THE NEW ENGLAND MEDICAL GAZETTE

A Monthly Journal of Homoeopathic Medicine

Editors
DE WITT G. WILCOX, M.D.
ARTHUR H. RING, M.D.
CONRAD WESSELHOEFT, 2nd, M.D.

Assistant Editors
SANFORD B. HOOKER, M.D.
HAROLD L. BABCOCK. M.D.
DAVID L. BELDING, M.D.
HELMUTH ULRICH, M.D.

"Die Milde Macht Ist Gross"

Volume LI

BOSTON
1916

INDEX

New England Medical Gazette

1916. Volume LI

The abbreviations in the following index are easily understood. The capital **C** preceding a page number indicates that the article appears in the Clinical Department. The capital **E** refers to the Editorial Department. The capital **R** indicates that the article was abstracted and appeared in the Department of Journal Reviews.

The **heavy-faced** type indicates an original article.

Cross-references have been used wherever necessary.

SOCIETIES

AUTHORS

THE NEW ENGLAND MEDICAL GAZETTE

VOL. LI JANUARY, 1916 No. 1

Books for review, exchanges and contributions — the latter to be contributed to the GAZETTE only and preferably to be typewritten — personal and news items should be sent to THE NEW ENGLAND MEDICAL GAZETTE, 80 East Concord Street, Boston. Subscriptions and all communications relating to advertising or other business should be sent to the Business Manager, 80 East Concord Street, Boston, Mass.

THE GAZETTE does not hold itself responsible for the opinions expressed by its contributors. Reprints furnished at cost.

GREETINGS FOR 1916

The *Gazette* extends to its readers its friendliest and most cordial good wishes for a happy and prosperous new year, and bespeaks for itself in this fifty-first year of its publication the continued interest and support of its friends. We "hitch the wagon" of our aspirations "to a star" while at the same time endeavoring to "keep the wheels on the ground" and to be both idealistic and practical, "noble of spirit and clear of vision."

"The unwritten only still belongs to thee;
Take heed and ponder well what that shall be."

DR. CABOT'S CARELESS REMARKS

The remarks made by Dr. Richard Cabot at the Evans Memorial in his lecture on November 16, 1915, entitled, "How to Secure Better Medical Service for Less Money," cannot pass without a few words of protest and criticism. Much that he said is contained in the introduction of Bernard Shaw's "The Doctor's Dilemma," the only difference being in the form in which it is put. Bernard Shaw as a cynic could say things with impunity which are hardly fitting for Dr. Richard Cabot or any other physician to say in a public health talk which is supposed to enlighten the laity on the subject which he chose.

Furthermore, the cynic referred to above seems to have a far better opinion of the medical profession as a whole than does our esteemed colleague.

Dr. Cabot made the remark that the young surgeon was not to be trusted, because his opinion as to whether an operation was advisable or not was biased by the consideration of the fee in the case of operating as against the fee if he did not operate. This is a very sweeping statement, and could only be made by one who must have a very poor opinion of the young surgeon and of the professional man in general. We entirely disagree with him on this point. The young surgeon can be relied on to give his honest opinion as well as the surgeon who is operating on a salary or the wealthy surgeon to whom the fee of operating is "too insignificant to affect his judgment." The salaried man can be just as anxious to exhibit his skill, and the wealthy one to increase his bank account. The oppressors of the poor are usually the wealthy. To accuse the younger surgeons in general of this entire lack of professional honor is unwarrantable, and should never have been brought up without substantial evidence, — which evidence was withheld, — and consequently the accused stand innocent under the English Law until proven to be guilty.

Dr. Cabot omits the position and the influence of the family physician. It is usually this family physician who calls in the surgeon because he feels the necessity of an operation. This physician in almost every case stands in the position of a friend to the patient, and this friendship makes him conservative. Fee-splitting is done away with by the rules of the College of Surgeons, and the physician only calls in the surgeon whose opinion and skill he seeks and values for the sake of his patients.

When Dr. Cabot states that only the poor and the rich get proper medical attention on the ground that the middle class are debarred from free clinics yet cannot afford the specialist's fees, he is again doing his colleagues, — this time the specialists, — a grave injustice. It is the common experience of every general practitioner that the specialist will be guided in his fee by the word of the practitioner as to the patient's circumstances, and that he will charge accordingly. A reputable specialist in any line has the right to charge a fee in accordance with his special knowledge, judgment and skill in this line. He is more often underpaid than paid in full for what his services are worth to the patient.

Finally, the remark is made that since the middle-class individual cannot afford the treatment of experts he is left to the mercy of the family physician who "makes a guess and then does the best he can." We most decidedly object to his

use of the term "guess." A guess implies hitting upon an idea at random. Differential diagnosis with the best sometimes comes down in the last analysis to something in the nature of a speculation, but this is the exception as there are usually sufficient facts found in connection with a case to bring the diagnosis outside the realm of mere speculation and guesswork. A good family physician is usually a man trained in observation and judgment. He is by no means infallible, but his mistakes are not to be blamed to guesswork but to an inability to ascertain and weigh facts. His art is at fault, not his luck at guessing.

We must admit that there is a grain of truth in Dr. Cabot's criticism of the profession, but he is applying the faults of the minority of medical men to all. He apparently has a very poor opinion of the rank and file of his colleagues. Whether this is due to his inability to judge the merits of his fellow men or to the company he keeps is the privilege of his hearers to decide. We prefer to remain under the impression that this inspiring teacher, this author of excellent books, — providing they are restricted to medicine, — and this distinguished student of clinical medicine is at fault in his judgment of his colleagues. Dr. Cabot answers the subject of his lecture by stating that he wants the unfortunate middle-class to have better care and treatment, and that he "wants them" himself. Altruistic motives of this nature would be judged by unkind critics of Dr. Cabot's calibre as being self-advertisement. We, however, are better judges of human nature than to make such a charge against our esteemed colleague and friend.

Our chief criticism of the lecture is that Dr. Cabot debases the medical profession before the laity without offering sufficient grounds for this debasement, and finally that he offers no practical solution for the subject under discussion. He is driving the laity from under the wing of the medical profession. He is driving them to Christian Science and quackery, for people crave advice on medical matters, desire treatment and need a guiding and controlling hand so long as disease and suffering are prevalent. Dr. Cabot is not helping the laity or the profession; he is hindering the physician in his already too difficult task.

C. W.

ORIGINAL COMMUNICATIONS

ADDRESS AT THE OPENING OF BOSTON UNIVERSITY SCHOOL OF MEDICINE FOR ITS FORTY-THIRD ANNUAL SESSION OCTOBER 7, 1915

By John P. Sutherland, M.D., Dean

Ladies and Gentlemen:

It seems but a short time, and yet in that short time the earth has made its annual journey through its orbit around the sun since many of us were gathered together on an occasion similar to the present: — viz. the opening of a new year of school work; — and once more it is my deeply appreciated privilege and honor as well as my duty to appear before you as the representative of the Faculty of Boston University School of Medicine, and in the name of the Faculty, and in the name of the School and all it stands for, to extend to the student body here assembled a most hearty welcome, and most sincere greetings. We do not welcome you into an unfamiliar field or to unknown duties and experiences, for members of the Faculty have trod the path you are now entering, have passed through the vicissitudes of student life, are familiar with its numerous and varied phases, have been drilled in its disciplines and tried by its drudgeries, have been elated by hopes and successes, and even have known something of the possible disappointments and disillusions which are experienced by humanity in general as well as by medical students who with high hopes and exalted ambitions enter upon a definite and serious life work. It is this wide and deep familiarity with medical life, as students, teachers and practitioners, that permits the Faculty to extend to you, individually and collectively, not only a hearty welcome, but a welcome that is permeated through and through with sympathy. This sympathy, however, is not to be misunderstood as an attitude of weak and careless indulgence, or obliviousness to shortcomings, but as that paternal friendliness which endeavoring to appreciate all factors in a given problem seeks a solution from the standpoint of your own best and highest welfare. However high your expectations, however lofty your ambitions, however earnest and enduring your hopes and endeavors, let me assure you of the Faculty's hearty and willing encouragement and assistance; and if these expectations and ambitions and hopes and efforts are still somewhat immature we trust that under the stimulating influences of your school life with us, they may attain a sturdy growth and generous proportions.

To-day our School, of which you as a matter of volition now form an integral and definite part, begins its Forty-third (43rd) Annual Session. While still young in comparison with the life of the world, our School has attained an age and maturity, and has acquired experiences, standards, traditions and history which carry it beyond the realms of youth and inexperience, and place it among the more mature and established influences in the educational world. Since the memorable day — Nov. 5th, 1873 — when its first class assembled, the sun (in popular phrase) has set many times; many moons have cast their radiance over the earth; many summers and winters have passed in established order; many classes have passed through the School's portals, and most of the high-minded, independent, liberty-loving, self reliant pioneers to whom the School owes its origin have relinquished active work on the teaching staff, or have passed from this life leaving a rich legacy of policies, ideals, customs and accomplishments. After more than two score years have passed in successfully carrying forward the work undertaken by the School, it is fitting that in order to accurately judge of the present and prepare for the future, an occasional retrospective glance be taken at the purposes which called the School into existence, and at some of the results of its efforts.

Very briefly let me remind you that the aims of the School (as set forth in its Announcement) have been and are to give its students a broad and sound training in the fundamental sciences of medicine; a thorough training in the Principles of Homœopathy; practical training in Materia Medica; special training in Homœopathic Materia Medica; and special training in Homœopathic Therapeutics. It aims to impart a working knowledge of modern surgery, obstetrics and the specialties; to make useful, practical, liberal and successful physicians, — true healers of the sick; to uphold high standards of medical education and to inculcate lofty ideals of ethics and morals.

Historically it might with justice be claimed that our School was twenty-five (25) years old on its birthday, for it was, from the legal standpoint, the successor of the New England Female Medical College, the first medical school in the world to be established for women, and a school which for a period of twenty-five (25) years, from 1848, had done sturdy pioneer work in the medical education of women. Naturally this fact in connection with the purposes of the Founders of Boston University accounts for the medical department of the University being at its initiation in 1873 coeducational; and since that time it has made no discrimination in sex among its students or on its Faculty.

From the date of its establishment (1873) it demanded entrance examinations of all applicants for admission who were not college graduates: a new departure at that time in medical education. At the same time also (1873) it offered a graded course of three years: — the average medical course at that date being two years.

In 1877 it made the three years course compulsory.

In 1878 it offered for the first time in this country a four years course. The same year it also offered courses leading to the degrees Bachelor of Medicine and Bachelor of Surgery, and lengthened the annual session to eight months.

In 1890 it took the lead among medical schools in making the four years course compulsory.

In 1907 it instituted an optional five years graded course.

In 1908 in conjunction with the College of Liberal Arts of Boston University it offered a six years combination course whereby the two degrees Sc.B. and M.D. may be acquired.

In 1912 its graduates became eligible, under specified conditions, to the degree Ph.D., from the Graduate School of the University.

In 1914 its entrance requirements were increased to the extent of demanding at least one " premedical year " of training in a college or technical school.

On three occasions of national and international competition (1904–1905–1908) the School acquired the unique distinction of being awarded two gold medals and one silver medal on the excellency of its exhibits, — the only known medical school to make such a record.

Within its brief history its buildings have been more than doubled in size; its course more than doubled in length; its faculty and the subjects included in its curriculum more than doubled in number; and its clinical facilities have been increased more than four-fold.

During this period of two-score years its graduates have been making creditable and even enviable records in their various communities as general practitioners, specialists, surgeons, members of boards of health, examining and licensing boards, and school boards; as trustees and superintendents of large state institutions; as medical missionaries in foreign fields, and in a useful way performing their civic and professional duties with credit to their Alma Mater.

These points are referred to not in any boastful spirit, but simply with the idea of presenting to you in brief a suggestion of your medical heritage in becoming a part of our School.

The work of the School is a continuous and unbroken record running throughout its history. The *personnel* which has formed

the working machinery naturally has undergone changes as the years have passed, until at the present time binding us of to-day with 1873 we have only one living link still an active member of our Faculty. Of the twenty-six members of the original Faculty, Edward P. Colby, Professor of Nervous Diseases is still in the ranks.* To be "on duty" is characteristic of Prof. Colby, for since those dark days in our Nation's history in the sixties, when he served his country in the medical department of the navy, he has responded "present" to duty's roll-call, and we are inspired and encouraged and strengthened by his living interest in the affairs of the School to-day. Prof. Colby by his long-continued devotion to the welfare of the School, by his generosity, loyalty, faithfulness and unselfishness, by his genial and sympathetic temperament, by his clear and forceful teaching, has endeared himself to generations of students and to his colleagues on the Faculty, and there are many among us who do affectionate homage to him as respected instructor, collaborator and most highly esteemed friend.

It may not be of service to linger very long in contemplation of the past, but during the School year which terminated last June certain modifications in methods of teaching were introduced experimentally, and with such success and general approval, that they are to be continued during the coming year. The senior students, especially, will be interested to know that a large part of their time during the coming year is to be spent in the practical work of actual clinics, in which they are to occupy the position of participants and not merely that of observers. The advantages of coming into close personal contact with patients, of being obliged to make diagnoses and prescribe treatment, of assisting in operations, conducting anæsthesia, making all necessary examinations and analyses under the direct supervision and with the assistance of instructors, are so obvious that no comment is needed. The Faculty reports made at the end of last year's work showed that there had been held during the year 90 special medical clinics of two to three hours duration each, at which a large variety of cases came before the students for observation, analysis and treatment. In the surgical department one instructor performed over 200 operations in which the students in turn acted as assistants, thus coming into the closest possible contact with surgical work and obtaining an experience not to be had from text-books, in the lecture hall or elsewhere. In the surgical department as a whole the students assisted in over 3000 operations including more than 1100 abdominal cases. The orthopedic clinics had an average attendance of 40 cases, the number at times exceeding 60. In ophthalmology over 200

* Dr. Colby died November 1, 1915.

cases illustrating practically all the diseases met with in ophthalmic practice were brought before the class and utilized for instruction. During a period of five weeks students in small groups spent the forenoon hours at the Contagious Department of the Hospital where scarlet fever and diphtheria in all their different phases and complications were available for the closest clinical study. Also each student spent an unbroken period of five weeks at the State Hospital for the Insane at Westborough, Massachusetts, where an average daily population of 1300 patients was under observation; — where all types of mental alienation, with the general and systemic complications possible in such a large community, could be studied; and where also special opportunities to study the pathology of such cases were offered under the guidance of a pathologist of international reputation. These few extracts from the records are presented to show what a wealth of material is available for study, and how fortunate the School is to have such incomparable clinical facilities at its disposal. The subject is introduced here, also, to suggest that the benefits to be derived from these clinical opportunities are dependent largely upon the earnest, intelligent and conscientious work done by the individual student. There is offered in these clinics the opportunity to develop powers of close and accurate observation, originality in solving problems, ingenuity in adopting appropriate therapeutic measures, and in short all the qualities which make a useful and successful practitioner. It is for the individual student to take advantage of the opportunities thus offered.

It was only a year ago that new admission requirements were put into operation, and applicants for admission who had not acquired a primary degree in Arts or Science were required to present evidences of having pursued at least one premedical year, as it is generally termed. This premedical year was to be equivalent to the first year in a college or technical school and was to include in its work Physics, Chemistry, Biology, and French or German of the accepted freshman year grade. To these requirements another year has been added, and the announcement has been made that the Faculty has voted that a year hence, viz. in 1916, applicants shall have had two years of college training as a prerequisite to the medical course. Whether or not these advanced requirements are consistent with democratic principles; whether or not they are desirable from the educational standpoint; whether or not they are to prove of real benefit to the sick and suffering humanity which is served by the profession, are questions which cannot be profitably discussed at this time. Whether approved or disapproved by medical faculties many state examining and licensing boards

have ruled that no candidate for practice can be admitted to examination who has not had two years of college prior to entering a medical school, and the newly formed American College of Surgeons has voted that beginning with the year 1920 no candidate will be admitted on credentials to a fellowship who cannot comply with these same requirements. It certainly behooves medical schools to qualify their students to meet the requirements of state medical licensing boards and similar organizations. It was partly in anticipation of the modern advanced standards that as long ago as 1908 Boston University established by a co-operation of its College of Liberal Arts and Medical School a six years combination course whereby two degrees are obtainable. The collegiate part of this course includes prescribed courses in English, Mathematics, French, German, Chemistry, Physics, Biology, Comparative Anatomy and Psychology, and a number of electives. This Combination Course has been heartily advocated by the Medical School Faculty, but the new requirements for admission to the School practically make this course compulsory. Its advantages are evident to all who are familiar with the demands of modern medical education, and it is to be hoped that students and members of the profession will recognize the desirability, if not the necessity of this new departure in the way of requirements.

It is with pleasure attention is called to certain much-needed improvements which during the summer have been made in certain of our laboratories. For several years the chemical laboratory has been sorely inadequate to the work demanded of the department, the cramped, ill-lighted and poorly ventilated quarters being a serious handicap to both pupils and instructor. The big laboratory on the first floor of the new building has been converted into an attractive and most desirable laboratory for this valuable chair, and will now be known as the chemical laboratory. Its commodiousness, excellent light, accessibility, and thoroughly new and adequate and up-to-date equipment are most satisfactory and will make possible the most accurate and convenient performance of all the delicate analyses required in organic and physiological chemistry and toxicology.

The bacteriological laboratory has been installed in and consolidated with that used for so many years for histology. By the introduction of new slate-topped tables, a system for artificial lighting, convenient working benches, and the rearrangement of lockers for apparatus, together with the usual sterilizers and incubators, a particularly desirable and appropriate new home for this department is made. And all this

has been accomplished without interfering with the facilities for histological work.

Another valuable addition to our teaching facilities has been made during the summer months by the mounting of approximately five hundred new and selected specimens for the Museum. New display tables have been made, old specimens have been remounted and rearranged, and such improvements made generally that the exhibition and preservation of material will be made more effective. The cheerfulness and attractiveness of the entire laboratory building have been greatly increased by painting and varnishing, and it is expected that during the coming year more valuable work than ever before will be done therein.

The School is to be congratulated upon other and highly valuable additions to its facilities through its connection with the Massachusetts Homœopathic Hospital which during the past year has been made the recipient of a new building to be used as a Maternity and Out-Patient Department. The old "Dispensary," through the generosity of a philanthropic Boston business man, has been reconstructed on a fireproof basis, and in accordance with a modification of the original plan, has been converted into a five story and basement building, the lower portion to be used for Out-Patient work and the upper three floors as a Maternity. During the past year (1914) approximately 1000 maternity cases were treated at the Hospital and the removal of this large tax on its resources will by so much increase its possibilities for conducting its other work.

I have referred to the aims of the School, to some of the things it has done, its requirements for admission, to its standards, to the standards of licensing and examining boards and closely kindred subjects. It has occurred to me that before separating to take up our various routine duties it might be profitable to spend a moment in considering the general subject of requirements and standards in order that we may have a guiding idea to help us during the year we are to work together.

What things are required of us; what things shall we require of ourselves? What standards are imposed upon us by others, and what standards shall we elevate for ourselves? Upon our answers to these questions hangs the record we shall have made at the end of the school term, at the end of life's term. According to physiologists many of the acts of our bodies are involuntary, are performed without reference to our will, reason or intelligence, but these are, or should be, wholly of the lower and least important order of functions, and comply simply with physiological standards. Our higher functions, those things which make the real individual; the thoughts, the desires, the

will, — these things should be wholly controlled and "voluntary" and these are the things by which we, as individuals, are ultimately judged, by ourselves and by others.

While you are with us as students you have a certain curriculum laid out for you sufficient to occupy your time and energy and thoughts for the greater part of the eight months, or the four years, ahead of you. A certain attendance upon your duties, a certain industry, a certain rank will be required of you, but there is absolutely no doubt in my mind about your making good and creditable records if you will simply perform your various outlined duties perseveringly, faithfully and intelligently. The standards are not unattainable: they are adapted to the ordinary demands of life, and with systematic and reasonable application to mastering each day's tasks, the result at the end of the year is sure to be satisfactory, from the pedagogical standpoint. You unquestionably have other objects in view than simply making records as medical students. Your student life here is simply preparatory. It is here you are to fashion the weapons and secure the equipment needed in the warfare with disease. Our function as teachers is primarily, and usually is understood to be only, to instruct you in the mysteries of organic life, normal and abnormal; to acquaint you with the structure and functions of the body in health and disease; to train you in the detection and quick recognition of causes of ill-health; to develop your technical skill so that difficult and delicate manipulation of laboratory and clinical apparatus and instruments may be deftly, safely and successfully accomplished: in a word to make anatomists, bacteriologists, pathologists, diagnosticians, "internists," surgeons, and specialists of you. But you are not to be contented with being converted simply into doctoring machines. Such an ideal, such hope, such an object is utterly unworthy of a medical student, and if the work of the Faculty results in nothing more than that, we shall have miserably failed in our task, fallen far short of any worthy standard.

To put the matter another way, you are here to be prepared for life's work, for your special part in the great life of the world. But one's life cannot be restricted — certainly should not be, to the technical and mechanical routine of the medical life. Of course, a useful, well-trained and capable physician is better than an inefficient one, but again, one's influences in life extend beyond the limits of his vocation or industrial pursuit, and it is to some of these duties and influences and to the spirit that should animate us; to the standards and objects and motives, the purposes, aspirations and hopes that guide us in our actions, that I would ask your present consideration.

Among your own personal ambitions may be that of making what the world calls a "success in life." The medical profession is sometimes looked upon as a portal to social recognition and prestige, and occasionally as the roadway to financial eminence, although such ideas, fortunately I think, rarely form the real incentive to entering its ranks. The standards of what is called the "world" frequently need revision and it is a comfort and encouragement to hear a voice raised in protest against some of the world's standards. I should like, on account of the appropriateness and excellence of the sentiments expressed, to quote in this connection a few sentences from an oration recently delivered by Hon. Charles J. Bonaparte before a graduating class of dental surgeons. He said, — "Professional men, at least if they are worthy to be so-called, render an immense service to American Society in teaching by their example and by the avowed purpose of their lives and labors, that the mere accumulation of wealth is not the true end of human endeavor, that it is, or, at all events, it ought to be, in some sort, a by-product of the fulfilment of duty.

"One of the gravest dangers which I foresee for the America of the future is that it may become a land where honor and dishonor, justice and injustice, right and wrong shall be all measured in dollars and cents. Against this peril, the vital principle that looks on money-making as a mere incident to faithful, strenuous and effective service, is, to my mind, our best safeguard; a society with honorable and conscientious professional men as its exemplars and guides may not be a society of saints, but it will never bow down in adoration before the Golden Calf.

"While a profession, no less than a trade, is a means of gaining one's livelihood, a profession is not practised, as a trade is pursued, with moneymaking as its conscious, avowed and legitimate end. I wish each one of you most heartily a large and lucrative practice, but I wish you this only because I feel confident you will not get it unless you deserve it; in your case, as in all cases of honorable and worthy professional labor, if you shall succeed in making money, it will prove that you have also succeeded in gaining the respect and confidence of those you serve, and these things are beyond purchase by money. Moreover, although I hope you may be prosperous, I cannot say I expect to see you multimillionaires; if the great end in life of any among you is to become such, I fear those of you have started on the wrong road. The man who is guided by principle acts and lives under orders; he does his best, and leaves responsibility for the outcome where it rightfully belongs."

The standards of success in professional life, therefore, by

some are considered to be more than possession of material things, such as number and power of automobiles, the size of a bank account or of "investments," the kind of house one lives in or the social entertainments one offers, the works of art one possesses or the variety and richness of one's apparel. These things all have their place, but they should be incidentals and not incentives.

One of the standards of the day is the "Educational," and in medicine it has been brought into the foreground in recent years by the action of various state legislative bodies, examining and licensing boards, medical associations, and the Carnegie Foundation for the Advancement of Teaching. Unfortunately for true progress in things medical, these standards have been and even are too arbitrary and material in their nature. It is chiefly the length of time spent in study, the number of courses preparatory and advanced, the size and valuation of the School buildings, the laboratories and equipment; the size of Faculties and number of full-salaried instructors and the amounts of their salaries; the possession of libraries, number of volumes contained and the salary of the librarian; the hospital connections and size and variety of clinics available; and things of such nature that have been adopted as the standards by which medical schools and students are valued and classified. That such standards are unworthy and inadequate when applied to educational matters should be self-evident and it is with distinct approval that I am able to quote the president of the Carnegie Foundation, who in his latest Report points out the incongruities of such standards, especially as applied by the Council on Medical Education of the American Medical Association. He says in brief, classification of medical schools upon such a basis "has now become almost meaningless" (page 67); also, on page 69 ". . . the problem of classifying schools into four or five groups upon such criteria as the Council has assumed seems to me practically insoluble. It has served its day, and some looser form of grouping seems now desirable." Furthermore he says, "The first test of any school . . . is the *quality* of material that it accepts as students;" and ". . . the *quality* of the teaching, the ability and devotion of the faculty, must be taken into account." And again ". . . the principal function of the medical school is the *training* of *medical practitioners*. To sacrifice their interests to the preparation of a few men for *research* is not to be thought of." The really significant thing in these quotations is the use of the word "quality" as applied to students and teaching, and that is the one idea I am anxious to impress upon your minds to-day. It is the purpose, the motive, the ideal possessed by the student or teacher that will

decide in great measure, if not entirely, the real "quality." Education should be considered as much more than the acquisition and possession of some knowledge of geography, literature, languages, mathematics, history, chemistry, physics, biology, logic, medicine, etc. These things are chiefly things of memory and of the so-called "senses" and are desirable and useful, but the education that is worth while and that makes for "quality" of life must include in addition to all these and allied things:

1. The ability to interpret Nature, Nature's purposes and natural phenomena, in so far as finite mind can interpret these manifestations of Creative and Infinite Power;

2. The ability to perceive the truth that is within or behind phenomena or appearances in whatever form presented; in so far again as absolute truth can be apprehended by mortal mind;

3. The education that is worth while results in the development of judgment, powers of perception, analysis and discrimination.

4. The education that is worth while enables one to deal justly with one's neighbor, and to enact laws or make guiding rules that will result in the social, industrial, economic, political, medical and spiritual uplift of humanity.

5. The education that is worth while empowers one to differentiate between the *essential* and *non-essential* in all the phases of life.

6. The education that is worth while leads to humility; to a wide and generous sympathy with others; to practical altruism which appreciates and approves of "will to serve" and shuns and abhors "will to power"; and which prompts one to hold out a helping hand to those in need of physical, financial, mental or moral aid.

In connection with this question of education it may serve a purpose to ask if the mind of the man of to-day is any stronger, or more capable than the mind of his predecessor. There are those who claim that as far as real ability is concerned man's mind has not changed much, if any, during historical ages. The ancient Egyptians excelled all the peoples of their day in their possession of scientific or natural knowledge, and in this respect it is doubtful if they have been surpassed by the peoples of to-day. Their constructive ability along architectural lines is indicative of their knowledge of physics and mathematics, and of the imagination and artistic sense they possessed. The social, economic, political, artistic and other conceptions as well as the ethical and moral ideas of the Incas of America and many of the ancient Orientals seem to

have been on a par with those current to-day throughout the world. According to a most instructive article by S. M. Mitra on "War Philosophy, Hindu and Christian" printed in "The Hibbert Journal" for July '15, the ancient Hindu's War Philosophy, Ethics, Diplomacy and Strategy anticipated even down to minute details the war philosophy, ethics, diplomacy, and strategy of the modern civilized nations. The "*Mahabharata*" of 1500 years B.C. is quoted on the morality and expediency of war, and to show that many of the "conventions" or agreements of the Hague Conferences were not only discussed, but settled in that far-off day, in accordance with what are to-day called "humane principles." True there is to-day a greater utilization of Nature's forces than ever before in historic times, in the navigation of the sea and air, in the application of electricity in industrial arts and manufacture; there have been marvelous developments in wireless telegraphy and telephony; and there are greater national and international co-operations than the world has before known; and there never was a time when Nature's forces were more perverted or put to more destructive uses than at the present time, but has there been any essential development of mental power, any real growth in mental capacity? An answer in the negative would probably be correct. As to possessing vast revenues and accumulating huge financial capital the rajahs of India were not, or possibly are not, a slow second to our modern great captains of finance. The wonderful harmonies, symphonies, beauties and majesty of Nature in color, form and sound are to-day not as fully appreciated as by the Psalmist who wrote "The heavens declare the glory of God; and the firmament showeth his handiwork. Day unto day uttereth speech, and night unto night sheweth knowledge." (Ps. xix)

Doubtless with all the educational machinery of modern civilization there is greater diffusion of natural knowledge than ever before, but that does not mean that the mental power of Man has increased, any more than that his muscular, respiratory or digestive powers have increased.

On the other hand there is much all about us to show that this wide diffusion of "knowledge," lacking as it does the proper development of Man's best possibilities, is a particularly unfortunate and undesirable circumstance. A glance at the havoc, destruction and devastation being wrought in the world to-day, a thought of the suffering, unhappiness and misery prevalent, would seem to be enough to convince one that there is something wrong and wholly wrong with humanity, in spite of, or possibly because of, the wide-spread diffusion of what is called science, or scientific knowledge, without a suitable

counterbalance. That is, upbuilding standards and ideals and motives have not been able to control Man's tendency to pervert things and misuse them. Many of us can appreciate the following which is quoted from a sermon in the "New Church Messenger":

"The great thing for us to realize is, the pressing and paramount duty lying before man of putting the life of this world right. It is man who has put it wrong, wrought such havoc in it, overrun it with manifold evils and their manifold miseries. This is man's work, and man will have to undo it. We may blink that truth in any way we please. But there it is, moveless, inexorable. It will not stir from its place, until its bidding is done. Man has wrecked human life. Man must rescue it from destruction. That cannot be too strongly insisted upon, nor can this as an attendant truth. It is perfectly useless to look to Divine Providence to bring this about, unless man, the free agent, religiously does his part. God works for the better, through man; not instead of him."

Man unquestionably always has had, and to-day has, great mental power, and it is within his control to utilize it to his own profit and happiness.

I trust you will not weary with me if I carry my idea a step further. In "The Hibbert Journal," already referred to, is a noteworthy essay entitled, — "A Spiritual Balance-Sheet of the War" by Cloudesley Brereton which gives evidence of keen analysis, deep perception, excellent literary style and sound judgment. As an explanation, not excuse, for writing on such a subject he says, (page 731) ". . . as one who firmly believes that the spiritual factors in war are even more important than the material — Napoleon, no mean judge in these matters, assessed them in the ratio of three or four to one, — I cannot help feeling that any attempt, however crude and imperfect, at making a trial balance-sheet of the spiritual factors involved in this war promises certain definite advantages." One of the causes of the great war he says is that a ". . . Godless science has taken the place of religion" (page 742). And again he writes, when discussing the devoted patriotism and loyalty of the German people, "But this group loyalty seems to me only a part in its turn of that deep religious feeling which I consider to be the most distinctive quality of the race, and which lies to-day *crushed under the weight of appalling materialism*. One must not forget that the Reformation first took root in Germany and not elsewhere. The misfortune is that to-day in Germany this religious feeling has been made the *bondswoman of science*, whereas science ought to be the handmaiden of religion."

It is interesting, and I think instructive, to study historical events with the idea in mind of the incentive, the motive, the purpose, the ideals which were behind the facts, that is as far as it is possible to interpret the motives from the facts or acts themselves; — because there is probably some connection between the incentive and the final result. For an instant, glance at the story of Alexander the Great, weeping because there were no more worlds to conquer; of Cæsar and the Roman dominance; of Napoleon and his dreams of conquest. The standards and visions of these historic personages were very mundane. They evidently did not have deeply in mind kingdoms of freedom, of justice, of liberty, of equality, of high intellectual and spiritual development, of uplifting arts and useful industries, but rather kingdoms and empires of might where by physical power peoples might be kept under subjection. History will repeat itself throughout time while such visions and standards and ideals control men's actions.

The great voyages of discovery of the fifteenth century, the colonizing enterprises of the sixteenth and seventeenth centuries have their lessons when measured by the highest standards. The biography of Columbus is a wonderful story of enthusiasm, imagination, confidence, patience, determination, heroism, and endurance, and it is suggestive that among the motives which spurred him on to his great work was the hope that he might convert the great Khan and his people to Christianity. In fact, he came to believe that the Most High had chosen him as his instrument to carry the light of faith into the kingdoms of oriental paganism. To the best of my knowledge there is no such high faith and desire connected with the so well known names of Cortez, Balboa, Ponce de Leon, Pizzaro, De Soto. The idea of plunder and conquest and self aggrandizement seems to be reflected from the records of their achievements. And what is the 300 year result of their work as witnessed in many of the West Indies, Mexico and adjoining territory?

The mere mention of such names as the Cabots, Cartier and some of the noble priests who were his successors, Magellan, Drake and Raleigh is enough to stir the blood and waken the spirit of those who love out-of-doors and adventure, but I want especially to ask you to think of the puritan colonization of New England and the Quaker settlement by William Penn. There was a compact signed in the cabin of the Mayflower on Nov. 11 (old style), Nov. 21 (new style), 1620 in which the forty-one signatories claim that "haveing undertaken, for the glorie of God, and advancement of the Christian faith, and honour of our king and countrie, a voyage to plant the first colonie in the Nathern part of Virginia, doe by these presents

solemnly and mutually, in the presence of God, and of one another, covenant and combine ourselves together into a civill body politick, for our better ordering and preservation and furtherance of the ends aforesaid," etc. With no more courage or strength or pluck or endurance than other colonists had, but with the avowed purposes declared in the compact, what have been the chief results of their efforts?

A little more than a half century later, in 1681, the so-called "Holy Experiment" of William Penn was made in the state named after him; an experiment based on the Golden Rule without soldiery, weapons or gunpowder. The records of these two colonies contain many contrasts with those of the 1607 Jamestown settlement of Virginia where in the short space of twelve years, in 1619, slavery was introduced.

Purposes and standards and ideals which stand behind or stimulate to action, do make a difference. In more recent times compare or contrast the purposes and results of David Livingstone's explorations into and his opening up of the "Dark Continent" with those of some of his successors.

And now, Ladies and Gentlemen, let me ask in conclusion, in what spirit, with what guiding motives shall we begin our year's work? I have been tempted to outline some standards for you, but the best ones were long ago given to humanity. It is simply for us to unstop our ears and hear, — open our eyes and see. Seven hundred years before the Christian Era the Prophet Isaiah was exhorted to "Go through, go through the gates; prepare ye the way of the people; cast up, cast up the highway; . . . lift up a standard for the people." (Isaiah 62, 10). And the standard existed long before his day and has been exemplified since, so there is no excuse for us for unfamiliarity with it.

I trust that in the year ahead of us we shall all make strenuous endeavors, in all our different relationships, to live up to the highest standards that have been given to us. Work done in that spirit, life lived in that effort, is sure to bring its own rich blessings.

THE SURGERY OF THE VAS DEFERENS*

By Leon T. Ashcraft, M.D., F.A.C.S., Philadelphia, Pa.

In order that we may appreciate the necessity for surgical interference in the vas deferens, we must review the anatomy of this tube, together with its topographical relationship to those organs with which it is intimately connected.

The vas deferens is the excretory duct of the testis, and extends from the globus minor of the epididymis to the prostatic portion of the urethra. In its course and extent it is divided into four portions: the testicular portion, extending along the epididymis from the globus minor to the top of the testicle; the funicular portion, extending from the latter point to the external abdominal ring; the inguinal portion, occupying the inguinal canal; and the pelvic portion, extending from the internal abdominal ring to the termination at the ejaculatory duct.

The seminal vesicles are the lobulated membranous pouches placed between the base of the bladder and the rectum, serving as reservoirs for the semen, and secreting a fluid to be added

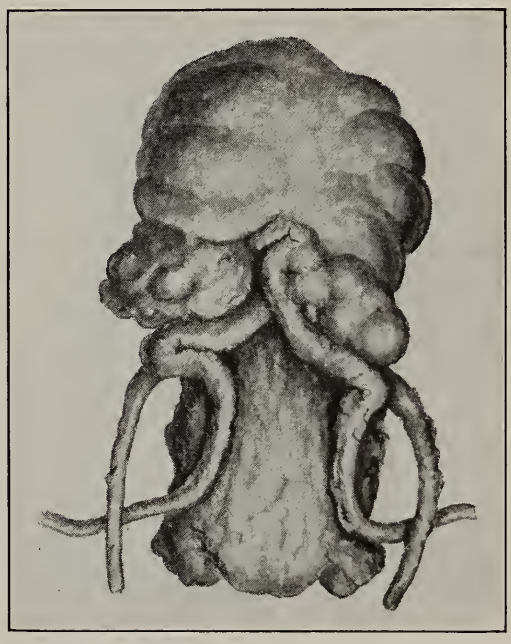


Plate I

Prostate, seminal vesicles, vasa-deferentia and vereters.

to the secretion of the testicle. They vary in size in different individuals, and also in the same individual. Their upper surface is in contact with the base of the bladder; their under surface rests upon the rectum. Their posterior extremities diverge from one another; their anterior extremities are pointed, and converge towards the base of the prostate gland, where each joins with the corresponding vas deferens to form the ejaculatory duct.

* Paper read at a meeting of the Philadelphia Society of Surgery, Gynecology and Obstetrics, Wednesday evening, November 25, 1914.

The vas deferens runs along the inner margin of each vesicle. Each seminal vesicle consists of a single tube, coiled upon itself. When uncoiled, it is of about the diameter of a goose quill, and from four to six inches long. Each vesicle is made up of several compartments.

Ampulla and vesicle are closed by a sphincter of smooth muscle, the interampullary muscle. It is a compressor of the seminal duct, whose contraction closes the orifices of ampullæ and vesicles. The existence of this sphincter explains the clinically important fact that liquids injected into the vas enter the vesicle and distend it, before they escape through the ejaculatory duct.* Ampulla and vesicle are closely bound to the base of the bladder. Ureter, vesicle and vas are in intimate relationship, held together by a sac of rectovesical fascia, a fold of peritoneum.

The ejaculatory ducts, two in number, one on each side, are formed by the junction of the ducts of the seminal vesicles with those of the vas deferens. The ejaculatory ducts pass forward obliquely through a conical canal situated on the posterior portion of the prostate, and opening into the prostate urethra.

Having, then, briefly reviewed these facts, I shall now refer to those bacteriological diseases that may affect the organs in intimate contact with the vas deferens, namely, the seminal vesicles, the epididymis, and the ejaculatory ducts. The organisms most frequently met with in both the acute and the chronic form of seminal vesiculitis, epididymitis and deferentitis are, first, gonococci; second, tubercle bacilli; third, colon bacilli; and fourth, unclassified bacteria. I mention these because of their rarity. To be sure, it has been demonstrated by Welch and others that the bacilli of typhoid fever, mumps, and, rarely, other diseases, are sometimes found in the secretions from the seminal ducts. The same organisms are found in the chronic form, except that mixed bacteria and the various pus cocci are usually more prevalent in seminal vesiculitis and in epididymitis; in fact, in both these diseases, especially the latter, gonococci and tubercle bacilli occasionally lie side by side. This is not to be marveled at, because it is readily explainable that the long residence of gonococci so devitalizes the tissues as to prepare a favorable soil for the invasion of tubercle organisms.

This brings us to a consideration of those pathological conditions which may be benefited or cured through surgery of the vas deferens, namely, seminal vesiculitis, epididymitis, diseases of the ejaculatory ducts, and, in some instances,

* Pus Tubes in the Male. Belfield, Int. American Medical Association, Dec 25, 1909. Belfield's investigations.

posterior urethritis. It is not my desire to intimate that the only manner of curing any of these is through surgery of the vas deferens, since there is a small percentage of cases that get well under other therapeutic and mechanical measures, but the majority are rebellious to such methods, and, unless treated surgically, become chronic. Pathogenic organisms are then not only responsible in a great measure, for the continuance of a chronic urethral discharge, familiarly known as "gleet," but are taken up by the general circulation, and carried to the synovial membranes, causing in not a few instances so-called gonorrheal rheumatism, and, rarely, endocarditis, pleurisy, and various degrees of myositis. A simple vasostomy will do much to relieve, and in many instances cure these conditions, depending upon a focal infection. The technic that I employ for scrotal vasostomy is as follows:

The vas is held by an assistant between the thumb and forefinger against the skin of the scrotum near the median line. A half inch incision is made through the skin, and a groove director is introduced underneath, bringing the vas to the surface. It is then stripped of its covering, and freely exposed.

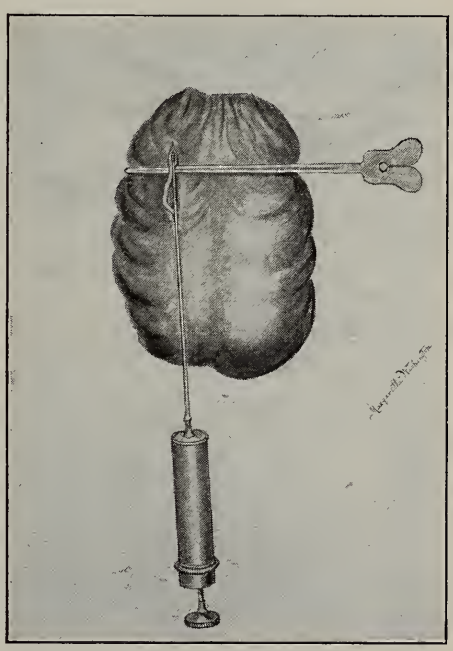


PLATE II

Showing exposure of vas, brought to surface, incised over groove director and being injected.

A longitudinal incision into the vas opens the canal. The blunt needle of an oberlander or leuer syringe can be passed into this minute canal, and its patency tested by injecting a solution of carbo-fuchsin 2 per cent; or any non-irritating coloring matter may be slowly injected. 4 to 8 c.c. is the amount usually given, although sometimes as much more has been injected, provided a general anæsthetic has been used as de-

manded by hypersensitive patients, or in some instances, we have been able to increase the amount by injecting the fluid slowly. Colic is the guide to the amount the vesicle can accommodate. This fluid will distend the seminal vesicle, which, subsequently, discharges it into the bladder. A No. 16 French catheter introduced into the bladder will recover the stained fluid. A solution of 5 per cent. argyrol or 1 per cent. protargol is then injected. This liquid also traverses the vas and ampulla, and enters the seminal vesicles. A fine silkworm-gut suture is passed into the lumen of the canal at each extremity of the incision, and out through the wall of the vas, a quarter of an

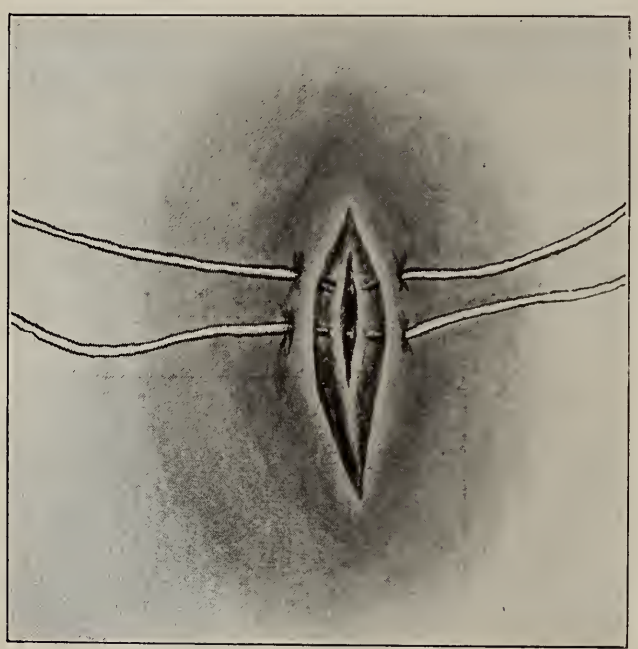


FIG. 1
Showing vas opened and held apart for drainage and injection.

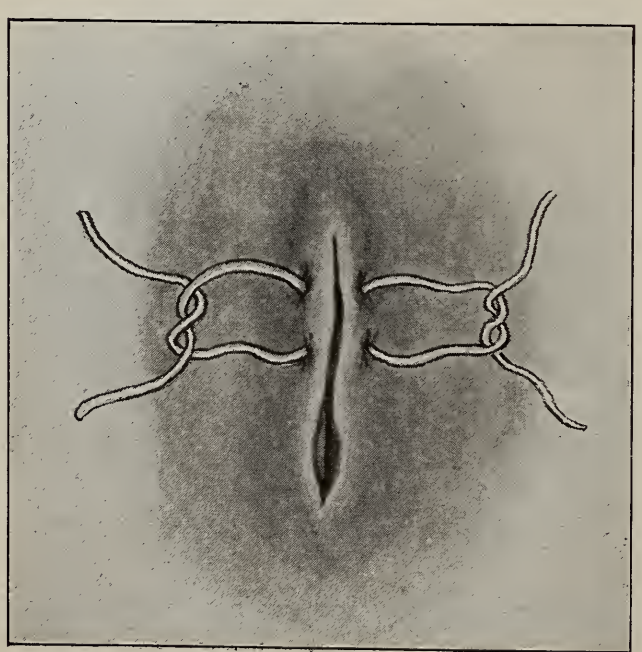


FIG. 2
Showing temporary closure of wound, after injection. Note imperferfect coaptation of cut edges facilitating subsequent easy approach to vas.

FIG. 3
Showing closure of wound

inch or more distant. One suture end is then passed through the skin, and the two ends tied loosely outside. This suture entering the lumen of the proximal end serves to guide the needle when daily injections are made. The amount used at the first injection varies from 4 to 8 c.c., although some, Herbst* among them, claim that the vas may be drained, and injected as many as 20 times consecutively. We rarely give more than three injections because of a resultant funiculitis. The latter, of course, disappears within a reasonably short time. Vasostomy likewise, relieves pressure upon the epididymis. Both vasa may be drained at one sitting. When the wound is healed, the suture is removed. Restoration of the lumen of an occluded vas is accomplished by excising the occluded portion and suturing the divided ends in the same way. The lumen of the vas is maintained during the healing by the thread within it.

In acute cases of seminal vesiculitis, it is not necessary to resort to injections. A simple vasostomy in many instances may be all that is needed to relieve the pressure from the epididymis, as well as drain the vas. When, however, the condition becomes chronic, it is necessary to resort to injections of the seminal vesicles through the vas at least before resorting to more radical surgery, such as seminal vesiculotomy. If the seminal vesicles were like the urinary bladder, it would be the simplest matter to either drain or inject them, but all seminal vesicles, as previously stated, are not alike. Picker† states that there are five types: simple, straight tubes, 4 per cent.;

* Ballenger, Genito-Urinary Diseases and Syphilis.
† Urologic and Cutaneous Review, 1913.

thick, twisted tubes, without diverticula, 15 per cent.; thin, twisted tubes, with or without diverticula, 15 per cent.; main tubes straight or twisted, with diverticula, 33 per cent.; and short main tubes, with large, irregular, ramified branches, 33 per cent.

The reason that these injections into the vas are necessary is because of the poor results that have followed mechanical and internal treatment. Belfield advocates vasostomy for the various pus infections of the vesicle, vas, posterior urethra, ejaculatory ducts and epididymis, claiming that he has met with steady improvement as the result of this procedure. The arguments advanced for its employment are:

1. Pus infections of the seminal tract plus occlusion of the ejaculatory ducts soon convert vesicle, vas, and, finally, epididymis, into a closed abscess.

2. Vasostomy is the simplest and least objectionable means of evacuating pus, relieving tension, and medicating vas and vesicle.

3. Among the effects of these infections on the urinary organs are bladder-irritation, and obstruction of the ureter, with consequent kidney-lesions.

4. Impotence, sterility and sexual neurosis in the male are frequent results of pus infections of the seminal tract, and are amenable to appropriate treatment thereof.

It is but fair to state, however, that there are certain types of peri- and para-vesiculitis in which marked adhesions exist between the seminal vesicles and the bladder and prostate, and that in these Fuller's, or Squier's operation must be attempted; that is to say, seminal vesiculotomy.

Unless one has had a wide experience in observing the outcome of Belfield's operation (namely, vasostomy, and injection of the seminal vesicles), it is hard to appreciate the good results that follow. During the past few years, I have, in selected cases, particularly in those of so-called gonorrheal rheumatism, and in rebellious cases of seminal vesiculitis in which there were no adhesions, been doing this operation. It is remarkable how soon after the operation the rheumatic condition disappears, and an absence of all organisms is noted in the expressed secretions of the seminal vesicles and prostate. This operation is unattended by any danger, and is not followed by stricture of the vas deferens, or the absence of spermatozoa, if one is careful in his technic.

For colon-bacillus infections of the seminal vesicles when a systemic toxemia results, the same beneficial results accrue from simple vasostomy and injection of the seminal vesicles.

Combined Vasostomy and Epididymostomy for Gonorrheal Epididymitis. — Epididymitis, as we know, is very frequently found. My results following surgical treatment have been uniformly gratifying. It is not hard to understand this, nor to recognize why medical treatment is so ineffectual. All that is necessary is to recall that the urethral discharge reaches the epididymis from the posterior urethra directly through the vas deferens. In very rare instances, it arises from the blood and the lymphatics. As a result, the urethral discharge becomes either markedly diminished, or entirely suppressed, and is mostly confined to the tail of the epididymis. Upon delivering the testicle from the tunica vaginalis, and examining the epididymis, one sees an intense engorgement of this body, particularly marked at its tail. The vas is also swollen. In many instances, the tunica vaginalis is firmly adherent to the lower portion of the epididymis, and often an appreciable hydrocele exists. Smears taken from this pus show gonococci. Unless the pus is liberated from the epididymis, the excretory duct becomes blocked. Herein can be seen the imperative necessity for surgical treatment. There must be a free channel to convey the semen to its storehouse. To be sure, medicine and mechanical treatment will alleviate epididymitis; but they never effect a cure.

The technic that I employ for acute gonorrheal epididymitis is as follows:* — The patient is anæsthetized, after which the scrotum is shaved. A two per cent. alcoholic solution of iodine is then applied, and the scrotum incised, thus exposing the tunica vaginalis. A second incision is then made into the tunica. This is enlarged, and the testicle delivered and inspected. If the epididymis is swollen, especially at the tail, it should be punctured in several places. Unless these punctures are made sufficiently deep, pus will not exude. Rarely I make a free incision into the epididymis. Until one has performed this operation, it is impossible to realize the number of miliary abscesses that exist. Subsequent to puncturing, I make gentle pressure upon the epididymis, with the thumb and forefinger. This causes an exudation of pus. The testicle is then returned into the tunica, and several stitches are taken, leaving a small opening in the lower portion. Into this I insert a small strip of gauze, which is removed daily. It is remarkable how quickly constitutional symptoms disappear. Within a few days the patient is very comfortable. The discharge, in many instances, ceases, but in some it is as profuse as before the attack. Sometimes the scrotum attains a considerable size following the

* The Surgical Treatment of Epididymitis, American Practitioner, February, 1913, by L. T. Ashcraft, M.D.

operation, but, singularly, this is not at all painful. Nodules, which are so clearly defined for years following non-operative treatment, are rarely met with, and are not palpable at all two months after the operation. I always examine the semen, expressing it from the previously diseased side, several months subsequent to the operation, and in nearly every case active spermatozoa have been seen. Inasmuch as fifteen per cent. of the cases of acute gonorrheal epididymitis are complicated with acute seminal vesiculitis, for obvious reasons, I make a vasostomy incision also.

Epididymo-Vasostomy for Sterility. — Medicinal measures are valueless in relieving sterility in the male. Edward Martin,* of Philadelphia, must be given the credit of first suggesting an operation (epididymo-vasostomy), for the relief of this condition.* The operation was first performed on dogs with good results. It was first practiced on December 24th, 1901, on a human being whose childless marriage was absolutely dependent upon azoospermia consequent upon obliterating epididymitis and chronic posterior urethritis. The patient then resumed marital relations on January 9th, and on October 17th, 281 days later, his wife was delivered of a normal baby girl, who then had, and has since exhibited a striking resemblance to her father. It was then completely established that an anastomosis could be made between the vas and the epididymis, and that spermatozoa coming from the upper part of the epididymis were fertile. The technic of the operation is as follows: " I have usually made a lateral anastomosis, but in some cases have cut the vas off, split its end, and then sewn this split end into the epididymis, finding this an easier procedure. Before making the anastomosis, the milky fluid exuding from the epididymis is examined for spermatozoa, and if these are not found, the section is made near the testicles. In one instance followed by complete success, this section was made in the region of the rete testis. As a rule, no ligatures are required, care in handling of the veins insures the absence of thrombosis, and the application of an elastic jock strap enables the patient to go about his occupation immediately upon recovering from the effects of the ether. Because of this fact, and because patients have not always given the names by which they are known, it has been impossible to follow a number of cases." Success has been remarkable; spermatozoa appearing in the discharge.

Vasostomy is suggested by Rosving for tuberculosis. He injects the seminal vesicle every day or so with a five per cent. solution of phenol. This establishes drainage, and, in a way,

* Therapeutic Gazette, December 1909.

antisepticizes the contents of the seminal vesicle. Perhaps it might be as well, in such circumstances, inasmuch as tuberculosis of the genital tract is rarely limited, to excise completely the seminal vesicle, the vas, and the epididymis, which may be done by a combined operation, epididymectomy and vasectomy, through an inguino-scrotal incision, and vesiculectomy by the perineal route.

Slight reference must be made to the operation of vasectomy as legalized in seven states for the sterilization of criminals and mental defectives. The vas is simply picked up and divided, the ends ligated, and the wound closed. It is not within my purpose to criticize the medico-legal aspect of this operation. I would, however, enter a protest here, from a humanitarian standpoint. Criminals are sometimes converted to a better life, and mental defectives are cured by finding out the cause. To unsex them is to rob them of their heritage. Belfield suggests, as a remedy for vasectomy, vaso-ligation, which prevents discharges from coming from the epididymis so long as the ligature is applied; and it is effective. It may be in place for months, and then freed, when the function of the testis will return.

SOME PHASES OF THE SURGERY OF THE CHEST CAVITY*

By G. Forrest Martin, M.D., F.A.C.S., Lowell, Mass.

Surgery of the abdominal cavity has become such an everyday affair that we find everybody quite ready to discuss it. It is the conviction that the surgery of the chest is not so well understood that prompts me to select this field for discussion today. It is my intention to refer briefly to several of the more common conditions where surgery is liable to be indicated.

Effusion into the pleural cavity is a common sequel or accompaniment of various lung disorders or chest injuries. In the great majority of cases it yields to internal and local medication. Should, however, this result not promptly follow, aspiration with the hollow needle should be used, and if the fluid withdrawn is serous, and proper aseptic precautions have been taken not to introduce a septic element into the case, prompt recovery is the rule. No irrigation should be used.

Should the symptoms indicate pus present, however, the indications are entirely different. Aspiration is not sufficient, but free drainage is indicated. This is sometimes accomplished by a free incision between the ribs, but removal of a portion of one or more of them is usually necessary.

---

* Read before the Mass. Surgical and Gynecological Society, December, 1915.

Partial resection of the ribs is as old as Celsus, but little that would indicate a direct aim in the treatment of empyema was written until a comparatively recent date. Resection of one or more ribs for empyema was first employed in this country by Dr. Warren Stone of New Orleans. It is of interest to note here that among the clearest writers upon these chest conditions a generation ago, were Sir Rickman Godlee who came over here two years ago, in his capacity of president of the Royal College of Surgeons of England, to install the first officers of the American College of Surgeons; and Sir Pearce Gould, also of England, who was one of the active operators at the 1914 Congress of Surgeons in London. The energy and vitality of these men, after their long years of service, is inspiring.

The points to keep in mind, in this operation for drainage of an empyema are: to avoid the intercostal vessels and nerves which lie in the groove below the ribs; to have the drainage in the most dependent position, even though a second opening is required; to remove as thoroughly as possible, all thick curds from the cavity, thus shortening the period of drainage; and to see that the drainage tubes, always double, are not introduced too far and that they are securely fastened. Hardly a writer on this subject has escaped trouble from neglect of the latter precaution. In one of my hardest cases, I missed the large rubber drain at the morning dressing, was told by the nurse in attendance that it came out with the dressing which had to be changed in the night, and as the forceps failed to show any trace of it, I believed her. At a subsequent operation on this same patient, I had the disagreeable task of removing this same tube which had slipped up into the pleural cavity.

As with the serous, so with the purulent effusion, washing out the cavity is not favored by the majority of writers, unless the discharge becomes offensive. With free drainage which is insured by keeping the tubes clear and applying plenty of absorbent dressings to carry off the discharges, the majority of these cases gradually get well. The lung expansion gradually pushes the displaced pleura back to its normal position, and the cavity closes.

But we come now to the next step in our discussion, — what to do with the cases which fail to close up under these measures. Our problem is one of much greater magnitude. The thin elastic pluera which envelops the lung becomes tough and thick and unyielding, and a pyogenic membrane in every sense of the word. If this stage has arrived before the evacuation of the pus takes place, as often happens, the tough, leathery membrane remains in its displaced position, the lung has not

the expansive power to push it outward, the two layers of the pleura, instead of being in contact and gliding freely upon each other with the movements of respiration, are more or less widely separated, and a permanent, pus secreting cavity is the result. Nature tries in vain to obliterate this space. We find, in these chronic cases that the diaphragm is markedly retracted upwards, the chest wall, from its failure to expand with the lung action, retracts as far as the bony walls will allow, but still the space remains. It is obvious that only radical procedures can remove this condition, and unless they are resorted to there is but one end to the case, — it will settle down to a permanent fight between the vitality of the patient and the persistent drain which the pus organisms will exact.

Two principal measures have been used to overcome this obstinate condition, — the Estlander operation, and the so called decortication of the lung. Estlander wrote his paper describing his operation in 1879. The essential points in this operation are the removal of portions of two to seven ribs, after the soft parts of the chest over the cavity have been lifted as a flap, the cleansing of the cavity, and if necessary, the curettage of the thickened pleura, and then the sinking of the flap of soft tissue into the bottom of the cavity, to which it is desired that it shall adhere. The ribs are removed sub-periosteally, and, in Schede's modification the periosteum is then cut away with the parietal pleura. Drainage is provided for a time, at the bottom of the wound.

At the Boston meeting of the American Institute of Homœopathy in 1903 Dr. Horace Packard of that city wrote and delivered a very interesting paper upon this subject. One of the cases there recorded was a patient of my own. The following year she again contracted pneumonia, and, having only one lung with which to combat it, she soon succumbed.

The objections to this operation are the great deformity, first of the lateral chest wall, and eventually, unless strenuous precautions are taken, of the spinal column. The relief afforded, however, to the victim of a chronic pus discharge, with its offensive saturated dressings, more than compensates for these evils. These operations of thoracotomy and thoracoplasty are at the best not ideal surgery, which aims not only to remove the cause of trouble but also, in so far as is possible, to restore the parts to a normal condition. This brings us to a discussion of our next measure, — decortication of the lung.

We should recall here the fact that when the pleural layers, normally in contact, become separated by the accumulation of serum or pus, the lung is pushed backward and upward, to a greater or less degree, until, if the quantity of fluid be sufficient,

it is entirely collapsed. If, now, at this time, inflammatory adhesions occur, they may be sufficient to entirely prevent expansion, even when the pressure is removed. Over this collapsed lung, usually adherent to it like the bark of a tree, we have the thickened visceral layer of the pleura. In one case which I hope to show to you today, this membrane measured over one inch in thickness. This same case will also serve to illustrate the entire inadequacy of the term "decortication," as a descriptive title. Perhaps the most readable article that I have found upon this operation is one which Dr. Lund of the Boston City Hospital prepared for the 1911 meeting of the A.M.A. In a considerable experience at this institution he had no opportunity to do this operation until 1907. He presents seven cases with two deaths.

Delorme of France, and Fowler of Brooklyn, each performed this operation in 1893, and each claim the priority. But Lund is disposed to give the credit to the Frenchman because he went at the measure with a definite plan which he carried out.

The essential difference between this operation and the preceding one, is that the Estlander operation aims to "*sink the chest wall*" in against the collapsed lung and its heavy covering of pleura, while the other aims, by removing the abnormal lung covering, to allow the "*lung to expand*," fill the space which has been taken from it by the empyema cavity, and thus, in so far as is possible, to restore the parts to their normal status.

Several features of this operation which I desire to discuss will come in readily, and thus save repetition, in the report of two cases which I now present to you. I am sure that you will find features in both of them which will prove of interest.

Case I. Mr. W. D.—— age 18. I was first called to see this patient at his home March 15, 1909. He had been through a severe siege with pneumonia, and his attending physician, so his father informed me, had given him up. I found a very sick boy, with a pulse of 165, temperature 104, and respirations over 50. The fight for his life and health, from that day to now, has been one of the most interesting experiences I have ever had. A diagnosis of empyema was made at the time and a very guarded prognosis given. I took him to the Lowell General Hospital, removed a portion of the 7th rib, and evacuated over two quarts of pus, thoroughly cleansed the cavity, and inserted drainage tubes. He took the anæsthetic very poorly, and for several days hung in the balance. He gradually pulled up, however, and on April 13th was able to leave the hospital. He gradually improved and was able to resume his

work in a few months. On Jan. 31st, 1913, I was again called to his home and found him suffering from a moderate case of la grippe. He was up and down through the month of February, and on the 27th I became convinced that he again had pus in his chest, this time in the posterior aspect. I operated March 1st, removing a section of the 8th rib below the tip of the scapula, and evacuating one and one half pints of pus, and much thick, cheesy debris. He recovered from this slowly, but went home April 26th. There was a varying amount of discharge, however, for some months. Sept. 24th I removed some necrotic rib, enlarged the opening, and cleaned out the cavity to give better drainage. Only slight benefit followed from this. I saw him a few times between this and March 30th, as his dressings were taken care of at home. At the latter date I filled the persistent cavity with bismuth paste and Dr. Lambert took the excellent pictures which I will now show you.

PLATE I

Showing large cavity in right lung, bismuth filled, and sinus leading down to 8th rib. Retraction of diaphragm marked.

As you will note, they show a very large cavity, running upward and backward in the hollow between the vertebral column and the posterior ribs and connecting at the bottom with the sinus to the 8th rib space. April 4th through a posterior incision, I removed what remained of the 7th and 8th ribs, in the back, to the spine, cleaned out the cavity with curette and iodine, and endeavored, by treating the cavity as an open wound, packed with iodoform gauze, to obliterate the space. It was at this time that I found the piece of drainage tube to

which I have previously referred. While the patient was benefitted by this operation, it did not relieve him of his troubles, for the muscles and skin grew ahead of the deeper tissues, and soon had a cavity enclosed again.

PLATE II

Showing clear lung tissue from top to bottom: regeneration of ribs at side.

On Aug. 27th, 1914, I did a radical Estlander's operation, removing six ribs from the spine to the axillary line, and collapsing the muscles, fascia, and *periosteum of the ribs* into the cavity, after the same had been thoroughly curetted and cleansed. Drainage was inserted. A very good recovery was made from this operation, and the case seemed to be cleared up, but along in October the signs were unfavorable, so I probed open the wound, found a little pus there in a slit-like cavity, and was convinced that it would soon open up the whole field if allowed to accumulate.

But my patient was made of good stuff, and he was willing to trust me to try once more to relieve him. I operated October 19th, 1914, making a long U-shaped flap, this time severing the muscles which held the scapula to the chest, raising the arm above the head, and freely exposing the entire old field which extended from the diaphragm to the apex of the chest. The visceral pleura was split open and removed, and was found to be over one inch in thickness. The impossibility of the lung ever expanding under such conditions, is at once apparent. And now comes an interesting point in my case.

When the lung space was entered, through this thick pleural wall, the lung was found to be at no point adherent to the pleura, but tied up in a small ball at the very apex of the cavity. Perhaps I could best describe the condition by comparing the lung to a large sponge filled with air. Now if you will take this sponge and with a ball of twine go round and round it, tying it up into as small a bundle as possible, you have a condition similar to that in which I found this remnant of lung. Then if you can imagine this lung ball stuck to the vertebral column and ribs by many firm adhesions, you have the picture complete. I should judge that the entire mass was about two inches in diameter. Separation of these adhesions by dissection was quite impossible. They had to be cut one at a time, with long scissors. And only those who have held an expanding, pulsating lung grasped in their hand can realize the sensation which comes when the patient begins to cough, and the lung to expand. In this case it did so very irregularly, at first, owing to the distortion from various bands of adhesions. As these were cut, one by one, it gradually assumed shape, and practically filled the entire cavity. There was severe hæmorrhage, and escape of air from the lung where it was cut in various places, but hot packs gradually relieved this. The patient suffered severely from shock, and a vein was opened and saline with adrenalin was given. His recovery was steady and complete. He left the hospital November 15th. Just one year later, to a day, Dr. Lambert took for me this picture, which shows the lung clear from top to bottom, occupying the space which was occupied by the bismuth paste in the previous picture, and being about two-thirds the normal capacity.

Two other points of interest in this picture are, first, the marked upward retraction of the diaphragm on the right side in its attempt to obliterate the cavity; and, second, the very considerable regeneration of the ribs over the field of operation. It will be remembered that I *did not remove the periosteum* with my parietal peritoneum. There is a fairly firm bony wall over the entire side, and I do not expect the usual spinal deformity which would follow a typical Estlander-Schede operation. Mr. D—— is now in good health, has gained back his flesh, has no cough, and has resumed his work.

It is very easy to criticize a case after you are through with it, and I have no hesitation in saying that I wish I had done the last operation first in this case. I have no doubt, however, that it would have been considered a very radical procedure at the time.

Case II. Philip H.—— aged 13, came into my service at the Lowell General Hospital, March 12th, 1913. He had been

sick since December 20th with pneumonia. Had been out of bed for four weeks, but a cough persisted, and his left chest was badly swollen. He presented temp. 102, pulse 130, respiration 40, left chest bulging with pus, and the heart displaced so that the apex beat was just below the right nipple. He took anæsthetic badly, and required repeated stimulation. The pus was withdrawn very slowly, a pint at a time, with rests between, until six pints had been removed. The patient suffered severely, as the heart began to shift to the left. A portion of the 6th rib was removed, drainage tubes inserted, and the patient gradually improved. He left the hospital June 28th but with a discharging sinus. He came back October 12th, 1914, and was operated upon by my colleague, Dr. Gardner. At this time the X-ray showed a collapsed lower lobe of the left lung, and heart still well over to the right side, and beginning right lateral curvature of the spine. There was a persistent discharging sinus leading up into the left pleura. Dr. Gardner removed about three inches of the 5th, 6th and 7th ribs over the cavity and severed the pulmonary pleural adhesions. He left the hospital November 24th, in good condition, and with complete healing of the wound. Nov. 15th, 1915, I had an X-ray picture taken which shows the lung clear and in good condition. The removed ribs do not show much regeneration. An interesting feature of this picture is the pericardium apparently adherent to the right of the sternum, with the apex in a nearly normal position. This makes the heart shadow nearly double the normal size.

NOTE. Plate III which belongs here was unfortunately broken in the mail, and time did not permit waiting for another to be made.

These cases are interesting to me as showing how much can be accomplished by surgery in these cases, even after very long delay. They also suggest the necessity of a thorough study of the chest in all cases which do not make full recovery from pneumonia, even though their symptoms may not be severe enough to keep them in bed.

I have not gone into the discussion of differential pressure in the management of these cases, because it opens up more of a field of discussion than we can here allow. Neither negative nor positive pressure were used in these cases, and certainly the field was well opened to atmospheric pressure. It was my pleasure to witness some of the really marvellous work of Sauerbruch at Zurich last year. He works both with positive pressure appliances and in his cabinet, under negative pressure. He has four or five assistants on every case, and is the most rapid operator I ever saw work. He is removing lobes of lungs, and entire lungs even, where the opposite side is in good condition, and with some good results.

Intratracheal anæsthesia, as now practiced, is thought to offer some help in this class of work.

Perfect asepsis is even more important here than in some other parts of the body, if results are to be expected.

My work was done under the C. E. anæsthetic which I always use, and by the open drop method.

The temperature of the operating room is of vital importance in this work and should never be below 80.

THE TREATMENT OF PELVIC ADHESIONS*

By DeWitt G. Wilcox, M.D., F.A.C.S., Boston, Mass.

Nature is a bit of a surgeon. To be sure, her operations are sometimes clumsy and require days or months or years to complete, but in their performance she always follows definite laws. Moreover, her laws are more stable than are the ever shifting surgeon's laws or rules. We have every reason to believe she does her repair work just the same today as she did it three thousand years ago and will continue to do it the same for three thousand years to come. It would seem that having done her work precisely the same for such a long period of time, man would today have a better understanding of her methods, but nature seems inclined to reveal only about so many secrets per century, no matter how impatient man may become or with what importunity he may beseech her to divulge more generously.

It was not until aseptic surgery made the opening of the abdomen a safe procedure that man learned something as to the methods adopted by nature for repairing lesions in the abdominal and pelvic cavities. The conducting of autopsies evidently did not reveal nature's method, for instance, of taking care of pus formed within these cavities. Neither did it show how nature attempts to heal inflamed serous surfaces by causing adhesions to form and thereby immobilizing them. If we once get well in mind just how and why adhesions take place in the abdominal cavity we are then in a much better position to treat them intelligently.

Upon the first intimation which nature receives that a perforation of any of the abdominal viscera is about to take place, she loses no time in preparing for the catastrophe. Her preparation is to rush reinforcements to the threatened quarter and seek to strengthen the weakened ramparts. This she does by commanding all adjacent structures and cementing these structures to the weakened spot in the viscera. If she has

* Read before the Mass. Surgical and Gynecological Society, December 8, 1915.

received the warning in time she can effect this cementing before the complete perforation or rupture has taken place and thus forestall disaster.

But even if she is late, she sets about immediately to plaster up the rent by sending out a quantity of serous exudate which causes the nearest adjacent serous surface to become cemented to the disabled structure. Soon a repair has been effected and if the shock has not been too great or the resulting infection overwhelming, her operation has been successful. At any rate, she cannot claim her operation was successful when her patient dies, for she goes down to defeat with her patient.

In a perforating ulcer wherever located; in a ruptured gall bladder, appendix, or pancreas; in a rent uterus, tubes, bladder, ureter, or urethra, we invariably get evidence of nature's attempt at a surgical operation if the patient has survived long enough to permit the attempt.

As the time allotted will not permit us to consider all the lesions wherein nature produces adhesions, we will consider those only that pertain to the pelvis.

Let us suppose we have an infected Fallopian tube, or tubes, due either to puerperal, gonorrheal, or systemic infection. As soon as infection reaches the tube, the mucosa therein begins to be inflamed; that inflammation results in an excess of mucous discharge which is prone to trickle along down toward the fimbriated extremity of the tube. This is nature's warning and she begins her surgical operation at once, which is a closure of the said fimbriated end. While this operation does not terminate the inflammatory process, nor stop the formation of infected serum, yet it prevents the dangerous poison from finding its way into the pelvic cavity lined with the sensitive, vulnerable peritoneum. It may indeed oblige the tube to empty itself into the uterus and thus drain the infectious fluid out into the world.

As the inflammatory process develops further in the tube, pus forms. Nature is now more determined than ever that none of this highly dangerous substance shall escape from the cavity of the tube, so she seals it still more closely and may even pick up, by right of eminent domain, a loop of intestine or a surface of broad ligament and requisition them into service by cementing them over the closed extremity of the tube. Still the process of suppuration within the tube does not abate, and now comes the danger that the delicate over distended tube may at any moment rupture from end to end and pus be poured out over the entire pelvic viscera.

But this grave misfortune has been anticipated by nature and she has an operation to meet it. The distended tube is

exuding serum all over its serous surface; that serum is so mucilaginous that it causes any structure which comes in contact with this serum-bathed surface to adhere to it. Every hour which these adhesions continue to form, strengthens just so much the endurance of the distended tube. But such adhesions do more; they act as a splint to the friable tube and render it immobile and so prevent it being pulled or stretched with the varying movements of the pelvis.

Now if nature has been able to do what she set out to do, namely, prevent pus escaping from the tube, she has, in all probability, saved the life of the patient; for no one would under-rate the great dangers of an acute suppurative pelvic peritonitis which must have ensued had such an escape occurred. Nature has taught us that the tube will harbor pus for an indefinite period without immediate serious consequences, which the pelvic peritoneum could not tolerate even for a few hours. So nature seals up the tube, both at the uterine and fimbriated ends, reinforces the wall by plastering other structures on top of and around it, and thus sets up a stage of siege. (You will pardon my jumping from one simile to another; first it is "surgery" then it is "war," but just now war and surgery are bed-fellows.)

What will become of the walled-in pus? Simply this:— Nature begins another operation which the surgeon has but recently learned how to do, namely, to establish an immunity to that walled-in pus. She allows the watery or serous portion of that pus to leak through the walls of the tube in such minute quantities that it cannot overwhelm the pelvic peritoneum but will rather allow said peritoneum to absorb it easily and carry it by way of the lymphatics to the excretory organs and thus eliminate it. The residue of pus in the tube now becomes innocuous and may remain there for months or years. But even by all this process of conservation, nature has not cured the patient. She dare not relinquish, altogether, her state of siege of that tube. She lives in daily fear that something may again light up that once active suppurative process and the danger be as great as before; and well may she be thus apprehensive, for we have all seen innumerable cases in which an old time salpingitis which had long since passed its acute stage lighted afresh by some cause such as a severe chilling, undue exertion, a miscarriage, excessive venery, the application of a pessary, or a harsh bi-manual examination, and not infrequently such a delayed attack proves either fatal or calls for immediate operative measures.

Suppose we now consider those adhesions which concern the uterus rather more than the tubes. While it is true that

there are rarely adhesions of the uterus alone, not involving the tubes, yet there are many cases where the fault lies primarily with the uterus and where the tubes by being in close company become also involved.

Imagine a case of infective endo-metritis followed by a general metritis caused by an abortion or puerperal infection. We first get the acute inflammation of the endometrium, followed by suppuration. The cervical canal is inadequate as a drainage outlet, and the entire uterine body becomes infected and in consequence enlarged. It is the tendency of every large fundus to fall either forward or backward. It usually falls backward because the moment it pushes itself from without the pelvic cavity into the abdominal cavity the intra-abdominal pressure is in the direction of a retro-displacement. Once a large inflamed uterus makes the mistake of ducking its head under the promontory of the sacrum, the chances are that it will remain there for life unless rescued by the surgeon.

But an infective endo-metritis rarely fails to infect one or both tubes, and if the resulting infective serum finds its way into the cul-de-sac of Douglas there will be formed an abscess between the uterus and rectum which will, if unattended, break through the vagina and effect an escape. The trouble, however, does not end there. Nature has employed her surgical measures in opening and draining the abscess as quickly as she could, but she is not a rapid operator and while the abscess was "ripening," — which in fact is nothing more than the gradual softening and breaking down of the vaginal wall which held the pus in, — numerous adhesions have taken place involving uterus, tubes, and ovaries. Here again we have the beginning of chronic invalidism, for a woman who has been so unfortunate as to have had a pelvic abscess which was not promptly drained, is an invalid, and her invalidism is due entirely to the resulting adhesions.

Having shown how adhesions may form from salpingitis and metritis, we will speak briefly of those other forms of inflammation which may cause pelvic adhesions and yet where the original inflammation was not in the pelvis, like the appendix, for example.

Not infrequently a young girl will have appendicitis, will recover without operation and remain well until she begins to menstruate; then she becomes more or less of an invalid from pain in the right ovarian region. If this is allowed to go unattended she may be rendered miserable for the rest of her days. She may even become sterile in consequence. The cause of all her trouble is due to a leaky or ruptured appendix which allows pus or infected serum to trickle down upon the right

tube and ovary and there sets up a peri-salpingitis, or ovaritis with resulting adhesions. This occurs not infrequently where cases of appendicitis are allowed to go without surgical treatment. Any condition causing a localized peritonitis may leave in its trail adhesions of tubes, ovaries, or uterus. It is well recognized by all gynecologists that a woman who has adhesions of the uterus or adnexia to any great extent, is an invalid according to the density and extent of those adhesions. The reason she is an invalid is:

First, because these organs bound down, twisted or bent by exudates, cannot properly functionate. If she is a young woman she will in all probability have a distressing dysmenorrhea which did not appear prior to the adhesions. Also, she is likely to be sterile because the tubes are occluded, or the fimbrated end closed.

Second, she is an invalid because subject to recurrent attacks of acute localized peritonitis, due to an escape of pus or serum from a partially occluded tube.

The pertinent question is, what can we do for this class of women? The world is full of them, every practicing physician, whether specialist or not, is sure to be consulted by some of them at some time. I meet them by the score in my out patient clinic at the Homœopathic Hospital. If any class of patients more than another needs the careful, patient, skilful attention of a medical advisor, it is these sufferers. The bright side of the picture is that the majority of these women can be either materially bettered or altogether cured.

Before beginning treatment it might be well to note just what are the clinical findings in cases of pelvic adhesions.

The first essential before looking for any of the clinical findings is a thoroughly worked out personal history which will give some evidence of the initial attack, in other words, some reason for the patient's having adhesions. She may tell the story of an unduly prolonged convalescence from her last confinement, which bears the ear marks of a mild puerperal infection. She may be able to recall an almost forgotten miscarriage which sent her to bed with a long period of subsequent illness. She may remember that a few weeks after marriage, now some fifteen years ago, she began suddenly to have an excoriating leucorrhea, which really made her sick, and the doctor attended her for a month and called her illness inflammation of the bowels, and she has never been quite the same since. It is quite common to find an innocent young wife who can paint a most perfect picture of gonorrheal infection, without having the slightest idea what the symptoms of gonorrhea are; yet she is the victim of dense pelvic adhesions owing to an almost forgotten gonorrheal salpingitis.

The clinical evidences of pelvic adhesions are:

First: **a dense inelastic pelvic floor.** In attempting to push up the cervix with the inserted vaginal finger, or push down upon the uterus with the abdominal hand, there is found a rigid pelvic floor which permits of no freedom of motion on the part of the uterus or cervix. That in itself is almost diagnostic of pelvic adhesions.

Second, unusual and general pelvic sensitiveness. It is rare that one finds a uterus bound down by adhesions where the tubes and ovaries are not implicated; hence, there must be sensitiveness in such cases.

Third, the presence of a tumor or mass behind or on either or both sides of the uterus. This tumor is usually composed of tube and ovary with a mass of exudates holding those structures just behind or at the side of the uterus. These masses are always sensitive. In that they differ from a small fibroid or an ovarian cyst which might be found in the same locality.

Fourth, the position of the uterus. If adhesions have formed after a woman has had one or more children, the chances are quite strong that the fundus will be found well fixed in the hollow of the sacrum. If she has not borne children the fundus may be in its proper position, but whether nullipara or multipara the fundus is more likely to be retro-displaced, and when so, it is almost impossible to lift it above the promontory of the sacrum.

In considering the treatment of these cases of pelvic adhesions it is well to keep in mind not alone what might be beneficial to the patient but what measures might be actually harmful.

It is quite apparent that if any manipulative effort is made to force a retro-displaced fundus upward when it is held down in the hollow of the sacrum by adhesions, it is quite likely to cause peritoneal irritation and in the end cause the adhesions to be all the more dense. The same is true if nature has sealed up the tubes and matted them down in a bed of exudates to keep them from leaking; any harsh manipulative measures would be quite likely to cause a leakage of the tubes and a subsequent recurrent peritonitis.

I recall just such a case where the attending physician mistook a mass in the cul-de-sac for a retroverted fundus and, without obtaining a history or further clinical evidence, inserted a hard pessary, a portion of which exerted constant pressure against one tube, which was adherent in the sac. The patient suffered constant pain for forty-eight hours and was then taken with acute peritonitis from which she died. An autopsy re-

vealed an old time salpingitis with adhesions and exudates, with evidence of a recent leakage from one tube. The salpingitis had rendered her life unsafe from the moment of its inception; but she had managed to get along fairly well until the traumatism of the pessary had been just sufficient to cause a tear in the adhesions, and a fatal infection followed.

A safe rule is never to insert a pessary where there is a rigid pelvic floor or an immovable mass in the sacral hollow.

There is a temptation on the part of the surgeon to advise all patients suffering from old-time adhesions to submit to operative measures because such treatment is generally very satisfactory and of short duration, and yet many of these patients can be cured or materially relieved by milder measures. In many instances the results obtained by local treatments are very gratifying, particularly in those cases when an operation would appear to be rather more than usually hazardous.

I have in the last year seen many patients in my clinic and my private practice relieved of all these distressing symptoms, with an apparent disappearance of the adhesions under local treatment. There is no doubt about the beneficial action of glycerine and its compounds upon congested serous structures. Its power of depleting such surfaces, owing to its affinity for water, makes it an ideal medicament for tampons. To glycerine we may add icthyol, iodine, or borax. Because this tampon method of treatment is such an old one we are inclined perhaps to neglect it, or to be somewhat skeptical about its virtues; but when used intelligently and persistently it is one of the best known means of curing a certain class of these patients and is particularly indicated for those who cannot or will not submit to operation. These treatments should be given twice a week as a rule, should be followed by daily hot salt douching, with careful attention to exercise, diet, and general elimination. My observation induces me to believe that very few patients take a vaginal douche in a manner that is at all beneficial. Either they take it squatting, semi-reclining, or else the douche bag is hung so high that the water passes in and out too quickly, thus losing the beneficial results.

The patient should be instructed to lie flat upon the douche pan, have the bag hung not over two feet above the level of the bed, and to have the water as hot as can be borne. There should be at least two quarts of water to two teaspoonsful of salt, and it should be regulated to run slowly, consuming twenty or thirty minutes in the douching process. Then the patient should lie quietly for at least one hour afterward.

A course of such treatment for a period of three to six months will in a certain per cent of cases produce extremely gratifying results.

As to massage. I should hesitate to use it or recommend it in cases where there is the least history or other evidence of a previous salpingitis, for fear of causing a fresh attack of inflammation. In sub-involution or a lack of tone in the uterine supports, massage is very helpful. It is possible that electricity may be beneficial in the treatment of these cases of adhesions, but I have seen it fail so generally that I am quite skeptical about it.

But after all these measures have been diligently and intelligently employed there will remain a certain proportion of patients who must come to operation or remain confirmed invalids, and it becomes the duty of physicians treating such cases to make a careful study in the selection of them in order that neither they nor his reputation may suffer thereby. There is no hard and fast rule laid down for the determination of the operative cases and the non-operative; each must be studied upon its own merits. But any patient who is suffering from pelvic adhesions due to an old-time attack or inflammation of some of the pelvic organs, no matter how severe or how long stands an excellent chance of being permanently cured by the employment of some of the herein mentioned methods of treatment.

I shall not dwell much upon the surgical treatment of a pelvic adhesion, as every surgeon is familiar with the method of dealing with them. There is little benefit afforded the patient from an operation unless the structures which are involved in the adhesions are each and all liberated. To leave one tube or ovary in a mass of exudates, no matter how well the other tube and ovary may have been liberated, will benefit the patient but little.

A question of prime importance in dealing with all cases of adhesions by operative methods, whether in the pelvis or in the abdomen, is how to prevent the recurrence of such adhesions. It goes without saying that no raw or exposed surface should be left in the abdominal or pelvic cavity when it is possible to cover it with peritoneum; stumps of vessels or viscera should especially be protected. Where, however, the uterus, tubes and ovaries have been cemented down in the pelvis by a mass of exudates, the result of an old time pelvic peritonitis originating from a salpingitis, it becomes manifestly impossible to borrow sufficient peritoneum from adjacent structures to cover the denuded surfaces. Some other method must then be devised to prevent loops of intestines from adhering to such exposed surfaces.

Some years ago it was suggested that sterile olive oil poured into the cavity after it had been well dried would prevent

adhesion. There has been much discussion pro and con as to whether the oil really does prevent adhesions. The weight of clinical evidence, however, is in favor of the oil. More recently Dr. Walter G. Crump of New York has produced a rancid-proof oil, which with the addition of camphor seems to afford the ideal preparation for such conditions. One or more ounces of the Crump oil should be poured freely into the pelvis just before the abdomen is closed. Personally I have had some very gratifying results from the use of the Crump oil; cases in which the extent of raw surfaces was such that I should otherwise have expected intestinal adhesion, but in which no evidence appeared after two years had elapsed.

It is always a good practice where exposed surfaces have been unavoidably left, to have the patient change her position quite frequently immediately following the operation and for the subsequent ten days, and not to allow her to lie upon her back more than a few consecutive hours.

The "Argyle Membrane" and similar devices which were employed a few years ago for the prevention of adhesions following operations, seem to have passed into "inoccuous desuetude" as being impractical and useless.

CLINICAL DEPARTMENT

Conducted by ARTHUR H. RING, M.D.

As part of the general wave of enthusiasm which has overtaken the *Gazette*, we are again to present one or more clinical cases each month. We hope they will prove interesting and instructive. Again we appeal to our readers to send us brief accounts of cases which have especially attracted their attention or in which they have verified a diagnosis at autopsy, or achieved therapeutic success through the use of well selected or new drugs.

In this department it is our desire to emphasize the therapeutic side. Some able men have promised cases and we feel confident in the belief that in this, as in the other departments, the 1916 *Gazette* will be well worth while. Permit us at the start to offer salutations and to wish all our readers a very happy and prosperous New Year.

Case 1-F. The patient is a well built but anemic looking girl of seventeen. Mother died of tuberculosis five years ago at 32 years.

When a child the patient had diphtheria, measles and pertussis, and this fall she had tonsilitis. She denies acute articular rheumatism or rheumatic pains. Menstruated at

thirteen normally. Mentally and socially she was a normal child.

About six weeks before coming for treatment the patient had some dental work done; about this time she noticed that she had difficulty in holding her right hand steady while eating; later the left hand became uncontrolled and her feet felt tired and unsteady.

Inco-ordinate jerky movements gradually developed in trunk and limbs until she was unable to keep still even on the bed during waking hours. However, all movement disappeared during sleep. When first seen she was in perpetual motion, face, head, trunk and limbs twitching and jerking incessantly, so that she occasionally fell out of bed. She was unable to feed herself and her speech was thick and indistinct; words were jerked out spasmodically. She was anemic, the hemoglobin index being about 75. There was no evidence of cyanosis or œdema. The apex beat of the heart was visible in the left fifth intercostal space in the mid-clavicular line. Upper border of heart was percussed at left third rib. There was a soft systolic murmur heard best at the apex and transmitted to the axilla, and the second aortic sound was accentuated. Blood pressure was 120 systolic, diastolic 95 (Tycos).

Intellectually she was orientated and had insight into her condition; memory was intact, but she was very fractious and unreasonable. Emotionally she was most unstable, crying on the slightest provocation, demanding unreasonable things and to have her way regardless of her own best interests.

This is an evident and somewhat extreme case of Sysenbam's chorea.

There can be no doubt that some infectious organism or its toxine is the cause of chorea. To say it is rheumatism of the central nervous system is to beg the question — it means nothing, its only similarity, which indeed it has in common with many other infections, is that in about 50 per cent of the cases it invades the heart, resulting in an endocarditis. We have to acknowledge at present that we do not know the causative factor in chorea.

This patient was put to bed much against her wish, and it was necessary to give her a special nurse of her liking in order to obtain any degree of contentment. She was given three regular small meals a day and three inter-feedings, the food all being simple. Morning and evening she had a twenty to thirty minute tub-bath at 98 degrees F., after which she usually slept. A short massage, twenty to thirty minutes was given forenoon and afternoon. Diversion consisted in being read to and some basketry.

For a drug, agaricin 2x was given every three hours.

Goodnow says that he gives agaricin in all cases in which no other drug is definitely indicated. He says that he has never been able to get results from agaricus.

The result of these procedures in this case was most satisfactory. The patient is now controlling practically all motion and is sitting up. She is taking also a one-grain tablet of iron with arsenic 2x, three times a day.

We believe that the treatment here outlined should be followed for a time even in mild cases in the hope of preventing a heart complication, which is the important thing to avoid. In this way many a child would be saved the handicap of a chronic heart condition in later life.

BIOGRAPHICAL SKETCH:—EDWARD PORTER COLBY, M.D.

The following biographical sketch of Dr. Colby does not claim to be an adequate or complete record of the exceptionally simple, gentle and useful life he lived, but rather the gathering together of a few of the more salient facts connected with the daily life he lived among us. Of his inner self one may speak from its consistent, long continued outward manifestation, for in his case, as in others, " By their fruits ye shall know them "; and his straightforwardness, neighborliness and unselfishness could have been nurtured only by an inward peace and steadfastness dependent on self-knowledge, self-control, settled convictions and the possession of fixed, honest and honorable purpose.

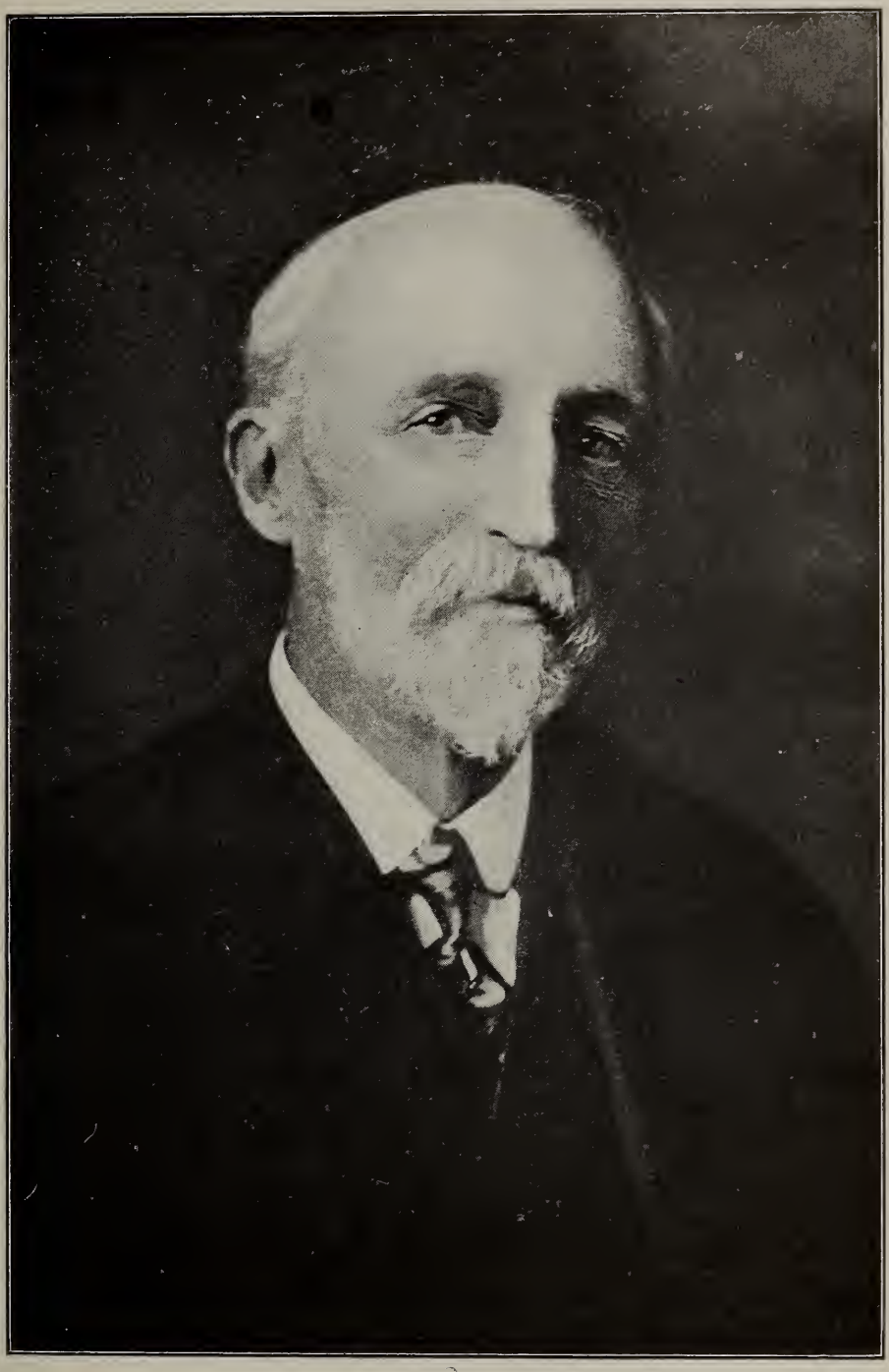
Dr. Edward P. Colby was born in Cincinnati, Ohio, March 4, 1839, and died in Boston at his home, 175 Dartmouth Street, November 1, 1915, age 76 years and nearly 8 months. His father, Enoch L. Colby, who was a homœopathic physician, was born in Bradford, New Hampshire, in 1797 and died in Claremont, New Hampshire, the family home, in 1849, being then only 52 years of age. Dr. Colby's mother was born in Claremont, New Hampshire, and it was here his father settled and practised medicine, but was induced by a brother, Isaac Colby, also a homœopathic physician and one of the early converts, to move to Cincinnati. Dr. Isaac Colby married for his first wife a sister of Salmon P. Chase who was well known as an antislavery leader, Governor of Ohio and a member of Lincoln's Cabinet. The climate of Cincinnati not agreeing at all well with Dr. Colby's mother, the family returned to Claremont, New Hampshire, and it was here that the Doctor received his early education, at Claremont Academy, and spent the early

part of his life. He always retained his fondness for the rugged hills of Southwest New Hampshire and often affectionately referred to the bold and picturesque outlines of Mt. Escutney under whose uplifting influence his boyhood days were spent. When he was only ten years of age his father died, and doubtless this experience did much to widen and enlarge his sympathy and develop his self reliance and manliness.

One of Dr. Colby's ancestors, Anthony C. Colby, came to this country in 1642 with Governor Winthrop and later settled in Salem, where he "builded himself a house" which, now in the possession of the Daughters of the American Revolution and in a state of good preservation, is exhibited as an excellent specimen of early colonial architecture. It was a special well dug by this ancestor for the accommodation of the passer-by and known as the "Captain's Well" that was sung of by the poet Whittier.

By tradition and heredity Dr. Colby seemed destined for medicine. When eighteen or nineteen years of age he became a student of the widely and honorably known senior Morrill (homœopathist) of Concord, New Hampshire, whose sons "Zeke" and "Shad," also homœopathists, are even in these days remembered throughout the countryside as eminently efficient and successful medical practitioners. With such an hereditary bias and such environmental influences during his youthful plastic years, it is matter of no surprise that Dr. Colby became and remained an earnest, intelligent, enthusiastic homœopathist, and that his confidence in the principle of similars was strong enough to withstand the trials of his medical student life. He studied medicine for one year at Harvard, taking his Anatomy under the famous Oliver Wendell Holmes, and later, in 1861, graduated from the Long Island Hospital College. Immediately after graduation he married Miss Annie S. Judson of Malden, Mass., who with one son, survives him. It is well known among their friends that Mrs. Colby possesses artistic skill in oil painting which, if developed, would have won wide recognition.

It fires the imagination and stirs one's patriotic impulses to recall the fact that in the hour of the Nation's great peril every member of Dr. Colby's class at the Long Island Hospital College offered his services to, and entered, the medical staff of the Army or Navy. Dr. Colby was assigned to a ship in the Gulf Squadron under Admiral Farragut, participating with this fearless and undaunted seaman in the taking of Mobile, and in other operations. It was the Doctor's misfortune to be poisoned by some brackish drinking water which in an hour of need had been obtained from the shore, and he was prostrated



EDWARD P. COLBY, M.D.
(Died November 1, 1915)

by an intestinal disorder which enfeebled him for the greater part of his life. As an invalid he secured a furlough, but rejoined his ship before recovery was secured, and later found it imperative after about three years of service, to tender his resignation. As soon as his health permitted he settled in Wakefield, Mass., where for a period of about a quarter of a

century he practised his profession with an intelligence, a conscientiousness and a success that made his name a household word in the entire community. His experience and his preferences led him to devote his energy to the study of nervous diseases, and in 1887 he opened an office in Boston for the practice of this specialty and after a few years, in 1895, relinquished his practice in Wakefield and moved with his family to Boston, where he spent the remainder of his life.

Dr. Colby's zeal led him at no slight sacrifice of time and energy to participate with a band of earnest, heroic souls in the formation of plans for the establishment of Boston University School of Medicine. With the destiny of this School for a period of forty-two years his name is inseparably connected. He was a member of its first Faculty, occupying for five years the chair of Medical Chemistry and for three subsequent years he lectured on Mental and Nervous Diseases. As the performance of the school work grew to be a heavy tax on his otherwise busy life and interfered with the pursuance of his special studies, he resigned from his position and for six years took no active part in the work of the School. In 1887, however, he was back on the Faculty as Lecturer, and in 1890 as Professor of Nervous Diseases, and as he would have wished he "died in the harness." As an instructor he was lucid, forceful, impressive and up-to-date. His popularity among the students who with succeeding years formed his classes was great and abiding, and the influence of his personality and teaching was immeasurable.

Dr. Colby was a member of the Medical staff of the Massachusetts Homœopathic Hospital from 1893, and for twenty-two years was Consulting Physician in his specialty. He was a member and chairman of the Consulting Board of the State Hospital for the Insane at Westborough, and it was due largely to his advocacy and interest that the very efficient and successful pathological laboratory of that institution was brought into existence. He was a member of the American Institute of Homœopathy from the year 1890; of the Massachusetts Homœopathic Medical Society, of the Boston Homœopathic Medical Society, of the Massachusetts Surgical and Gynæcological Society, and of the Hughes Medical Club (limited membership) of which he was the active secretary for many years. He was a member of the Loyal Legion; was a 32nd degree (Scottish Rite) Mason; and was an Episcopalian from childhood. He quite regularly read the service on board ship while in the Navy.

As evidence of the impression his life made upon his colleagues, the following brief quotations are taken from many

tributes which have been paid to his memory. "He was wise and kindly, courageous under trial, witty but without malice, humorous, and loyal to family and friends, loyal to country and religion, loyal to homœopathy."

He was "simple, unassuming, gentle, kind, brave-hearted and liberal, bearing trial with fortitude and patience, leaving men better and happier for having known him." He was a "genial, courtly, kindly gentleman."

He was noted for his "loyalty, dependableness and steadfastness," and he will be remembered for his "profound knowledge, broad humanity, eternal youth which never failed, his broad sympathy and his smile which was always a bendiction."

In medicine, in religion, in politics, in life he was a kind-hearted gentleman who won the affectionate regard of all who were privileged to know him.

J. P. S.

REVIEWS

PATHOLOGY

Tubercle Bacilli in the Fæces. *Keller, H., and Moravek, A. J., Medical Record, Nov. 20, 1915. Vol. 88, p. 864.*

Preliminary animal experimentation showed that tuberculous guinea pigs discharge acid-fast bacilli in the fæces, whereas healthy pigs do not, and that these acid-fast bacilli are not smegma or other harmless forms, but tubercle bacilli. This is the case in the absence of any recognizable tuberculous involvement of the intestinal tract.

In applying these results clinically, the authors used (a) cases suffering from positive joint tuberculosis; (b) cured cases; (c) control cases. The results were as follows: (a) Active joint tuberculosis 42 cases; tubercle bacilli in fæces 30, in urine 2; (b) cured cases 6, no bacilli found; (c) controls 18, no bacilli found.

In concluding their article, the authors say in part: Patients suffering from joint tuberculosis keep on discharging tubercle bacilli for years, so long as the disease is active. Those bacilli are alive and capable of producing tuberculosis in others, as proven by animal inoculation. In obscure joint conditions the finding of tubercle bacilli in the fæces may be of great diagnostic importance and should never be neglected. A patient suffering from joint tuberculosis should not be discharged as cured without a thorough search for acid-fast bacilli in the fæces, and if they are found, the patient should be kept for further observation, for it shows that there is still some activity of the disease

present. The smegma bacillus is conspicuous by its absence in the fæces. We fully agree with the remarks of Dr. M. Solis-Cohen that "The fæces of tuberculous patients must be regarded as a source of contagion and must always be thoroughly disinfected. The same precautions in regard to disinfection of hands, clothing, bed covers, etc., soiled by fæcal evacuations, that are taken in cases of typhoid fever should be observed in the management of patients with tuberculosis."

Nephritis Due to Typhoid Infection. *Deutsch, F., Wiener klin. Wochenschrift, Vol. 28, pp. 965–992.*

Three children in the same house developed acute nephritis with high temperature. There were no evidences of typhoid in the intestines or elsewhere. The urine and blood contained numerous typhoid bacilli which, however, were serum-proof, not clumping at 1:50.

Pyorrhœa Due to Organisms Other than the Amebas. *Hoxie, G. H., Journal of American Medical Association, Nov. 27, Vol. 65, p. 1908.*

After stating that there is a tendency to administer emetin in all cases of dental infections without establishing the presence of the endameba, Hoxie reports a case to prove that this organism is not the cause of all cases of pyorrhœa. His patient has had recurrent fever for about seventeen years. The local foci were the alveolar processes and the oral mucosa. Aside from the mouth, the left knee (bursitis) and the anal fold (abscesses) have shown evidences of infection. The organisms most constantly found were a diplostreptococcus and a mold. Repeated examinations failed to reveal any amebas. Arsenic in various forms, salicylates, and other systemic and local germicides, as well as vaccines, both autogenous and stock, single as well as mixed, proved useless. The causative organism was not identified, but is believed by Hoxie to be "one which is ordinarily nonpathogenic, but which has acquired parasitic power in the tissues of this patient."

Frequency of Simultaneous Presence of Myoma and Cancer of the Uterus. *Olow, J., Archives Mensuelles d'Obstet. et de Gynecol., Paris, Oct. 1915, Vol. 4, p. 369.*

Sixteen cases or 5.2% in 359 operative cases of myoma of the uterus were complicated with cancer. In only one of these cases had cancer been suspected before the operation. If radium treatment does not cause prompt improvement, or if there is a

recurrence of symptoms following temporary improvement, then operative interference should be resorted to. Under favorable conditions complete hysterectomy seems to be indicated for myoma, even if the presence of cancer is not proved. Because one woman of 50, in whom one ovary was left after nearly complete hysterectomy for myoma, developed cancer from the stump of the ovary within a year, the author deems it advisable to remove both ovaries at the time of operation, if the patient is approaching the menopause. Since climacteric hæmorrhages are usually amenable to radium therapy, failure to influence them with this agent almost certainly indicates malignancy.

H. U.

The Effect of Roentgen Rays on the Rate of Growth of Spontaneous Tumors in Mice. *James B. Murphy, M.D., and John J. Morton, M.D., Journ. Eperimental Med. Vol. XXII, No. 6, December, 1915.*

In these experiments mice with spontaneous cancers were deemed more suitable material than mice inoculated with transplanted tumors. The malignant growths were removed as completely as possible by operation and the animals reinoculated with a portion of the removed tissue. The mice were treated with the Roentgen X-rays as follows:

(1) The animal itself after removal of tumor.
(2) The tumor only, before reinoculation.
(3) No treatment.

Fifty per cent of the first group where the animal was treated, proved immune, and in the susceptible (recurrent) cases the average time for appearance of graft was five weeks and four days as contrasted with one week and five days (3.4% immunity) in the second group and one week and three days (no immunity) in the third group, the control.

D. L. B.

Diet and Tumor Growth. *William H. Woglom, M.D. Journal of Experimental Medicine. Vol. XXII, No. 6. December, 1915.*

The effect of lactose upon tumors was studied in carcinomatous mice and rats which were fed milk sugar in addition to the regular laboratory regimen of bread and vegetables.

One hundred and twenty-three lactose-fed animals and one hundred and nine controls were kept under the same conditions throughout the experiment. The addition of lactose did not affect the growth of the tumors in the slightest and did not increase the receptivity of these animals for transplanted tumors. These results are contrary to those obtained by

Van Alstyne and Beebe in rat sarcoma. (Jour. Med. Research 1913–1914.)

D. L. B.

Experimental Pneumonia (Friedlander Type), *Warren R. Sisson, M.D. Jour. Experimental Med. Vol. XXII, No. 6. December, 1915.*

Large cats were insufflated with 5 cc.—8 cc. of a 12 hour culture of the organism (B. mucous capsulatus) through a small filiform catheter pushed down between the vocal cords to enter a bronchus. At autopsy the bacillus was recovered from the heart blood. Definite lobar pneumonia processes were obtained in 38.4% and also in 30% where the lung was injured by ammonia fumes after injections into the femoral vein, whereas when no injury was done there was no effect on injection. Eighty per cent of the positive cases yielded the bacillus in blood cultures. Pathologically this form of experimental pneumonia, although subject to considerable variation, has distinctive characteristics.

D. L. B.

IMMUNOLOGY

Observations Upon Complement Fixation in the Diagnosis of Pulmonary Tuberculosis. *Charles F. Craig, M.D. American Jour. Med. Sc., Vol. CL, No. 6. December, 1915.*

Using an antigen composed of seven different strains grown on alkaline bouillon the blood of 166 pulmonary tuberculosis patients at Fort Bayard was tested, also 150 syphilis, 100 other diseased patients and 150 normal individuals. The cases were grouped as incipient, moderately advanced and far advanced, as well as active and inactive. Dr. Craig found that complement binding antibodies were present in the blood serum of both active and clinically inactive cases of tuberculosis, obtaining 96.2% positive in the active cases and 66.1% in the inactive. Negative results in the normal and other diseased individuals with the exception of two syphilitics who had coincident tuberculosis infection, indicated a specific reaction. The highest per cent came in the far advanced cases where there was greatest lung involvement. The writer evidently believes that eventually a test as valuable as the Wassermann in syphilis will be evolved for the diagnosis and control of tuberculosis.

D. L. B.

Observations on Antityphoid Vaccination. *Henry J. Nichols, Jour. Experimental Med. Vol. XXII, No. 6. December, 1915.*

The author found that the living sensitized vaccine of Metchnikoff and Besredka is infectious, producing a typhoid cholecystitis when injected into the gall bladder of a rabbit. These animals are therefore unsuited for immunizing tests, as it is impossible to immunize them against gall bladder infection. The same strain (Rawlings) has been used in the English and American armies. It was isolated in 1900 and is still pathogenic but avirulent. Its efficiency is believed to depend upon its toxicity, which attains a maximum at three months after preparation. Local reaction may be more marked after typhoid fever and after previous typhoid immunization.

The results of five skin tests with typhoidin prepared in powdered form by precipitation with alcohol gave 75% positive as compared with Gay's 97%. He interprets the typhoidin test not as an index of true immunity, but as an indication of typhoid proteid sensitization, which is not as complete, as permanent or as specific as true immunity.

D. L. B.

PHARMACOLOGY

Morphin and Scopolamin Action upon the Intact Uterus. *Barbour, H. G. Jour. of Pharmacology and Experimental Therapeutics, Nov., 1915, pp. 547–555.*

The author used for his experiments decerebrated and non-decerebrated animals with pregnant and non-pregnant uteri. Cats and rabbits were used. There is abundant clinical evidence that morphin may delay the progress of labor, but its action here should be attributed to its action on the cerebrum. "The explanation of the delay in labor resulting from morphin and scopolamin undoubtedly lies simply in the general quieting and narcotic action of these drugs, in the same way that it is recognized that normal sleep diminishes the frequency of the uterine contractions." Neither morphin nor scopolamin cause profound changes in the activity of the pregnant or non-pregnant uterus of decerebrated cats. [Since cats have a lower order of a central nervous system than human beings, the action of morphine is exerted more on the cord and medulla than on the cerebrum. This action on the cord is manifested by an increased reflex irritability, and an increase in peristalsis with defecation, in contra-distinction to its quieting effect on man through the greater cerebral control which under the influence of morphin overshadows this opposite effect on the cord. Consequently, if these drugs exert no influence on the uterus in cats, especially decerebrated cats, it is all the more evident that in man the action of morphin in labor is exerted high up in the central nervous system. Ed.]

C. W.

Urine Formation by the Perfused Kidney: Preliminary Experiments on the Action of Caffeine. *Richards, A. N., and Plant, O. H., Ibid. pp. 485–509.*

A method is described for perfusing the rabbit's kidney *in situ* with hirudinized blood under conditions which permit adjustment and measurement of blood flow through the kidney. " Caffeine causes diuresis in the perfused kidney when the rate of blood flow through the kidney remains constant. The increase in blood flow which occurs in the intact animal as the result of the action of caffeine upon the renal vessels is therefore not an essential factor in caffeine diuresis."

C. W.

The Wassermann Reaction in Malaria. A good deal has been written about the appearance of the Wassermann reaction in the presence of malaria, a subject which is of interest to the student of homœopathy. If malaria can arouse a similar reaction to that obtained in syphilis it would seem that this phenomenon should have some bearing on our laboratory analysis of homœopathy. Just what is the nature of this reaction in syphilis is at present under discussion. It is thought not to be dependent on the presence of anti-syphilitic bodies in the serum.

In a review of the previous work C. Mathis and P. Heyman (*Bulletin de la Société de Pathologie Exotique, May, 1915, p. 258*) show that the findings are contradictory, and vary greatly according to the nature of the antigen employed. The authors found negative reactions in 22 cases of malaria with the exception of one case in which there was a previous history of syphilis. The cases were of the tertian, æstœvo-autumnal and tropical variety. They venture the statement that the finding of a positive Wassermann in leprosy is also dependent upon a previous syphilitic infection.

W. Fletcher (*Lancet, London, June 13, '14, p. 1678*) makes the following statement regarding this subject. " The presence of malarial parasites in the blood does not cause the serum to give a positive Wassermann reaction when the method of Browning, Cruickshank and McKenzie is employed."

C. W.

THERAPEUTICS

Pollen Therapy in Hay Fever. *Goodale. Annals of Otology, Rhinology and Laryngology, Vol. XXIV, No. 2, June, 1915, p. 269.*

Observations based upon one hundred and twenty-two cases of hay fever are reported.

The method of obtaining and preserving pollen extracts is explained, an alcoholic dilution of about 15%, kept in amber bottles, being found most reliable.

Tests were made by making a series of superficial scratches on the skin of the arm and gently rubbing in a drop of the pollen extract, the reaction occurring in from five to fifteen minutes.

The intensity of the skin reaction was not always proportionate with the clinical symptoms of the hay fever. The hay fever season in eastern North America is divided by Goodale into four periods:

First: Flowering of the earliest blooming plants.

Second: Flowering of the grasses.

Third: Flowering of the mid-season flowers of July.

Fourth: Flowering of the Autumn-blooming compositae.

In this vicinity (Boston) the chief causes of hay fever were found to be the grasses and the late compositae.

In the treatment of the cases, the initial dose was determined by the dilution which failed to excite a definite skin reaction, five to ten drops being injected sub-cutaneously after the reaction from the first skin tests had subsided.

Injections were given from two days to a week apart, the dosage being increased slowly.

Two cases of anaphylactic shock from too rapidly increasing the dose are reported.

Sixty-two of the cases treated showed diminution in size and intensity of disturbances in the skin.

The skin reactions from ragweed and cosmos were especially stubborn about yielding.

Statistics are given regarding the 122 patients treated, showing 25% to be unmistakably improved. Owing to the element of suggestion, Goodale feels that the results as regards a large percentage are indefinite.

The biologic relation between the different plant proteids or pollens (with accompanying tables) is discussed.

Goodale states the opinion that more rapid results would be obtained by employing a mixture of pollens, rather than by using any single one.

His conclusions are:

"Serobiologic methods have shown the phylogenetic relationship of the different plant orders and families. The application of these discoveries to the treatment of hay fever by injection of plant proteids promises to assist in the selection of the specific material required for a given case.

"Definite reactions are elicited in hay fever by the pollen of the exciting plants when brought into contact with an

abrasion of the skin. The intensity of these skin manifestations may be sensibly diminished by the repeated parenteral administration of the proteids in question. Coincident with the diminution in the skin reactions there seems to occur an increased tolerance of the exposed mucous membranes to the pollens of the plants employed. Pollen therapy in hay fever may be regarded at the present time as a promising method of treatment, but its value and the permanence of its results remain still to be definitely established."

H. L. B.

BOOK REVIEWS

Diseases of the Nose and Throat. By Algernon Coolidge, M.D., Professor of Laryngology in the Harvard Medical School. 12mo of 360 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, $1.50 net.

This book for the student and practitioner is one of the best of the year on the examination, diagnosis and treatment of the upper respiratory tract. A large amount of material is included in a small volume of three hundred and sixty pages.

In chapter one, examination of the trachea by the indirect method and the section on trans-illumination give valuable points of technic, but the reviewer regrets that the naso-pharyngoscope is not mentioned in the book.

In the next chapter on the clinical history, the significance of the important symptoms of nasal obstruction and secretion, cough, hoarseness and obstruction to nasal breathing is discussed.

In chapter four the so-called vaso-motor disturbance is carefully considered.

The author's position as to the relation of the tonsils to rheumatism and other remote diseases is a conservative one but omits any reference to sinusitis or carious teeth being foci of infection.

Chapter nineteen is devoted to bronchoscopy, esophagoscopy and an excellent chapter on diseases of the mouth and trachea follows

The more common operations are clearly described and there are many illustrations which bring out clearly the important points under consideration. The subjects are taken up in a clear, systematic manner. It is a very useful and valuable book.

E. J.

SOCIETIES

Boston District of the Massachusetts Homœopathic Medical Society

The regular monthly meeting of the Boston District of the Massachusetts Homœopathic Medical Society was held on December 2, 1915, at the Evans Memorial on East Concord Street.

Owing to the absence of the Secretary, the reading of the minutes of the previous meeting was omitted, and Dr. Edward S. Calderwood was appointed Secretary pro tem.

Drs. Nathan H. Garrick, Mary F. V. Moore and Harry A. Watts were elected to membership in the Society.

As Chairman of the Committee on Resolutions on the death of Dr. Edward P. Colby, Dr. J. P. Sutherland presented the following:

Whereas in the death of Dr. Edward P. Colby our Society has lost not only one of its senior members, but one of its most highly useful, most deeply respected and most influential members, a man of rare personality, of unusual

charm and attractiveness, loyal, dependable, stedfast, genial, gentle and sympathetic; and

Whereas by his removal from our midst we no longer have the benefit of his wise counsel, his broad and comprehensive knowledge, his critical and analytical acumen, his sound judgment, his stimulating companionship and encouragement, his long and varied experience; and

Whereas the absence of his strong personality from our gatherings is recognized as a distinct and irreparable loss,

Resolved that the Boston Homœopathic Medical Society in regular session assembled hereby expresses its deep and heartfelt sympathy with the members of Dr. Colby's family in their bereavement.

Resolved that we incorporate in the records of our Society this expression of appreciation of Dr. Colby's sterling character as a man, a citizen and a physician, and also of our loss in his removal by death; and

Resolved that a copy of these resolutions be forwarded to Mrs. Colby by our Secretary.

The Committee on Nominations presented the following list of officers for the Society for 1916:

For President: Benjamin T. Loring, M.D., Francis H. MacCarthy, M.D.

For 1st Vice-Pres.: Walter J. Graves, M.D., Wesley T. Lee, M.D.

For 2nd Vice-Pres.: Alice H. Bassett, M.D., Susan M. Coffin, M.D.

For Secretary: *Harold E. Diehl, M.D., Francis X. Corr, M.D.

For Assoc. Sec.: David L. Belding, M.D., Frederick M. Sears, M.D.

For Treasurer: *Edwin W. Smith, M.D., Herbert E. Maynard, M.D.

For Auditor: George D. Bliss, M.D., Herbert D. Boyd, M.D.

For Censors: Frederick W. Colburn, M.D., *Edward S. Calderwood, M.D., Albert W. Horr, M.D., Thomas E. Chandler, M.D., N. H. Houghton, M.D.

(* Candidate for re-election.)

Dr. Nelson M. Wood presented a case recovered from general septicæmia with abundant findings of streptococcus in the blood stream.

The paper of the evening was presented by Dr. William J. Brickley of the Haymarket Square Relief Station of Boston, on "Head Injuries — Diagnosis, Prognosis and Treatment." It was a very interesting one, based on a sound knowledge of the subject gained from wide experience. It was discussed by Drs. Horace Packard, J. Emmons Briggs and W. F. Wesselhoeft.

At the close of the meeting light refreshments were served.

HAROLD E. DIEHL, M.D., Secretary.

Massachusetts Surgical and Gynæcological Society

The eighty-fifth session of the Massachusetts Surgical and Gynæcological Society was held at Pilgrim Hall, 14 Beacon Street, Boston, on December 8, 1915.

Papers were presented by Dr. Ralph A. Stewart of New York on "A Plea for Better Records in Fractures," by Dr. D. G. Wilcox of Boston on "The Treatment of Pelvic Adhesions," by Dr. G. F. Martin of Lowell "On Some Phases of Surgery of the Lungs," by Dr. Walter G. Crump of New York on "Surgical Aspects of the Cancer Problem." Discussion of these papers was opened by Drs. J. K. Warren, J. Emmons Briggs, Edgar A. Fisher, Horace Packard, George R. Southwick.

The meeting was attended by ninety-four members and their guests. Following the presentation of papers and discussion, dinner was served at Young's Hotel.

Prof. Frank Lewis Duley spoke after the dinner on "A Study in European Diplomacy," tracing the events from the time of the Franco-Prussian War to the eve of the declaration of the present European War. Many little understood points in the early weeks of the war were explained and an instructive and entertaining survey of the present conditions in Europe was presented.

Officers for the year 1916 were announced as follows:
President: Dr. H. O. Spalding.
Vice-Presidents: Dr. R. C. Wiggin, Dr. Conrad Wesselhoeft, 2nd.
Secretary: Dr. Harry J. Lee.
Associate Secretary: Dr. William K. S. Thomas.
Treasurer: Dr. Caroline Y. Wentworth.
Auditor: Dr. Mary R. Lakeman.
Censors: Dr. Thos. M. Strong, Dr. George E. May, Dr. Clarence Crane.

The reports of the Treasurer and the Secretary show that the Society has improved its financial condition and increased its membership during 1915.

HARRY J. LEE, M.D., Secretary.

American College of Surgeons

The following named physicians were made Fellows of the American College of Surgeons at the Boston Convocation held in October, 1915:

Zuber Short, Hot Springs, Ark.; Florence N. Ward, San Francisco, Cal.; Thomas I. Motter, Chicago, Ill.; Richard H. Street, Chicago, Ill.; Charles B. Kern, LaFayette, Ind.; Orrin L. Smith, Lexington, Ky.; Herbert D. Boyd, Boston, Mass.; J. H. Carmichael, Springfield, Mass.; Matthias W. Conrow, Springfield, Mass.; Frederick W. Halsey, Boston, Mass.; Albert W. Horr, Boston, Mass.; Robert F. Hovey, Springfield, Mass.; Harry J. Lee, Boston, Mass.; Erdix T. Smith, Springfield, Mass.; Wm. J. S. Thomas, Cambridge, Mass.; John K. Warren, Worcester, Mass.; Hugh McD. Beebe, Ann Arbor, Mich.; Frank A. Kelly, Detroit, Mich.; Claudis B. Kinyon, Ann Arbor, Mich.; George L. LeFevre, Muskegon, Mich.; Dean W. Myers, Ann Arbor, Mich.; Walter E. Reily, Fulton, Mo.; Herbert C. Allen, Brooklyn, N. Y.; J. Ivimey Dowling, Albany, N. Y.; Gove S. Harrington, New York, N. Y.; Edwin W. Kellogg, New York, N. Y.; Claude A. Burrett, Columbus, O.; Judson A. Ferree, Columbus, O.; Norman S. Betts, Philadelphia, Pa.; Herbert P. Leopold, Philadelphia, Pa.; J. Homer McCready, Pittsburgh, Pa.; Warren C. Mercer, Philadelphia, Pa.; John L. Peck, Scranton, Pa.; Gustave A. Van Lennep, Philadelphia, Pa.; Robert V. White, Scranton, Pa.

MASSACHUSETTS HOMŒOPATHIC HOSPITAL NOTES

The following appointments have been made to resident interneship in the Massachusetts Homœopathic Hospital:

Dr. Edwin D. Lee, Boston University School of Medicine, class of 1914.

Dr. Lydia Baker Pierce, Boston University School of Medicine, class of 1906.

These are to be resident physicians and are to serve in the various departments of the Hospital, having charge of the internes who enter direct from the Medical School. Besides their maintenance they receive a moderate salary.

The Out-Patient clinics were transferred on December 13 to their new quarters in the splendid building just completed for the Maternity Department of the Hospital, erected on the site of the old Homœopathic Medical Dispensary, 750 Harrison Avenue, Boston. Dedicatory exercises were held on January 1, and the rooms for maternity cases opened for use on January 3. No expense has been spared to make the equipment the most modern and up-to-date possible for it to be made.

Following a custom established several years ago, the Hospital gave a Christmas celebration on the evening of December 23 in the new building, with a well filled tree and a Santa Claus for the children of the Out-Patient "district." The contributions to this charity are generous and carry gladness to many hearts and homes.

PERSONAL AND GENERAL ITEMS

Dr. Sanford B. Hooker (B.U.S.M. 1913) is spending the school year at the University of California, in the Department of Bacteriology and Pathology.

Dr. Ralph R. Mellon of Ann Arbor, Michigan, is at Harvard Medical School, taking research work with Dr. M. J. Rosenau.

Dr. R. Agnes Hartley, B.U.S.M. 1899, has removed from Upland Road to 180 Massachusetts Avenue, Cambridge.

Dr. Louis W. Salvin, B.U.S.M. 1914, has opened an office at 558 Warren St., Roxbury, but retains his connection with Long Island Hospital.

Dr. Samuel Worcester has removed from South Norwalk, Connecticut, to Portland, Oregon.

Norwell, Massachusetts, offers a good field for a homœopathic physician, Dr. H. J. Little who for many years was in practice there having retired and removed to California.

Dr. Edwin M. Kent, B.U.S.M. 1909, has returned from the mission field in China and has located at Remsen, New York.

Dr. Mattibelle Boger (B.U.S.M. 1915) has accepted appointment at Talitha Cumi Home, Jamaica Plain, Boston, succeeding Dr. Helen B. Todd as House Physician in that institution.

Dr. H. E. Whitaker has removed from Gloucester, Mass., to Somersworth, New Hampshire.

Dr. Henry I. Twiss, B.U.S.M. 1903, has removed from Seattle, Washington, to Chicago, where in addition to the practice of his specialty, orthopædics, he is to teach in Hahnemann Medical College.

Dr. Leighton F. Johnson, B.U.S.M. 1915, has become associated in practice with Dr. Alonzo J. Shadman (1905 B.U.S.M.) at West Roxbury, Mass., as well as in surgical practice at Forest Hills Hospital.

Dr. Henry D. Troutman has removed from Tucson, Arizona, to offices in the Dodworth Building, Pasadena.

Hahnemann Medical College of the Pacific has become amalgamated with the Medical Department of the University of California and after thirty-five years of educational service ceased on June 8 last to exist as a separate institution. Dr. William Boericke has been appointed Professor of Homœopathic Materia Medica in the University of California Medical School, his duties to begin January 1, 1916.

Dr. DeWitt G. Wilcox has been appointed Consulting Surgeon to the Newton Hospital, Newton, Massachusetts.

Dr. Christopher Egland (B. U. S. M., 1895) sends a change of address which is as follows:
80 Glenlyon Road, Brunswick, Melbourne, Australia.

Dr. Bertha L. Cameron Guild, B. U. S. M., 1911, has removed to Manchester, N. H., R.F.D. 29, Box 137.

Dr. Gladys H. Brownell, B. U. S. M., 1912, has removed her residence from Winthrop to 17 Albemarle St., Arlington, Mass.

Dr. Abraham Colmes, B. U. S. M., 1915, has located at 374 Blue Hill Ave., Roxbury.

Dr. Forrest Jay Drury, class of 1912, B. U. S. M., is located at Seabrook, N. H.

Dr. Grace D. Reed, class of 1914, B. U. S. M., has opened an office at 10 Varnum St., Arlington, Mass.

Dr. Cecil W. Clark, class of 1915, B. U. S. M., has opened an office at 341 Water St., Augusta, Me.

Dr. Elizabeth R. Shapleigh, class of 1911, B. U. S. M., has opened an office at 88 Lawrence St., Lawrence, Mass.

DR. GRENFELL AND HIS WORK

A special meeting of the Board of the International Grenfell Association was recently held in New York City, at which representatives from Canada, Newfoundland, Chicago, New York and Boston were in attendance, Dr. Grenfell himself being present after a month's lecture tour in the Middle West and in Canada. Drs. Clarence J. Blake, John M. Little, John D. Adams and W. Russell MacAusland, all of Boston, were members of a subcommittee formed to present plans for a more substantial and permanent hospital building at St. Anthony. Dr. and Mrs. Grenfell are sailing Dec. 14 on the Holland-American Line to join the Harvard unit at a base hospital in France for three months' service, Mrs. Grenfell acting as interpreter for the nurses and in other needed capacities. The doctor has left four surgeons in charge of the Labrador and Newfoundland hospitals for the winter. He will return to the States in the spring, going North when open water permits. He has expressed a strong desire to "serve the brave fellows who are fighting the world's battles in France."

A report of the medical missionary work the past summer by the hospital steamship *Strathcona* in the Labrador region gives an interesting impression of Dr. Grenfell's activity. There were treated on the trip of 2,250 miles 958 out-patients and 27 in-patients. She sent eight volunteers to the front and twenty-four to the hospital, transferring to mail boats. She steamed mostly on wood billets, purchased at various places from the neediest families in return for clothing. Forty-six circulating libraries of 2,000 books were arranged, communicating with the libraries at St. Anthony and at the Seaman's Institute, St. Johns. To furnish the Northerners with water-tight skin boots Dr. Grenfell purchased 200 sealskins, leaving them where they could make their own footwear, in which work they are clever. Seals have become scarce and the people very poor.

THE NEW ENGLAND MEDICAL GAZETTE

VOL. LI FEBRUARY, 1916 No. 2

Books for review, exchanges and contributions — the latter to be contributed to the GAZETTE only and preferably to be typewritten — personal and news items should be sent to THE NEW ENGLAND MEDICAL GAZETTE, 80 East Concord Street, Boston. Subscriptions and all communications relating to advertising or other business should be sent to the Business Manager, 80 East Concord Street, Boston, Mass.

THE GAZETTE does not hold itself responsible for the opinions expressed by its contributors. Reprints furnished at cost.

THE M. G. H. PAY CLINIC

We have just received a circular letter from the Massachusetts General Hospital announcing the opening of a new type of clinic. It is intended for persons who would not care to go to a free clinic but cannot afford to pay regular consultant fees. The idea is to take advantage of the opinions of as many specialists as the case may require for one fee of five dollars with moderate charges for special laboratory work and X-ray examinations.

At first glance this plan sounds very interesting, but what are the facts? To begin with, it is well known that many persons use or rather abuse dispensary privileges who could afford to pay a small fee to a near-by doctor. It is also true that all physicians worthy of the name lay the emphasis of their work upon helping the patient rather than upon the fee to be obtained, and are accustomed to make the fee commensurate with the ability of the patient to pay. This, we believe, is as true of the specialist as of the general practitioner who asks his assistance.

We chanced to be present at a small medical meeting in a suburban town when this plan of the Massachusetts General pay clinic was informally discussed. It was the unanimous opinion of the meeting that such a scheme tended to commercialize the profession and was lacking in that liberal altruism which has ever kept the true physician above the sordid aims and made him the priest of health and wisdom alike for those who could and those who could not pay. The men spoke of consultants whom they had ceased to call because they were "too much

after the money," and all agreed that they had rarely found a specialist who was not willing to adjust his charge to the pocketbook of the patient.

Again, the question of prestige is involved. If our patients are led to believe that there is a sort of medical court of appeal at the Massachusetts General Hospital where the judges know so much more than their own doctors, we shall doubtless be asked to send them in even though we ourselves would prefer some other consultant. Is this not rather forcing our consultants upon us? Is it not going to be prejudicial to the best work of the general practitioner? We are all human and cannot be blamed for having preferences. Suppose for personal reasons a homœopath prefers his patient to go to a particular consultant, but the patient has heard through the newspapers or elsewhere that she can get more for her money at the pay clinic. Her doctor knows that the consultant whom she will see there is of the old school stand-pat type, and that try as he will not to, he will be bound to show his prejudice. The patient goes, and if she returns at all to her own physician it is with altered confidence.

No one can say for a year or so how this pay clinic is going to work out, but we shall watch it with great interest.

ANOTHER REFORM NEEDED

Now that Massachusetts has corrected one automobile nuisance in requiring that the glare from head-lights be subdued by "dimmers," she might well turn her attention to another annoyance — the general use of unnecessarily loud sounding horns or warning signals. These typically American devices are no less an insult to the ears than were the head-lights to the eyes. The resulting damage comes not from direct injury to the auditory nerve, such as would be produced from a continuous sound of the same pitch, but from the indirect effect on the nervous system. Owing to the intimate relationship between this system and the auditory apparatus, persons subjected to a continual series of these irritating noises soon become as tired out nervously as those who suffer from the somewhat similar "Fatigue of Deafness," which has played no small part in many a nervous breakdown. Our modern city and town life is noisy enough at best without the addition of thousands of noise-producing devices which furnish two or three times the volume of sound required to properly perform their function. Any regulation which would give our street crossings and much travelled highways less of the atmosphere of a perpetual Fourth of July celebration would be most welcome.

H. L. B.

ORIGINAL COMMUNICATIONS

HODGKIN'S DISEASE AND THE DIPHTHEROID BACILLUS

By Ralph R. Mellen, M.D.

The so-called pseudo-diphtheria bacillus was isolated by Loeffler and Hoffmann-Wellenhof in 1887. It is now known as the Bacillus Hoffmannii. For many years a fierce controversy has been waged regarding its relation to the diphtheria bacillus, some regarding it as an attenuated form, while others held it to be a member of the same group as the latter but to stand in a class by itself. Although this question regarding the biological relationship of the pseudo-diphtheria bacillus is not settled to the satisfaction of every one, we are certain of one thing, viz., that the hopeless term "pseudo-diphtheria" is applicable to a very large and diversified group of organisms, and can no longer be limited to one organism.

Despite the fact that evidences have been adduced from time to time testifying to the notion that certain diphtheria-like organisms in all probability had a causal relationship to certain human ailments, the idea has prevailed that the group was, from a practical standpoint, strictly saprophytic. But the positive cultural results from lymph glands of Hodgkin's disease by Negri and Miermet, Bunting and Yates, and latterly by others, has stirred up an interest in the pathogenic role of this group which it has not enjoyed in many years.

Of course the fact that the diphtheroid bacillus is found in the lymph glands of Hodgkin's disease with great constancy means nothing of itself. Nevertheless, the stand taken by the tissue pathologist that its presence *can* mean nothing because of the ubiquity of the different members of this group is absolutely unwarranted. We could hardly hope for an organism with wider natural distribution than either the streptococcus or the bacillus aerogenes capsulatus, yet no one doubts their pathogenicity at times.

Bunting and Yates claimed to have reproduced the histopathological changes of Hodgkin's disease in its various stages in the lymph glands of monkeys as well as to have produced the acute or toxic form of Hodgkin's, and to have recovered the specific diphtheroid organism from the lymph glands during the course of the inoculations. The characteristic blood picture has also been reproduced in the monkey. In man, it has been produced by injections of the dead organisms.

It would seem that such evidence would be very satisfactory, satisfying, as it does, the postulates of Koch, but there are

very many dissenting opinions on the various phases of the question. First, in regard to the use of autogenous vaccines. The great preponderance of evidence shows not only that the vaccines are absolutely ineffective in the condition, but furthermore, they usually produce no reaction at all, either local, focal, or constitutional. Bloomfield reports having given ten thousand million in one case without even a local reaction. An occasional frenzied observer reports a cure of Hodgkin's, sometimes with a vaccine and sometimes without, but such reports are not to be taken seriously at this time. It is not so unusual to have a recession of the cervical glands under the influence of the X-Ray, or in some cases spontaneously, but the subsequent history usually shows a coincident extension of the process into the bronchial or retro-peritoneal glands. Even Bunting and Yates themselves admit the complete failure of the vaccine treatment in this condition.

Another source of dissension lies in the fact that very often there are several types of this organism found in the glands, which may or may not be mixed with streptococci, the bacillus ærogenes capsulatus, bacillus subtilis, and staphlococcus. To my knowledge, there has been no detailed description of all the characteristics of any diphtheroid organism which would warrant the designation coryne-bacterium Hodgkini. The sugar reactions, for one thing, have been most entirely neglected, and as I am personally familiar with a rather large group of organisms which have a wide range of sugar fermentation, I believe that this heretofore neglected characteristic of this group should be emphasized. Especially is this so in an instance of this kind, where one finds mixed types of the organism. It is quite possible that one type may be etiologic, and the other not, but as yet, it is hard to define the former. Bunting seems to consider the extreme pleomorphism and the anti-formin-fast qualities to be characteristic, but unquestionably many diphtheroids of this type can be isolated from conditions having no relation to Hodgkin's disease whatever.

It is, of course, very possible that any member of a group with these qualities might under certain conditions acquire pathogenic affinity for the lymphatic tissues, without producing recognizable change in the morphologic and cultural characters of the organism. We have presumably a similar instance in the contention of Rosenow regarding the streptococci. As is well known, he believes that these organisms can develop various tissue affinities in the different foci of infection of the body, owing to the peculiar biochemical conditions obtaining there. In this way, he accounts for streptococcic appendicitis, herpes zoster, mumps, and many other conditions. These affinities

are soon lost on artificial media, thus explaining in part the negative animal experiments of various observers. Right in the diphtheroid group we have a very interesting example of affinity for a specific tissue. Teacher of Glasgow has shown an epizootic of infective abortion among guinea pigs to have been caused by a member of the group whose morphological and cultural characteristics showed it to be one of the most saprophytic. He has not only found this organism at definite sites in the placenta, but has reproduced the entire phenomenon in pregnant pigs which were otherwise normal.

In one of his early experiments, Bunting was unable to get a lymphatic gland "take" with his diphtheroid, there having resulted an abscess at the point of inoculation into the monkey which contaminated a pure culture of the diphtheroid. Injecting this pus directly into another monkey without subculture, he succeeded in producing the pathological picture of Hodgkin's in the glands.

It is possible that future work will harmonize the fortuitously regarded presence of the spore-bearing organisms, staphlococci, etc., in Hodgkin's glands, when we know more about the symbiotic relations of the diphtheroid group. So in one way, it really is no wonder that we are unable to place biologically the so-called B. Hodgkini, since at the present time we have no adequate classification of this heterogenous mass of organisms.

Another phase of the problem which must be harmonized lies in the fact that in normal lymphatic glands, in glands draining pathological joints, the spleen and glands of leukemia, in Gaucher's splenomegaly and in granulomata of definitely established etiology, such as tuberculosis, syphilis and leprosy, on the mucous surfaces of the body, on the skin, and almost ad infinitum, diphtheroids have been isolated, and not infrequently those meeting the requirements of B. Hodgkini as we now know it.

So although the researches of Bunting have a most striking positive value, there is much about the condition from a bacteriological and immunological point of view that cannot be successfully correlated with his contention at present. However, none of the obstacles mentioned cannot be explained, but more work will be required to validate any hypotheses that may be so induced. There is every reason for optimism regarding the successful outcome of this view, while recognizing at the same time the obstacles to its universal acceptance.

A PLEA FOR BETTER RECORDS IN FRACTURES*

By Ralph A. Stewart, M.D., F.A.C.S., New York

Fracture work, at the present time, is receiving a great amount of attention. Medical journals teem with it, and the programs of our meetings generally have some space devoted to this subject. Possibly many feel that it is usurping time and space which might better be given to other topics, but bone work is one of the fads of the day, so let us bear with it patiently until definite results have been attained.

Why this great revival of interest in fractures? Probably because of the recent development of operative treatment of these conditions. Fifteen years ago no surgeon thought of operating a fracture case except as a last resort. Today some standard text books advocate operating where perfect anatomical results may not be obtained otherwise; more conservative authors limit its application to cases which give a bad anatomical and functional result by the closed method. Between these extremes are all gradations of opinion.

Probably no other surgical procedure is so far from standardization. Surgeons working in this line are far from agreed on fractures which may best be treated operatively. There is a class which all agree should receive the closed method of treatment, e.g., those in which perfect approximation of fragments is not possible to obtain and maintain without operation. At the other extreme are those fractures which if treated by the closed method would result in non-union or viscous union. Here there can be no divergent views as to the necessity of doing an open fixation. Between these two extremes there is a large class where unfortunately there are honest differences of opinion as to the best procedure.

Then again, in operative treatment, opinions as to the best procedures are as divergent as the poles. The quite recent development of the open operation has brought out various ways of fixation, e.g., steel plates, screws, nails, wire, bone-transplants, ferrules of bone and metal, intramedullary splints of bone, ivory and metal. Each of these devices has distinct advantages and enthusiastic advocates who are very uncharitable toward any except their own pet scheme. To go into a meeting where the topic of bone work is under discussion, as many of you had the pleasure of doing at the recent session of the Surgical Congress held in this city, one is forced to conclude that this whole subject of bone treatment is still up in the air. For the sake of the patients as well as for the surgeon's peace of mind this

* Read before the Mass. Surgical and Gynæcological Society, December 8, 1915.

is unfortunate and we are all, I dare say, anxious to add our little mite toward a better understanding of what is the best thing to be done for these cases.

There is a practical side, as well, to this subject. Do you realize that fracture cases furnish about 75% of all malpractice suits? We cannot wink at that fact if we want to keep out of the clutches of the law. The laity are firmly of the opinion that standard practices should prevail in medical and surgical treatment. To tell a judge and jury that in certain classes of cases there are no fixed standards of treatment is to meet with an incredulous shrug of the shoulders. While it may be possible for the leaders of the medical fraternity to get away with that statement, the rank and file would probably find themselves involved in the suspicion that reasonable knowledge and skill had not been exhibited. A doctor who had failed to give ergot in a fatal case of post partum hemorrhage would be convicted of criminal negligence in nine cases out of ten, notwithstanding authorities say that ergot may or may not be indicated in this condition. So the doctor who failed to take an X-ray of a fracture would generally be charged with and convicted of negligence in treatment no matter how easy of diagnosis the case and how unnecessary the picture. The laity, as well as the profession, appreciate the great safety in standardization of treatment, which is doubly important for physicians who treat few cases of a special line of work.

Admitted then that standardization is the desideratum, how is it to be accomplished — what little may each of us add toward its fulfillment? I imagine that all of us in reading of or listening to descriptions of various methods of fracture treatment, have been consciously or unconsciously thinking that possibly some other method than the one under consideration might have produced as good or even better results, so little is brought out of the exact pathology of the lesion and the results of treatment and so much of just how the particular trick of treatment was accomplished. Possibly if we told in detail the kind of a fracture — oblique, transverse, impacted, simple, compound, etc., as the case might be, that there was three inches of overriding which could not be overcome after repeated trials with extension, or that repeated attempts of apposition and fixation of fragments by other and usual means had failed, and, that by the particular treatment described a good anatomical and functional result was obtained in a time usual or less than obtains in other treatments, and that finally the patient was able to resume his former occupation and was as efficient as before, — then we would naturally agree that this particular method had distinct and valuable advantages over other and

usual procedures. But our experience has been that these very essential facts on which to base a judgment are not given, either because the operator had not kept or assembled them or because a recital would upset his argument. Only by comparison of results with all essential facts known and stated as an integral part of such comparison may deductions be drawn which ultimately will lead to standardization. My plea then is that such records of fractures be kept that all cases may be assembled and classified and true results of treatment deduced.

My attention was drawn to this subject of proper records in fracture cases by a talk given by Dr. John B. Walker of New York before the surgeons of the P.R.R. His description of prevailing conditions and his plea for complete and uniform records so impressed me that I at once began to carry out, in my own work, his recommendations; and this is my reason or excuse for taking your time in the consideration of this subject today.

All doctors, for lack of time, strength, or inclination, all hospitals, as well as doctors in their private work, are careless of their records of cases treated. This is a most unfortunate state of affairs which our colleges should correct as quickly as possible. Only by assembling and comparing complete and accurate records of many cases treated by the law of similars may deductions be drawn which will have value and weight in proving our oft made assertion of the superiority of homœopathy in the treatment of disease. Assertions of such superiority without the production of any records, or at least of records which carry the stamp of completeness and accuracy, have not only failed to convince the unbeliever but have brought to ridicule the school which maintains without proper proof such, in the minds of the doubter, preposterous claims.

I owe it to truth and fairness, however, to say right here that Boston University School of Medicine produced before the Clinical Congress last month records which were the antithesis of those decried. Boston University has the right to feel proud of her records as well as of her other performances before the visiting doctors at that time. I hope and believe that those records at that time read to us were of her usual standard and that her graduates are taught to make equally good ones.

I must not leave this particular theme of general records in homœopathic institutions, even though it is diverging from my subject, without expressing my belief that we are losing our golden opportunity of proselyting in the enemy's camp by not keeping accurate, complete and up-to-date records of our application of homœopathic drugs. I use the term up-to-date to designate records which show modern scientific conception of

disease manifestations and not merely subjective symptoms which vary with the ever changing mood of the patient.

A doctor friend of mine told me an experience of his, and I wager there are many similar, which made a profound impression upon me. An old school neurologist made to him this astounding statement, "I have become very much discouraged with our drugs in my cases and from what I have heard, I believe I could do better with homœopathy and I would like to try it out. Will you give me the name of your books which give the records of these cases treated homœopathically?" My friend assured him that he would gladly get the lists of books for him, but to his great astonishment he found no books containing reports of such cases treated homœopathically. Imagine my friend's chagrin when he had to confess this deplorable condition to his old school colleague. I believe this is not an exaggeration or an exception to the general situation. I know of few cases reported under homœopathy. There are books filled to the covers with unsubstantiated assertions of the wonderful action of homœopathic drugs, but the records of the cases are either wanting or so incomplete and unscientific that no one may accept them as proof.

To come back to my subject, let us consider what constitutes a proper record of fracture cases. It is evident that if all fractures from hospitals and private practice are to be assembled and compared with the object of deducing the best treatment, similar particulars must be observed and recorded in each case. This means that a similar outline must be used by all. The committee whose work and recommendations Dr. Walker reported attempted an investigation of treatment and results in femur fractures. Many of the leading hospitals of the country were requested to report on blanks furnished by the committee their cases of fractures of the femur. About 8000 cases were reported, and of this number but 1000 could be correlated; — the other 7000 had such incomplete records that classification and comparison were impossible. From this experience, the committee decided that a uniform blank should be adopted by hospitals if any advantage was to result from a comparison of results obtained. They have prepared a blank which, in their judgment, covers the points which should be observed and recorded, and they ask the profession to adopt the scheme. I have brought with me copies of this blank which I will gladly furnish to all who do fracture work or who are interested in advancing the cause of scientific statistics in medicine and surgery.

A usable blank must contain the proper headings arranged in logical sequence but must have such typography and spacing

that the eye quickly catches the main facts. Your printer may be able to so use his type and spacing as to improve upon the pattern. The headings and sequence should not, however, be changed.

At the risk of tiring you, I am going hurriedly through this blank, that I may have the satisfaction that comes to one when he inflicts upon his listeners a hobby that has become very dear to him. On the first line appears the patient's name, when admitted and his ward assignment. Below this is shown in diagram the end results of treatment. This resumé, appearing before the body of the record instead of in its natural position at the end, is a convenience in quickly assembling special cases.

The body of the record then begins with: —

1. Bone fractured.
2. Site of the fracture in the bone, as, neck, — upper — middle — lower, third — condyle — joint.
3. Name of patient. 4. Sex. 5. Age. 6. Occupation.
7. Date and hour when fracture occurred.
8. Date and hour when case entered hospital.
9. Date and hour when first treatment was given.
   The accuracy in recording the time in Nos. 7, 8 and 9 has other significance than keeping a tab on our internes, for delay in beginning treatment is an important factor in bad results.
10. Cause of fracture.
11. Kind of fracture — oblique — transverse — spiral — impacted — comminuted — simple — compound.
    Often the cause is very helpful in determining the kind of fracture resulting.
12. Injury to soft parts — skin — muscle — vessels — nerves.
    Very valuable information in determining prognosis.
13. Reduction — How many hours elapsed after injury before reduction? Undoubtedly, difficulty of or failure in reduction is often attributable to delay. So important a factor of reduction is time, that the surgeons on the war fronts of Europe have provided devices which allow immediate reduction and fixation of the long bones, even in the presence of serious injuries of the soft parts. Our old friend, the Thomas splint, is kept in stock in various sizes, so that immediate reduction of the long bones of the leg may be made. This splint may be turned out by any good blacksmith at an expense under three dollars. You will recall that orthopædic makers have always charged us $15.00 and upwards.

14. Was anatomical reposition of fragments obtained?
15. Was an anæsthetic used, and which one — ether, gas, or chloroform?
16. Was fixation by closed method used, and if so —
    (a) In what position was the part placed — hyperflexion — full supination — abduction?
    (b) What splints were used?
    (c) In what form was plaster-of-Paris used — cast or moulded splint?
    (d) What traction if any was used — Buck's — Jones' — Hodgen — Bardenheur — Steinman?
    (e) Amount of weight used?
17. Was fixation by open method used, and —
    (a) Was non-operative treatment tried first?
    (b) How long after injury was operation performed?
    (c) Was open reduction alone performed?
    (d) What form of internal fixation was used — steel plates — nails — screws — wire — bone-transplants?
    (e) Was it later necessary to remove fixation material?
18. What was the amount of shortening in cm. at first examination, when all apparatus was removed, and the date of such removal? Amount of shortening, with date when patient was discharged from hospital? Amount with date at last observation?
19. X-ray examinations — before reduction — after reduction — position of fragments as revealed by these pictures — were fragments displaced slightly or markedly — was there fair approximation — anatomical approximation — over-riding — or rotation?
20. How long was patient confined in bed; how long in hospital?
21. How long did patient use crutches; how long a cane?
22. What were the final results as determined by an examination made weeks — months after injury?
    Was there bony — fibrous — or non-union?
23. Was disability partial or complete as estimated by (a) deformity; (b) shortening; (c) angulation; (d) swelling of soft parts; (e) pain; (f) nerve involvement; (g) interference with joint action; (h) endurance?
24. If case died, the age and main cause of death is given.
25. Duration of absence from work.
26. Is patient fully able to take his former job?
27. What is his present earning capacity as compared with former?
28. Was compensation obtained or expected — under insurance, legislative act, or legal process?

This surely is a very full and complete record of fracture cases. But what item could be omitted and still have all the factors of value in deducing standard practice rules of treatment which would withstand the test of time and experience?

This blank may be arranged on the standard record hospital sheet or on the two sides of a five by eight card.

Efficiency and standardization are the watchwords of present day progress. We may learn a valuable lesson from the wonderful development in a comparatively short space of time of the automobile. During all the years since the appearance of the first car, which was awkward, cumbersome, inefficient, and unreliable, engineers have been racking their brains to increase its efficiency, and as one part after another was perfected it was standardized; so today, for a small sum, in comparison with former prices, we can select one of a score of machines which represent the acme of beauty and efficiency.

Surgeons, the world over, are vigorously tackling the fracture problem and as results are obtained they are recorded, and soon we may hope to have standard practice procedures which will be a boon to all surgeons and a Godsend to patients.

ECLAMPSIA: STUDIES CONCERNING ITS CAUSES, NATURE AND TREATMENT

By Harold E. Diehl, M.D., Quincy, Mass.

A study of eclampsia is one that must be of considerably more than usual interest to obstetrician, general practitioner, and research worker alike, — to the first two because the event of the condition in pregnant, parturient, or puerperal women means often an extremely hopeless prognosis and always a more or less blind and empirical treatment; and to the last, because in view of the maze of very diverse studies already made with so few definite conclusions determined, a field of very wide possibility lies before him. The few remarks of this treatise are only an attempt to classify the various theories and facts concerning the causes, nature, and treatment of eclampsia and to summarize the present conclusive data concerning this peculiar phase of disease; it being a matter of regret on the part of the writer that the ideas here presented are not the result of an extended original work, much as he wishes it were his opportunity to pursue such.

The first mention or description of eclampsia was made by Hippocrates, who recognized the occurrence of convulsions in pregnant women and knew they were accompanied by a tendency to sleep and often by severe headaches; Galen also

speaks of the condition but gives no more information or description than his worthy predecessor. The term "eclampsia" was first introduced by Boissier de Savages in 1760, meaning to "shine out" or "flash out," the term applying more to the sudden onset of the convulsion than to the condition underlying the symptomatic manifestations. More properly, etymologically speaking, it should be, and originally was, "eclactisma." Rayer and Lever in 1843 called attention to the presence of blood in the urine of eclamptics, the occurrence of albumen having been noted by a number of observers prior to that time. Little work of any value was done, however, until the last thirty years, the beginning of which time marked the development of considerable interest in the condition on the part of a large number of observers, but, strange to say, the accomplishment of not a great deal of positive and conclusive result.

As a general average, eclampsia occurs in .3 to .6 per cent. of all cases, 20 per cent. coming antepartum, 60 per cent. during labor, and 20 per cent. being puerperal. Statistics show that multiparæ are affected only one third as frequently as primiparæ, but in the former the disease is usually more severe and more fatal. General predisposing causes seem to be primiparity, heredity, contracted pelvis, multiple pregnancy, previous renal or hepatic disease (especially of the infectious type) and an unstable nervous equilibrium. In the role of active causation the first theory of any degree of plausibility was advanced by Bouchard in 1887, who held that the eclamptic condition was caused by the accumulation and retention of waste material not eliminated through the kidneys. This theory, being a new line of thought, aroused the activity of other investigators; and while the researches of Vollhard, Schumacher, and Stewart in a few years disproved Bouchard's theory *per se*, nevertheless it suggested much that stands most probable in the theories of causation now accepted, namely, — autointoxication in some form.

Properly speaking, eclampsia is but one, although the most severe of the manifestations of the toxemias of pregnancy. A consideration then of the causes of eclampsia must be a consideration of the causes of the toxemias of pregnancy, — although, with the exception of the hyperemesis of pregnancy such other manifestations as epileptiform seizures, ptyalism, gingivitis, chorea, etc., need not be considered here. Relative to hyperemesis, gravidarum, considered for a moment apart from true eclampsia, it must not be forgotten that certain local factors may be productive of such hyperemesis: namely, evidences of local peripheral irritation, such as displacements of the uterus, erosions of the cervix, inflammatory conditions

of the uterus or adnexa, also aggravations of local conditions already existing, such as gastric ulcers, nasal diseases, laryngeal tuberculosis, in addition to disturbances of the nervous system itself, best evidenced clinically in the so-called neurotic temperament which often yields to autosuggestion. It is most often the evidence, however, of this so-called toxemia of pregnancy of which we wish to speak, probably very closely related to the condition termed eclampsia, the causes of which we are to discuss.

Assuming, then, the term toxemia to be correct, one is naturally led to the conclusion that the condition is a result of the circulation in the blood-stream of certain poisons or toxins; but one cannot stop here, but must ask when and where and how and why are such bodies, of whatever nature they may be, found.

One of the somewhat older theories is that of C. K. Austin who claimed that the condition termed eclampsia and its convulsions were a manifestation of the retention of the chlorides within the system. He drew attention especially to cases of generalized hard edema with no albumin in the urine, in which during a series of experimental observations he noticed the most marked instances of such chloride retention. Such cases, however, he found to be productive of a larger percentage of recovery than other cases of the more usual type; and in such his explanation failed.

To divide eclampsia into two types was the suggestion of Corbett in 1899. The first type is that which may be considered primarily renal, the second of origin elsewhere in the body, but, by the toxins produced, attacking the renal epithelium. He made a clinical although somewhat complicated application of his theory by feeding diastase to a series of cases of threatening or active eclampsia. If the kidney were primarily involved he found that only a small percentage of diastase was excreted in the urine. If the liver or pancreas were primarily involved, the toxines secondarily attacking the renal epithelium, he found a large excretion of diastase in the urine. In both cases there were high percentages of diastase in the blood serum and rather excessive amounts of albumin both in urine and blood-serum. These experiments and their application thus far have not found general favor.

The liver has had to bear the brunt of blame from a number of observers, the argument being that by reason of hepatic insufficiency certain toxins are allowed to develop and overpower the system. It is true that necropsy findings, especially those reported by Ahlfeld and Schmool, describe a condition in eclampsia very similar to that in those dying of

acute yellow atrophy of the liver. Outside of these findings and a common, almost lay, tendency to attribute myriad disorders to "something wrong with the liver" there seems little ground for this hypothesis. Remembering the chemistry of glucose in the liver, it may be well to bear in mind, however, that in normal pregnancy the carbohydrate content of the blood is but little altered, while after the onset of the eclamptic convulsion there is a marked increase in this carbohydrate content. Benthin on the other hand declares that such increase is a katabolic product of the convulsion, not the evidence of disturbed hepatic function.

Lange is responsible for the renovation of the thyroid gland theory in its application to eclampsia. He considers it very plausible that a deficiency in thyroid secretion may be the cause of eclampsia, or more properly speaking a lack of balance between the internal secretion of the thyroids and adrenals, in favor of the latter, thus producing the high blood pressure nearly always seen in a greater or less degree in eclampsia. (He does not explain, however, why cases of myxœdema do not develop eclamptiform seizures.) In spite of the fact that Lange cites cases in fairly large number which were cured of albuminuria of pregnancy by the ingestion of iodothyrin, this theory has not found general favor. Other organs with internal secretions have also been suggested in the role of causes productive of eclampsia: namely, the parathyroids, the adrenals, the ovaries; also the corpus luteum and the mammary glands. Valid experimental evidence in all this is lacking. That the symptoms of eclampsia are anaphylactic manifestations by reason of absorbed villous elements is a newer theory. In fact, animal experimentation has shown that when such animals were subjected to anaphylactic reaction they underwent organic changes similar to those found in eclampsia. Whether or not future biochemical researches will corroborate or disprove this assumption remains to be seen; but the work of Oscar Verter in the Friedrichshain General Hospital of Berlin seems to be already strongly corroborative.

Dienst in a series of forty-two cases of eclampsia (including seven with a pregnancy nephritis and thirty-five with a previously normal pregnancy) expounded a theory which is attractive, even though in actuality probably explanatory of the results of eclampsia rather than of the cause. In each of these cases he found the albumin (namely serum globulin) deficient and fibrinogen in excess; and very markedly so in the cases previously pathologic. As a result of these findings he therefore deduced that the antithrombin was deficient, which would cause an overburdening of the blood-stream with thrombin. This

thrombin in pathological excess he considers the cause of pregnancy kidney and eclampsia; and when the waste channels of the body become clogged with this excess of thrombin a spasm of the circulation results and convulsion develops. Duhrssen also holds strongly to the spasmodic theory but without the elaborate explanation offered by Dienst. Stroganoff's expectant narcotic treatment to be mentioned later is based largely upon this hypothesis. Dienst also experimentally determined that acid drinks form antothromblin in the circulation and therefore applies their use clinically as a prophylactic. Of clinical results of such we are not informed. Strange to say, Jarzew's results are almost the opposite of Dienst in that he finds an accumulation of albuminoids (very probably of different character, however) in the blood, as a result of their defective oxidation, such defective oxidation ensuing from faulty functioning of placenta and liver. The viscosity of the blood is thereby increased, the arterial system is engorged, an effusion into the central nervous system results, producing increase of intracranial and intra-spinal pressure and, later, toxemia and convulsions.

The faulty placental action suggested by Jarzew forms the basis of probably the most plausible theory of the eclamptic condition. Endeavors have been frequently made to find a toxine in the placenta, but without conclusive results. Vert's quite modern line of thought in contending that the changes occurring in the syncytial elements of the placenta (thereby developing certain ferments by lines of activity now unknown) may cause the condition is more probable than the older view that the child and placenta may be the origin of the toxines. At any rate it seems more than a plausible idea that cases of eclampsia and nephritis of pregnancy may result from a diseased ovum alone. Eclampsia may occur with a macerated fetus, and several reliable observers have found it in cases of hydatiform mole. That the same condition then may result from an uncomplemented ferment from the placenta or from toxine from the fetus or from both seems more than a justified conclusion. Such toxic bodies may give rise to numerous disturbances in other organs of the body, such as are commonly observed. In a fetus dead of convulsions a number of observers, more especially Doleris and Blanc, have found various bacteria in the blood, and Gerder lays particular emphasis on the finding of the bacillus proteus. Certainly the marked frequency of sepsis after eclampsia, the febrile nature of the disease, and at least its coincidence with cases of tonsillitis are worthy of consideration, even though no consistent and conclusive evidence of bacterial infection can be found.

A few other theories need only be mentioned, namely, that eclampsia may be a urinemia from compression of the ureters by the uterus, — the circulation in the blood-stream of carbonic acid, ammonium carbonate, or certain leucomaines. All these, however, have either been disproved or else deemed of too little importance to be proved or disproved.

Three questions still present themselves: — First, what causes the onset of convulsions? Second, what is the explanation of the frequent onset of uterine contractions after the beginning of ante-partum convulsion? Third, why do convulsions occur after delivery? Reference has already been made to the claim of Duhrssen that convulsions arise from a spasmodic contraction of the blood vessels especially of the brain, liver, and kidneys, such a contraction in the brain causing a local anemia and general convulsions. This theory, however, is far less likely than that which assumes a direct irritation of the cortical centres by the toxines circulating in the blood, analogous to the irritation by tetanus toxines and strychnia, but differing from the latter two in that it bears an affinity for the anterior half of the cerebral cortex. A similar irritation of the nerve centres of the sympathetic system governing the uterine muscular fibres would explain the onset of uterine contractions in eclampsia or threatened eclampsia, a failure of uterine contraction as sometimes occurs, resulting from failure, by one reason or another, of irritation of these nervous centres by circulating toxines. It is not possible to explain the reason for post-partum convulsions; but in the light of modern thought it seems very reasonable that such toxines (whatever their nature may be) circulating in the blood-stream have far outnumbered the antibodies produced to combat them; and that unless these antibodies are further developed in sufficient numbers to neutralize the toxine already circulating or else liberated by the trauma of expulsion of fetus and placenta, the toxic symptoms (namely, convulsions) will either begin post-partum or else continue as they did ante- or intra-partum in spite of the removal of their origin.

It would be superfluous here to recount the symptoms and physical signs of eclampsia, for they may be had very accurately in any good text-book of obstetrics. More pertinent may be the pathological findings in cases of eclampsia, particularly in view of the possibility of throwing further light upon the nature and causation of the condition. The most marked changes of course are found in the liver and kidneys. In reference to the latter, almost without exception every case gives evidence of change in pathological structure, most often in the form of cloudy swelling and degeneration of the epithelium. Degenerative changes are almost invariable. In some cases, — probably about 50 per

cent, the condition is very similar to that of acute parenchymatous nephritis, and at least a severe congestion in about 20 per cent. more. Other forms of so-called "Bright's Disease" are also frequently found. In spite of these marked renal changes it is generally conceded that such signs are but secondary to the general toxemia or possibly to disturbed liver functions. From the standpoint of pathological histology the liver is profoundly affected. There is a degeneration of the liver cells with replacement of them by albuminoid substances; also scattered areas of anemia and capillary hemorrhages, the latter frequently forming definite thromboses. Fatty degeneration about the periphery of the lobule invariably occurs, similar to acute yellow atrophy of the liver. Such changes mean of course that the hepatic function is greatly disturbed; but whether it be a primary condition or a result of the circulating toxine having a special affinity for this organ is not possible to be determined by our present means of diagnosis. The brain shows as a rule some edema, very often with small or large areas of hemorrhage. Schmorl has particularly emphasized the latter fact after a considerable study of necropsy findings. Occasionally there may be tubercle formation, meningitis, cerebral anemia, etc. The heart muscle is very likely to be fatty with area of necroses, hemorrhage, and thrombosis. Fatty degeneration has been constantly observed much more markedly in those cases to which chloral and chloroform have been administered. The clinical application is therefore evident. The blood during life in eclampsia coagulates very quickly in marked distinction to that found in the auricles after death, the auricles being very distended, while the ventricles are usually found contracted. The lungs show congestion and edema and are studded with minute hemorrhage areas. The skin also shows petechiæ. The pathological findings then, to summarize, are of marked disturbance in the whole circulatory system, especially in the finer ramifications in the liver and kidneys, causing thereby severe pathological changes in the structure of those organs, conditions all very probably the result of circulating toxins.

What then can we learn about the treatment of eclampsia? Naturally until the cause be specifically known, treatment must be indefinite and a matter of routine. However, during the studies of the past thirty years certain facts have been deduced which form a basis for rational methods of treatment. Such facts have a large field in prophylaxis as well as in treatment of the condition after it has arisen; in fact more so, for when convulsions once begin the nervous balance of the organism is upset, while such a condition may often be warded off by

early recognition and appropriate treatment. A physician who properly supervises the hygiene of pregnancy of his patient will be using prophylactic measures against the onset of eclampsia, and will pay especial attention to the patient's heredity (especially as regards nervous instability or alcoholism), her previous history (particularly of infection or renal diseases), her temperament, as well as blood pressure and urinary condition from time to time. Symptoms especially suggestive of impending convulsive seizures are headache, nausea, vomiting, seeing spots before the eyes with dimmed vision, epigastric pain, insomnia, or an abnormal desire to sleep, twitchings, edema, high blood pressure, and albuminuria. It must not be forgotten, however, that some cases may develop without albumin or casts and with a comparatively low blood-pressure. Very fulminant eclampsia shows an abnormally low systolic-pressure, as does also the early stage of toxemia. Such symptoms then call first for dietary measures of such nature that, while the patient's strength may be maintained, very little waste material results from the food ingested, especially avoiding therefore the proteins and foods rich in cellulose; and second, extraordinary attention to the eliminative channels, the bowels, the urine, the skin, and lungs. If these measures do not suffice, premature induction of labor is decisively called for, by whatever method may seem under the circumstances most advisable.

After convulsions have occurred two methods of treatment are strongly advocated: the first calling for immediate delivery by whatever route may be deemed best; the second, delivering in no case, but attempting to control convulsions by the administration of morphia or chloral or both and vene-section. Stroganoff is the apostle of the latter method, with Zueifeil of Leipsic as an enthusiastic disciple; Stroganoff claims a maternal mortality of 6¼ per cent. in 80 cases by this method, but does not mention the fetal mortality. He claims also that 41 to 55 per cent. of cases go on to recovery or to further convulsions independently of labor. Lichtenstein supports him with the statement that 955 cases out of 4585 or 20.8 per cent. occurred after delivery. Engelmann in using this expectant treatment reports no better results than under active operative measures for delivery. Assuming the very plausible circulating toxine theory to be correct, vene-section is indeed very commendable; for it not only removes considerable toxic material but it also promotes diuresis and diaphoresis. The advice of the old Roman poet and historian, Livy, to choose the "golden mean" is probably again applicable in the contention on this point; that is, that it is wise to individualize each case as far as treatment is concerned: to isolate the patient, remove toxic material by

whatever rational means possible, replacing the same by saline or by colonic irrigation, subcutaneously, or by intravenous route, and to assist labor when developing or when the patient's condition does not improve. All necessary adjuvant measures of course should be employed, namely, protection of the patient against injury, preventing of tongue biting by a padded clothes pin between the teeth, removal of mucus from the mouth, avoidance of any external irritation which may induce convulsions, administration of morphia guardedly, remembering that the baby may be sacrificed by its injudicious use, and other details which fall under the head of nursing. Anæsthetics are best withheld if possible and certainly chloroform, if we remember the pathological heart findings, especially after the administration of chloroform. Chloral therefore should not be given, for the same reason. Eliminative measures should be carried on as vigorously as is consistent with the welfare of the patient. If we remember, however, the peculiar liability of the eclamptic to sepsis, it will certainly seem wise to wait until after delivery to administer cathartics, especially croton oil or elaterium, in order that the field of operation may not be continually contaminated. Diaphoretic drugs and especially pilocarpin are actually dangerous and in the writer's opinion should never be used. Wet packs and alcohol sweats very probably are of benefit in promoting elimination by the skin, but it may be well to consider whether or not by their use the toxines already circulating in the blood-stream may not be concentrated in the splanchnic circulation and so the sympathetic nerve centres and the vital centres of the medulla be overpowered. Veratrum viride has been handed down to us through the experience of a number of years, but its use is considered by many today as hardly rational. It is a powerful heart depressant and cases of rapid collapse following its use are not by any means unknown, such cases then taking on almost identically the appearance of fulminent eclamptic cases. The tincture of lobelia administered in ten to twenty minim doses hypodermically rather frequently seems to have been useful in several cases under personal observation at the Massachusetts Homœopathic Hospital although it is not mentioned by authorities in obstetrics. The forced use of liquids, especially saline, has already been mentioned. Their use is certainly among the most rational procedures in vogue. Among the newer methods of treatment may be mentioned the intraspinal injection of a saturated solution of magnesia sulphate, and the intramuscular injection of normal pregnant serum. The former method has accomplished practically nothing; the latter in the comparatively few cases used, seems promising and may be later developed

as a method of real value. Other methods without any definite proven value may be mentioned: full doses of urotropin, thyroid and parathyroid extracts, the use of alkalies, amyl nitrite, lumbar puncture, and Edebohl's decapsulation of the cortex of the kidney.

If actual operative measures for delivery are needed, provided there be no dilatation of the cervix, the choice of methods rests between abdominal Cæsarean section, vaginal Cæsarean section, and instrumental dilation of the cervix. Vaginal Cæsarean section of these methods seems to offer the best chance for the mothers, probably in that it involves the least shock and least chance of sepsis. In 201 cases of this type conducted by Duhrssen, Beckman, Veit, and Fry the maternal mortality among the different operators varied from 3 per cent. in 33 cases to 15 per cent. in 112 cases. With 384 cases delivered by means of instrumental dilatation by Zweifel, Glockner, Ferri, and Newell, the maternal mortality varied from 7 per cent. in 82 cases to 26½ per cent. in 79 cases. Williams in 85 cases of abdominal Cæsarean section had a maternal mortality of 48.2 per cent. A few cases may be favorable for the action of the hydrostatic bag. If the cervix is partially or fully dilated the dilation may be normally completed if need be, and version performed, or forceps applied according to indication.

A summary of 39 cases of eclampsia in the Massachusetts Homœopathic Hospital since the beginning of the year 1911 is somewhat of interest. (This does not include those cases listed as toxemia of pregnancy, only actual eclampsia.) Of these 39 cases 28 were primiparæ and 11 multiparæ. Eleven cases occurred before full term, twenty-two in labor, and six post-partum, one case continuing after delivery and more severely than during labor. The maternal mortality was fifteen or 38.5 per cent. Fetal mortality was fourteen (six still-born and eight dying after delivery) or 35.9 per cent. Excluding the cases of post-partum eclampsia, thirteen delivered themselves spontaneously, in four labor was induced, eight were delivered by forceps, five by version, and four by Cæsarean section. In the latter method the maternal mortality was 50 per cent., the fetal mortality 25 per cent. Methods of treatment were very diverse ranging from Asafœtida 3x alone in one case to Eserin sulphate grain 1–50; Podophyllum 3x, morphia grain ¼ and Atropin grain 1–150 repeated four times, Veratum viride tincture gtt.x every two hours until pulse fell to 70 and finally Aconite 3x, in another single case. Salines and wet packs were used almost universally and some homœopathic remedies likewise. Vene-section was done but seldom. Methods of treatment then are very divergent, even more so than our theories of causation.

These facts are not mentioned here to bring criticism, only in the belief that by studying our own methods can we improve. Such has been the purpose of this paper: — to bring out the most substantial evidence among the many theories of this condition, and to attempt to crystalize into rational procedure the results of our study.

NEW MATERNITY BUILDING ADDED TO MASSACHUSETTS HOMŒOPATHIC HOSPITAL, PRESENTED BY WALLACE F. ROBINSON

The Massachusetts Homœopathic Hospital is the fortunate recipient of the gift of a beautiful, new, five-story, fire-proof, maternity hospital to be known as the Jennie M. Robinson Memorial, and meeting a want long felt for more adequate accommodation for this class of cases.

Dedication exercises were held on January first, in the beautifully appointed reception hall, presided over by Edward Haven Mason, President of the Board of Trustees. The donor of this generous benefaction, Wallace F. Robinson of Boston, made a short presentation speech, which was responded to by Mr. Mason, who had previously given in outline the history of the parent institution, the Massachusetts Homœopathic Hospital, and then followed an address by Dr. William Francis Honan, of the Metropolitan Hospital, New York City.

At the close of the formal exercises the audience was invited to an inspection of the building and to an informal reception and tea in the spacious rotunda on the second floor.

Historical Remarks by the President, Edward Haven Mason

Through the great generosity of Wallace Fullam Robinson, the Massachusetts Homœopathic Hospital comes into possession of a new building which we are today to name The Jennie M. Robinson Memorial and dedicate to the comfort and care of maternity.

I wish to call to your attention a few historical facts relating to the hospital and its work, showing the urgent need of this building.

The Hospital was incorporated in 1855, but it was not until 1870 that it opened its doors in a small building in Burroughs Place, owned by the Homœopathic Medical Dispensary which continued to use a portion of the premises but allowed the Hospital accommodation for sixteen beds.

THE JENNIE M. ROBINSON MEMORIAL

New Maternity Building of the Massachusetts Homœopathic Hospital presented by Wallace F. Robinson

The Medical and Surgical Staff consisted of four physicians, besides an interne, one surgeon, one ophthalmic surgeon, a pharmacist and a matron.

The first patient was admitted January 23, 1871, and 37 patients were treated during the first year.

One name appears prominently in all the early history of the Hospital, Dr. Israel Tisdale Talbot, the devoted friend of the Hospital from its foundation in 1855, to whom more than to any other single person is due its development and success. All the departments of the Hospital received at one time or another the benefit of his great professional attainments, his untiring energy and his remarkable executive ability.

In the beginnings — he was the surgeon, the secretary of the corporation and Trustees; he was chairman of the Supply Committee; when the new building on East Concord Street, the central portion of our present main hospital, was built in 1877 he was of course on the building committee; and he was one of the committee of five which planned the fair which made the building possible.

Through his efforts the surgical wing was erected in 1884, increasing the number of beds from 38 to 73; and again in 1891, through his efforts, the surgical wing was extended and the medical wing built, increasing the number of beds to 200.

Finally he gave up private practice and his work at the Medical School and as the Director of the Hospital made that his chief charge and interest.

Dr. Talbot died July 2, 1899. In the last year of his twenty-nine years of service 1,782 patients were admitted, besides 81 out-patients; the Medical Board consisted of eleven physicians, eight surgeons and ten specialists.

The seeds planted by him have flourished, for during the last calendar year 6,533 patients were cared for in the main hospital and a total of 28,260 were treated in all departments; of days treatment in the main hospital, 50.9% were for free patients, 29.7% for part paying patients and only 19.4% for paying patients.

The first mention of obstetrical cases appears in 1877 when three cases were reported, of which two were discharged "cured" and one remained at the end of the year.

The first serious effort to establish a Maternity, was in 1897, when the house No. 20 West Newton Street, overlooking Blackstone Square, was secured and adapted to accommodate twelve to fifteen patients; a little later eleven additional beds were provided in the main Hospital.

In 1907 there were 510 obstetrical cases, but a very large falling off in income with increased expenses made it necessary

to close the separate Maternity building as well as the Children's Ward and remove all patients to the main building and limit the number of free patients.

During the last calendar year 1,162 obstetrical cases were admitted, with a mortality of 1.4 per cent. The accommodations of the Hospital were strained to the utmost.

Just at this time came this gift from Mr. Robinson; you will see the building for yourselves, so I will merely describe it as an absolutely fire-proof, five-story building from plans by Kendall, Taylor & Co., constructed by the H. P. Cummings Construction Company.

The entrance on Harrison Avenue will be used exclusively for the Out-Patient Department, which will occupy the ground floor, the first floor and most of the second floor; a portion of the second floor is devoted to examination rooms of the Maternity Department, entrance to which will be from Stoughton Street through this Memorial Hall; from this hall, elevators and stairs lead to the upper floors which have been assigned to the Maternity Department, the third floor being devoted to ward patients, the fourth floor to semi-private patients, and the fifth floor to private patients.

Originally designed for 82 beds, necessities of construction and requirements of building laws have reduced the number to seventy, a welcome increase from the fifty-four occupied in the old hospital at the beginning of this year but still inadequate.

You will remember that our Hospital started in a building owned by the Homœopathic Medical Dispensary. This corporation acquired the site and began the construction of this present building. In 1898 the Legislature authorized it to transfer its property to the Hospital and this was consummated in 1907, the work having grown beyond the financial ability of the management and becoming too great a burden upon the few steadfast supporters.

In this year, 1907, 11,274 patients made 40,403 visits to the Out-Patient Department, 8,763 visits were made by district physicians and 2,793 visits by district nurses.

During the year 1914, in spite of removal to temporary quarters during construction of this building, 12,188 patients made 41,207 visits to the department; 9,668 visits were made by district physicians and 6,241 visits were made by district nurses.

As this building represents the very latest ideas in construction and furnishings, we may expect a considerable growth. We understand that it is the most perfect as well as the largest building of the kind in the Eastern States.

Mr. Robinson's Presentation Speech

Mr. President, Ladies and Gentlemen:

For some time the Trustees of the Massachusetts Homœopathic Hospital have wished to enlarge the facilities for maternity work in the hospital, and in the report for the year 1913, made a most urgent appeal for contributions. This work made a most compelling appeal to me, in view of a long life partnership with one who had always been interested in the general work of the hospital, and particularly in the ills to which woman is heir. Therefore, after consultation with the proper authorities, I made up my mind that I could perform no better service to humanity, no service that would better please the spirit of her who had passed beyond, than by making a contribution towards the erection of this hospital building, and thus realizing the fondest desires of the Trustees.

I will not enter into a long discussion of the work of this hospital. This task I will leave to those who know it, from experience and observation, better than I do. Facts and figures are in their hands, and I will spare you a wearisome repetition of them. But this new building is to perform a double service. A large part of it is to be devoted to the out-patient department, whose good work has been blessed already by many of suffering humanity; and a still larger part to the care of maternity cases. In this latter department all classes will have an opportunity. Free beds, semi-free beds and exclusively private patients will be provided for; and I have the assurance of you, Mr. President, and your associates, that when this new building is open, it will have no superior, at least in our community. I, therefore, most ungrudgingly, make this contribution to your hospital work, in the hope and confidence that it will serve humanity for many years to come, and that the patients who are treated here will ever be grateful and pronounce blessings upon her after whom it is named. It has been said that in a true woman sympathy directs all else, and truly Jennie M. Robinson was in her lifetime a woman who sympathized not only with her fellow women, but with all mankind; and I now ask you, Mr. President, ladies and gentlemen, to accept this gift from me as a memorial of one who well served her generation.

Acceptance of the Gift

The Trustees of the Massachusetts Homœopathic Hospital gratefully receive your magnificent gift, tender you their thanks and the thanks of the entire community and promise to make proper use of the wonderful facilities for the benefit of mankind and womankind.

It is an ancient custom for cities to honor those who have rendered distinguished service by granting citizenship, calling it the freedom of the city; in like manner, the Trustees desiring to express their appreciation of your gift, tender you a master key, to unlock the doors of this establishment when you wish, as your gift has unlocked the doors of our hearts.

We hope that as a Trustee of this Hospital you will not only continue your interest in this Department, but rejoice with us over the benefits to the community which will surely follow in due time.

Address by Dr. Wm. Francis Honan, M.D.

At the Dedication of the New Maternity Building (Jennie M. Robinson Memorial) of the Massachusetts Homœopathic Hospital.

Mr. President, Members of the Board of Trustees,
Visiting Staff of the Hospital, and Ladies and Gentlemen: —

At the very outset, permit me to express my deep sense of gratitude for the privilege of participating in the splendid function you celebrate today, and to congratulate you, and this community, upon this valuable acquisition which will so completely round out the service and increase the spirit of usefulness of this great hospital.

In my boyhood days, I was the proud possessor of two very ancient volumes, published in Dublin at a very early date, and which were supposed to contain all of the knowledge and information sufficient for the liberal education of young people of that remote period. Although I but vaguely recall chapters on drawing, geography, belles-lettres and deportment, the preface has lingered long in my mind. After a gradiloquent dedication by royal permission to the Prince of Wales of that period, with an expression of deep gratitude for the privilege, the author rather naively stated that, inasmuch as the advantages of education were generally admitted throughout the British kingdom, he felt that arguments on that subject were hardly necessary and therefore at once proceeded to the elucidation of his plan of providing an education by means of the aforesaid two volumes of well selected and concentrated knowledge. Although like that famous author-teacher, one might feel that the modern hospital has become such an established factor in the life and well being of every community, the extent and scope of its work were so well understood that arguments for its existence and unqualified support would seem unnecessary, and that patients would welcome the opportunity to be treated under conditions best suited for their rapid and complete recovery, nevertheless, we experience much difficulty in bringing about the end very much

to be desired, which is, the modern and scientific treatment of diseases in institutions thoroughly equipped for that purpose.

It is unfortunately a matter of common experience with the physician of today, more often than occasionally, that individuals are met who present conditions whose proper and successful treatment require the resources, the armamentarium, and the discipline of a modern hospital, but who are curiously averse to institutional treatment. These persons, frequently capable of even remarkable judgment about some of the complicated phases of life — whose value to the community may be considerable — often imperil their lives, and sacrifice health and happiness by failing to recognize the practical application of the onward march of medical science. Nowhere do we find prejudice and tradition so strongly entrenched and so difficult to put to rout, as in the practice of medicine. The fault, — and certainly the error exists — is through the failure of the medical profession to provide a proper means of public education in matters of prevention and the combatting of disease. I have a deep conviction on this subject, and I believe that, from well recognized and authoritative sources, there should be circulated in every community a kind of knowledge which should be free from the taint either of commercialism or wild sensationalism, the object being to educate the individual to understand the problem of caring for his own health; the prevention of disease in the community, and, so far as possible, to develop a certain ability to recognize or suspect the very beginnings of serious diseases — like cancer. Such a plan would develop intelligence and cooperation on the part of the patient, which would render the task of the physician comparatively easy and much more successful than we find is our experience at the present time.

In every department of human activity, the impression is that this generation is the only one whose work is significant and valuable and that there is a wide hiatus between *our* equipment and abilities and those of our predecessors. No matter how intelligent and capable they were, we seem to consider only the absurdities and abuses of their practice. The era about to dawn will perhaps smile at the gravity of our pretensions of the present. We must recognize, moreover, this dawn of a new era, the evolution of which has received a very decided impetus in the past few years. It is somewhat startling to the lay mind, which still insists upon tenaciously holding on to old traditions and methods — particularly if they carry with them deep and heartfelt sentiment. What figure looms bigger and nobler in our mind's eye than that of the old family physician, the guide, philosopher and friend of by-gone years? Who

of middle age cannot recall the black-coated figure, the bearded face, the kindly eye, the semi-ministerial air, the combination alike of dignity and kindliness? Even in this day of epoch-making discoveries in the science of art and medicine, we look back, with undiminished wonder, at the skill, the rare common sense, and the marvellous ability of that man, with only the limited resources which his profession afforded him at that time. He had not at his command either instruments, apparatus, or methods of great precision, and with his limited medical accomplishments and resources, he certainly achieved wonders. We may almost drop a tear and ask a blessing on the passing of that noble figure, so dear to our hearts and so affectionately preserved in our memories.

A new personality has appeared upon the medical horizon — the highly developed and well equipped internist. It is he who develops and weighs the evidence. You consult him about an apparently trifling malady, when almost with a wave of his hand, he summons laboratory experts, subjects you to the tests of complicated apparatus, has various portions of your concealed anatomy laid shrinkingly bare by the use of the X-ray, interprets your dreams and, finally, like the trial lawyer, sums up the case, brings in a verdict, passes sentence, thereby constituting himself the attorney for the prosecution, also for the defense, and incidentally, judge and jury. The moment you appear in his presence, and he hears your story, he adjudges you guilty of having in your possession some abnormality of anatomy, some hidden pathological secret, or some mental or nervous obliquity, and he maintains your guilt and prosecutes you with much vehemence and energy until he has proven you innocent. He has been the final arbiter and has passed judgment on the sum total of the evidence which has come to him from perhaps five or six experts. For example: A man of affairs, somewhat beyond middle age, stops on his way to his office to see a prominent physician. "Doctor, I have a little trouble with my stomach — an old doctor friend of mine used to give me some tablets that helped me — I think I have a little indigestion — bothers me a little now and again — of late has been troubling me a little more, so I promised the family I would drop in and see you. I haven't much time — I have an appointment at my office — if you will just give me a few little tablets, I will be on my way. I guess I know all about what I should eat. A man who lives until my time of life and doesn't know what to eat must be a fool, don't you think so, Doctor?"

The Doctor, who in the meantime has been studying him rather carefully, says: "We are not practising medicine that

way today. Go to your office, attend to your necessary business, arrange to be away at least three days. Instead of going home tonight, I want you to go to the ——— hospital, and we will see if we can find out what your trouble is." Our whilom patient is much taken back by the proposition, but there is something in the serious face of the physician, and in his quiet insistence and decision, that makes the man of affairs feel that he has found someone besides his wife who can issue peremptory orders. He takes up his abode in the hospital, and undergoes some rather novel and interesting experiences. He is given test meals and the contents of his stomach withdrawn and examined. His blood, and all the other available body fluids, secretions and excretions are subjected to close scientific scrutiny. As the saying is, he is put through a complete X-ray examination. He is shown cardiograms of his different varieties of pulse waves, blood pressure, and what not, and, when he goes home, he is the hero, from his own account, of some thrilling experiences, and has added many new and very strange words to what has been his simple business vocabulary. Up to this point, once he became interested, the affair has been somewhat of a joke. He protests at the loss of time, but once he enters into it, his feeling is: "For once I will let them go as far as they like." In the course of two days more, he saunters into the Doctor's office, with the air of a man who has been put to a lot of unnecessary trouble and loss of time, because a few doctors wanted to ventilate their fads.

"What's the verdict, Doctor?"

"How soon can you go back to the hospital? How long will it take you to straighten up your affairs and be prepared to spend two to three months out of business?"

"Why, what's the trouble? I feel fine — feel as good as ever now."

"I have carefully weighed and considered your case, from the standpoint of reliable evidence — evidence against which there can be no contradiction or mistake. You have a process, beginning in the stomach, now in the early beginning, which, if met promptly and radically by the proper surgical operation, will, in all probability, permanently cure you. If it is allowed to remain in its present condition for three months, no cure, only palliation could be promised. You have a condition which we feel, and in fact know, is an early malignant involvement. We have recognized it early, it is possible to cure you, but the cure will brook no delay."

Let us assume the patient took the advice of the scientific internist, a capable and well qualified surgeon operated, and the end result was happy and satisfactory to everyone con-

cerned like the happy endings of all good stories. There is nothing novel about this story — things like this are happening daily; the resources and the machinery of the modern hospital in any large community are continually put in motion in order to arrive at such conclusions, and to reach such results as have been indicated in the case quoted. What is true of this case, with slight variations, might be applied to a variety of conditions which are met daily in the practice of the physician, and which indicate the best practice of our noted exponents in medicine and surgery.

It is, however, the subject of obstetrics that really interests us today, — a department of medicine which, until a few years back, has received in this country a very negligible amount of interest. We have been so busy developing surgery and other erudite specialties, that contributions to the subject of obstetrics from American physicians have been remarkable by their absence, or lack of great importance. We have excelled in so many departments that it is strange that we have produced, until recently, so few great obstetricians. It has been largely due to faulty teaching in the medical colleges. Twenty-five years ago, a student in any recognized medical college would have had some practical experience in most of the departments of medicine by the time he had received his degree, except in obstetrics, and in this wonderful branch of scientific activity his knowledge was that usually gleaned from didactic lectures and textbooks. It is only until recently that the university ideals were entirely lacking in our medical schools. The obstetric departments of institutions were poorly provided with accommodations for a sufficient number of patients for the instruction of medical students. There were but few adequately paid assistants and laboratory experts for research work, not to speak of the salary for a competent director in any way commensurate with his ability and time to be devoted to the subject if the work were to be properly supervised and conducted. While in some medical colleges, university departments are being organized in many branches of medicine, thus far only one or two have been devoted to gynecology and obstetrics. Prof. J. Whitridge Williams, of the Johns Hopkins University, is particularly emphatic on this point, for he states that from an extensive investigation he found that, in most of the medical schools, the department of obstetrics was poorly equipped, and the professor, the head of the chair, often regarded by his colleagues as being employed in an unworthy pursuit. Prof. Williams further examined into the work of the American Obstetrical Society since its foundation and, after a careful review of its transactions, regretfully confesses, that in the entire history of

the Society, he could find only three contributions that he could say were original or noteworthy: First, the introduction of the medicinal use of ergot by Dr. John Stearns, a country practitioner; second, the development of laparo-elytrotomy by the late Dr. T. Gaillard Thomas of New York; and third, a classic essay recognizing the contagiousness of puerperal fever by that distinguished anatomist and literatteur, your own beloved Dr. Oliver Wendell Holmes. The genius of Semmelweis, following Dr. Holmes' contribution, illuminated the etiology of puerperal fever and, by his method of preventing infection, laid the foundation for the almost perfect technic of to-day. Half a century ago Pasteur established the relation of germs with disease and demonstrated that wound infection and puerperal infection were identical. Yet notwithstanding these epoch-making discoveries and advance of knowledge, the mortality and morbidity in parturition, as evidenced by the health reports of various communities, have been but little diminished since the advent of the antiseptic era. That women at this day are permitted to entrust themselves to the hands of ignorant and untrained persons at the most important period of their lives would seem incredible were it not true. The results obtained by the mid-wife are no worse than those of the unqualified physician. Thousands of women die every year from puerperal infection and accidents of child-birth. Thousands more become chronic invalids and pass into the hands of the gynecologist. One-third of all the blindness of the world is due to badly treated ophthalamia neonatorum. These are convincing proofs of the lack of application of scientific principles to the practice of obstetrics. There is, however, another and comforting side to this dark picture for, in certain quarters, institutions have been founded and, as in this hospital, departments are added which are achieving splendid results in practice, and conducting a wonderful campaign of education for physicians and nurses. The study of bacteriology has been of incalculable value in showing the character of puerperal infection, which is mostly of external origin, due to ignorance and carelessness or lack of surgical cleanliness on the part of the obstetrical attendant, — therefore, largely preventable. The application of aseptic principles have made possible undreamed-of possibility in the surgery of obstetrics. The surgical and mechanical knowledge have developed certain definite principles governing complications, often discovered in the pregnant state. According to some available figures (Moran), it has been shown in certain registration areas that the minimum annual death rate from puerperal sepsis, in general practice, from 1900 to 1913, was 39.7 per cent. In 1906, the maximum was 47.8 per cent. and

the general average during that period was 44.8 per cent. In the British Isles, the death rate from puerperal sepsis varies between two and two and a half per thousand; — in Germany about two per thousand; — in the Kingdom of Saxony, about 1.5 per thousand; but in Basle appeared to be the lowest figures obtained, that between 1901 and 1903, the total deaths from puerperal infection, out of 10,497 births, amounted to 15 — a mortality of only 0.14 per cent. These latter figures afford a very striking illustration of the success which follows the complete organization of the attendance on puerperal women and the cooperation of medical men, nurses, and maternity hospitals. In the York Road Hospital, London, in 1910, there were 8,376 deliveries without a single death from infection; in the Rotunda Hospital in Dublin in 1907, 1908, 2,060 women were confined without a fatality from infection arising in the hospital. At the Sloane Maternity Hospital, New York, the first 20,000 cases, extending over a period of years, showed a mortality of 1.07 per cent. from sepsis — the last 8,000 cases, however, showed only 0.485. In this institution, maternal deaths from all causes, in the first 28,000 cases, was .99 per cent.— last 8,000 cases, 0.75 per cent.

At the Lying-In Hospital in the City of New York, an analysis of 60,000 cases shows a maternal mortality of .94 per cent., while 3,125 cases were attended at the homes of the patients with a loss of only two mothers. These cases are usually attended by students under the direction of a hospital expert. These figures are illuminating as to the mortality and morbidy of parturition and show the wonderful results of aseptic and antiseptic methods. More wonderful, too, when we consider that the cases which really swell the death rate are generally those patients brought to the hospital often in a dying condition as the result of ineffectual efforts at delivery, or the failure to recognize serious conditions on the part of unqualified physicians and ignorant mid-wives. In former years, the total maternal deaths were from 5 to 8 per cent.; today, by modern methods, even in institutions, they have been reduced to one or one-half of one per cent.

Hospitals of this character, with an obstetric annex, with private and semi-private accommodations, afford a medical haven for people of varying degrees of means which, at the same time, allow them to preserve their independence and suffer their pride not to be injured, and become a veritable God-send. In a case of acute appendicitis, requiring prompt operation, the typhoid patient, with a long drawn out illness, the successful treatment of which depends upon close observation and good nursing; — even the treatment of children requires no forcible

or elaborate argument, to have the resources of the hospital made use of, but, in the case of the pregnant woman, there is about that wonderful state so much sentiment of home, so much question as to the locality where a child shall be born, so great a dependence upon those near and dear, that this character of patient has been the most difficult to persuade to make use of the benefits of the hospital. In obedience to the power of sentiment, or prejudice, the young wife about to become a mother often elects to remain in perhaps a small apartment, to employ the services of perhaps a more or less incompetent physician, and frequently to depend upon the care of an untrained nurse. As is the custom under such conditions, she is assumed to be normally pregnant, and nothing different is suspected or discovered until some grave crisis occurs. Then, perhaps in a sad and hopeless condition, she is removed by an ambulance to a hospital, where from what has preceded, she may have passed beyond the help of medical or surgical skill. It is not perhaps wholly because she elected to remain at home that such a calamity has occurred, as witness the outdoor work of the Lying-In Hospital of the City of New York, in which 3,125 women were confined in a tenement district with a loss of only two maternal lives, but that she lacked a skillful obstetric attendant and a capable nurse. Another phase of this question is that, should complications occur in a case apparently normal and which requires prompt interference and help from obstetric surgery, many patients are lost by reason of lack of hospital or operating room facilities.

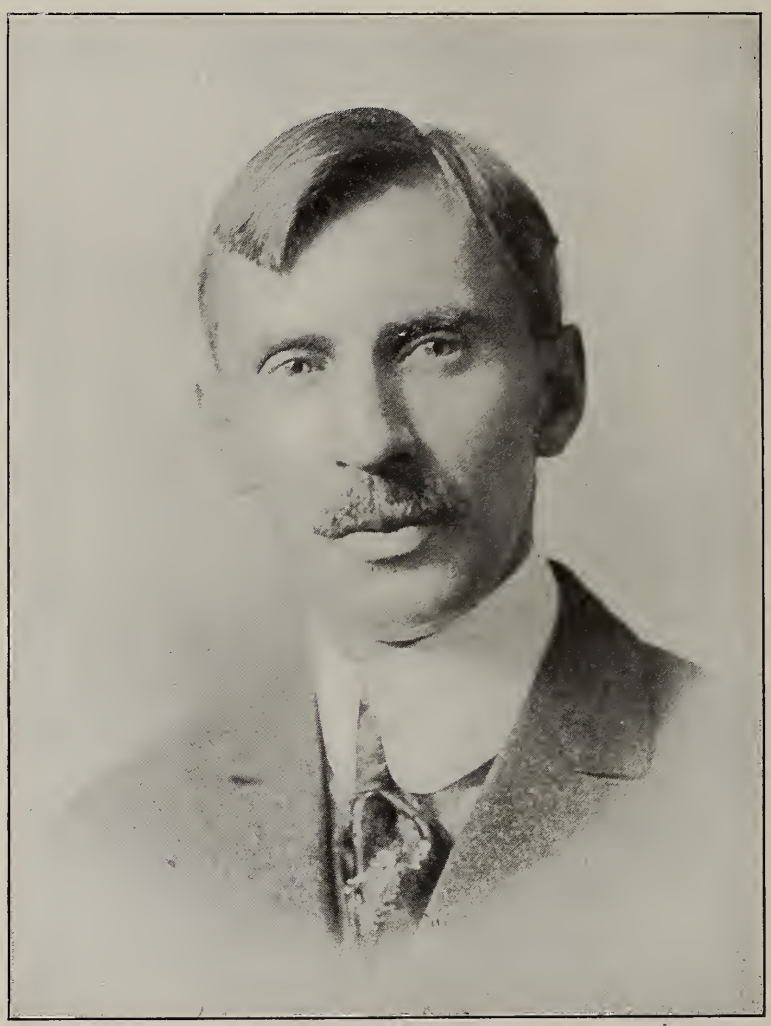
Notwithstanding that I have sorely tried your patience with this lengthy dissertation, I trust that I have at least made a few points clear: — The great necessity for higher training and education in the subject of obstetrics in our great medical schools; the urgent need for greater maternity hospital facilities for research work and the practical demonstration of the subject, which will train physicians and nurses to the highest state of efficiency in this branch of medicine. Heretofore, the patients who have received the best treatment were the very rich, who could convert a house into a hospital, employ all manner and kinds of high grade specialists, numerous nurses, and provide all the care, attention and knowledge that money could procure. At the other extreme was the patient in the charity hospital, who was subjected to what may be called a scientific hospital routine and care, which is the essential part of the work of every good medical institution. Between these two extremes, there were numerous gradations. Those who really suffered were the families of the self-respecting, independent, hard-working providers, of small or medium income who form so

large a proportion of the population of our great cities. Lack of means prevented them from availing themselves of the first proposition, and pride militated against the acceptance of the latter. In this democratic country, in matters of this kind, we cannot recognize social caste — the wage-earner making from $800 to $2,000 a year who dwells in a flat, has the same concern and desires the same skill in treating disease and caring for his dear ones as the multi-millionaire. In fact, in this country, with its sudden changing opportunities for men of brains and ability, the clerk of today may be the millionaire of tomorrow. A small manufacturer of a few years ago is a captain of industry today. The intellectual differences perhaps are not very great. It is a sad confession but, at the present time, money seems to make the greatest difference. Can we not then quite well understand the difficulty that the man of moderate means has had in the past in accepting what really was best for a sick member of his family, torn on the one side by anxiety to do the best, and pride on the other which prevented him from appearing in the role of one accepting charity?

Here we have the development of a complete hospital unit, so splendidly illustrated in this institution, — a feature entirely unique in this city, — with accommodations private and semi-private, variously graduated as to price so that even a patient of very limited means can enjoy all the privileges of private accommodations with all the resources of this excellent hospital. I understand further that physicians not connected with the hospital staff may have the privilege of using this division for the care and treatment of their own patients. What a liberal policy, what a blessed boon to your fellow-practitioner! The public will be educated out of the dark shadows of tradition and will soon realize the benefits of the institutional idea of treatment. Think of the responsibility, parents and physicians, when we contemplate the greatest phenomenon the human mind can grasp — the mystery of birth! Trace the evolution of the single impregnated cell which in the period of gestation develops into the human form divine, becomes the repository of a soul endowed with life and being, possessed of emotion and ideas, performs its function, loved and is loved, begets its kind. You doctors and nurses, what is your struggle for perfection in your art — what are your years of preparation, your anxieties and nightly vigils? How they fade into utter insignificance and oblivion when you know the pleasure of placing upon the throbbing breast of a young mother her first-born child! Let us pray you, kind friends, for your moral and material support, for this splendid undertaking, for from out its walls will go to the remotest corner of the earth nurses and physicians expertly

trained to do service in this very important part of their professional endeavors.

To the donor, whose generous act has made this beautiful addition possible, and who, with tender eyes as a parent watches the development of a lovely child, has seen the daily growth of the object of his affection, let us express our deep appreciation and lasting loving gratitude. For myself, in addition, I would



HENRY M. POLLOCK, M.D.

Superintendent of the Massachusetts Homoeopathic Hospital

congratulate him that the spirit of Almighty God has entered his heart and made him hear the cry of the needy and has turned his thoughts to the uplift and to service for his kind; that, in the autumn of his life, it has been his blessed privilege to recognize his stewardship. Let him find his present comfort in the simple joy of doing for men, and women yet unborn will live to bless his name.

HENRY M. POLLOCK, M.D.,
New Superintendent of the Massachusetts Homoeopathic Hospital

Dr. Henry M. Pollock, late Superintendent of Norwich (Connecticut) State Hospital, on February 1st formally assumed office as Superintendent of the Massachusetts Homœopathic Hospital, succeeding the late Dr. William O. Mann, whose death occurred March 9, 1915. In the months intervening from March to Dr. Pollock's appointment, Dr. Edwin R. Lewis (B.U.S.M. 1901), for some years Assistant Superintendent, has served as Acting Superintendent.

Dr. Pollock was born in Newark, New Jersey, and is a graduate of the Homœopathic Department of the University of Minnesota, class of 1897. He was appointed Assistant Physician at Fergus Falls (Minnesota) State Hospital in February, 1899, Dr. Mann, whom he succeeds in Boston, being at that time Assistant Superintendent. Dr. Mann left in October 1899 to become superintendent of the Massachusetts Homœopathic Hospital, succeeding the late Dr. I. Tisdale Talbot in office, and Dr. Pollock was appointed in Dr. Mann's place. He remained in office until May, 1904, when he resigned to become superintendent of Norwich State Hospital, then about to be opened. At the present time this Hospital is caring for 1230 patients (insane), as well as a State Farm for Inebriates, recently started, with fifty patients. Both institutions are under the same board of trustees. Dr. Pollock therefore brings to the Massachusetts Homœopathic Hospital long experience in institutional management, and the Trustees are to be congratulated on the wisdom of their selection of a Superintendent.

CLINICAL DEPARTMENT

The following case is of sociological and legal interest.

Case 2-F. The patient, a man of 61 years, was born in Massachusetts of run-out New England stock. His grandparents were apparently normal, though his paternal grandfather is said to have been miserly. His maternal grandmother was also miserly and of willful temperament. The patient's mother was peculiar, miserly, cruel and undoubtedly feeble-minded. She died of cancer. His father was shiftless, seclusive, quarrelsome and smoked much, — probably opium.

The patient was normal as a baby and young child. At two years of age he had some sort of illness in which he is said to have lain as if dead for a number of weeks. He went to grammar school and is said to have come in from recess, at

the age of twelve, so intoxicated that he had to be sent home. He left school at twelve and learned to make shoe laces, which later became his business.

At an early age he showed a marked tendency to accumulate money in the bank. He was opposed to tobacco, saying that those who used it died of "tobaccolosis." He would eat neither meat, fish, eggs nor fowl. He kept a pig in his room and insisted upon sleeping with it. At twenty he fell in love with his father's housekeeper and soon after developed an acute mania in which he was violent and destructive. This may have been caused by alcohol. At this time he was a patient at the Danvers State Hospital for three months. He made a fair recovery and was discharged improved. He then went to Utah for a time and got into some trouble there.

He dealt in real estate, showing good business ability and accumulating much money. He made his father deed his property to him at the point of a revolver and then immediately sold it and forced his father to go and live in a hut in the woods. He allowed his hair to grow very long, and was extremely unkempt and dirty. He believed that plaster was poisonous and that one should not sleep on a bed. Consequently he pulled the plaster off his hut and slept on the floor. He lived mostly on unleavened cornmeal cakes, though when at a neighbor's house he would eat anything, meat included, that was put before him. His hut was a gathering place for disreputable characters to whom he sold bad whiskey. However, he was not seen drunk at this period.

Later he was accused of assault on a nine-year old girl and was for this arrested and committed again to the Danvers State Hospital.

An old man in his town was brutally murdered and later one of his bank books was found in the patient's possession. He said that he found it in a dump and was never tried, but the murderer has never been apprehended. Before his commitment too he had caused to be printed blackhand and anarchistic flyers which were incoherent and foolish but were supposed to be directed against Mr. Rockefeller and the Standard Oil Co. He said that oil was developed from fat niggers who died ten thousand years ago and were buried in a bottomless pit, hence oil was poisonous, and he burned candles in his hut. He believed that no one should buy from Jordan & Marsh Company because the real name was Jord-hen, and hens were poisonous. He would not own stock in steel because it was backed by Mr. Carn-egg-e.

This man amassed about twenty-five thousand dollars which he had deposited under various names. He had an idea

that various persons, especially his guardian, were persecuting him and trying to get his money. He was continually making wills on old bits of paper which were utterly foolish and showed a decided lack of sensible purpose. Finally, at the instigation of his lawyers, he signed a will which they had drafted and in which he left all his possessions away from his only rightful heir.

He died at the age of sixty-three. Autopsy showed atrophy of the frontal lobes of the brain and marked cirrhosis of the liver.

Naturally the heir contested the will. It was not allowed in the lower court and was carried to the supreme court. It was on trial for fifteen days. Six alienists who had had him under care and observation more or less for seven years all agreed that he had suffered from paranoid dementia precox and was incompetent to make a will. Two alienists, one of whom saw him for an hour and the other not at all were called by the defense.

The court finally decreed that —

"The will was conceived and executed by the patient uninfluenced by moral force or coercion which disturbed his free agency and substituted his will for that of another; that the mind of the patient at the time of the execution of the will was in such state that he could originate the disposition of property, could recall to his mind the nature and amount of his property and could and did recall all persons who were justly dependent on his bounty or had other claims to his remembrance."

This we understand is the first case on record where the will of an acknowledged and committed insane man has been allowed to stand.

LABORATORY DEPARTMENT

The New England Medical Gazette, because of the rapid strides that are made in the scientific progress of medicine, will henceforth contain a Laboratory Department, through which it aims to keep its readers informed regarding advances in laboratory diagnostics. The discussion of various procedures is not to include technical details, but is hoped to give the practising physician the information he needs for an appreciation of the applicability and limitations of laboratory measures, as well as an intelligent interpretation of results obtained.

SYPHILIS

Wassermann Reaction. A negative test does not exclude syphilis. The importance of this fact, particularly in late cases, can not be over-emphasized. Since a positive test appears only

after generalization of the disease, it is absent in the first days of the primary sore. Generalization of the disease, that is, invasion of the blood and lymph streams, occurs much earlier, however, than is commonly believed, and, therefore, in many cases, a positive Wassermann may be obtained before clinical manifestations of the secondary stages appear.

There may be varying degrees of positivity. A strongly positive test, if reported by a competent serologist, means syphilis; a weakly positive one makes such a diagnosis probable but not absolute; a doubtful test may be present in a few other diseases, as cancer, malaria, tuberculosis, and scarlet fever, but should, nevertheless, warrant further investigation to exclude or establish the presence of a syphilitic process.

The number of positive tests obtainable increases rapidly from zero before generalization, to 95–100% of all cases at the height of the secondary stage. Then there is a gradual decline, until in the later cases the percentage of positives is not far from 60.

This means that the tertiary stage of syphilis, the stage that comprises the largest number of sufferers from this disease, gives negative tests in 40% of all cases. Tabes dorsalis and general paresis, in the past erroneously called para- and meta-syphilitic diseases, but now properly regarded as one form of tertiary syphilis, give positive tests, respectively, in about 60% and 80% of all cases.

A positive reaction may change to a negative or vice versa in a comparatively short time without treatment. Therefore, if two apparently contradictory reports are obtained, this does not necessarily mean incompetence of the serologist.

Lumbar Puncture and Examination of the Spinal Fluid. Because of the affinity of treponema pallidum for nerve tissue, and because of the usual consequent cerebrospinal involvement in tertiary syphilis, it is often possible to diagnose cases that have a negative blood test, by means of an examination of the spinal fluid. This is especially true of cases presenting cerebrospinal symptoms.

Lumbar puncture and examination of the spinal fluid should be resorted to in every suspected syphilitic exhibiting a negative Wassermann reaction. The Wassermann test, which may be positive in the spinal fluid when it is negative in the blood, the cell count, and the globulin reactions, are the usual procedures in a spinal fluid examination.

The normal number of cells per cmm. of spinal fluid varies from less than one to eight or, possibly, ten. In acute meningitis the number is greatly increased, in chronic inflammation there is a moderate excess. Syphilitic counts vary from normal to

two hundred or more cells, chiefly lymphocytes, per cubic millimeter, depending upon the amount and severity of meningeal involvement.

The globulin increase usually runs parallel with the cell count, since, like this, it is an indication of meningeal irritation. A large number of tests have been elaborated for the detection of an increase of this normally present proteid. In acute inflammations of the meninges, the increase is excessive; in chronic ones, including syphilis, it is moderate.

Luetin Test. A test that is not used as much as its apparent importance seems to warrant is the allergic skin reaction advocated by Noguchi and named by him the luetin test. An extract of treponema pallidum is injected into the skin of the upper arm. Papule or pustule formation with surrounding dermal hyperæmia constitute a positive reaction, no change or only very slight transient swelling and redness a negative one.

This test is particularly applicable in the tertiary stage, because at this time it is positive in about 90% of all cases. In the primary and secondary stages it is usually negative. Its frequency in tertiary cases is especially fortunate, for through its use many Wassermann negative cases of this stage will, no doubt, be correctly diagnosed.

With such an assortment of relatively reliable laboratory procedures at our command, it should be possible to make a positive or negative diagnosis of syphilis in nearly every case. If all of the tests are negative, it is highly improbable that syphilis is present; if all of them, or, for that matter, one of the major ones (Wasserman, Luetin) are frankly positive, the diagnosis of syphilis is certain.

Control of Treatment. Not for diagnosis alone, but also for prognostic control of antiluetic therapy should these measures be employed. Repeated blood examinations and an occasional lumbar puncture will give valuable information about the progress of the case, and its response to treatment, and, finally, with the luetin test, will tell whether or not a cure has been effected.

H. U.

REVIEWS

PATHOLOGY

Nanism. *Konne, Deutsche medizin. Wochenschrift, Sept. 23, 1915.*

Dwarfism, like gigantism, is now attributed to disturbance of glands with internal secretion. Two cases are reported, one a female, aged 18, whose growth had begun to show arrest at three, and whose mental processes were those of a child of

seven. The thyroids, para-thyroids, pineal body, and adrenals revealed no apparent abnormalities. X-ray of the hypophyseal region showed a normal sella turcica. In spite of this, the pituitary gland was considered at fault, because of the presence of glycosuria and of a positive Abderhalden test with hypophyseal substrate. The second case, a male Lilliputian, showed marked expansion of the sella turcica. At autopsy, a teratoma of the hypophysis was found.

H. U.

A Pathological Study of Syphilitic Aortitis and Its Serology. *Larkin, J. H., and Levy, I. J., Journal of Experimental Medicine, 1916. Vol. XXIII, page 25.*

About 90% of syphilitics dying fifteen or more years after the initial lesion have luetic aortitis, and in 60% of these this aortitis is the cause of death. The Wassermann reaction is positive in about 94% of patients suffering with syphilitic aortitis. The aortic involvement may vary from a merely microscopic perivascular lymphatic infiltration with practically normal macroscopic appearance of the vessel, to the typical gross picture of an advanced case. In the latter, the lesion is confined to the ascending and transverse portions of the aortic arch, with a sharp line of demarcation between the diseased part and the practically normal remainder of the aorta. The involved portion presents either a diffuse dilatation or an aneurysmal pouch. The intima has lost its normal glistening appearance and is covered with confluent, pearly white, elevated scar areas, with scattered yellowish areas of fatty degeneration.

The most common complication of syphilitic aortitis is an insufficient aortic valve. Pure aortic insufficiency, that is, one not complicated by disease of other valves, when not due to infectious endocarditis, is always luetic. Cardiac hypertrophy is not a complication of luetic aortitis, unless nephritis also exists.

H. U.

Tonsillitis and Rheumatism. *King, J. J., Medical Record, 1915, Vol. 88, p. 958.*

A report of six of a group of seventy-eight cases in whose tonsils was found a diplococcus to which the author gives the name Connellan-King diplococcus. Many of the cases suffered from arthritis. Vaccines made from this new (?) organism produced marked improvement in all but one case.

Although unreserved acceptance of this report without corroboration would seem hasty, some of the already known facts concerning the interrelation of the tonsils and arthritic

infection ought to be emphasized. Septic arthritis, commonly called rheumatism, is probably always caused by a focus of infection elsewhere in the body, most frequently in the tonsils. A very simple tonsilitis may be followed by complications (nephritis, endocarditis, myocarditis, arthritis) so serious as to endanger life. The infection may become latent and produce serious trouble weeks or months later, at a point far removed from its original site. In view of an occasional general sepsis coming on after tonsillectomy, it is necessary, whenever possible, to clear up the infection before operation. Vaccines will often aid in this.

H. U.

IMMUNOLOGY

Active Immunization with Diphtheria Toxin and Antitoxin. *W. H. Park, M.D., and Abraham Zingher, M.D., Jour. Am. Med. Asso. Vol. XLV, No. 26.*

Persons who give a positive Schick reaction and are exposed to diphtheria should be given either antitoxin alone or both antitoxin and a toxin-antitoxin. For general prophylaxis against diphtheria a mixture of toxin and antitoxin alone (from 85 to 90% of the L + dose of toxin to each unit of antitoxin) or toxin-antitoxin plus vaccine of killed diphtheria bacilli is recommended. The dose is 1 cc. of toxin-antitoxin and 1,000,000,000 bacteria injected subcutaneously and repeated three times at intervals of 6 or 7 days.

D. L. B.

Immunological Studies in Pneumonia. *Richard Weil, M.D., and John C. Torrey, M.D., Jour. Exp. Medicine, Vol. XXIII. Jan., 1916.*

To ascertain the susceptibility of guinea pigs to the pneumococcus these animals were passively sensitized with serum from human cases of pneumonia by subcutaneous injections of 4 cc. of inactivated serum. After from 2 to 6 days these pigs were tested for induced hypersusceptibility to the pneumococcus by means of an autolysate of a pneumococcus culture as an antigen. The uterus of a sensitized guinea pig was removed and suspended in a bath of Locke's Fluid. Upon the addition of the antigen the rhythmical curve of the organ changed markedly.

It was found that the blood contains sensitizing antibodies during the course of pneumonia, but that none are present after the crisis, in other diseases, or in a normal individual.

D. L. B.

The Wassermann Test in Medical Dispensary. *Josiah J. Moore, M.S., M.A., Jour. Am. Med. Asso. Vol. LXV, No. 23.*

The positive Wassermann test is of inestimable value in the diagnosis of syphilis in the medical dispensary. Owing to the unreliability of histories and the protean nature of the disease, a correct clinical diagnosis is extremely difficult in many cases. Dr. Moore found 56 positive reactions in routine examinations of 418 patients. Of these only 50 per cent gave a history of having syphilis. On the other hand, in the diagnosis of syphilitic condition in which false histories of the previous conditions have been obtained, repeated negative tests are considered sufficient.

Over 80 patients suffering from tuberculosis gave negative reactions. The writer believes that whenever a patient tested has tuberculosis and shows a positive test, the diagnosis of syphilis may be made, although this conclusion is open to the criticism that tuberculosis is one of those conditions which may occasionally give a positive reaction. A large series of malignant tumors also reacted negatively, which leads the writer to the assumption that whenever persistent positive Wassermanns are present in cases of malignant tumors, or those diagnosed as such, syphilis with carcinoma is present.

D. L. B.

THERAPEUTICS

The Use of Pituitary Extract as a Coagulant in Surgery of the Nose and Throat. *By Harry Kahn, M.D., and L. E. Gordon, M.D., Annals of Otology, Rhinology and Laryngology. Vol. XXIV, No. 2, June, 1915, page 322.*

The authors report a series of fifty cases of tonsil and adenoid operation in which pituitary extract was administered hypodermatically in the dose of twelve minims to children and fifteen minims to adults, not less than fifteen minutes before the intended anesthetic.

They determined the coagulation time and blood pressure at various intervals, using the Brodie and Russell coagulometer for the former and Stanton's mercury sphygmomanometer with Gerstley's modified cuff for children, for the latter; and draw the following conclusions:

1. The coagulation time of the blood is materially reduced by the hypodermic administration of pituitary extract (one third to one half).

2. The hemorrhage following the nasal and throat operations is much reduced, especially those on the turbinal bodies.

3. The effect on the blood pressure of children is variable, as follows: Systolic pressure was increased in 55.31 per cent of

the cases, reduced in 36 per cent, and unchanged in 8.5 per cent. Diastolic pressure was increased in 35.5 per cent of the cases; reduced in 35.5 per cent, and no change in 29 per cent. Pulse pressure was increased in 61 per cent, and decreased in 39 per cent of the cases. H. L. B.

DIAGNOSIS

A Preliminary Report on Pneumonia in Children with Special Reference to Its Epidemiology. *Godfrey R. Pisek, M.D. and Marshal C. Pease, M.D., Am. Jour. Med. Sc. Vol. CLI, No. 1, Jan.*, 1916.

In 1,000 cases of pneumonia in the Babies' Ward at the New York Post Graduate Hospital, a mortality of 34.3% was found. This proportion is probably higher than in private practice, but is the average for the mass of city dwellers in the locality of that hospital.

Bronchial pneumonia is preëminently a disease of the first two years of life, and after the third year is relatively uncommon, being replaced by lobar pneumonia, except in other infectious conditions. Lobar pneumonia during the first two years of life is more frequent than is commonly supposed. The infection of lobar pneumonia is always the pneumococcus, while broncho-pneumonia may be due to a number of others, such as the streptococcus or the influenza bacillus. If pneumococci are present in broncho-pneumonia they are usually of low virulence and resemble the organism found in the mouth. Pneumonia is the most common, most fatal, and least studied disease which occurs among children.

D. L. B.

Clinical Studies on the Respiration. II. Acidosis of Chronic Nephritis. *Francis W. Peabody, M.D. Archives of Internal Medicine, Dec. 15, 1915.*

In mild cases of uncomplicated nephritis in which the phenolsulphonephthalein test shows a normal renal function there is little or no acidosis. In advanced cases with a decreased phenolsulphonephthalein output there is some acidosis, but there may be no change in the alveolar carbon dioxide tension. Only in very advanced cases is the acidosis so marked as to cause a decrease in the alveolar carbon dioxide tension. In such cases the phenolsulphonephthalein output is usually below 10% in 2 hours. The acidosis of chronic nephritis is due to retention resulting from inefficient renal function. It is probably a constant feature of uremia, but only in a few cases is it sufficient to cause definite clinical symptoms, and in these cases the symptoms may be relieved by alkali therapy.

D. L. B.

Mild Diabetes in Children. *David Riesman, M.D. Am. Jour. of The Medical Sciences. Vol. CLI, No. 1. Jan., 1916.*

Dr. Riesman sets aside what he terms the hoary tradition of the fatality of diabetes in early life by citing a number of favorable cases which have come under his observation. He finds that there is a mild type of diabetes in childhood and adolescence which has the following features: (1) A tendency to occur in several members of the same family. (2) A moderate glycosuria augmented by nervous excitement and by other disturbing factors. (3) A non-progressive disease which may remain stationary or end in apparent recovery, but which in its general features corresponds to the so-called renal diabetes.

D. L. B.

OBITUARY

Dr. Charles M. Thomas

Dr. Charles M. Thomas, former Dean of Hahnemann Medical College of Philadelphia, died on January 15 of the present year at his country home near West Chester, Pa., after a lingering illness of two years, at the age of sixty-seven years.

Dr. Thomas was widely known and previous to his retirement three years ago enjoyed one of the largest practices in Philadelphia. He was considered an authority on surgery and ophthalmology, having at one time held those chairs at Hahnemann College. He was a member of the American Institute of Homœopathy and of the State and County Homœopathic Medical Societies.

Dr. Thomas was born in Watertown, N. Y., May 3, 1849. He was educated at the Central High School and the Hahnemann Medical College of Philadelphia. Later he studied surgery in Europe. He became Dean of the college in 1903 and held that chair until 1906. During his later years he devoted his attention exclusively to diseases of the eye and ear. Dr. Thomas is survived by a widow, three sons and three daughters.

Edgar Reeve Bryant, M.D.

Dr. Edgar Reeve Bryant, a well known surgeon of San Francisco, died on December 30 last in his fiftieth year, his death being the result of a terrible fall from the roof of the California Building in the Panama-Pacific Exposition on the closing night of the Exposition. He had climbed to the roof of the building, in company with friends, the better to see the beautiful illumination effects which marked "Finis" to the Exposition, and by some unaccountable accident fell through a skylight a distance of thirty-four feet.

Dr. Bryant was a native Californian and a graduate of the University of the Pacific, receiving the M.D. degree in 1889 and the A.M. in 1903. He was actively identified with homœopathic interests in California and was closely associated with Hahnemann Medical College of the Pacific, first as lecturer on anatomy, then assistant to the chair in surgery, and later Registrar of the College for a period of years.

Gertrude Gooding, M.D.

Dr. Gertrude Gooding of Bristol, R. I., died of angina pectoris at her home on January 2, aged sixty years. She was a graduate of Boston University School of Medicine, of the class of 1884, following graduation from Mount Holyoke College. She had been in practice first in Philadelphia, then in Newport, and lastly in Bristol, but ill health compelled her retirement about fifteen years ago. She was actively interested in the Labrador mission work of Dr. Wilfred T. Grenfell and was president of the British Section of the American Labrador Needlework Guild.

SOCIETIES

Program of the College Alliance Meeting, to be held at the Auditorium Hotel, Chicago, February 8, 1916

I. LABORATORY TEACHING

General Subject: Dean William A. Pearson, M.D., Hahnemann Medical College and Hospital of Philadelphia.
As to Chemistry: John C. Blake, Ph.D. (Professor of Chemistry) Hahnemann Medical College and Hospital of Chicago.
As to Bacteriology and Pathology: William H. Watters, M.D., Boston University School of Medicine.
As to Anatomy: Francis C. Ford, M.D., Hahnemann Medical College and Hospital of Chicago.
As to Materia Medica: Albert E. Hinsdale, M.D., College of Homœopathic Medicine, Ohio State University.

II. CLINICAL TEACHING

General Subject: Ralph H. Stewart, M.D., N. Y. Homœopathic Medical College and Flower Hospital.
As to Surgery: Charles E. Kahlke, M.D., Hahnemann Medical College and Hospital of Chicago.
As to Internal Medicine: Homer V. Halbert, M.D., Hahnemann Medical College and Hospital of Chicago.
As to Materia Medica: Willis A. Dewey, M.D., Homœopathic Medical School, University of Michigan.
As to Obstetrics: Gilbert FitzPatrick, M.D., Hahnemann Medical College and Hospital of Chicago.

III. MATERIA MEDICA TEACHING

General Subject: William A. Boericke, M.D., Hahnemann Medical College of the Pacific.
The Text Book: Clark Hetherington, M.D.
The Lecture: Dean George Royal, M.D., College of Homœopathic Medicine, State University of Iowa.

The Repertory: Rudolph F. Rabe, M.D., N. Y. Medical College and Flower Hospital. (Homœopathic)
The Key Note Symptoms: Thomas H. Hudson, M.D., Southwest School of Medicine and Hospital.

IV. PROPAGANDISM

General Subject: Dean John P. Sutherland, M.D., Boston University School of Medicine.
As to the Faith: Dean W. B. Hinsdale, M.D., Homœopathic Medical School, University of Michigan.
As to Advertising: Dean Claude A. Burrett, M.D., College of Homœopathic Medicine, Ohio State University.
As to the Getting of Students: Dean Cornelia C. Brant, M.D., N. Y. Medical College and Hospital for Women.

Homœopathic Medical Society of the State of New York

The next annual meeting of the Homœopathic Medical Society of the State of New York, will be held in Rochester, April 11, 12, 1916.

The invitation of Rochester to the State Society to hold its next annual meeting in that city has been accepted. This will be the first time annual meeting of the Society to be held elsewhere than in the city of Albany. The Executive Board and the local committee promise a good and enthusiastic meeting, for matters of great importance to the profession will be brought before the society for discussion and action. President J. Ivimey Dowling has been engaged in an active propaganda throughout the State, and reports most favorably.

Much interest in the internal affairs of the organization has been aroused and is being manifested in many ways, notably in the recent election of officers. An opposition ticket to the one presented by the nominating committee was presented by petition, and strong efforts have been made to carry it to election. The platform upon which these candidates are appealing for votes comprises a demand for but one scientific meeting to be held each year, a provision for a progression of vice-presidents in office and the assumption by the vice-presidents of the duties formerly performed by the various bureaux. At the date of this writing, the result of the election has not been announced.

BERT B. CLARK, *Secretary.*

Boston District of the Massachusetts Homœopathic Medical Society

The annual meeting of the Boston District of the Massachusetts Homœopathic Medical Society was held on Thursday evening, January 6, in the Evans Memorial, retiring president Dr. Frederick W. Colburn in the chair.

The following names were proposed for membership in the Society:
Dr. W. W. Walker of West Somerville.
Dr. George H. Coffin, Massachusetts Homœopathic Hospital, Boston.
Dr. Augusta N. Carlson, Boston.

The report of the election committee gave the following list of officers for 1916:

President: Benjamin T. Loring, M.D., Watertown.
1*st Vice President:* Wesley T. Lee, M.D., Boston.
2*nd Vice President:* Susan M. Coffin, M.D., Boston.
Secretary: Harold E. Diehl, M.D., Quincy.
Associate Sec'y: David L. Belding, M.D., Boston.
Auditor: George D. Bliss, M.D., Dorchester.
Censors: Frederick W. Colburn, M.D., Thomas E. Chandler, M.D., Edward S. Calderwood, M.D.

The retiring president than introduced his successor, Dr. Loring, who made brief remarks, then announced the second and social part of the evening's program, an entertainment by the Boston Quintette (male) which was greatly enjoyed and warmly applauded. One member of the Quintette being ill and unable to be present, his place on the program was taken at very

short notice by Mrs. Gertrude Diamond Holt, soprano. Her rendering of "The Rosary" with the accompaniment of male voices was especially beautiful, as was the last selection, the sextette from "Lucia."

At about 9.30 the company adjourned to the Medical School building where a light collation was served, bringing to a close a most enjoyable evening.

PERSONAL AND GENERAL ITEMS

Dr. George D. Bliss of Dorchester (B.U.S.M. 1881) has been appointed by the State to the Board of Trustees of the Massachusetts Homœopathic Hospital.

Dr. Winifred Woolls Devine (B.U.S.M. 1908) has been appointed school physician to the city of Lowell, Massachusetts. Dr. Devine is the first woman to receive this appointment.

Dr. Elizabeth Wiltshire Wright (B.U.S.M. 1909) has removed from 609 West 137th St. to 620 West 116th St., New York City.

Dr. Herbert F. Gammons (B.U.S.M. 1909) has been given appointment at the State Sanatorium for Tuberculosis at Meriden, Connecticut.

Dr. Helen B. Todd (1914 B.U.S.M.) has opened an office at 244 East Main St., Meriden, Connecticut.

Dr. Frank L. Jones (B.U.S.M. 1914) is substituting for a few weeks for Dr. George F. Woodbury (B.U.S.M. 1899) of Patten, Maine, while the latter is taking post-graduate work.

The Massachusetts General Hospital is to hold a series of five clinics on Sarcoma, conducted by Dr. Torr Wagner Harmer, on Mondays beginning February 7, from 11 to 1 o'clock, and continuing through March 6. The course is designed for general practitioners, and is to be given in connection with the Harvard Graduate School of Medicine. Attendance is not limited and the fee is to be five dollars for the course.

Miss Caroline L. Marston, long and affectionately known to the older homœopathic physicians of Boston and vicinity as "Aunt Carrie," died at "Sunnybank," Watertown, the convalescent home of the Massachusetts Homœopathic Hospital, on January 6 at the age of eighty-four. She has been a patient at the Home for several years, and until the failure of her health had been identified with the Hospital since the time when it occupied the old Burroughs Place quarters, off Hollis Street, Boston. When the Hospital was moved to East Concord Street, in 1874, Miss Marston and Mrs. Wragg went with it as the nursing force, — a sufficient one in those early days.

Announcement is made of the marriage of Dr. Cosa D. Haskell (B.U.S.M. 1913) of Fergus Falls State Hospital, Minnesota, to Mr. Thomas J. Uhrig, on December 12, 1915.

Dr. Henry H. Nadig (Chicago Homœo. Med. Coll., 1898), formerly of Colebrook, N. H., has removed to Stamford, Conn.

Dr. Clyde Bartlett (B.U.S.M. 1915) of Marion, Mass., was married on January 20 to Miss Maude B. Moulton of Natick, Mass., Dr. Bartlett's former home.

Dr. Howard P. Bellows, Professor of Otology in Boston University School of Medicine, sailed from New York on January 27, for a trip to Cuba, to be away from Boston about four weeks. During his absence his practice will be cared for by Dr. Frederick W. Colburn.

Dr. Sayer Hasbrouck (B.U.S.M. 1882) has removed from Providence, R. I., to Hamilton, Bermuda.

Dr. Florence Nightingale Hamisfar-Aitchison (class of 1882 B.U.S.M.) is located at 1430 Berwyn Avenue Chicago.

Dr. Araphena B. Drake, for more than fifty years in the practice of homœopathic medicine in South Boston, died at her home on January 21, aged eighty-seven years.

BOSTON UNIVERSITY CALENDAR AGAIN

The Boston University calendar for 1916, issued by the Women Graduates' Club, is on sale at the bookstore of the College of Liberal Arts, 688 Boylston St., Boston, and also at the Medical School office, 80 East Concord St.

The calendar is attractively arranged in book form of about 400 pages, with a favorite selection for each day from Faculty and alumni of the University. Price one dollar. The proceeds from the sale of this calendar are to be applied to the permanent fund of the Medical School. If you have not already bought one, send a dollar to the office of Boston University School of Medicine, or to Dr. Clara E. Gary, 416 Marlboro St., Boston, and the book will be delivered to you.

The Civil Service Commission of the State of New York is to hold on February 26, 1916, for the position of assistant physician, homœopathic, the examination intended to provide eligibles for this position in the State Hospitals at Gowanda and Middletown. Salary $1,200, increasing $100 each year to $1,600, with maintenance, including quarters, board, laundry, etc. The examination is open to men and women who are licensed medical practitioners in New York State who have graduated from a registered medical school and who since graduation have had one year's experience on the resident medical staff of a general hospital, or as medical interne or clinical assistant in a State Hospital or institution, or have been engaged for three consecutive years in the practice of medicine. Open also to non-residents.

For application blank and further information address,
State Civil Service Commission, Albany, N. Y.

See page 18 of advertising section for special offer of *Harper's Weekly* in combination with the *New England Medical Gazette*

January 8, 1916.

New England Medical Gazette: —

Recently many appeals have come to me relative to procuring natural brown rice (variously known as unpolished rice, unmilled rice, natural brown rice). Some two years ago when this matter was agitated, S. S. Pierce Company of Boston added natural brown rice to their stock under the name of Comet Rice and until very recently they have been able to supply all demands. This rice comes from the Seaboard Rice Milling Company, Galveston, Texas, and in the congestion of freight traffic in the past several weeks, shipments have failed of delivery. It is hoped that from now on there will be an abundant supply available, but in case of failure may I announce that rice of this kind may be obtained by parcel post from Great Valley Mills, Paoli, Penn., in such lots as may be desired; — ten-pound bags are shipped very expeditiously and cheaply.

Very truly,

HORACE PACKARD.

And This in Cultured Boston!

A Boston schoolteacher has recently received a note from a pupil's mother which reads as follows:

"Willie tells me you've begun asking him where's his glasses. I want to tell you he has had his adams and tonsils removed and he don't need them."

TYPHOID FEVER REDUCED IN RURAL COMMUNITIES

Reduction in typhoid fever and improvement in sanitary conditions have followed the intensive investigations of rural communities carried on by the United States Public Health Service in cooperation with local and State health officers, according to the annual report of the Surgeon General of that Service. During the past fiscal year 16,369 rural homes in eight different states were visited and many of them re-visited. In each of these homes information was obtained as to the prevalence of disease and insanitary conditions and a complete sanitary survey of the premises conducted. This was followed by reinspections to determine if remedial measures had been instituted. In but a relatively small percentage of the cases did the persons concerned, after having their attention drawn to the danger of a particular unhygienic condition, fail to inaugurate corrective measures. Stimulus was given to the work by means of public lectures, the formation of active sanitary organizations, and the enlisting of all public spirited citizens in the campaigns for reform. Public buildings were also inspected and local authorities given expert advice in solving such sanitary problems as the disposal of excreta, the prevention of soil pollution, and the maintenance of pure water supplies.

The surveys made during the year 1914 had shown that in rural communities less than one per cent of the homes had sanitary toilets and that more than fifty per cent of the people were using water from polluted sources. This condition, according to the Public Health Service, made the rural sanitation question loom large among the matters vitally affecting the welfare of the nation. Following these studies and as a result of the interest aroused, the typhoid fever rate, an excellent indicator of the sanitary status of a community, has in some places frequently been cut to one quarter of its previous figure. In Berkeley County, West Virginia, the cases of typhoid fever were reduced from 249 to 40 in one year. In Orange County, North Carolina, the rural sanitation campaign resulted in a reduction of the cases from 59 to 17.

The tangible results of operations in rural sanitation indicate that marked advancement in maintaining hygienic and satisfactory surroundings in country districts is possible by the application of the common principles of preventive medicine. Insanitary conditions exist largely because they are not known to be such. Actual demonstrations of their harmfulness, together with definite recommendations for their correction, remain one of the most gratifying and successful methods for instituting reforms and has been, in the experience of the Public Health Service, invariably accompanied by definite and measureable results.

PRINCIPAL CAUSES OF DEATH

Census Bureau's Summary of the Statistics for the Registration Area in 1914

Washington, D. C., January 16, 1916. — According to a preliminary announcement with reference to mortality in 1914, issued by Director Sam. L. Rogers, of the Bureau of the Census, Department of Commerce, and compiled by Mr. Richard C. Lappin, chief statistician for vital statistics, more than 30 per cent of the 898,059 deaths reported for that year in the "registration area," which contained about two-thirds of the population of the entire United States, were due to three causes — heart diseases, tuberculosis, and pneumonia — and more than 60 per cent to eleven causes — the three just named, together with Bright's disease and nephritis, cancer, diarrhœa and enteritis, apoplexy, arterial diseases, diphtheria, diabetes, and typhoid fever.

The deaths from heart diseases (organic diseases of the heart and endocarditis) in the registration area in 1914 numbered 99,534, or 150.8 per 100,000 population. The death or mortality rate from this cause shows a marked increase as compared with 1900, when it was only 123.1 per 100,000.

Tuberculosis in its various forms claimed 96,903 victims in 1914, of which

number 84,366 died from tuberculosis of the lungs (including acute miliary tuberculosis). As a result of a more general understanding of the laws of health, the importance of fresh air, etc., due in part, no doubt, to the efforts of the various societies for the prevention of tuberculosis, there has been a most marked and gratifying decrease during recent years in the mortality from this scourge of civilization. In only a decade — from 1904 to 1914 — the death rate from tuberculosis in all its forms fell from 200.7 to 146.8 per 100,000, the decline being continuous from year to year. This is a drop of more than 25 per cent. Prior to 1904 the rate had fluctuated, starting at 201.9 in 1900. Even yet, however, tuberculosis has the gruesome distinction of causing more deaths annually than any other form of bodily illness except heart diseases, and over 40 per cent more than all external causes — accidents, homicides, and suicides combined.

Pneumonia (including bronchopneumonia) was responsible for 83,804 deaths in the registration area in 1914, or 127 per 100,000 — the lowest rate on record. The mortality rate from this disease, like that from tuberculosis, has shown a marked decline since 1900, when it was 180.5 per 100,000. Its fluctuations from year to year, however, have been pronounced, whereas the decline in the rate for tuberculosis has been nearly continuous.

The only remaining death rate higher than 100 per 100,000 in 1914 was that for Bright's disease and acute nephritis, 102.4. The total number of deaths due to these maladies in 1914 was 67,545, more than nine-tenths of which were caused by Bright's disease and the remainder by acute nephritis. The mortality from these two causes increased from 89 per 100,000 in 1900 to 103.4 in 1905, since which year it has fluctuated somewhat.

Next in order of deadliness come cancer and other malignant tumors, which filled 52,420 graves in 1914. Of these deaths, 19,889, or almost 38 per cent, resulted from cancers of the stomach and liver. The death rate from cancer has risen from 63 per 100,000 in 1900 to 79.4 in 1914. The increase has been almost continuous, there having been but two years — 1906 and 1911 — which showed a decline as compared with the years immediately preceding. It is possible that at least a part of this indicated increase is due to more accurate diagnoses and greater care on the part of physicians in making reports to registration officials.

Diarrhœa and enteritis caused 52,407 deaths in 1914, or 79.4 per 100,000. This rate shows a marked falling off as compared with the rate for the preceding year, 90.2, and a very pronounced decline as compared with that for 1900, which was 133.2. Nearly five-sixths of the total number of deaths charged to these causes in 1914 were of infants under 2 years of age.

Apoplexy was the cause of 51,272 deaths, or 77.7 per 100,000. The rate from this malady has increased gradually, with occasional slight declines, since 1900, when it stood at 67.5.

Arterial diseases of various kinds — atheroma, aneurism, etc. — caused 15,044 deaths, or 22.8 per 100,000, in the registration area.

No epidemic disease produced a death rate as high as 18 per 100,000 in 1914. The fatal cases of diphtheria and croup — which are classed together in the statistics, but practically all of which are of diphtheria — numbered 11,786, or 17.9 per 100,000, in that year, the rate having fallen from 43.3 in 1900. This decline of nearly 59 per cent is relatively greater than that shown by any other important cause of death. The rate has not fallen continuously, but has fluctuated somewhat from year to year.

Diabetes was the cause of 10,666 deaths, or 16.2 per 100,000. The rate from this disease has risen almost continuously from year to year since 1900, when it was 9.7 per 100,000.

The mortality rate from typhoid fever has shown a most gratifying decline since 1900, having decreased from 35.9 per 100,000 in that year to 15.4 in 1914, or by 57 per cent. This decline has been almost as great, relatively, as that for diphtheria, and has been greater than that for any other principal cause of death. The total number of deaths due to typhoid fever in 1914 was 10,185. The marked decrease in the mortality from this disease gives emphatic testimony to the effectiveness of present-day methods, not only of cure but of prevention. The efficacy of improved water-supply and sewerage systems, of the campaign against the fly, and of other sanitary

precautions is strikingly shown by the reduction of the typhoid mortality rate to the extent of more than five-ninths in 14 years.

WHOOPING COUGH, MEASLES, AND SCARLET FEVER

The principal epidemic maladies of childhood — whooping cough, measles, and scarlet fever — were together responsible for no fewer than 15,617 deaths of both adults and children, or 23.7 per 100,000, in the registration area in 1914, the rates for the three diseases separately being 10.3, 6.8 and 6.6, respectively. In 1913 measles caused a greater mortality than either of the other diseases, but in 1914 whooping cough had first place. In every year since and including 1910, as well as in several preceding years, measles has caused a greater number of deaths than the much more dreaded scarlet fever. The mortality rates for all three of these diseases fluctuate greatly from year to year. The rates for measles and scarlet fever in 1914 were the lowest in 15 years, while that for whooping cough was considerably above the lowest recorded rate for this disease, 6.5 in 1904, although far below the highest, 15.8 in 1903.

RAILWAY AND STREET-CAR ACCIDENTS

Deaths due to railway accidents and injuries totaled 7,062, or 10.7 per 100,000. This number includes fatalities resulting from collisions between railway trains and vehicles at grade crossings. The death rate from railway accidents and injuries is the lowest on record and shows a most marked and gratifying decline as compared with the rate for 1913, which was 13 per 100,000, and a still more pronounced drop from the average for the five-year period 1906–1910, which was 15 per 100,000.

Deaths resulting from street-car accidents and injuries numbered 1,673, or 2.5 per 100,000. This rate, like that for railway fatalities, is the lowest on record and shows a material falling off as compared with 1913, when it was 3.2, and as compared with the average for the five-year period 1906–1910, which was 3.7.

SUICIDES

The number of suicides reported in 1914 was 10,933, or 16.6 per 100,000 population. Of this number, 3,286 accomplished self-destruction by the use of firearms, 3,000 by poison, 1,552 by hanging or strangulation, 1,419 by asphyxia, 658 by the use of knives or other cutting or piercing instruments, 619 by drowning, 225 by jumping from high places, 89 by crushing, and 85 by other methods.

ESTABLISHMENT OF A DEPARTMENT OF HYGIENE, SANITATION AND EPIDEMIOLOGY

The H. K. Mulford Company announces the establishment of a department of Sanitation and Epidemiology, under the executive management of Thomas W. Jackson, M.D., expert in preventive medicine, sanitation and the study and control of epidemic diseases.

The most important subjects before the American people at the present time relate to the public health. Work in this field is frequently beyond the reach of the existing health and sanitary departments of the various municipalities and smaller towns, on account of limited appropriations.

The department does not propose to enter into competition with the constituted public health authorities, Local, State or Federal, but to aid and assist these authorities in every possible way. The work is essentially one of service and education, and will be developed along these lines. The resources and equipment of the Mulford Laboratories, Chemical and Bacteriological, will be utilized, thus placing at the disposal of the New Department the entire laboratory facilities and expert services of the H. K. Mulford Company.

HEALTH NEWS
Issued by the United States Public Health Service

Great things have small beginnings. A spectacle maker, Jan Leippersheim by name, living in Holland, invented a crude magnifying glass in 1608. Anton von Leuwenhoek, born in Delft, this day 1632, improved this clumsy toy and evolved a compound microscope which has become the most valuable sanitary tool yet devised by man. That first microscope was as far removed from the high-powered instrument of today as is the modern American from the original caveman. Yet by this faulty means, Leuwenhoek, naturalist, physician and botanist, discovered certain minute bodies which he called "little animals." He made drawings of these and today we know them for those useful friends and malignant enemies of man — bacteria.

We spend our days surrounded by another world, a living world of countless billions, invisible to the naked eye, silent, tireless, destroying the living, consuming the dead, useful in the sciences and arts, yet often followed by a train of sickness, suffering and death. A curious paradox this, yet bacteria are at once the greatest friends and the fiercest foes of every living thing. Not animals, as Leuwenhoek thought, but vegetables, bacteria consist of two classes, those which prey on living things and those which reduce to their original minerals, fluids and gases, every dead thing which they attack. They are of various shapes, round like marbles or straight like little sticks. They grow in clusters, chains, and in pairs. They are ubiquitous. The dusty air, the earth and its waters, the interior of animals and plants all contain them. They cause the fermentation of foods, they make cheese, they produce disease and some of them when killed and injected into an animal protect it against the very disease which they would have produced if living. Many of them live as harmless creatures in the body of an animal for years, only to kill their host when the opportunity presents. Their study has given birth to a science, bacteriology, one of the foundation stones of public health.

Their mere presence does not necessarily produce disease. Recalling the parable of the sower, some bacteria fall by the wayside, some fall upon stony places, and some fall in good ground and bring forth the fruit of suffering, perhaps of death. A normal, temperate life, free alike from the gluttony of idleness or overwork, the sound mind in the sound body, a cheerful, normal environment, these form the stony places in which bacteria take no root. The depraved appetites of mind and body, the dark and sordid atmosphere of penury, the nerve racking and strength undermining trades, these prepare the good ground.

The great weapon against bacteria is cleanliness. The mastery over premature death lies to a great measure in our own hands. Clean persons, clean cities, clean workshops and clean lives are the makers of public health. The United States Public Health Service and other sanitary bodies of this country are gradually bringing these facts home to the general public. In this way cleanliness is becoming more general, and the span of life in America is gradually being lengthened. All of which is largely due to the microscope.

The U. S. Public Health Service issues various publications, each having a specific purpose. The annual report of the Surgeon General undertakes to detail to Congress and through it to the citizens of the United States, what has been accomplished with the funds which they have appropriated for the Public Health Service, and to outline plans for the future. The bulletins of the Hygienic Laboratory are intended for the technical professional reader. The Public Health Bulletins deal in a more popular way with public health subjects. The Public Health Reports are a weekly resume of sanitary conditions throughout the world. The Health News attempts to present to the busy reader through the medium of the newspapers, short, pithy articles on personal hygiene and public sanitation. In order that the Health News may accomplish this, it is necessary that the Service have the co-operation of the press throughout the country. If you like these articles and use them, will you please send a marked copy or a clipping thereof to the Surgeon General, U. S. Public Health Service, Washington, D.C.? Suggestions as to timely articles will be appreciated. The Public Health Service believes that the

only way to affect permanent sanitary betterment throughout the United States is by the inculcation of the sanitary habit on the American people. This is not only practical and economical but it is also in keeping with the basic principles upon which our form of government rests.

INFORMATION REGARDING THE STEREOPTICON LOAN LIBRARY OF THE U. S. PUBLIC HEALTH SERVICE.

IN CORRESPONDENCE RELATIVE TO THE STEREOPTICON LOAN LIBRARY ADDRESS THE SURGEON GENERAL, U. S. PUBLIC HEALTH SERVICE, WASHINGTON, D. C. AND REFER TO THE LETTERS D. Q.

The stereopticon loan library established by the United States Public Health Service consists of over 2,000 views, the majority of which are original, dealing with the aspects of various public health problems. Additions are constantly being made to the collection. The slides are classified by diseases or subjects, the following being the respective divisions of the library:

Alaska. Eighty-three views depicting living conditions in the territory of Alaska, the type of villages and the diseases from which the natives suffer.

Children and Children's Diseases. The various eruptive diseases of children are shown in 50 views. Chiefly of interest to physicians.

Health Exhibits. Over 90 photographic slides of the exhibit of the United States Public Health Service at the Panama-Pacific International Exhibition. Many of these views explain the means of dissemination of different diseases, the mortality therefrom and the value of preventive measures. All are original.

Hookworm. The geographic distribution of the disease, its economic importance, the life history of the parasite its invasion of human, tissue and the resulting effects, are demonstrated in a series of over 90 slides.

Indians. Housing and living conditions among American Indians. Shown in 50 views.

Leprosy. Forty-five slides depicting the disease. Principally of service to physicians.

Living Conditions. Contains a relatively small number of slides. See other subjects.

Malaria. Prevalence of the disease, the malarial parasites, larval, pupal and adult developmental stages of mosquitoes, breeding places, methods of extermination, including oiling, drainage and the types of fish destructive to larvæ. Prevention of the disease by screening and the use of quinine. Two hundred and seventy-five views.

Milk. Eighty views showing tuberculous cows, proper and improper stabling, care and treatment of dairy herds, methods of obtaining pure milk, spread of milk-borne epidemics and the value of sanitary measures.

Miscellaneous Subjects. Sewage disposal, fumigation and cleaning of railway cars, and views relating to Rocky Mountain Spotted Fever.

Mouth Hygiene. Twelve slides showing the development of the teeth.

Parasites and Organisms. Over 200 views of the common organisms causing the diseases of man, including different types of water organisms. Also the developmental stages of fleas, lice, flies, and disease bearing vermin.

Pellagra. Statistical data, geographical distribution and the lesions of the disease presented by 60 photographic slides.

Plague. Perhaps the most complete collection of original plague slides extant. Practically every aspect of plague prevention is demonstrated, including the eradication of rodents and squirrels, methods of rat-proofing, ship fumigation, the examination and classification of rats, the plague organism, and the relation of fleas to the spread of the disease. Over 500 views.

Rural Schools. Not yet complete. Ten slides.

Service General. The activities of the United States Public Health Service depicted in 320 views. Quarantine vessels and stations, methods of fumigation, the examination of passengers, detention barracks and quarantine procedure. The mental and physical examination of immigrants, types

of immigrants, and immigration stations. Marine Hospitals, including the tuberculosis sanatorium at Fort Stanton, New Mexico.

Smallpox. Ninety slides illustrating the eruptive stages of the disease, the protection afforded by vaccination and the lesions thereof.

Trachoma. The disease in its acute and chronic stages, and such effects as pannus, entropion and blindness. Trachoma among the American Indians and the relief work of the Public Health Service in the mountains of Kentucky are also shown. One hundred and twenty slides, many of which are colored.

Tropical Diseases. Incomplete. Filariæ, trypanosomes, and intestinal parasites illustrated, together with the common infections of the tropics. Forty views.

Tuberculosis. One hundred slides showing the economic loss from tuberculosis, susceptible races, the tubercle bacillus, pathological conditions in the lungs, the relation of the disease to improper housing and the causes predisposing to infection. Also the methods of care, precautions to be exercised and the benefits of sanatorium treatment.

Typhoid Fever. Of great public health interest. The role of uncleanliness, infected milk, polluted water, improper sewage disposal, and flies, in the dissemination of the infection. Methods of prevention, including proper care of milk supplies, avoidance of water pollution, and the prevention of fly breeding; 350 views.

Yellow Fever. Mosquitoes in different stages of development, preventive measures, including detention camps. The discoverers of the means of transmission of the disease.

How to Use the Stereopticon Loan Library

The slides are loaned to physicians, health organizations, educators, welfare workers, and others, without cost. Persons desiring slides should advise the Bureau as to what subjects they are interested in, so that the proper catalogs may be forwarded. The slides should be selected by number, and the request made upon the application blank. If desired, the Public Health Service will undertake to make the selection, provided the applicant will state what he wishes to illustrate. There is no arbitrary limit within which the slides are to be returned, but as the demand far exceeds the supply, it is expected that they will be returned at the earliest possible moment. Stereopticon lanterns are not loaned, but as the slides are of standard size, $3\frac{1}{4}$ by 4 inches, any lantern may be used. It is expected that slides broken by careless handling or packing will be replaced; these to be ordered from the Government contractor by the United States Public Health Service and the bill therefor to be paid by the borrower.

It is requested that in returning the slides a letter of transmittal be forwarded, stating the approximate number of persons to whom the views have been shown. The container should be labelled with the name and address of the sender, and returned by express prepaid or by mail. Photographs, from which it is possible to obtain slides of public health interest, will be gladly received and promptly returned.

PAMPHLETS RECEIVED

The Internal Secretions — Some Clinical Aspects Illustrated. By Wm. Seaman Bainbridge, A.M., Sc.D., M.D., C.M., New York City.

The Cure of the "Incurable." A Plea for More Accurate Diagnosis and More Careful Prognosis in Malignant Disease. By Wm. Seaman Bainbridge, A. M., Sc.D., M.D., C. M., New York City.

THE NEW ENGLAND MEDICAL GAZETTE

VOL. LI MARCH, 1916 No. 3

Books for review, exchanges and contributions — the latter to be contributed to the GAZETTE only and preferably to be typewritten — personal and news items should be sent to THE NEW ENGLAND MEDICAL GAZETTE, 80 East Concord Street, Boston. Subscriptions and all communications relating to advertising or other business should be sent to the Business Manager, 80 East Concord Street, Boston, Mass.

THE GAZETTE does not hold itself responsible for the opinions expressed by its contributors. Reprints furnished at cost.

HOW NOT TO DO IT

Under the signature of "S" appears an interesting contribution from Paris to the *Boston Medical and Surgical Journal* bearing date of December 25, 1915. The writer has made a number of previous contributions to this *Journal*, all of which bear the ear marks of firsthand information or actual personal observation; hence they may be taken as official or dependable statements. In the letter of December 25th, "S" describes in an interesting style the surgical care given the wounded soldiers in French field and base hospitals, and then proceeds to give some inside information regarding the medical care of the sick soldiers who are not in any sense surgica patients. He says:

"But when we come to the medical side of the subject we find a very different state of affairs. . . . But there has been one unquestionable blot on the picture, and a serious one, — the handling of the army *medical* cases. This has really been something too awful, and if the history of this side of the question ever comes to be written, it could be fitly entitled: A treatise on how *not* to take care of the medical cases of an army in time of war. The fact seems to be that the organization of that branch was hopelessly bad even in time of peace, and apparently so utterly bad that it broke down so completely that every one connected with it is so thoroughly dis-

heartened as to be incapable of an effort to improve it so long as the war lasts. Later on it will have to be made over from the bottom up."

The words "This has really been something too awful" might be interpreted variously, but as we already have had some information upon the subject it is not difficult to understand just what is meant. It means that the therapeutic nihilism which has gradually undermined old school medical treatment has become so widespread, that when this so-called "system" was suddenly called upon to be of some actual use in a very critical period it broke down entirely, so much so that "everyone connected with it is so thoroughly disheartened as to be incapable of an effort to improve it."

Could any one ask for a more complete and outspoken acknowledgment of the failure of old school medical treatment to meet present day requirements than is given by this writer who has been in the field and knows whereof he speaks? Can there be any greater travesty upon "modern scientific medicine" which so blatantly claims to represent "all there is in medicine" and which denounces every other claim to therapeutic value as "sectarian medicine" than this statement by one of their own number, who says that the medical treatment of the sick soldier in the French hospital is a "blot upon the picture, and a serious one," and who further states that when it comes to be written up in full it could be fitly entitled "A treatise on how *not* to take care of the medical cases in time of war"?

To justify this "awful state" our friends of the old school may claim that this woeful lack of medical treatment was due to a lack of organization, which may be partly true; but there can be no effective organization without a basic element of principle backed by confidence. As there is palpably no principle or system in old school therapeutics, only chaos or nihilism, how can there be confidence? One cannot have confidence in something that is so intangible and unreal that it does not exist even in imagination, hence cannot be organized.

The reason that there has been no organization for the care of sick soldiers requiring internal treatment is because the Medical Corps in charge of affairs and composed of old school men have felt their utter helplessness when it comes to prescribing drugs. It is just as "S" says: "Everyone connected with it is so thoroughly disheartened as to be incapable of an effort to improve it."

Now turn to the other side of the picture and note what a handful of enthusiastic homœopathic physicians are doing for these same sick soldiers whose care by old school methods has

been a "blot upon the picture." It is quite possible that "when the history of *this* side of the question comes to be written up" it will *not* be entitled a "treatise on how *not* to care for the medical cases in time of war."

The hospital at Neuilly, France, which has been established and is maintained by homœopathic friends and whose recognition as a hospital unit was made possible only by the earnest pleas and powerful influence of "friends at Court," is doing a splendid work for the non-surgical sick soldiers by giving them the benefit of internal treatment with drugs, the selection of which has a tangible basis of scientific value. The enthusiasm and devotion manifested by the physicians in charge of this hospital is an evidence of their belief in the power of drugs when administered by a method that is backed by some semblance of science. "The proof of the pudding is in the eating" and these scientific prescribers are obtaining results in that they are curing their patients and sending them back into the trenches. Surely there is nothing "too awful" about this hospital nor is it a "blot upon the picture."

If this were the first time that old school therapeutics had utterly broken down in time of need the picture would not be quite so dark. Although eighteen years have elapsed, it is easy to recall and still easier to read of the "flunk" made by real "scientific medicine" in the days of the Spanish War. Can there be found in history a more disgraceful episode in "scientific medicine" than the widespread prevalence and high mortality of typhoid fever which attended the American soldiers at the time of the Spanish War? Their methods failed utterly to prevent or to cure typhoid fever. And right here permit us to make a statement which we are ready to back by facts. It is this: That the typhoid-stricken soldiers who were sent home, to be cared for in hospitals, made more rapid recoveries with a consequent lower mortality when placed in homœopathic hospitals under homœopathic physicians than did those in old school hospitals under old school treatment.

Is it not almost time for the representatives of a "system" which has become an acknowledged failure (this acknowledgment coming from their own leaders), to look about them and if not ready to accept some other system to have at least the temerity and the breadth of mind to investigate a system which has stood some pretty severe tests for over a hundred years?

D. G. W.

VACCINES IN MEDICINE

By W. H. Watters, A.M., M.D., Professor of Pathology, Boston University, and Elizabeth Ross, M.D., Instructor in Pathology, Boston University.

Now that approximately a decade has passed since bacterial vaccines have been introduced as a general therapeutic aid, it would seem to be advisable to review some of the results in order to ascertain their true value. The first period of undue over-enthusiasm with application of the method to most diverse conditions, logical or illogical, has passed. So also has passed the resultant period of undue pessimism, during which many physicians, disappointed because all the promises made by unwise enthusiasts had not been fulfilled, consigned the entire method to oblivion or to perdition according to their temperament. At present it is possible to look back upon both of these eras and, profiting by the benefits and errors of each, to arrive at a somewhat adequate conclusion concerning the scope of vaccines in medicine as well as their limitations. Such an attainment, such a summary of results and conclusions derived therefrom is the object of this paper. These conclusions will be much influenced by consideration of the results attained by the writers during an extensive experience over a period of nine years in a large general hospital and with private cases outside. During this period thousands of inoculations have been administered to a large number of patients under most diverse conditions, and in all of these cases as they are briefly viewed in retrospect it has been impossible to find a single inoculation the administration of which has been regretted. In other words it is believed that the method properly used will be followed by no permanent injury to the individual. It must be remembered that in theory each injection produces an injury, else there would be no satisfactory reaction, but this in practice is indeed merely theoretical in the majority of cases. In prophylactic treatment there is often some evidence of clinical injury rapidly followed by a return to and beyond normal. This is, in fact, the object desired. It is of course also conceivable that in the terminal stages of a disease when the body is literally overwhelmed with the toxin, an unwise massive dosage of vaccine might be followed by permanent injury. Such cases should only be treated by or under the direction of one experienced in vaccine therapy when such treatment would be most carefully avoided.

In beginning a paper on vaccines it is perhaps unnecessary to state that the name itself is a misnomer given by the theoretical similarity of action to smallpox vaccine. The name given to these preparations by one of the commercial firms, "bacterins," is much more correct but will probably not replace the older one in popular usage.

A very few words concerning the theory of action may be not entirely inappropriate, although it is doubtless more or less familiar to most physicians. Vaccine therapy was first popularized by Wright of England who made extensive investigations in conjunction with his work with the opsonic index. The principle is entirely one of active immunization brought about by the inoculation of small and gradually increasing amounts of the toxic products of the various bacteria. Its efficacy depends upon the ability of the patient to react and in acute and severe cases must be used with much caution. In theory the introduction of these toxic products in proper amounts into the body is followed by a direct primary injury to the body. Nature very promptly reacts against this injury by producing various antibodies for the specific purpose of opposing the foreign material. In this production nature acts with her usual prodigality and produces the specific antibody in excess of what is actually needed to counteract the effect of the toxin. Some free antibody then remains in the blood. In a short time a larger dose of toxin is given, one that can be safely borne now that its action can be in part neutralized by the antibody. This is followed by the production of more antibody, and a still larger dose by yet more of this immunizing substance. By this means a high degree of resistance can be attained.

This is not the place to take up the questions having to do with the immunity induced by vaccine during the course of an infectious disease when the body seems open to abundant autoinoculation but still responds better to hypodermic injections. In some of these conditions a plausible explanation can be given, but in some we must accept the facts as such even though we are unable to adequately account for them at present.

In the practical application of vaccine therapy several facts should be clearly understood.

First. Use the smallest amount of vaccine that will produce the desired effect. This amount will often seem to be ridiculously small.

Second. Too frequent repetition of the dose will at times defeat the very object striven for. Wright has conclusively shown that in certain instances two or three weeks is not too long an interval to elapse between inoculations.

Third. Autogenous vaccines are usually preferable to stock ones although the latter are often efficient.

Two variants of the original vaccines have recently appeared. One is a preparation, practically a proprietary one, called " phylacogen " containing many various types of vaccine in a special medium. This is in brief a modern adaptation of

the old fashioned "shot gun" prescription and as such is neither scientific nor in the opinion of the writer advisable to use. It would seem that either in their intravenous or their sub cutaneous form their popularity with the members of the medical profession is decidedly on the wane. The second variant appears in the form of "sensitized vaccines" or "sensitized bacterins," a form that in theory possesses some advantages over the older form of stock vaccines. These were first fully described by Besredka and have since been completely studied by Gay and others. While some optimistic reports have been received, the general impression gained by the writers of this article has not been sufficiently favorable to induce them to replace it for the older method. Much more work remains to be performed, however, before any definite opinion can be expressed.

After the preceding, possibly too verbose introduction, one may now take up those various pathologic conditions in which vaccines may be used with reasonable hope of some benefit or where their use is at least logical. Instead of taking up the diseases subject to vaccine therapy in a classification made according to the particular bacterial varieties (the more common and probably the more logical manner) they will be taken up without any definite bacterial grouping merely as clinical entities some of which are at various times of different bacterial cause.

Furunculosis. This disease certainly merits first place in the present category because if there is any one condition in which a practical unanimity of opinion is noted concerning the efficiency of vaccines it is this one. Caused in the great majority of cases by the staphylococcus pyogenes aureus, it often proves a most obstinate adversary and one making a prolonged fight characterized by repeated attacks just at the time when all hoped that the victory was won. We are all familiar with those patients who come to us for treatment for an abscess and when it is successfully controlled return with another and a third and still another, almost indefinitely. Such a case presents a most puzzling problem to the physician and is in its entire course most discouraging to both patient and attendant. In such, the results following vaccine therapy have been particularly gratifying. A stock staphylococcus vaccine will usually give the desired results, noted by either a complete cessation of all further recurrences or by a rapid decrease in the number and the severity of the new foci. At times cultures will show an infection of staphylococcus complicated by some streptococcus. In such a case the addition of some streptococcus vaccine is indicated. In some cases the stock vaccines prove inefficient. Here carefully made autogenous ones should be made and they

usually prove to be efficient. Coincident with the injections, the general condition of the patient should be investigated lest there be some other removable predisposing factor such as digestive errors with autointoxication, or some faulty dietetic or hygienic factors.

One of the most gratifying cases that we have treated came to us a number of months ago. It was that of a young physician much in the open air and of excellent habits. For the past eighteen months he had not at any time been without one or more abscesses, the majority of which were on the back of his neck. In close daily contact with many men of wide experience in medicine he had tried all the usual methods of treatment without any benefit. An autogenous vaccine was prepared and administered. Following this there was one small boil and within two weeks he was for the first time for months free from his pests. This freedom persisted and still continues after several months (or at least did so when last seen about six weeks ago).

A slight variant of the above has been noted in some cases in young people, particularly when the foci have occurred on the eyelids ("styes"). Here at times but indifferent results have followed even autogenous vaccines. When this has been noted a little tuberculin (.0001 mg. B. E.) has been added, followed by rapid return to normal. In furunculosis therefore, a stock vaccine can be used with considerable expectation of success, an amount materially augmented by preparing an autogenous, and still more, in certain selected cases by fortifying it with some other antigen. Vaccine treatment should be the one most to be relied upon in such a disease. The next condition to consider is closely allied to the first, namely, carbuncle.

Carbuncle. This has by some been called an "overgrown boil." More fulminating, more severe and more menacing than furunculosis, it is more frequently caused by a mixed infection of streptococcus and staphylococcus. Presumably on account of this more active and complex etiology its treatment must be more energetic. The routine measures used for treatment, local or general, medical or surgical, must be carefully followed according to the individual. When a case is first seen our routine is to administer a stock vaccine of about 100M staphylococcus and 10M streptococcus, to take cultures and to obtain an autogenous vaccine as soon as possible. It is very easy to isolate the staphylococcus but in this symbiosis the streptococcus often proves too elusive to capture. In such circumstances an autogenous staphylococcus with a stock streptococcus vaccine is used. When the case is seen in its early stage a fair degree of hope for partial abortion is justified.

Under favorable conditions, where the patient is under adequate observation and where drainage can be secured, the use of vaccines accompanied by careful local treatment will in many instances be followed by complete recovery even without surgical incision. Some cases will require to be opened with varying degrees of thoroughness. As the disease becomes progressively more and more advanced, however, the need of more radical measures becomes more urgent, extending to the deep crucial incision or even to complete excision in very bad cases. Even in these later stages vaccines are fully indicated in order to more definitely assure a prompt and uncomplicated convalescence. A typical favorable case might be cited of a patient seen not long ago. He was a well developed man of about fifty years, a station agent. When first seen he presented a large red area of sub cutaneous swelling and œdema fully 15 c.m. in diameter on the back of the neck. In the center was one moderately large opening from which some pus was escaping. Surrounding this was a ring of six or seven subsidiary openings. Cultures showed streptococcus and staphylococcus and appropriate vaccines were administered. The local treatment consisted of antiseptics and the application of pressure for the double purpose of expressing the pus and of increasing the circulation. A prompt decrease in the size of the infected area was noted with rather rapid sloughing of the skin over a small central area, and early return of the whole condition to normal. In such a case the ordinary procedure would probably have been some anæsthetic and radical incision or excision. A not dissimilar case where the infection was in the gluteal fold just outside the rectum has even more recently been treated with equally good results. It should be borne in mind nevertheless that enthusiasm must be tempered with a wise conservatism and that vaccines, important though they are in carbuncle, possess distinct limitations and that other measures may in certain ones be equally or even more strongly indicated.

Septic Wounds. Closely allied to the two preceding diseases is that varied manifestation included in the above sub-title, "septic wounds." Here might be logically placed, tetanus and other similar specific diseases, but for the present discussion we will limit ourselves to those that are pyogenic in nature. A considerable number of cases has been treated of plain infected surgical wounds occurring in otherwise "clean" operations. Many of such clear up very promptly even when left alone, so it is often very difficult or even impossible to state definitely whether any given case has been influenced beneficially. We have a distinct belief, however, obtained in reviewing many cases that the average time of convalescence has been shortened

by the use of vaccine. The type used has in the great majority of instances been staphylococcus. When we consider that other class of septic wounds, the one following penetration by infected articles such as splinters, nails, etc., the indications for bacterins seems more distinct as indicated by results in actual cases. Whether it be the ofttimes sluggish staphylococcus with the mere local lesion or the more actively virulent streptococcus with the local lesion plus ascending lymphangitis and lymphadenitis, vaccines are equally indicated. Here again the autogenous preparations are usually preferable. Often, however, it is advisable to immediately administer a stock vaccine to be followed by the autogenous later and by so doing prevent the delay that intervenes till the autogenous one is ready.

Local infections of the finger, hand etc., with steady progress for the worse have not seldom been transformed into very favorable cases by the proper vaccine. And in those more severe cases that are advanced when first seen, surgical measures will often be helped to a more rapid favorable termination by the same adjuvant measures.

Acne. Scarcely anything in medicine that is not really serious possesses the possibilities of annoyance to both patient and physician as does a stubborn case of acne. This disease in its pustular type presents so many points of resemblance to furunculosis that at once we think of vaccine treatment. The resemblance continues with the demonstration of staphylococcus pyogenes in the pus, although the albus instead of the aureus is more frequently found. In not a few cases the resemblance still continues in the response of the case to vaccines. Unfortunately, however, the percentage of favorable responses is not as great as in furunculosis. Whether acne is caused by the acne bacillus, by the staphylococcus albus, by some constitutional condition or any or all in combination, are questions that will not here be discussed. Some cases will recover if vaccines only are used, some if certain local measures are carefully carried out, and certain others if proper diet and improved intestinal hygiene are insisted upon. Those cases that come to the immunologist are usually those referred by other physicians who have in vain tried the more common methods. In a general way we can say that of these, from twenty-five to forty per cent can be definitely cured and a like percentage distinctly benefitted, while the remainder seem to be entirely uninfluenced. As might perhaps be expected, the pustular type responds most satisfactorily. We accordingly believe that a physician has not done all he can for his acne patient unless he has given the vaccine treatment a fair trial. In this trial it should be borne in mind that one is dealing with a sluggish chronic infection and that persistence is the key note of success.

Skin lesions. In such diseases as eczema, psoriasis, various forms of dermatitis, etc., not definitely of bacterial origin, some individuals have written most enthusiastically of the cures from vaccine therapy. We read such reports with much skepticism, however, because both in our hands and in the hands of those whose opinion we most value, the results of this treatment have not been such as to justify its continuance.

Erysipelas. A certain form of skin or subcutaneous infection to which we give the name erysipelas is caused by entrance into the tissues of the streptococcus. A localized acute infection freely supplied with blood, it should theoretically be a suitable disease for the use of vaccines. Here fortunately theory and practise coincide. A stock vaccine made from an erysipelas strain is used immediately the diagnosis is evident, and this is followed as soon as possible by an autogenous one made from the serous exudate. An acute usually severe disease, it needs most careful watching. The doses of vaccine should be small 1M to 5M and repeated daily, gradually increasing both dose and interval as improvement appears. Many very fulminating cases have been thus treated with most gratifying results.

Otological Diseases. Abscess formation in the external ear, really furunculosis, is readily amenable to vaccines, particularly autogenous. In otitis media some claim to have obtained much benefit, others are less optimistic. In theory they should be helpful in any such localized infections, and their practical application usually bears out the theory. Especially is this true of their tendency to arrest the spread of the infection to adjacent parts, particularly to the mastoid. It is believed that suppurating ears have been cleared up, both acute and chronic, that extension of the inflammatory process has been prevented and that mastoids already subjected to operation have been hastened in healing by the proper and judicious use of vaccines.

Ophthalmic Diseases. Apart from infections on the lids, already mentioned, the principal ophthalmic disorder for which vaccines are advisedly used is tuberculosis. This is particularly true of those recurrent often minute corneal ulcers of tuberculous origin but is also applicable in other more deeply seated manifestations. In the clinic at the Out-Patient Department of the Hospital, patients, usually children, have been repeatedly sent to us with a very bad prognosis and in no instance now available has any thing but steady improvement followed the routine administration of tuberculin. Without any question much good has thus been performed.

(To be continued in our April issue)

THE DIETETIC TREATMENT OF DIABETES*

By Geo. F. Worcester, M.D., Merrimac, Mass.

It must be frankly admitted that the underlying nature of diabetes is still veiled in deep mystery. The number of individual important facts now known in regard to the disease is large. The earliest knowledge of the attending glycosuria has been supplemented by the information about the condition of the blood — the hyperglycæmia of diabetes — and by such investigations as have demonstrated beyond question that the capacity of the organism to destroy sugar is impaired. Other details of the perversion of metabolism, such as the acidosis and ketonuria, have been brought to light. Drug therapy has largely been abandoned and dietotherapy substituted for it. One who has followed the progress in the study of diabetes can understand the occasion for the successive changes in the proposed dietetic measures which include all gradations of regimen from starvation or strictly carbohydrate-free dietaries on the one hand to the oatmeal or potato "treatments" at the other extreme. As an expert in this field recently remarked, "Physicians may well come to the conclusion, after reading some of the most recent literature on this subject, that all of our earlier views have been turned topsy-turvy."[1]

An intelligent appreciation of the situation calls for a brief historical survey. The earliest attempts of the more modern procedure in the dietary management of diabetes aimed at overcoming the excretion of sugar or reducing it to a minimum by restricting the intake of carbohydrate, and, if need be, likewise that of protein, which was recognized as an added source of sugar in severe cases. This method of treatment met its difficulties in the appearance of ketonuria, with the attendant dangers of acidosis, leading to the dreaded coma. Nothing short of the administration of some carbohydrate seemed to avert this incidental feature of the severer type of the disease. It was at this period that certain special dietary schemes were attempted, such as the milk, rice, and potato diets, respectively. Levulose was recommended as a carbohydrate toward which the diabetic shows special tolerance. None of these proposed devices for furnishing carbohydrate in some way more acceptable to the diabetic organism gained more than passing recommendation. As a rule, they offered no advantage in treatment.

CARBOHYDRATE TREATMENT

The meaning of the carbohydrate treatment in the modern sense is the use of one sort of carbohydrate in nutrition, exclud-

* Read before the Alethean Club of Boston, January, 1916

ing other sorts, with the aim of diminishing glycosuria and ketonuria, and of strengthening tolerance. The other (non-carbohydrate) articles of diet may be varied from time to time, but as it is desirable to reduce the quantity of protein, meat is not given and only a small quantity of albumen.[2]

This treatment is by no means new. There was a time when it was considered necessary to replace the sugar lost in the urine of diabetic patients. As far back as fifty years ago, Donkin recommended his patients to live entirely on donkey's milk for a long period, and since then the milk diet has played a certain role in the treatment of diabetes for a time, although it has been opposed by Frerichs. Strasser later wrote against the too general use of the milk treatment, and Naunyn and von Noorden opposed it altogether. However, every physician who has treated diabetes knows that occasionally milk gives good results because it is a low form of diet, and, further, that with many people the milk-sugar is so slowly split that it is only gradually absorbed by the bowels. And lastly, we know that milk is particularly capable of allaying hunger and thirst, and the albumen of milk is non-irritating.

Not so modern a treatment is the rice treatment of von During. This consists of daily rations of 80–100 grams of well washed rice that has been soaked over night. At the same time 250 gm. of meat are given daily. This treatment has proved successful not only because of offering less calories but also because von During laid down many important rules concerning the general hygiene of the patient which greatly contributed to the success of the method.

Another method of far greater importance than those just spoken of is the oatmeal treatment. Through chance observations, von Noorden hit on the oatmeal diet as a routine treatment. In certain cases in which the patients were put on an exclusive diet of oatmeal, owing to digestive disturbances which they were subject to, von Noorden noticed that instead of an expected increase in sugar output, this actually decreased. Repeated similar favorable increases of tolerance led to the publication of the facts.

The dietary of von Noorden is as a rule suitable to the mild type of case and is as follows: All meats, fish, shell-fish, meat sauces, eggs, fats, cream up to 300 c.c. daily, cheese up to 50 gms. daily, most vegetables (excluding squash, beets, potatoes, turnips and carrots), allows 8–10 nuts daily (walnuts, hazelnuts, almonds, brazil nuts or peanuts), allows stewed cranberries, unripe gooseberries, and young rhubarb preserved with saccharin or crystallose, allows any kind of soup or broth without flour or the forbidden vegetables; allows desserts made from

eggs, cream, almonds, lemon and gelatine; allows brandy, rum, arrack, kirshwasser, light Rhine wine, gin, claret, Burgundy; allows the various condiments — salt, pepper, etc. — ; allows tea, coffee, mineral waters, diabetic cocoa, (20 gms. daily), lemonade, saccharin, crystallose or glycerine as a sweetener, glycerine not to exceed 15 gms. a day.

It will be seen that from this list milk and most fruits are excluded. As to the matter of bread, von Noorden allows 100 gms. of white bread or its equivalent per twenty-four hours. It is in these equivalents for bread that success in holding the patient to the diet largely consists, as also in providing substitutes for withdrawn articles.

The common theory that to treat a diabetic one must cut out articles is true only when qualified by the rule that for everything cut out something else must be put in. To allow various articles of diet without stipulating quantity is a serious error, as the diabetic patient prefers to make an entire meal on one or two articles he likes to a variety of things which he does not like. One writer speaks of its being a favorite subterfuge on his part to eat gluten bread and milk.[3]

When von Noorden recommended the oatmeal treatment in 1902 he proposed to give 250 gms. of oatmeal, from 200–300 gms. of butter, 100 gms. of vegetable albumen or from five to eight eggs. More recently, he altered this treatment. Before and after the above mentioned diet, which he prescribed for three days, he orders two days of vegetables and eggs and in severe cases no additional albumen. A great deal has been written about the oatmeal treatment from which can be deduced that it is useful in serious cases and especially in those combined with acidosis. It is also especially useful in diabetes of childhood and also before and after operations. Some authors have stated that the use of oatmeal has been known to effect the recovery of a diabetic patient when all other methods have failed. In some cases it has no effect. It is therefore not surprising that there are differences of opinion about this treatment. Whereas Siegel, Mohr, Langstein and others recommend it, Naunyn is less warm in his recommendation. It must also not be forgotten that the oatmeal treatment is distasteful to many patients, and therefore some attention to detail on the part of both physician and patient is needed if it is to be continued for a long period.

There are theories that oatmeal differs from other kinds of flour in the influence on metabolism. But L. Blum has lately brought forward weighty reasons against such a view. This author criticises the new modification (the oatmeal treatment with the two vegetable and egg days preceding and follow-

ing) by means of comparative examinations of wheat flour. These experiments proved that wheat flour is tolerated as well or almost as well as oatmeal under specified conditions; these conditions are a diet without meat and with only a small quantity of albumen. Blum's researches were conducted in a much more systematic manner than those of Falta, Lampé and others which had indicated the superiority of oatmeal to other cereals. The researches of Baumgarten, Grund and Strauss, in order to test the results of Blum, have entirely confirmed them. Blum's modification of the von Noorden oatmeal treatment, then, is to omit meat, to give only a small quantity of albumen, and to compute the calories as well as a previous and a subsequent diet of vegetables and eggs. The presence of a growth of saccharolytic organisms in the intestines—a matter mentioned by Klotz—is perhaps of importance also. Klotz says that the days of vegetables and eggs with many patients allow the carbohydrate flora to take the place of the meat flora in the intestines, and this makes it possible for the system more completely to exhaust the starch grains, which, without increasing the secretion of sugar, may still be of use to the diabetic patient. The use of flour in soups also seems to be of great importance. The same quantities in bread, however, have not given equally good results. It therefore seems that chemical and physical changes are produced by different ways of cooking.

The researches of Blum have given new suggestions on the subject in question especially in as much as he individualizes by abandoning the strict scheme and giving as much oatmeal in soup form as the patient can tolerate. As to the reduction of the albumen he recommends such a great reduction for a short time, but for longer periods not less than 50–60 gms. daily. That the restriction not only of calories but also of albumen has a very good effect on some patients is seen by the success of "drinking days" which cause a very considerable diminution of sugar and acetone secretion. These drinking days are made less disagreeable to the patient by giving, besides water, tea, coffee, lemonade, and small quantities of fruit and nuts.

We have known for some time that the tolerance of diabetic patients differs toward various sorts of carbohydrates, and Strauss in his researches found that the tolerance for levulose, lactose, glycose, starch and galactose diminished in that order. Also, that the sugar secretion is greater when sugar was given in full dosage than in broken dosage. In consequence, we may say that a certain quantity of carbohydrate agrees with the diabetic patient better the more slowly it is absorbed.

Despite its theoretical incompatibility and the outspoken criticism of well known writers, the oatmeal treatment for cer-

tain types of diabetes has not been abandoned. From time to time groups of successful cases have been reported by competent unbiased clinicians. Every one who has achieved any success with the procedure has emphasized that a suitable preliminary strict regimen is indispensable to success, and also that the scheme fails in many instances. The striking character of some of these statistics which show greatly improved tolerance after a few days of the oatmeal diet, as well as the character of the names attached to the reports, leaves the impression that some element of merit is hidden in the observation.

The attempts at explanation have not been fortunate. At first it was believed that some specific chemical constituent of oatmeal other than starch is responsible for the increased carbohydrate tolerance and the amelioration of the ketonuria. This now seems unlikely. It was believed that oatmeal components might either act on the ductless gland mechanism in some undiscovered way or render the kidneys less permeable to sugar. The more recent analyses of the blood-sugar content have withdrawn any probability of the latter explanation. Williams and Powell[4] carried on a very prolonged study in regard to this treatment and their conclusions were mostly of a negative character, namely, that if there be any specific body in oatmeal that has an effect on carbohydrate metabolism, they are convinced that it is not a diastase ferment.

The supposed specificity of oatmeal in its favorable effect on the diabetic was gradually dispelled by the demonstration, — not very convincing at first, but more emphatic as the technic became more consistent, — that other cereal products could be substituted with success. Blum, Petersen, Lampé, Klemperer and others have reported the occasional favorable use of a variety of natural products other than those derived from the oat seed. In every case, however, emphasis appears to have been put on the necessity of restricting the carbohydrate intake to a single plant source, whether it be oat, wheat, buckwheat or legume.

Falta of Vienna now assures us that "Mixed" carbohydrate treatment may equal the older procedures in its favorable influence on glycosuria and ketonuria. This extends the palatability of the diet in those cases in which this form of diabetic regimen is to be tried. As a rule it seems best to use the cereals in the form of gruels or porridges and not in a baked product, the reason presumably being connected with the different alimentary behaviour of the two types of food products. Like the advocates of the oatmeal treatment, Falta insists that meat and protein from animal sources should be excluded, and plant protein be substituted. The explanation for this is not

clear. The contention is made that meat in largest degree interferes with the glucogenesis of the diabetic organism.

Inulin, the polysaccharid of levulose, has been recommended by Kulz and Naunyn. In his extensive researches concerning the tolerance of diabetics to inulin, Strauss found that in grave cases it was better digested than the same amount of wheat flour and that in most cases the acidosis became greatly reduced during the inulin period. He uses it as follows: To a diet mostly of vegetables and eggs he adds 100 gms. of inulin baked in omelets or mixed in soups, vegetables, or fruit poor in carbohydrates. Latterly he has repeatedly given courses of treatment by inulin in the same way as by oatmeal in the form of a certain weekly routine. To two vegetable and egg days he added three inulin days (five to one hundred grams of inulin daily) and finished with two vegetable and egg days.

As regards inulin, no enzymes which can convert it into sugar have been found in the digestive tracts of higher animals. It happens, however, that the normal acidity of the gastric juice is sufficient to effect a partial hydrolysis of inulin to levulose in suitable conditions. This would seem to be the only process, therefore, by which inulin can be rendered available for absorption. H. B. Lewis[5] noted that inulin fed to a healthy man was not eliminated in the feces, but the marked intestinal fermentation which was observed to follow the ingestion of the carbohydrate suggested that it was impossible to administer more than comparatively small amounts without discomfort, and that aside from a possible small formation of levulose in the stomach the bulk of the product is decomposed with the formation of products other than carbohydrates.

Knerr[6] recommends raw starch. His procedure is to put the patient to bed and allow him nothing whatever except a dram of raw corn starch stirred in a glass of warm water every two hours. His results he claims are most gratifying. Both sugar and acidosis decrease gradually. The raw starch serves two purposes: (1) It supplies considerable nourishment and it prevents acidosis, so there is no danger of coma and no need of alkaline dosage, and (2) The patient suffers none of the distress of the rigid starvation regime. All wines and some whiskeys and brandies contain some sugar, so Knerr prefers pure alcohol if any is to be given at all. Its only advantage is to modify the taste of the raw beaten egg.

Labbe[7] of Paris is an advocate of dry vegetable diet in those unable to take oatmeal. He has found that diabetics thrive much better on a three-day course of a dry vegetable diet. They digest it readily, it is eaten with greater appetite and does not have a constipating effect like milk or induce

diarrhœa like oatmeal. The ration is 300 grams of legumes with 150 grams of butter, 3–6 eggs and 3–6 rolls made of anti-diabetic flour. He permits three or four glasses of Bordeaux wine and some green vegetables, but no meat. Besides peas, beans and lentils, the soy bean might be utilized but is hard to cook. The benefit is particularly marked in severe forms, both the glycosuria, the acidosis and the nitrogen balance all showing improvement. In some cases the sugar disappeared entirely on this diet, although unaffected by other diets. He advocates this diet in acetonuria, in impending coma and in upset nitrogen balance.

It should be borne in mind that these cereal treatments are not in the nature of permanent diets but are merely interspersed in the midst of a fairly strict routine of carbohydrate-free living. This fact has not always been understood. Highly advocated tentative dietary methods, whether they involve starvation and alcohol or mixed cereals, deserve intelligent consideration and trial under appropriate conditions. They must not, however, be allowed to overshadow the success of the current method of diabetic dietotherapy, particularly in cases of only moderate severity; nor should they be permitted to furnish an argument for the unscrupulous vendor of diabetic foods which are rich in starch even though the label may be "within the law." Whether these occasional oatmeal or potato days profoundly alter the bacterial flora of the digestive tract or create conditions by which utilizable products of carbohydrate fermentation rather than the refractory sugar are offered to the diabetic organism to burn up, or whether the apparently good effects are but the expression of a lessened permeability of the kidneys for sugar, these newer perplexing experiences have only enhanced the possibility of increasing the tolerance of the diabetic for sugar, — which is his greatest desideratum.

THE ALLEN OR STARVATION TREATMENT

The Allen[8] or so-called starvation treatment is based upon the experimentation on dogs, one group of which was made diabetic by operation and the other by diet.

Group 1. Animals made diabetic by operation.

In animals from which an excessive amount of pancreatic tissue is removed, a diabetes may be obtained which is so severe that fasting will not produce sugar-freedom. But when the pancreas remnant is of suitable size, for example, one-tenth, though the resulting diabetes is permanent on meat diet and will end fatally if allowed to persist, nevertheless a few days of fasting at the outset will produce sugar-freedom. If the diabetes is allowed to continue longer, a much longer period of fasting may

be necessary for sugar-freedom, or it may be impossible to obtain. If after obtaining sugar-freedom, feeding of protein and fat is begun very cautiously in quantity only enough to maintain the animal in its thin condition, such dogs remain free from diabetes. The longest experiment to date is that of a dog which, possessing less than one-tenth of the pancreas, has been kept free from diabetes for six months, and there is at present no indication that the condition cannot be continued indefinitely. If an attempt be made to increase the weight of such an animal, glycosuria soon appears and must be checked by renewed fasting. Such dogs though very thin, are vigorous and lively. They contrast sharply with dogs which, after similar operations, are allowed to remain diabetic on full meat diet. Though the latter animals at first appear much better nourished, they finally emaciate in spite of the most enormous eating; and when they have become as thin as the dogs above described, weakness and cachexia are very evident and the progress continues downward to death.

Group 2. Animals made diabetic by diet.

When the animal possesses perhaps one-eighth or one-sixth of the pancreas, and is not diabetic after operation but is then made diabetic by excess of carbohydrate, this diabetes at first can be stopped by a simple change to meat diet. After a longer duration, the diabetes no longer stops on carbohydrate-free diet, but after a period of fasting, the time depending upon the severity of the diabetes, the urine becomes sugar-free. With still greater duration or severity of the disease, sugar-freedom is no longer obtainable by fasting. When such animals are made sugar-free, they may be kept so by the same procedure as described for those of the former group. When the diabetes is thus checked fairly early, it is evident that the prognosis is much more favorable than in animals of the previous group, for in the present animals the removal of pancreatic tissue was considerably less, and the cause of the diabetes is partly a functional change. Accordingly, it is found that the diet can be gradually increased and in favorable cases the animals be brought to a higher level of weight and nutrition than ever is possible with dogs of the preceding type. Up to the present, however, the experience has been that these dogs are never able to return quite to the condition that they enjoyed before the diabetes and which is permanently maintained by similar dogs in which diabetes is prevented by suitably chosen diet from the outset. As above mentioned, dogs so treated can be kept indefinitely at full weight and well being when placed after operation on a diet which keeps them free from glycosuria. But when diabetes gravis has been produced and allowed to continue long enough

to demonstrate its reality, while it has been possible by the foregoing method to stop the diabetes and bring a dog back to within a kilogram of its normal weight, every attempt to produce a further gain in weight has brought a return of glycosuria which must be checked by fasting. Such dogs, however, are so near to normal that if they are mixed up in a yard with ordinary dogs, a stranger might be unable to tell one from another.

Microscopic examinations of the pancreas remnants of such animals as have come to necropsy from both of these groups show that in both alike the island cells are well endowed with cytoplasm and granules, and degenerative processes are not seen, but there is a decided impression that the islands are inferior both in size and number to those of normal animals.

Based upon the principles of these experiments, Allen has undertaken the treatment of a limited number of patients, and the results indicate that the same method employed in rendering the diabetic dog free from glycosuria and prolonging its life is efficacious in eliminating glycosuria and acidosis in the human patient.

The method of treatment is in brief as follows: — If the patient is moderately emaciated, with a negative carbohydrate balance and acidosis, he is put to bed and receives no food whatever. If coma seems imminent the usual emergency treatment with purging, stimulants, alkalies and large amounts of water should of course be carried out. In addition to fasting, alcohol is important at this stage in the treatment. From 50–250 c.c. of whiskey or brandy may be given in each 24 hours in small doses, from 10–20 c.c. every one to three hours during the 24. As soon as the glycosuria stops and the acidosis diminishes, — which even in severe cases may be within 48 to 96 hours, — the amount of alcohol and alkali may be reduced. Fasting and moderate doses of alcohol are continued for from 24 to 48 hours longer, however, depending on the patient's strength. The alkali is now stopped, and feeding with starch is commenced in order to clear up the last traces of ketonuria. The kind of starch is of minor importance. Green vegetables are useful because their carbohydrate and food value is so low that they can be given in considerable bulk, and this bulk is agreeable to the patient for relieving his feeling of emptiness. Neither fat nor protein is added. For the first day, the food is chosen to represent a carbohydrate content of from 10–40 gms. This is divided into four to ten equal portions and fed at equal intervals during the day. If glycosuria remains absent, the ration for the next day is doubled to represent 20–80 gms. of carbohydrate, similarly divided into numerous small portions.

On the next day it is sometimes possible to increase the ration to 100 gms. of carbohydrate without glycosuria. About this time, especially if glycosuria has appeared, another fasting day is interposed, from 50–200 c.c. of whiskey being given. Present experience indicates that even in severe cases ketonuria may by this method be made to disappear entirely. Several repetitions of the foregoing routine may be necessary for this purpose. All food contains danger, tending toward either glycosuria or ketonuria. The carbohydrate of the diet is seldom reduced below 50 gms. and it is preferably kept higher. If carbohydrate must be kept low, the total diet is kept low. The diet is so chosen that glycosuria, not ketonuria, is the signal of overstrain. Fasting-alcohol days are given not merely whenever this signal appears, but also at close enough intervals to prevent it from appearing, even every two or three days if necessary. If there has been no glycosuria, a slight addition to the diet is made after each fast day. Each day's diet is calculated exactly and the nitrogen balance is watched. It is thought that no matter how low the assimilative power, the attempt to feed in excess of this assimilative power is harmful, and it is possible that by rest the assimilative power may gradually become stronger. With improvement in the patient's condition, the carbohydrate in the diet is further increased. Increase in weight, however, is not attempted at this time. From the present point of view, contrary to the generally held opinions, the attempt to increase the weight should be the last rather than the first step in the treatment. It is attempted to keep the metabolism at the lowest safe level until the patient is taking from 100–150 gms. of carbohydrate (mostly as green vegetable) daily, with fast days interposed often enough to prevent any trace of glycosuria from appearing. Then protein is cautiously added, always being kept rather low; and in favorable cases the weight and well being may finally improve under gradual additions of fat.

The radical procedure here described is that used for the most severe cases. In milder cases, the treatment may be correspondingly milder. Primary loss of weight is intentional. The purpose of the treatment is not to confer temporary comfort or appearance of well being, though various symptoms, including polyphagia and asthenia may actually be relieved. When there is extreme cachexia and emaciation the difficulty is greatest. It may then be necessary to juggle very carefully the three factors of glycosuria, acidosis and nutrition.

As regards the results of the Allen treatment it is, of course, too early to make many statements. However, one fact is significant and that is the high percentage of success in those already so treated.

Hill and Sherrich[9] in their series, some of whom were severe cases — young people treated by the old method and could not be made sugar-free — became so under the starvation treatment and remained so on a reasonable diet which enabled them to hold their weight. They adopted a scheme whereby, when a patient was discharged from the ward, he was given a series of written diet slips with two or three menus which he could use on different days figured out carefully with his tolerance The two most important things to remember in this treatment are: — (1) Do not raise the diet too quickly after starvation, and pay just as much attention to the protein intake as the carbohydrate and (2) Do not worry if the patient loses weight; it will not hurt him.

There has been no sign of coma in the series thus treated. The ammonia has always been low, only in one case reading as high as 2.5 gms. per day, which is not at all a high ammonia. In most of the cases it has been very low, usually under a gram a day. This very possibly is due to the low protein intake. There was nothing constant in the appearance or disappearance of the acetone and diacetic acid while on starvation. In one case both disappeared, in others they increased slightly and in others stayed practically the same. No patient has lost more than five pounds during his treatment and no patient has gained more than seven pounds. In most of the cases the weight at discharge was practically the same as at entrance.

In Joslin's[10] series he found that the more closely Allen's directions were followed the better the patients did. No patient has required more than five days to become sugar free. Many patients became sugar free after the omission of three or four meals. Patients are put to bed and the plan of treatment is carefully explained to them. They are furnished with note books in which answers to their questions are recorded, taught the use of a diet card and how to examine the urine for sugar with Benedict's solution. So far, no patient whom Joslin has taught to test his own urine during the last year has died. He feels that coma no longer represents the culmination of the disease, but that it is an avoidable accident.

DIETARY TREATMENT AND THE SUGAR CONTENT OF THE BLOOD

If there be any aspect of the dietetic side of diabetes respecting which the records furnished by the new mode of investigation are weak, it is in connection with the influence of the routine dietary treatment on the hyperglycæmia.[11]

A series of cases studied with reference to this has recently come from Rudolf-Virchow-Krankenhaus of Berlin. The introduction of a carbohydrate-free regimen consistently produced a

decrease in the sugar content of the blood in such cases as were not complicated with chronic nephritis. The extent of the diminution corresponded in general with the severity of the disease. Cases of the mildest type were brought to a level characteristic of the normal in health. Moderately severe cases under the same dietary regulations reached a definite level of the blood sugar which was as a rule higher than normal, fluctuated with the severity of the symptoms and was rather unresponsive to further rigorous treatment. Patients in this class usually reacted to the feeding of carbohydrate more intensely in the direction of increased hyperglycæmia than did those exhibiting a less severe diabetes. No variations from these general rules were brought about by such complicating factors as tuberculosis of the lungs, cirrhosis of the liver or arteriosclerosis.

It is a significant and perhaps an expected fact that when the lower level of blood sugar, whatever its figure, characteristic of each case was once reached, further restrictions in the diet produced no additional lowering of the glycæmia. Even after a diminution in the protein intake, as on the days on which green vegetables formed the chief ingredient of the diet, thus approaching a partial starvation level, no reduction of the sugar content was manifested in the blood, although the glycosuria sometimes disappeared at this time. Herein, the analysis of the blood reveals a picture not afforded by the examination of the urine alone. It is also worthy of note that on the "oatmeal days," the blood sugar was if anything increased in the cases investigated.

In cases that ended by death and coma, the patients showed an increased hyperglycæmia, even though they were fasting prior to the examination. In such conditions it seems necessary to assume severe disturbance in intermediary metabolism.

It is evident, therefore, that such studies on the blood serve as a valuable supplement to other current methods of routine examination. They may furnish evidence of a latent defect of metabolism when it no longer manifests itself by way of more familiar methods.

In conclusion, may it be emphasized that no other chronic disease is so much under our control as diabetes, aside from the unconditionally malignant and very far advanced cases? It is, however, deplorable that it so often happens that systematic treatment is not considered necessary in the early stages and much time is wasted and the disease allowed to progress to a severe form by inadequate measures. This is the time when all may yet be won or all may be lost. When this principle is

universally recognized, it will be appreciated that the prognosis of diabetes is much more favorable than that of any other chronic disease, and we will rarely ever encounter it in a severe form.

BIBLIOGRAPHY

1. Editorial, Journal A. M. A., Oct. 23, 1915, p. 1463.
2. Strauss, H. The carbohydrate treatment in diabetes, Journal A. M. A., May 10, 1913, p. 1410.
3. Mitchell, Clifford. The diet in diabetes. Journal A. I. H., December, 1915, p. 610.
4. Williams, O. T. and Powell, P. M. Action of diastase in diabetes mellitus. Quarterly Journal of Medicine, London, October, 1912, p. 98.
5. Lewis, H. B. The value of inulin as a food stuff. Journal A. M. A., Apr. 20, 1912, p. 1176.
6. Knerr, E. B. Use of raw starch in treatment of diabetes mellitus. Missouri State Med. Assn. Journal, St. Louis, February, 1915, p. 90.
7. Labbé, M. Vegetable diet for diabetics. Bulletin de l'Academie de Médécin, Paris, Jan. 13, 1914, p. 55.
8. Allen, F. M. Studies concerning diabetes. Journal A. M. A., Sept. 12, 1914, p. 939.
9. Hill, L. W. and Sherrick, J. L. Allen treatment of diabetes. Boston Med. and Surg. Journal, May 13, 1915, p. 710.
10. Joslin, E. P. Present day (Allen) treatment of diabetes. Am. Journal of Med. Sciences, October, 1915, p. 543.
11. Editorial, Jour. A. M. A., Aug. 22, 1914, p. 688.

THE TREATMENT OF SOME PHASES OF CEREBRO-SPINAL SYPHILIS

By E. Everett Rowell, M.D., Stamford, Conn.

There is probably no class of cases which a physician is called upon to treat whose future depends so much upon a correct diagnosis and early institution of energetic treatment, as the apparently simple venereal sore. In syphilis, as ordinarily seen, its early manifestations appear trivial in character, so trivial in fact that they are dangerously deceptive. No matter how small or insignificant or simple a venereal sore may seem, treat it with the respect which it demands. Your patient may be a future cerebro-spinal syphilitic; your attitude will go a long way towards determining this. The physician who accepts a case of syphilis for treatment assumes a great responsibility. The patient's whole future, and the future life of the patient's wife and children, may depend upon the treatment the patient receives.

When we realize that ten per cent of people who contract syphilis develop marked central nervous lesions we can easily see how important an early diagnosis and treatment is.

As a rule, the blood does not give a positive reaction to the Wasserman test, showing a general systemic infection, under twenty to thirty days from the appearance of the chancre,

although, occasionally, it is noted at ten days, and, exceptionally, earlier. During this period, the patient's whole future may hang in the balance. That is the time to cure syphilis and to prevent tabetics and paretics.

The physician who treats cases of venereal ulcers or sores with a simple dusting powder, assuming that by the grace of God they are not specific in character, and who does not exhaust every means at his command to determine the exact nature of the lesion, cannot be too strongly condemned. He is false to his self, to his patient, and to the tenets of his profession. He may be largely to blame if that patient later in life breaks down with some lesion of the cerebro-spinal system. This is one condition which you cannot afford to temporize with, and it must be attacked in the most energetic manner known to medical science. No physician has the moral right to adopt a policy of delay when one of these ulcers is brought to him for treatment, when, by a laboratory test, its exact nature can be speedily determined.

Wasserman, in an address before the International Medical Congress in London, made the following statement: "The fate of every syphilitic is decided in the first two or three years of the disease, when every case can and ought to be cured. What is not gained in this time will never be gained any more."

Bearing these things in mind, is a physician not to blame if, when a case with a venereal sore comes to him for treatment, he does not exhaust every means at his command to determine its character beyond question or doubt, and, if it is syphilitic in nature, fails to attack it in the most energetic manner known to medical science? If the patient develops a generalized systemic infection and later in life a syphilis of the cerebro-spinal nervous system, with its horrible consequences, who other than the physician, in view of our present knowledge of this disease, is to blame?

No case of syphilis should be discharged by a physician as cured, no matter how energetic the treatment has been, without an examination of the spinal fluid, as well as the blood serum.

Bernstein examined the spinal fluid of several cases of apparently cured syphilitics presenting persistent negative Wasserman reactions in the blood, and in 18 per cent of them found an abnormal spinal fluid.

Do not be afraid to suspect your patient of syphilis if he comes to you suffering from any of the symptoms which ought to suggest a threatening syphilis of the nervous system. It is far better to prove that your patient's symptoms are not syphilitic in nature, than to hold up your hands in amazement at the

thought of their being syphilitic, and to say, " Oh, that is impossible in this case," and in the meantime allow your patient's nervous system to become well involved with lues. Syphilis does not always indicate immorality. Remember that there is such a thing as syphilis innocently acquired. It is better to injure your patient's feelings than to insult your intelligence, and, possibly, jeopardize your patient's future. So called shooting rheumatic pains in the extremities, neuralgias of the stomach, explosive gastric symptoms, should always be proven to be non-syphilitic, and not assumed to be so. Patients presenting a lack of poise, attacks of unnatural irritability, the various eye symptoms, i. e. unequal pupils, stiff or sluggish pupillary reflexes, etc., should always suggest syphilis. It must be remembered that the pains of a gastric crisis may simulate gall stones or renal colic. Cases of gastric crises have been known to be operated under the supposition that the patient was suffering from gall stones or renal colic. " It is better to be safe than sorry."

Even our oculists should be educated to suspect an invasion of the cerebro-spinal system by the spirocheta, when a case is referred to them for relief from chronic, intense headache. While it may seem surprising, it is nevertheless a fact that a great many times an oculist will struggle to fit a patient with lenses to stop a headache which is syphilitic in nature and not the result of an error of refraction.

A negative Wasserman does not necessarily preclude the existence of syphilis. Several tests should be made. The Wasserman may show a negative condition of the blood and yet, by the administration of a provocative injection of salvarsan, and the examination of the blood again in a few hours, it will be found to be positive. This is not an infrequent occurrence, and the method suggested should always be employed.

Again, the blood may give a persistent negative Wasserman and a positive Wasserman be present in the spinal fluid. The spinal fluid should always be examined, not only for a Wasserman test, but a cell count made and also an estimate made as to the amount of globulin present. The globulin estimation is of the greatest importance. It is usually the first serological change occurring in cerebro-spinal lues and the last to disappear. This is of as much importance as the Wasserman itself.

When a Wasserman test is made a Noguchi test should be made as well. A negative Noguchi test with an active serum is a better indication of the absence of syphilis, than is a negative Wasserman. A positive Wasserman reaction, however, is better evidence of the presence of syphilis than is a positive Noguchi, because of the possibility of false complement fixation occurring in the Noguchi test when active serum is used.

The question of how early in the course of syphilis an involvement of the nervous system is likely to occur is an interesting one. Whether the headaches and neuralgias which occur so frequently with the development of the secondary symptoms of syphilis are toxic in nature, or the result of a direct invasion by the spirocheta, is, as yet, an unsettled question. Personally, in the majority of cases, I am inclined to believe that they are toxic in character, as they disappear very readily, in the majority of cases, under treatment.

Nonne had observed a cerebral syphilis occurring four months after infection, and reported one case apparently occurring with the roseola. Mott has found menengitis occurring even before the primary sore was healed. A lymphocytosis and an increase of globulin in the spinal fluid has been observed several times, even before the blood became positive to the Wasserman reaction. Braus compiled statistics from one hundred cases of syphilis and demonstrated that fifty per cent of them developed an infection of the nervous system during the first year of the disease. McDonagh claims that in at least sixty per cent of people who develop syphilis the spirochetæ reach the nervous system, including the meninges, early in the general systemic infection. The theory advanced by some observers that syphilis of the nervous system is caused by a special strain of spirochetæ having a predilection for it, is, I believe, an incorrect one. The fact that a large percentage of cases of cerebro-spinal syphilis occur in these syphilitics whose disease was not recognized, or who did not receive proper treatment, would seem to have some significance. Weygandt and Jakob proved experimentally that rabbits infected with a strain of spirochetæ which had caused nervous syphilis, were no more apt to develop nervous lesions than those that had been infected with spirochetæ from a non-nervous case.

It would appear, then, that we are flatly confronted by the fact that syphilis of the nervous system, in a large percentage of cases, is the result of neglect on the part of the patient, or improper or insufficient treatment by the physician. It is pertinent, therefore, to reiterate in the strongest language possible the suggestion that when a physician is called upon to diagnose symptoms which may *possibly* be syphilitic, he should take no chances whatever. It's better to be safe than sorry.

Syphilis of the central nervous system can be divided into two classes — the degenerative (tabes and pareses) and the non-degenerative (gumma, gummatous infiltration around the blood vessels of the brain or cord, gummatous infiltration of the meninges and syphilitic endarititis). Of the two types, it was the degenerative which proved the most intractable to treat-

ment, due to our inability to reach the spirochetæ. It has been proven that there is practically no diffusion of arsenic into the spinal fluid when salvarsan is injected into the blood stream. Recognizing our inability to reach the spirochetæ in these conditions, several methods of direct injection of salvarsan were devised, but they proved too irritating and have been practically abandoned, with the exception of the Ogilvie method which is still used to a great extent.

Swift and Ellis devised a method of treatment of these cases by means of an injection of serum that had been salvarsanized in the patient's body. Briefly, the technic is this. — A full size dose of salvarsan is given the patient intravenously. One hour afterwards 50 c.c. of blood is withdrawn from the patient. The serum obtained is diluted to 40% with normal salt solution, inactivated at 56c for one-half hour and then injected through a lumbar puncture. This method, with a slight modification, is the one I have used almost exclusively. Instead of waiting one hour before withdrawing the blood, only fifteen minutes is allowed to elapse, as I believe the serum is more active at that period. Instead of confining my work to a 40% serum, I frequently use a 50% or 60% serum if the patient does not react quickly.

The use of the mercuralized serum as recommended by Byrnes is, I believe, dangerous. My experience with it has been unhappy. The reactions following its use have been so severe as to preclude its employment entirely.

The following few cases will serve to illustrate briefly the value of the intra-spinous injection of salvarsanized serum in certain phases of syphilis of the cerebro-spinal nervous system.

W. J. Age 30. Last April, while in Panama, he developed a chancre which healed in two weeks. This was followed in six weeks by chills and fever, generalized pain, very intense headaches and a fine, measly rash, while there. He took one intravenous injection of old Salvarsan and two of Neo-Salvarsan, with no influence on the intense headaches, and several injections of Mercury. — Dec. 2nd. Spinal puncture was made and the spinal fluid was slightly cloudy in appearance, presented a cell count of over two hundred to the field, a large increase of globulin and a border-line Wasserman. He complains of the most intense headaches, worse at night. His hearing is so bad that he cannot hear a watch tick when held against the right ear; in the left ear he cannot hear the watch tick over three inches from the ear. His eyesight is poor and he cannot read, owing to the intense pain in his eyes. He presents a well marked Descemtites. On Dec. 10th he received: .4 Arsenobenzol (American Salvarsan) and on the following day 20 c.c.

of a 40% serum intra-spinously. No reaction. — Dec. 12th. Pain in the head much better; eyes better; spots practically gone; can hear the tick of a watch three inches from the right ear; left ear normal. — Dec. 29th. Treatment repeated; spinal fluid examination; fluid perfectly clear, cells 40 to field; globulin slight increase; has not had any pain in head for past two weeks, eye apparently all right. January 14, Arsenobenzol .6. — January 15th. 30 cc. of 40% serum. Globulin slight increase, cell count 20. February 1st. Arsenobenzol .6. — February 2nd. 30 cc. of 50% serum. Wasserman spinal negative, cell count 4, globulin normal. Eyes normal.

W.D. Age 45. Hotel keeper. Gonorrhœa 18 years ago. Absolutely no history of syphilis. Eight years ago had a so-called stroke which affected his right side and his speech. This gradually almost cleared up, and about three years ago he had another attack. — Nov. 25, 1915. Marked ataxic walk, which has grown rapidly worse during past month. Unable to walk at all without cane, and then has to have assistance. Stuttering speech, and forgetting words. Rhomberg present; pupils very stiff, reflexes (patella) exaggerated. Intense shooting pains in legs; constant aching pains, so bad that his physician had started him on opiates to quiet them. Obstinate constipation, with difficulty in control. Blood xxx; spinal fluid xx; increase of globulin; cell count 40. He received .6 Diarsonal (Canadian salvarsan) intravenously and 30 cc. of 40% serum. Reaction slight.

Dec. 8th: — Speech better. Walks with cane, without assistance; is much more sure on his feet: pains are much better. Received .9 Neo-Salvarsan and 30 cc. of 40% serum. Reaction slight. Dec. 22d: — Has improved to slight extent since last treatment; Can walk a little without cane; much steadier on feet; no pain at all; can tell difference in surfaces with feet. .6 Old Salvarsan and 22 cc. of 50% serum intraspinously. Dec. 30th: — Feels much better in every way. Can go up and down stairs without assistance. Feb. 8th. — Still improving in every way; no pain, walks half a mile daily. Spinal fluid examination Wassermann x. Cell count 10, slight increase of globulin. Received 30 cc. of 50% salvarsanized serum intra-spinously and .6 Salvarsan intravenously.

F.W. Admitted to Dr. Givens' sanitarium May 2nd, 1915; age 31; single; bookkeeper. Contracted syphilis in 1908. History of inadequate treatment. One week before admission he became incoherent. He became imbued with a desire to get many different positions: grandiose ideas, exalted and excited, ataxic gait, pupils unequal, react to light but not to accommodation. Speech markedly affected; he stutters and slurs his

words so that he can hardly be understood. Wasserman, positive xxxx. Spinal fluid 4x, increase of globulin, cell count 18. — June 11th. .9 Neo-Salvarsan, 30 cc. salvarsanized serum intra-spinously. — Aug. 3rd. treatment repeated, patient very much improved, speech better. Much quieter, not as delusional. — On Aug. 23rd. cyanide of mercury injections started and given every other day for 45 injections. — Aug. 26th. .75 Salvarsan and the next day 30 cc. 50% serum injected. — Sept. 15th. .9 Salvarsan intra-venously and 30 cc. of 50% serum intra-spinously. — Dec. 18th. .9 Neo-Salvarsan followed by 30 cc. of 50% serum. Still shows a positive Wasserman in the fluid, cells 30. No delusions, speech much better, memory better, converses intelligently and has a good insight into his condition. Pupillary reflexes are returning.

Mr. B., lawyer, admitted to Dr. Givens' sanitarium, December 20, 1914; age 43. Syphilis fourteen years ago. About eight months previous to his admission he became exceedingly irritable; judgment impaired; neurotic; loquacious; restless. Now presents pronounced delusions of grandeur; pupillary reflexes very sluggish; patellar reflexes diminished; mild state of mania. Wasserman on blood. Wasserman spinal fluid; cell count 40; increased globulin. — March 23, 1915, received Neo-Salvarsan intravenously; on the following day 30 cc. of 40% salvarsanized serum. — April 15, 1915: The treatment repeated. — April 29, 1915: received full dose of Neo-Salvarsan and the following day 30 cc. of 50% serum. — May 21, 1915: Treatment repeated. — June 19, 1915: Treatment repeated. This patient has gradually improved until he is almost normal. Delusions have disappeared. Instead of being extremely restless, he is quiet. His spinal fluid still shows a positive Wasserman, but no excess of globulin and a cell count of fourteen. — Aug. 9: Patient apparently normal mentally. .9 Neo-Salvarsan and 30 cc. 50% serum intraspinously. — Nov. 15: Patient has been home since last treatment, returning to sanitarium twice weekly for mercury injections. He received an intra-venous injection of salvarsan and spinal treatment 40% serum next day. Patient is apparently able to resume his practice of law but he should continue his spinal treatments for some time longer as his spinal fluid still presents a Wasserman xx and a slight increase of globulin.

It is claimed by some of the most conservative of physicians who are using this method of treatment that the improvement noted may be only remissions of symptoms which are apt to occur in this disease. Even if this is true, there is no other kind of treatment which will bring about the remission of symptoms so frequently and constantly as this treatment.

Cases which I treated three years ago, and reported to the Institute, are still apparently cured.

To obtain the best clinical results from this treatment, it should be instituted early in the course of the disease, before degeneration has occurred, as it is manifestly impossible to regenerate nerve tissue. If we cannot cure all of these cases, we can at least in the majority of instances arrest the cause of the disease, relieve some of the symptoms and make life less of a burden to the patient.

PURE PHENOL AS AN INTERNAL REMEDY*

By Clarence Bartlett, M.D., Philadelphia

Philadelphia is a conservative town; too conservative perhaps, but we Philadelphians think well of it. We pride ourselves on our remarkable ability to discern merit. This is a tradition with us. Those of us who have had opportunities for observing agree that if there is any place on earth superior to Philadelphia, it is Boston. With this general estimate of your city entertained by my townsmen, I am in hearty accord, and must confess to harboring a feeling that all that comes out of Boston is good. It was therefore with especial pride that I received an invitation from your worthy president to address you last spring. Unfortunately, previous engagements prevented my acceptance at that time, and I requested Dr. Colburn to invite me some time in the autumn, which he did; and I am here, needless to say with pleasure and gratification to myself.

Having accepted the kind invitation, my troubles began. What subject would be most likely to interest my audience? An essayist must be ever mindful of the fable of the stork who invited the fox to dine with him and then served the viands in a long necked flask. The stork could partake; but the fox was obliged to go hungry. Inasmuch as you are here with me, you must perforce listen out of politeness while I orate. For about eight years, I had been interested in the clinical use of phenol as an internal remedy. The results have been so generally pleasing to me that I have dared to presume that you might be willing to review a study of the drug with me.

During the many years I was associated with Dr. Wm. C. Goodno, my illustrious predecessor in the Chair of Medicine in Philadelphia, I learned to respect and admire his wonderful therapeutic sagacity. His final contribution to medicine related to the remedy which is the subject of this evening's address.

---

* Read before the Boston Branch of the Massachusetts Homœopathic Medical Society, November 2, 1915.

Under the caption "The Treatment of Acute Infectious Disease"[1] he presented what, so far as my search of medical literature can discover, is the only systematic clinical exposition of the claims of this wonderful remedy to professional recognition. Dr. Goodno's essay was noteworthy by reason of the large doses of the drug employed by him; his explicit instructions as to details in administration; and the remarkable results achieved in certain acute infections, notably in influenza, scarlet fever, pneumonia, rheumatic fever, and erysipelas. In influenza he regarded it as a specific, and claimed for it the ability to shorten greatly the periods of postfebrile exhaustion. He even extended the internal use of phenol to the treatment of ordinary "colds" now recognized as infectious under the name of "catarrhal fever." His experience in pneumonias was limited to those complicating influenza, and the results reported were uniformly good. It was in rheumatic fever, however, that he claimed the remedy scored its greatest success, in that it produced euthanasia and recovery far more rapidly than any other remedy hitherto used in this disease. Herein he and I differed. While it was remarkably efficient, my experience has taught me that pain is relieved much more rapidly by sodium salicylate in typical cases than it is by phenol. Still I never resorted at that time to the author's large doses. Not only did he give from fifteen to twenty grains of the drug internally each day, but periarticular injections of two to five per cent. solutions were administered almost *ad libitum*. Patient's drinking water was also medicated with the phenol. The total daily quantity of medicine administered may have amounted probably to about forty to fifty grains.

Goodno's administration technic has continued to be my own to the present day. Merck's pure white crystals only have been used, with only one exception to be noted hereafter. Two strengths of solution have been kept on hand. That of two per cent. is made with water and presents no difficulty in preparation. This is reserved for hypodermic use. That of twenty-five per cent. is prepared as follows:

Merck's pure crystallized phenol, oz. iv.

Glycerin and distilled water, aa q.s., ad, oj.

If the preparation is suitable for internal administration, it is absolutely transparent and free from any color. On *long* continued exposure to light, it assumes a pinkish tinge which deepens as time goes on. It is therefore wise to store the remedy in amber bottles and in a darkened closet. I have always been careful not to employ preparations that have undergone any change other than that to a slightly discernible pink. Perhaps this precaution is unnecessary. Our honored

Dean and Professor of Chemistry, Dr. Wm. A. Pearson, assures me that the chemical compounds generated in long kept solutions cannot have any serious poisonous action. Still it is wise to be careful until one knows by actual experimentation. Goodno was very strict on this point.

Quite recently, it was impossible to obtain the Merck preparation for a month or so. Then my practice was limited to the use of one of domestic manufacture. Therapeutically, it was as efficient as the imported drug. In a comparatively short time, however, the crystals exposed to the same physical conditions that surrounded the keeping of the imported preparation deliquesced and discolored to a pronounced degree, and were accordingly discarded. It seems unreasonable to expect two substances having such diverse physical characteristics to be identical, especially after undergoing decomposition (?) changes.

This care as to the preparation seems to me absolutely necessary in view of what I shall later quote from numerous authorities as to the internal use of carbolic acid.

Prepared as above and administered freely diluted, pure phenol seems to be devoid of poisonous action in doses heretofore regarded as dangerous. Numerous patients have taken 15 grains daily for over three years without any deleterious symptoms. In one case obscuration of vision appeared. The ophthalmoscope showed a hazy retina which cleared promptly on discontinuing the drug, and did not return when medication was resumed.

In the old school at the present day and among our own prior to Goodno's communication, carbolic acid has not enjoyed much of a reputation as an internal remedy. True it is that Middleton[2] and others praised its efficacy in smallpox, but the rarity of that disease has caused their writing to be forgotten. The neglect of the remedy probably lies in the general acceptance of the idea that carbolic acid has no action other than that of an antiseptic, and the possibility of any drug acting in that capacity being generally doubted, it follows quite naturally that it must be useless for internal administration. Hale[3] compares the career of carbolic acid with that of arnica, and says: "It is feared that it will meet with the fate that arnica meets at the hands of the majority of our school. Hahnemann had a high opinion of arnica as an internal remedy and he gave us an excellent pathogenesis, but somehow the average homœopathist takes possession of the idea that it is to be used solely as an external application, or if given internally at all, only in case of injuries. The fact is that arnica is nearly as valuable as bryonia and nux vomica in a variety of internal diseases.

"So with carbolic acid. It will prove far more useful as

an internal remedy than it ever has as a topical application. . . . My present estimate of carbolic acid is that its sphere of action is the cerebro-spinal centres and that the disorders of the mucous surfaces, of the blood and secretions, of digestion, etc., are but the consequences of this primary action on the nervous system. Its pathological action when applied locally to any tissue is that of a caustic, disorganizing the surfaces when it is applied in a peculiar manner. It causes an ulceration and sloughing with tendency to putrescence. It is in this class of local lesions that its use, in very dilute solutions, will cure by its homœopathic relations."

The author then proceeds to deny the probability of carbolic acid acting as an internal antiseptic, and then says: "It is my belief that carbolic acid has the same effect on the human as on the lowest organisms, namely: the destruction of the vitality of nerve centres." Then he proceeds to review the provings of Hoyne and Mitchell.

Again he says: "All the provers had increased urine. It is known to be diuretic as is creasote. I predict it will prove useful in some of the varieties of Bright's disease, and possibly in diabetes."

Let me interpolate at this place that thus far I have not used phenol in any cases of renal disease, though I have demonstrated as far as one case can go that in large medicinal doses it does not damage these organs, and that it is capable even of increasing renal function in diseased kidneys in chronic parenchymatous nephritis. An old school authority[4] has also recommended its use in so-called hepatic diabetes, using doses of one to three grains not oftener than once in two hours.

The general medical literature concerning the physiological action of phenol is very large, and deals for the most part with cases of poisoning by that drug. It is more than likely that their great number has done much to foster in the minds of the profession that phenol has no medical interest other than in its toxicologic bearings. In referring to this literature, permit me to refer first to the teachings of certain prominent textbooks:

"On temperature: carbolic acid possesses considerable power to lower bodily temperature. It possesses more power over pyretic temperature than does salicylic acid, generally preventing a rise or causing a fall of temperature, but sometimes failing to do so. Its mode of decreasing normal bodily temperature is not as yet fully understood, although it would seem that it acts upon both heat functions. In fever it acts chiefly by decreasing heat production, although it affects both functions."[5]

Concerning this antipyretic action of phenol I must express grave doubts if I am to follow my own clinical experience. Not

once have I noted that it influenced fever in the slightest degree, nor that it depressed the bodily temperature in febrile illnesses aside from any influence exerted on the general improvement of the patient. My observations on this point are not likely to be in error, for the majority of cases were treated in hospital wards where temperatures were taken at four-hourly intervals. Hare,[6] who made some studies of the antipyretic action of phenol about 30 years ago says "Phenol acts as a feeble depressant to normal bodily temperature even when given in medicinal dose, and also decreases the bodily heat in fever. It lowers fever by diminishing heat production and increasing heat-dissipation. This antipyretic action is not sufficient to permit its use in disease for this purpose."

So far as the nervous system is concerned, phenol has an important action.[7] Hare says: "Phenol acts as a depressant and paralyzant to the peripheral sensory nerves when locally applied. Upon the higher centres in the brain the acid produces a condition of depression and stupor. The convulsions which sometimes occur after toxic doses have been taken are spinal in origin, as they occur after section of the spinal cord. The motor nerves escape almost untouched, as do also the muscles."

Sollman[8] taking carbolic acid as representative of the antiseptic group of coal tar derivatives comments upon that drug presenting collapse as a prominent feature. "It is much more difficult to adjust the dose in such a way as to get a desired effect without the admixture of a more or less violent collapse action. They present the same narcotic effect on frogs as was noted with the antipyretics. The following symptoms are more pronounced, and are shown in frogs or mammals by muscular tremors, twitchings, and convulsions.

"Carbolic acid causes in the frog a short stupor followed by incoördinated convulsions. The latter involve the entire central nervous system. Intactness of the sensory paths is necessary for their production, so that they like those of strychnin, rest upon an increased excitability. The action differs from that of the latter poison by its wider distribution, and in the more incoördinated spasms.

"There are also signs of stimulation of the medullary centers, especially that of *respiration*. The *heart* is quickened, probably by direct action on the cardiac muscles. The blood pressure consequently rises.

"These stimulant effects are shown only if the carbolic acid be slowly absorbed. If it is injected into the circulation or absorbed rapidly for any reason, the collapse sets in before there is time for the development of convulsions or other stimulation."

Cushney[9] in speaking of the action of phenol on frogs says:

"Quivering of individual muscle fibres sets in and this is soon accompanied by an increase in the reflex excitability and eventually by convulsions similar to those seen after strychnin. These movements gradually become weaker, and eventually complete paralysis is induced, while the heart continues to beat and the muscles and nerves react to the electric shock."

"In mammals, a very similar set of symptoms are produced, save that there is often no noticeable preliminary stage of depression."

"In man, convulsions are rarely seen. When large doses are taken, immediate unconsciousness may result and death follows within a few minutes." . . . "In more gradual poisoning, depression and weakness, headaches, nausea, and vomiting are followed by giddiness, noises in the ears, pallor, and collapse, with irregular pulse and respiration, cold perspiration; fainting and unconsciousness then lead to failure of the breathing and death. Delirium and excitement have been observed in some cases." . . .

"The cause of the convulsions in the frog seems to be an increase in the irritability of the spinal cord, similar to that seen in strychnin, for they are not removed by section of the medulla oblongata. In mammals, the sudden contractions of isolated muscles appear to be due to a similar action on the spinal cord, but the clonic convulsions and the persistent tremors are probably of cerebral origin, and Berkholz found the cerebral cortex abnormally irritable after carbolic acid. The rarity of convulsions in man has not been satisfactorily explained." . . . "In all cases, the primary stimulation of the central nervous system is followed by depression and paralysis if large doses are administered."

"The increased secretion of saliva, perspiration and tears which is seen in poisoning in mammals is probably of central origin, and may possibly be associated with the nausea and vomiting." This action of phenol suggests the propriety of trying it out clinically in the treatment of the salivation of pregnancy, especially as the obstinate cases are likely to be associated with pronounced vomiting.

H. C. Wood[10] says: "The influence of carbolic acid on the cerebrum is not very intense in the lower animals, but in the higher species, and especially in man, results in the early production of stupor. The convulsions are not peripheral, since they do not occur in a limb whose connection with the spine has been severed by division of the nerve, and do take place in a leg which has been protected against the action of the poison by tying the artery. They are therefore either cerebral or spinal. Although there is a distinct conflict of evidence, it seems established that the convulsions are of spinal origin."

"The spinal convulsions are accompanied by increased reflex activity which is lost as the paralytic stage is reached, so that carbolic acid appears first to stimulate and then depress the spinal centres. Stone asserts that the stimulation is preceded by a primary depression, due to stimulation of Setshenow's inhibitory center in the medulla."

Blyth,[11] when speaking of the nervous symptoms in man is apparently at variance with the observations of Cushny respecting the frequency of convulsions: He says: "The symptoms of carbolic acid poisoning admit of considerable variation from those already described. The condition occasionally is that of deep coma. The convulsions may be general, or may affect only certain groups of muscles. — Convulsive twitchings of the face alone, and also muscular twitchings only of the legs, have been noticed."

Of the autopsy findings in fatal cases of poisoning, but two quotations are of practical interest in connection with this paper. Blyth[12] says: "The respiratory passages are often inflamed, and the lungs infiltrated and congested."

Hare[13] says: "A peculiar croupous exudate is sometimes found in the bronchial tubes, and fatty degeneration of a more or less widespread type often follows phenol poisoning. Langerhans has noted that in some of these cases, evidences of croupous pneumonia existed. A very common symptom is hoarseness of the voice due to the effect on the larynx after the drug is absorbed, and not from its local influence."

The doses of phenol recommended in the various textbooks are invariably small, ranging from one half to two grains, the daily quantity being about five grains. The Bacelli treatment of tetanus with few exceptions is called hazardous. Such conservatism in view of Blyth's statement that the minimum lethal dose for man is 231 grains would be hard to explain were it not for the numerous cases recorded in literature in which serious local and constitutional symptoms have followed the application of weak solutions as external medicaments. Commenting along this line, O. H. Allis[14] remarked: "It would be safer to put a gallon of pure carbolic acid into a purulent thoracic cavity than to pour in a gallon of water into which a single ounce of carbolic acid had been placed." When studying the use of carbolic acid as an internal remedy it is well to forget the direful effects that have followed its external use, for even in the very large doses used by numerous physicians they seem to be non-existent. Still it is always wise to be cautious and to watch the urine for any discoloration. It is my practice to do so, and yet not in one instance, have I noticed this result.

The textbooks of recent date are either indifferent in their

recommendations of phenol as an internal remedy, or they speak of it as a remedy of the past. There seems to be a general idea that any medicinal action it may possess is due to its antiseptic properties; that internal antiseptic medication is at present an impossibility; therefore phenol is useless or comparatively so.

Personally, I am free to confess that from what we know of laboratory studies of the drug, its use as an internal antiseptic appears to be absurd if not actually indefensible.

It is next in order to refer to my own personal experiences with phenol covering a period of over eight years. My first cases were of arthritis deformans with which disease it had been my previous experience to obtain but decidedly mediocre results. With one exception, that of the last cases treated, the doses in all were the same, namely, twenty minims of the 25% solution three times daily. In one case, that of a young girl of twenty years in which the swellings were limited to both hands and wrists, a complete cure was apparently effected after two years steady treatment. In all there was some improvement to an extent greater than I have observed by any other measures previously used by me. In none of the cases were hypodermatic injections employed, because such injections are more or less painful and are somewhat annoying in their immediate after effects. Such an objection seems to come with especial force in the management of a disease the course of which must be measured by years instead of by days.. In the last case treated, the deformities were widespread and extreme, and the pains continued night after night with sufficient severity to demand the use of analgesics. It was then that I proceeded to increase the regular dose of 60 minims daily of the 25% solution by simultaneous administration by way of the rectum. For the latter purpose, a solution of seven and a half grains with one pint of normal salt solution was prepared, and administered by the Murphy drop method, the patient receiving 30 grains daily in this way. The result was fairly prompt. In the course of two or three days, swellings commenced to subside, contractures lessened, pain was relieved, and in six weeks more the patient was able to leave the hospital for his home. It is true that he was still far from well but he had been a sufferer for twelve years, and was certain that the carbolic acid had done more for him than had any other treatment. The good result cannot be attributed to the Murphy drip, for that had been in use for a week before the phenol was added to the normal saline. My confidence in phenol as a remedy in arthritis deformans is such as to lead me to recommend it most heartily to my colleagues, but not as a specific, but as an additional therapeutic measure for the relief of a terrible disease. It may be that my dosage

will be found faulty. In the last case, the patient was receiving 45 grains daily without ill effect.

A search of medical literature fails to find any reference to the use of phenol internally in chronic arthritis diseases. Some few authors have used it with satisfaction by injecting two or three per cent. solutions into the joint cavities. Although Zagato and Balduzzi reported their cases as far back as 1901, no one seems to have been sufficiently impressed to follow up the treatment.

In gonorrhœal arthritis, I have done nothing to determine the value of the drug, as the results of the bacterine treatment have been sufficiently satisfactory to deter me from searching for something better.

Next I come to a use of phenol which I believe is new, namely, as a remedy in pneumonic fever. Two or three years ago, there was admitted to Hahnemann Hospital a patient with delirium tremens complicated by lobar pneumonia. He was assigned to Dr. O. H. Paxson, who on account of the profound toxæmia, ordered Murphy enteroclysis. The result was excellent notwithstanding the apparent hopelessness of the case. Thereafter, we employed continuous enteroclysis one hour off and one hour on for most of our pneumonia and delirium tremens cases, and we believe with advantage to our patients. In March last, there was admitted to my wards two cases of lobar pneumonia following closely upon suppurative tonsillitis. They were assigned to Dr. G. Morris Golden, who remarked upon the frequency with which such cases were followed by abscess of the lungs. These cases were ordered continuous enteroclysis by the drop method. One of them not progressing favorably my attention was directed to his case. In view of the good result obtained in the case of arthritis deformans to which reference has been made, pure phenol in the proportion of seven and a half grains to the pint was ordered by the Murphy drip method. The patient made an excellent recovery. Almost at once, there was admitted a colored woman age unknown whose pneumonia was also sequential to suppurative tonsillitis. Her leucocyte count was high, namely 27,600. Phenol by the Murphy drip was ordered. Her illness followed a mild course. At no time was her condition serious. Following upon these experiences, I decided to try the value of phenol in cases of pneumonia the clinical phenomena of which suggested an unfavorable outlook. The ordinary cases were permitted to follow the plans in former use.

As a result I have 13 cases to report, with three deaths. Of these, nine cases were under my personal supervision, and were selected by me for the clinical experiments. Of the remaining

four, two, cases 12 and 13, were admitted as cases of delirium tremens, and the pneumonia discovered when they were submitted to our thorough examinations. Still it is proper to include these. Both died.[15] At present there is a convalescent delirium tremens patient who had coexistent lobar pneumonia who recovered on the simple Murphy enteroclysis without the addition of phenol. The remaining fatal cases according to my interpretation of the symptoms had complications when admitted, basing this opinion upon their erratic temperature curves which did not simulate pneumonia, but rather that of a septic condition. This is case 10 of my series. Fourteen cases were submitted to our regular methods, and of these three died. The percentage of deaths in each group was therefore about the same. The phenol cases are assumed to make the better showing because they were supposed to offer a more than reasonably unfavorable prognosis when admitted. My cases in brief are the following. Later I trust to report in greater detail with a larger series of cases.

1. Male, aged 30 years; temperature ranged around 104; pulse, 160; respirations, 60 at the time of beginning the treatment. He made a good recovery, but was collapsed with the crisis. Large doses of camphor were administered as a stimulant.

2. Vagrant, aged 27, had suppurative tonsillitis ten days before admission. He was believed to have pulmonary abscess when admitted, which diagnosis was confirmed by the X-ray. Temperature varied greatly. Pulse, 160; respirations, 52. Good recovery.

3. Colored man, aged 47. On admission temperature 104; respiration, 58; pulse, 140. Illness followed an uncomplicated course to recovery.

4. Colored man, aged 26; temperature 104.5; pulse, 120; respirations, 56. Leucocyte count, 17,000.

5. Clerk, aged 27. Temperature 105; pulse 120; respiration, 36. Leucocytes at first, 16,300 rising to 22,000. Followed a mild course.

6. Italian, aged 27; temperature 104; pulse, 160; respiration, 52. Illness followed a mild course notwithstanding his apparently serious condition on admission.

7. Female, aged 20; temperature, 104; pulse, 120; respirations, 48. Recovery.

8. Male, aged 40; consolidation of right middle and lower lobes; temperature, 104; pulse, 140; respirations, 50. Leucocyte count, 11,000; blood culture positive on second day. Sputum on admission was thin and dark brown from admixture of altered blood (so-called prune juice sputum). Highly toxic

with subsultus tendinum, soon becoming delirious. Seventy-five grains daily by graduated enteroclysis was started; but he failed to retain it. Then 20 minims of the 25% solution was prescribed by mouth every 3 hours, making 30 grains of pure phenol daily. The illness ran a rather prolonged course, and was complicated by a pleural effusion, the fluid removed by tapping being blood stained.

9. Colored girl, aged 20; temperature, 104; pulse 140; respiration, 50. Good and uneventful recovery.

10. A Russian, aged 30 years, was treated by Dr. Sappington by the phenol method. He recovered from his pneumonia, but subsequently developed pulmonary gangrene. He improved to sufficient extent to be up and out on the porch. Concerning this case, there is some question. There was some evidence pointing to complications when he entered hospital. Sappington questioned the possibility of the inadvertent continuance of the carbolic acid having contributed to the production of the pulmonary gangrene.

11. Man, aged 36; temperature, 103; pulse, 120; respiration, 40; quite toxic; leucocyte count, 9,500; Crisis the day following administration of phenol; rather prompt to have been favorably affected by any treatment.

12. The fatal cases were as follows: Waiter, aged 30 years; a heavy drinker. Delirium tremens with secondary pneumonia; temperature, 105; respiration, 70; pulse, 140; leucocyte count, 11,000. Died within 24 hours after admission.

13. Meat cutter, aged 43; heavy drinker for years. Had chronic nephritis. Case was not under my immediate care, but was evidently a far more serious one than the records would indicate, for the very unusual course of placing a special nurse on constant duty on one ward patient was followed. He died on the sixth day of the illness, and the second day of treatment.

In the selection of cases, respiratory frequency and the general condition of the patient after the patient had been in the hospital sufficiently long to quiet down and be accustomed to the surroundings were regarded as the most reliable data. With two exceptions, the phenol was administered by enteroclysis, the regular daily dose being 30 grains, the solution being in the proportion of 1 to 1,000. Half of the patients were regarded as sufficiently ill to be screened from the general ward.

In addition to the above scheduled cases of pneumonic fever was one seen in consultation with Dr. C. S. Raue. The illness followed almost immediately upon removal of the tonsils, and was by those interested attributed to tonsillar infection. Phenol was advised in this case, but was objected to by the attending physician because of a coincident nephritis and the

fear that the drug might do harm if given in appreciable doses. The illness terminated fatally.

The first case treated was selected solely because of the prospective danger of pulmonary abscess. The second one was desperate when the change to phenol was made. Antiseptic medication, quixotic as it may sound, was the basis for the prescription. That this can be the rationale of the treatment is not, however, clear. Hare observes concerning autopsies on fatal cases living sufficiently long to undergo visceral lesions: "A peculiar croupous exudate is sometimes found in the bronchial tubes, and fatty degeneration of a more or less widespread type often follows phenol poisoning. Langerhans has noted that in some cases evidences of croupous pneumonia exist. A very common symptom is hoarseness of the voice due to an effect on the larynx after the drug is absorbed and not from its local influence."

N. F. Cooke, of Chicago, in a little brochure entitled antiseptic medication, which, however, does not mention pneumonia as within the sphere of the therapeutic activity, refers to experiments on dogs, four of which showed croupous pneumonia following their deaths by phenol poisoning.

The above experiences suggested the advisability of using phenol in the normal saline in septic cases in the surgical wards. Thus far but two cases presenting test conditions have come up. In one of these each pint of saline contained 5 grains of phenol, and the other, 7½ grains were added to the pint. Both cases occurred in the service of Dr. H. L. Northrop, and the results were good. With this limited experience, Dr. Northrop is unwilling to express any other opinion than that the carbolic acid thus administered did no harm. Quite recently, I learned that Dr. J. C. Applegate, obstetrician to the Samaritan Hospital, had been using enteroclysis with phenol 1 to 1000 for a couple of years in his streptococcic infections, and was under the impression that he obtained better results than from normal saline alone. In conversation with him over the 'phone, he confirmed this report, and added that he had been using the drug intravenously in the same dilution, and he thought with good results. He still adhered to serum treatment to start with, leaving the phenol for cases that he thought were going badly, or that had not come under treatment promptly. His dosage of phenol was 30 to 40 grains daily as a maximum. He had never seen any bad results.

In malignant endocarditis, I have given phenol one trial without one iota of evidence that it was efficient in any dose or after any method, the intravenous excepted. The patient was in the hospital five weeks, and his daily dose was pushed to 50

grains. On his recent visit to Philadelphia, Dr. Goodno referred to a case treated by him in the West in which recovery was the result, the dosage was extreme, but at the present time I am not able to give particulars.

In a case of proved colon bacillus infection seen with Dr. Raue, the phenol was without any evident effect. The illness had been going on with variations for two years. Phenol did not check its onward course, and patient died four or five days after I saw him. The dosage here was 20 grains daily by the mouth.

A study of literature shows that a few physicians have made use of phenol in the treatment of infectious diseases notwithstanding the current teachings of materia medicas that the internal use of that drug is obsolete. It is in bubonic plague that we note the largest doses in use. Atkinson[16] reported one case ending with recovery to whom 200 grains were administered within three days. Thompson[17] treated a series of cases administering 144 grains daily. Twelve grains were prescribed every two hours. He noted that the medicine must be given well diluted. He never observed poisoning symptoms, and the so-called carboluria was rare.

The Bacelli treatment of tetanus has created considerable interest in Italy, where excellent results have been reported, better indeed than any observed as the result of antitoxin or magnesium sulphate. The fundamental detail of this treatment is the hypodermic administration of fifteen grains daily in the form of two or three per cent. solution. Much larger doses than 15 grains daily have been reported. W. F. Baker treated one case of tetanus to a successful conclusion after administering 120 grains daily for 12 days. This is the maximum dosage of which I have knowledge. With the phenol treatment of tetanus I have had no experience. In view however of the numerous reports of successes, I cannot sympathize with those who characterize the Bacelli doses as dangerous. It is very evident that if a pure phenol is used, there need be no apprehension concerning doses of 75 grains daily if cases are carefully watched, and the pure preparation is employed.

I have prescribed pure phenol in doses of 60 minims of the 25% solution daily in a number of cases of gastric stasis characterized by pain. Unfortunately, these cases have not been sufficiently studied. The histories of the case are thoroughly written up, and gastric analyses made; but the need of good X-ray serials is evident in establishing a positive opinion as to the pathology of the case. Generalizing, I would say that most of them are old ulcers with sequential gastric dilatation or examples of cholecystitis with extensive cicactrization and the resultant adhesions and impairment of the gastric motor effi-

ciency. At any rate, my cases, about twelve in number, all show the remarkable palliative influence of the treatment.

In closing, I would express my disappointment that I have not presented on paper a sufficient number of observations to warrant the enthusiasm that is within me respecting the value of phenol as an internal remedy. Therapeutic problems are always difficult to solve. It is said that salvarsan was tried out on many thousand cases before it was given to the profession; and yet with its merits recognized, there still remain many data to be determined in the future. Apparently, I have brought forth a new remedy in pneumonia. I have personally within eight months treated nine cases successfully. But these cases were regarded at the time as unfavorable ones and were selected for that particular reason. And yet it may happen that the next series may not terminate so fortunately. In arthritic and gastric disorders, my experience has been more lengthy, covering over eight years, and in this field, I feel that I can recommend the phenol with more reasonable assurance borne of an extended experience.

It takes about ten years of collective investigation on the part of the medical profession to give each new addition to medical science its proper place. This result is to be secured by laboratory experiments and clinical experience. Much of the work relating to the study of the physiological action of phenol has been done in the many cases of poisonings reported in journals. These need to be collected and systematized. With these as a basis, there can be no question about our ability to extend the sphere of the remedy. I am asked if I have any opinion as to the mode of action of phenol. In reply I would say that there is much to say in favor of any view one may take concerning the subject. It hardly seems possible that it acts as an internal antiseptic and yet quinine is deadly to the pharmodium in even smaller doses. It may be that the phenol reduces the activity of micro-organism to an extent sufficient to enable the defensive mechanism of the body to become efficient. Again, it may be homœopathic. We have evidence that it produces the lesions of pneumonia, and Hughes & Dake's encyclopædia proves it capable of disordering the joint structure. The large doses seemingly necessary are against the homœopathic theory and yet with our limited knowledge "who knows?"

1. *Hahnemannian Monthly*, March, 1907, p. 161.
2. *Hahnemannian Monthly*, April, 1872.
3. *New Remedies*, 4th edition. Vol. ii, p. 107.
4. *Foster's Therapeutics*, Vol. i.
5. *Reference Handbook*, 2d edition. Vol. ii, p. 571.
6. *Practical Therapeutics*, 12th edition, p. 388.

7. *Ibid*, p. 387.
8. *A Textbook of Pharmacology*, p. 368.
9. *A Textbook of Pharmacology and Therapeutics*, 3d edition, p. 399.
10. *Therapeutics: Its Principles and Practice*, 13th edition, p. 834.
11. *Poisons, Their Effects and Detection*, p. 151.
12. *Op. cit.*, p. 154.
13. *Op. cit.*, 389.
14. *Philadelphia Polyclinic*, April 14, 1894.
15. Feb. 24, 1916. Further experience has given me the impression that pneumonia in confirmed alcoholics is better treated by the plain enteroclysis, at any rate the results have been better in these cases with the phenol eliminated.
16. *Lancet*, Dec. 9, 1899.
17. *Journal of Tropical Medicine*, Oct. 1, 1903.

CLINICAL DEPARTMENT

A Case of Vagatonia

Case 3-F. Patient is a woman thirty-one years of age, tall, slightly over fat and very soft from lack of proper exercise. She is the seventh generation born in the same home in a New England town, and the stock seems to have run out. The parents are living and both are of the rather strict orthodox type. The mother is normal enough. The father is of a somewhat poor type posturally with a morbidly philosophical mind and over strict ideas of the proprieties of life. He is now slightly senile, is decidedly psychasthenic and unduly emotional. There are two children, the son a High Church clergyman and extremely neurotic, with somewhat bigoted ideas, and a daughter, the patient.

This daughter was an extremely sensitive, impressionable child, always very shy and fearful and yet with a violent temper, and during her girlhood she dreaded to meet strangers. When about eight years old she fell off a high beam in the barn, striking upon her head and was unconscious for some hours. At about this time her brother, who is eight years older and already was much interested in religious matters, impressed upon her young mind in vivid pictures the terrors of hell and eternal punishment for any wrong-doing, and this early impression seems to have continued through life as the ground-work of her neurosis.

At twelve she matured normally but had such a distinct psychasthenic attitude of mind that she was sent to a sanatorium, where she remained until she was eighteen. Over this period her main obsession, apart from the fear of future punishment, was that of tubercular germs. She had the hand-washing mania and feared to touch her clothes or books and many other things because of the possibility of infection. There were periods

during this time when she was comparatively normal, but the obsessions remained deeply rooted and persistent.

The patient has an unusually bright and critical intellect, and at this time had access to the institution library and acquired a very credible store of knowledge, including a smattering of French. When eighteen a logically minded physician into whose hands she fell succeeded so well, after a few weeks, in explaining away her fear of tuberculosis that this fear has never returned and she can now talk sensibly about it. At eighteen she returned home and assisted in the housework, and cared for her mother through a long illness.

When about twenty-two, however, the eternal punishment idea returned and she went back to the institution for a few months. She improved sufficiently to enter one of the large training schools for nurses, where she got along fairly well for two years through the aid of a clergyman to whom she constantly went for advice and reassurance. At the end of this period, however, she had such severe backaches and flat feet that upon the advice of an orthopedic surgeon she gave up her nursing. It is evident, therefore, that she had some postural disturbance. She then entered upon some social service work, continuing her dependence upon the clergyman and one or two women friends to whom she constantly went for assistance in straightening out her disturbed and fearful ideas. At this time it would appear that she was well enough so that a few carefully placed, convincing arguments were readily accepted. She says, however, that her fears were many and that she lived in a state of great unhappiness.

After a year or two of this life she lost faith in the clergyman and returned home with many obsessions and a constant sense of fear. For the past six years she has lived at home, seeing only her mother and father and a few friends and children in the neighborhood with whom she has enjoyed walking in the woods. The household has been entirely given up to her perverted ideas growing out of these fears, so that her father could only step in certain places, sit in certain chairs and put his hat and coat in certain places. Her mother spent many hours of each day explaining away her senseless and childish fears and false philosophies. The home atmosphere has been one of constant dread lest some word or act should bring down a torrent of tears and protestations. Yet at no time has the family been allowed to know the real (sex) basis of these fears.

At the present time the patient stays mostly in bed because, she says, it minimizes the opportunities for necessitating her doing these things which increase her dread of eter na punishment. She is n ot quite sure what the unforgivable sin is

and, therefore, fears to do anything because it may be in some way connected with the unforgivable sin. This differs from the classical symptom of involutional melancholia in its element of doubt and is therefore a psychasthenic symptom. Occasionally after days of explaining and discussion it is possible to talk her into a frame of mind where she can get up, put on her clothes and appear in many ways quite normal, smiling and taking part in conversation in an affable manner. This too is characteristic of psychasthenia.

Physically, the patient has a most immature, childish expression. The face is pale, flesh flabby, the eyes (V. Graefe's sign) and pupils unduly large, yet there is no exopthalmos; when frightened by some chance word or act the eyes seem to start out of her head. The tongue is heavily coated and the saliva almost absent; what there is is tenacious and stringy, the mouth being constantly dry. She cries three-fourths of the time and at these times in attempting to explain her fears has a peculiar high, shrill, whining voice. Her teeth are good. The thyroid is slightly enlarged. She has an excellent appetite when not too depressed and is a great meat eater.

For a year or so since the more acute symptoms developed she has had periods of what appeared to be gall-stone colic. The pain always comes at night and usually recurs on two or three successive nights at intervals of a week or ten days. She describes it as "knife-like." The bowels are somewhat distended and gassy and there is obstinate constipation. The urine is very scanty, only being passed once or twice in twenty-four hours and then only after urging and waiting. The skin though usually pale has periods of flushing, especially when she cries the face gets quite livid. Hands and feet perspire freely. The urine is concentrated, 350 cc. 24 hours, and contains much oxalic acid and indicans.

The blood shows a lymphocytosis (37%); color test of 90.

Here then is a case in which the entire vegetative nervous system seems to be acutely disturbed. Whether this disturbance may be explained in the light of Cannon's findings in his book, "Bodily changes in Pain, Hunger, Fear and Rage," as the result of a prolonged emotional attitude of fear and therefore of psychic origin or whether the general atavistic tendency including irritability of the autonomic system has persistently sent disturbed visceral impressions to the parietal areas, in the cortex, resulting in the perverted intellectual and emotional attitude is a most interesting question, the answer to which would largely depend upon whether it were given by one who believed that the physical mechanism determined all human activities, or one who laid the greatest stress on the psychic or

spiritual side. It suggests the old question of which came first, the egg or the hen.

It is evident that the entire autonomic system is extremely irritable, the large pupils and palpebral fissure mean that the autonomic fibres running in the third nerve are disturbed. The dry mouth with sticky, mucoid saliva point to an irritability of the autonomic fibres running in the fifth and seventh and through the corda tympani to the face and salivary glands. In so emotional a picture one would expect the heart to run considerably over 100 at times, yet it rarely gets above 80, which is further evidence of disturbance of the cardiac autonomic fibres. Going further down, the gallstone-like colic attacks are undoubtedly due to inspissated bile from irritability of the vegetative fibres from the cœliac plexus.

We neglected to say that there is periodic eroticism both in dreaming and waking, which forms the groundwork for the fear of eternal punishment, and this as well as the constipation are undoubtedly due to irritability of the large pelvic (autonomic) nerve, the suppressed urine possibly coming from the same source. Whether this is a case of psychasthenia engrafted upon a so-called autonomic constitution or whether the whole picture is one due to vagatonia, only a prolonged course of treatment can determine.

In the light of our later knowledge of visceral neurology the glandular disturbance in this case suggests a line of therapy which was hitherto not thought of by the old school, though homœopaths working along symptomatic lines have long been accustomed to use the very remedies (atropin, phytolacca, physostigma) which are now being lauded by the old school men who are working upon this new disease entity, Vagatonia.

LABORATORY DEPARTMENT

DIPHTHERIA

Bacteriologic Diagnosis. — Fully developed characteristic cases of diphtheria are readily diagnosed by the clinician, but the less marked and early undeveloped cases present greater difficulties. In these cases cultures are of the utmost value.

A culture diagnosis should never be considered as the absolute criterion. A *negative* report is always inconclusive, and in suspicious cases calls for another culture. The reported absence of bacilli in a culture must be given weight in proportion to:

(1) The duration and progress of the disease, as the earlier cases yield a greater percentage of positive cultures.

(2) The locality of the infection; purely laryngeal cases offer

but a small percentage of positive cultures owing to the inaccessibility of the diseased area.

(3) In certain cases of diphtheria for some reason or other no bacilli are found in the cultures by the examiner. In many instances later cultures will reveal them.

(4) The skill with which the culture is made.

(5) The efficiency of the medium as favoring the growth of the organism.

(6) The knowledge and experience of the examiner.

A *positive* report is practically final, but the presence of diphtheria bacilli without clinical symptoms does not of itself justify a diagnosis of diphtheria. There are typical bacilli which produce diphtheria toxin and other forms morphologically identical with the Loeffler bacillus which are practically atoxic. In addition there are pseudo-diphtheria bacilli which though resembling the true bacillus in many particulars yet have distinct class difference.

Culture tubes of Loeffler's blood serum should be kept in an incubator at 37 deg. C. for twelve hours before examination. When haste is necessary even five or six hours will sometimes suffice for a sufficient growth of bacteria to enable a skilled examiner to decide as to the presence or absence of this particular bacillus. An *immediate* diagnosis is often possible from a microscopic examination of a smear made directly with the exudate, but the results are more uncertain than with cultures.

Release Cultures. — In a convalescent case the absence of bacilli in any one culture indicates that there are not many bacilli left in the throat, but only repeated cultures prove their absence. For this reason two and even three successive negative cultures are necessary before a case should be released.

Carriers. — Diphtheria bacilli (morphologically) have been found in from 0.5% to 2.0% of healthy persons, but only a small proportion produced strong toxins. The continued presence of virulent diphtheria bacilli in the throats of certain patients who have recovered from the disease have been demonstrated by numerous investigators. In "carriers" there is often some concurrent condition lowering the vitality of the patient. In these cases cultural results are extremely variable.

Virulence. — Virulent diphtheria bacilli are separated from non-virulent diphtheria-like bacilli by the production of toxin. Tests in any particular case as to toxin production and its consequent effect upon guinea pigs by injections or by cutaneous reactions may be made in the laboratory.

Schick Test. — The technic of this test consists in an intracutaneous injection of 1-10 c.c. of diphtheria toxin of a strength equivalent to 1-50 of the minimum dose fatal to a

standard 250 gram guinea pig. A negative result in normal persons indicates the presence in the blood of diphtheria antitoxin, and therefore consequent immunity to diphtheria, at least for the time being. A typical positive result points to an absence of antitoxin and a resulting susceptibility to infection. The value of the test comprises: (1) separating cases of other infections such as angina and rhinitis. (2) Distinguishing cases of true diphtheria from those which are bacillus carriers, and (3) Determining the persons who, when exposed, need a prophylactic injection of antitoxin.

REVIEWS

RECENT PROGRESS IN PSYCHIATRY

The Intelligence Examination and Evaluation.

Dr. J. Victor Haberman, Journal A. M. A., July 31, 1915 discusses the difficulties of estimating the child's mental status and the factors to be considered, quoting from many men who have made this question a special study.

He defines the normal person in these words: "The individual we term mentally and intellectually normal is one who acts and progresses in a manner that will permit him to take his place among his fellows without conflict or any hindrance or molestation to them," or, "One whose reaction to given stimuli neither no more nor less in degree and manner than a certain quantum that we have become accustomed to — allowing for topographic, racial and temperamental differences. He emphasizes the importance of a medical as well as psychological education for those who would do this work, and points out the inferior and juvenile equipment of most of those to whom it is entrusted. He says that "The mind of the child is not a matter of knowledge, but of something essentially dynamic behind and veritably in this knowledge — a facultative interfunctioning (of perception, comprehension, combination, etc.) harmonious and correlated in the normal — discordant and disrelated in the psychopath — incapable, inadequate, impotent when the intelligence is defective." He considers most of the present methods, including the Binet test commonly made, as a "Stereotyped Jargon."

Criticizing the Binet test he points out: —

(1) That one is struck by the paucity of questions for gauging the intelligence and mentality of the individual, or rather his intellectual age, with four or five bare questions.

(2) That they are largely questions of language efficiency.

(3) Even normal children with psychopathic constitutions

are deficient in school-trained ability because they frequently "cut school, raise trouble in the school room, etc., and so get set back."

(4) The questions are such that at different ages one is testing quite a different set of functions, so that one cannot say from them that the child has passed a year in advance for the same faculty has not been examined.

(5) The questions are changed backward or forward according to the ideas of various examiners, thus changing the evaluation for the different years.

(6) Using Paris scale it has been found that the children of Rome and Brussels test two years higher and those of Moscow two years lower.

(7) The Binet tests do not and cannot take into account the abnormalities and hence have no value in the evaluation of the abnormal child. Abnormalities of attention may throw the whole computations out of gear. The child may lack concentration, have hyperfancy or day dreaming, pathologic moods, perverse moods and humors — yet these children may be remarkably intelligent.

(8) The Binet test takes no account of emotionalism, or affectivity in certain children — children finely attuned — "soulful." This may appear in the normal talented child as well as the psychopath, and is often of much importance in an estimate of the intelligence. This, Haberman regards as "the most important shortcoming of the Binet tests."

(9) He points out the danger of making deductions from one test, as mental accomplishments fluctuate under normal conditions varying with fatigue, alimentary, hazard, disinclination, disease, etc.

What we need, Haberman believes, is not tests of general ability but insight into the intelligence or mentality. "In short, we can form a rational conception only if we ascertain the data concerning single component functions and construct our estimate on these.

Haberman has constructed a chart which he thinks obviates the defects of the Binet test while including its good points.

Recent Aspects of Nervous and Mental Pathology *Francis X. Dercum, M.D., Philadelphia. Journal A. M. A., July 31, 1915.*

In this instructive and illuminating article Dr. Dercum correlates the modern views of infection, autointoxication and immunity and shows their bearing on nervous and mental diseases. Of special interest is his explanation of certain of the psychoses, basing their etiology on autointoxication both

primary and secondary. He says, "Disturbances of metabolism of the body, no matter how arising necessarily entail states of intoxication, and in these states must be sought the explanation of nervous and mental disease. That poisons do play a rôle in the production of mental disease is evident by the effect of alcohol and infections. Kraepelin has pointed out that mental symptoms may be the result of bacterial toxines. These toxines may act directly on the brain or may bring about disturbances in the function of other organs leading to changes in general metabolism and the formation of endogenous toxines and consequent general autointoxication."

As concrete instances of this Dercum cites, "The prolonged confusion that now and then occurs in the convalescent period of typhoid and the confusional insanity of alcoholism which lasts many months after the alcohol has ceased to play a part." These ideas he says must necessarily influence our conception as to the nature and origin of autointoxication, that is, endogenous poisoning. This is of two kinds, (1) Arising from the gastro-intestinal tract, and (2) arising in the tissues of the body itself.

The long duration of mental disease points to the fact that these poisons cannot be of a character to permit elimination, at least, not readily.

The clinical histories of many mental diseases, for example of melancholia, consists of a period of gradual invasion, another of maximum onset of symptoms and a third of subsidance. These facts suggest that we have to do with biochemical processes akin to those of infection and immunity processes fermentative or enzymotic in nature. In combating the poisons in nervous and mental disease it would seem that the phagocytes have no opportunity to exercise their special function, but it is not improbable that they join the serum of the blood in furnishing protective serums. Dercum cites the work of Behring and Roux in regard to curative and preventive serums and looks forward hopefully to similar therapy for mental diseases when their exact poisons shall have been determined. He points out that the Abderhalden reaction offers much possibility in this latter connection in explaining their biochemical or physiochemical origin.

He thinks that at present the essential thing in treatment is to build up the lipoids in the blood stream and thus assist it in establishing a natural immunity. To this end he believes that the essential things are summed up in the Weir Mitchell treatment — excessive rest in bed and forced feeding together with exercise in the form of massage and baths. He believes ordinary drugs of little use unless simple anodynes and sedatives

are required but that much benefit is to be obtained from frequent injection of normal saline subcutaneously or intravenously.

PATHOLOGY

A Case of Fatal Diabetic Coma Without Diacetic or Beta-Oxybutyric Acid. *McCaskey, G.W., Jour. Am. Med. Asso., 1916, Vol. 66, p. 350.*

This case is an exception to Stadelmann's dictum that "diabetic coma occurs only when the urine contains beta-oxybutyric acid."

The Action of Light upon the Living Cell. *Scharz, F., Munch. med. Woch., 1915, Vol. 62, p. 643.*

Light changes soluble albuminous substances to insoluble ones. This action of light is the cause of sclerosis of the lens of the eye. A probable explanation is the property of the lens to absorb a greater portion of ultraviolet rays; in fact all of them are absorbed after the fiftieth year of life. The sclerosis is, therefore, looked upon as a result of the action of these rays.

The difference between youthful and senile lenses may be shown by a color reaction resulting from the use of sodium nitro-prussic acid ammonia. With these reagents, easily soluble albuminous material is stained red. Youthful lenses are completely stained, whereas sinile ones show no or only peripheral staining.

Iron in Tomatoes. *Brantlecht, C. A., and Crawford, G., Jour. Ind. and Eugin, Chem., 1914, VI, 1001.*

An analysis of Florida tomatoes gave the following average figures: Water 93.4%, Ash 0.53%, iron 0.023%.

Experimental Scleratherosis of the Cardiac Valves. *Anitchkors, Nr. Arch. Path. (Virchow), 1915, Vol. 220, p. 223.*

In rabbits fed with cholesterin there appear, in addition to aortic changes, white patches on the large mitral cusp and on the aortic semilunar cusps. These patches correspond entirely with those appearing in man. They show a very definite localization, and begin with the deposition of doubly refractive cholesterim fats in the intercellular cement substance, following which there is a collection in the cells themselves.

The appearance of these white patches is dependent upon the cholesterin content of the blood, and runs parallel with the development of atheramatous aortic changes; it is favored by the normal anatomic relations of the cardiac openings, but to a greater degree when the cusps are injured by infectio-toxic influence.

A Study of the Occurrence of Diphtheria Bacilli in Normal Throats. *Keilty, R. A., Med. Record, N. Y., August 21, 1915, p. 311.*

The author examined one hundred students living under healthy conditions with normal throats and found only one suspicious culture which proved negative on inoculation into the guinea pig, i.e. at least avirulent.

C. W.

Diphtheria Bacillus Carriers. *Guthrie, C. G., Johns Hopkins Hosp. Bull., March, 1915, p. 88.*

The work is based on a study of 6000 throats. Eighty to ninety per cent of the carriers found harbored avirulent organisms. These were morphologically and culturally typical, but they failed to produce toxin. The validity of the guinea pig test was confirmed by throat inoculation of healthy volunteers. Virulent organisms remained virulent in throats of patients who became carriers, from which the author concludes that avirulent carriers are not a menace to the community if allowed to be at large.

C. W.

The Treatment of Diphtheria Carriers. *Meader, F. M., Med. Record, N. Y., July 17, 1915, p. 127.*

A pathological lesion of the mucous membrane or a foreign body was often found to be the cause of an individual's being a carrier. The removal of this caused the disappearance of the bacilli from cultures from these patients. The Bulgarian bacillus, the lactic acid bacillus or the Staphylococcus Aureus, sprayed into the throats of carriers merely overgrow the Diphtheria bacillus, and if the spray be discontinued the latter bacillus will return in the culture after a few days. Removal of the tonsils proved very efficacious in bringing negative cultures. Autogenous vaccines from diphtheria bacilli have received some attention but a true amboceptor has never been demonstrated, although one amboceptor-like body has, but only after the use of the vaccine, as it is never present during convalescence from the disease. Meader found 0.4 per cent of the general population to be carriers. If the mucous membrane is infected with syphilis or tuberculosis, the diphtheria bacillus is apt to get a foothold and will remain until the first infection is eradicated. In discussing Meader's paper, W. D. Park said that 10 per cent of children with scarlet fever are carriers of the diphtheria bacillus, for which bacillus the disease offers a suitable nidus.

C. W.

Zur Frage der bakteriologischen Diphtherie Diagnose. *Berlin, H., Deutsch. med. Wochenschrift, July, 1915, p. 858.*

Suspicious cultures which after twenty-four hours were negative often gave positive results after another twenty-four hours. [This is contradictory to the current ideas on cultures which are allowed to go over. Ed.]

C. W.

Zur Behandlung der Diphtherie. *Seidel, O. Munch, med. Wochenschrift, Sept. 7, 1915. 1209–1212.*

In a series of thirty-two cases the author got no deaths where antitoxin was given before the third day. When given after this time two deaths occurred. His dose was only 1000 to 8000 units. [It is to be remembered that the diphtheria in southern Germany is considered by some authorities to be much less severe than in New England. Ed.] Seidel recommends the injection of one or two c.c. of the serum when the antitoxin is to be given intravenously. If no signs of anaphylaxis occurs in two hours the desired dose may then be put into the vien.

C. W.

IMMUNOLOGY

Treatment of Typhoid Fever by Intravenous Injections of Polyvalent Sensitized Typhoid Vaccine Sediment. *Frederick P. Gray, Henry T. Chickering. Archives of Int. Med., Vol. 17 No. 2. February 15, 1916.*

This article deals with a study of 105 cases of suspected typhoid fever in which workers were allowed to examine patients through the courtesy of attending physicians. Thorough laboratory examinations were made, including blood cultures, Widal tests, and in some cases examination of stools and urine. On this laboratory basis 40 cases were excluded as not being typhoid, and in 12 cases it was impossible to give treatment. Patients were cared for under varying conditions of hospital and home. The mortality was 9%, that which one may expect under best hospital conditions.

Method of treatment consisted in intravenous injections of 1-50 to 1-25 milligram (150 to 300 million bacteria) of a sensitized polyvalent, killed typhoid vaccine sediment. This injection gives rise to a series of symptoms characterized particularly by a chill, rise and fall of temperature, and leukopenia followed by hyperleukocytosis. In 66% of the cases a distinct benefit was obtained with disappearance or amelioration of subjective symptoms and apparently accelerated recovery. A series of subcutaneous injections following the intravenous treatment ap-

parently aids in preventing relapses. The use of the sensitized vaccine is considered by the authors as better than the plain typhoid vaccine for intravenous injection.

D. L. B.

Agglutination in Pertussis. *Olga Povitzky, assisted by Edward Worth. Arch. Internal Med., Vol. 17, No. 2. February 15, 1916.*

The work reported is part of a series of studies by the Bureau of Laboratories of the New York City Board of Health under the direction of Dr. A. W. Williams. The determination of the best conditions under which agglutinating serum may be obtained in test animals is such as to be of value to other workers. The rabbit and horse proved to be the best animals for serum production. Living cultures give most strongly agglutinating serum, vaccines causing immunity but not producing agglutinins to any large extent. A strong serum agglutinates equally well though not equally promptly, all strains, irrespective of the medium for growth or the sluggishness of the strain.

Agglutination tests in the clinical diagnosis of pertussis compares favorably with complement fixation only in the first week of whooping cough. In later stages of the disease complement fixation antibodies appear more frequently than agglutinins. A dilution of not less than 1:200 is necessary for practically positive diagnosis of pertussis by agglutination test.

D. L. B.

SOCIETIES

Boston District of the Massachusetts Homœopathic Medical Society

The monthly meeting of the Boston District of the Massachusetts Homœopathic Medical Society was held on Thursday evening, February 3d, in the Evans Memorial Building, East Concord St., Boston. In spite of the heavy snow fall, the attendance was unusually large to hear Dr. Walter E. Fernald, Superintendent of the Massachusetts School for Feeble Minded, at Waverley, Mass., who discussed the subject "Can Mental Defects Be Prevented?" Discussion was opened by Dr. Frank C. Richardson and Dr. Charles T. Howard, and the evening was a very pleasant and a very profitable one.

It has been decided to bring to each meeting during the coming year one interesting surgical case, one medical case and to hear from one member the most recent advance in some one of the specialties. In accordance with this plan, Dr. Herbert D. Boyd exhibited a recovered case of general peritonitis by the "kinetic drive" method recently suggested by Dr. George W. Crile of Cleveland. Dr. Arthur H. Ring gave a synopsis of the most recent advance in neurology and psychiatry. Lack of time caused the omission of a medical case.

Drs. Waldo W. Walker of Somerville, George H. Coffin of Boston, and Augusta N. Carlso of Boston were elected to membership in the Society, and the names of J. J. Golub, M.D., Ralph O. Parris, M.D., Mary Parker, M.D., Wm. J. Taylor, M.D., Max Goldman, M.D., and C. J. Sukeris, M.D., were proposed for membership, to be voted on at the next meeting of the Society.

Through the courtesy of Dr. Henry M. Pollock, Superintendent of the

Massachusetts Homœopathic Hospital, and Dr. Lewis, Assistant Superintendent, opportunity was given for inspection of the new Jennie M. Robinson Memorial maternity and out-patient building from 7 to 8 o'clock.

At the close of the scientific session, light refreshments were served.

B. T. LORING, M.D., President. H. E. DIEHL, M.D., Secretary.

Homœopathic Medical Society of the County of Kings

The annual meeting of the Homœopathic Medical Society of the County of Kings was held at the Medical Library Building, Brooklyn, January 25, 1916, and the following board of officers elected for the year: President, George H. Iler, M.D., Vice-President, Alfred Bornmann, M.D., Secretary, L. D. Broughton, M.D., Treasurer, Chester A. Peake, M.D., Necrologist, J. Alexander Stewart, M.D., Censors, Robert F. Walmsley, M.D., H. D. Schenck, M.D., Roy Upham, M.D., Stanley W. Pallister, M.D., Alton G. Warner, M.D. An interesting address on "The Causes of Industrial Unrest," including the discussion of occupational diseases and methods of accident and disease insurance among workers, was made by Dr. Thomas J. Riley, General Secretary of the Brooklyn Board of Charities.

PERSONAL AND GENERAL ITEMS

FOR SALE. — $3000 Ohio practice in a rich community on main line New York Central. Collections splendid. Wish city specialty. Address "Homo.," care *New England Medical Gazette*, 80 East Concord St., Boston, Mass.

Dr. John L. Coffin spent the month of February in a winter vacation at Palm Beach, Florida.

There is an opening for a young physician at Fergus Falls (Minnesota) State Hospital. An unmarried man from twenty-five to thirty-five years of age preferred. Application should be made to G. O. Welch, M.D., Medical Supt., Fergus Falls, Minn.

Dr. G. H. Brownell (B.U.S.M. 1912) has been appointed pathologist at Norwich (Connecticut) State Hospital, her duties beginning in March.

Word has been received that Dr. D. Seropé C. Kavalgian of Adapazar, Turkey, a graduate of Boston University School of Medicine 1875, died in November last.

Dr. and Mrs. H. S. Paine of Glens Falls, New York, have recently been tendered a dinner in honor of their silver wedding and in recognition of Dr. Paine's contribution to medical science in devising a method for operation on the eye hitherto considered impossible. They were presented with a beautiful solid silver Tiffany tea and coffee service, suitably inscribed. Dr. Paine has been in practice as an oculist for the past thirty-five years.

FOR RENT. To a woman physician, the use of a Boston office certain hours one or more days a week. Inquire at suite B, 483 Beacon St., between 3 and 5 P.M.

Dr. Cyrus W. Truxal has removed from Lancaster, Pennsylvania, to Wayne in the same state.

Dr. Humphrey F. Brackett, for many years in practice in Brighton, Massachusetts, died on January 31st in his seventy-fifth year. Dr. Brackett was a native of the State of Maine and a graduate of Boston University School of Medicine of the class of 1884.

Dr. Hugh Heaton, class of 1908, Cleveland Homœopathic Medical College, has been appointed house physician in the Massachusetts Homœopathic Hospital, Boston.

Dr. Thomas M. Stewart of Cincinnati has become associated with Drs. John W. Murphy and Martin H. Urner and has removed to their offices and private hospital in the Union Central Building, Fourth and Vine Sts., Cincinnati.

THE NEW ENGLAND MEDICAL GAZETTE

VOL. LI APRIL, 1916 No. 4

Books for review, exchanges and contributions — the latter to be contributed to the GAZETTE only and preferably to be typewritten — personal and news items should be sent to THE NEW ENGLAND MEDICAL GAZETTE, 80 East Concord Street, Boston. Subscriptions and all communications relating to advertising or other business should be sent to the Business Manager, 80 East Concord Street, Boston, Mass.

THE GAZETTE does not hold itself responsible for the opinions expressed by its contributors. Reprints furnished at cost.

THE COMING MEETING OF THE AMERICAN INSTITUTE OF HOMŒOPATHY

The American Institute of Homœopathy is the representative organization of Homœopathy in the United States and Canada. Every physician who is practicing homœopathic therapeutics in any manner, or has practiced it, should be vitally interested in the management and welfare of this national society. Whatever Homœopathy has accomplished in this country is due to the support which this society has received and the consequent power which it has exerted. Whatever Homœopathy may accomplish in the future will in all probability be due to this same American Institute. The power which it will wield will be in exact proportion to the support given it by that wing of the profession which is interested in homœopathic therapeutics.

The man who stays at home and but rarely, if ever, attends a meeting of the Institute, need not growl and grumble because Homœopathy is not accomplishing all that he would expect it to accomplish. It is his child just as much as anyone's and is dependent upon him for a part of its nourishment. Hence his obligation to attend its sessions is self evident.

The next meeting of the Institute will be held in Baltimore, June 25th–July 1, at the Hotel Emerson. It promises to be a big meeting. Many matters of vital interest to the Institute and Homœopathy at large will be considered. The proposed plan of federating the various state and local societies, first outlined by Ex-President Wilcox and later detailed by Dr. Sawyer, and Secretary Scott Parsons, will be considered and probably acted upon.

But after all the real reason for attending these sessions is, as the Journal of the Institute says:

"The *raison d'etre* of the meetings of the American Institute of Homœopathy is the interchange of individual experiences and research for the betterment of the medical profession and the resulting good to the general public. The reading of papers, with discussions, is the medium by which this interchange is accomplished."

The American Institute can exert a tremendous power if supported loyally by its three thousand members.

D. G. W.

A valuable and timely paper appears in this number of the *Gazette* by Professor Albert E. Hinsdale, A.B., M.D., of the Ohio State University of Homœopathic Medicine. It will bear careful study by every practicing homœopathic physician, no matter what his years of practice or quality of experience. Particularly will it prove interesting to the instructor in the various departments of medicine. The medical student of today, like the student in mechanics, electricity, business, engineering and mathematics, does not want to take things on faith; he wants to see demonstrated or be able to demonstrate for himself those things which are stated as supposed facts.

In this day of materialism we cannot hope to make Homœopathy interesting or even plausible to the average educated student unless we can do more than simply tell him that a drug will produce such and such symptoms when administered to a healthy person. As Dr. Hinsdale forcibly says:

"In teaching the medical student of today, the didactic work of the class room is demonstrated and confirmed by the findings of the laboratory and that so far as possible modern pedagogical methods leave little for the student to take 'on faith' alone. But when it comes to teaching homœopathic materia medica we expect him to take it all 'on faith.'" There is quite as much, if not more need of laboratory proof in this branch than in any of the others and until we do so teach our materia medica we shall not find any great enthusiasm amongst our students of materia medica.

Dr. Hinsdale shows clearly just how this laboratory method of instruction can be carried out in a practical and comparatively easy manner.

The homœopathic colleges of this country have the burden laid upon them of teaching Homœopathy in such a manner that their students will go forth not half "doubting Thomases", but enthusiastic, believing, and energized Pauls, preaching and prescribing the gospel of scientific cure.

D. G. W.

ORIGINAL COMMUNICATIONS

THE LABORATORY METHOD OF TEACHING HOMŒOPATHIC MATERIA MEDICA

By Albert E. Hinsdale A.B., M.D.

Professor of Materia Medica and Clinical Therapeutics, College of Homœopathic Medicine, Ohio State University

Practically every subject in the curriculum of every college course, be it medicine or general science, is now being taught by means of the laboratory method. Every year sees the application of the laboratory idea to subjects which have long been taught purely by didactic methods alone. Those of our profession who graduated years ago without the advantages which laboratory work afford, cannot appreciate fully the immense help which this method confers. I understand that the fundamental idea in laboratory courses is that the didactic work of the class room is demonstrated by actual experiment to the student and that so far as possible modern pedogogical methods leave little for the student to take " on faith " alone.

Thus early in his career our modern homœopathic medical student becomes habituated to this method of learning his lessons; but when he comes to take his lectures in materia medica he immediately finds himself in an entirely different atmosphere than that in which he is in while engaged in studying the other branches of his medical curriculum. In materia medica, he is asked to take everything on faith alone; he sees nothing of which the lecturer speaks demonstrated to him, and, unless his early training was such as to work to the contrary, much of our symptomatology of drugs and their action is not well understood by him, and, in fact, he may not be made to really believe all that his teacher tells him. Our student begins to wonder, — and well he may, — that if homœopathic materia medica is a science, why it is not treated of as are other sciences, and until this is done by some one, some where, some time, this very important subject will remain to the average student a dry, theoretical abstraction and difficult to learn.

I would adapt the laboratory method to the study of materia medica as follows:

The entire materia medica should be gone over, and those pronounced effects of our medicines, both physiological and pathological, which can be shown the student by animal experimentation, should be demonstrated to him in a logical and systematic manner, and these demonstrations will serve to give the learner a rational pathological basis upon which he can later add the finer shades of drug symptomatology and differentia-

tion. There is no claim that there is anything new in the idea of demonstrating the effects of drugs upon animals; the old school have always done this, but nowhere, I believe, until quite recently has there been adopted the idea of adapting the pharmacological methods of drug study to the study of those medicines which are peculiar to Homœopathy. The following few examples will illustrate the method.

In lecturing upon Arsenicum, we say that this drug produces a weak, irregular, intermittent pulse such as is seen in certain types of fevers and in certain conditions of the heart and kidneys. By applying Arsenicum to a frog's heart and making kymographic tracings, this action of the drug is clearly demonstrated. After doing this, the student is quite apt to remember the heart symptoms of Arsenicum. We say that the potash preparations weaken the cardiac tissue and cause a slow pulse; let the student demonstrate this effect of the drug upon heart tissue. Crategus slows the heart, and all of our teaching to this effect is delightfully shown by making kymographic tracings from a frog's heart while it is under the influence of this drug. Gelsemium causes a generalized motor paralysis; and the drooping of the eyelids, the involuntary evacuations, and the difficulty in walking are easily shown by injecting this drug into rabbits. While this experiment is in progress, the instructor tells his student that the conditions seen in the rabbit are similar to the effects of fright, sunstroke, the absorption of typhoid toxine or la grippe toxine, and points out to him the gross similarity between these conditions and those which he has produced by Gelsemium.

Bryonia produces an inflammation of lung tissue, and no student will forget this fact after noting its effects upon animals.

Phosphorus produces fatty degenerations which are easily demonstrated. We can tell a student one day in a lecture that Plumbum produced an interstitial nephritis, and that Mercurius Corr. produces a parenchymatous change in the kidney; but until he actually produces these conditions himself he may not remember or believe the teaching. Certain of our remedies produce characteristic respiratory symptoms which can be roughly produced in animals and kymographic tracings made therefrom. I have prepared a laboratory guide for the use of homœopathic students in which no drug is used or studied which does not produce some change from which the student can draw at least one inference or deduction of a homœopathic nature.

Homœopathic materia medica is not built up upon animal experimentation, and it is one of the tenets of our institution that drugs may have effects upon animals different from their effect upon human beings; but in the experiments carried out

only those drugs are used which affect some portion of an animal in a way similar to that in which corresponding parts of the human anatomy are disturbed. Most of our remedies will affect some organ or organs of one of the lower animals in quite the same way that the corresponding human organ is affected.

It frequently happens that a given drug will affect some organ of an animal, the stomach for instance, in a way quite similar to the way in which the human stomach is affected; and that the other organs of the animal are affected in an entirely different way from that in which the corresponding human organ is disturbed by its action; in this case the gastric disturbance only would be studied by the student.

Every homœopathic medicine has running through its pathogenesis and physiological action some one or two pronounced effects which are accountable for the rest of its symptomatology, and this "red line" of the remedy may frequently be shown by animal experimentation. Not all homœopathic medicines can be studied from the laboratory standpoint, but a considerable number of them may have their "red line" thus demonstrated. Of course, there is no attempt to show any considerable amount of symptomatology, modalities, or mental symptoms; these are all brought out in the usual didactic manner, but are more easily learned, understood, and memorized by having a visualization of some effect of a medicine shown the student.

The object of this paper is not to go into details, but to outline the principle of the methods used. Those who have been out in the general practice of medicine need no demonstrations of this kind to show the actions of our drugs, but this does not apply to the beginner in the study of the subject. The homœopathic teacher is confronted by two problems: he must first do something to actually show that our medicines produce those changes of which we speak, and he must then cause the student to believe that a medicine will cure a condition that it produces. Having accomplished the first, the latter follows as a matter of course. Neither is the claim made that these procedures constitute research work. The first duty is to work out and demonstrate a few of the fundamentals which have so long been neglected, and after that has been accomplished there are plenty of problems confronting the materia medicist which in their execution require enough skill and ability to be dignified by the term "research studies."

The advantages of these studies are that the materia medica becomes modernized, and that the misty, hazy and supernatural notions concerning the action of our medicines are done away with; the study of the subject is rendered interesting, and since

the student's faith in what is said about drug action is increased, it makes of him a better prescriber. The spirit of original investigation is encouraged and it furnishes a rational pathological basis for drug symptomatology. A few weeks ago, one of my students said to me, "Doctor, is there anything that I can do with Bryonia?" I directed him to give this drug in appreciable amounts to animals, and after two weeks we held a post mortem; the pleura and lungs were congested, inflamed, and a portion of the lungs was consolidated. These findings we confirmed by microscopical examination. Then I had him refer to the materia medica, and look up the respiratory symptoms for Bryonia. The pathological conditions which he had produced in the rabbit accounted for the symptoms in the materia medica, and from this day on there will never be any doubt in this man's mind that Bryonia will be useful in pleuritic and pulmonary complaints when the symptoms call for the medicine.

It must be distinctly understood that the laboratory method in no manner supplants the older methods of giving instruction by means of the usual didactic lectures. Every important homœopathic medicine should be thoroughly discussed as regards its symptomatology, differentiation from other remedies, and therapeutic applications; the laboratory method is simply an adjunct to the older methods and in no way supplants them.

Finally, it may be said that the instituting of materia medica laboratories upon the part of our colleges will in time give us places where trained men will be found paying particular attention to the studying out of certain problems of importance and of special interest to our school. It is not too much to anticipate that the potency question will be settled by certain research procedures; that the uncertainty which is now attached to much of the symptomatology of our drugs will be removed by carefully conducted provings; and that an all-around increase in faith in Homœopathy and a further acceptance of our doctrines will emanate from such sources.

INGUINAL HERNIA

By Claude A. Burrett M.D., F.A.C.S. Ohio State University, Columbus, Ohio.

The subject of inguinal hernia and its surgical treatment was selected for this paper because of the opportunity of your speaker to observe the results of the line of treatment to be described, in a large number of cases. The studies have been made at the clinics of the University Homœopathic Hospitals of the University of Michigan and Ohio State University.

Of all the forms of hernia, by far the most common is in the inguinal region. It occurs in males very much more frequently than in females, no doubt because of occupational differences as well as the anatomical variations.

The causes of hernia in general apply in this form to a very marked degree. Of the predisposing causes, hereditary conditions play a most important part. The descent of the testis through all of the muscular layers of the abdominal wall, results in a weakened spot in every case whether a hernia forms or not. Added to it, the large percentage of cases in which there is failure of the peritoneal covering to close along the course of the inguinal canal, and a still greater natural tendency exists. It must be remembered that this failure of obliteration of this vaginal process of the peritoneum may be only partial, leaving a funnel shaped opening into the inguinal canal. Thus a trap is set, through nature's failure, for the future hernia. Another predisposing cause of an hereditary kind is a lengthened mesentery, allowing the intestines to be more readily forced by intro-abdominal pressure into the inguinal region. Very frequently the appendix may be brought through the internal abdominal ring because of laxness of intestinal support. The greater frequency of hernia of the right side may be accounted for by the fact that the closure of the vaginal process of the peritoneum is later on that side.

The acquired predisposing causes are of two general types, the one due to the weakened abdominal wall and relaxed abdominal rings, and the other increased intra-abdominal pressure. The walls may be weakened from accumulation of fat or rapid loss of flesh; to wasting disease; or to injury or post-operative weakness of the abdominal wall. We call to mind a retired farmer who said he had always worked hard and never saved himself while on the farm, but about two years after leaving the farm for a life of ease, he developed an inguinal hernia from lifting on a wagon box. This was, we believe, caused by the weakened muscle wall resulting from the lessened exercise.

Intro-abdominal pressure may be increased as a result of the accumulation of fat, or from a tumor.

The exciting causes are usually due to sudden or constant increase in intro-abdominal pressure, — as from sudden straining, coughing, or lifting. Again, the constant strain from cystitis, prostatitis or labor pains may be the cause of hernia.

Congenital defects in the closure of the peritoneum in the descent of the testis are followed by the indirect or external inguinal hernia, and the tumor appears first through the internal inguinal ring. This form of hernia may also be acquired.

Direct or internal inguinal hernia protrudes directly through the abdominal wall at the external ring and internal to the inferior epigastric artery. This form is never congenital excepting for a congenital weakness of the abdominal wall. It is usually the direct result of sudden straining and is much less frequent than the other type.

Inguinal hernia in infancy is of especial interest not only from its congenital origin, but from the fact that the internal ring opens direct into the external ring. The inguinal canal connecting the two rings is developed with the growth of the body, until in adult life, it becomes about 1½ inches in length. This relation should be borne in mind in the treatment of hernia in infants.

Bearing in mind the two general conditions of weakened abdominal wall and intro-abdominal pressure, it becomes apparent that in the treatment of this condition, the greatest opportunity for correction is afforded in the strengthening of the wall around the natural openings and the closing of the acquired ones. Intro-abdominal pressure may be controlled by measures to reduce fat, the removal of growths, and by correction of conditions favoring straining.

The support of a hernia by means of a truss is indicated in the first appearance of the hernia in the hope that in a small percentage of cases the sac may become adherent and sealed up sufficiently to prevent further protrusion of the viscera. The truss should be worn in that class of cases in which, from age or disease, an operation is contra-indicated. We have operated for the relief of hernia in patients seventy-six years old, with good results. Hernia of great size in which a large portion of omentum and intestine have for many years been without the abdominal cavity, is usually regarded as inoperable from the fact that the intra-abdominal pressure has become permanently lessened. Such a case was treated successfully by operation in which double scrotal hernia had existed for years. On the right side the cœcum and appendix were found in the sac together with a large amount of small intestine and omentum, and on the left side an equally large mass of gut and omentum was present.

The patient, sixty-six years of age, recovered without complication and now, nearly a year after, is in perfect condition.

In taking up the surgical treatment of inguinal hernia, we shall confine ourselves to the one method which has been used in this class of cases over a sufficient period to study the results in a large number of cases. Originality is not claimed, it being the operation long used by Dr. Dean T. Smith in his clinic at the University of Michigan, and which we found so satisfactory that it was continued on taking up that part of his work.

The operation takes advantage of the general principle of the well known Baccini operation, with points from the technic of E. Willis Andrew operation and also that used in the Mayo clinic with one or two added points to the procedure.

The preparation does not differ from that in general use. The incision is made from a point midway between anterior superior spine of the ilium to the pubic spine, parallel with Poupart's ligament and one inch internal. The aponeurosis of the external oblique muscle is clearly exposed, with the skin well retracted. The external oblique is split in the direction of its fibres, such that it will end at a point superior and internal to the external ring. This aponeurosis is next separated from the tissues beneath it down to Poupart's ligament and a six-inch curved hæmostat placed on the fascia at right angles to the d rection of the fibres, just at the outer edge of the external ring. The few fibres of the external oblique aponeurosis necessary, are then cut on the inside of the hæmostat, which procedure opens the external ring, and the flap of the external oblique can now be turned back over Poupart's ligament, exposing the inguinal canal. The hæmostat on the cut edge of the aponeurosis prevents that tissue from splitting, which it would otherwise easily do.

A search for the sac is now made. It usually lies to the inside of the spermatic cord. We have found it convenient to gently lift the cord from the canal before looking for it, as in this operation the cord is transplanted. The infundibuliform fascia lies over the sac and cord, and it must be split in order to expose the parts beneath. In cases of long standing, it is much thickened, as is also the sac. Great care is exercised in the search for it, in order that blood vessels, the vas deferens, as well as the contents of the hernial sac shall not be injured. It will be recognized by its pale color and by the rolling of the omentum or gut within it. It is opened with the greatest care, when the smooth inner surface of the peritoneum will be recognized. Examination is now made to see whether there be adhesions which may prevent the return of the viscera to the abdominal cavity. In cases of long standing, a section of omentum

is very apt to be adherent to it or the accumulation of fat and accompanying thickening of the neck make a complete reduction difficult. Adhesions are divided between ligatures, and if need be the thickened neck is incised. There may be a number of constrictions. In case of markedly constricted omentum or accumulation of fat, that portion of the omentum is removed. Having emptied it, it is then separated from the cord. This is conveniently done by grasping its cut edges with forceps, and inserting a finger into the distal end. With dry gauze, the cord with its net work of vessels and the vas deferens, can be carefully rubbed away without hæmorrhage. The sac is well separated around the internal ring, so that when tied and cut it will slip back into the abdomen. To tie the neck of the sac, a round curved needle threaded with number two plain catgut is pierced through its neck and double tied, thus insuring against its slipping. The portion distal to the ligature is now removed, and the stump allowed to drop back into the abdomen.

We are now ready to repair the floor and do the real important part of the operation. Linen is used by many surgeons for the floor, but we have had most satisfactory results with number three ten-day chromicised catgut. The first stitch is made external to the internal ring. The needle is first thrust through the cut edge of the aponeurosis of the external oblique and then through the edge of Poupart's ligament and tied, drawing the external and internal muscles over to Poupart's ligament. A similar stitch is next taken on the inside of the spermatic cord, thus bringing the cord out through the external oblique aponeurosis and making a new ring as well as making the external oblique aponeurosis the floor of the inguinal canal. A simple procedure that facilitates the placing of the sutures in the floor of this new canal is accomplished by removing the spermatic cord from the line of the proposed sutures by holding it below Poupart's ligament by means of the clamp on the free flap of the aponeurosis of the external oblique. The interrupted sutures are now placed along the floor of the canal, drawing the inner cut edge of the external oblique aponeurosis as well as the internal oblique and conjoined tendon, over to Poupart's ligament, until the open space is closed, down to the pubic spine. In placing these sutures, care is taken to avoid the hypogastric branch of the ilihypogastric nerve, as it perforates the upper surface of the aponeurosis, and also to avoid the deep epigastric and external iliac blood vessels. All of these sutures can be placed within perfect view, and the floor of the new canal carefully examined. Having completed this step, the cord is released and allowed to fall into the canal. The outer free flap of the external oblique is now reflected over the spermatic cord

as a roof, and stitched to the surface of the aponeurosis internal to the cord.

The skin incision is now closed in the usual manner. For the past year, we have used number two plain catgut to close the subcutaneous tissue, and skin clips for the apposition of the skin.

This operation has the advantage of making a floor to the inguinal canal of the strong fibres of the aponeurosis of the external oblique as well as using the deeper structures as in other operations for this condition. The internal ring is rebuilt of the same strong tissues. In placing the stitch on the inside of the ring, space should be left after it is tied, to allow the end of the index finger to engage, in order to insure large enough ring for the spermatic cord. The outer flap of the aponeurosis still further reinforces the abdomonal wall, by making a roof over the internal ring and cord.

We require all patients, after this operation, to remain in bed seventeen days. We believe this most important, as it insures the union of the aponeurosis to the shelving edge of Poupart's ligament. A patient should refrain from heavy labor for from eight to twelve weeks.

Failure of this operation is so largely a personal one, that statistics are deceiving. Excluding constitutional disease conditions, and post-operative infection, practically every failure can be traced to imprudent conduct on the part of the patient soon after operation. Infection can be eliminated in all but a very small percentage of cases, so it may be fairly stated that less than three percent of inguinal hernia recur after operation.

SOME NERVOUS PHASES OF SYPHILIS*

By Harry B. Ballou, A.B., M.D.
Westborough State Hospital, Westborough, Mass.

Soon after syphilis had made its appearance in Europe in 1497, various investigators began to suspect that it was responsible for certain nervous manifestations, and to speak of headaches, neuralgia, epileptiform attacks, and paralyses, as due to the disease. As early as 1672 Willis seemed to have some conception of what we now call general paresis. Progress, however, was slow, and not much was done to make clear the effect of syphilis on the central nervous system until 1847, when Virchow laid the foundation for our present knowledge of the disease.

Since then a great deal has been done to clear up the per-

* Read before the Boston District of the Massachusetts Homœopathic Medical Society, March 2, 1916.

plexing question and give a workable knowledge not only of the clinical symptoms and the pathological changes, but also of the relation between the acute disorders and those of later onset. Nissl and Alzheimer have fully established the histo-pathology; Schaudin has shown the exciting agent to be the spirochæta pallida; Moore, Noguchi, and others have demonstrated the parasite in syphilitic gumma of the brain and spinal cord, in syphilitic meningitis, in congenital syphilis of the nervous system, in the cerebro-spinal fluid, and in the paretic brain and spinal meninges of tabetics, thus making clear the etiology even in the heretofore obscure para- or meta-syphilitic disorders. This, however, did not complete the task, for the manifestations of the disease were so varied as to still baffle the diagnostician and it became apparent that something more was needed before the knowledge already gained could be put to a practical use. Therefore, along with the work already done, Neisser, Metchnikoff, Wasserman, and others, were able to so perfect the laboratory technic as to render the diagnosis comparatively certain, especially when the results of the laboratory tests are considered in conjunction with the neurological findings.

The value of these laboratory tests can perhaps be better appreciated when we realize that they furnish not only a ready and the most reliable means at hand for determining the presence or absence of syphilis in any obscure nervous disease, but also enable us when considered in conjunction with the neurological findings to differentiate fairly accurately the acute syphilitic nervous disorders from paresis, tabo-paresis, and tabes. Thus it seems that practically all forms of early syphilis of the nervous system show a positive Wasserman reaction in the blood. In the cerebro-spinal fluid the Wasserman reaction is also positive in practically all forms of cerebro-spinal syphilis, but in paresis the reaction appears to be more uniform with a smaller quantity of the fluid. On the other hand, in syphilis without the nervous involvement, the cerebro-spinal fluid usually gives a negative Wasserman reaction. The cytological examination of the cerebro-spinal fluid shows a positive lymphocytosis in cerebro-spinal syphilis, in paresis, and in tabes without paresis, the number of cells, perhaps, merely showing the activity of the inflammatory process. The cell count is apparently of great importance, for Sicard, Ravant, and others have shown that especially in paresis a pleocytosis may antedate the onset of the neurological symptoms by as long as two years. The chemical examination of the fluid shows an increased globulin content in all three diseases, but this reaction is thought to be an especially characteristic feature of paresis.*

* Diseases of the Nervous System, Jelliffe and Crile.

Several clinical forms of cerebro-spinal syphilis have been mentioned, although apparently it is seldom that a syphilitic infection of the brain and its meninges furnishes a pure clinical type at least in the acute stages of the disease, for the reason that if the arteries of the brain are attacked there is almost sure to be an accompanying gummatous formation or a meningitis either of the base or convexity, or both, thus giving rise to a confusion and multiplicity of clinical symptoms, the nervous phenomena depending largely on the location and the extent of the pathological process.

In the vascular form of cerebral syphilis, it is the arteries of the brain that are first attacked. There is an infiltration of the adventitia and a proliferation of the intimal endothelium which gradually reduce the lumen of the arteries, often causing a complete occlusion with a resultant area of softening or degeneration of that section of brain tissue supplied by the vessel. Sometimes, instead of the larger arteries being involved, the smaller ones in the cortex are the seat of the change, and we get a syphilitic endarteritis. Therefore, as the disease progresses some patients may show a picture similar to general paresis or may exhibit focal symptoms such as mild transitory palsies, monoplegias, speech disturbances, apoplectiform attacks, and sooner or later permanent paralysis. Clinically, the prodromal symptoms of headache, dizziness, irritability, insomnia, lack of interest, and inefficiency, often appear within a few months after infection.

In the basal meningitis there is a thickening of the meninges, and possibly a gummatous formation, the process frequently extending in all directions, invading the brain, affecting the entering and emerging cranial nerves, and even spreading to the spinal meninges. Under such conditions the optic chiasm is frequently involved, and the boring, stabbing headache with nocturnal exascerbation is often accompanied by vomiting and choked disc. As the diseased process digs deeper and deeper into the brain, oculomotor palsies and a variety of other symptoms both neurological and mental may develop. Still another picture ensues when gummata of the cranial bones and a meningitis of the convexity involve the motor area, causing epileptiform seizures which may perhaps continue over a period of years.

Besides the syphilitic diseases of the nervous system already mentioned, there is another group, commonly known as the para- or meta-syphilitic disorders. The onset of these diseases, general paresis, taboparesis, and tabes, is insidious; the varied manifestations, both mental and physical, seldom becoming prominent until from seven to twenty or more years after in-

fection. Just why any distinction should be made between cerebro-spinal syphilis and the later manifestations of the disease, has apparently never been satisfactorily explained, but it is interesting to note that less than four per cent of those infected with syphilis develop either paresis or tabes. Still, paresis is of relatively frequent occurrence, and in 1904 every twelfth patient admitted to the New York State hospitals suffered from the disease. It is generally conceded, however, that general paresis differs from the acute syphillitic disorders of the nervous system not only in the histo-pathology and laboratory tests, but also in the results of the therapy.*

In paresis, the pia is invariably altered by a diffuse infiltration of plasma cells, some lymphocytes, occasional mast cells, an excess of connective tissue, and at times the formation of new capillary vessels, some sections showing an enormous increase in the number of blood vessels. These changes are more marked in the frontal and parietal regions, and the blood vessels of the cortex often show a proliferation of the endothelium of the intima, some degeneration of the media, and thickening of the adventitia, due to the plasma cell infiltration. It is rare, however, in paresis that the vessels either new or old show sufficient degeneration to occlude the lumen of the vessel as is often the case in the vascular form of cerebral syphilis. Rod cells are found scattered through the tissues and the lymph spaces are enlarged. There is an increase in the neuroglia in the outer cortical layer and about the vessels, but there does not seem to be any characteristic change in the nerve cell. Pathologically, therefore, one of the most distinguishing features of paresis as compared with cerebral syphilis is the plasma cell infiltration and formation of new blood vessels.

The diagnosis of paresis is comparatively easy when once the disease is established, but although expansive, demented, depressed, agitated, galloping, and atypical types are described, there really seems to be very little uniformity in the mental symptoms which characterize the onset. The disease may be far advanced before the family, friends, or business associates suspect the change that has taken place. In fact, the first serious warning may be a foolish business venture, an erratic act, a sudden ungovernable outburst of temper, or a convulsion. Then perhaps it will be remembered that for many months the patient has shown a gradual change in disposition, an unnatural indifference to business affairs, family duties, and moral obligations, impairment in judgment, increasing irritability, expansive ideas, or possibly increasing loss of memory and deterioration. As the mental symptoms develop, the physical symptoms be-

* Diseases of the Nervous System, Jelliffe and Crile.

come more pronounced. There may be fibrillary twitchings, slight tremor of the hands, unsteadiness in walking, speech defect, mistakes in writing, unequal, inactive pupils, and increased or absent patella reflexes. In the incipient stages, however, both the mental and physical symptoms may fail to attract attention, and by way of illustration I wish to mention two somewhat remarkable cases of paresis that have come under my observation at the Westborough State Hospital.

The first, a French Canadian acrobat of forty, who gave up his acrobatic work about one year before admission to the hospital because he felt he was becoming "too slow" to successfully continue it. He then secured a position to run an elevator car in a department store, and continued to do this work efficiently until the day before commitment, his family and associates, in the meantime, observing nothing wrong with him. On admission, he was disoriented, confused, and showed the typical physical-complex of paresis. The blood serum and the spinal fluid gave a positive Wasserman reaction. He later developed marked agitation and apprehension, and was clouded, but did not express any delusions. He died twenty days after giving up his work, and the autopsy findings confirmed the diagnosis. In this case it is fairly safe to assume that the neurological symptoms of a grave nervous disorder were present at the time he felt he was "too slow" to continue his acrobatic work, but it is evident that, if consulted, his physician failed to detect the real source of the trouble.

Second, a hardworking, intelligent, single man of 43. For a year and a half before commitment his sister had observed nothing wrong except that he seemed nervous, and had had several attacks, each of about one half-hour duration, when he would complain of a sensation as of pins and needles in his right hand, arm, and tongue. His hand and tongue would then become stiff and he would be unable to speak, but he did not lose consciousness, and was able to return to work. He had used liquors to excess for ten years, and his sexual life had been excessive and promiscuous. On admission, September 18, 1913, he was mildly euphoric and showed some memory defect, but had no hallucinations or delusions, and was quite clear mentally. Physically, there was a marked tremor in the muscles of face and tongue, speech slow, tremulous, and slurring, Argyll-Robertson pupils, patella reflexes increased, slight Romberg, and ataxic gait. At autopsy, besides the characteristic changes in the brain and its membranes, the spinal cord showed areas of degeneration in the lower thoracic and lumbar regions, and the spinal pia was congested and slightly opaque. In the cervical region there was a questionable firmness and a greyish appear-

ance of the crossed pyramidal tracts. In this instance it would seem that the early attacks of transitory paralysis of the hand and tongue should have been sufficient to direct attention to the possible significance of the symptoms.

An unusual feature in the final course of this case is that during the twenty-six months of his hospital residence he did not undergo much further mental deterioration, did not develop any delusions, had a fairly good insight into his condition at all times, enjoyed parole privileges, and did a great deal of work in spite of his increasing ataxia, kept an accurate account of the number of other paretics in his ward who had died, and fourteen days before his death told the physician he could not keep up any longer. He then gave directions for his burial, and predicted correctly that he would probably be number forty-six.

In tabo-paresis, the prodromal course is apparently about the same as in the cerebral type. There is some dispute as to whether the changes in the cord are due to exactly the same process as causes the change in the brain, but, at any rate, there is a similar degeneration which takes place in the posterior columns of the spinal cord causing loss of the patellar reflexes. The mental complex is much the same as in the cerebral form of paresis. Rarely a case of juvenile paresis finds its way to an institution, but the clinical picture is so variable that many such patients die diagnosed as imbeciles after perhaps a normal development up to a certain age. In this regard it is interesting to note that the paresis develops after about the same length of time as it would if the infection had been acquired.

There is hardly time here to take up the question of tabes without paresis, or any of the other manifestations of syphilis of the brain and spinal cord. In closing, however, I wish to make a plea for the recognition of paresis in its incipient stages. When we consider the extent and character of the change that has taken place in the nervous tissue by the time the nature of the disease is usually recognized it seems almost beyond the realm of reason to expect useful results from any form of neurotherapy. There are, of course, conditions which may be confused with paresis, such as a diffuse form of cerebral syphilis, cerebral arteriosclerosis, idiopathic epilepsy, arising in adult life, and a so-called pseudo-alcoholic paralysis. I believe, however, if the general practitioner will consider paresis as more of a physical than a mental disease an early diagnosis is possible, especially if the laboratory aids are more frequently employed in every case of even mild nervous disease that is in the least obscure.

VACCINES IN MEDICINE. Part II

By W. H. Watters, A.M., M.D., Professor of Pathology, Boston University, and Elizabeth Ross, M.D., Instructor in Pathology, Boston University.

(Continued from March issue of this Journal)

Pneumonia. In regard to the benefit to be derived from vaccines in lobar pneumonia there is a great diversity of opinion, with the probably predominant tendency to consider it but of little use. In the opinions of those who have had any considerable personal experience with them however, they possess a distinct sphere of usefulness. The exact size of that sphere varies from individual to individual. As a result of the recent studies of the biology of the pneumococcus and the division of the family into several groups, we may obtain one explanation of the lack of efficacy of a single stock vaccine in a given case. Here obviously the chances are two or three to one that the particular variety causing the disease may not correspond to the one from which the vaccine was made. In the use of stock vaccine, one made from several strains, a so-called "polyvalent" one is always to be desired. For these reasons, therefore, as well as others, it is always preferable to make and administer an autogenous preparation at the earliest possible moment. The routine that we follow when a case of pneumonia is referred for vaccine treatment is to immediately give a polyvalent stock mixture and to prepare an autogenous one for subsequent treatment. By so doing the patient is given the advantage of the possible benefit from the stock preparation during the period required to develop and prepare his own. When such a procedure is followed we believe that a very material advantage will be given to the patient in his combat with the invading organisms. It is fully appreciated that the disease is a very variable one, subject to sudden changes both for better or for worse, and that in any given case it may be mpossible to state whether or not the vaccine was beneficial. It is, nevertheless, our earnest belief that in a series of cases taken without selection, those receiving vaccines will upon the whole show much better results than those not receiving them. This belief has been reached by personal experience and by studying the reports of others.

Tuberculosis. Much less divergence of opinion exists concerning this disease than was noted in the case of pneumonia. The majority admit that tuberculin in small doses is of use in those cases of pulmonary tuberculosis that do not have temperature above 99 degrees F. The method of administering the treatment divides those using it into two sections, one following Wright in using the smallest amount that will produce the desired effect, usually one ten-thousandth to one one-thousandth

of a milligram or less, the other following Trudeau and Baldwin and administering small and gradually increasing amounts to the point of toleration. There is doubtless much to say for each of these methods. In our work in the Homœopathic Hospital we have usually followed Wright and have obtained results that strongly incline us to so continue. Diverse opinions are again encountered when those cases with temperature of over 99 degrees or 100 degrees are considered. Personally we believe that many or perhaps most of such cases are caused by a secondary infection of pneumococcus, streptococcus, etc., and are accordingly distinct septic conditions grafted on the tuberculous one. In such we prepare an autogenous vaccine from the sputum and administer it every four to six days. It is surprising how many of these cases will under such conditions show a gradually receding fever and an approach to that more uniform level where the tuberculin can be used to advantage. The type of tuberculin preferred by us is the bacillus emulsion (B E). Space again forbids illustrative cases. If in pulmonary tuberculosis we find a field for this modern form of medication, a still larger one is found in this disease as it affects other organs of the body. The first and from this standpoint the most important is tuberculosis of the lymph nodes particularly those in the cervical region. This includes the old fashioned "scrofula." No description is necessary, so well known is the condition. In those cases where there is extensive caseation and softening of the nodes one should not expect cure or great benefit from tuberculin, as this agent merely acts in such a way as to prevent destructive and progressive changes from taking place and cannot materially aid in the absorption of already destroyed tissues. Such a case is for the surgeon preferably. Otherwise spontaneous rupture of the gland with resultant escape of the caseous material. Where no such caseation has occurred or where it is present in but small amount, small doses of tuberculin administered at about weekly intervals will in a great many cases be followed by gradual return of the lymph nodes to normal. The treatment must extend over several months and is not therefore to be compared from the standpoint of celerity with surgical removal. As the condition is not often a painful or menacing one, as it usually gives no trouble, and as the vaccine treatment is not followed by clinical or symptomatic disturbance it is almost always far preferable to surgical intervention and resultant scar formation. Our usual advice is for the patient to give vaccines a three-months trial before proceeding to the surgeon. In tuberculous osteomyelitis the orthopedist or surgeon can by obtaining the co-operation of the immunizator obtain more rapid and more permanent results than when he acts alone.

In tuberculous meningitis the present mortality percentage of one hundred will probably be uninfluenced by the use of tuberculin. We have had two cases thus diagnosed by several eminent clinicians where recovery followed inoculation. Whether or not these were mistaken diagnoses we do not feel qualified to decide. One very remarkable case of tuberculous enterocolitis of most severe character secondary to slight pulmonary involvement made a most remarkable recovery with alternation of tuberculin and colon vaccine. Our experience with mesenteric tuberculosis has been too slight and ndefinite to warrant any conclusions beyond saying that the use of tuberculin is here certainly indicated.

One case of renal tuberculosis after a long course unattended and then regu'ar and irregular treatment over a period of two years is now apparently cured. The pus, which was present in great abundance, has gradually subsided and is now absent.

Tuberculosis of the internal genitals of the female has not been treated. Two cases of involvement of the testicle have been apparently benefited.

Two cases of lupus have received inoculations, with entire cure. How much of the result was due to the treatment and how much to other measures also employed is indeterminate.

Reference has already been made to infection of the cornea with ulcer formation and the very satisfactory results following treatment.

Leaving the respiratory tract, which is such a fertile field for vaccines, we come to one rather less encouraging, the alimentary tract.

In gastric ulcer and some forms of gastritis, vaccines have been occasionally recommended. For their use in such conditions we can at present see no logical reason. In some of the specific forms of enteritis conditions are different. Tuberculosis has already been noted.

Typhoid Fever. There has been and still is a great divergence of opinion concerning the use of vaccines in typhoid, with a slow but steady tendency to favor them more and more. In 1907 we made what was, as far as we know, the first actual application of the emulsions in the actual treatment of the disease, with results so encouraging that in the following and successive years their use has been warmly recommended. By them the duration of the fever was lessened, the course of the disease shortened and the percentage of relapses much decreased. Meeting with much opposition at first, the number of immunologists adopting the theory seems to be steadily increasing. Very recently a report from Gay of California describes

a special form of sensitized vaccine for use in typhoid and cites some very convincing cases. If more extensive clinical tests substantiate the comparatively small series it will go far to still further strengthen the idea advanced some years ago. And as stated earlier, the use of sensitized vaccines in treatment should be an improvement over the older stock vaccine. It is not of course, applicable to autogenous preparations. It seems safe to say that the pendulum is slowly swinging toward the use of vaccines in this disease. In regard to their benefit in prophylaxis, there can be but one opinion among those who have any regard for facts accomplished. Prophylactic typhoid immunization has taken its place as one of the really great recent accomplishments of medicine, ranking with Jennerian vaccination, the discovery of anesthetics and the introduction of antiseptic and aseptic surgery. It merits even more extensive application than it now receives and should be the routine resort of those travelling extensively or of those spending their summer vacations in the country. For several years it has been made a routine application for all nurses admitted to the training school of our hospital, a routine now followed by practically all large institutions.

Gonorrhoea. In one phase of this disease of protean manifestations there is a practical unanimity of opinion concerning the beneficial action of vaccines. This is gonorrheal arthritis. Our own experience merely corroborates that of others that improvement of symptoms and eventual recovery follows more rapidly after the use of stock vaccines than after any other form of treatment. In other late forms of gonococcal infection, diverse opinions prevail. Some very favorable reports have appeared about their use in chronic urethritis, prostatitis and epididymitis, but other workers are less enthusiastic. In the acute stage there is a majority opinion that they are of little if any value.

Acute Arthritis. Many cases of this disease have been traced to a general infection originating in the tonsils, some part of the respiratory tract or in a carious tooth. In such, streptococcus or pneumococci will be most frequently found as active agents. Autogenous vaccine is far preferable for treatment. This may be obtained at times by aspiration of the joint involved, at others by cultures from the original focus, — tooth, tonsil, etc. Several times vaccines have been made from cultures taken from the extracted root cavity or from a sac at the tip of an ulcerated tooth. Occasional cases have been reported originating from an infected appendix. We have not as yet recognized any such. It is very safe and conservative to say when the focus of infection can be determined and bacteria

isolated that our case of acute infective arthritis will respond more promptly and completely when an autogenous vaccine is used than when sole reliance is placed upon other routine measures. Not seldom will the results be remarkably gratifying. Space alone prevents citation of cases.

Chronic Arthritis. This term, like "chronic nephritis," includes many and divers conditions. In such cases, where by cultures or history a distinct infectious origin can be determined, the use of vaccines can be wisely attempted with distinct hopes of success. Where the cause is, however, essentially metabolic it seems to us that application of vaccine therapy is merely a waste of time. In a number of instances where the etiology was doubtful, a mixed vaccine has been used beneficially and, while probably not strictly logical, the results seemed to bear out the hypothesis.

Pyorrhoea alveolaris. "Riggs disease," has lately come to the front in the eyes of the medical profession both on account of the recognition of its close alliance to bacterin and protozoa and because of its undoubted etiological agency in acute arthritis and other less distinct abnormalities. We have but just passed through the great wave of enthusiasm due to the recognition of amœbæ in these secretions and the resultant use of emetin as a therapeutic measure. In some cases the theory was substantiated by the facts, in others theory and fact clashed. Where amœbæ can be demonstrated, the use of emetin is doubtless justified, but in many more instances no such parasites can be found. Whether amœbæ are demonstrable or not, it is always a wise course for one to follow to obtain cultures from which autogenous vaccines may be made and to use such as indicated. By so doing and at the same time having proper care for dental hygiene, many cases will be cured or benefited that would not satisfactorily respond to any other method. One must remember that as the disease is a slowly progressive one, it is not logical to anticipate a rapid and startling alteration to immediate cure. It is surprising, however, how often distinct amelioration of symptoms will be noted even after two or three inoculations.

General Peritonitis. In an not inconsiderable number of cases of acute suppurative peritonitis usually following rupture of the appendix, autogenous vaccines have been used with apparently a very distinct degree of success. In such cases care should be taken not to omit any of the usual curative procedures but to employ vaccines as an adjuvant aimed at increasing the resistance of the patient to the specific infection present. While it is, of course, impossible in any given case to state just what might have happened had vaccines not been adminis-

tered, yet in a series of such cases the results have been such as to distinctly encourage the advising of a continuation of the method.

Septicaemia. When the bacteria, whether it be streptococcus, staphylococcus or otherwise, have invaded the general blood system the question of possibly increasing the resistance of the individual by autogenous vaccines is one that is distinctly debatable. From theoretical grounds the use of vaccine is contra-indicated. From the practical standpoint, however, a number of such cases that have been thus treated have shown such a gratifying degree of improvement that justification of the attempt seemed evident. Within the past three months two cases of such have been under observation, one a post partum case in which streptococci were found in abundance in the blood, the other a case of cryptogenetic type in which a pure culture of staphylococcus aureus was found. Each of these cases received appropriate autogenous vaccines, and in spite of very serious symptoms showed immediately thereafter a slow and steady degree of improvement, a condition that had not appeared during the considerable time of residence of each patient in the hospital. Complete convalescence followed. A short time ago a collection of about fifty cases of so-called " Puerperal septicæmia " was made by us in which we believe we administered the beneficial effect of autogenous vaccines in such conditions. Certainly a number of these cases that had been looked upon as well nigh hopeless made a very gratifying recovery.

Vaccines have been used in various other conditions, the majority of which we believe have been illogical, and they will therefore not be further discussed.

A paper such as this is essentially one of conclusions, it being a summary of the results of a number of years' study and observation. The only concluding word that seems advisable therefore is to state that in bacterial vaccines we have a substance which is capable, when indicated and logically used, of doing much good, but when used, — as it has been not infrequently in the past, — without reason or logic, will frequently prove disappointing to him who thus experiments with it.

GENERAL PERITONITIS: A CASE TREATED BY THE OPIUM METHOD*

By Herbert D. Boyd, M.D., F.A.C.S., Boston, Mass.

Mr. Chairman and Members of the Boston Homœopathic Medical Society:

Your President has requested the Surgical Department of the Massachusetts Homœopathic Hospital to present, at each meeting, a surgical case with unusual features. This month I have the pleasure of presenting a case from Dr. Briggs' clinic, which was operated upon Jan. 11, 1916. From an operative point of view, this is not a rare case. It is only in the after-care of the patient that it differs from most cases of its kind treated in our Hospital.

I will give you a brief history of the case, the findings at operation, the after-care, and show you the patient. I will then give you a brief resumé of the literature on the treatment given.

Case 83091. Age 29 yrs. Always been well. Had measles and chicken pox in childhood. Never had any stomach trouble or indigestion. Was constipated. Had slight attack of pain in abdomen one year ago. In bed three or four days.

Present condition. On Sat., Jan. 8th felt bloated when he rose in the morning. In afternoon felt pain in right side and called physician. Put ice on abdomen. Pain increased until Monday night, Jan. 10th. Began to vomit black fluid. Brought to hospital Jan. 11, A.M. Abdomen much distended. Extreme tenderness all over lower abdomen, especially on left side. Face hippocratic. Pulse weak, 112. Temp. 101.4. This present attack came on suddenly.

Operation. — The case came to Dr. Briggs' service. Under ether anesthesia, an incision was made through the right linear semilunars. Free pus was found in the abdomen, general peritonitis, abscess deep in pelvis and toward left side, appendix gangrenous and ruptured in two places. Pus was wiped out, appendix removed, Penrose drains carried down to pelvis and abdominal cavity drained. Wound was closed in the usual manner.

Patient left the table in very poor condition. Returned to ward at 1.45 P.M. Murphy drip started at 2.15, 30 drops per minute.

Jan. 12. Patient did not complain of much pain. Abdomen distended and hard. No gas expelled. Rectal tube inserted, considerable brown fluid expelled, no flatus.

Jan. 13. Temp. 101.6, pulse 120. Hiccough. Abdomen

* Read before the Boston District of the Massachusetts Homœopathic Medical Society.

distended. No flatus. Pulse weak. 12.30 A.M. vomited 17 oz. dark brown fluid, fecal odor. 10.30 A.M. vomited 18 oz. dark brown fluid, fecal odor. 2.15 P.M. stomach washed out. Patient in very bad condition. At 5.30 P.M. new treatment was begun, 1-4 gr. morphia sulph; 6 P.M., 1-16; 6.30 1-16.

Jan. 14, 12.45, 1-16 gr.; 4.15 A.M., 1-16; 5.15 A.M., 1-16; sleeping in short naps. 7 A.M., 1-16. Patient had comfortable night. 11.30 A.M., 1-16; 12.30 A.M., 1-16; 1.10 P.M., 1-16; 2.10 P.M., 1-16; 3.10 P.M., 1-16.

Jan. 15. 2.30 A.M., 1-16; 4.30 A.M., 1-16; 6 A.M., 1-16; 7 A.M., 1-16; 8 A.M., 1-16; 9 A.M., 1-16; 10 A.M., 1-16; 11 A.M., 1-16; 12 M., 1-16; 1 P.M., 1-16.

Water and malted milk by mouth. Patient very comfortable, expelled some gas.

Jan. 16, 12.15 A.M., 1-8. Expelling gas, comfortable. Diet, malted milk, beef juice and water. 7.20 P.M., large amount of gas, fluid with small amount of feces expelled. 9 P.M., large dark brown movement expelled.

Jan. 17. Patient confortable. Malted milk, steak and water. Natural movement. No morphine.

Jan. 18. Broth, malted milk, ice-cream and meat. Patient comfortable. Loose movements.

Jan. 19. Comfortable. Full diet. Natural movements.

Jan. 20. Temp. 98. Pulse 84. Normal movements. Has progressed well and will now be shown to you.

Many of you have read with a great deal of interest and profit a book by George W. Crile, M.D., "A Mechanistic View of War and Peace," in which he has compiled the researches of the laboratory with the actual experiences of the war. He places great emphasis on the Kinetic System and Its Drive.

"The Kinetic System is the group of organs in the body, by means of which man and animals transform the potential energy contained in food into muscular action, emotion, body heat; in short, it is the system by the activity of which life is expressed. It may be compared to the motor of an automobile."

In an article read before the American Association of Obstetricians and Gynecologists at Buffalo, N. Y., Sept. 15, 1914, on "The Kinetic System and the Treatment of Peritonitis," the same authority declares that "the leading symptoms are all adaptive phenomena for the purpose of defense against injury. We must conclude that death is caused by an excessive discharge of the body's store of energy in maintaining the defense. Our problem must be to discover some means by which the method of defense evolved by nature may be maintained, while at the same time, the energy of the body is conserved as far as possible."

"Two prime requisites in the treatment of peritonitis are:

A. The conservation of energy by the use of morphine, and

B. The maintenance of the water equilibrium by the Murphy rectal drip."

"Morphine not only protects the organs, but it also aids in promoting the efficiency of the defense mechanism within the abdomen, for deep morphinization of itself causes inhibition of the intestine, immobilizes the patient as a whole, prevents pain, and holds metabolism practically at a standstill. Under deep morphinization, but little food is required, the brain, the suprarenals and liver are protected and the intestines are immobilized, while the phagocytes overcome the infection."

"In cases of appendicitis with spreading peritonitis, the surgeon should never lose sight of the prime need of protecting the kinetic system from exhaustion. The administration of morphine should therefore begin at once. Nitrous oxide is the inhalation anesthetic of choice, as ether, by dissolving the lecithin in the phagocytes, causes a weakening of the body's defense which may last twenty to twenty-four hours, a break in the defense which may cost the life of the patient. Morphine is continued as it is required to conserve the patient's energies."*

In an article on "The Kinetic Drive," read before the New York Academy of Medicine, Oct. 7, 1915, after reviewing the kinetic drive and the organs involved in that drive, Crile says:

"Turning from the phenomena of the kinetic drive to the methods of control, we first find that morphine controls the rate of energy transformation in response to any stimulus. Whatever the activation, whether infection or injury, morphine controls the outward phenomena, such as the pulse rate, respiratory exchange, sweating, thirst, restlessness, acid excretion, fever, muscular action and pain. The value of opium in infection is one of the foundation stones in medicine."

Crile gives the credit of the opium treatment to a New York physician, Alonzo Clark, who on empirical grounds made a daring innovation in the opium treatment of peritonitis.

Alonzo Clark, in an article published in the *Hospital Gazette*, 1879, on "Peritonitis" writes as follows concerning this condition.

"Under morphine treatment, a considerable number of cases will recover. Armstrong proposed full doses of opium. Drs. Palmer and Child of Vermont treated their cases by the Armstrong method in 1844. When I first adopted this method of treatment, eight recovered, the ninth died. The rule is to

*(Amer. Med. Journ., Dec. 18, 1915.)

give as much opium as the patient can stand without being narcotized.

You are to give the opium by its effects and not by quantity; these effects are the sensible contraction of the pupils, marked reduction in the frequency of respiration, diminished frequency of pulse, gentle perspiration of the skin and easy but very much protracted sleep from which the patient may be easily aroused."

Dr. Clark further says, "In 1840 I went to Vermont to deliver a course of lectures there. I found the physicians using the combined method of phlebotomy and morphin. After a thorough study of the cases, I found opium was the curative agent. The idea then formed was to establish the narcotic effects of opium within safe limits. A kind of saturation of the system with opium would be inconsistent with the progress of the inflammation and would subdue it.

Reduce breathing to 12 respiration per minute. Reduce the pulse. Begin dose with 1-4 gr. and repeat in 2 hrs. until opium symptoms appear.

Bowels are to be left entirely alone at rest until they regain muscular tone. Then they will expel first the gas, then the feces. I have often left them 14 days."

At the end of this article, he refers to the Stokes paper in the Dublin Journal of Medical and Chemical Science, No. 1, 1832, and gives Dr. Stokes the credit for first using opium in the treatment of peritonitis.

Dr. Crile, in an article already referred to, states further:

"Even today we must concede, that next to surgical treatment, the administration of opium is the most efficient treatment of peritonitis.

Guided by researches made in my laboratory, in collaboration with my associates, I have combined the administration of opium with surgical treatment in only those cases of peritonitis in which the kinetic drive threatened to kill the patient.

In such cases a quick operation under nitrous oxide, Fowler's position, huge hot packs, sodium bicarbonate and glucose, plus the Alonzo Clark opium treatment for from twenty-four to forty-eight hours have given startlingly good results. Opium blocks the kinetic drive, draining relieves tension, water and alkalies control acidosis, and the patient gets well. Death from acute peritonitis from any cause has all but disappeared from the Lakeside Clinic.

The amount of opium must be determined not by the quantity but by its effect on the drive. The respiration should be reduced to from 12 to 15 per minute.

The final test of anything in medicine is in the crucible

of the clinic. Our laboratory findings support not only the kinetic theory, but also the postulate that the kinetic drive may be controlled by the use of morphine, nitrous oxide and alkalies."

This case, which has been presented to you tonight, is only one, and although the treatment was not begun at the start, but forty-eight hours after operation, and at a time when all hope of recovery was given up, those of us who have watched the progress of the case feel that there is more than a theory in the method of treatment. It is Dr. Briggs' order to use this line of treatment on all similar cases, and you may possibly hear at a later date the result of the series.

THE LANGE COLLOIDAL GOLD REACTION

By Helmuth Ulrich, M.D., Boston, Mass.

The examination of the spinal fluid, particularly in cases of central nerve syphilis, has claimed considerable attention in recent years and is now almost indispensable in the diagnosis and therapeutic control of these cases.

The laboratory tests applied to the fluid are classifiable into three general groups: the serological, the cytological, and the chemical. The Wassermann reaction belongs to the first, the determination of the number and kinds of cells present to the second, and the globulin reactions to the third groups.

One of the globulin reactions is the Lange colloidal gold test, concerning which a great deal has of late been written and said.

The reagent used in this test is a red solution, or, perhaps more properly, a suspension of gold in the colloidal state.

When cerebro-spinal fluid with an abnormal globulin content is added to this reagent, the colloidal gold is precipitated, either

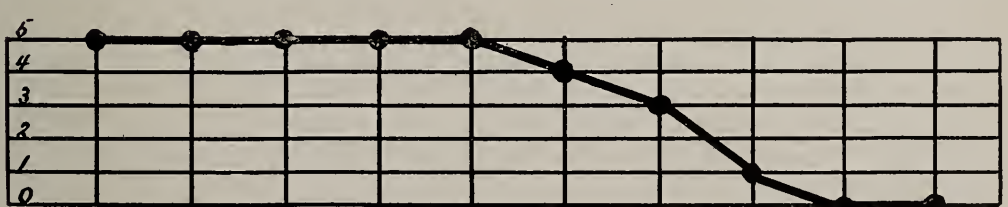


FIG. 1. GENERAL PARESIS

partially or wholly, causing a change in color or decolorization. The color changes may vary and depend upon the amount of gold precipitation, going from the original red through several nuances of violet and purple to blue, gray-blue, and colorless. The last is the strongest reaction.

Whether it is an increase of normally present spinal fluid

globulin, or the appearance of an abnormal kind, or both, that causes the *Ausflockung* of the gold, is not yet known.

According to Zsigmondy,* colloidal gold is precipitated by electrolytes. Other colloids, in general, act as more or less potent protectives for the colloidal gold particles, so that they can not be

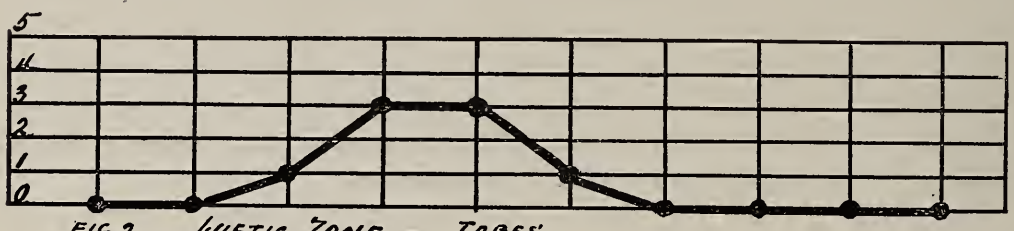


FIG. 2. LUETIC ZONE – TABES

precipitated by electrolytes. Many albuminous bodies have a colloid-protecting function if they are present in certain amounts, but lose this function when these amounts exceed certain limits.

The technical details of the preparation of the reagent are too intricate to warrant presentation here. Roughly, the test is performed by adding spinal fluid in progressively increasing dilutions to ten test tubes, each of which contains five cc. of the gold solution. The mixture is allowed to stand for twenty-four hours, and then the changes in color in the various tubes are noted. A control tube without spinal fluid must retain its original color and is used for comparison with the other tubes. The color changes are plotted as a curve, in which no change equals zero and complete decolorization equals five.

The advantages of the Lange colloidal gold reaction over other and simpler globulin tests lie in the possibility of differentiating by its use between certain types of meningeal irritation and inflammation. That is to say, some diseases cause a gold sol reaction that is pretty constantly different from that produced by other affections.

The difference lies in the production of color changes in different groups of tubes of the series of ten tubes. For instance, general paresis will cause precipitation of gold colloid and a consequent change of color in the first five tubes, that is, those containing most spinal fluid; whereas tuberculous meningitis affects chiefly the higher dilutions.

In general, there are three fairly distinct types or zones of reaction: first, the paretic type (Fig. 1), showing a strong reaction in the first four or five tubes and gradually diminishing ones to zero as the dilution of spinal fluid increases; second, the so-called luetic zone (Fig. 2), found in tabes and insterstitial cerebro-spinal

* Ztschr. f. analyt. Chemie. 1901.

† Ztschr. f. C hemotherapie, 1912. Orig. I, 44.

syphilis, usually not as strong as the preceding, and most marked in the third, fourth, and fifth tubes; third, the non-syphilitic type (Fig. 3), g ven by tuberculous and acute meningitides, with color changes especially marked in, perhaps, the sixth and seventh tubes.

Thus it is seen that the colloidal gold reaction for globul n may be of the utmost importance in differential diagnosis, not so much

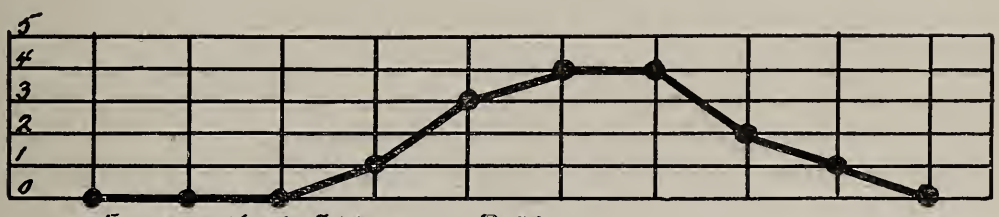


FIG. 3. NON-SYPHILITIC REACTION

between syphilis and non-specific infections, but especially between incipient general paresis and nterstitial cerebro-spinal syphilis present ng mental symptoms.

Although I can not subscribe to the opinioin of some optimistic extremists, who rely on this test above all others, it is, no doubt, a valuable addition to the already large group of more or less precise diagnostic measures applied to the spinal fluid.

CLINICAL DEPARTMENT

Case of Paralysis Agitans

Case 4-F. The patient is a woman of sixty-four years, born of New England parents. So far as her present illness goes there seems to be nothing in her family history obtainable that could be considered as an hereditary factor. She was a healthy child, had the usual grammar school education, and was married at eighteen years of age. She has had four children, the youngest of whom is now twenty-nine, and no miscarriages. One of these children died of heart trouble in infancy, and another son died at the age of forty-nine after a prolonged chronic illness probably due to heart trouble.

The patient has been a very active woman, of good executive ability, having been the matron of several large institutions. In the spring of 1913 she had an attack which was of a " grippy " nature, following which there was some uncontrollable trembling with weakness of the right leg for a short time, which, however, soon disappeared, and she was able to get about through the summer as usual without any impairment of gait.

In the fall of 1913 she started to board an electric car and had gotten one foot on the step when the car started, throwing her on her side and back. She was stunned for a moment, and when she came to, was in a general condition of coarse tremor. She was helped onto the car still shaking, and went home and to bed, where she remained three weeks with some pain in the lower back and contusions of the hips and face. Her legs and arms continued to tremble; indeed there has not since the accident been any remission in this tremor except during short intervals of sleep, a period of two and a half years now.

At the present time she is dressed each day by an attendant and is able to get about the house. The gait is shuffling, with the body bent forward, the spine and neck being rigid. The hands are held slightly forward, and the thumb and first finger perform a slightly pill-rolling motion. All muscles are very slow, and there is marked muscular weakness as is shown by the slight resistance necessary to overcome any voluntary motion. The head is rather rigidly fixed on the neck so that in attempting to look sidewise the eyes move first and the head slowly follows and to a limited extent only. The patient gets out of a chair with great difficulty. She cannot turn in bed without help and so must awaken the attendant every hour or two through the night to be moved, and then can get comfortable only after much adjustment. Her facial expression and voice are normal, though there is beginning to be some rigidity of the facial muscles, and the smile has an unreal appearance. She is unable to feed herself because of the coarse tremor of the

arms, nor can she read, because the book or paper shakes in her hands. She has occasional choking or strangling spells as well as suffocating attacks. Her appetite is good and her bowels regular. The urine is poorly controlled. Both knee jerks are increased to the third degree, and there is considerable tremor of both legs, somewhat greater in the right than in the left. There is no ankle clonus and no Babinski. Under voluntary effort she can for a few moments stop the tremor of the arms or legs, when it again returns more violently than before. The blood pressure is 182 systolic and 100 diastolic. The aortic sounds are rough, and there is a slight murmur in the apex.

This is an evident case of paralysis agitans, and the interesting question is what part did the trauma play in its development? There was just a suggestion of the condition present the preceding spring after the attack of grippe, but this might have been caused by some local disturbance resulting from the infection. The trauma is accepted by most authorities as an exciting cause in a latent or oncoming paralysis agitans. Jelliffe and White in their recent book on Diseases of the Nervous System, state, "Trauma stands in a closer relationship. It is highly impossible as a direct cause but it may be a sufficiently exciting cause to bring slumbering symptoms of a paralysis agitans to the surface." Oppenheim says, "Injuries of the heart and trunk or an extremity — may be a cause of the disease." Personally, we have seen one other case in a woman who was apparently in perfect health until she fell down some cellar stairs and when picked up had a definite tremor of both arms which has gone on progressively to a typical case of paralysis agitans.

The pathology of paralysis agitans has been shrouded in mystery until within a few years. "It is now accepted, however, that the lesion is not in the muscles but in the central nervous system. It is a senile or presenile degeneration of certain brain regions mostly within the cerebellar, thalmic and lenticular mechanisms." "The increased tonus resembles cerebellar and not cerebral tonus." "The rigidity, attitude, slowness of motor impulse has its analogics in disorders of the fruntocerebellar cerebello-rubro-spinal and thalmic systems." "The disturbances of equilibrium are distinctly of the cerebellar type." "The vasomotor secretory and trophic symptoms represent central sympathetic disorders which are referred with greatest probability to those thalmic nuclei which are known to be the synopsis of the chief sensory pathways." "Arteriosclerosis is probably the chief causal factor." (Jelliffe and White.)

In the treatment, hygienic factors, such as warmth, clothing, open air, good foods, are important. Massage and Zander exercise

and vibration as well as neutral tub baths are useful. For drugs, hyoscin, duboisin, scopolamin and atropin are the most useful in lessening the tremor. For sleep veranol is best.

BOSTON UNIVERSITY SCHOOL OF MEDICINE ANNOUNCES POST-GRADUATE COURSES FOR 1916

Continuing the policy adopted in 1910, the Faculty of Boston University School of Medicine offer the courses outlined below. *In many departments special graduate courses may be arranged at other times of the year by consulting the Registrar.*

The close affiliation of the School (with its laboratories) and the Massachusetts Homœopathic Hospital, including the newly opened Robert Dawson Evans Department of Clinical Research and Preventive Medicine, and the grouping of all the buildings, with the new Out-Patient Department across the street, makes it practicable to combine courses without loss of time, which would be impossible were the clinical and didactic departments in different parts of the city.

The laboratories are of ample size, well lighted, and adequately equipped. The Hospital treats annually approximately 5,000 patients, and in the Out-Patient Department upwards of 10,000 receive treatment every year, so that abundant clinical material is always at hand.

These courses are open:

First, to graduates in Medicine.

Second, to undergraduates of recognized medical schools.

Third, to such other persons as may be approved by the Registrar.

All applicants must first consult the Registrar, to whom fees must be paid. Receipts will be given which must be shown to the instructors giving the courses, at the first exercise.

If two or more courses are taken, a discount of twenty-five per cent will be made.

For further information not contained in this announcement, candidates should apply in person, or by letter, to the Registrar.

Abbreviations:

M. H. H., Massachusetts Homœopathic Hospital.

O. P. D., Massachusetts Homœopathic Hospital Out-Patient Department.

Evans, Massachusetts Homœopathic Hospital Department Clinical Research and Preventive Medicine Evans Memorial.

B. U. S. M., Boston University School of Medicine.
F. A. C. S., Fellow American College of Surgeons.

(1) DERMATOLOGY. Clinical Instruction.

Wesley T. Lee, M.D., Lecturer on Diseases of the Skin. Mondays 10 A.M. to 12 M., O. P. D. Acne, Dermatitis, Herpetiformis, Herpes, Impetigo, Pityriasis, Tuberculosis.

A. Howard Powers, M.D., Lecturer on Clinical Surgery. Thursdays, 10 A.M. to 12 M., O. P. D. Epithelioma, Eczema, Erythema, Psoriasis, Parasitic Diseases, Diseases of the Scalp.

Six weeks, commencing May 1. Fee $20.

(2) DIGESTIVE TRACT, DISEASES OF, Clinical and Laboratory Course.

J. Arnold Rockwell, M.D., Lecturer on Diseases of the Stomach and Intestines. Asst. Visiting Phys. M. H. H.

1. Stomach Contents.
2. Radiographic Examinations.
3. Acute and Chronic Gastritis.
4. Motor Insufficiency and Gastric Ptosis.
5. Gastric and Duodenal Ulcer.
6. Carcinoma of Digestive Tract.
7. Enteritis.
8. Fæcal Examinations.

Hospital material will be utilized as opportunity offers. Tuesdays and Fridays, 11 A.M. to 12 M., B. U. S. M., commencing May 2. Fee $15.

(3) GENITO-URINARY DISEASES.

Ralph C. Wiggin, M.D., F. A. C. S., Visiting Surgeon (pro tem.), M. H. H. A clinical course, including Renal Function test, Ureteral Catheterization and Cystoscopy. Mondays and Thursdays, 10 A.M. to 12 M., O. P. D. Fee $20.

(4) GYNÆCOLOGY.

George R. Southwick, M.D., F. A. C. S., Prof. of Gynæcology, Visiting Surgeon, M. H. H. Gynæcological Operations, M. H. H., Mondays A.M.

DeWitt G. Wilcox, M.D., F. A. C. S., Prof. of Clinical Gynæcology. Clinical Instruction, O. P. D., Fridays, 10 A.M. to 12 M.; Operative Gynæcological Clinic Saturdays, 2 P.M., place to be assigned.

Class limited to four. Commencing May 1 to June 10. Fee $25.

(5) HOMŒOPATHY.

J. Herbert Moore, M.D., Prof. Diseases of Children. Consulting Physician, M. H. H.

A course of twelve lectures on the Principles and Practice of Homœopathy, especially designed for physicians having no intimate knowledge of homœopathic therapeutics. This course will be divided into two parts: First, a clear and concise presentation of the principles of homœopathy; and second, their practical application in the treatment of disease. In the first part it will be the endeavor of the lecturer to present a study of homœopathy which is in accord with the findings of scientific and biological research up to the present time so far as they pertain to medicine.

In the second part there will be presented a study of some of the homœopathic polychrest drug remedies and the treatment of some of the more common diseases by their use. B. U. S. M. Commencing May 2. Tuesdays and Thursdays 12 to 1. Fee $20.

(6) NEUROLOGY.

Frank C. Richardson, M.D., Prof. Neurology and Electro-Therapeutics. Phys. M. H. H.

Methods of examination and significance of results. Diagnosis and treatment. Clinical and didactic.

Mondays and Thursdays, 10 A.M., to 12 M., O. P. D.

Alberta Boomhower Guibord, M.D., Physician, O. P. D.

Psycho-analysis, clinical and didactic. Commencing May 4. Thursdays, 12 M. to 1 P.M., O. P. D.

Arthur Hallam Ring, M.D., Phys. O. P. D. Psychotherapy. Commencing May 3. Wednesdays and Saturdays, 10 A.M. to 12 M., O. P. D.

Fee $30.

(7) NOSE AND THROAT.

A course for the General Practitioner.

George B. Rice, M.D., F. A. C. S., Prof. of Diseases of the Nose and Throat, Consultant, M. H. H.

N. H. Houghton, M.D., F. A. C. S., Assoc. Prof. of Diseases of the Nose and Throat, N. and T. Surgeon, M. H. H.

Conrad Smith, M.D., F. A. C. S., Lecturer on Diseases of the Nose and Throat, N. and T. Surgeon, M. H. H.

Physiology, Regional Anatomy, Diagnosis and Treatment. The more common Intranasal and Throat Operations. Tuesdays and Fridays at 10 A.M., O. P. D. Mondays and Thursdays at 10 A.M., M. H. H.

Commencing May 1. Fee $35.

(8) OBSTETRICS.

George H. Earl, M.D., Prof. Obstetrics, Consulting Obstetrician, M. H. H.

E. P. Ruggles, M.D., Assoc. Prof. Obstetrics, Obstetrician, M. H. H. Three days a week at O. P. D., and on district, interesting cases, including post-partum care.

Four weeks, commencing May 1. Fee $30.

Operative course on cadaver, class of at least three, three days. Time to be arranged after applications are received. Fee $25.

(9) OPHTHALMOLOGY.

David W. Wells, M.D., F. A. C. S., Prof. Ophthalmology, Ophthalmic Surgeon, M. H. H.

Albert W. Horr, M.D., F. A. C. S., Assoc. Prof. of Ophthalmology, Ophthalmic Surgeon, M. H. H.

Joseph E. Sternberg, M.D., Asst. Ophthalmic Surgeon, M. H. H.

Practical instruction in the use of the trial case, and the fitting of glasses, with abundant opportunity for personal work in refraction.

Examination and treatment of cases as they appear in the clinics, with minor operations.

Instruction in the use of Ophthalmoscope, Retinoscope, Keratometer, and Perimeter. Twenty-five exercises. Limited to graduates in medicine. Daily except Saturdays, 9.30 A.M. to 12 M., O. P. D. Commencing May 1. Fee $25.

(10) ORTHOPEDICS.

Alonzo G. Howard, M.D., F. A. C. S., Assoc. Prof. Orthopedic Surgery, Orthopedic Surgeon, M. H. H., and Medical Mission Dispensary.

Howard Moore, M.D., F. A. C. S., Instructor of Orthopedic Surgery, Asst. Orthopedic Surgeon, M. H. H.

Out-Patient Clinics, Mondays, Tuesdays, Thursdays and Fridays, 10 A.M., O. P. D.

Operative Clinics, Wednesdays and Fridays at 9 A.M., M. H. H.

Practical course with clinical lectures on Tubercular and Non-Tubercular Diseases of the Joints, Deformities, Paralyses, etc. The use of adhesive plaster strapping, plaster of paris bandages, and braces.

Four weeks, commencing May 1. Fee $25.

(11) **OTOLOGY.**

Frederick W. Colburn, M.D., F. A. C. S., Lecturer on Otology, Aural Surgeon, M. H. H.

Harold L. Babcock, M.D., F. A. C. S., Asst. Aural Surgeon, M. H. H.

A practical course in examination, diagnosis and treatment. Mondays, Wednesdays, Thursdays and Saturdays, 10 A.M. to 12 M., O. P. D.

Six weeks, commencing May 1. Fee $20.

(12) **PATHOLOGY. Clinical.**

William H. Watters, M.D., Prof. Pathology.

Elizabeth Ross, M.D., Instructor in Pathology.

J. Lewis Mahoney, M.D.

A course in clinical pathology will be given to graduates in medicine three afternoons a week for six weeks. The following will be the approximate outline:

First week, Urinary Analysis and Interpretation.

Second week, Clinical Hæmatology.

Third week, Clinical Bacteriology.

Fourth week, Gastric analysis. Examination of fæces, secretions, excretions.

Fifth week, Vaccine-therapy: technic and practical application.

Sixth week, Syphilis and the Wasserman reaction.

Advantage will be taken of the increased facilities offered by the Evans Memorial Department for clinical and bedside work.

Commencing May 1. Fee $30.

(13) **PATHOLOGY.**

Helmuth Ulrich, M.D., Instructor in Pathology.

Clinical Hæmatology, Secretions and Excretions in Disease. Evans.

Mondays, Tuesdays, Wednesdays, 2 to 5 P.M., 50 hours. Commencing May 1. Fee $25.

(14) **PHYSICAL ECONOMICS.**

Frank E. Allard, M.D., Lecturer on Physical Economics. Medical Director of Boston Mutual Life Insurance Co.

A practical course of twelve lectures and demonstrations on Medical Selection, designed for physicians who desire to specially prepare themselves to meet the pressing demand for physical examinations and early detection of disease, as required by Life, Accident and Liability Insurance Companies.

Present methods of determining the physical efficiency of human

life based upon its productive powers. Occupational Diseases.

Massachusetts Workingmen's Compensation Act and Its Relationship to the General Practitioner.

Chief cause of disability resulting in impairment of physical efficiency, or lowering of life expectancy.

Lectures daily from 2 to 3, commencing May 1, B. U. S. M. Demonstrations as far as practicable upon living subjects. Fee $20.

(15) **PHYSIOLOGY. Experimental.**

Arthur W. Weysse, Ph.D., M.D., Prof. of Experimental Physiology.

A brief course on modern laboratory methods in Physiology, designed especially for those who have never had the opportunity for such work. Lectures, discussions and laboratory experiments. This course will not be given to less than six students, and applications for admission should be made to the instructor not later than the last week in April.

B. U. S. M. May 2 to June 10, Tuesdays, Thursdays and Saturdays, 9 A.M. to 12 M. Fee $30.

(16) **SURGERY.**

Horace Packard, M.D., F. A. C. S., Prof. of Surgery, Senior Surgeon, M. H. H.

Surgery of the Kidneys, Ureters, Bladder and Prostate. Six lectures and clinics.

J. Emmons Briggs, M.D., F. A. C. S., Prof. Clinical Surgery, Surgeon, M. H. H.

Stomach and Gall Bladder. Intestinal Obstruction. Six lectures and clinics.

W. F. Wesselhoeft, M.D., F. A. C. S., Prof. Clinical Surgery, Surgeon, M. H. H. Hernia. Appendicitis. Six lectures and clinics.

Charles T. Howard, M.D., F. A. C. S., Assoc. Prof. Clinical Surgery, Visiting Surgeon M. H. H. Surgical Diagnosis. Clinical Surgery. Six demonstrations.

Thomas E. Chandler, M.D , F. A. C. S., Lecturer on Surgical Pathology, Visiting Surgeon, M. H. H. Surgical Technic. After-treatment. Shock. Direct Transfusion. Three lectures.

F. W. Halsey, M.D., F. A. C. S., Assoc. Prof. Diseases of the Rectum, Consultant in Rectal Diseases, M. H. H.
Rectal Surgery. Three lectures and clinics.

Clarence Crane, M.D., Lecturer on Surgery, Instructor in Operative Surgery on Cadaver. Visiting Surgeon, M. H. H.

Course in Operative Surgery on the Cadaver. Personal instruction in the technic of the operations of general surgery. Afternoons for one week, B. U. S. M. Course not given to less than four.

Frederick P. Batchelder, M.D., Prof. Physiology, Phys., M. H. H., and Mary A. Leavitt, M.D., Lecturer on Surgical Anæsthesia, Anæsthetist, M H. H.

Course of lectures and demonstrations on Theoretical and Practical Anæsthesia. Six lectures and demonstrations.

These lectures, clinics and demonstrations will be given daily at 10 A.M., throughout the course, a complete schedule of which will be arranged later.

Each Saturday, as far as possible, a "field day" clinic will be arranged, covering a wide variety of cases. Class not less than five.

May 1 to June 10. Fee $100.

Anyone wishing for a part of this course may arrange for same.

REVIEWS

PATHOLOGY

Linitis Plastica Hypertrophica (Leather Bottle Stomach). *McGlannan, A., Jour. Amer. Med. Ass'n, 1916. Vol. 66, p. 92.*

The name of this condition, characterized by great thickening of the walls of the stomach due to a fibrosis of the submucosa, suggested itself to Brinton in 1854, because of the interlacing strands of fibrous tissue. The disease may be localized or diffuse; and in the latter case the affected stomach affords a striking contrast to the thin walled normal duodenum.

The submucosa shows the greatest change. It becomes solid and tough and so thick that it makes up a great portion of the gastric wall. Segmentation of the circular muscle by the fibrous tissue, so that the colored muscle bundles are separated by partitions of white fibrous tissue, stands out clearly. This segmentation is characteristic and distinguishes linitis plastica hypertrophica from hypertrophy due to pyloric obstruction.

Syphilis is an unquestioned etiologic factor in some cases. Some cases are thought to be malignant, but the surrounding of individual glands by so much connective tissue makes a microscopical diagnosis difficult and often uncertain. The disease is one of adult life, occurring between 40 and 60 in greatest number and about twice as often in men as in women.

The symptoms of onset are generally slight; loss of appe-

tite, epigastric distress on taking food, and eructations. These gradually become marked and progressive, until symptoms of stenosis appear which, if not relieved, are followed by "anæmia, starvation, cachexia and death." Palpation may reveal the stomach as a "sausage-shaped" tumor in the epigastrium. Gastric analysis shows diminished or absent free hydrochloric acid and a possible presence of lactic acid. Blood is not usually found.

The circumscribed form is treated by partial gastrectomy, the diffuse by gastro-enterostomy.

Report of a case apparently cured by gastro-jejunostomy is appended. H. U.

An Analysis of Cleveland Death Certificates. *Harmon, G. E., Cleveland Med. Jour., Jan., 1916, XV, 17.*

During the period extending from January 1 to June 30, 1915, 4,749 certificates of death were registered at the Cleveland Health Office, and of this number, 422 or 8.9% were returned for additional information concerning the causes of death. The following registered causes of death were not considered sufficiently definite: Pneumonia, which should have been either lobular or lobar, and, if secondary to another disease, this primary cause must be stated; external causes or violence, not stating whether accident, suicide, or homicide, nor the instrument of death; burns, not stating whether from fire or hot liquids; nephritis, should be either acute or chronic, and the primary disease, if any, should be given; paralysis, may be caused by cerebral hæmorrhage, acute poliomyelitis, syphilis, etc.; intestinal obstruction, may be due to cancer, hernia, adhesions; in latter case give cause of adhesions; tumor, without giving type of growth; operation, not stating disease or type of operation; stillborn, should be used only when child is *born dead;* bronchitis, must be acute or chronic; cholocystitis, cause must be given; tuberculosis, organ affected must be named; peritonitis, without giving primary condition as perforated, etc.; meningitis, not giving causative organism; urinary diseases as pyelitis, cystitis, must have cause given; marasmus, give primary condition; heart disease, give cause and nature; uræmia, convulsions, septicæmia and gangrene all require added information concerning the primary cause.

In general, give sufficient information regarding deaths due to extrenal violence; state whether the disease is acute or chronic; do not give symptoms instead of diseases; state what organ is affected; indicate the primary disease or condition; avoid indefinite and ill-defined terms.

H. U.

Action of "Autolysin" on Mouse Tumors. *Wood, F. C., Jour. Amer. Med. Ass'n*, 1916. *Vol. 66, p. 94.*

A report of experiments to determine the action of "autolysin" upon spontaneous malignant tumors in mice. These tumors only rarely regress without treatment. The "autolysin" was supplied by Drs. Beebe and Horowitz. (No doubt, the readers of the *Gazette* have seen some of the effusive literature, both lay and professional, concerning this interesting material.) "There was no demonstrable effect on the course of the tumor, all the animals dying ultimately and all the tumors showing distinct expansive growth." H. U.

The Splenic Pathology of Pernicious Anaemia and Allied Conditions. *Schneider, J. P., Arch. of Int. Med., Jan., 1916, XVII, 32.*

In pernicious anæmia, the spleen is very rich in blood, especially in the pulp. This is in a striking contrast to the anæmia of other organs. Because of the tendency of the central artery of the Malpighian follicles to assume thicker and thicker walls with a resulting diminution in the size of the lumen, Eppinger conceives "That this lumen-obliterating pathology works a hindrance to the normal blood stream in so far as to force an unusual amount of blood to travel via the capillaries directly into the pulp area. Once in contact with the connective tissue spaces of the pulp area, the erythrocyte is marked for destruction." H. U.

SURGICAL REVIEW

Kahn and Gordon, Chicago. Annals of Otology, Rhinology and Laryngology, Vol. XXIV, No. 2, June, 1915, p. 322.

Adopting the suggestion of Citelli, the authors have used this drug in the various operations in the nasal and accessory cavities with universally good results. They found that the coagulation time was reduced to from one-third to one-half after the hypodermic administration of pituitary extract. The dose used was twelve minims to children and fifteen minims to adults.

Studying the effect on the blood pressure of children in connection with the injections, they found that systolic pressure was increased in 55.31 per cent., reduced in 36 per cent., and unchanged in 8.5 per cent. Diastolic pressure was increased in 35.5 per cent., reduced in 35.5 per cent., and unchanged in 29 per cent.

Pulse pressure was increased in 61 per cent. and decreased in 39 per cent.

A summarizing table of 50 cases of tonsil and adenoid operations is inserted for reference. H. L. B.

BOOK REVIEWS

Diagnostic Methods. By Herbert S. Brooks, A.B., M.D., Professor of Pathology, University of Tennessee College of Medicine, Memphis, Tennessee. Third edition. Pp. 96, with 31 illustrations. Cloth, $1. St. Louis, C. V. Mosby Publishing Company.

This little volume contains an immense amount of information. In fact, the material is so crowded that some elaboration would add greatly to the value of the book without unduly increasing its bulk.

The methods, on the whole are given satisfactorily although very concisely; but in a few instances the effort to economize space has been detrimental to explicitness. For instance, in giving the method of staining tubercle bacilli, it is recommended to "decolorize in acid alcohol," but the reader is left in doubt about the percentage composition of the mixture.

Orthographically, too, the book leaves something to be desired. Aniline, for instance, is spelled anilene.

In spite of its defects, — some of them serious, others practically negligible, this little book should be of value to those who do not care to purchase larger works on the same subject.

H. U.

Bodily Changes in Pain, Hunger, Fear and Rage. By Walter B. Cannon, George Higginson, Professor of Physiology in Harvard University. Published by D. Appleton and Company, New York and London.

The author and his laboratory co-workers by experiment show that emotions alter the appetite and digestion in animals and man by producing undoubtedly a psychic secretion dependent upon the autonomic system. When adrenin is thrown into the blood stream it affects the sympathetic division of the autonomic, precisely as if they were receiving nervous impulses. It causes the pupils to dilate, hairs to stand erect, blood vessels to be constricted, the activities of the alimentary canal to be inhibited and sugar to be liberated from the liver.

It is proven beyond doubt that emotional excitement as fear, rage, and pain, produce a discharge of adrenin and glycosuria. The adrenin acts also in restoring muscle to its original ability to respond through stimulation after that has been largely lost by continuous activity over a long period. In other words, what rest will do after an hour or more adrenin will do in five minutes. Adrenalin secreted by the adrenal glands in time of stress has all the effects in the body that may be reproduced by injection of adrenin. It plays an essential role in calling forth stored carbohydrate from the liver, thus flooding the blood with sugar; it helps in distributing the blood to the heart, lungs, central nervous system and limbs, while taking it away from the inhibited organs of the abdomen; it quickly abolishes the effects of muscular fatigue and renders the blood more rapidly coagulable.

The increased blood sugar attendant on the major emotions and pain is of direct benefit to the organism in the strenuous muscular efforts involved in flight, conflict or struggle to be free, as an antidote to fatigue. Increased blood sugar, increased adrenin, an adapted circulation and rapid clotting would all be favorable to the preservation of the organism that could best produce them, and is directly serviceable in making the organism more effective in the violent display of energy which fear, hunger or pain may involve.

William James in one of his last essays suggested that in every person there are resources of power which are not ordinarily called upon but which are, nevertheless, ready to pour forth streams of energy if only the occasion presents itself. These figurative expressions of the psychologist receive definite and concrete exemplification so far as the physical exhibitions of power are concerned, in the highly serviceable bodily changes which are described in this interesting book. Thus in sports, in mountain climbing, in hunting big game, in war, in risks and excitement there is set free unsuspected energy accompanied by a feeling of power and the possibilities of achievement.

Hunger is normally the signal that the stomach is contracted for action; the unpleasantness of hunger leads to eating, which starts gastric digestions

and abolishes the sensation, meanwhile the pancreatic and intestinal juices as well as bile are in the duocenus to receive the oncoming chyme. The periodic activity of the alimentary canal in fasting is not solely the source of hunger pangs, but is at the same time an exhibition in the digestive organs of readiness for prompt attack on the food swallowed by the hungry animal.

Since man is thus physiologically provided with a mechanism for fierce struggle, the militarists might wisely claim that as with other physiological processes bodily harmony would be promoted by its exercise. They might even account for the periodic outburst of belligerent feelings by arguing that these natural aptitudes require occasional satisfaction.

Although demonstrating a heretofore obscure aspect of physiological processes, the author has succeeded in making his experiments and observations clear and interesting. Psychologists, lawyers, doctors, clergymen, philosophers, soldiers and those who are interested in sports will find absorbing material in the original researches of this epoch making volume.

B. T. R.

The Work of Our Hands. A Study of Occupations for Invalids. By Herbert J. Hall, M.D., and Mertice M. C. Buck. Published by Moffat Yard and Company, New York.

In the "Work of Our Hands," Dr. Herbert J. Hall and Miss Buck have contributed to the literature of the invalid occupation problem a comprehensive review of the work done in our hospitals and institutions. Dr. Hall is a pioneer in selecting those occupations such as weaving, basketry, cement work, pottery, etc., suitable for the handicapped; in demonstrating that work may be used not only as a pastime or punishment, but as a cure and uplift for many nervous and chronic conditions. He has called attention to a truth that work should be prescribed with as much accuracy as we now prescribe drugs.

Work for the handicapped is not a new theme. It has been done for many years in prisons and state hospitals, but Dr. Hall gives the subject a new impetus in applying it as a therapeutic measure, examining the patient and prescribing the kind and amount of work suitable for his capacity.

After reading his book one feels that a vast amount of time and energy now wasted could be utilized if some industrial plants might be organized where persons variously handicapped might find occupation on a paying basis, not only for their own happiness but for the economy of the State. He knows whereof he speaks because he began with a similar plant and made it pay.

One might expect from the title, "The Work of Our Hands," that some detailed description of the work might be given. It is, however, a general resumé of the subject.

Dr. Hall has shown beyond doubt that neurasthenics and the infirm are improved physically and mentally by suitable occupation.

The book is of value and interest alike to doctors, social workers, craftsmen and invalids.

B. T. R.

Fractures and Dislocations, Diagnosis and Treatment. By Miller E. Preston, A.B., M.D., First Lieut. M. R. C. U. S. A.; Surgical Examiner, Colorado State Board of Medical Examiners; formerly Police Surgeon, City and County of Denver; Instructor in Anatomy, University of Denver; Visiting Gynecologist to City and County Hospital, Denver, Colorado. With a chapter on Rontgenology by H. G. Stover, M.D., Professor of Rontgenology, School of Medicine, University of Colorado; Member of American Rontgen Ray Society; Visiting Rontgenologist to City and County Hospital, St. Joseph's Hospital and Children's Hospital, Denver, Colorado. Octavo volume of 813 pages, with 860 original illustrations. C. V. Mosby Co., St. Louis, 1915. Cloth, $6.50 net.

The publication of this volume marks a new departure in the field of fracture literature. The illustrations are original, and many of them show the condition immediately after the injury; the X-ray plates are good and show the lesions clearly. A notable feature is the chapter on Fracture of the Skull, in which is given the differential diagnosis of the different causes

of coma with which fracture of the skull may be confused. Dislocation and fracture of the semi-lunar cartilages of the knee is treated in a clear and concise manner. Bone transplantation according to the method of Albee is covered by a chapter of 22 pages which lays down the laws governing this important and new branch of bone surgery. The book needs to be seen to be appreciated, and close contact with it will soon show its value.

Laboratory Methods with special reference to the needs of the General Practitioner, by B. G. R. Williams, M.D., member of Illinois State Medical Society, American Medical Association, etc., and E. G. C. Williams, M.D., formerly pathologist of Northern Michigan Hospital for the Insane, Traverse City, Michigan; With an Introduction by Victor C. Vaughan, M.D., LL.D., Professor of Hygiene and Physiological Chemistry and Dean of the Department of Medicine and Surgery, University of Michigan, Ann Arbor, Mich. **Third Edition.** Illustrated with forty-three engravings. C. V. Mosby Company, St. Louis, 1915. $2.50.

Many and good have been the publications on laboratory methods, but good as they all have been there has been the evident fact that they were written, not for the average general practitioner, but for the pathologist or laboratory worker. Williams' work is essentially designed for the physician who has not had a thorough laboratory training but who desires to keep abreast of the times by having a working knowledge of such methods as are now generally employed for diagnostic purposes. In other words it is written for the general practitioner, whose existence Dr. Victor C. Vaughan in his introduction to this work says is not "passing away." The book is certainly a very timely one for the purpose thus outlined. The illustrations are excellent, the type and paper of the best.

D. G. W.

Bone-graft Surgery. By Fred H. Albee, M.D., F.A.C.S., Professor of Orthopedic Surgery at the New York Post-Graduate Medical School and the University of Vermont. Octavo volume of 417 pages with 332 illustrations, 3 of them in colors. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, $6.00 net; Half Morocco, $7.50 net.

The impetus given bone surgery by the operative methods of Dr. Albee has been most pronounced and beneficial. The practicability of his method gave it a standing almost immediately and his numerous followers in the field was a sufficient endorsement of the success of his work. There has been a loud call for a publication setting forth his methods in detail and this is the result of the call. No small part of the general excellence of the work is the illustrated portion of it. The illustrations are particularly good.

D. G. W.

American Illustrated Medical Dictionary (Dorland), New (8th) Edition Revised and Enlarged. A new and complete dictionary of terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Veterinary Science, Nursing, Biology, and kindred branches; with new and elaborate tables. Eighth Revised Edition. Edited by W. A. Newman Dorland, M.D. Large octavo of 1135 pages, with 331 illustrations, 119 in colors. Containing over 1,500 more terms than the previous edition. Philadelphia and London: W. B. Saunders Company, 1915. Flexible Leather, $4.50 net; thumb index, $5.00 net.

The publication needs no comments. It is an authoritative work, put up in an easily handled, durable, attractive binding. Besides its usefulness it becomes an ornament to the writing desk. D. G. W.

What to Eat and Why. By G. Carroll Smith, M.D., of Boston, Mass. Second edition, thoroughly revised. Octavo of 377 pages. Philadelphia and London: W. B. Saunders Company, 1915. Cloth, $2.50 net.

It is with pleasure that we note the appearance of the second edition of "What to Eat and Why." In its first edition this book made for itself a strong place which has now been surpassed by the new publication. Many revisions have been made and much new matter added, including two com-

plete chapters on exercise and rheumatism. Its convenient arrangement and concise arguments make it a book of great value to the busy physician, who needs a volume on dietetics, but who has not the time to consult the more ponderous publications.

Therapeutics of the Respiratory System. Cough and Coryza, Acute and Chronic. Repertory witn Index. Materia Medica with Index. By M. W. Van Denburg, A.M., M.D. 782 pages. Cloth. $5.00 net. Philadelphia: Boericke & Tafel, 1916.

This stout volume is a repertory of the respiratory symptoms found in Hering's Guiding Symptoms. The general index of nearly 40 pages is very complete and arranged in very serviceable order. The repertory itself goes into the smallest details, and yet can be handled conveniently. As a repertory of Hering's Guiding Symptoms the work is most complete and accurate, but where the author has undertaken such a big piece of work it is too bad that he should have confined himself to Hering for a foundation. Those, however, who are satisfied with all the sources from which Hering derived the symptoms contained in his Guiding Symptoms, will value the book the most, although all who practice homœopathy with the constant aid of materia medica and repertory will find this volume a useful addition to their library.

C. W.

W. B. Saunders Company, Publishers, of Philadelphia and London, have just issued their 1916 eighty-four page illustrated catalogue. As great care has evidently been taken in its production as in the manufacture of their books. It is a descriptive catalogue in the truest sense, telling you just what you will find in their books and showing you by specimen cuts, the type of illustrations used. It is really an index to modern medical literature, describing some 300 titles, including 45 new books and new editions not in former issues.

SOCIETIES

BOSTON DISTRICT MASSACHUSETTS HOMŒOPATHIC MEDICAL SOCIETY

The regular monthly meeting of the Boston District of the Massachusetts Homœopathic Medical Society was held at the Evans Memorial on Thursday evening, March 2.

The following named physicians were elected to membership, their names having been presented at the February meeting of the Society.

Mary Parker, M.D., Cambridge.
William J. Taylor, M.D., Everett.
Max Goldman, M.D., Boston.
Ralph O. Parris, M.D., Brookline.
C. J. Sukeris, M.D., Boston.
Louis W. Salvin, M.D., Roxbury.

The name of Clarence W. Sewall of Jamaica Plain was presented for membership, his application to be voted on at the April meeting of the Society.

Dr. Mary A. Leavitt discussed the newer phases of anæsthesia, particularly the method and applicability of rectal anæsthesia, and the following papers were presented:

"The Colloidal Gold Test in Its Relation to Cerebro-Spinal Syphilis," by Helmuth Ulrich, M.D., Boston.

"The Pathology of Cerebro-Spinal Syphilis," by H. R. Ballou, M.D., Westborough.

"Treatment of Some Phases of Cerebro-Spinal Syphilis," by E. Everett Rowell, M.D., Stamford, Conn.

"Personal Experiences in the Treatment of Syphilis," by W. H. Watters, M.D., Boston.

General discussion followed the reading of these papers, and light refreshments were served.

B. T. Loring, M.D., *President.*
H. E. Diehl, M.D., *Secretary.*

BACTERIAL INFECTION AS A CAUSE OF RHEUMATISM AND ITS TREATMENT

Abstract

The term "rheumatism," defined as "an indefinite something induced by cold and exposure, always affecting either muscle or joint, and with pain on motion as a prominent sympton," has been much abused and sadly overworked, says Dr. F. E. Stewart in the Mulford Digest. Every pain affecting the human body which could not be otherwise accounted for has been ascribed to "rheumatism."

We have been taught to differentiate between rheumatism and gout, and told that the latter is "a painful constitutional or diathetic disease, acute or chronic, with joint inflammation and chalky deposits, and an increase of uric acid in the blood," and differentiation has been made between "rich man's gout" and "poor man's gout," the former being attributed to "excess of food and sweet wine," and the latter to "hard work, exposure, ill feeding or excess in the use of malt liquors."

And now, after clinicians have been for centuries building up a wall of differentiation between "acute" and "chronic rheumatism," and another one to fence off "gout" we are told that these different diseases are not several entities but groups of symptoms caused by bacterial infection, all of which may result from a septic mouth and all more or less curable by getting rid of the cause and treating the condition.

The researches of Poynton, Payne and Rosenow have done much to establish our knowledge of infectious arthritis including its cardiac and other complications. All authorities agree that with the exception of arthritis due to the gonococci the majority of cases of infectious arthritis are caused by a streptococcus.

For the treatment of streptococcic rheumatism a polyvalent bacterin may be employed prepared from different strains of streptococci isolated from rheumatic cases, or a mixed or combined bacterin may be selected containing pneumococci, staphylococci and streptococci. The pneumococcus is included because the majority of patients suffer with infectious rheumatism as the result of infection from a septic mouth and the pneumococcus is invariably found associated with the streptococcus and staphylococcus in the pockets of infection existing at the margin of the gums.

For the treatment of gonorrheal rheumatism a bacterin is supplied containing the gonococcus, staphylococcus (aureus and albus) streptococcus, bacillus coli, and the diphtheroid bacilli, because chronic gonorrhea is a mixed infection and these micro-organisms are found in a very large percentage of patients. The micro-organisms used for preparing the bacterin are taken from a large number of cases of chronic gonorrheal prostatitis and are, therefore, polyvalent.

Success in the bacterin treatment of rheumatism is largely dependent upon proper attention to Wright's directions in regard to accessory treatment. Wright calls attention to the fact that failure may result if proper circulation is not secured in the infected area. Nature walls off the infected area to the best of her ability to quarantine it from the rest of the body. Frequently this wall greatly hinders the circulation of the blood in the part infected by living microbes, thus presenting a serious obstacle to bacterin treatment. Methods for producing hyperemia are, therefore, often necessary. "Baking" the joints often proves helpful.

PROPOSED LEGISLATION

HOUSE No. 1164

Bill accompanying the petition of Philip Coombs Knapp relative to the organization of the State Board of Insanity. Joint special committee on commissions. January 18.

AN ACT

Relative to the Organization of the State Board of Insanity.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

Section: The state board of insanity shall hereafter consist of five members, two of whom shall be experts in insanity. One member shall annually be

appointed by the governor, with the advice and consent of the council, for a term of five years, and any member may be removed for cause in like manner. The members of the board shall receive no compensation, but they shall be paid the necessary expenses actually incurred by them in the performance of their duties. Of the members first appointed under this act, one shall be appointed for a term of one year, one for a term of two years, one for a term of three years, one for a term of four years and one for a term of five years. If a vacancy arises in the board, it may be filled by the governor, with the advice and consent of the council, and the person so appointed shall hold office until the expiration of the term of the member whom he succeeded or until he shall be removed for cause. The powers and duties of the members of the present board, and their terms of office, shall cease upon the appointment and qualification of the members herein provided for.

Section 2: The board shall appoint an executive officer who shall be a physician and an expert in insanity. He shall hold the position of executive officer during the pleasure of the board and shall perform such duties as it requires. He shall receive a salary of seven thousand five hundred dollars per year and the necessary expenses incurred by him in the performance of his official duties.

Section 3: Section one of chapter seven hundred and sixty-two of the acts of the year nineteen hundred and fourteen is hereby repealed.

DO YOU KNOW THAT

Four per cent of the inhabitants of certain sections of the South have malaria?

The United States Public Health Service has trapped 615,744 rodents in New Orleans in the past 18 months?

The careless sneezer is the great grip spreader?

Open air is the best spring tonic?

Typhoid fever is a disease peculiar to man?

Measles kills over 11,000 American children annually?

There has not been a single case of yellow fever in the United States since 1905?

Who would have thought that the tin can is a menace to the public health? The expert malaria investigators of the U. S. Public Health Service have found however that discarded tin cans containing rain water are breeding places for the mosquito which is the sole agent in spreading malaria. A hole in the bottom of the empty can might have resulted in the saving of a human life. Certainly it would have assisted in preventing a debilitating illness. Empty tin cans have no business about the premises anyway, but if we must so decorate our back yards, let's see to it that the can has a hole in the bottom.

ALCOHOL AND PNEUMONIA

The United States Public Health Service brands strong drink as the most efficient ally of pneumonia. It declares that alcohol is the handmaiden of the disease which produces ten per cent of the deaths in the United States. This is no exaggeration. We have known for a long time that indulgence in alcoholic liquors lowers the individual vitality, and that the man who drinks is peculiarly susceptible to pneumonia. The United States Public Health Service is a conservative body. It does not engage in alarmist propaganda. In following out the line of its official duties it has brought forcefully to the general public a fact which will bear endless repetition. The liberal and continuous user of alcoholic drinks will do well to heed this warning, particularly at this season of the year when the gruesome death toll from pneumonia is being doubled.

CORRESPONDENCE

Editors of *New England Medical Gazette:*

This item from "Progressive Gynæcology" by Stephen Rushmore, which appeared in the "Boston Medical and Surgical Journal" for March 12, 1916, seems of interest from an homœopathic point of view:

ATROPIN AND DYSMENORRHEA

Novak, following the suggestion of Drenkhahn, exhibited atropin in cases of spasmodic dysmenorrhœa in young women with gratifying results. In such cases he makes no pelvic examination (generally there is nothing to be made out), but begins the administration of the drug two days before menstruation is expected to appear and continuing for two or three days, according to the usual duration of the pain, one one-hundredth of a grain three times a day. If pain appears, the dose is increased unless signs of atropin saturation are present. The dryness of the throat and the itching of the skin are usually easily tolerated. In some cases he has employed other drugs also, as aspirin.

With dysmenorrhœa of this type, I find patients are relieved by taking Belladonna (3x–2–2 hrs.) for two or three days preceding menstruation, and continuing after the flow begins if pain persists. These patients are young girls who have not been examined even by rectum, who are not relieved to any great extent by heat or lying down, — and who promise they will "take no other medicine."

Susan M. Coffin, M.D.

Editor *New England Medical Gazette:*

Dear Sir:

You have doubtless noticed with interest, and possibly with concern, the news in the daily papers concerning the introduction of a bill for compulsory health insurance into the legislatures of New York and Massachusetts.

In brief these bills provide that all manual workers and all those earning less than $100 a month shall be insured and that the cost of the insurance is to be borne equally by the employer, by the employee, and that the state is to contribute one-fourth of the total. For a total contribution amounting to three per cent. of the wages, it is estimated that the insured can be provided with medical care (including medical, surgical, nursing attendance, hospital treatment in necessary cases and the required medicines and surgical supplies), a cash benefit for a maximum of twenty-six weeks of sickness, and a small funeral benefit for the family, should the wage earner die.

When you go over the sections of the enclosed pamphlet given below relating to medical care, you will notice the lack of specific detail. This apparent omission arises from the policy of the Social Insurance Committee, to postpone drafting these administrative regulations, so closely affecting the medical profession, until the committee could benefit by the advice and cooperation of the profession itself.

This Committee has specially refrained from any attempt to decide what the basis of remuneration, or what the rate of compensation should be, because it considers that these technical questions can best be worked out by physicians themselves. However, the Committee considers that the 100% collections for all insured patients treated and the possibility of putting all practice among wage earners upon a business basis will materially improve the financial status of many practitioners.

The coöperation of the medical men has been particularly welcome. The American Medical Association has been one of the foremost in offering its coöperation and has appointed a special committee, as you doubtless know, consisting of Dr. Alexander Lambert of New York City, chairman; Dr. Frederic Cotton of Boston; Dr. Henry B. Favill of Chicago. Various local medical bodies have also appointed committees to study the subject, to make recommendations and to confer with the Social Insurance Committee of the Association for Labor Legislation, New York City.

This Committee believes that through cordial coöperation it will be possible to frame regulations which will be satisfactory both to the layman and the practitioner.

Will you not do your part in urging the profession to study the subject and to coöperate?

Very truly yours,
WM. B. ANDREWS, *Secretary.*

Section 9. *Medical, Surgical and Nursing Benefit.* Medical, surgical and nursing attendance and treatment and all necessary medicine shall be furnished from the first day of sickness during sickness, but not to exceed twenty-six weeks from beginning of disability in any one case, but if such benefit is received after the expiration of that period, during the receipt of cash benefit; or the carrier must pay the cost of such service actually rendered by competent persons, but not to exceed in any week one-half of the weekly cash benefit to which the sick person is entitled.

Section 10. *Medical and Surgical Supplies.* Insured persons shall be supplied with all necessary medicines, surgical supplies, dressings, eyeglasses, trusses, crutches and similar appliances prescribed by the physician, not to exceed $50 in cost in any one year.

Section 11. *Hospital Treatment.* Hospital or sanatorium treatment and maintenance may be furnished instead of all other benefits (except as provided in Section 13), with the consent of the insured member, or that of his family when it is not practicable to obtain his consent. The carrier may demand that such treatment and maintenance be accepted when required by the contagious nature of the disease, or when in the opinion of its medical officer such hospital treatment is imperative for the proper treatment of the disease or for the proper control of the patient. Cash benefits other than to dependents may be discontinued during refusal to submit to hospital treatment. Hospital treatment shall be furnished for the same period as cash benefits. This benefit may be provided in those hospitals with which the associations and societies have made satisfactory financial arrangements which have met the approval of the Social Insurance Commissioners, or in hospitals erected and maintained by the associations and societies with the approval of the Commission.

VOICE AND MANNERS IN MEDICAL PRACTICE

The president of a great university, says the *Massachusetts Medical Journal*, when asked why it was that some of his teachers showed such irregularities of thought and manner, replied, "cultured men are abundant, but gentlemen with cultured manners, trained voices and common sense are very rare." To a certain extent, this is true among physicians. Common sense and gentility are acquired after a while, but voice culture is wanting. Both the legal and clerical professions show the same weakness. Attempts to cultivate the voice are considered superfluous and of no value, and manners are a question of the individuality of the person, and of minor importance.

This is a delusion and a stupid idea that is startling to the last degree. The voice and manners are the technic, to a very large degree, of a successful physician.

How often one notes the popular doctors, who are praised by their patrons everywhere, who are scientifically very mediocre men. On asking why this popularity we receive some such answer, as "he has such a pleasing way in the sick room." Contrast to this the young man who spent five years in the great medical centers of Europe came back with coarse mannerisms and harsh, abrupt tones. He had imbibed the very worst manners and coarseness of expression of his teachers. This was his downfall. He was disappointed at his failure to win, and he become an inebriate. He was a highly trained man, but the very essentials to make his training effective were wanting.

There is no organ in the human body so full of possibilities, through

training and culture, as the human voice, and yet it is practically neglected and often made more discordant by a great variety of weaknesses, of which smoking is one. Hundreds of students graduate every year from the best schools and colleges, with a high degree of intellectual learning, and with voices untrained, whose manners and expressions have been entirely ignored. They talk in broken, discordant notes, in bronchial tones and nasal inflections that are jarring and unpleasant, combined with awkward facial expressions, stilted manners, untrained control of the body, and often a very low sense of the art of dress and personal appearance. They literally follow the medieval theories that the voice, like the stomach and other organs, needs no care or training, but will take care of itself.

Physicians should exercise extraordinary care to keep the voice clear and resonant and prevent congestion which centers in the nasal passages and vocal cords. They should cultivate the most natural polished manners, so that persons who appeal to them for help can be impressed by something more than the drugs they give or the operations they perform. Physicians should represent the highest types of culture, culture that is real, apparent and genuine, not superficial and transient. They should exhibit voice culture and body training in its fullest sense. These are the most essential things in the sick room, and in company with invalids and weaklings who are ever looking for strength. Editorial in the February, 1916, *New Albany Medical Record.*

DIFFICULTIES OF THE LANGUAGE

The English language presents many pitfalls to foreigners. Here are a few specimens of its misuse by Asiatics. The following was written by an East Indian applying for Government appointment:

"Your humble petitioner is poorman in agricultural behaviour and much depends on seasons for the staff of life, therefor he falls on his famil's bended knees and implores of you this merciful considerations for a damnable miserable like your honorable humble petitioner.

Your humble petitioner was too poorly during last rains and was trying vernacular medicines without effectuality, but was resuscitated by much medicines of Dr. L. Lazarus, which made magnificent excavations in the coffers of your honorable servant.

Your humble petitioner has large family, consisting of seven lives, two males and five females.

Your humble petitioner prays that there is a place ever so small in your benevolence that this slave be allowed to creep in.

For your kindness he shall ever in duty bound ever pray for your honor's longevity and glibness. Ali Mohammed."

Written by a Japanese servant, asking his English master for a vacation:

"Having been amputated from my family for several months, and as I have complaints of the abdomen, coupled with great conflagrations of the internals, with entire prostration from all desire to work, I beg to be executed from orderly work for ten or nine more days, and in duty bound I will always pray for the salubrity of your temper and the health of your family.

M. Motoga."

The wives of the writers of these had been patients in a missionary hospital in China. The one died, the other was cured. Wrote the bereaved husband:

"Dear and Fair Madam — I have much pleasure to inform you that my dearly unfortunate wife will be no longer under your kind treatment, she having left this world for the other on the night of the 27th ultimo. For your help in this matter I shall ever remain grateful.

Yours reverently,"

And the Chinaman whose spouse was spared wrote as follows:

"Dear She—My wife has returned from your hospital cured. Provided males are allowed at your bungalow, I would like to do you the honor of presenting myself there this afternoon. But I will not try to repay you. Vengeance belongeth unto God."

CANNING COMPOUNDS DANGEROUS TO HEALTH

Housewives Warned That Use of Preserving Powders is Harmful and Useless

Information has come to the Department that the canning season has brought the usual demand on the part of housewives for salicylic acid and boric acid. These preparations are sometimes sold in the form of powder under various trades names and are recommended by the promoters for use in preserving canned goods in home canning. In the directions for use the housewife is told to fill the jar with the fruit or vegetables, cover with water, and add a teaspoonful of the preserving powder. While it is true that these compounds may retard the decay of the fruit or vegetable, it is pointed out by the experts of the Department that their use may be attended by serious disturbances of health. Salicylic acid is well known as a poisonous substance, and one of the evils which may accompany its use is derangement of the digestion. It is therefore plain that its extensive use in food may lead to disturbance of digestion and health.

The Federal Food and Drugs Act prohibits the use of harmful preservatives in foods that enter interstate commerce. The food law of nearly every state in the union forbids the sale within the state of foods that have been preserved with harmful substances. Neither the Federal or State food laws apply to foods that are canned in the home and consumed there. It would seem, however, that the housewife would not knowingly use, in the foods she provides for her family, substances that she could not use in foods for sale without violating the law, because these substances are injurious to health.

Artificial Preservatives Not Necessary

Fruits and vegetables can be kept indefinitely if they are sterilized by heat and properly sealed, and there is no excuse, in the opinion of the experts of the Department, for running any risk by using preserving powders, which may be injurious to health. The use of such powders in addition to the possible injury to health encourages uncleanly or careless work in canning. Reliance is placed in the efficacy of the preserving compound instead of upon cleanliness and heat.

The Department has issued bulletins that give specific directions for the preserving and canning of fruits and vegetables without the use of preserving powders or canning compounds. These bulletins may be obtained without cost from the Department of Agriculture. Application should be made for Farmers' Bulletin, No. 203 on Canned Fruit, Preserves, and Jellies, and No. 521 on Canning Tomatoes at Home and in Club Work. Also Forms N.R. 22, N.R. 23, N.R. 24, N.R. 34 and N.R. 37 of the Office of Extension Work, North and West, States Relations Service.

SECOND INTERNATIONAL CONFERENCE ON RACE BETTERMENT

The Second International Conference on Race Betterment, held at San Francisco, California, August 4–8, was attended by a large number of men and women of scientific achievement. The Conference discussed race decadence, the possibilities of race improvement, and the agencies of race betterment.

Luther Burbank, the plant wizard, discussed "Evolution and Variation with the Fundamental Significance of Sex." Mr. Burbank said: "Abundant, well balanced nourishment and thorough culture of plants or animals will always produce good results in holding any species or variety up to its best hereditary possibilities, beyond which it cannot carry them, and lacking which, maximum development can never be realized. But a sharp line must always be drawn between the transient results, temporarily attained through favorable environment and the permanent results of selection of the best individuals for continuing the race. Only by constant selection of the best can any race ever be improved."

Paul B. Popenoe, Editor of the American Journal of Heredity, in discussing "The Natural Selection of Man" declared: "There are only two ways to improve the germinal character of the race, to better it in a fundamental and enduring manner. One is to kill off the weaklings born in each generation. That is Nature's way, the old method of natural selection which we are all agreed must be supplanted. When we abandon that, we have but one conceivable alternative, and that is to adopt some means by which fewer weaklings will be born in each generation. The only hope for permanent race betterment under social control is to substitute a selective birth-rate for Nature's death-rate. That means — eugenics."

Dr. J. H. Kellogg, Superintendent of the Battle Creek Sanitarium proposed that the Conference institute a eugenics register which would undertake to register two classes of persons: — "First, those who, on examination in relation to personal characteristics and family pedigree, are found to measure up to eugenic standards. Second, the children born of parents whose pedigree and physical characteristics conform to the required standards. Such a registry would be the beginning of a new and glorified human race which sometime, far down in the future will have so mastered the forces of nature that disease and degeneracy will have been eliminated. Hospitals and prisons will be no longer needed, and the golden age will have been restored as the crowning result of human achievement and obedience to biologic law."

Among the other speakers were Dr. David Starr Jordan of the Leland Stanford University; Dr. Ernest B. Hoag of the Los Angeles Juvenile Court; Edgar L. Hewett, Director of the United States Bureau of Ethnology; Prof. Irving Fisher, of Yale University, and many others of equal prominence in sociological and scientific circles.

The Conference was concluded with a Morality Masque, in which two hundred students of the University of California took part. This masque was a dramatic arraignment of disease and war.

THE BOSTON UNIVERSITY CALENDAR

The "University Calendar" edited by Dr. Clara E. Gary, — President of the Women Graduates' Club of Boston University, — for the benefit of their Permanent Fund, is a unique souvenir of the University.

It is of more than temporary interest, for it contains many original literary contributions from well-known representatives of Boston University, both past and present. Ex-Governors David I. Walsh and John L. Bates, Presidents Murlin, Huntington and Warren, the Deans of all the departments, members of the Faculties, several of the Trustees, and graduates in various walks of life have contributed thoughts well worth preserving. The former students of Professor A. H. Buck (now of Rostock, Germany), will welcome a fresh message from their old teacher.

Professor Knudson of the College of Liberal Arts has selected many quotations from the writings of Professor Bowne which add much to the charm of the book.

The calendar is a work of about three hundred and eighty pages (with complete index), opens like a book, and is substantially sewed and bound. On the cover appear the portraits of the Founders of the University, and each copy is enclosed in a box.

Calendars may be obtained at the bookstores of the School of Theology, School of Medicine, School of Law and College of Liberal Arts, or will be sent via parcel post by the editor. Dr. Clara E. Gary, 416 Marlboro St., Boston, Mass., upon request.

The price is one dollar each (and postage if sent by mail). As the edition is limited, the friends of Boston University should secure their copies without delay.

(Mrs.) Susan L. Greely, Secretary,
B. U. Women Graduates' Club.

1322 Commonwealth Avenue,
Allston, Mass.

ANNUAL MEETING OF THE MASSACHUSETTS HOMŒOPATHIC HOSPITAL CORPORATION.

The Massachusetts Homœopathic Hospital Corporation held its annual meeting on January 25th, at which time the following named officers were elected:

Honorary President: Charles R. Codman, Boston.

President: Edward H. Mason, Boston.

Vice-Presidents: Walter Wesselhoeft, M.D., Henry S. Grew, Arthur F. Estabrook, Russell S. Codman.

Trustees: Talbot Aldrich, Leroy S. Brown, J. Wilkinson Clapp, M.D., Isaac W. Chick, B. Preston Clark, Charles R. Codman, Charles F. Dowse, W. B. H. Dowse, Herbert D. Heathfield, Charles J. Prescott, Wallace F. Robinson, William S. Richardson, John P. Sutherland, M.D., Cranmore N. Wallace, Edmund A. Whitman, William F. Whittemore, Mrs. Thomas Bailey Aldrich, Mrs. Francis R. Allen, Miss Susan P. Baker, Miss Eleanor J. Clark, Mrs. Costello C. Converse, Mrs. Robert D. Evans, Mrs. John C. Haynes, Miss Isabelle F. Keyes, and the President, Vice-Presidents, Secretary and Treasurer, *ex officio.*

Secretary: Ezra H. Baker.

Treasurer: Arthur F. Estabrook.

State Trustees: George D. Bliss, M.D., N. Emmons Paine, M.D., Geo. W. Moses, Elwyn G. Preston, and Chas. E. Rogerson.

In consequence of the increased number of nurses and other employees needed for the new Maternity Hospital, the hospital trustees have found it necessary to purchase the adjoining building, Hotel Newton, on Harrison Ave., for an extra dormitory and service building.

During the year 1915 the Hospital cared for 9,074 patients in its wards, besides 274 patients in its convalescent homes, nearly 33 per cent. of its work being for free patients.

The Out-Patient Department shows a similar growth, and with the fine new quarters which it now occupies and the most modern equipment in all its departments still further advance is expected.

The Hospital has great need of other buildings and an increase of its endowment funds to care for its annual deficit.

A TRIBUTE TO THE LATE DR. MARTHA G. RIPLEY

Alice Stone Blackwell, in the Woman's Journal, says of Dr. Ripley: "In the death of Dr. Martha George Ripley of Minneapolis the world has lost one of its noblest women. From her youth to the very end, she was a strong and active force for good, spreading comfort and help around her."

Dr. Ripley was born in Lowell, Vt., in 1843, and died in Minneapolis.

She was a graduate of Boston University School of Medicine of the class of 1883, and the same year began the practice of medicine in Minneapolis. She was concerned in the establishment of the Homœopathic Medical School of Minneapolis, afterwards taken over by the University of Minnesota, and was made professor of children's diseases.

Dr. Ripley was especially active in rescue work for unfortunate girls, and in 1886 was responsible for the modest beginning of Minneapolis's famous Maternity Hospital, her pride and chief professional interest. It was designed primarily to aid unfortunate girls, but Dr. Ripley's skill gave it high standing and prominence, and difficult cases were taken to it from distant cities. The death rate for both mothers and babies is said to have been incredibly low. From a shelter in time of need for two girls, in charge of an older woman as matron, it has grown into a famous institution with beautiful grounds, a nursery, babies' bungalow, and nurses' home, in addition to the main hospital.

Dr. Ripley's interest in hospital cases did not end with their discharge, but through her efforts hundreds of children born in her hospital were adopted into good homes, and she used to say with pride that they had turned out on the average fully as well as children born into families of the same class.

The hospital directors in their memorial of her gave the following high tribute to her service, characterizing her as "One who had always the best interest and good name of the city at heart; who never failed to give her voice in encouragement of worthy enterprises, or in protest against measures and conditions detrimental to the welfare of the city; who was resourceful in suggesting remedies for existing evils and helpful in furthering them."

THE DE-NARCOTIZATION OF TOBACCO

In the issue of the *Journal* for August 19, we commented editorially on the possibility of the de-alcoholization of beverages as a preventive of inebriety. It now appears that a similar project is in operation for the de-narcotization of tobacco by the removal of its nicotine to such an extent as to make it practically non-toxic without destroying its flavor or pleasant properties upon consumption. The experiments to this end have been performed during the past three years at the United States Agricultural Station in Landisville, Pennsylvania.* Instead of removing the nicotine from the grown leaf, however, the method adopted is a process of cultural selection. Three years ago a number of tobacco stocks were analyzed and found to have an average nicotine content of 3.5%. The seed from the plant having the lowest content was selected and this process repeated each year. Already the nicotine content has by this means been reduced to 1.3% and it seems conceivably possible by a continuation of the process to produce a strain of tobacco which should be practically free from nicotine and, therefore, non-toxic and harmless.

If this supposition be true, it would appear that the de-narcotization of tobacco may be as practicable a possibility as the de-alcoholization of vinous beverages, — processes, which, if really feasible, should make unnecessary reforms without which the higher progress of mankind could hardly be attained. — *From Boston Medical and Surgical Journal*

A NEW DEPARTURE

The Faculty of the College of Physicians and Surgeons, Columbia University, has voted in favor of the establishment of a Dental Department, to be connected with the Medical School, and plans presented by a committee of prominent dentists of New York City have been approved.

The school of dentistry will be closely associated with the medical school, and the admission requirements will be the same as the medical. The course will be four years, the first two years the same as those in medicine, thus giving the dental student a thorough knowledge of the fundamental sciences necessary to the practice of a specialty of medicine. At the end of the second year the dental student will give all his time to the study of dental subjects, namely, operative dentistry, prosthetic dentistry, oral surgery and oral pathology, orthodontia, etc., and the more technical part of the work required for the well trained dental surgeon. This new school will be the first university dental school in New York City and the second in the State. It will give the first four year course of dentistry ever given in the Empire State.

The Medical School has also voted to open its courses to women, beginning with the 1916–17 session.

SAPONIN BARRED FROM FOOD PRODUCTS

The Government Bureau of Chemistry at Washington sends out the following report regarding Saponin.

The addition of saponin to food mixtures which are sold for use in place of white of eggs is regarded by the Bureau of Chemistry of the Department of Agriculture as constituting adulteration within the meaning of the Food and Drugs Act. In "Service and Regulatory Announcements No. 17" it is stated that the practice is usually adopted for the purpose of concealing inferiority and that therefore it comes within the definition of adulteration in the Food and Drugs Act. Saponin is used extensively in so-called substitutes for white of egg for the purpose of producing foam and thus giving the articles a fictitious appearance of body and therefore of food value.

Saponin is a substance that when dissolved in water foams like soap. It is extracted from plants known as soapbark and soaproot, and a few other plants, by boiling them in water. Its name is derived from the Latin word sapo, which means soap. When saponin is added to the so-called substitutes for white of eggs it produces a foam similar in appearance to the foam produced by genuine white of egg.

PERSONAL AND GENERAL ITEMS

Dr. Olive Ella Smith (B. U. School of Medicine 1909) is in practice at Waterloo, Iowa.

Dr. George I. Lythcott (1913 B.U. School of Medicine) is located at Darlington, South Carolina.

Dr. George J. Searle (B.U.S.M., class of 1888) formerly of Marlboro, Massachusetts, but more recently of Plymouth, Ohio, has gone to Buckingham, Florida, in search of health. He writes that he is in the woods, twenty miles from the railroad.

Dr. Francis X. Corr (B.U.S.M., 1898) has removed from Magnolia St., Dorchester, to 422 Freeport St., Neponset, Mass.

Dr. Lillian Neale Wood Bradway (B.U.S.M., 1898) has removed from Boston to Monson, Massachusetts.

Dr. N. H. Garrick (B.U.S.M., 1915) has been sent to New York by the Evans Memorial for Clinical Research and Preventive Medicine, for special study and research in Neurology.

The present address of Dr. Margaret Doolittle Nordfeldt, (class of 1898, B.U.S.M.), is Provincetown, Mass.

Dr. David W. Wells, Professor of Ophthalmology in Boston University, left Boston on February 25th for a trip to Florida, Nassau and Cuba, covering the greater part of the month of March.

Dr. Frank E. Allard, Lecturer on Physical Economics at Boston University School of Medicine, has completed his course for the 1915–16 session, and sailed from New York on March 23 for a short trip to Bermuda.

Notice has been received from Australia that Dr. Albert Reginald Heupt of Sydney has legally changed his name to Albert Reginald Heupt McLeod. Dr. Heupt McLeod was a graduate of the Medical School of Boston University, class of 1907.

Dr. J. Walter Schirmer of Needham, Massachusetts, Lecturer on Sanitary Science at Boston University School of Medicine, sailed from New York on March 30 for a short trip to Bermuda.

Dr. J. Herbert Moore, Professor of Children's Diseases, Boston University, spent the month of March at Virginia Hot Springs, taking a much needed rest.

Dr. Elinor Van Buskirk, (class of 1907, B.U.S.M), is now Dr. Elinor Van Buskirk Cummins, her office address remaining as before, 605 West 111th St., New York City.

Drs. Barbara T. Ring and A. S. Guibord left Boston on March 29 to attend the Medico-Psychological Society's annual convention, held this year at New Orleans, April 4–7. They expect to be back in Boston about April 15.

The *Boston Journal* in its issue for March 23 stated that appropriations amounting to $2,670,874 have been made by the Rockefeller General Education Board to Johns Hopkins, Yale and Washington universities for reorganizing clinical instruction in medicine on the "full time plan," the teaching staff in important branches to retire from paid private practice.

A course of three lectures to the Massachusetts Dental Society was given in March by Dr. W. H. Watters, as follows:

1. Diagnosis of Syphilis.
2. Treatment of Syphilis.
3. Treatment of Syphilis of the Nervous System.

These were given in the lecture hall of the Evans Memorial, Massachusetts Homœopathic Hospital.

Dr. H. Martin Morse, class of 1896 B.U.S.M., has removed from Springfield, Vermont, to Nashua, N. H.

Dr. H. E. Whitaker has returned to Gloucester, Massachusetts, from Somersworth, New Hampshire.

Dr. J. J. Golub, B.U.S.M. 1915, has opened an office at 3 Hancock St., Boston.

Dr. G. E. Harmon, class of 1909 B.U.S.M., is located at 1353 East 9th St., Cleveland, Ohio, and is teaching Bacteriology in Western Reserve University in that city. He is not in active practice but is connected with the statistical department of Cleveland Board of Health.

Dr. Joseph K. Miller, class of 1913 B.U.S.M., is located at 36 River St., Boston.

Dr. Emily H. J. Barker has returned to Wellesley, Massachusetts, from East Aurora, N. Y., and is located at 14 Denton Road.

Dr. Walter Wesselhoeft of Cambridge, Professor Emeritus of Clinical Medicine, Boston University School of Medicine, has been spending the winter at Redlands, California, and expects to remain away until some time in May. His son, Dr. Conrad Wesselhoeft, 2nd, is caring for his father's practice.

Dr. C. Wesley Sewall, class of 1914 B.U.S.M., has located at 21 Seaverns Ave., Jamaica Plain, Mass.

FOR RENT. — To a woman physician, the use of a Boston office for certain hours one or more days a week. Inquire at Suite B., 483 Beacon St., between 3 and 5 o'clock p.m.

Dr. M. Edna Wallace (B. U. S. M., 1915), has transferred from Fabiola Hospital, Oakland, California, to Dr. Lee's private hospital, Rochester, New York.

The Journal of Advanced Therapeutics is being published under new management and its name changed to the American Journal of Electrotherapeutics and Radiology. The editorial staff remains as before, — William Benham Snow, M.D., Editor, Mary Arnold Snow, M.D., Associate Editor.

The June 1 meeting of the Maine Homœopathic Medical Society will be held in Augusta and, from the fact of its being the fiftieth anniversary of the founding of the Society, is to be made of especial interest.

OBITUARY

Franklin D. Worcester, M. D.

Dr. Franklin D. Worcester, for the past twenty years a resident of Keene, New Hampshire, died at his home on March 29th at the age of sixty-four years. He was a graduate of Hahnemann Medical College of Chicago and a brother of Dr. George W. Worcester of Newburyport, Massachusetts. Previous to his removal to Keene he had been in practice for twelve years at Springfield, Vermont. For some years past he had been an invalid from paralysis.

Dr. Worcester was a member of the American Institute of Homœopathy and of both the New Hampshire and Vermont State Homœopathic Medical Societies. He leaves a widow and a daughter, besides his brother, Dr. Worcester, and a sister.

DO YOU KNOW THAT

There is no Federal institution in the continental United States for the reception and care of lepers?

Plague is a disease of rodents?

Malaria is spread by a special mosquito?

House screening is a good disease preventive?

Fingers, flies and food spread typhoid fever?

Pellagra may be prevented or cured by proper diet?

The United States Public Health Service believes that the common towel spreads trachoma, a disease of the eyes?

Children from sanitary homes advance more rapidly in school than those from dirty premises?

CORONER'S VERDICT IN INDIA

For quaintness it would be hard to beat the verdict returned in India on a man whose fate it had been to assuage a tiger's appetite. "That Pandso died of tiger eating him. There was no other cause of death."—*London Chronicle.*

REGULAR HOURS

Faithful Colored Servant (to young physician)—"Glory be, Dr. Tawn, a sho' nuf patient done come at last. He done come today. But I hatter sen' him away." Young Physician—"What the deuce did you do that for?" Servant—"Well, suh, yo' orfice hours am from 11 to 1. Hit were gwine on half past when this here gem'man ring de do' bell."—*New York Post.*

A REFRESHING ODOR

An agreeable method of changing the atmosphere in an invalid's room is to put some eau de Cologne into a shallow dish, and with a lighted match set fire to it. The spirit will make a pretty flame, and impart a delightful odor to the air. —*Nursing Journal of India.*

THE NEW ENGLAND MEDICAL GAZETTE

VOL. LI MAY, 1916 No. 5

Books for review, exchanges and contributions — the latter to be contributed to the GAZETTE only and preferably to be typewritten — personal and news items should be sent to THE NEW ENGLAND MEDICAL GAZETTE, 80 East Concord Street, Boston. Subscriptions and all communications relating to advertising or other business should be sent to the Business Manager, 80 East Concord Street, Boston, Mass.

THE GAZETTE does not hold itself responsible for the opinions expressed by its contributors. Reprints furnished at cost.

STATE BOARD STATISTICS FOR 1915

The Council on Medical Education publishes in the Journal of the American Medical Association of April 8, 1916, statistics of state board examinations for the year 1915.

Graduates and students of Boston University School of Medicine may well be proud of the splendid showing made by our School. Of the four medical schools in Boston — and that means in Massachusetts — Boston University heads the list with but one failure, or 4%; Harvard Medical School is second with 6.5% failures, and Tufts Medical School and the College of Physicians and Surgeons follow with 13.5% and 39.3% respectively. These figures include all the candidates examined in 1915 regardless of the year of graduation.

The single Boston University failure was by a candidate who graduated prior to 1911. The figures for graduates of 1911–15 are, therefore, even more striking. Boston University has no failures, Harvard has 5.4%, Tufts 11.8%, and P. and S. 31.8%.

Among the graduates of 1915 examined last year, Boston University had no failures. P. and S. also had none (only five examined), Harvard had 1.8% and Tufts 11.9%.

Although the number of candidates from Boston University is approximately but one to four from either Harvard or Tufts

Medical Schools (25 to 108 [104] for all graduates; 19 to 55 [59] for 1915), and although this difference in the numbers examined would necessarily affect the percentages of failures in favor of our School, yet the margin of success of our graduates, except for those of 1915 (only one failure by Harvard), would seem to be greater than can be accounted for by statistical error due to simple variation in numbers.

On the other hand, it seems highly probable that our smaller classes, because of the necessarily closer relationship between teacher and student, are responsible for the superior product of our School. H. U.

BOSTON UNIVERSITY'S THREATENED LOSS

If President Lemuel H. Murlin accepts the secretaryship of the Methodist Board of Education, the headquarters of which are in New York City, Boston University will lose an able leader. The Boston Saturday Evening *Transcript* of April 22nd had the following editorial regarding his executive ability and success: —

"It is truly a remarkable growth which President Murlin signalizes in his report to the Trustees of Boston University. He announces that in six years the number of students at the university has increased from 1,240 to more than 2,600. In view of this increase, the President's insistence on the need of enlarged accommodations for the students who are flocking to Boston University was only to be expected. The grant of his request should follow as easily. President Murlin has shown that he knows how to keep the University's financial house in order in a way that few collegiate executives even attempt. Every dollar of its current expenses is paid out of current income. With such a showing, ready for the inspection of all who might be inclined to make gifts to Boston University, the President and Trustees should not have difficulty in raising funds for the institution — or at least they ought not, for their own stewardship has been faithful."

The editorial should also have stated that the budget of expense has almost trebled during that same period, showing that the "pay as you go" policy of the Trustees is carried on without niggardly retrenchment.

It is said that the Methodist Board of Education, the secretaryship of which has been tendered President Murlin, has the control of six hundred educational institutions, with 60,000 students, and the handling of $50,000,000. President Murlin's success as the head of Boston University is responsible for the call to the larger position.

ORIGINAL COMMUNICATIONS

FOCAL INFECTION OF THE NOSE AND THROAT, AND ACCESSORY SINUSES, AS A CAUSE OF SYSTEMIC INFECTION*

By George B. Rice, M.D., Boston, Mass.

It has long been known that many of the systemic diseases, such as arthritis, nephritis, endocarditis, pericarditis, chorea, pleuritis, tuberculosis, neuritis, and others, are frequently of an infectious origin, but the source of the infection has often been shrouded in mystery.

One is impressed, however, by the increasing interest in the subject, as shown by the many articles which have recently appeared in the current medical journals, in which the writers, in a large proportion of cases, show the relation between these diseases and a remote focal infection. The object in writing this paper is to condense a small part of this information, and by description and photographs, show that some of the many sources of focal infection are in the nose, throat, and accessory cavities, including, of course, the mouth.

So far as can be determined the most frequent focus of infection is in and about Waldeyer's Ring; next in frequency in abscessed tooth roots, and one of the many forms of pyorrhœa alveolaris; and then in about equal order the accessory sinuses of the nose, the middle ear, mastoid cells, and salivary glands.

Waldeyer's Ring, it will be remembered, is a chain of lymphoid tissue beginning in the naso-pharynx, and there forming the third, or naso-pharyngeal tonsil, or as it is popularly but incorrectly called, "adenoids," extending to the faucial pillars, and making the faucial tonsils, and again meeting at the base of the tongue, and there forming the lingual tonsil. This ring is peculiarly liable to infective processes, and, as a result of these infections, numerous changes take place in the character of the tissue, as is shown in the plates which I am pleased to show; most of them from the writer's own collection.

It can be readily seen that the relations between this focus of infection and systemic disease can only be satisfactorily demonstrated by the study of a large number of clinical cases. One physician's experience counts for little unless supported by the repeated experience of others. As has been said, a study of medical literature is on the whole convincing.

Dr. Louis Fisher reports several cases of severe gastric disturbance in children as entirely cured by removal of septic

* Read before the Massachusetts Homœopathic Medical Society, April 12, 1916.

tonsils. In 1910 Loeb reported four cases of acute nephritis resulting from acute tonsillitis.

In 1907 Brown reported a number of diseases of the heart, as well as arthritis, neuritis, pleuritis, phlebitis, Hodgkin's disease, and others, which, in his opinion, had their origin in an acute tonsillar infection.[1]

Dick and Burmeister report cases of asthma and epilepsy as in their opinion of similar origin.[2]

Davis reports forty-two cases of chronic streptococcus arthritis as in all cases due to infected tonsils.[3]

Wilson gives a history of five cases from the same source, three of nephritis, one of arthritis, and one of muscular rheumatoid pains. Among a number of similar cases the writer reports the following:[4]

Miss W., age 25, a patient of Dr. H. was sent to me Dec. 11, 1910, because of chronic sore throat, and repeated attacks of tonsillitis, frequently ending in a peritonsillar abscess. She had for years suffered from pains through the hips, at times so severe as to confine her to the bed. There was also an history of one attack of acute arthritis. The patient stated that she was rarely free from stiffness of the joints, and always an aggravation followed the acute attacks of tonsillitis. The tonsils were found to be enlarged, with dilated crypts containing masses of cheesy looking material, with also marked hypertrophy of the naso-pharyngeal tonsil.

Dec. 27, under ether, the tonsils were removed, and the naso-pharynx curetted. The bleeding was very profuse, indeed so profuse that the operation was a hurried one, and hæmostats were found necessary to control the bleeding. She made a good recovery, however, and had no further attacks of tonsillitis for four years, with entire disappearance of the arthritic and muscular pain. In June 1914, she consulted me again, stating that she was recovering from a prolonged attack of tonsillitis, with three abscesses within a period of six weeks, and a recurrence of the joint pains. Examination showed numerous pockets in the tonsillar stumps. Remembering her hemorrhagic tendency, I destroyed the remaining tonsillar tissue with the cautery. Recovery followed, with again disappearance of the joint pains, this time it is hoped, permanently.

The following case reported by my assistant, Dr. Walker, is of interest.

Mrs. L. consulted him in Feb. 1915, complaining of re-

---

[1] Journal A.M.A., June 15, 1907.

[2] Journal of Infective Diseases, Sept. '13.

[3] Journal A.M.A., Sept. 6, '13.

Journal A.M.A., Nov. 7, '14.

peated attacks of tonsillitis, and of pains about the articulations of the lower limbs. Her general health was fairly good, although she had the appearance of anæmia. The serum treatment had been tried, without definite results. In March tonsillectomy was performed by Dr. Walker, resulting in the complete, and apparently permanent, relief of the articular pains.

"Frank Billings, as the result of the study of seventy cases of arthritis treated in the Presbyterian Hospital, Chicago, declares that the center of infection was most frequently a chronic streptococcus focus in the faucial tonsil. In advice as to treatment he gives first place to tonsillectomy."[1]

Pyorrhœa alveolaris, or as it was originally called, "Rigg's Disease," is a term which comprises a variety of infections of the gums and alveola processes. Absorption of pus in these cases is a certain accompaniment. Abscessed tooth roots are also frequent sources of infection.

In October, 1914, a report of the Mouth Infection Research Corps of the National Dental Association was given in its official bulletin, and another report in November, 1915. This work was carried on by a large committee of scientific men, who examined, in the most thorough way, the mouths of several hundred hospital patients, with a view of showing the relation of the mouth infection if one existed, to the disease for which the patient was confined to the hospital. It is impossible to give even a fair account of the magnitude of this research work, but a few of the results will be found instructive. One of the reports is as follows:

"Perhaps the most interesting and valuable thing brought out by the research so far as it has been conducted has been the remarkable constancy of the streptococcus viridans findings in all the cases studied. In the eighty-two cases from which bacterial specimens were taken, seventy-five of them have presented streptococcal growth, and in the last thirty-five cases, identification of the streptococcus so constantly found has been perfect and complete, the organisms being the streptococcus viridans."

"The next most striking and suggestive thing about the research has been the causation of a diverse character of lesions in the animals inoculated; these lesions occurring in arteries, joints, kidneys and heart, which latter organ has presented myocardial inflammation, and in one rabbit we found a hemorrhage at the base of one of the heart valves, apparently a beginning endocarditis."[2]

The director states further that he has observed a direct

[1] Annals of O.R. & L., Dec., 1915.

[2] Official Bulletin of the National Dental Assoc., Oct., 1914.

relation between arthritis and mouth infection in the course of his work, and he records a number of cases where improvement only took place when the oral infection had been cured.

One of the cases is reported as follows: "Case number 59, that of a man forty-one years of age, white, unmarried, a painter by trade. At the present time he is suffering from arthritis deformans, as shown in figures 8, 9, 10, 11, 12. He also exhibits myocarditis and a mitral insufficiency. He commenced to have rheumatism in his twentieth year, and has been troubled by repeated attacks every few months during all the succeeding years until his joints are now in the condition shown in the radiographs submitted. During these years he has had a large amount of dental work done and when he appeared for treatment dental radiographs revealed the fact that there were abscesses in six or seven places in his mouth. There was also considerable pyorrhœa. The teeth were all extracted and the laboratory findings revealed as usual streptococcus viridans."

"The dental radiographs submitted, Nos. 13, 14 and 15, give some idea of the condition in which we found the teeth. This patient made a marked improvement, which commenced almost as soon as the teeth were extracted. Though still in a crippled condition the patient has insisted upon returning to work. The data here given shows clearly the possible damage to kidney tissues from this type of infection, as the blue areas in the cuts which were photographed through a dry lens, show numerous bacteria in the capillaries when examined through an oil immersion lens."

A second report founded upon the examination of nearly two hundred patients, and of experiments on one hundred and twelve, is reported in the same publication of November, 1915. The director says: "We have been able to verify the statement that para-apical abscesses and pyorrhœa pockets both harbor streptococci, which will induce in animals inflammation of the heart muscle, vegetations on heart valves, infected joints, inflammation in blood vessels, inducing vascular lesions, and both focal and diffused infections of the kidneys. "Within the past two months we have inoculated one hundred and twelve rabbits with twenty-two different strains of streptococci. Many lesions have been produced by these inoculations, which work we hope to report upon finally within the coming year. Our work thus far points strongly to the probability that streptococcus viridans, which is of the type found in focal abscesses, pyorrhœa pockets, and in the saliva, are alike capable of producing grave lesions. During the past year we have been able to find post-mortem human lesions, particularly of heart-valve, heart-muscle, and kidney, which compare closely with the

experimental lesions produced in animals which human lesions, we believe, are produced by the same organism as that used to produce the experimental lesion in animals."

The accessory sinuses of the nose; the two antra of Highmore, the ethmoidal and sphenoidal cells, and the frontal sinus since the advent of the grippe infection in 1889 are increasingly liable to infection.

The antra become more readily infected than the other sinuses, for two reasons; first, because of their size and situation, and, second, because they drain from above, so that pus once forming in these cavities must, with the patient in an upright position, overflow before it finds exit. Pus from these cavities, as well as from the other sinuses, draining into the nose frequently flows into the naso-pharynx, and then into the alimentary canal. Acute and chronic purulent middle ear infections also give rise to a variety of remote pathological changes.

Infection of the salivary glands is rare, but one case in the writer's experience is of interest: — Mrs. C. consulted the writer on Jan. 18, 1913, suffering from occlusion of Steno's Duct, and leaking of saliva into numerous pus cavities on the face over and about the site of the parotid gland. She had been unsuccessfully operated upon some five months previously. The patient suffered much discomfort from pain and pressure. Dressings were quickly saturated with pus and saliva, and frequent changes were found necessary. The general health of the patient was poor; she had lost weight and strength, was anæmic, and complained of muscular pains. After some disappointments, Steno's Duct was opened so that saliva drained into the mouth. The abscess pockets were opened, and the fistulæ injected with bismuth paste, with final complete recovery, although the treatments extended over a period of five months. With the cure of the local conditions the patient's health rapidly improved, and she has remained in good health up to the present time.

The terms rheumatism and arthritis are so often used interchangeably that the writer ventures to give the present-day meaning of the terms. Rheumatism has today no definite meaning as a diagnostic term. The writer recalls a consultation in which he spoke of a "rheumatic throat." The family physician replied "using that term to me is like waving a red rag to a bull."

A prominent diagnostician has said "Rheumatism is one of the most dangerous diagnoses to the conscientious physician."[1]

The term "rheumatism" is rather generally applied to a multitude of affections, and has been defined as a disease

[1] Cabot, Journal A.M.A., Dec. 28, 1912.

characterized by inflammation of the connective tissue structures of the body, especially in the muscles and joints, and attended by pain, aggravated by exposure, with a tendency to recurrence. As a diagnostic word, "rheumatism" has deservedly come into disfavor; myalgia, arthritis, periostitis, sprain, fractures, neuritis, and almost any localized pain of undetermined origin has at times been catalogued under this head. There is now, however, a desire to classify these different aches and pains, and to designate them with a proper scientific nomenclature.[1] By the studies of Pasteur and Koch it has become certain that many cases of so-called joint disease formerly called rheumatism are now known as infectious arthritis, due to the entrance of bacterial micro-organisms into the blood stream, and lodgment in the joints from points more or less remote.[2]

"There are, however, some cases, undoubtedly infectious in origin, in which there is complete failure to recover the organisms in culture, or to demonstrate them microscopically, and it is assumed that in these cases there is not actual lodgment of the infecting bacterium in the joints, but that its toxins, generated elsewhere and circulating in the body fluids, and exhibiting a selective chemical affinity for joint tissues, have set up a chemical inflammation which would persist so long as the toxins continued to be absorbed into the circulation."

"It may be added that acute inflammatory rheumatism itself, is not generally acknowledged to be a disease entity, but an acute infection with certain cocci. This conclusion is supported by analogy, and by sound bacterial investigation in which the postulates of Koch have been found to hold good, — viz. (1) the organism must be universally found in lesion; (2) it must be capable of being cultivated in pure culture; (3) the culture when injected into susceptible animals must reproduce the original disease; (4) it must be recoverable from the infected animal. This disease is therefore now considered an acute infectious arthritis."

"Charot's joints, gonorrheal arthritis and the numerous infective joints are in turn differentiated from rheumatism by the discovery of their respective causes, they receiving names indicative of those causes, and our conception of their pathology is based entirely on their causation."

"We have also forms of arthritis in addition to those already mentioned, viz., the senile, the arterio-schlorotic, the glandular, dependent on disturbances of secretion in the ductless glands; the tropic, as that accompanying diseases of unknown etiology like psoriasis, and the "metabolic."

[1] Brenneman N. Y. Med. Journal, Nov. 23, 1912.

[2] Journal Allied Dental Societies, March, 1914.

With the increasing interest in this subject, and continued research work, we shall no doubt be able within a short time to more accurately classify these varied forms of tissue change, and thus more certainly eradicate the cause.

BACTERIAL VACCINES IN COLDS AND PNEUMONIA

By Edward P. Swift, M.D., New York City.

Common colds, the causes of a large proportion of the minor illnesses of the winter season, and of not a few of the more serious ones, have been ascribed in a rather indefinite way, both by the profession and the laity, to exposure.

To prove that this view is erroneous it is only necessary to call attention to the fact that the persons least subject to colds, such as policemen, street-cleaners, motormen, Arctic explorers, and the like, are those most exposed to all the inclemency of the elements.

We have always talked about "catching cold," but only recently have we appreciated the significance of the expression. That exposure in those who are unaccustomed to it, may by lowering resistance, act as a predisposing cause, may be freely admitted, as in the case of numerous other infectious diseases, but the presence of specific micro-organisms is essential to the development of the symptoms.

It is a curious fact that similar clinical conditions seem to be produced by a variety of organisms. For example, an epidemic of colds in London, reported by Allen in 1908, showed the following bacterial record: influenza bacillus in only 2.4 per cent. Friedländer's bacillus in 19 per cent, bacillus coryzæ segmentosus in 26.6 per cent, and micrococcus catarrhalis in 28.6 per cent.

Niles and Hastings in 1911 reported a series of cases in which were found: micrococcus catarrhalis, 15 per cent, streptococcus 7, pneumococcus 7, b., influenzæ 7, and micrococcus tetragenous 6 per cent.

Dr. George Mather of Chicago found the predominating organisms in the recent grip epidemic to be the hemolysing streptococcus and pneumococcus.

A study of the recent epidemic in New York in the Research Laboratories of the Department of Health, under the direction of Drs. Williams and Nammack, covering about fifty cases, showed influenza-like bacilli in nineteen, but often in such small numbers as not to be considered of etiological importance.

The influenza bacillus was found alone in six cases, and associated with some other organism in thirteen cases.

The pneumococcus was isolated in eighteen cases. Other

organisms found were the hemolytic streptococcus in six, Friedländer's bacillus in 3, staphylococcus in three, and micrococcus catarrhalis in only one.

There have been numerous reports of success in the treatment of colds by mixed stock vaccines, but my personal experience is limited to their use in a few selected cases as a prophylactic measure.

Case. — S. V. W., age 35, organist, has been subject for many years to recurring colds, especially in winter, accompanied by asthma and bronchitis, so that his general health had become considerably impaired. Was obliged to burn asthma-powder for relief at night. Given four injections at three-day intervals, in Dec. 1914, of vaccines, in millions of killed bacteria: 150 at first injection, 300 at second, 600 at third, and 1200 at fourth; and containing micrococcus catarrhalis, bacillus Friedländer, pneumococcus, streptococccus, and staphylococcus albus and aureus, in the proportion of one-sixth of each.

His condition began immediately to improve, and there was no recurrence of colds or asthmatic attacks until the middle of February 1916, when he suffered from an attack of moderate severity, lasting a week, but unaccompanied by asthma. States that he has not been as well in years as since the treatment, and has gained several pounds in weight.

B. M. F., lawyer, age 37, subject to frequent catarrhal colds in head and throat which have affected hearing. Injected with same dosage as in preceding case in Dec. 1914. No colds during remainder of winter and spring, or until early February 1916, when he developed a moderate bronchial catarrh, lasting a week, but with very little involvement of the nasal passages, such as formerly occurred.

E. S. and P. S., brothers, 35 and 40 years of age, injected in Jan. 1915. Each developed rather severe colds within a few weeks, one of which was complicated by a suppurative sinusitis.

Injected myself in Jan. 1915. No colds during remainder of winter or spring, but one rather severe one first of the following December; none since.

In view of the fact that the immunity conferred by colds is of brief duration, it is unlikely that their vaccines will be found to be of very much prophylactic value, but their apparent effect in some individuals justifies their further trial.

The treatment of pneumonia by vaccines, both prophylactic and therapeutic, demands, in my opinion, more attention than has yet been given it by most practitioners.

As has been shown by the work of Cole, Avery, Dochet and others, at the Rockefeller Institute, there are several forms of pneumococci, differing in virulence, and described briefly as

follows: Groups I and II, which are agglutinated by the experimental sera derived from immunized horses; Group III: pneumococcus mucosus capsulatus, recognized by its peculiar slimy growth; and Group IV, an atypical group of all the pneumococci that kill mice, but do not agglutinate, or grow in the characteristic manner of Group III.

It is asserted that the mortality in groups I and II is 30 per cent, compared with 40 per cent in group III, and only 10 per cent in group IV, the miscellaneous group.

Inasmuch as the clinical aspects of all forms are similar at the outset, it is evident that a stock vaccine should include bacteria from all groups. An autogenous vaccine is impracticable, since the effectiveness of the treatment is directly dependent upon its early administration.

Following are the notes of a few cases, mostly treated during the past winter:

Mrs. S., age 60, subject of chronic rheumatoid arthritis, attacked with typical symptoms of lobar pneumonia on Dec. 28th, 1914. Given 50 million killed pneumococci on that date, followed in 24 hours by 100 million, with prompt subsidence of the symptoms and recovery.

The same patient was again attacked by pneumonia in Oct. of 1915. The treatment was repeated with prompt improvement, and rather slow convalescence, but complete recovery.

Mrs. E. S., age 79, attacked Dec. 22nd, 1915, with lobar pneumonia involving the right lower lobe, and extending to both lungs. Fifty million pneumococcic vaccine given on that date, 100 million on the 23rd, and 200 million on the 25th. This patient had a hard fight. Temperature on the 3d day 104, pulse 140, respiration 50; 4th day temp. 102.2; pulse 150; resp. 40. 5th day, temp. 102.2; pulse 160; resp., 44. Active delirium. On the morning of the 6th day the temperature had dropped to 100, pulse to 98, and respiration to 36, indicating a crisis. Slept the following night, and made uninterrupted recovery.

Miss J. H., home from college for the holidays, attacked Dec. 27th, 1915, by typical lobar pneumonia. Seen in consultation with Dr. Hall of Mamaroneck, on the 28th. Fifty million vaccine given on that date. Temp., 103.2; pulse 100; resp., 24; Dec. 29th A.M.: Temp. 101; pulse 90; resp., 22; P.M.: temp. 103.6; pulse 100; resp., 24. 100 million vaccine administered on the 30th. Temperature was 102 to 104 during Dec. 30th, 31st, Jan. 1st, 2nd, and 3d, but the pulse remained at about 100, and respiration 24 to 28, with no delirium, and good general condition. Crisis on night of Jan. 3d, and rapid

recovery. While this case ran a typical course, the apparent well-being of the patient throughout, and the moderate pulse and respiration were remarkable.

Mrs. D., age 82, attacked Jan. 16th, 1916 by chill, pain in right side, temperature 103, crepitant rales in the lower right lobe. Fifty million pneumococcus vaccine given immediately. On the following morning pain and fever had mostly disappeared, but the cough, at first with rusty expectoration, continued for three or four days, though there was no increase of lung involvement, and the patient fully recovered.

Mrs. S., age 57; chill at 8 P.M. on March 10th, followed by fever and pain in left side. Thought it an ordinary cold and did not send for me until 8 the following evening, March 11th. Then had temp. 103; pulse 110; respiration 28. Complained of headache, thirst, and considerable pain in the left side. Crepitant rales in lower right lobe; otherwise normal breathing sounds. Administered 50 million vaccine at once. Mar. 12th. A.M. Less pain in side. Slept at intervals. Temp. 102.2; pulse 110; resp. 26. Less thirst. Physical signs same. 6.30 P.M. Temp. 102.1; pulse 104; resp., 26. Less pain, but coughs more, with rather profuse bloody sputum. Broncho-vesicular breathing with crepitant rales lower and middle lobe of right lung. Broncho-vesicular breathing left lung posteriorly. Vaccine, 100 million. Mar. 13th, A.M. Temp. 101.2; pulse 110; resp. 26. Little pain, cough moderate, sputum bloody, physical signs same. P.M., Temp. 101.4; pulse 104; resp. 28. Sputum still bloody but lighter in color. Mar. 14th A.M., temp. 101.4; pulse 106; resp. 28. Coughed much during night. Sputum still blood-tinged, but lighter in color. Rales in middle and lower lobe, right, are coarser, with more normal vesicular breathing. Fine crepitant rales in lower left; broncho-vesicular breathing in middle portion of left lung. Vaccine, 200 million. Mar. 14th, P.M., temp. 103.2; pulse 112; resp. 32. Sputum more bloody. Crepitant rales over entire lower and middle portion of left lung, with bronchial breathing in middle portion. Fewer rales on right side, but partial consolidation of lower lobe. Mar. 15th, A.M., temp. 101.1; pulse 104; resp. 28. Slept at intervals. Less cough than the night before. Moderate perspiration in the early morning. Looks better. Coarse rales over left lung. Less bronchial breathing. Right unchanged. Sputum still bloody. Perspired moderately during the night. Evening temperature 101.3; pulse 108; resp. 28. Mar. 16th, slept during the night, awoke in perspiration. Temp. 99; pulse 92; resp. 24. Harsh breathing sounds in left lung, with fewer rales. Few crepitant rales in lower right lobe, otherwise vesicular breathing. This patient had no delirium at any time, nor other evidences of severe illness.

PNEUMONIA*

By George L. van Deursen, M.D., Lowell, Mass.

Pneumonia, like the poor, we have always with us, and like these worthy objects of charity it presents its claims for attention when cold and exposure lay their chilling hands on the unsuspecting victim.

The past few years have seen a steady rise in the fatality attending this much dreaded disease. In 1913 there were nearly 84,000 deaths from this cause in the United States, or more than one in every nine from all causes. In 1914 the number was still higher, and while the entire figures for 1915 are not yet available, seven cities of our country — Philadelphia, Pittsburg, Cleveland, Detroit, Chicago, Kansas City and San Francisco — during the last two weeks of December, reported 1,469 cases and 904 deaths.

While the number of cases varies at different seasons and at the same season in different years, all observers emphasize the importance of a lowered resistance on the part of the individual, whether due to exposure, insufficient food, alcoholism or some infection, such as the epidemic of influenza of the past winter.

Pneumonia in its classic form is described as "an infectious disease characterized by inflammation of the lung parenchyma, profound toxæmia, fever which terminates abruptly by crisis and certain secondary infective processes." Its cause is said to be the *pneumococcus lanceolatus capsulatus* of Fraenkel, though recent reports by Sisson and Roberts (Amer. Jour. of Medicine, Nov., 1915) suggest the *bacillus mucossus capsulatus* of Friedlander as the infective agent in from five to ten per cent of adult cases — only one case having been reported in infants or children. The pneumococci are rarely confined to the lungs alone, but may be present in the mouth and nasal cavities, pleuræ endocardium and peritoneum, and in several cases may be found in the blood and spinal fluid. They are often associated with other organisms, as streptococci, staphylococci and various bacilli constituting a mixed infection, giving rise to many of the secondary complications.

Rosenow of Chicago has made extensive experiments with various strains of pneumococci, and by certain cultural processes has developed an elective affinity in certain strains for certain tissues; — so that while the original strain would always produce pneumonia, the modified strains would in one case produce arthritis, in another endocarditis and in still another meningitis.

* Read before the Massachusetts Homœopathic Medical Society, April 12, 1916.

His later studies of this elective affinity in relation to streptococcic infections seem to show a modification of virulence as well as organ selection depending on the host from which the culture was selected and the focus of infection. This may explain much of the variation in types of the disease and of individual reaction to our various remedies. He says: — "Individual variations in resistance to infection were found in the individual animals. The effect of these conditions in the host as determining factors in localization are important. They are probably expressions of differences in metabolism, oxidation rates, etc., which influence the soil for bacteria." "Streptococci of low virulence but highly sensitive to oxygen are found to produce lesions in tissues whose blood supply and therefore oxygen and food requirements are low (heart valves, tendons and structures about joints). Streptococci of greater virulence are found to produce lesions in tissues whose blood supply and therefore oxygen and food requirements are high (kidney, lungs, etc.). Hence localization and production of injury seem to be closely related to the amount of available oxygen in a given tissue. Might not the predisposing action of trauma (locus minoris resistentiæ), of exposure to cold and of a drunken bout, to infection be best explained on the basis of lack of oxygen."

Studies of pneumococci by immunity tests have caused their division into four general groups according to virulence, which appear to be more or less constant. Types one, two and three are considered pathogenic and the cause of eighty per cent of the cases of pneumonia, while type four, which is more often found in the mouths of healthy persons, is of very low virulence and responsible for only about twenty per cent of the cases of pneumonia.

It is said that in South Africa certain tribes are very susceptible to this form, while their white neighbors are relatively immune, — so that a new pathogenic form may be developed as they acquire a racial immunity to type four. In patients recovering from pneumonia the virulent type is soon replaced by the non-virulent, and in cases where this does not occur resolution is always delayed.

Pneumococci found in the mouths of attendants usually correspond to the type found in the patient and they may in this way act as pneumonia carriers. Infection may be transmitted in this way by direct contagion or by air-borne infection, the pneumococci being drawn into the alveoli of the lungs and finding a suitable soil, owing to congestion from cold or lowered resistance from a previous infection or injury or other inflammatory condition. The reaction of the system to this new invasion is again dependent on individual resistance.

Dr. J. G. Cross of Minneapolis in a careful analysis of 400 cases of lobar pneumonia from the records of the City Hospital shows the relation of leucocytosis to the course of the disease — a low white count showing a low resistance and a high death rate. Under 10,000 gave 33.3% of deaths, 15,000 to 20,000 18.9%, above 25,000, 11.3%.

Rohdenberg and Vander Veer of New York, in their special study of 145 patients as a basis for prognosis, emphasize the importance of a falling curve of leucocytosis. In non fatal cases the maximum leucocytosis was reached on the first day, with a gradual decline, but not reaching normal until about ten days after the crisis. Fatal cases, however, show their maximum leucocytosis on the third day, with an irregular curve both before and after. In a study of the temperature charts they found the peak of the curve in then on fatal cases on the third day, while in the fatal cases the highest point was not reached till the fifth day. Of those having positive blood cultures, 56% recovered and 44% died, while all of the cases showing negative blood cultures recovered.

In their study of the spinal fluid 87% of the fatal cases showed pneumococci on culture and only 13% were negative, while of those who recovered 34% gave positive cultures and 66% negative. From their experience they consider negative blood and spinal fluid cultures, a falling curve of leucocytosis and a maximum temperature on the third day as warranting a favorable prognosis.

Methods of treatment have apparently not kept pace with the advance in knowledge of the causative factors in pneumonia. The study of the antibacterial power of the blood and the development of immunity by the use of serums is still under investigation.

Bull of the Rockefeller Institute states that in a few minutes after an injection of an active pneumococci serum an agglutination of the bacteria occurs, — the larger the dose of serum the larger the size of these bacterial clumps. The clumps are promptly removed from the blood stream by the liver spleen and bone marrow. If the clumps are not too large they are digested by the phagocytes and recovery takes place, but in the case of too large clumps this digestive process cannot be accomplished, the bacteria begin to grow and reinvade the blood with fatal effects. Hence smaller doses of serum, producing smaller clumps, seem more effective than the larger doses.

It would seem then from these observations that we are dealing with a general systemic infection having a local manifestation in the lungs, and any line of treatment must be directed toward increasing the powers of resistance by de-

veloping the anti-bodies by the use of proper remedies or the injection of immunizing sera in proper dosage.

Can our homœopathic remedies be depended on to accomplish this result? I think they can. Our Aconite, Belladonna, Bryonia, Phosphorus, Iodine, Ipecac, Hepar., Sanguinaria, Antimonium tart., Kali Carb. and Bichrom., Lycopodium and Sulphur have won their place on too many a hard fought field to be ignored or lightly cast aside.

Dr. Watters has demonstrated that certain remedies will positively raise the opsonic index toward certain infections, but in the application of these facts we must continue to bear in mind individual idiosyncrasy and treat the patient according to his personal reaction to the disease processes.

In an article on the "Therapeutics of Pneumonia" in the J.A.M.A. Nov. 6, 1915, the writer states: "We are past the stage when any dogmatic advice can be given in regard to the use of drugs in pneumonia. The physician who has charge of a pneumonia patient must decide whether a drug is needed to combat a *condition* or *symptom* and which drug is the best for the object aimed at."

That is good homœopathic doctrine to which we can all say "*Amen*," though he does not mention "the totality of the symptoms"; nor must we neglect any adjuvant treatment which may throw the balance in the favor of our patient in this often unequal struggle. If these bacterial invaders show a weakening of their power of attack in the presence of oxygen, let us meet the enemy with a wall of super-oxygenated cells. Do not reserve the oxygen tank till the patient is overcome by the toxæmia, but apply it early and supplement nature's efforts in every way possible. Rest of mind and body, elimination by skin, bowels and kidneys, support of an overworked heart and the supplying of proper nourishment in sufficient amount are all necessary factors in the successful treatment of any disease, but especially so in that of pneumonia.

SIMPLIFIED TECHNIC IN SURGERY OF THE STOMACH*

By A. R. Grant, M.D., Utica, N. Y.

As briefly as possible I will define the details of technic and the safest methods of dealing with benign and malignant ulcers.

The numerous principles embodied and points of procedure defined so concisely could be easily elaborated into a volume of considerable size.

---

*Read before the Medico-Chirurgical Society, Syracuse, N. Y., Dec. 2, 1915.

The incision best adapted is the "right rectus" extending its upper portion well toward the ensiform; one should not hesitate to add a transverse incision to the left if necessary to get good access when performing resection.

Visualization of the ulcer or cancer and palpation of all abdominal viscera should be the next step in all stomach operations.

TREATMENT OF THE ULCER. Ulcers of duodenum, pylorus, lesser curvature and ulcers of the posterior wall, cardiac region and body of the stomach, if not too large and not apparently cancerous, are best treated by the Percy cautery and infolding with chromic catgut reinforced with silk.

Resection of ulcers of lesser curvature has not been satisfactory, even with gastro-jejunostomy. Percy cautery and infolding by the Balfour technic and gastro-jejunostomy give the best results.

Ulcers that are well covered with adhesions should often be let alone, gastro-jejunostomy being done. Large ulcers and cancers should be resected.

Gastro-enterostomy should be added to the treatment of all ulcers of the duodenum, pylorus, lesser curvature and antrum, but ulcer of the body of the stomach, cardia and posterior wall do not require gastro-jejunostomy drainage, the healing of such ulcers being best favored by jejunostomy feeding for eight weeks. Jejunostomy is valuable also in exhausted patients where gastrectomy would be poorly advised, at least until the general condition is improved.

Jejunostomy after the Witzel method, using a large catheter, No. 12 English, or Rovsing's method, using a Pezzer catheter and enteroanastomosis, are both good operations. I use the latter when a large tumor and many adhesions make identification of proximal and distal portions of jejunum difficult.

Pyloric occlusion is no longer considered necessary nor advisable and is an obsolete procedure.

Pyloric occlusion accomplished in the process of cautery destruction of a duodenal or pyloric ulcer followed by infolding is proven to be only temporary, as the pylorus enlarges after healing and becomes practically normal in size and function.

Perforation is to be immediately closed by Percy cautery and infolding.

Gastroenterostomy is not necessary to the recovery of the patient and is only practiced when the patient is operated upon very early, say in ten or twelve hours, and then only if otherwise in favorable condition. Pelvic drainage with a glass tube is indicated with much free fluid in the peritoneum.

Hemorrhage, from ulcer, is best treated by a purse-string

suture if accessible or by the cautery. If doubt exists as to the site of hemorrhage a cystoscope introduced through a stab wound in the wall of the stomach gives trans-illumination that allows one to localize the origin of the bleeding.

Blood transfusion by the simplified citrate of soda method, is a valuable procedure in the desperate cases.

GASTRO-JEJUNOSTOMY. The site for the jejunal opening is located as near the fossa as possible, snipping a pronounced peritoneal band, if necessary.

The location of the stoma on the posterior wall of the stomach is that spot against which the jejunum is easiest applied, keeping close to the lowest border of the stomach, i.e., about one and one half inches.

For *approximation*, I use the Roosevelt Clamp applying only sufficient pressure to hold the organs up until the second row of posterior sutures is finished, when the clamp is removed, leaving the large middle rubber tube still in position behind the joint; then hemorrhage may be surely controlled.

The size of stoma should be about two inches longitudinal upon edge distal to mesentery of duodenum and transverse upon the stomach; after healing, all stomas are round regardless of whether one makes a vertical, oblique or transverse opening into the stomach.

Redundant mucous membrane should never be trimmed; the extra fullness is necessary when the stomach is full and vigorously contracting.

SUTURE MATERIAL. I am using catgut for both layers and feel confident of the security of approximation with the great advantage of having no sinuses from the lumen down to a non-absorbable thread that may be the starting point of a jejunal ulcer. This confidence was first assured from examination of stomas in dogs at different periods following gastro-jejunostomies. I use No. 2 plain catgut for the row of through and through sutures, and No. 1, 20-day chromic gut in a No. 7 straight seamstress' needle of the self-threading type, for the sero-muscular layer.

Using two needles on each gut thread facilitates easy turning and careful approximation of the corners, allows the knotted ends to be placed at different positions and is of great advantage in allowing linear traction upon the serous stitch that insures smooth approximation without the slightest danger of cutting or tearing the delicate peritoneum, as often happens when an assistant draws the thread too tightly at an angle to the line of sutures.

The posterior layer of through and through sutures is a simple glover's stitch and is safer than a button-hole stitch.

The anterior layer is united by a through and through Connell stitch, which inverts the mucosa.

I also use six tension sutures of fine silk placed with a curved needle.

The omental edge is turned into the lesser sac with fine silk thread which catches the duodenum ordinarily but which takes only the gastric peritoneum when the omentum is fatty and in resections of the Polya type.

RESECTION of one third or more of the stomach is indicated for probable cancer.

The Polya operation as perfected by the Mayos is the operation of choice.

Payr clamps and cautery are essentials, after careful hemostasis.

Technical hints include care in closing the duodenum and being sure to resect enough of the stomach to get well beyond the growth.

The stoma is closed precisely the same as an ordinary gastro-jejunostomy, the proximal portion of jejunum being applied to the upper end of the opening into the stomach.

For very radical resections the Soresi gastrectomy is a very valuable procedure, as it allows of easier anastomosis of the broad stump of the stomach to the small lumen of jejunum.

When closing the abdomen I approximate the peritoneum and posterior fascia with one continuous suture of O chromic gut doubled: then this same suture returning coapts the muscle fibres and, again turning, whips up the anterior layer of fascia.

Four silkworm gut figure of eight tension sutures are inserted through skin, fat and edges of fascia and the skin closed with horsehair.

CONCLUSIONS: One third of the 75,000 people of the United States who die of cancer every year, have cancer of the stomach. If indigestion persists after medical treatment has been faithfully followed for four weeks, it is better to have it treated surgically than to take the risk of being one of the 25,000.

Registration for the May Post Graduate courses at Boston University School of Medicine includes:

Dr. H. H. Sink, Columbus Grove, Ohio,
Dr. Oscar O. Sink, Smithfield, Ohio,
Dr. Glenn R. Matchan, Minneapolis, Minn.,
Dr. H. F. Morin, Bath, Maine,
Dr. A. A. Stott, Woolwich, Maine,

in addition to several from Massachusetts, outside of Boston.

RECTAL ANÆSTHESIA*

By Mark A. Leavitt, M.D., Boston, Mass.

Rectal anæsthesia was brought to the attention of the profession by Dr. Gwathnay of New York in the summer of 1913, and is not at all like the so-called rectal anæsthesia of previous years. The method of procedure for the giving of this anæsthetic is as follows:

The patient is prepared the night before as for an ordinary ether anæsthetization, by the giving of a good cathartic, say, castor oil. On the morning of the operation enemas are given one hour apart until the return is clear. The patient is then left to rest for a couple of hours, if possible. Rectal suppositories of chloretone are given, from 5 to 20 grains one half hour before the giving of the mixture. Chloretone is a proprietary drug of Parke, Davis & Co.'s, and is used as an anæsthetic for the mucous membrane. My usual amount is ten grains. Twenty minutes after the insertion of the chloretone, a hypodermic of morphine and atropine is given, from one-quarter to one-eighth of morphine and a hundred and fiftieth to a two hundredth of atropine, according to the physical resistance of the patient, my ordinary dose being one-sixth of morphine and a two-hundredth of atropine. From this time on the patient is kept very quiet in bed, no friends being allowed to see him. Twenty minutes after the hypodermic the patient is placed in the Sims position, and the mixture of oil and ether is introduced. This mixture consists of ether in the proportion of 50 to 75 per cent. and oil, cottonseed or olive, in the proportion of 50 to 25 per cent. The ordinary mixture for a normal adult is a 75 per cent. mixture of ether with a 25 per cent. of oil. One ounce of the mixture is given for every twenty pounds of body weight, not to exceed, however, eight ounces. This mixture is introduced through a rectal tube or a catheter, well lubricated, introduced four inches into the rectum, and it is given at the rate of one ounce a minute. The patient goes to sleep in this same Sims position in a varying length of time, from ten to 55 minutes ordinarily. The odor of ether is on the breath in about three minutes.

The physiology of the action seems to be that the ether is absorbed from the mixture by the capillaries surrounding the rectal mucous membrane, too much ether being prevented from being absorbed by the fact that the process of absorption takes heat from the surrounding tissues, and hence the ether is absorbed only a little at a time.

---

* Read before the Boston District of the Massachusetts Homœopathic Medical Society, March 1916.

The length of anæsthesia varies from two and a half to three hours. At the end of the operation the rectal tube is again inserted, and the bowels massaged to bring out whatever of the mixture is left. Cold water irrigations are then given until the return is clear, the return coming through a second rectal tube which is inserted. After the irrigations are finished, two ounces of olive or cottonseed oil are introduced and left in the rectum, and the patient is then returned to his bed.

The relaxed condition of the patient under this anæsthetic is more marked than under any other of the general anæsthetics. If the patient fails to go under this mixture readily the depth of anæsthesia may be deepened by holding a towel over the nose and mouth, excluding some of the air, or if this is not sufficient, a few drops of ether may be put on a mask over the patient's face until the patient is surgically anæsthetized. Then the mask may usually be taken off, and no further ether is necessary. If the anæsthesia is too deep, as indicated by stertorous breathing, cyanosis and the general signs of too much ether, withdrawal of the mixture will immediately lighten the anæsthesia. The introduction of a Connell breathing tube to be sure that there is no blocked airway will oftentimes have the same effect. If this is not sufficient a vein may be opened, and an intro-venous injection given of from one to three pints of normal saline solution. No preliminary medication is given in children under nine years of age.

The indications for this method of anæsthesia are in operations about the head, chest and neck, where the element of fear is in evidence, e.g., goitre, oper. on the resp. sub tract, bronchoscopy, gastroscopy where the cone and mask of the anæsthetist would be in the way. We have used it in about one hundred cases in the Hospital with no untoward results, and such operations as æsophocosphony, cancer of the tongue and angioma of the lip, goitre, cervical adenitis, eneucleation of the eye, impacted molars, resection of jaw and advancement operations have been among those for which we have used it.

We have had complete failure twice on the same individual. The reason I do not know. The case was that of a young fellow twenty years of age, with a tremendous angioma of the upper lip, so great that he was unable to obtain work anywhere because of this deformity. The first time that the anæsthetic was given it was done in more or less of a hurry, and all the preliminary steps were not observed, and I laid the failure at that door. The second time, however, every preliminary step was taken, and yet the failure was fully as complete as the first time. We had, however, great difficulty in getting him under the inhalation ether sufficiently to operate, and this was given

in addition to the rectal. Therefore, he may have been a case that would have resisted any form of anæsthesia. We have had no untoward results. The one symptom that we have expected would happen with some would be a transitory diarrhœa lasting for twenty-four hours or more. This we have not met. We have been very careful in sizing up our cases to give them too little rather than too much anæsthetic. I have used a 65 per cent. solution where ordinarily I think it would have been perfectly safe to have used a 75 per cent. During the week of the Clinical Congress in October among our cases five were anæsthetized by this method, and created much interest among our visitors.

GYMNASTICS FOLLOWING CHILDBIRTH

By Eliza Taylor Ransom, M.D., Boston, Mass.

After talking with several postparturient women who had been confined at the Freiburg Frauenklinic, the writer gleaned from each that no one factor in their wonderful recovery was more strongly emphasized than what they termed "The Freiburg Gymnastics Postpartum." While to the medical mind filled with the obstetric methods of the past, and the memory of two practical experiences of motherhood, with mental pictures of lying in absolute quietness, being turned in bed only by the nurse, receiving food from the hands of others, flowing copiously, suffering afterpains for several days, made much worse unless one position were maintained throughout, enduring unbearable gas pains from constipation due to the prone position, accompanied by agonies, and fainting from high enemas, this gymnastic procedure seemed a most wild, impractical, and dangerous method to pursue.

Subsequently a "Freiburg mother" demonstrated to the writer the complete set of exercises commenced on the lying-in woman, under Dr. Gauss in the Frauenklinic, from six to ten hours after delivery, or after awaking from Dämmerschlaf, an hour or two following "a good square meal." Let us consider for a moment what this means. If one rides a horse, rows a boat, splits a pile of wood to the extent of muscle fatigue, these same muscles must undergo this same exercise from day to day in order to prevent a lameness that otherwise becomes exceedingly uncomfortable to endure, unless one can avail herself of the luxury of a masseuse. There is no greater muscle fatigue than that due to childbirth (without an anæsthetic from the beginning) while with scopolamin-narkophen the uterine muscles work sufficiently to expel the child, and the adjacent skeletal musculature undergoes a thorough stretching even though it

assists not at all, or very little, in the birth process. Since the same exercise, in this case, can not be repeated the next day, as in the case of the horseback ride, a substitute can be deduced, — namely, a set of physical exercises carefully given by the physician, or taught to the nurse who can equally well administer them, — that include both extension and contraction of each muscle used, — uterine muscle inclusive, — as well as exercise of the other skeletal muscles that will be weakened by lying in bed, — from three to ten days as the case may be.

This procedure has been carefully carried out with every case delivered by me in this last year with marked beneficial results even in emergency cases delivered without "Twilight" (although every woman gets the benefit of at least one hypodermic of scopolamin no matter how close to delivery it may come, which, if nothing else, insures her a good sleep afterwards).[1] The results obtained, in short, are easily recognizable, and demonstrate themselves to the physician from day to day on the very first case.

The writer was giving recently these gymnastics to three women in a ward. The windows were open, the patients were lying uncovered, their feet in the air, when a physician opened the door and walked in. "My Gawd, have you all gone crazy?" was the exclamation of the astonished doctor, fearing utter ruin to one of the patients who happened to be his own. Whereupon, after being shown its advantages and after holding the fundus for a short period while the exercises continued, he remarked, "Why wouldn't this be even more beneficial in 'normal obstetrics'?"

It must be clear to the medical mind that the advantages of these gymnastics are many.

1st. The exercises begin so soon after delivery that no soreness has had time to settle in the much wrought muscles.

2nd. The stiffness and lameness concomitant with labor are all abolished, — better, averted.

3rd. Certain of the exercises are devised wholly to contract the uterine muscle, resulting in a very slight loss of blood from flow which means so much to the convalescent, when she now has two to sustain and needs all her good, arterial blood.

4th. On sitting up at first the exercises obviate any possibility of dizziness, prickly feet, and poor circulation.

5th. The exercises relegate the old weakness, and feeling of delibity, to antiquity. One *never* hears, "Oh I'm growing stronger from day to day."

6th. The getting about early after scopolamin-narkophen

[1] [To persist in the routine on such a flimsy excuse as "insures her a good sleep afterward" is carrying twilight sleep to the limits of unreasonableness. — Ed.]

anæsthesia delivery is due to two facts, first, no impression has been made on the cellular structure of the brain; second, and equally important, by means of the exercises the physical portion of the body has been kept in trim, or has not been allowed to get out of trim.

7th. The exercises keep the digestion and bowels in perfect condition (all other things being equal), so essential to both mother and child.

8th. A working man can eat a hearty meal, and digest it, — so can the lying-in woman with exercises twenty minutes twice daily.

9th. The gymnastics encourage a good healthy appetite, and *should be given* from the *time* of *inception of pregnancy*, as well.

10th. If exercises are given consistently they enable a mother to take care of her own child the second week and she can therefore receive from the attending nurse the most modern training in the care of the child. This alone will reduce the infant death-rate in a wonderful degree.

The greatest need of the obstetric physician today is the well trained "Twilight Sleep" nurse which would make the practice of obstetrics a joy, instead of each case a thing to be wished in the past, as these Freiburg gymnastics can be given by the nurse quite as effectively as by the physician, if she be of the understanding type.

THE TREATMENT OF EXTRA-UTERINE PREGNANCY

By Dr. Aime Paul Heineck. Chicago Ill.

Extra-uterine pregnancy is the condition which is obtained in the female when a fertilized ovum is permanently arrested somewhere in its course from the ovary to the uterus and undergoes development at this point of arrest or abnormal lodging place. The term ectopic has a broader meaning than extra-uterine, and refers not only to tubal and to ovarian pregnancies but also to those cases in which the fertilized ovum lodges and develops in some abnormal diverticulum of the uterus.

This condition, on account of its practical problems, appeals to all members of the medical profession. It occurs far more frequently than is generally believed. It is often overlooked, often misdiagnosed. Inflammation and sepsis following a supposed miscarriage are often due to a ruptured extra-uterine pregnancy. Countless women can be saved from chronic invalidism, and many more from premature death, by recognizing this pathological entity in its early stages and by subjecting it to timely and adequate surgical intervention.

So continuously destructive is the action of the syncytial cells upon the tubal wall, that tubal pregnancy is compared by many clinicians to a parasitic growth, to a malignant process, requiring in every case to be treated as such. Extra-uterine pregnancy is like a mine ready to explode without a moment's notice. It is highly important that the patient be at all times within easy reach of competent surgical assistance.

Extra-uterine pregnancy almost invariably is primarily tubal; ovarian pregnancies occur but they are pathological rarities. Tubal pregnancy occurs in all races and at all periods of the child-bearing age. It may be intra-mural, isthmic or ampullary, unilateral or bilateral. It does not seem to show any predilection for either tube. In sixty cases reported by Newell the right tube was involved in thirty, the left in twenty-four. In the remaining six cases the pelvic relations were not clearly made out. It may be the individual's first conception, or precede, be associated with, or follow one or more normal uterine pregnancies. Mussey, in the St. Paul Medical Journal of 1914, reports a study of 168 cases occurring in the Mayos'. Of these cases sixty had never been previously pregnant. Normal uterine pregnancies have intervened between two extra-uterine pregnancies. Some cases have been preceded by one or more miscarriages, accidental or induced; many have occurred in primiparæ and multiparæ, after a prolonged period of sterility and in a considerable number of cases one obtains history of previous inflammation, gonorrheal or other, of the internal genitalia. It is thought that inflammatory processes act as an etiological factor by producing kinks, strictures, adhesions, obliterations of the tube and by destroying the tubal cilia.

Every conceivable variation has been observed in cases of tubal pregnancy; it has been repeated in the opposite tube, in the same tube, in a tubal stump. There have been simultaneous gestation in the right and left tubes and also simultaneous tubal and normal uterine pregnancies. Under the designation "Tubal Twin Pregnancy," three distinct conditions are included:

1. Where one ovum is intra-uterine and the other extra-uterine.

2. Where each tube contains an ovum.

3. Where both ova are contained in one tube.

Tubal pregnancy at times simulates, and in some of the reported cases was associated with, one or more of the following pathological conditions: ovarian cyst, salpingitis, pyosalpinx and hydrosalpinx of the opposite side, appendicitis, various forms of uterine displacement, and various uterine neoplasms.

What are the possible terminations of an extra-uterine pregnancy abandoned to the unassisted resources of Nature?

1. The pregnancy may go to term and a living child be delivered through channels created by the surgeon. In connection with this termination, one must keep in mind that extra-uterine children frequently die in the first few days of life, many of them have lived only a few hours. They are frequently the subject of deformity. Potocki comments on the low cranial dimensions of his case. When two years old the child could not talk, and did not recognize anybody — not even his nurse. The operation necessitating their removal from the maternal organism may prove fatal to them. It may prove fatal to the mother, either immediately from surgical shock or from excessive hemorrhage; or remotely from toxemia, septicemia or pyemia. The removal of a living, full term extra-uterine child is one of the most difficult operations one can be called upon to perform.

2. The pregnancy may go to term and the child remaining undelivered dies and persists indefinitely in the maternal organsim. It may at any time become a menace to the life and health of the mother.

3. The fetus may die previous to term. Small embryos when expelled into the peritoneal cavity are promptly absorbed, unless the placenta retains a firm attachment to the tube or contracts new attachments. Fetuses that die at an advanced state of development cannot be absorbed.

The undelivered tubal fetus may undergo —

(*a*) Putrefaction.
(*b*) Mummification.
(*c*) Maceration.
(*d*) Septic changes —
1. From communication with neighboring organs.
2. From contiguity with neighboring organs.

After the death of the fetus, the liquor amnii is absorbed. No more is secreted. The cyst shrinks and the gestation-sac may be considered as a cyst, a fetal cyst. The fetal cyst may be merely —

1. A mechanical inconvenience to the maternal organism.

2. An obstacle to a subsequent intra-uterine pregnancy, and have to be removed to allow a simultaneous or subsequent uterine pregnancy to go to term.

3. A source of irritation to one or more contiguous organs, causing rectal or vesical disturbances; by compressing the intestines, determining an illeus; by compressing the bladder or ureters, causing urinary retention.

4. A cause of uterine displacement.

5. A cause for diagnostic errors.

6. The fetal cyst walls may, and frequently do, become adherent to surrounding organs and tissues, and the cyst by means of a perforative inflammation opens into (*a*) the bladder, (*b*) the vagina, (*c*) the intestinal canal, or (*d*) through the abdominal wall, by either or by several of which channels of outlet, it eventually incompletely eliminates its decomposing contents.

To recapitulate: The cyst may rupture —

1. Into the bowel by one or several openings.

2. Into the vagina.

3. Into the urinary bladder, and the fetal bones and other cyst contents be expelled per urethra. " Ten years after this extra-uterine gestation, patient began to feel that something was always obstructing the passage of the urethra and causing intense pain and discomfort. Small pieces of bone often discharged with the urine. The bladder was found to communicate with a sac containing a large number of fetal bones. The patient was placed under chloroform five times, only a few minutes each time, with an interval of six days between the sittings, and 68 bones were removed. Some still remained in the sac." Rai 9a.

4. Into the rectum and the fetal bones be expelled through the anal canal. " A painful, continuous, foul smelling, purulent bloody discharge from the anus; fetus minus an arm was passed through the rectum. The rectum was dilated and occipital and parietal bones removed." Marsh 9b.

5. Into the uterus.

6. Into a cyst of other nature contained in the abdominal cavity.

7. Through the abdominal wall.

8. The fetal cyst may open and be eliminated through one, two or more channels in the same patient.

Rupture is one of the terminations of tubal pregnancy. It is appalling in its suddenness and often overwhelming in its results. It may occur before or after the death of the fetus. Primary or secondary gestation sacs may rupture. The gestation may be arrested by this accident or may continue uninterrupted, though changed in anatomical type. Rupture is associated with hemorrhage, circumscribed or diffuse, belonging to one of the three following types, or to a combination of two or of all these types: (*a*) Extra-tubal; (*b*) intra-tubal; (*c*) intramural. If the amniotic sac be ruptured and there be an outflow of the amniotic fluid, gestation will come to an end. Kastanajeff reported in 1914, 717 cases of ectopic gestation treated

in a Petrograd hospital; nearly 600 of these ruptured before the end of the eighth week.

Extra-tubal rupture takes place: (*a*) Into the peritoneal cavity; if the ovum does not perish, the pregnancy is continued as a tubo-peritoneal or peritoneal pregnancy.

(*b*) Between the folds of the broad ligament. If the gestation be not interrupted, it will continue as an intra-ligamentary or tubo-abdominal pregnancy. Intra-ligamentary pregnancy is far more infrequent than peritoneal pregnancy. The layers of the broad ligament provide a ready made capsule by means of which the amount of bleeding is restricted.

(*c*) An intra-mural rupture may lead secondarily to an intra-tubal or extra-tubal rupture. In intra-mural rupture, a thin layer of muscle tissue and the peritoneum separate the blood-sac from the peritoneal cavity, or from the intra-ligamentary space. The condition is somewhat analogous to that which is obtained when a saccular aneurysm ruptures and the blood escapes interstitially. If the abdominal opening of the tube be occluded, intro-tubal rupture leads to an accumulation of blood in the cavity of the tube, viz., hematosalpinx. If the abdominal end of the tube be not occluded, the blood passes out of the tube into the peritoneal cavity, giving us a pelvic hematocele or a hemoperitoneum. The ovum, continuing to develop in the tube, may rupture secondarily either into the peritoneal cavity or between the folds of the broad ligament, and gestation therein continue. If one variety of rupture fails to relieve the tension, the gestation-sac ruptures in another direction. In tubal abortion the ovum is carried out of the tube by the intra-tubal hemorrhage.

The hemorrhage that attends and follows rupture usually requires immediate surgical interference. In some cases, it appears as though almost every drop of blood in the woman's body, has been shed into the abdominal cavity. Tubal ruptures and tubal abortions are associated with hemorrhage. Hemorrhage may also result from perforation of the tubal wall by the development of the chorionic villi. The amount of blood discharged bears no relation to the extent of the rupture. Severe and even fatal hemorrhages have occurred from very small orifices. The rupture may be punctiform in size; may be a large tear; may be almost a complete rending of the tube. Rupture into the peritoneal cavity leads either to the formation of an hematocele, or to a flooding of the peritoneal cavity; the latter will prove fatal if the hemorrhage be not operatively arrested. Maternal death may be caused by one severe intra-peritoneal hemorrhage, or by recurring hemorrhages. The signs and symptoms of acute anemia are quickly produced.

If the extra-tubal rupture be between the folds of the broad ligament, a pelvic hematoma will result. This hematoma is almost invariably one-sided and, needless to say, is on the side of the rupture. In some cases it dissects forward between the uterus and bladder, or backward around the uterus beneath the peritoneum and extends to the opposite side. If tension within the hematoma is excessive rupture may take place secondarily into the peritoneal cavity, giving us the combined condition of both intra-peritoneal and extra-peritoneal hemorrhages. The same may occur in a hematosalpinx. Excessive tension leads to tubal rupture either into the peritoneal cavity, or between the folds of the broad ligament, or in both directions. The hemorrhage associated with the rupture of a tubal or an ovarian gestation sac either proves fatal, or a pelvic hematoma or a pelvic hematocele results. These encysted blood collections — hematomata or hematoceles — are partially or completely absorbed, persist as fibrous bands or masses, or become infected and lead to pus formation. If the suppurative inflammation be circumscribed, an abscess is formed. Should the inflammation spread to, or the abscess burst into the peritoneal cavity, there results a circumscribed or diffuse suppurative peritonitis. Should the inflammation extend to the retro-peritoneal connective tissue, a cellulitis results, with all its accompanying dangers. The expulsion of the uterine decidua does not imply the death of the extra-uterine fetus.

The migration of the ovum into the abdominal cavity, through the ostium abdominale, is known as tubal abortion (Bland Sutton). Tubal abortion may also lead to hematosalpinx. Usually, however, the blood escapes freely through the ostium abdominale into the cul-de-sac of Douglas, and either becomes encysted there, or escapes into the general peritoneal cavity. The three factors involved in causing abortion or rupture apart from such extraneous causes as bi-manual examination, etc. are:

1. The destructive action of the trophoblasts.
2. Bleeding.
3. Contraction of the muscular wall of the tube.

One should always be very careful and gentle in examining a case of probable tubal pregnancy; the danger of rupturing one of these tubes by rough manipulations exists.

Tubal abortion may be complete or incomplete. In the former there is usually one attack of pain and weakness. In the incomplete form, we have repeated attacks of weakness. The abortion, if the amniotic sac remains intact, and if the ovum resists absorption, leads to a tubo-peritoneal and peritoneal pregnancy. If the villi or placental attachments are destroyed,

the ovum, being unable to form secondary attachments to other structures, dies.

Treatment

Extra-uterine pregnancy is as truly a surgical disease as appendicitis, and though, as in this disease, a clinical cure may at times be obtained by non-operative measures, it is not common for that clinical cure to be an anatomical cure. In ectopic pregnancy do not consider the viability of the child except as it endangers the life of the mother. We must destroy the fetus to save the mother. Without surgical aid extra-uterine pregnancy always terminates fatally to the child, and frequently causes the mother's death.

Nature's tedious methods of relief, and the many dangers to which the woman is obviously exposed during its occurrence, justify surgical interference. Even the absorption of large uninfected collections of blood is far more prolonged than post-operative convalescence. The ideal time for operating is before rupture takes place. Error should be made upon the side of prompt operation rather than on that of undue waiting.

In the hands of the average operator, the only possible dangers to which the mother is exposed by the operative removal of the dead or live ectopic fetus are sepsis, hemorrhage and shock. The first can be avoided, the second can be completely controlled, and the third can be minimized and almost always overcome.

Some operators make use of the terms "primary laparotomy" and "secondary laparotomy." In the former, the operation is performed during the life of the fetus. It is in accord with the theory and practice of modern surgery. It attacks tissues while they are healthy, in preference to awaiting nature's blind efforts to improve conditions. Secondary laparotomy is the operation performed after the death of the fetus.

The diagnosis of ectopic gestation is in itself an imperative indication for operation. Delay is inadmissible. The longer one waits, the more dangerous the condition becomes. A waiting policy is often fatal. Lives can be saved by accurate diagnosis, prompt decision, and skillful operating. The profession in general has not exhibited that keenness and alertness toward extra-uterine pregnancy which has characterized its study of appendicitis in the last few years.

In tubal rupture and in tubal abortion the first indication is to stop the hemorrhage. This indication is urgent. Hypodermic medication will not accomplish it. To stop this hemorrhage, place not your faith upon the coagulability of the blood, the lessened force of cardiac action, or such agents as heat, cold, styptics, and the like. Stimulants must not be used in

internal hemorrhage until the bleeding vessels have been secured, as increase of cardiac and arterial tension would be followed by recurrence of bleeding. Open the abdomen; stop the hemorrhage by ligating bleeding points with aseptic absorbable ligature material, if you have it at hand, or with antiseptic non-absorbable ligature material, if the former be not at hand.

Even in the absence of urgent symptoms, do not delay operation. To postpone operation is to incur adhesions and hematocele sacs in their various forms. As long as the embryo or fetus lives, the placenta increases daily in size, in vascularity, and in difficulty of removal. Furthermore, every day the increasing size of the child and of the placenta adds to the danger of secondary rupture.

Having decided to operate, two pathways are open: 1. Through the vaginal wall. 2. Through the abdominal wall. In some difficult cases you may have to use both the abdominal and the vaginal route. We recommend the vaginal route in the following conditions: viz., pelvic abscess — when the gestation-sac has been converted into a pelvic abscess, when suppuration has occurred in an intro-ligamentary fetal cyst, and in all intra-ligamentary hematomata. The opening of pelvic abscesses by way of the vagina is a safe and wise surgical procedure. The results are almost always very satisfactory. 2. In those cases where the fetal parts closely press against the vaginal wall. Even here it may be necessary to make use of the abdominal route, in addition to the vaginal route. It is often impossible to remove the impregnated tube through a vaginal incision. There is always greater danger of wounding the intestines when one makes use of the vaginal route. We prefer the abdominal route, because it enables the operator — 1. To remedy at the same time, coexisting pathological conditions, hydrosalpinx, obliteration of the abdominal ostium of the unaffected tube, ovarian cysts, etc. 2. To more thoroughly and more rapidly arrest hemorrhage. 3. To make a more direct examination and thereby to judge better the extent of damage, and formulate a more accurate diagnosis, and effect a more conservative ablation of organs. 4. To have the operative field under much better control, to more quickly come in contact with the condition, and to better and more completely remove the fetal sac and its contents. The separated ovum or liberated fetus may ascend in the abdominal cavity, and it may be very difficult to find and remove it by the vaginal route. An abdominal incision enables the operator, in case of an incorrect diagnosis, to treat those conditions that simulate ectopic gestation. In operating sight, as well as touch, is a very useful aid.

The greatest difficulty that we encounter near term, at

term, or after term, in operating for ectopic gestation is connected with the removal of the placenta. A slight detachment of the placenta often results in alarming hemorrhage.

We make use of a supra-pubic or infra-umbilical incision about one-half inch to one side of the median line, so the edges of the resulting wound are better adapted to our method of suturing the abdominal wall. Avoid cutting the epigastric vessels. Avoid cutting the urachus. Cutting into a patulous urachus is as significant as cutting into a urinary bladder. The cut must be repaired. Make timely and appropriate use of the Trendelenburg position. The patient must be placed in this position gradually, not suddenly. The return to the horizontal posture must also be gradual. The Trendelenburg position facilitates the gravitation of the intestines towards the diaphragm. It permits a better view of the pelvic tissues or organs. After the patient has been gradually placed in the Trendelenburg position, the intestines and the general peritoneal cavity are walled off from the pelvic cavity by gauze pads.

In all operations for extra-uterine gestation, the opposite tube and ovary should be carefully examined, as they may be the seat of degenerative changes. In a few instances the condition is bilateral. Extra-uterine pregnancy in some individuals has recurred.

Never make a needless sacrifice of tissues or organs. In the absence of a positive indication, such as a highly contracted pelvis, preventing the birth of a living child through the natural channels, etc., never remove the non-diseased tube and ovary. As most extra-uterine pregnancies are tubal, early operation will permit the preservation of the ovary. The preservation of the ovaries is of benefit to the patient.

The main difficulty in early and late operations is hemorrhage. The ideal treatment for hemorrhage incident to operations undertaken for the removal of the ectopic gestation-sac is prophylaxis. Therefore, do not provoke uncontrollable hemorrhages. Proceed after having well sized up the situation. Hemorrhage must be controlled by ligation or by compression of the bleeding points. Normal salt solution must not be given, either intravenously, subcutaneously, or per rectum, before the bleeding points have been controlled or secured. Once the bleeding is under control its use is of signal benefit. It increases the volume of the circulating fluid. Do not close up the abdomen until you are satisfied concerning the hemostasis. Hemorrhage is most profuse if the fetus be alive at time of operation.

If possible, do not leave denuded peritoneal surfaces.

They are possible avenues of infection. After ablation of one or both tubes, suture the folds of the broad ligament to each other from the superior pelvic strait to the angle of the uterus. Peritonization — that is, the covering with peritoneum of all denuded surfaces — lessens adhesion formation. These adhesions may be attended with colicky and other pains; may cause intestinal obstruction. This peritonization lessens hemorrhage and creates a barrier capable of limiting the extension of inflammatory processes.

In attempting to remove the fetal sac and its contents, be careful lest these efforts inflict much damage upon contiguous organs. Repair such damage, if feasible, before closing up the abdominal cavity.

In early, unruptured, tubal pregnancy, there are usually no adhesions. If adhesions be present they are to be separated, as in all other intra-abdominal surgical interventions, with great care and by the same methods. The incision, about three inches in length, is carried through the different layers of the abdominal wall into the peritoneal cavity. The first step is to locate the uterus. Using the fundus of the uterus as a guide, and proceeding to the right and to the left, examine both tubes and both ovaries. Tubal pregnancy is located with about as equal frequency on one side as on the other. Separate all adhesions, if such exist, of the gestation-sac to contiguous organs. Then remove the gestation-sac (which is usually tubal) as a whole, if possible, by total resection of the Fallopian tube involved. Suture the folds of the broad ligament together; leave no denuded peritoneal surfaces. Close up the peritoneal cavity. Post-operative treatment is that of uncomplicated laparotomy. If the pregnancy be ovarian in type, and be early and unruptured, do a typical ovariotomy. Accuracy and rapidity in operating is as essential in these cases as in any other intra-abdominal work.

If the gestation-sac is ruptured and hemorrhage has occurred or is occurring, after opening the abdominal cavity immediately locate and keep in view the fundus of the uterus. Determine on which side is the ruptured gestation-sac. Seize the uterus, preferably with the hand or with a double tenaculum. It is a most important landmark. Having determined on which side the rupture is (it is usually tubal), apply a clamp at the uterine end of the tube. This will stop all further hemorrhage from the ovarian artery of that side. Apply another clamp immediately below the tube, compressing the folds of the broad ligament but not injuring the ovary. Then remove the affected tube and the gestation-sac. Ligate all bleeding points, suture the folds of the broad ligament and the tubal

surface of the uterine stump. Remove as expeditiously as you can the easily removable liquid blood and blood clots contained in the peritoneal and pelvic cavities. Remove the embryo if it can be found without prolonged search. Let there be no needless exposure, no needless traumatizing of the intestines. Mechanical, chemical and thermal irritation of the peritoneum intensify operative shock, and may be followed by the aperistaltic form of ileus. Post-operative treatment is that of acute internal hemorrhage for which a laparotomy has been performed. Use normal saline solution secundum artem.

The most dangerous operative conditions, from the maternal standpoint, are presented by those in which the fetus is alive. In these cases the hemorrhage frequently is appalling. Some authors have suggested that the abdominal aorta be compressed. When the placenta is attached to the line of incision, the hemorrhage is profuse; it is checked by firm compression. In those cases in which the fetus is alive, we have two things to accomplish, and they must be accomplished with the preservation of the mother's life. The first thing to accomplish is the removal of a living child. The last and most important is the removal of the ovular debris, — placenta, membranes, etc. One is not often called upon to operate cases in which a living child is present. For a physician knowingly to abstain from operating in a case of extra-uterine pregnancy before it reaches term is, to say the least, injudicious. The best practice is to terminate these pregnancies early, before the development of the ovum is much advanced.

Remove the fetus without disturbing the placenta. If the fetus is alive, after having opened the abdominal cavity and protected the peritoneal cavity by compresses from the outflow of amniotic fluid, ligate the umbilical cord as in a normal pregnancy and remove the fetus. Have the amniotic fluid escape externally as much as possible. Upon the maternal end of the umbilical cord a clamp is placed, the umbilical cord being cut either between the ligature and the clamp or between the two clamps.

If the fetus has reached term or near term and is dead, there is some difference of opinion as to which operation is the preferable method — the immediate operation or the delayed operation — until the fetus has been dead for a month or longer. Our experience leads us to believe that the danger incident to the policy of expectancy is so great that if the fetus is dead, be that death recent or of some standing, it should be removed without delay. Exceptionally, our incision may carry us into the fetal sac. This occurs in some extra-peritoneal or broad ligament pregnancies and the peritoneal cavity is not opened.

In this variety the sac and placenta are entirely beneath the peritoneum. The latter may have been pushed up, stripped, as it were, from the anterior abdominal wall for a greater or less distance. Without disturbing the placenta, after having ligated the umbilical cord near the placenta hastily remove the fetus. Evacuate the sac contents and then after separating the sac and the placenta from the surrounding structures to which they have become adherent, remove them. Usually our incision carries us into the peritoneal cavity. After placing the patient in the Trendelenburg position, separate the sac from the contiguous viscus or viscera to which it adheres. Control hemorrhage as you proceed. Operate rapidly. The general peritoneal cavity is protected by gauze compresses, which are numbered and counted, and then the incision is carried into the ovum. Occasionally, you may be able to remove the ovum as a whole. If the placenta is not safely removable, if the nature of the adhesions of the surrounding organs to the ovum is such that their separation would prove disastrous, content yourself with evacuating the fetal cyst and then suturing its walls to the abdominal wound. The sac must be packed daily until the placenta has been expelled and the sac cavity obliterated. If the placenta is to be left behind, it is better that it be not disturbed.

The following methods have been employed:

1. The fetus, the umbilical cord, and the amniotic fluid have been removed. Everything else has been left in situ and the abdominal wall closed. This is an extremely risky experiment.

2. The fetus is removed, and more or less of the sac is resected. Drainage of the sac cavity is employed, and the placenta and sac are left for spontaneous expulsion. This is the most frequently employed procedure.

3. After the removal of the fetus, umbilical cord and amniotic fluid, the placenta is removed in part — so much of it as is easily separated — and the remainder is left to spontaneous absorption.

4. The placenta is left in situ after removing the fetus. Then, after the expiration of a certain time, when it is hoped that the blood supply is spontaneously cut off, the placenta is shelled out.

5. The placenta and entire ovum are removed immediately. An ideal measure, if feasible.

6. The placenta and gestation-sac are removed at once, likewise the neighboring organs, the uterus and ovaries, providing the hemorrhage cannot otherwise be arrested.

7. Preliminary ligature of the uterine and ovarian arteries

of the side from which the placenta received its blood supply, followed by removal of the placenta.

There is no disputing the fact that the fetal sac and placenta should be removed completely if the procedure be consistent with the safety of the mother. The complete ablation of the ovum is theoretically the only perfect operation.

The method we employ in those cases in which we fear to disturb the placenta is the following: After incising the sac, removing the fetus and other intro-ovulary contents, and ligating the umbilical cord close to its implantation, we resect a portion of the sac wall and sew what is left to the abdominal wound, thus closing off the general peritoneal cavity. This leaves a large pouch, which is packed with strips of aseptic gauze. Endeavor to keep this sac cavity aseptic until all the placenta has sloughed out of the wound. The elimination of the placenta by this method takes from twenty to fifty days.

In some cases a vaginal drain has to be used, in addition to the abdominal drains. The first strips of gauze that are inserted in the fetal sac are made to serve the offices of a compress and of a tampon. They are used to check the bleeding. After the first dressings, the gauze strips are used more with drainage in view. After the fetal cyst has been sewed to the abdominal wall, or immediately previous, according to the exigencies of the case, the compresses that have been used to protect the general peritoneal cavity are removed. Sewing of the sac wall to the abdominal wound shuts off all communication between the cyst and the peritoneal cavity. We use No. 3 catgut to suture the sac wall to the abdominal wall. The abdominal wound is closed as in those cases in which a Mikulicz drain is employed. Post-operative treatment symptomatic.

1. Newell, F. S. — Sixty cases of Extra-uterine Pregnancy. *Boston City Hospital Report.* 1905, page 26, fifteenth series.

2. Kynoch, John A. — On repeated Extra-uterine Pregnancy with notes of two cases. *Journal of Obstetrics and Gynecology of the British Empire.* 1906, vol. 10, page 576.

3. Vineberg, Hiram, N. — Simultaneous Uterine and Extra-uterine Pregnancy. Report of two cases. *New York Medical Journal.* 1906, vol. 83, page 396.

4. Horrmann, Albert. — Uber Extra-uterine-Graviditat. *Zentrablatt fur Gynakologie.* 1907, vol. 31, page 487.

5. Potocki, M. — Grossesse Extra-uterine a terme avec enfant vivant. *Revue de Gynecologie et de Chirurgie Abdominole.* 1908, vol. 12, page 362.

6. Brickner, Samuel M. — An Analytical and Clinical Study of Thirty Cases of Ectopic Pregnancy. *The Medical News.* 1905, vol. 87, page 289.

7. Burford, Geo. — On the principal features of Extra-uterine Gestation, with especial reference to three uncommon cases. *British Homœopathic Review.* 1907, vol. 1 (new series), page 391.

8. Morehouse, H. W. and E. H. Griswold. Lithopedion Carried Twenty-six Years or More. *Journal.* 1907 *A. M. A.* Vol. 48, page 222.

9a. Rai, Captain D. G. — Extra-uterine Fetation. *British Medical Journal* 1906. Vol. 2, page 428.

9b. Marsh, Jone. Pregnancy Continuing to Term and Twenty-seven Months. Later in the Discharge of Fœtus per Rectum. *Jour. of the Obst. and Gynæc. of the British Empire.* 1906, vol. 9, page 438.

10. Dr. Emil Haim and Dr. Oskar Lederer. — Erfahrungen uber rupturiente. Extra-uterineschwangeerschaft mit freiem. Bluterguss in die Bauchholle. *Monatsschrift fur Geburtschulfe und Gynokologie.* 1907, vol. 25, page 207.

11. Galabin — Tubal Abortion Produced by Bimanual Examination. *Obstetrical Transactions Obstet. Society of London.* 1905, vol. 47, page 332.

12. Bovee, J. Wesley. — Report of a Case of Unruptured Tubal Pregnancy of Four Months' Development. *Virginia Medical Semi-monthly.* 1905, vol. 10, page 389.

13. Noble, Chas. P. — Extra-uterine Pregnancy. *Pennsylvania Medical Journal.* 1905–6, vol. 9, page 833.

14. Yeager, Frank N. — A Case of Ectopic Gestation at Full Term with Fetus Carried in Abdomen for Thirty-five Years. *Journal of A. M. A.* 1912, vol. 59, page 443.

15. Lane, John W. — Report of a Case of Full Term Intra-abdominal Pregnancy. *Boston Medical and Surgical Journal.* 1911, vol. 164, page 683.

16. Cobb, F. — The Management of the Grave Emergency Cases of Extra-uterine Pregnancy, with a Study of 137 cases of Tubal and Interstitial Pregnancy at Massachusetts General Hospital. *Ann. Surg., Phila.* 1912, vol. 56, page 835.

17. Grimsdale, J. B. — Case of Ovarian Pregnancy, with Full Time Fetus. *Jour. Obst. and Gyn., Brit. Emp., London.* 1913, vol. 23, page 115.

18. Purefoy, R. S. — A Case of Tubal Pregnancy Attended with Previous Symptoms without Rupture. *Dublin J. M. Sc.* 1913, vol. 135, page 81.

19. Smith, W. S. — Extra-uterine Pregnancy. Operation Three Months after Term; Recovery. *A. J. Obst.*, N. Y. 1913, vol. 87, page 669.

20. Chaput. — Grossesse tubaire a terme avec conservation de l'enfant pendant trois ans dans le ventre de la malade. *Bull and Mem. Soc. Anat. de Paris.* 1913, vol. 88, p. 479.

21. Proust. — De L'intervention opératoire dans les grossesses tubaires. *Gaz. des Hop.*, Paris. 1914, vol. 87, page 85.

22. Henault, L. — Seize nouveaux cas de grossesse ectopique; quelques diagnostics différentiels. *Presse Med. Belge Bruxelles.* 1914, vol. 66, page 143.

23. Mauclaire. — Kyste Fétal suppuré. *Bull and Mem. de la Soc. de Chirurgie de Paris.* 1915, vol. 46, page 1106.

24. Polak, John Osborn. — Observations on 227 Cases of Ectopic Pregnancy. *A. J. of Obst.* 1915, vol. 71, pages 946, 952.

25. Anderodias, de Boucand and Roche. — Récidive de grossesse tubaire; hémorragie cataclysmique. *J. de Med. de Bordeaux.* 1913, vol. 43, page 610.

26. Potheral, G. — A propos de deux cas de grossesse extra-utérine rompue. *J. de Med. de Paris.* 1913, vol. 25, page 792.

27. Weiss and Sencert. — Un cas de grossesse intra- et extra-uterine combinée. *Bull. Soc. d'Obst. et Gynec. de Paris.* 1913, vol. 2, page 648.

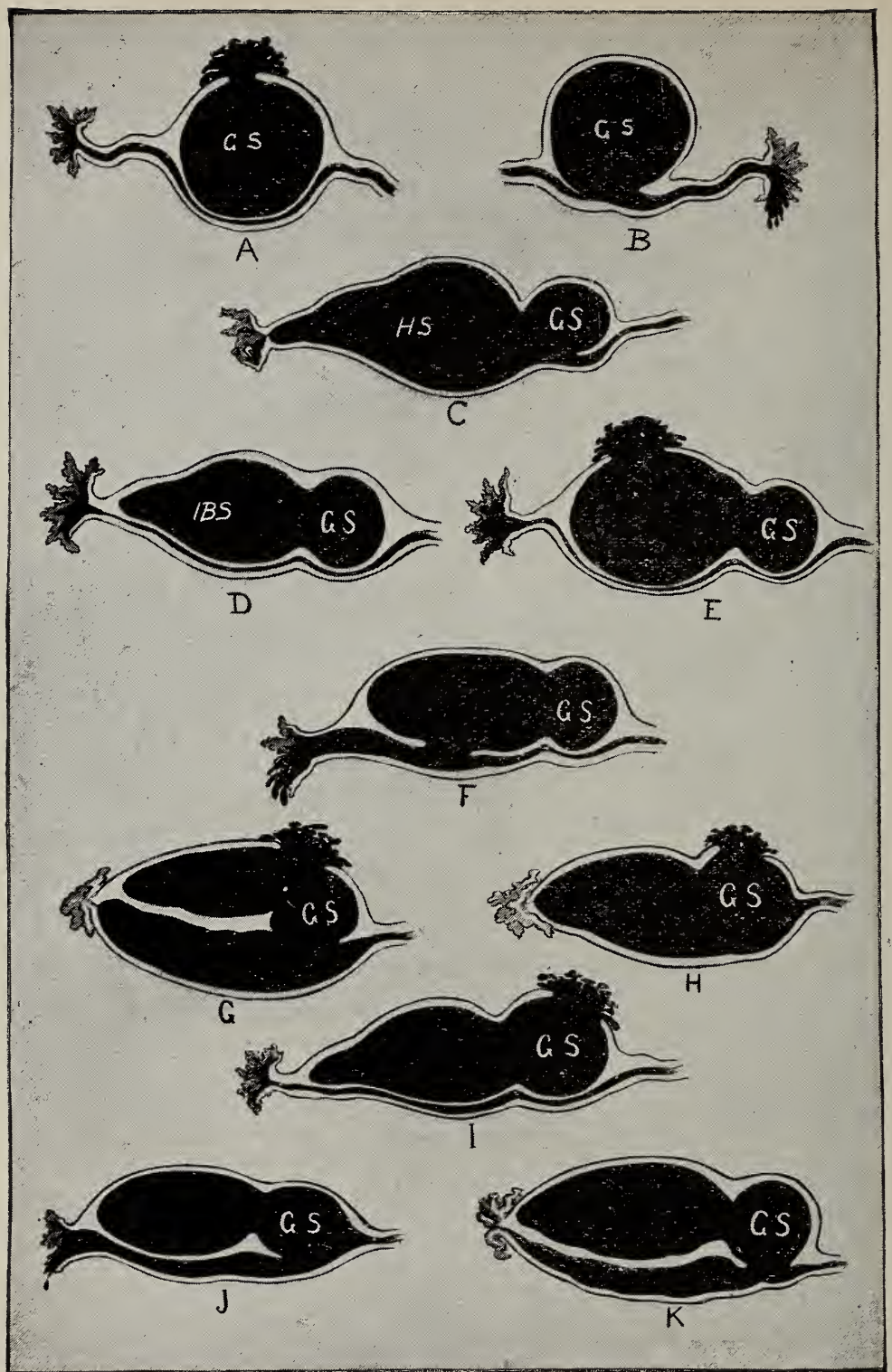
28. M. Peraire. — Grossesse extra-utérine droite rompue avec coincidence d'un kyste ovarien du meme coté. *Paris Chirurgical*, vol. 6, pages 793–795.

29. P. Mauclaire. — Grossesse péritonéale; ablation par laparotomie; guérison. *Bull. and Mem. Soc. de Chir. de Paris.* 1915, vol. 41, page 1106.

30. Sampson, John. — The Influence of Ectopic Pregnancy upon the Uterus with special reference to the changes in its blood-supply and uterine bleeding. *Surgery, Gynecology and Obst.* 1914, vol. 18, page 587.

31. Smith, Richard. — Final Results in 192 Patients Operated upon for Ectopic Pregnancy. *Surg., Gyn. and Obst.* 1914, vol. 18, page 684.

32. Wilcox, DeWitt G. — The Early Recognition of Ectopic Pregnancy. *The Philadelphia Medical Journal.* July 28, Aug. 4, 1900.



A. Extra-tubal Rupture of Gestation-sac. Escape of blood into peritoneal cavity.
B. Intra-tubal Rupture, with escape of blood into peritoneal cavity through ostium abdominale of Fallopian tube.
C. Intra-tubal Rupture, with retention. Hematosalpinx.
D. Intra-mural Rupture. A layer of muscular tissue intervenes between the blood extravasate and lumen of tube.
E. Intra-mural Rupture, with blood-sac opening into peritoneum.
F. Intra-mural Rupture, with blood-sac opening into lumen of tube.
G. Combined intra-tubal and extra-tubal and intra-mural rupture.
H. Combined intra-tubal and extra-tubal rupture.
I. Combined intra-mural and extra-tubal rupture.
J. Combined intra-mural and intra-tubal rupture, with escape of blood into peritoneal cavity.
K. Combined intra-mural and intra-tubal rupture, with retention of blood into lumen of tube.
GS. Gestation-sac. HS. Hematosalpinx. IBS. Intro-mural blood-sac.

CLINICAL DEPARTMENT

The following record is submitted by Dr. J. Arnold Rockwell, with autopsy by Dr. Helmuth Ulrich.

Case of Miss S. R. H.

Family History: — Good. Age 89.

Personal History: — Patient was of high intellectual attainments and in very comfortable circumstances. Temperamentally excitable, fractious, but usually well controlled, of a decided literary bent and an uncontrolled appetite.

During the past fifteen years she has had facial erysipelas four times (the last attack four years ago), pneumonia, once (three years ago), and a right hemiplegia in December, 1914. Intermingled with these conditions were innumerable digestive attacks, especially during the first few years of this period. At this time it was not uncommon for her to have weekly "sick headaches," with vomiting and vertigo, the attacks lasting two or three days. Careful inspection of the vomitus at these times showed masses of undigested and poorly masticated food, especially meats, which in some cases might almost have choked an average individual, moderate quantities of bile and mucus, but no blood. These headaches were usually ushered in by increased physical activity and extreme irritability, with anorexia and vertigo. In a few hours nausea and vomiting, with typical cold sweat and prostration followed, with relief of headache. These attacks were often the result of extreme excitement or fatigue associated with rapid eating. It is of interest to note that there have been no attacks of the above description during the past seven years. This has been chiefly brought about by proper regulation of diet and especial attention to the methods of eating, particularly as to mastication. Remedies used during and subsequent to these attacks included Hydrastis, Iris versicola, Nux vomica, Sanguinaria, Mercurius corrosivus, Pulsatilla and Arsenicum.

At no time during this period of fifteen years was there any inflammatory reaction with these digestive explosions, no evidence of gall stones or gastric or duodenal ulceration, and the case had been considered one of sub-acute gastritis due to poor digestive hygiene.

Present Illness: — During the early part of April, 1915, the patient, who had become bedridden since the hemiplegia of December 1914, showed a greater lassitude and general weakness, together with increasing indifference to her surroundings and nutrition, which at this time was practically composed of liquids, with selected soft solids. A suppression of urine was

noted for the first time, necessitating catheterization during a period of several weeks. There was a slight jaundice developing during these premonitory symptoms. On the morning of the 7th of April she complained of tenderness in the right side over an area extending from the upper margin of the liver to the anterior superior spine of the ilium. She cried out with every attempt to change her position when such effort involved the placing of the hands over this region. There was entire loss of appetite, and increasing drowsiness prevailed. Temp. 99, Pulse, 100, Resp., 25. At about 6 o'clock in the evening she began active vomiting which was almost continuous to ten o'clock, during which time a total of 1,500 c.c. of a dark grayish-green, pea-soup material of foul odor was expelled from the stomach. There was a general picture of collapse. The following morning at 6 o'clock more vomiting of similar material and again at 9 P.M. a recurrence of the same pea-soup foul smelling vomitus. At this time it seemed almost fæcal in character. The marked prostration with scarcely perceptible pulse, temperature 100, with rapid respirations prevailed. Distension of the abdomen began to develop at this stage, accompanied by great tenderness over the entire surface. There was constant nausea, not even water being retained. Daily enemas of milk and molasses, equal parts, alone relieved the accumulation of intestinal gases, and hot hamamelis compresses over the abdomen gave partial relief to the general distress. This distension lasted for the greater part of four days, with gradual subsidence. During the course of several weeks the patient gradually returned to what might be termed her normal condition. There was no chill, only moderate temperature, and slight jaundice during this attack.

A second attack, milder but of a similar nature, developed in January, 1916, — eight months later. It was ushered in by marked distension of the abdomen and general tenderness and one vomiting attack. The material vomited had no characteristic pea-soup consistency but was made up chiefly of curds. Again the pulse and heart went bad, yet in about two weeks the patient was enjoying her usual health. There was no jaundice at this time.

The third and fatal attack developed gradually during the middle of February, 1916. A slight jaundice was the first evidence of this progressive condition and, by the end of ten days, was of deep saffron hue, with all the characteristics associated with such marked icterus. There seemed to be a desire to lie on the left side although there was no direct evidence of tenderness over the right epigastrium, nor was there any distension. A moderate febrile reaction was noted during these last days, with fading pulse, shallow respiration, evident

nausea, complete anorexia, with the final week of life practically a comatose condition.

Conclusions: — At no time was there anything to suggest gallstones, gastric ulcer, duodenal ulcer, or cancer.

Icterus was slight in first attack, very pronounced in the third. There was no clinical evidence of abscess formation in the first attack although examination of vomitus demonstrated bile, pus and blood. As unusual, is noted the great resistance demonstrated at such advanced age.

Autopsy, March 6, 1916: — Body of a moderately well nourished woman, age 89. The entire body has a bright lemon to greenish-golden yellow hue. Eyes: Pupils are equal, regular, about 6mm. in diameter. Teeth are lacking. Double halux valgus. Rigor mortis absent. Body still warm.

Median incision made extending from suprasternal notch to symphysis pubis. Abdominal wall 3 cm. thick. Musculi recti reddish brown; abdominal fat golden yellow in color.

Diaphragm reaches fourth rib on the right side and fourth space on the left. Peritoneum smooth and glistening throughout. Peritoneal cavity contains about 20 c.c. clear yellowish fluid. Large intestine moderately distended with gas, small intestine collapsed. Omentum contracted to about half normal length, with consequent thickening.

Costal cartilages ossified. Few pleuritic adhesions posteriorly on left side, fairly easily severed. Right lung free. Very little (5 cc. estimated) clear yellow fluid in left pleural cavity, no fluid in right. Both visceral and parietal pleuræ smooth and glistening except at point of attachment of adhesions. Lungs contain an excessive amount of air, are anthracosed, and unusually pale and dry, except in the posterior portions of both lower lobes, but especially the left, where there is considerable hyperæmia and consequent dark red color.

The pericardial sac contains a small amount (5 cc. estimated) of clear yellow fluid. Pericardium smooth and glistening throughout.

Heart: Slight dilatation of left ventricle. Cardiac muscle fairly firm, somewhat atrophied, dark reddish brown in color, containing few very small fibrotic areas. Fibrosis of mitral valve, but pliable. Moderate amount of calcareous deposit in leaflet of aortic valve, but leaflets retain their normal shape. Moderate sclerosis of coronary arteries. Moderate scleratherosis of abdominal aorta.

Liver: Dense adhesions to the liver, colon, head of pancreas, right kidney, and duodenum about the gall bladder, which is filled with thick, pasty, reddish-gray, cheesy material and a small amount of thick yellowish green fluid pus. It also contains

two black gallstones, 1.5 and 1.3 cm. in irregular diameter. Another stone, 1 cm. in diameter, lay in the dilated hepatic duct near the confluence of its two roots. The gall bladder communicates with the duodenum, about 11 cm. below the pylorus, by means of an opening about 2.5 cm. in diameter. On cross section, the liver shows dilatation of biliary ducts, containing considerable green purulent bile.

Stomach: The gastric mucosa is diffusely red and thick.

Intestines: Inflammatory redness of duodenum and upper jejunum diminishing towards lower portion. Appendix normal.

Kidneys: Small. Capsule moderately adherent. Stripped surface granular. On cross section, cortex is rather narrow and surface reddish.

Spleen: Very slightly softer than normal. Trabeculæ easily seen, follicles less marked. Pulp reddish brown. Normal size.

Anatomical summary:

Arteriosclerosis.
Senile cirrhosis and atrophy of kidneys.
Mild fibrosis, atrophy, and dilatation of heart.
Cholelithiasis.
Chronic purulent cholecystitis with pericholecystic adhesions.
Obstruction to outflow of bile resulting in dilatation of intrahepatic bile ducts. Jaundice.
Acute purulent exacerbation of the chronic cholecystitis with spontaneous rupture of pus cavity into duodenum.
Acute gastritis and duodeno-jejunitis.

Case Reports
Boston University School of Medicine

Professor Frank W. Patch submits the following cases which have been reported to the Department of Materia Medica of Boston University School of Medicine by upper class students working in the Out Patient Department.

The quality of the work both in the taking of cases and in the prescriptions is an interesting commentary on the uniformity of results in the application of the law of similars whether applied by a beginner or a master.

It must not be supposed that the whole history as taken is here recorded, but only those leading symptoms which led to the indicated remedy.

Case I. Woman, 30 years of age.

History: Father dead; mother well; four brothers, three sisters, all well.

Had measles at twelve years. Always well, but not strong. Sedentary habits; eats simple food; no tea nor coffee; Began menstruating at thirteen years, always regular, no pain.

Present symptoms: For over a month has had much gas in stomach, no pain, only feeling of fullness, frequent belching with no relief. No headaches, never nausea nor vomiting. Feels hungry but can eat only a little, as food causes feeling of fullness; wants clothes loose around waist.

Daily bowel movement; abdomen somewhat distended after meals but no pain, only soreness, tenderness; relieved by passing gas; worse from 4 to 5 P.M.

Lycop. 3x prescribed.

Patient seen again after two days; much improved. After one week medicine stopped, as patient felt well. Patient came again after five days complaining that gas was troubling her as before. Lycop. given same as before, for ten days. Saw patient one week after had stopped Lycopodium; she seemed quite well.

Case II. A man about 40 years old; about 6 ft. tall and weighing 160 pounds; Occupation, clergyman; single.

(Chest involvement.)

He suffers with sense of constriction of the chest, especially at night. There is considerable thirst; mouth dry and appetite poor. Vomiting not incessant but occurs shortly after drink. He likes cold drink.

The patient is disinclined to talk and somewhat irritable. The cough dry and with scanty and semi-solid sputum.

Treatment: Phosphorus 3x every half hour. Patient relieved in less than two days.

Case III. Jan. 4, 1916. Man; Age 42; born in Nova Scotia; has resided in the States for five years. Occupation, farming.

Father died of tuberculosis at age of 30 years. Mother still living, 65 years old.

Patient had measles when seven years old.

Habits: Drinks coffee, little alcohol and is a light smoker.

Present symptoms: Dry cough, voice slightly affected; thinks he has a sore throat; feels a tightening in the chest; worse in the evening. Vomited once or twice; does not like warm foods but likes to take cold drinks and foods. Bowels occasionally constipated. Has lost fifteen pounds in six months.

Patient is tall, poorly nourished, narrow chested. On percussion there is dullness in upper posterior surface of left lung. There are some fine rales. Heart neg.; liver, spleen, etc., neg. Pulse 80; Temp. 99.

Diagnosis: Tuberculosis of left lung.

Presc., Phosphorus 3x every three hours. Hygiene and diet corrected.

Jan. 11, 1916. States that the cough is not so severe, voice slightly improved. Thinks he feels better.

Prescription repeated.

Case IV. Boy 16 years old, student who worked quite a lot mentally. He complained of a gnawing pain in stomach, and opening and shutting sensation in brain especially in occipital region.

Did not sleep very well and experienced a muscular soreness. Better when in a warm room. There was some photophobia and pain in eye balls.

Cimicifuga 3x one tablet every three hours was given, and the condition was relieved.

Case V. Woman 60 years of age, presenting a dirty, nasty appearance; clothes shabby, stained and filled with grease spots. Skin presented an oily look with foul smell; bad smelling feet.

Complained of having early morning diarrhœa, driving her out of bed. Stools were loose and watery. Complained of an "all-gone" feeling in stomach about 10.30 to 11 A.M.

Burning sensation in top of head; this condition had lasted for a period of six to eight weeks before I saw her.

Presc., Sulphur 30x, one tablet every hour for four days, the second week one every two hours, and the condition cleared up in one week with no further disturbance.

Case VI. Dec. 28, 1914. Mrs. L. B. H.

Past history: One child living (5 yrs.), well. One miscarriage, one blue baby, one abortion; Rheumatic fever 18 years ago; Accident, struck in back with brick. Carried arm in sling one year after accident. Hysterical; constipated, takes laxatives. Two weeks ago had a severe illness; tonsillitis (?) Temp. 104. Culture neg. for diphtheria.

Present symptoms: Hands, knees and back of neck swollen and tender. Cervical glands enlarged. Pain in hands and back of neck; cannot turn head around without severe pain. Restless; dreads changing position but is better moving about. Better from warmth.

Rhus tox 3x given.

Dec. 29, 1914. Rested well until 11 P.M. Was wakened by severe pains first in hands, then in neck. Swelling all gone but cervical glands quite prominent. Temp. 99, pulse 93. Heart irregular. Mitral murmur not clearly transmitted.

Presc., Caulophyllum 3x (30 drops in a half glass water) tsp. every two hours).

Dec. 31, 1914. No pain when still or from moderate ex-

ertion. Wants to stretch, but this brings back the pains. Ankles slightly swollen (this had not been investigated before). Temp. 98.6; pulse 80. No medicine.

Jan. 2, 1915. Feels well. Discharged.

In addition to the above treatment the patient's joints were well wrapped to keep them warm, her diet was restricted, meat excluded and fruit and water given in abundance.

The case proved to be one of post-scarlatinal arthritis.

Case VII. Woman, 43 years of age; Married; Weight 97 lbs. (has weighed 130 lbs.); Dark hair; muddy complexion; slim, straight and angular build; Has longstanding pulmonary tuberculosis of fibrinous type. Right lung much involved and contracted; heart displaced to right about two inches; some morning cough but not very severe. Appetite and digestion were usually good; previously constipated but entirely corrected by diet and exercise. Has gained 12 lbs. in weight in past four months.

Had ordinary diseases of childhood; typhoid fever at about twenty years; One child, difficult delivery (forceps); lacerations, ultimate complete recovery; history of a curettement about six years ago; flow established at fourteen years, somewhat irregular until married, afterwards approximately normal.

Present symptoms: Gradually increasing menstrual difficulty with each period. Marked aggravation of all symptoms a week before and continuing for week after period (during past year).

Mental: Agreeable yet rather easy to take offense and to form dislikes; likes company; depressed during menses; weepy tendency, ameliorated by cheerful company and conversation. Easily influenced.

Head: Headaches of heavy, throbbing type, especially in temporal and frontal region, during menses, apt to be continuous and quite distracting; occasionally has slight vertigo upon rising.

Tongue: Apt to be coated slightly (white); breath a little foul.

Stomach: Appetite and digestion usually good but much impaired during menses; feeling as of "lump in pit of stomach" — a "bearing down feeling"; quite distressing.

Abdomen: Occasional slight distention; occasional flatulence but not great; not constipated at present.

Pelvic: Heavy, bearing down pains with an all-gone feeling; weakness (excessive) in back, desire to lie down and keep quiet (headache also). Considerable leucorrhœa, only slightly excoriating. Scanty flow.

Treatment: Pulsatilla was given during two periods, with marked relief of all symptoms. During the next period the

symptoms came on as usual. Pulsatilla was given with amelioration of the head and gastric symptoms but the pelvic symptoms continued and increased, viz., excessive weakness in back, heavy, severe, dragging down pains radiating from the loins. Pains shooting from the vulva to lumbar region, sharp and excruciating, — a feeling as if everything would be dragged out of the vagina, must lie down and "keep tight." The mental state became more irritable and less responsive to persuasion.

Sepia was substituted for Pulsatilla. Marked relief followed in twelve hours; at the end of twenty-four hours she expelled a clot; a second clot was expelled at the end of forty-eight hours; this was followed by further relief and recovery from the period in about ten days.

Sepia was continued in reduced doses during the following interval. With the approach of the next period it was given in increasing doses, with the result that the patient had a period of about six days with little discomfort and few symptoms.

Case VIII. Girl, aged 19, was taken sick on Saturday morning; general malaise and headache all day. Felt hot; slight sorenes of throat on swallowing. No history of exposure.

Throat red and dry; Tonsils inflamed;

Skin hot, dry and burning;

Temperature 103.2; *Pulse* 96; *Respiration* 21.

Patient very restless and nervous; thought she was going to have pneumonia.

Aconite was given on Saturday night; Sunday morning, throat red and dry; slight irregular, yellowish-white deposits on left tonsil, in nature of film, easily removed; bad taste in mouth and foul odor of breath.

Temperature 101.6; *Pulse* 84; *Respiration* 20.

Diagnosis. — Follicular tonsillitis.

Treatment. — Proper diet and hygienic regulations; Merc. bin. 3x every two hours.

Patient improved. On second day *temperature* was 98, *pulse* 76, *respiration* 19, and patches on tonsil had almost entirely disappeared. On third day everything normal and patient was up, appetite returned and case discharged.

Throat was washed with a gargle of Hydrogen peroxide and water equal parts.

REVIEWS

PATHOLOGY

The Mortality from Cancer in the Western Hemisphere. *Hoffman, F. L., Journal of Cancer Research, Jan. 1916, I, p. 21.*

Hoffman bases his article upon a consideration of the death rate of cancer in four large American cities, e.g., New York, Philadelphia, Boston, and New Orleans. He says that, although Asiatic cholera and yellow fever have been practically eliminated in these communities, and although smallpox, scarlet fever, diphtheria, typhoid fever, pulmonary tuberculosis, and other diseases have materially decreased, the mortality from cancer has increased from 46.4 per 100,000 population, in the 25 years prior to 1889, to 72.1 per 100,000 population since 1889.

The annual number of deaths from cancer in the United States is estimated at 80,000.

During recent years, the cancer mortality for the western hemisphere is believed to be 65.7 per 100,000 as compared with the rate of 72.8 for the eastern hemisphere.

The death rate in the United States for the two sexes is about equal up to the age of 5, between 5 and 14 it is a little higher for males, but after 14 the rate for females is much greater than that for males. This, of course, is due to the vulnerability of the female sex organs.

For the ten years ending with 1912, the urban cancer mortality was 79.2, as against a rural rate of 66.7 per 100,000 of population. The greater part of this difference must be ascribed to the presence of hospitals and special cancer institutions in the cities; but even if this is taken into account, there seems to be cause for assuming that cancer in the country population is somewhat less common than in the cities of America. This does not, however, apply to all countries of the world.

Although the fact that in 30 large southern cities of the United States, the cancer mortality of the whites was 80.3 as compared with a rate of 55.2 among negroes, bears out the previously recognized fact that primitive races are relatively free from cancer, yet the gradual approach in the cancer death rate among American negroes toward the mortality of the Caucasians seems to indicate that the relative infrequency of the disease in primitive races is a result of habits of life rather than of racial immunity.

As to habits of life and economic conditions, Hoffman cites statistics from the Public Health Dept. of Edinburgh which show that cancer is much more prevalent in the well-to-do than in the poor.

Cancer of the breast and ovaries is more common in single than in married women, but cancer of the uterus is decidedly more prevalent among the married, although this excess is probably limited to cancer of the cervix.

Of the 80,000 cancer deaths in the United States for the year 1915, approximately 67,600, or 84.5%, occurred at ages 45 or over.

H. U.

The Part Played by Internal Secretions in the Spontaneous Development of Tumors. *Lathrop, A. E. C., and Loeb, L., Jour. of Canc. Research, Jan. 1916, I, p. 1.*

Mice are subject to spontaneous cancer development. The authors castrated female mice at various ages. If the ovaries were removed before the animals were six months old, there was a very marked decrease in the percentage of spontaneous cancer development. Non-breeding mice, also, show a lower cancer incidence.

These results are interpreted by the authors as indicating that the corpora lutea exert an influence upon the growth of the mammary gland, and that the internal secretion of these structures is of etiological importance in the spontaneous development of cancer.

(According to Hoffman's statistics [vide supra] carcinoma mammæ is less common in married than in single women. Rev.)

H. U.

Researches on Phagocytosis. *Hamburger, H. J., Brit. Med. Jour., Jan. 8, 1916, No. 2871, p. 37.*

Phagocytosis was found to be increased by small amounts (as little as 0.005% calcium chloride) of calcium. Other drugs with similar effect are chloroform, chloral, alcohol, benzine, camphor, and turpentine. Phenol in weak solutions increases phagocytosis, whereas in higher concentrations it paralyzes it.

H. U.

The Importance of Anaphylaxis to the General Practitioner. *Friedemann, U., Therapie d. Gegenwart, Dec. 1915, LVI, p. 441.*

Serum sickness following injections of diphtheria antitoxin, is a form of anaphylaxis or, better, oversensitiveness. Its symptoms are fever, vomiting, swelling of glands and joints, edema, and skin eruptions. It is rare to have more than two of these symptoms appear at once.

The phenomenon appears eight to thirteen days after the

injection of serum if there has been no previous dose. If there has been a previous injection the symptoms may come on almost immediately, and they may be severe.

Since serum sickness does not appear before the sixth day after injection it may be warded off by repeating the dose before this time is up. In that way its development may be postponed indefinitely.

Serum sickness may also be prevented by bringing about the phenomen of anti-anaphylaxis through the preliminary injection of a small dose which prepares the individual to tolerate a larger second injection.

Intravenous administration is more frequently followed by serum sickness than are intramuscular or subcutaneous injections.

Serum sickness is not particularly frequent and only rarely fatal. Death is more often reported after first injections than after subsequent ones.

H. U.

Icterus Neonatorum. *Abels, H. Medizinische Klinik, Nov. 28, 1915. XI, pp. 1307–1336.*

Abels formulates two laws governing icterus neonatorum: first, this disease occurs in all the children of a family if it appears at all; second, it is most marked in the first child and diminishes progressively in intensity in the following children.

H. U.

The Etiology of Syphilitic Aortitis. *Symmers, D., and Wallace, G. H., Jour. Am. Med. Asso., Feb. 5, 1916, LXVI, p. 397.*

Eighty per cent of the syphilitic aortitides of the authors' series of 70 cases occurred in males and 71.4% between the ages of 30 and 50. Thirty per cent of the cases developed aneurysm, at least 15% were attended by dilatation of the ascending aortic arch and about 30% finally showed sclerosis and retraction of the aortic valves.

H. U.

Etiology of Scarlet Fever. *Schleissner, F., Jahrb. f. Kinderheilk., Sept. 1915.*

Schleissner obtained pure cultures of streptococci from cases of scarlet fever and sprayed them into the noses of apes. In twelve out of twenty-seven of these animals there was caused an infection characterized by fever, angina, exanthem, strawberry tongue, and ending in ten to twelve days in a large-scaled desquamation.

This disease could be communicated to other apes, but

attempts to reinfect the same animal were unsuccessful, showing that immunity was produced.

These facts make it probable that the cause of scarlet fever is a streptococcus.

(The above is of particular interest in view of Mallory's recent announcement of his alleged discovery of the excitor of scarlet fever. Rev.)

H. U.

The Use of Quinin and Urea Hydro chlorida sa Local Anaesthetic in One Hundred and Forty-eight Cases of Tonsillectomy. *By Louis J. Burns, M.D., Philadelphia. Annals of Otology, Phenology and Laryngology. Vol. XXIV, No. 4, Dec., 1915. LXII, p. 841.*

The writer selected a two per cent solution of quinin and urea hydrochlorid for his cases, using thirty to forty minims as an average dose. After discussing various points of technic, the mode of action and duration of anæsthesia (which he finds usually lasts five to seven hours), he arrives at the following conclusions:

1. Its absolute nontoxicity in even as strong solutions as ten per cent.

2. Always produces sufficient anæsthesia to complete our operation without the necessity of stopping to make further application or injection.

3. Marked diminution of after-pain and discomfort.

4. Its superior advantages over cocain and its derivatives, due to its non-systemic action.

5. Absolute absence of troublesome primary or secondary hemorrhage; this being one of the frequent and dangerous drawbacks, especially in the type of cases so often the subject of tonsillectomy by local anæsthetic.

6. The readiness with which our solution may be sterilized; frequently repeated high temperatures producing no chemic or physiologic change.

H. L. B.

The Occurrence of Abscess of the Lung after Tonsillectomy with a Report of Nine Cases in Adult. — *M. Manges* (*Jour. of Surg.* 1916, *XXX*, 78.)

Manges discusses the frequency of abscess of the lung following tonsillectomy in the adult. He reports nine personal cases and mentions Bassim's series of 19 cases. He points out the fact of the frequency of this complication occurring in ward patients, and believes that some of the number are due to one of three factors, i. e. (1) Carelessness in operative technique. (2) Hasty or incomplete pre-operative physical examination.

BOOK REVIEWS

Being Well Born. An Introduction to Eugenics, by Michael F. Guyer, Ph.D., Professor of Zoology, The University of Wisconsin. Childhood and Youth Series. Edited by M. V. O'Shea, Professor of Education, The University of Wisconsin. The Bobbs-Merrill Co., Publishers, Indianapolis. Price $1.00.

While one cannot select his ancestors, one can elect to become an ancestor to about the kind of progeny he desires. The "accident of birth" is apparently becoming less and less an accident, as we learn more of Eugenics. It lies within the power of nearly every man and woman to endow their children (if they have any) with certain of the essentials of good health. If we are to believe certain philosophers and eugenists, it lies within the power of most parents to endow their children with *acquired* talents irrespective of what they (the parents) themselves inherited.

We may not for a long time to come get entirely away from the question "Does heredity play a greater part in shaping one's mind and body than does environment?" but certainly we are nearer to answering the question in the affirmative and answering it with a positiveness born of conviction.

Dr. Guyer says "One of the most significant processes at work in society today is the awakening of the civilized world to the right of the child, and it is coming to be realized that its right of rights is that of being well born."

In his intensely interesting and instructive book he has given us what would appear to be the normal rights of the child in its heredity. Dr. Guyer has not presented a rehash of other writers on the subject, but has given the results of his own carefully studied investigations and observations which his work as a zoologist would enable him fittingly to do.

D. G. W.

Painless Childbirth, Eutocia and Nitrous Oxide-oxygen Analgesia, by Carl Henry Davis, A.B., M.D., Associate in Obstetrics and Gynæcology, Rush Medical College in affiliation with the University of Chicago. Assistant Attending Obstetrician and Gynæcologist to the Presbyterian Hospital, Chicago. Forbes & Company, Chicago, 1916. $1.00.

If we are to take the statement of Dr. Davis we must believe that maternity is more dangerous today than before the discovery of anæsthetics or antiseptics. It is rather startling to read his apparently good authority for expressing such an opinion. Dr. Davis places nitrous oxide-oxygen as superior to Twilight Sleep for the parturient woman. He believes it is a logical method of relieving the suffering during childbirth and a great aid in securing Eutocia.

D. G. W.

Potter's Compend of Human Anatomy, Revised by D. Gregg Metheny, M.D., L.R.C.P. and S. (Edin.), L.F.P.S (Glasgow), Associate in Anatomy, Jefferson Medical College, Philadelphia. Eighth Edition with 139 Illustrations; also Numerous Tables and 16 Plates of the Arteries and Nerves. P. Blakiston's Son & Co., Philadelphia.

One of the valuable little books of the year is this Compend, invaluable to the student in anatomy, and helpful to those who desire to refresh themselves on anatomical points. It is so thoroughly indexed that any subject in the book can be found in a moment. It is reliable, concise, and of good type.

D. G. W.

Habits that Handicap, by Charles B. Towns, Published by Century Co.

Charles B. Towns is not a physician, but he has told the medical profession much that it should know about the effects of narcotic drugs and the method of curing the habits resulting from taking such drugs.

Mr. Towns says, "I have seen over six thousand cases of the drug habit in various countries of the world. Ninety-five per cent of the patients who have come to me taking morphine or other alkaloids of opium have taken

the drug hypodermically. With few exceptions, I have found that the first knowledge of it came through the administration of a hypodermic by a physician."

We need have little fear in following or endorsing Mr. Towns' methods and writings when he has shown so conclusively to the most critical judges that his methods are successful, or at least more so than any others yet tried.

It makes the physician sit up with a start to read what he says about the morphine addict:

"The moment the hypodermic syringe is taken from the doctor's or nurse's kit the sufferer is made aware of the means which will be used to give him ease. He remembers it, forming a respect and admiration, almost an affection, for the mere instrument, and with the most intense interest gathers such information as he may find it possible to acquire about this wonder-working little tool and the material which is its ammunition of relief."

But equally sad is it to learn from Mr. Towns what many of the profession know only too well, — that many of these addicts are physicians themselves. Mr. Towns' researches are not confined entirely to morphine. He has had a wide experience in handling alcoholics and he has something rather plain to say about that drug.

"The thinkers of the whole world are saying that in alcohol is found the greatest of humanity's curses. It does no good whatsoever; it does incalculable harm. A dozen substitutes may be found for it in every useful purpose which it serves in medicine, mechanics, and the arts; its food value, of which much has recently been said, is not needed, and it has worked greater havoc in the aggregate than all the plagues. If not another drop of it should ever be distilled, the world would be the gainer, not the loser, through the circumstance."

His idea on The Injuriousness of Tobacco, and Tobacco and the Future of the Race are enough to give the complacent tobacco lover a severe jolt.

Don't fail to read the book. D. G. W.

Boericke's Materia Medica comprising the characteristic and guiding symptoms of all remedies, together with a compact *Therapeutic Index* and a comprehensive *Repertory*, is now issued in its Sixth Edition, which has been completely revised and contains several hundred additions and verifications.

It is a pocket encyclopædia of Homœopathic Materia Medica, giving in condensed form the *experience of the Homœopathic School* with all remedies, proved or partially proved, or clinically suggested by applying the Law of Similars. It is a work needful to every physician who wishes to keep abreast with the times; it is *supplementary and additional* to all other works on Materia Medica, even the largest and latest, because it contains *all* new remedies and verifications mentioned in periodical literature to date.

Its scope of usefulness is not confined to physicians of the Homœopathic School; every practitioner of Medicine, every medical student, and even the intelligent layman, will find in Boericke's Materia Medica the greatest fund of practical medical knowledge contained in any one single medical book.

Price $3.50, postpaid.

Gould's Practitioner's Medical Dictionary. Third Edition, Revised ard Edited by R. J. E. Scott, M.A., B.C.L., M.D., of New York, 962 pages.

Flexible cloth, round corners, marbled edges. $2.75.

In the publisher's words the object in view in publishing this new edition of "Gould's Practitioner's Medical Dictionary" is to provide a modern dictionary for physicians and medical students that shall be up-to-date; contain all the words that are needed; be issued in a form convenient to handle and to be published at a low price.

The editor and publisher have kept in mind the following features:

The Inclusion of all the Current Words and Terms

All Pronounced and Defined on the Gould System

Accuracy and Reliability

Definitions Concise and Clear

The Words of Allied Sciences so far as seemed necessary.

We believe that these ends have been accomplished and that this book is a worthy successor to the several editions of Gould's Medical Dictionaries, the sale of which has reached almost 400,000 copies.

About 70,000 Terms (an actual count makes 70,900).

The use of clear, readable type.

962 pages, weighing only 2 ¼ pounds.

Flexible bindings, cloth and leather, marbled edges, round corner.

Height, 8 ¾; width, 6 ¼ inches; thickness, 1 ¼ inches.

A. H. R.

A Hand Book of Infant Feeding. By Lawrence T. Royster, M.D., attending physician Bonney Home for Girls and Foundling Ward of the Norfolk Society for the Prevention of Cruelty to Children; Physician in Charge of King's Daughters' Visiting Nurse Clinic for Sick Babies. Illustrated. C. V. Mosby Co., St. Louis. Price, $1.25.

The reader will miss much if he skips the Introduction in Chapter I of Dr. Royster's little book on Infant Feeding.

Some of the later teachings are emphasized in the book. For instance, there is a growing feeling that the use of alkalies in the food of all normal infants is unnecessary. Also that the majority of normal infants whose food has been carefully modified from the start, thrive on milk sugar, is corroborated by the experience of many practical physicians, the malt sugar preparations being used only for special indications which may arise.

The author, in common with other writers on the subject, recommends lengthening the intervals between feedings for many infants, and this also accords with the practice of many physicians.

It is the feeling of many physicians who are especially interested in the care and treatment of infants, that many of their professional brethren seem rather helpless when they come to the matter of infant feeding. Whether from lack of interest or lack of training and experience is difficult to say, but to those physicians who realize the tremendous importance of starting the baby right, the present book should prove of much value.

Nitro by Hypo. By Edwin P. Haworth, superintendent of the Willows Maternity Sanitarium, Kansas City, Mo. Cloth, price $1.00, pp. 128. Kansas City: The Willows Magazine Company, 1915.

This little volume contains a message of cheer and encouragement for the general practitioner. Its pages are full of vim and optimism. It was written expressly for the medical man, and should prove an inspiration to those who require "an occasional spur to revitalize their lagging energies."

H. U.

SOCIETIES

HOMŒOPATHIC MEDICAL SOCIETY OF THE COUNTY OF KINGS, NEW YORK

At the March meeting of the Homœopathic Medical Society of the County of Kings, the Legislative Committee brought up the bill now before Congress, the design of which is to aid tuberculosis patients who are stranded in States wherein they are not residents. The title of the bill would lead one to suppose that there was an intention by the Government to control the treatment of such cases, as it purports to standardize the methods. The object of the bill is to have the general government pay one-half the expense of such cases, the State the other one-half, but in order that the State may claim the share from the Government, the institutions must reach a specified standard of efficiency. The secretary was instructed to write to the representatives of this district to express the endorsement of the Society of the bill.

Dr. Albert Comstock read an interesting paper on Iodine. Dr. F. H. Lutze read translations of clinical cases from the writings of Samuel Hahnemann, with the remedies prescribed. Dr. William H. Freeman read a paper on the remedies used by him in the recent epidemic of grippe, stating that

Nux vomica had been curative in about 70% of his cases, and natrum mur in about 25%, while Bryonia had been curative in practically all cases of dry cough, pleurisy or pneumonia during the epidemic. Other drugs which were occasionally needed in exceptional cases or for complications and after effects were Arsenicum, kali iod., pulsatilla, capsicum, sepia, causticum and carbo veg. Dr. Roy Upham read an interesting paper on Pyloric Obstruction Due to Ulceration.

L. D. Broughton, Secretary.

BOSTON DISTRICT OF THE MASSACHUSETTS HOMŒOPATHIC MEDICAL SOCIETY

The April meeting of the Boston District of the Massachusetts Homœopathic Medical Society was held on Thursday evening, April 6, at the Evans Memorial Building.

Dr. C. Wesley Sewall of Jamaica Plain was elected to membership.

The program for the evening was entirely clinical, as follows:

Dr. Frank R. Sedgley of West Roxbury reported an operation for cystic kidney in a patient from whom the other kidney had been removed some years previously.

Dr. N. W. Emerson reported a case in which a large calculus was removed from the urethra, with complete recovery, under the most adverse conditions.

Dr. Howard Moore exhibited a case of Potts' disease fully recovered after bone-transplantation of several years ago.

Dr. Benjamin T. Loring reported an unusual case of cardiac irregularity.

Dr. Conrad Wesselhœft discussed cardiac irregularities, classification, causation and treatment, especially the treatment by use of digitalis.

The president announced that Dr. Wilfred T. Grenfell, of Labrador, is to be the speaker at the next May meeting.

Light refreshments were served.

Benjamin T. Loring, M.D., *President.*
Harold E. Diehl, M.D., *Secretary.*

HOMŒOPATHIC MEDICAL SOCIETY OF THE STATE OF NEW YORK

The sixty-fourth annual meeting of the Homœopathic Medical Society of the State of New York was held in Rochester on April 11 and 12. The following papers were read:

First day:

Gynæcology. Arthur B. Van Loon, M.D., Albany, Chairman.

Retrodisplacement of Uterus, by B. E. Kinne, M.D., Albany.
Prolapsus Ani, by G. S. Harrington, M.D., New York.
Surgical Treatment of Procidentia Uterii, by W. Louis Hartman, M.D., Detroit, Mich.
Hernia through the Anterior Abdominal Wall in Women, by Joseph H. Forbes, M.D., New York.

Laryngology and Rhinology. H. W. Hoyt, M.D., Rochester, Chairman.

Laryngeal Diseases, by Harold A. Foster, M.D., New York.
Observations of Nasal Polypi, by H. W. Hoyt, M.D., Rochester.
Foci of Infection in Facial and Tri-facial Nerve Troubles, by W. H. Doane, M.D., Rochester.

Neurology. Reeve Turner, M.D., New York, Chairman.

Mechano Therapy of the Motor Tract, by Clarence C. Howard, M.D., New York.

Physical Therapeutics. Wm. H. Dieffenbach, M.D., New York, Chairman.

Post-Operative Treatment in Malignant Growths. Has it Established Its Value? By M. W. Johns, M.D., Utica.

Surgery. T. Drysdale Buchanan, M.D., New York, Chairman.
Anæsthesia and Acidosis, by Harold A. Saunders, M.D., Brooklyn.
The General Practitioner of Medicine and the Cancer Problem, by George W. Roberts, M.D., New York.
Cooperation of the Surgeon and Roentgenologist, by Wm. F. Honan, M.D., New York.

Second day:

Ophthalmology and Otology. C. E. Williams, M.D., New York, Chairman.
Suppurative Otitis Media, by L. E. Hetrick, M.D., New York.
The General Practitioner's Duty to Patients with Immature Cataract, by E. J. Bissell, M.D., Rochester.
Paine's Operation for Extraction of the Lost Lens, by H. S. Paine, M.D., Glens Falls.

Materia Medica. Chas. T. Haines, M.D., Utica, Chairman.
Verifications of Gelsemium, by D. E. S. Coleman, New York.
Causes of Chronic Diseases and Methods of Cure, by Wilfred Allen, M.D., New York.
On the Recognition of Incurable Conditions, by R. F. Rabe, M.D., New York.

Pediatrics. Crawford R. Green, M.D., Troy, Chairman.
Whooping Cough, with Special Reference to Melaleuca as a Remedy, by R. A. Benson, M.D., New York.
The State Problem of Feeblemindedness, by L. L. Button, M.D., Rochester.

Clinical Medicine and Pathology. Chas. L. Bailey, M.D., Albany, Chairman.
The Bacteriological Aspect of Syphilis, by Geo. P. Olcutt, Jr., M.D., New York.
History, Symptoms and Treatment of Syphilis, by Sprague Carleton, M.D., New York.
Ocular Syphilis, by A. C. Worth, M.D., Albany.
The Surgical Aspect of Syphilis, by C. E. Alliaume, M.D., Utica.

Obstetrics. Philip Cook Thomas, M.D., New York, Chairman.
Report of Cases of Cæsarian Section with Unusual Complications, by L. S. Loizeaux, M.D., New York.
Control of Conception, by Elizabeth Hamilton Muncie, M.D., Brooklyn.

MASSACHUSETTS HOMŒOPATHIC MEDICAL SOCIETY

The Massachusetts Homœopathic Medical Society held its seventy-sixth annual meeting at the Massachusetts Homœopathic Hospital on Wednesday, April 12, 1916.

The morning was devoted to surgical clinics and the luncheon served at the Medical School at noon was a pleasant occasion.

The afternoon meeting at the Evans Memorial Building opened with a business session, following which four very interesting papers were read and discussed. Dr. Conrad Wesselhoeft's paper on *The Relative Value of Homoeopathy in the Prophylaxis and Treatment of Scarlet Fever* was a report of his clinical researches carried on at the contagious department of the Massachusetts Homœopathic Hospital, under the auspices of the Evans Memorial for Clinical Research and Preventive Medicine, covering a period of three years. Dr. George L. Van Deursen of Lowell reported a study of pneumonia in a paper entitled *Pneumonia: Recent Epidemics and Newer Theories.* Dr. Horace Packard read a paper on *The Story of the Ductless Glands,* and Dr. George B. Rice read one on *Focal Infection in the Upper Air Tracts and Accessory Sinuses as a Cause of Systemic Disease.* The discussion was spirited and interesting.

The annual banquet for members and their guests was held at Young's Hotel, nearly two hundred being present. The speakers of the evening were Dr. G. Forrest Martin, the President, and Dr. DeWitt G. Wilcox, who delivered the annual oration, his subject being *The Psychology of Laughter.* After the appointment of two delegates to the meeting of the American Institute of Homœopathy, the meeting adjourned.

PERSONAL AND GENERAL ITEMS

FOR RENT. — To a woman physician, the use of a Boston office for certain hours one or more days a week. Inquire at Suite B., 483 Beacon St., between 3 and 5 P.M.

Dr. G. E. Hoffses, who since his graduation from Boston University School of Medicine in 1898 has been in practice at Dedham, Massachusetts, has retired and removed to Damariscotta, Maine. He is succeeded by Dr. William J. Taylor, class of 1915 B.U.S.M.

The Indiana Institute of Homœopathy, — Albert A. Ogle, M.D., Indianapolis, President, — is to celebrate its "Golden Jubilee" anniversary on May 16th and 17th, 1916, at Indianapolis.

A very interesting publication has just been given to the library of the Medical Department of Boston University, report of the "Trial of William Bushnell, M.D., Samuel Gregg, M.D., George Russell, M.D., David Thayer, M.D., Milton Fuller, M.D., H. L. N. Hoffendahl, M.D., I. T. Talbot, M.D., Benjamin West, M.D., all of Boston, for practising Homœopathy While They Were Members of the Massachusetts Medical Society." A note on the cover states that it was "printed for the Examination and Consideration of the Fellows of the Massachusetts Medical Society," Boston, May 1873.

The *Gazette* learns that both Berlin, Connecticut, and Suffield, Connecticut, offer good openings to energetic, bright, young homœopathic practitioners.

Dr. Eliza B. Cahill has removed her office from Hotel Westminster, Copley Square, to 296 Newbury St., Boston.

Dr. Mary E. Nutter (class of 1884 B. U. S. M.) is located at 440 West 34th St., Norfolk, Virginia.

Dr. DeWitt G. Wilcox will remove his residence on June 1st from Brookline to 132 Homer St., Newton Centre, where he has purchased the Golding property.

Dr. W. W. Gleason, B.U.S.M. 1877, has recently moved to Muncie, Indiana.

Dr. Maria Louisa Cummings, class of 1879 B.U.S.M., died in Roxbury, Massachusetts, on March 24th of the present year.

Dr. William K. Fletcher, for many years in practice in Somerville, Massachusetts, died on January 13, 1916.

Dr. A. George Gigger, class of 1906, recently of Chatham, Mass., is taking the Public Health course in Harvard Medical School and is temporarily located at 24 Queensberry St., Boston.

Notice has been received that on June first there will be two vacancies, one Dermatological and one Surgical, on the House Staff of the New York Skin and Cancer Hospital. The service is for one year, six months as assistant and six months as house physician.

Application should be made in person or by letter to Edward M. Foote, M.D., Secretary of the Medical Board, 119 East 40th St., New York City.

The removal of Dr. H. Martin Morse from Springfield, Vermont, to Nashua, N. H., leaves an excellent opening for a young homœopathic physician at the former place.

Dr. Boris J. Sohn, class of 1915 B.U.S.M., has completed his service at Emerson Hospital and has opened an office at 83 Orms St., Providence, R. I.

THE NEW ENGLAND MEDICAL GAZETTE

VOL. LI JUNE, 1916 No. 6

Books for review, exchanges and contributions — the latter to be contributed to the GAZETTE only and preferably to be typewritten — personal and news items should be sent to THE NEW ENGLAND MEDICAL GAZETTE, 80 East Concord Street, Boston. Subscriptions and all communications relating to advertising or other business should be sent to the Business Manager, 80 East Concord Street, Boston, Mass.

THE GAZETTE does not hold itself responsible for the opinions expressed by its contributors. Reprints furnished at cost.

THE VALUE OF POST-MORTEM EXAMINATIONS

At some of the larger European hospitals the number of obductions averages three or four per day. This is far in excess of what even our largest and most progressive institutions have to offer in this respect. The small number of autopsies done in this country would seem to indicate a lack of understanding of the value of post-mortem examinations.

Statistics of such examinations show that many ante-mortem diagnoses are incorrect. An autopsy will in most cases establish the true nature of the fatal disease as well as reveal any accessory causes. Of course, a post mortem diagnosis is of no use to the dead, but a study of actual morbid lesions will aid the physician in diagnosing future cases. He can see what caused this, that, or the other symptom, and he will be guided in the future by what he saw.

That the opposition of the relatives of the deceased is often difficult and even impossible to overcome is, no doubt, true, but many times, perhaps even usually, the lack of interest or energy of the family physician deprives him of the means for familiarizing himself with the anatomical changes that caused death, and for verifying or correcting his clinical diagnosis.

The science of medicine is more and more overshadowing the art of medicine. Modern medical science requires above all

a fundamental knowledge of normal anatomy and of anatomical changes brought about by various morbid processes. He who would repair a machine must be familiar with its integral parts, and he must know, furthermore, what disorders may befall them. And it is probably safe to assert that nowhere can so much of practical value be learned about the human machine as at the autopsy table.

The physician should make an effort to obtain permission for post-mortem section in all of his fatal cases. Thus he will not only gain confidence from confirmation of his clinical diagnosis, or become more careful and exacting from seeing his mistakes, but he will also be in a position to evaluate with a greater degree of accuracy various therapeutic measures, because he will have a better knowledge of the structural changes which he is trying to remedy. H. U.

A DELIGHTFUL ALL-SEA TRIP TO BALTIMORE

Those physicians who wish to combine recreation with medical lore may do so by journeying by boat to Baltimore for the session of the American Institute of Homœopathy.

A party of Boston physicians will leave Pier No. 2, Northern Ave. dock, Boston, Friday, June 23rd, at 5 P.M., and will arrive in Baltimore Monday morning at seven o'clock. Single fare, $15.00, which includes berth, stateroom, and meals. The round trip is $25.00, similarly inclusive. The boats are staunch, commodious, and well appointed. Boats leave Baltimore Tuesdays, Fridays, and Saturdays.

By rail there are no special rates and no through trains from Boston to Baltimore. A change of train and stations in New York is necessary. A convenient train is the one leaving Boston at midnight, arriving in New York at 7 A.M., transferring to the Pennsylvania Station and leaving there at 8 A.M., arriving in Baltimore at 1.30 P.M. Single fare, $9.99; lower berth, $2.00.

SLAVES TO THE CLOCK

However inventive the mind of man, it has not as yet devised a light which equals that of Old Sol. While man has turned night into day in so far as dispelling darkness is concerned, his substitutes for sunlight lack all of the qualities which are essential to good health and normal vision. Could we do all of our vision work by sunlight there would be a material lessening of the oculist's job. Could the indoor worker have the

benefit of the sunlight which he studiously shuts out of his bedroom from four to six o'clock on the summer mornings, he might avert the physical breakdown which so frequently comes in middle life. The "untutored savage" regulates his life by the sun and not by the clock, with the result that his vision and his physical endurance are rarely impaired even in advanced age. He sleeps when it is dark and is awake when it is light without consulting the clock or the calendar.

Some ten years ago an attempt was made in England to change the official time by setting the clock ahead one hour and forty minutes at midnight on the twenty-third of April and back again on the twenty-third of September. The effort at that time proved abortive for various reasons. Now, however, it has gone into effect with some modifications, and it is quite probable that America will follow the lead, as Wall Street is seriously considering the change. The movement is a thoroughly sane one, and the wonder is that it has not been accomplished before this.

We need to get away from the clock and get closer to the sun, especially now that we have learned how essential sunlight is in maintaining health and dispelling disease. While the economic factor has been employed as the great argument in favor of the change, yet it is but secondary to the health factor. The change would mean that millions of men, women, and children in this country would have an additional hour of daylight after working hours in which to be out of doors in the sunshine, instead of indoors under artificial light and in ill-ventilated rooms. True, the saving of one hour of gas or electric light each day for five months in a city the size of New York would amount to a huge sum, and for the entire Nation it would build many a battleship and construct more than one Lincoln Highway, and the reward for the saving would be a physically better people.

It is no more difficult to go to bed at nine o'clock and get up at five o'clock than it is to retire at ten o'clock and arise at six, provided the clock has been so "fixed" as to make one believe that it is six when it really is five. The point is to get the clock on good terms with the sun, even if we must hold up his hands to make him do it.

D. G. W.

HEALTH INSURANCE

Just as the State has recognized its duty in providing surgical care and compensation of an injured workman, as evidenced in the Workingmen's Compensation Act, so is it beginning to recognize its duty in providing medical care and compensation for the sick or aged employee. The Committee on Social Insurance of the American Association for Labor Legislation has formulated a tentative plan for a workingmen's health insurance which should interest every physician.

It is estimated that at least four per cent of the income of the working class families goes for sickness or burial insurance. On that assumption, the man earning six hundred dollars per year would pay out twenty-four dollars per year, or two dollars per month for sickness. The plan of the Committee on Social Insurance is that the employer shall pay forty per cent, the employee forty per cent, and the State pay twenty per cent. In the event of the establishment of such an insurance, this same employee earning six hundred dollars per year would then pay for sickness eighty cents a month instead of two dollars, his employer would pay eighty cents, and the State would pay forty cents. It is estimated that three million persons in the United States are sick at any one time. It is further estimated that each of the thirty million wage earners in the United States loses on an average approximately nine days from sickness in every year; that the cost for medical treatment of this number is one hundred and eighty million dollars per year, and that the resultant annual wage loss totals just one half billion dollars annually.

While there can be no question but that a large part of this sickness, and consequent loss, is preventable and therefore unnecessary, yet the fact remains that until it is *prevented* something must be done by other agents to help lift the burden from the shoulders of the overpowered sick employee. Wage studies show that the slender savings of workingmen are inadequate to meet the burden of sickness.

No better incentive for studying methods of preventing sickness amongst wage earners could be devised than that of establishing a health insurance whereby the burden is borne proportionately by the employer, the employee, and society. All these agents would then be pecuniarily interested in abolishing sickness. We need but note the advancement made in the prevention of accidents since the operation of the Workingmen's Compensation Act. Under the workings of this act it is now highly expensive to the State, the employer, and the individual if an accident occurs. Prevention is cheaper. The result is

that machinery is more highly safeguarded. An incompetent man is not entrusted with a dangerous mission. Not only is the employee examined as to his physical fitness to do the work entrusted to him, but he is sized up mentally as well. His habits are studied. It has been found by the Workingmen's Compensation Commission that the man who drinks alcohol even in moderate quantities is not only dangerous to himself, but is a menace to his fellow workmen; consequently he becomes an expensive employee, and is the first to be eliminated.

It is to be assumed that the inauguration and operation of Health Insurance would work out in much the same way. As as economic factor, sickness would be materially lessened. Needless to say, the prohibition of alcohol drinking amongst employees would be almost a necessary corollary to health insurance. There is also a wide opportunity for a study of occupational diseases, the understanding of which would materially lessen the sum total of industrial sickness.

The Committee on Social Insurance has formulated a few tentative rules for study:

1. "To be effective, health insurance should be compulsory, on the basis of joint contributions of employer, employee, and the State.

2. "The compulsory insurance should include all wage workers earning less than a given annual sum, where employed with sufficient regularity to make it practicable to compute and collect assessments. Casual and home workers should, as far as practicable, be included within the plan and scope of a compulsory system.

3. "Health insurance should provide for a specified period only, provisionally set at twenty-six weeks (one-half year), but a system of invalidity insurance should be combined with health insurance so that all disability due to disease will be taken care of in one law, although the funds should be separate.

4. "Both health and invalidity insurance should include medical service, supplies, necessary nursing and hospital care. Such provision should be thoroughly adequate, but its organization may be left to the local societies under strict governmental control."

One of the most difficult problems presented in any consideration of health insurance is how to arrange for medical attendance. In other words, how to get one hundred and fifty thousand doctors to agree to some one plan of compensation for services rendered. This was the *bete noire* which nearly tore asunder the British Medical Society three years ago when the Health Insurance Act first became operative in England.

A number of methods have been suggested by the Committee for consideration by the medical profession:

First, the capitate payment plan, of so much per person per year, common now in lodge practice. This plan has proven so reprehensible to the profession that most of our State societies prohibit its members from entering into any such contracts. Such a plan is destructive to medical advancement, prohibits anything like scientific accuracy of treatment, and tends to commercialize the physician so engaged.

Another plan is the salaried one, — by which a physician is paid a stipulated salary for rendering medical attendance to a certain number of families. This under proper regulations would act more fairly toward the physician than the capitate plan. It has the disadvantage of obliging all the families in that group to accept the services of the physician employed whether he was acceptable to them or not. Such a plan would act as a constant stimulation to the physician so engaged to be ever watchful to prevent sickness. It would be on a collective scale what the profession has long advocated for the individual family, — a stipulated yearly payment to the physician by the head of the house for keeping the family well. Here again appears the same obstacle; the funds being small would necessitate each physician assuming charge of more families than he could do full justice to.

The third method is the payment per visit plan, a direct and proportionate return for the amount of work rendered. It is human nature to work harder for the direct return than for the indirect; the bigger the return the harder will one work. There are both advantages and disadvantages to this system when applied to a great number of families, the prime trouble arising from an attempt on the part of the employed physician to attend a larger number of families than can be properly cared for.

The attitude of the medical profession towards health insurance (and such insurance for the wage earner is as sure to come as accident insurance has already come) should be first a determined stand to render only the best service which the advanced profession is capable of rendering and to demand for that service a reasonable (not pitiable, as in England) compensation. Second, to enlist in this service to the wage earners not the political doctors, nor the failures in private practice, but the men of ability who have achieved success or who show evidence that they are achieving success.

D. G. W.

ORIGINAL COMMUNICATIONS

CONSERVATISM IN UTERO-OVARIAN SURGERY*

By Henry A. Whitmarsh, A.M., M.D., F.A.C.S., Providence, R. I.

"I will listen to anyone's convictions, but pray keep your doubts to yourself; I have plenty of my own." Thus wrote Goethe. It was because I thought I had a few convictions that I consented to speak briefly on utero-ovarian surgery, trusting that you would prefer, not theories and methods, but rather some conclusions from personal observation.

Though invited by your committee, in accordance with the general program of this meeting, to emphasize prevention, rather than surgical cure, I cannot forbear to mention a few pathological conditions in which conservatism has no place; in which only early and radical surgical measures can avail.

Next to carcinoma of the breast, malignant disease of the cervix is a matter of anxiety to the surgeon as regards recurrence after operation. Diagnosis is, to the skilled, comparatively easy; permanent cure is another matter, especially when the disease has invaded the parametrium, the connective tissue surrounding the uterus. Every undue hardness of the cervix should be diagnosed. Most frequently it is the scar tissue of laceration. If extensive and accompanied by eversion and erosion, cervical repair is needed. Next in frequency is the cyst, which may attain considerable size, and give a first impression of serious disease. Incision, with application of iodine, carbolic, or phenol-camphor, to change the secreting surface, will speedily cure. Again, a small fibro-myoma may reside in the cervix. This, so often harmless in the uterine body wall, in the cervix generally proves troublesome enough to require removal.

In a very few cases of epithelioma, discovered early, I have accomplished a cure by removing a portion of the cervix. As a rule, however, nothing short of total extirpation of the uterus will do.

Always view with suspicion any slight show of blood appearing after coitus, or after extra work, as lifting, etc., and satisfy yourself whether or not incipient malignancy be the cause.

We pass now to the uterine body. Here the same kinds of malignancy are found as in the cervix, viz.: adenocarcinoma, malignant adenoma, endothelioma, chorio-epithelioma, and sarcoma. (Still more rarely tuberculosis can attack the body of the uterus.) Cancer of the uterus begins generally in the endometrium. Unfortunate it is that for weeks and months the

* Read before the Mass. Surg. & Gynecological Society, May 17, 1916.

process may go on without a symptom. You know these cases well. Your patient may be the picture of health; she passed the menopause several months, or maybe one, or even several years ago. There has been no pain, no leucorrhœa; but recently some bleeding, perhaps repeated. Now what do you say to such a patient, that this is an after-echo of the change of life, and may be ignored? I trust that none of us would be guilty of this. No, we must examine. This you do, and find the adnexa normal, the uterus freely movable and not enlarged; at least no larger than could be accounted for by an unrepaired laceration with an old hyperplasia. Now what do you say to her, I do not find anything? But you have not yet looked. It is the *in*side and not the *out*side of the organ that needs exploring. Hence if your acquaintance with the curette is not a very intimate one, call in your expert with a *curette for diagnosis.* And this, let me say, is the chief role of the sharp curette. To be sure it is indispensable in the cleaning up of early abortions; and a simple polyp is reached, and the cure accomplished, by the curette alone. Again a chronic septic or gonorrhœal endometritis may be cured by thorough curetting, plus suitable applications. But the fact remains that the curette is an instrument for diagnosis rather than for the cure of disease.

Now possibly a simple polyp may be the only cause of the hemorrhage, the removal of which means the permanent cure of the case. Generally, however, the curette will dislodge material found by the microscope to be malignant. And a pan-hysterectomy means generally a permanent cure. If it be *unfortunate* that malignant disease of the fundus can exist so long without revealing itself, it is, on the other hand, *fortunate* that this organ of the pelvis is so far apart from the general economy, that an inoperable condition comes so late. Provided the disease has not advanced beyond the uterine wall into the peritoneum, these adeno-carcinomata of the fundus are among the most satisfactory triumphs of our skill. We are meeting in public, patients for whom we operated ten, fifteen, even twenty years ago; cases which we called cancer, and which were also thus pronounced by expert pathologists.

There should be public campaigns of education against this disease. In East Prussia the report of the first year's work by Winter, showed: (1) That the proportion of cancer patients consulting a physician within three months after appearance of symptoms rose from 32 per cent. to 57 per cent. (2) That the proportion operated within two weeks after the first consultation increased from 78 per cent. to 90 per cent. (3) That operability rose from 62 per cent. to 74 per cent.

The removal of small fibroids, whether sub-serous, intra-

mural, or sub-mucous, may often suffice, without sacrificing the uterus. A single fibro-myoma, even if projecting into the uterine cavity, and causing serious bleeding, may, as early practised by Kelley and Noble, be safely removed by laparotomy, leaving a uterus well able to perform its functions. I say by laparotomy, because inspection and direct examination can better determine whether other very small tumors are present, later to spoil the aims of well-intentioned conservatism. But just here I believe we can, as regards single or even few small growths, practise a conservatism highly satisfactory both to the conscientious surgeon and the family life of the patient. Small fibroids giving no trouble, I think should be let alone, since mere growth does not necessarily mean operation. Persistently growing ones should be removed. For many years I have valued calc. iod. 2x as an aid to good behavior of uterine fibroids. The old teaching "once a fibroid always a fibroid" does not hold. Either carcinoma or sarcoma may start the degenerative process. And this fact is one element to be considered when we try to be conservative.

You have doubtless observed by this time that I have not tried to make out a strong case to bolster up the title of this paper, but have preferred to discuss in a practical, non-technical manner, the principles governing our decisions in behalf of those for whose wellbeing we feel responsible.

There is an ultra-conservatism which is to be deplored, seen in the use of tampons continued for months and even years, in the vain hope of curing chronic displacements of the uterus. I am not now speaking of those retroversions in nulliparæ, and even in mothers, without procidentia, and with most of the uterine supports intact. Many of these may be permanently cured by tampon, or well fitting pessary worn for a few weeks or months; or by appropriate exercises, electricity, massage, and selected homœopathic remedies, which I trust some in this company may bring out in discussion. I refer, rather, to those heavy, prolapsed, enlarged uteri, which remain nowhere unless artificially supported; which have resisted ordinary measures faithfully employed for more than reasonable time. Too often, mere displacement is not all of the trouble. Some complication, such as adhesions, or a prolapsed ovary, has possibly supervened, rendering futile, measures well intended and faithfully employed, but not sufficiently radical, and not strictly adapted to the conditions. The following is a rather extreme illustration. But there are all grades, of which other cases doubtless will recur to you as I read.

Mrs. F. S., aged 67, had from girlhood suffered from dysmenorrhea, the pain coming just before, and generally con-

tinuing the first two days of the flow. The latter was profuse, calling at times for many napkins a day. She reports that when 16 years old, she jumped in such manner as to displace the uterus. At 21 she married, and 21 months later gave birth to a child. Another was born ten and a half years later. Unless packed with tampons, she was seldom free from backache and pain in the iliac regions. In 1890 the cervix was repaired. In 1892 she was curetted for excessive flow, much debris coming away in the operation. The next year, because of hemorrhage still persisting, both ovaries were removed. In 1896 the appendix was removed for obliterative appendicitis.

In consultation about a year ago, I found these conditions: 1. A post-operative hernia at the appendix incision. 2. The uterus somewhat enlarged, but in fairly good position, with one or two small fibroids to be felt in the walls; tenderness quite pronounced in the left ileo-inguinal region. *For thirty years* she had been faithfully, and more or less constantly, treated with the tampon, without which she felt she could not endure the discomfort in the left side.

What now is to be done? Evidently and essentially something to free both the patient and her faithful physician from the bondage of the tampon; something sufficiently radical to remove the cause of invalidism. I advised repair for the hernia, and exploration of the pelvis. Seven weeks ago the patient came for operation. In the operation for the hernia, extensive adhesions of the bowel were freed. The incision for the uterus found several more small fibroids in its walls. Both ileum and colon were firmly adherent to the fundus at the left. These were carefully freed, leaving, however, rather extensive raw surface. Now, in a woman of 67, a heavy uterus, with ovaries gone, and fibroids present, and especially with a raw surface to become again adherent, is not only a useless bit of anatomy, but is threefold better out. The fundus was removed, and the round ligaments stitched into the cervix for support. The patient says that now for the first time she can stand straight and feel that she needs no packing. Is not this a notable example of conservative surgery of the uterus and ovaries? I trust it may emphasize two or three points.

First, conserving the organs of a patient does not always mean conserving the patient. Second, thirty years of tampon may wisely give place to other treatment. Third, complications (adhesions in this case) may prove a factor more important than mere displacement, which often gives no discomfort at all.

As regards ovarian conditions, do not advise immediate operation for reasonably small cysts. Not infrequently they cure themselves by spontaneous rupture. Others may remain

stationary, giving no trouble. A dermoid, if diagnosed, needs radical treatment because of its tendency to abscess and dangerous nature of its contents.

I would like now to compare notes with you regarding the partial resection of ovaries. My practice in pelvic operations is to leave, especially in young women, at least a portion of ovary when sufficiently normal. At the menopause or later, I think it matters not so much. But the portion left must be able to function, or nothing is gained. My efforts to save parts of cystic and cirrhotic ovaries have too often proved disappointing. While at Rochester, a few years ago, I mentioned this to Charles Mayo. He immediately made it the text for a brief talk to the clinic, while his operation waited. His concluding advice was "remove them entire, or let them alone."

It is now time for this discussion to come to a close. If you think the title should be changed, I have no quarrel. I simply must present truth and facts as I see them, rather than try to make out a case for conservatism, believing this course more helpful, especially to the younger members, and more practical, too.

1. I trust that it may aid some to be master of, and not the slave of, the tampon. Economy in time for the physician, and for the purse as well as time, for the patient, demands this.

2. Try to discover in a given case, all existing pathology, for surgery is largely a matter of diagnosis.

3. Especially be alert in early diagnosis of malignancy. If reasonable stimulation to this alone should result, this partial and very simple treatment of the subject will have been worth while.

GENERALLY ACCEPTED METHODS FOR ARTIFICIAL FEEDING OF INFANTS, WITH INDICATIONS AND CONTRA-INDICATIONS

By Orville R. Chadwell, M.D., Boston, Mass.

Many infants deprived of breast milk present a feeding problem which often causes perplexity and chagrin to the physician. If the latter is familiar with these following generally accepted methods of modifying cow's milk, and knows when and why to apply them, he may be saved many unsatisfactory experiences.

I. SIMPLE DILUTION OF TOP MILK, WHOLE MILK OR SKIM MILK WITH WATER, AND THE ADDITION OF DRY MILK SUGAR

This method is probably the one most commonly followed by the average physician.

In *theory* this method varies the percentage of the elements,

i.e., fat, sugar and protein, to the individual case, approximating the percentage of these elements to the ability of the child to digest them.

In *practice*, while it is valuable because of its elasticity, inasmuch as the various elements may be so proportioned as to resemble mother's milk, it frequently fails because it ignores the chemical difference in the fat of cow's milk and also the difference in the casein or curd proportions which make up the proteid element in cow's milk.

However, it is *indicated* for the majority of cases which have been fairly well started on breast milk or in a robust baby from the start. The popular formulæ given in the small books for home use by Dr. Holt and others are based on this method.

It is *contra-indicated* in

(a) Very young or premature children, where the split proteid method better applies. (See v)

(b) In toxic diarrhœa (where putrefactive bacteria should be fed a minimum of proteid).

(c) In cases where vomiting of casein or curd is a prominent symptom. Here one should consider the addition of alkalies. (see II), or the use of a cereal diluent (see IV), or perhaps the formula should be boiled (see X).

II. THE ADDITION OF ALKALIES TO MILK MIXTURES

A good many physicians are in the habit of adding some alkali to almost any milk mixture they may prescribe. In *theory* they are used either to delay coagulation of the casein, i.e., curd formation, or to hasten the emptying of the stomach, or to chemically change the formation of the curd. The three alkalies commonly used are lime water, sodium bicarbonate and sodium citrate.

In *practice* the percentage of alkali added to a mixture is best estimated in relation to the amount of milk and cream in the whole mixture. Of lime water, 20% of the milk and cream will generally sufficiently delay curd formation. If 50% of the milk and cream be lime water there will be no gastric digestive action, and the food passes directly into the duodenum.

If sodium bicarbonate is used, about 1.7% of the milk and cream will prevent curd formation.

The theory in the use of sodium citrate is that the casein will be coagulated in the form of a more readily soluble sodium paracaseinate instead of calcium paracaseinate. In practice .2 of 1% seems to make the casein more easily digestible.

The *indications* for the addition of alkalies are in all cases

where vomiting is the chief symptom, particularly when it is evident that the cause is casein indigestion.

This method is *contra-indicated* unless there are reasons for the addition of the alkali.

III. THE ADDITION OF OTHER SUGARS THAN MILK SUGAR

Most commonly maltose (malt sugar) combined with dextrin is added. Occasionally there is indication for the use of saccharose (cane sugar).

Milk sugar as found in human milk is used by the infant in two ways. It is split by the ferments into dextrose and galactose. The former only is absorbed and burned for energy, that is assimilated, while the latter provides food for the normal bacteria of the intestinal tract, that is fermented.

Malt sugar is split into dextrose and dextrose, so that in *theory* where rapid and complete assimilation is desirable, maltose is added in place of lactose, with the result of more rapid and complete assimilation of the sugar element, and consequently with more rapid gain in weight and energy for the infant. This particularly is so in those unable to take normal amounts of fat.

In *theory* also cane sugar is rather more completely assimilated than milk sugar.

The result in *practice* of the desirability of using maltose as a substitute for milk sugar has been seen in the success following the use of several of the proprietary foods, particularly Mellins Food, Malted Milk, etc., which is practically a combination of maltose and dextrin, and it is undoubtedly because of the presence of this malt sugar content that they have gained their place in the artificial feeding of babies. The dextrin content in these foods seems also to have a mechanical or colloidal action on the casein of cow's milk, thus rendering it more easily digestible. The reasons behind the successful use of these foods were not properly appreciated by the medical profession for about one generation, but latterly these mixtures have been complimented by the appearance on the market of more "ethical" preparations of dextrin and maltose. The malt soup mixtures come under this method of substitute feeding.

The success of condensed milk (largely cane sugar) in occasionally giving the baby a food in form to be easily assimilated, again illustrates that milk sugar is not always the best sugar for the infant.

The use of malt sugar is *indicated*

(a) in severe atrophies,

(b) in cases of fat indigestion not having reached the atrophic stage,

(c) where there is slight curd indigestion shown by some vomiting and slow gain in weight,

(d) where there is excess of intestinal fermentation with gas and colic,

(e) where for the sake of simplicity whole milk dilutions are desirable. Most of the post-natal clinics and baby hygiene conferences advise this simple method of modification among the poorer classes which they touch, and many physicians in their private practice today appreciate the ease of feeding babies on whole milk mixtures combined with dextri-maltose.

The *contra-indications* are not prominent. Chiefly in the simple acute diarrhœas where lactose by supplying fermentative media, more easily restores the normal bacterial balance.

IV. THE ADDITION OF STARCH IN THE FORM OF BARLEY WATER, ETC.

In *theory* there has been much speculation as to the age when an infant acquires the ability to split and absorb starch. The experiments have shown that some infants can digest starch at birth, while others have deficient ability as late as one year. The metabolism of starch is the same as that of sugar as soon as the starch is split by the ferments. When it is not so converted it is either excreted as free starch in the stools or ferments in the intestine. Presumably starch makes easier the digestion of cow's curd by its mechanical or colloidal action on the curd while in the stomach, that is, it breaks up the casein, making the curds softer, finer, and more easily digested. 75–100 of 1% barley starch in a mixture will give this colloidal action, and no more is needed, though more may be tolerated. In *practice* if one-fourth of the whole formula be a 3% cereal water, this proportion is obtained. Starch is the first food given to the infant after the milk. It may be added anyway when the teeth appear, but it may be said to be *indicated*

(a) in cases of curd indigestion with curds in the stools,

(b) in young babies who persist in a slow gain of weight without any other symptom. Many demonstrations illustrating this latter indication have again been given by the proprietary food manufacturers.

The use of starch is *contra-indicated* in cases of carbohydrate indigestion with sour, watery vomitus.

V. THE SPLIT PROTEID OR WHEY MIXTURES

This method at one time was hailed as the final solution of the problem of artificial feeding. The indigestible casein of cow's milk is largely removed in this method, and the proper percentage of fat and sugar result from the addition of high fat top milk and dry lactose. It is properly *indicated*

(a) in the artificial feeding of premature or small babies under three months of age where there is vomiting of curds as the chief symptom.

(b) It may be useful in any case of casein vomiting at any age, but in older children this symptom is generally better overcome by the previously discussed methods of adding alkali or cereal diluents. (See II and IV.)

(c) It is indicated in cases of pylorospasm. Whey mixtures are sometimes even better tolerated than breast milk.

The *contra-indications* are

(a) in the feeding of atrophic babies. These are generally advanced cases of fat indigestion and are best treated by a formula with low fat and high sugar percentage in the form of maltose, and as much protein as can be tolerated. (See III.)

(b) In any acute diarrhœa, where the whey offers too good a culture medium for the putrefactive bacteria.

VI. PEPTONIZATION

This method is but little used in good practice. It predigests the protein elements in the milk. Too long use results in impaired capability for casein digestion on the part of the infant. The so-called peptogenic powders are largely milk sugar with the peptonizing ferment added. Heat is necessary to kill the ferment, and unless fruit juices are begun early, scurvy may result.

VII. LACTIC ACID MILK

By this is meant the addition to some milk mixture of some preparation containing the lactic acid bacillus, making artificial buttermilk, wherein the casein is precipitated in very finely divided form, i.e., it is precipitated instead of coagulated. Its use as a food in certain cases of indigestion is quite different from its use as a weapon for combating bacterial processes in the intestine.

There are many familiar preparations for preparing lactic acid milk on the market. It is important to have a good starter.

Lactic acid milk is indicated

(a) in chronic feeding cases with persistent green movements, where the results are quite remarkable in the rapidity with which the stools return to a normal color,

(b) in the acute toxic fermental diarrhœas, particularly with gas bacillus infection.

Lactic acid milk is commonly combined with precipitated casein in the formation of albumin milk.

It is *contra-indicated* where vomiting is the chief symptom.

VIII. PRECIPITATED CASEIN

This is a combination of lactic acid milk with added casein. It is familiarly known in the literature under the name " Eiweiss-milch." The *theory* behind its use is that the complete washing of the precipitated casein, which is part of the technique in its manufacture, removes the casein salts which Finkelstein and some other authorities believe to be the disturbing factor in the cases of infantile atrophy. The casein precipitated in this form may be more easily digested. Combined with the lactic acid milk it is *indicated* where the latter is best used and with the additional advantage of giving larger amounts of casein, thus increasing the caloric value. It is commonly used in atrophic cases with bad green stools.

In *practice* it is often found very difficult to administer to the sick child, and after a few days it may well be combined with carbohydrates in the form of maltose or starch, to the better nourishment of the baby and with an improvement in the stools.

IX. HOMOGENIZED MILK

By this term is generally meant the addition of some foreign fat other than cream to fat-free cow's milk, choosing some fat which more closely resembles in its chemical form the fat of mother's milk, and its complete emulsification under the homogenizing process. This emulsification is made so complete that the fat never again separates from the mixture, and microscopically shows itself to be divided to the very finest point.

The series of cases observed by Dr. Maynard Ladd at the Children's Hospital and presented in the literature of the last two years points encouragingly to this method of substitute feeding for those infants who are unable to digest any amount of cow's fat and for whom mother's milk cannot be obtained.

The fat commonly substituted for the cream is olive oil. It is generally used with some starch, with maltose as the chief sugar ingredient, and the whole formula boiled. In most of the large cities now the large milk laboratories possess a homogenizing machine, so that soon one will be able to write prescriptions for the desired formula. The possibilities from this method of feeding appear very large where its use is indicated, namely, in cases of chronic fat indigestion with atrophy.

X. BOILING

There is no doubt but the casein of milk is rendered more digestible by boiling, a fact which may well be remembered in cases of casein indigestion, where care as to the addition of starch and cereal diluents and the choice of dextri-maltose as a sugar has not quite resulted in casein tolerance on the part

of the infant. The simple boiling of the whole formula for three minutes, stirring constantly, will often cause the disappearance of the vomiting and of the tough curds in the stools. Its prolonged use would be contra-indicated unless anti-scorbutic measures were observed.

No particular originality is claimed for this grouping and classification which approximates the arrangement in most of the later text-books on infant feeding. That the ordinary feeding case will find its suitable treatment under one of these methods of artificial feeding is almost certain.

19 Bay State Road.

BIBLIOGRAPHY

Morse and Talbot. "Diseases of Nutrition and Infant Feeding."

Maynard Ladd. "Difficult feeding, homogenized olive oil and fat free milk mixtures, In case of," Archives of Pediatrics, June, 1915.

E. W. Titus. "Cow's Milk, Raw and Heated." Medical Record, N. Y., June 11, 1914.

Charles Hunter Dunn. Harvard Medical School Lectures. 1915.

A. L. Daniels, S. Stuessy and E. Francis. "Boiled Milk, Nutritive Value of," American Journal of Diseases of Children, January, 1916.

Roger H. Dennett. "Milk Boiled, Usefulness in Infant Feeding." Journal of American Medical Association, January, 1915.

HERNIAS OF THE URINARY BLADDER

(a) Nature. (b) Modern Operative Treatment. (c) Conclusions.

By Aimé Paul Heineck,
Prof. of Surgery Chicago College of Medicine and Surgery;
Surgeon to Rhodes Ave., Jefferson Park and Frances Willard Hospitals

The permanent or temporary escape of a part or the whole of the urinary bladder, through any of the usual or unusual hernial orifices, is uncommon. Nevertheless, many cases have been published and a much larger number have been allowed to pass without record. In a long series of hernia operations, every surgeon is certain to meet some instances of hernia of the bladder. The urinary bladder in part or in its entirety is present in one per cent of all hernias.

Many operators have unknowingly punctured, incised, ligated or removed a herniated bladder-process and then closed the hernial canal and operative wound in the usual way. Bladder protrusions have been excised by mistake for hernial sacs, or stitches used to close hernial canals have been passed too deeply and found at the necropsy to have caught the bladder.

This article is based on an analysis of all the vesical hernias reported with sufficient data in the English, French and German languages from 1896 to 1914, inclusive (literature to which access can be had at the John Crerar Library, Chicago, Illinois),

and also of some unpublished personal cases (one hundred and fifty-nine patients, representing one hundred and sixty-four vesical hernias).

As vaginal bladder hernias fall more appropriately within the domain of the gynecologist, we decided not to include them in this contribution. All the hernias herein considered were external hernias, that is, their outermost overlying saccular covering was skin; each after reaching a certain stage of development gave rise to a more or less visible and palpable external swelling in the obturator, femoral, inguinal or other region.

INCIDENCE AS TO AGE

It was not possible, in most cases, to ascertain the age at which the hernia first appeared. We therefore tabulated the age of the patients at the time of operative relief. In three cases, the patient's age at time of operation is not or is indefinitely stated. The other patients at time of operation were from: —

18 months to 5 years of age	7 cases
6 years to 14 years old	6 cases
16 to 25 years old	9 cases
26 to 35 years old	27 cases
36 to 45 years old	31 cases
46 to 55 years old	36 cases
56 to 65 years old	18 cases
66 to 75 years old	15 cases
76 to 80 years old	5 cases
81 to 83 years old	2 cases

Our personal clinical observation and a review of the literature justify the following conclusions as to age incidence of hernias of the urinary bladder: —

(a) They are extremely rare in infancy, childhood and adolescence. During the first year of life, not one patient, and previous to the sixteenth year only thirteen patients, are reported to have been operated for hernia of the urinary bladder.

(b) They are most frequent after the fortieth year of life. Ninety-one patients out of one hundred and fifty-nine unselected consecutive herniated individuals were operated for the relief of this condition during the fifth and subsequent decades of life.

(c) Hernia of the bladder is an infirmity occurring chiefly in advanced life.

INCIDENCE AS TO SEX

Hernias of the urinary bladder, like all hernias of viscera common to both sexes, are found more frequently in males. The one hundred and sixty-four hernias herein studied and

analyzed were distributed as follows: — Masculine pseudo-hermaphrodite (1 case), females (62 cases), males (96 cases).

Case reports show that, in the female, these hernias occur in nulliparæ, in primiparæ and in multiparæ. They first become manifest either before, during or after gestation or between successive pregnancies.

INCIDENCE AS TO SIDE INVOLVED

Most hernias of the urinary bladder are unilateral. Out of one hundred and fifty-nine patients suffering from this infirmity, only five presented double vesical hernias. In thirty-seven females and fifty-one males, the hernia was on the right side; in seventeen females and forty-one males, it was on the left side. We thus see that hernias of the urinary bladder show in both sexes a noticeable predilection for the right side.

In bilateral hernias, both hernias either appear simultaneously, or, as is more frequent, an interval of time, measured in weeks, months or years, elapses between the appearance of the first and that of the second hernia.

ANATOMICAL TYPES

Hernias of the urinary bladder appear at various anatomical sites. Indirect or oblique inguinal hernias escape from the abdomino-pelvic cavity, above Poupart's ligament, by way of the external inguinal fossa, and follow in their progress outward the course of the spermatic cord in the male, or of the round ligament in the female. They are complete or incomplete, according as the herniated viscus or viscera emerge or not beyond the external opening of the hernial canal. The complete are pudendal or scrotal. In the former the hernial swelling descends into a labium majus, in the latter into a scrotal pouch. Direct inguinal hernias escape from the abdominal cavity by emerging through either the middle or the internal inguinal fossa and first appear externally at the superficial abdominal ring. Direct inguinal hernias are always to the inner or medial side of the deep epigastric vessels, and, unlike the indirect, do not follow the entire course of the inguinal canal. In our cases, we find twenty-seven patients with direct inguinal hernias and eighty-seven with indirect or oblique inguinal hernias. Of the twenty-seven patients with direct inguinal hernias, five were females. Direct hernias are very rare in the young. Thirteen of the eighty-seven patients with indirect or oblique inguinal hernias were females. In our list of cases, there were forty-two femoral hernias, forty of which occurred in female patients and two in males.

What precedes shows that: —

(a) Inguinal vesical hernias are more common in men than in women.

(b) Femoral vesical hernias are far more common in women than in men.

(c) Femoral hernias of the urinary bladder are an exception to the general rule, which is, that inguinal hernias are more frequent in women than femoral hernias. Forty female patients presented femoral vesical hernias and only seventeen presented inguinal vesical hernias.

(d) Direct inguinal vesical hernias are of frequent occurrence. Out of one hundred and fourteen inguinal vesical hernias, twenty-seven were of the direct variety.

Gladstone's case of left obturator extra-peritoneal bladder hernia is the only obturator vesical hernia reported in the period covered by this paper.

Gerulanos' and Tédenat's cases were irreducible supra-pubic hernias of the linea alba, consisting solely of a prolapsed bladder diverticulum.

According to the relation which the bladder protrusion bears to the peritoneum, hernias of the urinary bladder are classified into the following three varieties: —

(a) Intra-peritoneal, in which there is a complete hernial sac.

(b) Para-peritoneal, in which the herniated bladder-process is covered by peritoneum on one surface.

(c) Extra-peritoneal, in which the herniated bladder-process is neither engaged in nor contiguous to a hernial sac.

In the intra-peritoneal variety, the herniated portion of the bladder has a complete peritoneal covering and is contained in a true hernial sac. In the para-peritoneal variety, the herniated bladder-process lies to the inner side of the sac, and its serous covering enters in part into the formation of the hernial sac. Part of the herniated bladder-process has no peritoneal covering. The para-peritoneal form is not uncommonly a sliding hernia, and is frequently due to a continuous pull and traction exerted by the sac of an existing enterocele, epiplocele or entero-epiplocele upon the peritoneal covering of the urinary bladder. In the extra-peritoneal variety, the herniated bladder-process has no peritoneal covering. The prolapsed bladder is neither present in, nor does it enter into the formation of a hernial sac. The extra-peritoneal bladder-protrusion is in relation with the subcutaneous tissues and is always distinct from and to the inner side of the hernial sac, if one be present. In the one hundred and sixty-four reported cases, the hernia is definitely stated to have been: —

(a) Intra-peritoneal in 4 cases (females, one case).

(b) Para-peritoneal in 53 cases (females, 21 cases).
(c) Extra-peritoneal in 58 cases (females, 22 cases).

In the cases not included in the above tabulation the relation of the herniated bladder-process to the hernial sac, when one was present, is not precisely recorded.

CLINICAL TYPES

Any hernia of the bladder may be reducible, irreducible, inflamed, obstructed or strangulated. At first most vesical hernias are reducible; the larger number, sooner or later, become irreducible.

Reduction of hernial contents, spontaneous or manual, may be temporary, may be permanent, and is effected with more or less difficulty (general anesthesia may be required). In our collected cases, there were forty-eight hernias, the contents of which could be completely reduced. Sixteen of these occurred in female subjects. If the hernial sac-contents cannot be manipulated back into the abdominal cavity, the hernia is said to be irreducible, provided that the irreducibility per se does not cause any functional disturbance of the herniated organ or organs, and none or but slight interference with the blood supply thereof. The irreducibility may be recent or of long duration. Partial or complete irreducibility predisposes to inflammation, obstruction and strangulation, and is either of sudden or of gradual onset. We noted fifty-eight irreducible vesical hernias, twenty-one of which occurred in females.

If communication between the herniated and the non-herniated portion of the bladder be more or less interfered with, the urinary bladder being transformed, in some instances, into a bissac, the hernia is said to be obstructed.

If, in addition to irreducibility of the sac-contents, the blood supply of the herniated organ or organs is interfered with to such a degree that their vitality is endangered or lost, the hernia is said to be strangulated. There were twenty-two strangulated hernias, eleven of which occurred in females. In some cases, the bladder alone is herniated and becomes strangulated. In some strangulated cases, the vesical hernia was associated with an enterocele, an epiplocele or an entero-epiplocele, the bladder was not constricted, but the herniated omentum or intestine or both were strangulated. In others the bladder was strangulated and the herniated omentum, intestine or both were not constricted. Bladder-wall offers more resistance to constriction than intestine. Strangulation of the bladder is especially grave if renal disease coexists.

ETIOLOGY

The etiology of these hernias is largely the etiology of hernias in general. In the causation of this pathological lesion, the following factors are of importance: —

A. All conditions that tend to increase intra-abdominal pressure.

1. Occupations necessitating repeated muscular efforts associated with increased intra-abdominal tension (lifting, pushing of heavy weights, etc. — over twenty cases in our series).

2. Physiological or pathological states which distend the abdominal cavity, stretching the abdominal parietes and widening the orifices normally present in the muscular and aponeurotic layers of the abdominal wall (enteroptosis, obesity, abdominal tumors, ascites, pregnancy, etc.).

3. All diseases associated with frequently repeated increase of intra-abdominal pressure (long-standing lung affection, pulmonary emphysema, chronic bronchitis, habitual constipation, etc.).

B. All conditions which weaken the abdominal wall.

1. Acute or chronic diseases debilitating the organism, especially such as cause great emaciation.

2. Obesity weakens the abdominal wall and increases the intra-abdominal pressure.

3. Traumatism (abdominal operations). Pathologic adhesions of viscera or omentum to the anterior parietal peritoneal wall near a hernia opening may act as a predisposing cause.

4. Previous hernia operations.

5. Enteroceles, epiploceles and entero-epiploceles.

6. Feeble development or atrophy of the aponeurosis of the transversalis muscle and of the conjoined tendon.

7. Unduly large hernial rings.

8. Excessive breadth of hernial canal.

9. Congenital defects present in abdominal wall.

10. Inherited or acquired weakness of abdominal wall.

11. Pre-existing hernial sacs of pre- and post-natal formation.

C. All conditions associated with prolonged over-distention, overstretching, impaired contractibility, restricted mobility, etc., of the urinary bladder.

1. Congenital malformations of bladder.

2. Diseases of the lower urinary organs, impairing the expulsive force of the bladder or abnormally hindering the outflow of urine (vesical catarrh, prostatic hypertrophy, urethral stricture, phimosis, etc.).

3. Abnormal increase of the peri-vesical fatty connective tissue (lipome pré-vésical).

SYMPTOMATOLOGY

Hernias of the urinary bladder are congenital or acquired, recent or recurrent, and of greater or shorter standing. They vary in shape, volume, rate of growth and in amount of discomfort and disability entailed. Occasionally they occur at the site of a previous hernia operation.

Hernia of the bladder is usually an acquired condition. It occurs most commonly in late adult life and is, not infrequently, secondary to pelvic, vesical and urethral diseases. Direct inguinal hernias are said to always be acquired hernias. All the femoral hernias, excepting one case, that of a five year old female child and reported by the author to be an acquired hernia, first became manifest in adult life. Congenital femoral hernias are pathological rarities. Femoral hernia is essentially a hernia of adult life. Congenital hernias appear at all periods of life. Even at the time of operation, one may be unable to differentiate between a sac of pre-natal and one of post-natal formation.

Size is variable. A few of the reported hernias simply pointed; in the others, the size ranged from that of a hazelnut to that of a man's head. In many, the hernial swelling is said to have been large, voluminous.

The hernial swelling may be cylindrical, ovoid, elongated-ovoid; it may be grooved or bilobed, soft, elastic and fluctuating or hard and non-elastic. The hernial swelling may be a large, tense, smooth tumor, may occupy the scrotum, may occupy the entire labia, distorting the vaginal opening, may extend as far as the middle of the femur.

The size of the hernia is liable to rapid and considerable changes, being influenced by clinical type of hernia, position of body, amount of urine present in bladder, etc. The hernial swelling gives a dull or tympanitic percussion note.

Pain is an inconstant symptom. Ten of the reported cases are said to have been painless.

Diverse urinary disturbances (subjective and objective) may be present.

Vesical hernias may exist alone, may be one of two or more hernias, co-existing with a hernia of other organ or organs on the same or opposite side of the body. Other congenital or acquired anomalies may be present: — phimosis, ectopia testis inguinalis, cryptorchism, vaginal cystocele, hydrocele, prolapsus uteri, hydrocele of hernial sac, etc.

PATHOLOGY

In many cases, note is made of excessive breadth of hernial canal, of enlarged hernial rings.

To differentiate a hernial sac of pre-natal formation from one of post-natal formation is at times difficult, at times impossible.

Acquired hernial sacs, except in hernias "par glissement," are always entirely derived from the parietal peritoneum.

Sac may be thin or thick, congested and infiltrated, free or intimately adherent to the spermatic cord, and, not uncommonly, is capped by a thick mass of fatty tissue. There may be an unusual amount of fat in the hernial canal. In the extra- and para-peritoneal forms, the herniated bladder-process is frequently covered with fatty tissue, the "lipome herniaire" of the French authors. This pre-vesical accumulation of fatty tissue is thought by many to be an important contributory etiological factor.

Amount of viscus present in hernial swelling may be small, may be large. In some cases, the hernial swelling consists solely of the herniated bladder-process and of the increased amount of fatty tissue overlying it. In other cases, fifteen in our series, it consists of the herniated bladder-process or bladder diverticulum and of an empty serous hernial sac. In a large number of cases, the hernial swelling includes a herniated bladder-process and a distinct or contiguous serous hernial sac with or without sac-contents. The hernial sac-contents may be hernial fluid, a part of right ureter, omentum, small intestine, large intestine, intestine and omentum, small and large intestine. In the strangulated cases we note such contents as the following: — Hemorrhagic fluid and the bladder, bloody fluid, gut and ovary, a loop of congested intestine and urinary bladder, congested bluish appendix epiploica, reddish-brown fluid, bladder diverticulum and small intestine.

The wall of the herniated bladder-process may be normal, thinned or thickened. The herniated bladder-process may present the appearance of an empty or of a thickened hernial sac. Its cavity communicates with the cavity of the non-herniated portion of the bladder by means of a wide or narrow channel. It may be the seat of tuberculous disease, of carcinomatous disease. Calculi may be present in the herniated or in both portions of the bladder.

The spermatic cord is sometimes found spread out over the vesical hernia, at times is distinct from it, and often is in close relation with co-existing enterocele, epiplocele or entero-epiplocele.

DIAGNOSIS AND DIFFERENTIAL DIAGNOSIS

The existence of a hernia of the urinary bladder may be ignored, suspected or diagnosed before operation. The diagnosis may first be made at time of operation, or not before one or

more days after operation. Evidence of the bladder having been wounded may not be present until some time after the patient has left the operating table. Eminent clinicians have failed to recognize even in operated cases the true state of affairs previous to the autopsy.

Before operation, the following symptoms are suggestive of vesical hernias: —

1. Urinary disturbances: dysuria, two-stage urination (miction à deux temps), frequent urination, painful urination, scalding urination, vesical tenesmus.

2. A hernial swelling, pressure upon which causes a desire to urinate.

3. A hernial swelling which increases in volume with urinary retention, and markedly diminishes in size with urination.

4. A hernial swelling, the size of which is increased by air or water distention of the urinary bladder.

5. A hernial swelling in which fluctuation is detected or in which a metallic sound can be introduced by way of the urethra. A cystoscope introduced into the bladder may show the round contour of the bladder distorted into T-shape, the vesical orifice of the herniated bladder-process, etc.

6. A hernial swelling in which, after easy reduction of most of the contents, there persists a small doughy mass representing the extruded part of the bladder.

During the course of a hernia operation, the following symptoms or signs are suggestive of vesical hernias: —

a. An unusual amount of fat in the neighborhood of a hernial swelling.

b. Difficulty in finding or in isolating the true hernial sac from the tumor mass.

c. The trabeculated appearance of the bladder muscularis.

d. Large-sized external hernial opening and the fact that hernias of the bladder are usually nearer the median line than true hernial sacs.

e. The occurrence of a second hernial sac is so rare that it is a safe rule to regard as the urinary bladder, until proved otherwise, any structure resembling a second hernial sac.

f. The pedicle of a herniated bladder-process leads down behind the pubic bone into the true pelvis; the pedicle of a true hernial sac leads to the general peritoneal cavity.

Escape of urine following wounding of the bladder is conclusive evidence of the presence of a bladder hernia.

Keep in mind that vesical hernias are frequently associated with intestinal and omental hernias.

Injury of the bladder may not be noticed at the time of

operation, and be diagnosed, for the first time, several hours after operation by: —

(a) Voluntary voiding or withdrawal by catheter of blood-stained urine.

(b) Urine escaping from the hernial operative wound. This is usually preceded by the development and subsequent rupture or incision of a urinary phlegmon.

(c) Sepsis due to urinary extravasation.

(d) Peritonitis due to escape of urine into peritoneal cavity.

TREATMENT

In discussing the treatment, we will limit ourselves to the consideration of femoral and inguinal hernias.

An operator not on his guard, may incise the bladder under the belief that he is opening a hernial sac. In operating upon recurrent hernias, guard against wounding the bladder. If isolation of the hernial sac from the inner lower portion of the ring be difficult, involvement of the bladder is to be suspected. Avoid injuring the bladder by securing a good exposure of the operative field. The more exact the stripping of the sac, quite up to the deep epigastric artery, the more likely will cystocele, especially in its earlier stages, be discovered.

Vesical hernias can be produced by traction upon the sac, and efforts to place the ligature high up may, if one be careless, result in catching in its bite the bladder-wall. The bladder was accidentally injured in sixty-eight of the cases under consideration. In thirty-one, urine escaped into the operative field at time of operation.

Should the bladder be incised or otherwise injured, carefully suture it and provide appropriate drainage. Immediate closure of the bladder-wound is of primary importance. It is effected by two, in some cases by three, layers of interrupted or continuous sutures. Introduce your bladder-sutures so as to include all the layers of the bladder-wall, the mucosa excepted. Needless to say that only absorbable suture-material is to be employed. Even if the bladder be not opened, but merely injured, it is safer to fortify the weak spot by the introduction of a few catgut sutures.

The herniated urinary bladder-process may be:

(a) Injured in attempts to separate surrounding adhesions. Not only must one be careful as to sac-contents but also as to contiguous tissues.

(b) Torn accidentally in trying to separate it from the hernial sac. The herniated bladder-process is more liable to be injured if it be the seat of changes incident to strangulation.

(c) Punctured or pricked in suturing walls of hernial canal, in closing hernial orifices.

(d) Incised or ligated and cut off, being mistaken for a hernial sac.

Resection of the herniated bladder-process is indicated only if the bladder-wall be very much attenuated, necrotic or the seat of other serious degenerative changes. Resection is to be followed by suture of the bladder-wound. If a calculus or calculi be present in the bladder protrusion, incise the bladder-wall, remove the foreign body, and repair vesical wound secundum artem. As a routine procedure, resection of the bladder protrusion is not to be recommended. It was performed only in twelve of the reported cases. If the bladder protrusion be apparently normal, free it from surrounding adhesions, if any be present, and then reduce it into the abdomino-pelvic cavity. As a routine procedure, bladder repair, bladder resection and bladder reduction are always to be supplemented by resection of the abdominal wall. After isolation of the herniated bladder-process, supplemented by the repair of any injury which it may have sustained during the course of the operative procedure, we advise that the bladder be reduced into the abdominal cavity.

Vesical hernias have been successfully operated for radical cure without anesthesia, under local cocaine infiltration, spinal and general surgical anesthesia: nitrous oxide gas and oxygen, chloroform and ether (the majority of cases).

For inguinal hernias, the Bassini operation, with or without transplantation of the cord, seems to be the operation most universally employed; it was employed forty-one times. Czerny's, Andrews', Ferguson's, Halsted's and Kocher's type of operation were each employed once. Numerous other methods were employed. Various types of operations were employed in the femoral hernias (Berger, Coley, Lotheissen operations).

In all the cases in which the herniated bladder-process was not injured, in practically all those cases in which it was injured and repaired or resected and sutured, the organ, after being freed from surrounding adhesions, was returned into the abdominal cavity. Berhard, in one case, after suturing the bladder, fixed it to the lower angle of the abdominal wound.

Operators are not agreed as to the advisability of using a permanent catheter after bladder suture, nor as to the time during which this permanent catheter, if used, should be left in the bladder.

Drainage extending to the bladder wound is a prudent provision against leakage from the sutured bladder. Many operators prefer, after bladder suture, to leave the abdominal wound open at its lower angle, either closing it as soon as conditions warrant or allowing it to close by granulation.

If the hernial swelling contains, in addition to a bladder-process, a knuckle of gut, a piece of omentum or some other viscus, the indication is to first free and reduce the bladder-process, and then carefully isolate, incise and inspect the hernial sac-contents. In the absence of contraindications, all hernial sac-contents, sac-fluid excepted, are to be returned into the cavity from which they have escaped. A deviation from this rule is indicated in cases: —

(a) In which herniated omentum has undergone such inflammatory, cystic or other changes, that, if returned into the abdominal cavity, it might act as a foreign body.

(b) In which the herniated gut or omentum is gangrenous or of doubtful viability.

(c) In which the hernial contents are in such a pathological state that their return to the abdominal cavity would jeopardize the patient's life.

The treatment of the sac contents does not differ from that which obtains in hernial swellings in which no bladder-process is present; if those contents are injured by the surgeon, the injury calls for repair.

RESULTS

Operations for the radical cure of vesical hernias have practically no mortality. What mortality occurs is due either to concomitant circumstances: Extreme old age, great debility, shock, long-standing strangulation and unrecognized bladder-injuries.

One of these hernias was a dissecting-room discovery; this leaves one hundred and sixty-three hernias occurring in one hundred and fifty-eight subjects. There were twelve deaths; all the other patients recovered.

Operations for the radical cure of vesical hernias are rarely followed by disagreeable sequelæ. In thirteen cases, a urinary fistula complicated convalescence. These urinary fistulæ usually closed spontaneously. One can, if he so desires, close these fistulæ under cocaine anesthesia.

A careful study of the cases in which death occurred shows that operations for the radical cure of vesical hernias have no mortality per se, if all bladder-injuries be suitably repaired. In bladder-hernias, recognized either previous to or at time of operation, before closure of the abdominal wound, recovery, of necessity, is rapid and uneventful.

CONCLUSIONS

1. The urinary bladder, in part or in its entirety, may escape from the abdominal and abdomino-pelvic cavities through

any of the uncommon or common hernial orifices of the lower abdominal wall.

2. Hernias of the urinary bladder occur in both sexes, at all ages, and in all races. They are congenital or acquired, recurrent, recent or of some standing; almost always unilateral, very rarely bilateral. Like other hernias, they vary in shape, size, rate of growth and in the discomfort and disability which they entail.

3. In the female, vesical hernias occur in mulliparæ, primiparæ and multiparæ; they occur previous to, during or after gestation and between gestations. They neither interfere with gestation nor disturb parturition.

4. According to anatomical site, vesical hernias are designated as hernias of the linea alba, of the obturator, femoral or inguinal regions. Anatomical relations justify the further subdividing of the latter into interstitial or intra-parietal, direct or indirect, complete or incomplete, pudendal or scrotal.

5. The relation of the herniated bladder-process to the serous membrane lining the peritoneal cavity is well expressed by the terms: Intra-peritoneal, para-peritoneal and extra-peritoneal.

6. According to clinical manifestations, hernias of the urinary bladder are reducible, irreducible, inflamed or strangulated.

7. A vesical hernia may be single, double, or one of two or more hernias located on the same or opposite side of the body, having dissimilar contents, and presenting like or unlike anatomical and clinical characteristics.

8. As etiological factors, in the causation of vesical hernias, the following are foremost: —

a. All conditions that tend to increase the intra-abdominal pressure.

b. All conditions, congenital or acquired, that weaken the abdominal wall.

c. All diseases of the lower urinary organs that impair the expulsive force of the bladder or abnormally hinder the outflow of urine.

d. Pre-existing hernias and hernial sacs of pre- or post-natal origin.

9. The pre-operative signs and symptoms may be unmistakable, vague or absolutely wanting. In addition to such symptoms as are common to all other hernias, vesical hernias present peculiar suggestive and positive manifestations of their existence.

10. The herniated bladder-process may be the sole content of the hernial swelling, or merely one of the associated contents. In addition to a bladder-process, a hernial swelling may contain

a part or one or more of the following organs: — Ureter, Fallopian tube, ovary, appendix vermiformis or appendix epiploicæ, omentum, and small or large intestine.

11. The herniated bladder-process may be free or adherent to surrounding tissues or organs, may be structurally normal or present degenerative, inflammatory or neoplastic changes; may be the seat of atrophy, hypertrophy, catarrh, gangrene, tuberculosis or carcinoma, and may or may not communicate freely with the general vesical cavity. The herniated process of bladder may contain one or more calculi.

12. The vesical hernia may be the sole existing anomaly, or it may be one of two or more, congenital or acquired, pathological states, having or not having any relationship of cause or effect to the hernia (cryptorchism, vaginal cystocele, prolapsus uteri, prostatic hypertrophy, etc.).

13. Truss treatment for hernias of the bladder is not curative, is often productive of discomfort and may injuriously affect the structure of the bladder-wall.

14. In patients over ten years of age, all hernias, irrespective of anatomical site, clinical condition or contents, should, in the absence of a constitutional state contraindicating operations of election, be subjected to an operation for radical cure.

15. Clinical conditions so closely simulating hernias of the urinary bladder that a positive diagnosis without operation appears impossible should be subjected to operative treatment.

16. All hernias of the urinary bladder, irrespective of sex, age or social condition of patient, irrespective of size, shape, anatomical site or clinical type, call for operative treatment. The only contraindications to operative treatment are: — Extreme old age and the coexistence of a pathological state or states.

17. In all incarcerated and in all strangulated hernias of the bladder, operative intervention is indicated.

18. In all hernias, the ideal time for operation is previous to the development of degenerative or other pathological changes in the herniated organ or organs and previous to the occurrence of any of the various complications incident to hernias.

19. Women who suffer from any form of hernia should be carefully watched before, during and after their confinement, so as to prevent or rather minimize any undue strain upon weak regions of the abdominal wall. These women, at the close of lactation or towards the end of the first year following their confinement, should, in the absence of contraindications, be subjected to an operation for radical cure of the hernia.

20. The most popular and efficient modern hernia operations permit a full view of operative field and allow such a careful

examination of hernial rings, canals, and surrounding structures, that a prolapsed or herniated viscus rarely escapes detection.

21. In inguinal and femoral hernia operations, after careful opening and isolation of the sac, see that the latter consists preferably of peritoneum only, and that its neck be freed from all other structures. Neck of sac should not be twisted, as by so doing the bladder is drawn towards the hernial opening and is liable to be included in the ligature. Necrosis and peritonitis result therefrom.

22. In hernias of the urinary bladder, first expose and free the herniated organ or organs, and then effect reduction into the abdomino-pelvic cavity. Follow this by suppressing the hernial sac if one be present, and then strengthen, according to an approved method, the weakened hernial area. Resection of the herniated bladder-process is only exceptionally indicated. When performed, it calls for immediate reconstitution of the urinary reservoir.

23. During hernia operations, the wounding of the urinary bladder can, to a large extent, be prevented by careful operating and by keeping in mind that this clinical entity occurs.

24. Wounds of the urinary bladder inflicted during the course of hernia operations give a good prognosis if they be immediately accurately repaired and if the post-operative treatment be instituted appropriately. In the repair of bladder-wounds, two or three layers of continuous or interrupted absorbable sutures give satisfactory results. Bladder-suturing is to be followed by resection of the abdominal wall of the herniated area.

25. If within twenty-four to forty-eight hours after a hernia operation on a healthy subject the catheterized urine contains blood, determine the origin of the blood. If a bladder-injury be present, open the hernial operative wound or laparotomize, or do both, and repair the injury.

26. The mortality of operations for the radical cure of hernia, if performed at an opportune time by a rapid and skillful operator, competently assisted, is practically nil.

27. The operative treatment of hernias of the urinary bladder is highly satisfactory.

THE RÔLE OF THE PLACENTA IN THE PATHOLOGY OF PREGNANCY AND THE PUERPERAL STATE*

By Harold E. Diehl, M.D., Quincy, Mass.

Pregnancy with its natural developments is generally conceded to be a physiological state which may, under the stress of certain conditions, become pathological. The various abnormal phenomena exhibited under such conditions are of diverse origin, and, in the determination of causative factors, custom has usually led us to look elsewhere than to the placenta. Apart from the more frequent phases of abnormality of the placenta more or less familiar to physicians at large (which phases will be herein considered), the newer field of biochemical studies, especially along immunological lines, develops fresh theories of the role of the placenta, especially its toxines, in the causation of pathological conditions incident to pregnancy and the puerperium.

As will be mentioned below, there seems to be more or less intimate association between the placenta and the corpus luteum. With reference to later remarks, it may be well then to review in short some of the embryology and physiology of the placenta and the ovary (in the latter, particularly the corpus luteum). It will be remembered that the ova are confined within small vesicles in the ovary called the Graafian follicles, which may migrate to the surface of the ovary and there rupture, discharging the ova. A certain small amount of hemorrhage occurs within the follicle, some of the lining cells show fatty degeneration, the walls collapse, the ovarian stroma and other ovarian cells proliferate, the latter becoming so-called lutein cells, and to this entire mass a yellow color is imparted by the hematin of the extravasated blood. This small mass is known as the corpus luteum. When fertilization of an ovum occurs, this corpus luteum becomes much larger (2–2.5 cm.) and is known as the corpus luteum of pregnancy. How much part in the life of the individual this corpus luteum plays it is not possible to state, in spite of the great amount of theory advanced, as well as presumptive clinical evidence adduced by drug firms placing these products on the market. Certain data, however, are suggestive, as will be pointed out later.

Immediately upon fertilization, the ovum forms about itself a growth of extremely delicate villi called the primitive chorion, the whole ovum being called the chorionic vesicle. Synchronous with this change, the uterine mucosa assumes a pulpy, soft, velvety consistency, with numerous depressions, being as much as 1 cm. in thickness, which is called the decidua.

* Read before the Alethean Club, Boston.

This structure is composed of three parts: — the decidua vera, which is the hypertrophied mucosa of the entire uterus, and which is thrown off in part with the membranes in labor and in part with the lochia in the puerperal period; the decidua serotina, in which the fertilized ovum is embedded, and which enters actively into the formation of the placenta; and third, the lowermost layer, the decidua reflexa, which is a layer of endometrium advancing progressively over the entire ovum and meeting above it. This completion of the reflection occurs within eight to twelve days after the lodgement of the chorionic vesicle in the uterine wall, continues to grow until the end of the second month of pregnancy, after which it ceases to functionate, and disappears at the seventh month.

The villi of the chorionic vesicle, above mentioned, at once begin to enlarge and to penetrate at the same time into the crypts of the decidua, which themselves progressively deepen. They develop two layers of epithelium, are penetrated by blood-vessels of the chorion, and protrude directly into the maternal blood. The outer layer of epithelial cells proliferates rapidly, forming a separate thin, but very important, layer, the syncytium. After this stage, the chorionic villi next to the decidua reflexa degenerate, leaving a surface nearly smooth, called the chorion leve; while the villi in contact with the decidua serotina ramify and increase in number and size, forming a tufted mass called the chorion frondosum. The union of this chorion frondosum and the decidua serotina forms the placenta, which process occurs at the third month. Functionally, this placenta, in short, acts as lungs, alimentary tract, liver, and kidneys combined, a most delicate rendezvous of substances, both noxious and beneficial; when normally functionating, a protective and nourishing agent; but with a chemical equilibrium extremely easily unbalanced, and thus an ever-potential factor in the production of toxines dangerous to mother and child, or in mechanical interference in the circulation so necessary to the welfare of both.

Clinically, of course, abnormalities and diseases of the placenta react more heavily upon the fetus; but since during pregnancy the lives of mother and child are so closely interlocked (embryologically considered as well as otherwise), the pathology of one concerns the other. The possible additional primary effect upon the mother alone, above that which is usually recognized, it will be endeavored to demonstrate later,

Physical anomalies of the placenta comprise chiefly abnormalities in form, size, number, and relation or insertion. In form, placentæ are usually round, firm, and uniform in thickness. There are some types in which the placenta is lobed, either

equally or irregularly. Other types show fenestræ in which no placental tissue is inserted at one or more places upon the chorion. Horse-shoe and annular placentæ (the latter being a ring of tissue about the uterine cavity) are described, but have not been observed by the writer. In weight (i.e., size), the placenta is in proportion to the fetus as 1:55. A placenta of less than this proportion usually maintains an ill-nourished child, but produces no maternal effect. Placental hypertrophy is of no effect on mother or child and is of frequent occurrence. Occasionally one or more smaller placentæ are found; if contributory to the nourishment of the fetus called placentæ succenturiatæ; if not, false placentæ. Their possible presence should always be borne in mind in any parturient case. In the consideration of anomalous relations between the placenta and fetal appendages, only one of clinical interest exists — the so-called "battledore placenta," in which the cord has its implantation at the placental margin. This I have observed more frequently in twin pregnancies with a single placenta, one of the cords frequently being in this relation. In these cases the child thus nourished is more puny and has lower resistance than its fellow.

Placenta previa (including the marginal, partial, and central types) is the most familiar of the various anomalies of the placenta. The clinical manifestations of this condition are too well known to need discussion here; reasons for the occurrence of this condition are more obscure. Probably the primary cause is an endometritis from one source or another. It is seen more in multiparæ, in those of the poorer classes accustomed to hard physical work and too early resumption of duties after parturition (which tends to subinvolution), and with new growths of the uterus — also abnormal size of the uterus and low implantation of the Fallopian tubes — conditions all tending to some type of endometritis. Hemorrhage is of course the chief danger to the mother as the result of this abnormality of position of the placenta; and the nearer to time of labor the hemorrhage begins, the better the prognosis, because the dilatability of the cervix varies in direct ratio to the stage of pregnancy. Placenta previa for this reason also is less formidable in a multipara than in a primipara. By reason of the abnormal situation of the placenta, the weakened muscle fibers of the lower half of the uterus do not readily contract immediately after the third stage of labor, and post-partum hemorrhage is therefore a frequent sequel. Central implantation of the placenta previa is more dangerous to the mother than any other type, and at the present day is practically always an absolute indication for the performance of Cæsarean section. Another danger from placenta

previa is the danger from rupture of the cervical artery or even more serious injury during the dilatation of the cervix so often necessary. Naturally sepsis is a grave danger to the mother in every case of this condition, due partly to the manipulation necessary, partly to the lack of closure of the uterine sinuses immediately postpartum, and partly to the nearness of the placenta to the outside world. Other danger are later endometritis and subinvolution and operative shock. The fetal mortality is of course high, due to shock, prematurity, or asphyxia.

Premature detachment of a small or large portion of the placenta occurs about once in two hundred pregnancies and is a mechanical injury to, rather than an anomaly or disease of, the placenta. It places the mother in danger from hemorrhage similar to those from that cause enumerated under placenta previa. Disease of the decidua at some point of the placental attachment is the chief general cause of the condition, causing a partial separation between the chorionic villi and the crypts of the decidua serotina with a cavity formation between them as a result, allowing a greater or less degree of hemorrhage. Usually this decidual disease presupposes some constitutional weakness as a predisposing cause: e.g., anæmia, syphilis, tuberculosis, debility from one source or another, as well as an exciting cause, viz., injury. Differentiation from placenta previa is oftentimes difficult. Hemorrhage may take place within the placenta iself, remaining within or forming a clot between the maternal and fetal elements. Remembering the embryology of the placenta, it is only reasonable to assume that in such conditions the chorionic villi, rather than the decidual attachment, are at fault. It is a pathologic condition of the maternal part of the placenta; and while the pathology is of the placenta, nevertheless the condition precludes a maternal cause underlying. Clinically it occurs in cases of high arterial tension or when the heart undergoes some sudden and unusual strain. Rupture of the blood vessels takes place at the site of the already diseased chorionic villi; and clinically an abortion or miscarriage results. There are no clinical symptoms of the condition in itself. General edema (pallor and swelling) may occur in a placenta, causing it to become thrice or fourfold the normal size. It is an evidence of a general condition, however, rather than a disease of its own structure, and has no clinical importance. It needs then no further consideration.

Certain inflammatory and degenerative changes may occur in the placenta and are worthy of mention. Observation is made by authors (although I have not seen personal evidence) of true acute purulent infections of the placenta either from the ordinary

pus germs or from the gonococcus. A chronic form of interstitial placentitis is occasionally seen as a result of primary endometritis, with local thickening, degeneration, or adhesions to the uterine wall as a result. Placentæ are at times very distinctly affected by circulating toxines from renal disease with albuminuria, exhibiting various types of degeneration, white infarcts, hemorrhages, areas of separation, etc., producing separation of the placenta, death of the fetus, abortion, or very occasionally adhesions. This same condition is said to occur without nephritis also.

Tuberculosis and syphilis are not primary diseases of the placenta, but manifestations of the disease elsewhere seated. Tuberculosis very rarely occurs. Syphilis, however, is frequent, and is the most frequent cause of intra-uterine death of the fetus and of abortion. Clinically to the mother, the danger lies chiefly in the tendency to marked adherence of the placenta and subsequent sepsis. Being a part of a general syphilitic condition and without further consequence to the mother than above-mentioned, syphilis of the placenta is a subject of technical interest rather than of practical importance.

Calcareous, cystic, and fatty degenerations of the placenta are self-explanatory, and usually so comparatively little of the placenta is involved in the degenerative process that they are of little clinical importance. White infarcts are yellowish, grayish, red, or white areas of the placenta which have, by reason of interstitial inflammatory changes, been deprived of their normal circulation. They may be seen as very small spots in all placentæ and are therefore to a certain point physiological. In greater numbers or size, they may become pathological and interfere with the nutrition of the fetus, causing defective development, even to the point of producing abortion. During labor these areas may cling to the uterine wall, forming a focus for the development of sapremia. True adhesion of the entire placenta rarely occurs, such apparent instances being nearly always cases of true retention.

The more recent biochemical studies tend to bring out the fact that pregnancy produces certain changes in the blood serum of the pregnant woman or the lower animals in which the placenta as the medium between the mother and child must be very prominently considered. This placenta through the medium of its syncytial layer, acts as a dialyzing agent by which the varied products of the embryo are transmitted to the blood stream of the mother. In other words, the mother, from the inception of pregnancy to its termination, is continually sensitized to a gradually increasing dosage of these substances resulting from the pregnancy, which may be termed placental proteins

or proteotoxines. After a certain period of their sensitization, the blood serum then acquires the ability to split these placental proteins. Further deductions by a number of observers along the same lines lead to the very reasonable assumption that further absorption of these placental proteotoxines above the normal cleavage coefficient of the individual maternal serum, or that some deficiency in this coefficient itself causes the maternal organism to be overpowered by the toxines of pregnancy with any degree of resultant toxemia, from very mild nausea to an extremely severe eclampsia. In other words, a further absorption of placental proteid beyond a certain standard for the individual results in an albumin-antialbumin reaction with the production of anaphyl-toxines or anaphylaxis. It has also been experimentally determined that the pathologico-anatomical lesions of eclampsia show marked similarity to those which would result from anaphylactic reactions produced by the injection with a foreign proteid.

It seems very fair also to assume, reasoning along the same lines, that birth may be an anaphylactic phenomenon. During gestation, it may be assumed, the mother is gradually and increasingly sensitized to some proteid body from the fetal circulation through the placenta, and that at full term an excessive absorption of this substance produces anaphylactic contractions of the uterus. Reports of a few cases of injection of fetal serum at full term would seem to indicate stimulation of the onset of labor, but no actual systematic technic or conclusive results are at hand.

Upon the principles above suggested, that the blood serum of pregnant animals has the power of causing the cleavage of placental peptone and placental protein, Abderhalden announced his serum test for pregnancy, and later the placentin skin reaction analagous to the tuberculin or leutin cutaneous tests. It is not my purpose to describe the technic of these tests, but only to have endeavored to point out the underlying principle and its relationships.

Kolmer and Williams of Philadelphia dispute the accuracy of the Abderhalden test and claim that other factors than those pertaining solely to technic might be responsible for the divergent results which are obtainable in the Abderhalden reaction for pregnancy. They contend that in pregnancy serum there are two sets of ferments, a normal or non-specific, and a specific: the first being released by the absorption of the antiferment by various non-specific organic and inorganic substances, the second by absorption of the antiferment by the specific protein antigen alone. They determined experimentally that while a considerable amount of proteotoxine may be produced by the

reaction of human placental tissue upon human pregnancy serum, a less amount could also be produced by the use of a substrate of inorganic substance such as kaolin or starch. With reference then to the divergency of results obtainable in the Abderhalden pregnancy reaction, they suggest from experimental evidence that the protein matrix is the protein not only of the serum alone, but of the tissue substrate itself.

Considerable study has been made of the effect of placental extract, and, coincidently and comparatively, of that of corpus luteum. This was first done by Starling, Aschner, and Wintz, and later and more accurately by Hermann. The latter found that placental extract is very similar in physical and biochemical properties to extract of corpus luteum, except somewhat more intense in action. It is a thick yellow liquid, becoming brown when exposed to air, probably a cholesterin derivative associated with some of the lipoids. He determined also that an aqueous or saline solution of these extracts carried very little of their active principle; but that alcoholic or ethereal solutions of the same, which would hold the lipoids and the active principle in solution, were very concentrated and much more potent. Rabbits of eight weeks of age after five successive days of injection of the extract showed sexual characteristics identical with those of rabbits of 25 to 30 weeks of age. When continued over a longer period of time, constitutional changes similar to those occurrng in pregnancy were clearly evident. When injected into animals in which a double oöphorectomy had been done, there was a decided loss of weight, although none died; but at the same time, at experimental autopsy a very great hypertrophy of the uterus and Fallopian tubes was noted. The untoward effects (especially loss of weight) Hermann thought to be due to the toxicity of the lipoids which could not be separated from the active principle, probably in these castrated animals an anaphylactic phenomenon. The extracts of corpus luteum from pregnant animals were in all cases more potent.

Curtis of Chicago has performed some very interesting experiments and drawn valuable conclusions. He injected a series of sixteen pregnant rabbits and guinea pigs with extract of human placental tissue. Four which had received a very small dosage were not affected. Three advanced cases littered within forty-eight hours. Nine less advanced cases suffered absorption or abortion of the embryo. None showed corpus luteum. Another series of ten pregnant guinea pigs he injected with defibrinated blood of pregnant and puerperal women. Five progressed to term, three suffered abortion or absorption of the embryo, and in two the results were classed doubtful. Controls

on six other pregnant animals by the injection of defibrinated blood of non-pregnant women were negative, as were also two controls injected with normal saline. Of seven pregnant guinea pigs injected with extract of guinea pig placenta, five progressed to term, one suffered abortion and one absorption of the embryo. Four pregnant guinea pigs injected with defibrinated blood of pregnant and puerperal guinea pigs progressed to term without event.

He concludes that extract of human placenta is oxytocic for pregnant guinea pigs and rabbits; that defibrinated blood from pregnant and puerperal women is so in less degree, and that defibrinated blood from non-pregnant women does not disturb pregnancy in pregnant guinea pigs; that extract of guinea pig placenta is slightly oxytocic for pregnant guinea pigs; and that pregnancy in these animals is not influenced by defibrinated blood from pregnant and puerperal animals of the same species. Further continuation of his work to the field of pregnancy in the human may bring forth valuable results.

To repeat from a quotation at the beginning of this paper: the placenta acts as lungs, alimentary tract, liver, and kidneys combined. But it is in the more intricate fields of biochemical research that one finds the larger role of the placenta; and our complete understanding of its every phase will in all probability solve most of the problems of pathology incident to pregnancy and the puerperium.

A PROVING OF CRATEGUS*

Conducted by the Department of Materia Medica, College of Homœopathic Medicine, Ohio State University

Albert E. Hinsdale, A.B., M.D., Professor of Materia Medica and Clinical Therapeutics. R. V. Hadley, M.D., Laboratory Assistant.

(Note: The Materia Medica Research Laboratory of this College has been the recipient of a gift of $500 which was procured by Dr. Thos. McCann of Dayton, Ohio. This fund is in addition to the maintenance funds which the University supplies and was given especially to prosecute certain drug studies this year. Accordingly, it was thought wise, among other procedures, to prove Crategus; a similar gift to the laboratory was made by Dr. McCann last year.)

The American Homœopathic Pharmacopoea gives the following with reference to this drug:

Common Names, English Hawthorne, Haw. White or May Thorn. Hedge-Thorn. May Bush. Quickset.

* Read before the Indiana Institute of Homœopathy. Indianapolis, May 16th, 1916.

Natural Order, Rosaceæ. A shrub, or small tree, having stout thorns from one to two inches long; leaves slender-petrioled, glabrous on both sides, wedge form at the base, and one to two inches long. Corymbs many-flowered pedicle and calyx glabrous, not glandular; flowers broad, white or pink, flowering in May or June. It is a native of Europe and Asia. The fruit is small, depressed-globose, about the size of a pea, bright red, becoming dark late in the fall.

Preparation: The fresh fruit gathered when fully ripe is used to prepare the tincture as directed under Class III. Amount of drug power, 1/6.

History: This drug is said to have been first used by a Doctor Green of Ireland, who used the remedy successfully in the treatment of "heart disease." He used it as a secret remedy and its name was not divulged until after his death. Because of its somewhat spectacular introduction to the medical profession, the remedy has been heralded as a wonderful drug for certain forms of heart disease, yet there are many who discredit these claims; these conflicting opinions are due, undoubtedly, to the fact that the medicine has been used empirically. A clinical resume of Crategus is to be found in "New, Old, and Forgotten Remedies"; this book quotes articles from the New York Medical Journal, October, 1896, and from the Kansas City Medical Journal, 1898. None of these quotations are based upon provings, but are, practically, empirical deductions. A record of the effects and uses of it is to be found in Clark's Dictionary of Materia Medica; this authority bases his deductions mostly upon clinical and empirical experiences. So far as can be determined, the first proving was conducted by Dr. A. C. Cowperthwaite and appeared in the Transactions of the American Institute of Homœopathy for 1900. In 1910 Crategus was proven by the Homœopathic Department of the University of Michigan and the results published in the Medical Century, June, 1910. Bradford's Index to Provings (1901) does not mention the remedy. Frequent reference to the medicine is to be found in the periodical literature of the Homœopathic and Eclectic Schools.

The drug used in this proving was supplied by Boericke & Tafel.

The Provers: — Three medical students participated in the proving, and after a careful physical examination, in addition to analyses of the urine and blood, were found to be practically normal in every respect. The provers were ignorant of the name of the drug being used and received financial compensation for their services. Their ages were 21, 23, and 22 years respectively.

Form in which the drug was administered: — The drug was given in the form of the tincture only, beginning with five

drops three times a day and continued thus for three days, when the dose was raised to ten drops, which was continued for five days. At this time the dose given was fifteen drops for two days, twenty drops for two days, twenty-five drops for six days, thirty drops for five days, thirty drops for three days, concluding with forty-five drops for two days.

Symptomatology: Unless especially indicated, no symptoms are recorded unless experienced by all three provers, yet the symptomatology reported by all three was essentially the same.

A reduction in pulse rate averaging 17 beats a minute. The individual records are as follows:

Prover A.	Prover B.	Prover C.
normal pulse 85.	normal pulse 71.	normal pulse 80.
maximum reduction 17.	maximum reduction 11.	maximum reduction 25.

This maximum reduction in the pulse rate followed doses of ten drops of the tincture three times a day. There was a continued reduction in the pulse rate throughout the proving, but as the doses increased the pulse rate was not proportionately depressed.

Sphygmographic tracings taken from each prover at frequent intervals showed a decrease in the pulse rate, a dicrotic pulse, and a pulsus inequalis. The diagnostician will remember that a dicrotic pulse is usually associated with a low blood pressure, and that the pulsus inequalis is caused by intermissions in the peripheral pulse, dependent probably, in this case, upon a weakened heart impulse.

Blood pressure observations revealed a fall in blood pressure averaging 13 mm. The individual records are as follows:

Prover A.	Prover B.	Prover C.
normal systolic blood pressure 118	normal systolic blood pressure 118	normal systolic blood pressure 108
maximum fall 110	maximum fall 104	maximum fall 90

The maximum fall in blood pressure followed doses of ten drops of the tincture three times a day, and continued reduced throughout the proving, but as the doses increased the blood pressure was not proportionately depressed.

Repeated blood examinations demonstrated an eosinophilia in one of the provers, and this fact is significant when it is considered that all provers showed a skin eruption. Otherwise variations in the blood counts were well within the normal.

Urinary analysis was negative throughout the proving.

Each prover reported excessive perspiration of the palms of the hands, beginning early in the proving and lasting throughout; no modalities. There was also present a skin eruption characterized by pinkish macules situated on the back of the neck, in both axillary spaces and on the chin. The eruptions

were accompanied by burning, dryness, smarting, and were worse from heat and sweating, temporarily better from washing. A whitish scale developed on the macule in the later part of the proving.

Each prover experienced a sharp, darting pain under the middle of the left clavicle; no modalities. Also a dull backache in the lumbar region near the level of the iliac crest, better from pressure and worse from rising. Sharp, shooting pains in the left leg, hip, knee, and ankle joints, worse from walking and relieved by stretching the leg out at full length, were symptoms also recorded.

Other effects of the remedy are: a dull headache over both eyes, chiefly over the left; the pain seems to come and go and is worse upon motion. Slight inflammation of the conjunctiva of both eyes, with burning and smarting, chiefly in both canthi, worse from cold air, which causes eyes to water. A dry, burning sensation in the throat, accompanied by a slight, dry, spasmodic cough, caused by a tickling; not relieved by swallowing or drinking water.

A slight watery discharge from the nose. Feels wide awake in the evening; restless sleep, continually turning and twisting. Sleeps late in the morning and does not feel rested upon arising. Mental dulness characterized by an indisposition to study or perform any mental labor. Flatulence; slight nausea; feeling of fulness and weight in the stomach.

In addition to the proving of Crategus upon humans, the effects of the drug upon frogs and dogs were determined. When a non-alcoholic solution, equivalent in drug strength to the tincture, is administered to a pithed frog, a marked slowing in the rate of the heart's action is the result. Some slowing may be obtained by applying the drug locally, every half minute, to the exposed heart, but a more pronounced and quicker effect is obtained by injecting 15 minims of the remedy into the anterior lymph sack in addition to its local application. When thus given, the tracing shows, in about thirty minutes, a decided reduction in the rapidity of the heart's action. Control experiments proved that the slowing was not due to the mechanical presence of the drug in the tissues or to exhaustion.

If a dog be anæsthetized with ether and a tracing made of the carotid pulsations, there is obtained, after an intravenous dose of 20 c.c. of the non-alcoholic tincture, a fall of blood pressure measuring about 25 mm. This fall in pressure persists for about one and a half to two minutes, when it returns to normal. The effects of Crategus upon animals are closely in accord with the effects obtained upon the provers.

To recapitulate: Crategus produces, in brief, the following effects:

(1) A reduction in the pulse rate.

(2) A lowering of the blood pressure.

(3) A dicrotic pulse and pulsus inequalis.

(4) Excessive perspiration and skin eruptions.

(5) A pain under the left clavicle; backache; sharp pains in the extremeties; headache; conjunctival irritation; cough; nasal discharges; disturbed sleep; mental dulness and mild gastric derangements.

Concerning the effects of Crategus it is interesting to note that the symptom "a reduction in the pulse rate" was reported in the proving of this drug as conducted in the University of Michigan, and constitutes the most important effect which that proving reported. The symptom "a pain under the left clavicle" was reported by G. Harlan Wells, M.D., some years ago, in the Hahnemannian Monthly, as a clinical symptom, which the doctor had frequently seen disappear under the influence of this remedy, but this symptom had never been produced by the remedy. The University of Michigan proving mentions no effect upon the blood pressure, but it is extremely probable that such an effect would have been reported had it been looked for. Dyspnœa was produced in the Michigan proving, which did not make its appearance in our experiments, yet one of the provers had a "touch" at times, as he said, of "difficult breathing." Attacks of dyspnœa associated with a slow pulse have been relieved so many times by Crategus as to make the symptom one of the reliable indications for the use of the remedy. It is the opinion of the writer that a well confirmed clinical symptom ranks almost in importance with a symptom that has actually been produced by a drug in question.

The other symptoms of Crategus which we are reporting are what the materia medicist terms "general symptoms" and are of little importance to the prescriber, as such symptoms are to be found in the symptomatology of almost every drug, and these symptoms, while supposedly produced by the drug, should receive confirmation by other provings of the remedy before they receive full and unqualified endorsement. However, some importance may be attached to the symptom "excessive perspiration."

As a result of this proving, and the confirmations of another proving and of clinical experience, which it has produced, the writer regards the following as well verified and trustworthy indications for the use of Crategus:

(1) A reduction in the pulse rate.

(2) A reduction in the blood pressure.

(3) Dyspnœa.

(4) A pain under the left clavicle.

In both the Ann Arbor proving and the one which we are reporting, no symptoms were obtained until appreciable doses of the tincture were given. This is another point in common with the results obtained in both provings and is exactly in accord with clinical experience, which is to the effect that, therapeutically, far better results are obtained with doses of the tincture, varying anywhere from five to twenty drops, than from dilutions. The writer has had considerable clinical experience with the remedy and has never seen any results follow the administration of any of the dilutions; this same opinion is held by others.

Lastly, it may be said that this proving professes to show nothing especially new concerning the action of Crategus, unless it be the skin effects and the other minor symptoms, but its value lies in the confirmation of certain portions of previous experiments with the drug and of clinical symptoms, and what is of greater value than the confirmation of results which heretofore have not been universally accepted?

CLINICAL DEPARTMENT

Case F-6. *Hysterical Blindness.* Patient is a young man, 24 years old, born in Yassea, Roumania, of Jewish parentage. Was always very studious. Graduated at Cairo, Egypt, at the age of ten years, in Italian and French, receiving diploma. Has lived in Boston fourteen years. Graduated from high school with high honors. Would rise at three o'clock in the morning to study and sell papers. Family wanted him to go to work, but he was ambitious to study law. Parents were unable to aid him, so he solicited aid from a friend's parents who are very poor, but with the friend's help and his own earnings together with aid from her parents, he took a three years' law course in two years at Suffolk Law school, graduating in 1914. Failed three times at State Bar examination. Attended a law preparatory school from October until December, rising at three o'clock to study, and spent entire day after paper-selling at Public Library, studying. Took last bar examination January 1, 1916, and passed successfully.

Admitted March 7, 1916 to the Brigham Hospital, from which the following history was secured:

Patient is a well developed and nourished young man, giving a history of marked depression with occasional emotional states and crying spells for eight weeks. During this period he com-

plained of pain in the scalp, in the upper part of the left cheek and side of the forehead. He had been abnormally sleepy and had increasing trouble with his eyes. He had feared that he would lose his vision, and yesterday morning on awakening he found that he was totally blind.

Physical examination negative except for active deep and superficial reflexes. No ataxia, no intention tremor, or loss of control of sphincters, no scanning speech. General facial appearance was that of a neurotic individual. Patient sleeps soundly. While asleep, a strong flashlight, when turned on the closed lids, caused a contraction of the muscles about the eye, but after the first response, repeated flashes would bring no effect. Patient ate well, his clinical and laboratory charts were negative. Blood: Wassermann, negative. X-ray of cells negative. Repeated examination of the fundi and ocular muscles showed no evident disturbance.

With the confidence in the above negative evidence, he was approached with the idea that his blindness was an hysterical phenomena. With the eraser in the end of a lead pencil moderate pressure was exerted just outside the outer canthus of each eye, with assurances that the resulting hyperæmia would carry away the cause of his blindness. He complained of pain but was assured that this was intentional and part of the procedure, that the balance of power was being shifted from the sensorium to the motorium, which would release the contraction of his visual fields. Patient was left alone for a few minutes; at the end of which time he could see just as well as ever. Patient overjoyed at the restoration of his sight.

March 11, 1916.

Patient discharged with the assurance that he will never have any further disturbance with his eyes.

The following case is submitted from the Medical Clinic of the Out-Patient Department of the Massachusetts Homœopathic Hospital by Dr. Mary Parker. We hope to have one such case each month, emphasizing the use of the indicated remedy.

Case of Miss C. McC. Age 55 years.

Family History. — Father had eczema. Mother's history negative.

Previous History. — Eczema for past twelve years every winter. Constipation for years. Takes physics frequently. Rheumatism in knees at times. Has been frequently treated at City Hospital and later at Massachusetts Homœopathic Hospital Out-Patient Department skin clinic for years. The latter since 1907, where she received Ars. 3x internally and local applications externally, including the following: Calendula, carbolic acid,

glycerine and rose water, Lassar's paste, zinc oxide, mercurial ointment, and other things.

Dec. 22, 1915. Came to medical clinic complaining of a cold, and inability to sleep well. Still taking the Ars. 3x and using the local applications. Stiffness in limbs, worse standing. Eczema on neck and face. Eyes red and under lids much swollen and red; eyes watery. Eruption oozes a sticky fluid, and scabs over with yellow crusts. Often has cracks behind ears. Is very constipated. Never has eczema much in summer, but it returns every winter.

Was told to stop all local applications, eat no meat, take plenty of water and fruit and vegetables, for sake of bowel condition.

Rx. Graphites 1m and S. L.

Use flour browned in oven if desired for dusting powder.

Dec. 29, 1915. Eruption came out furiously for two or three days and then cleared up. Felt better in general, although face was worse at first. Today is absolutely free from scabs. Eyes not swollen and not red. Skin still pink where eruption was worst on side of neck, but absolutely clear, no eruption.

Prescription S. L.

Jan. 5, 1916. Bowels moving naturally every day, first time for years; is feeling better than she has for ten years. Slight itching of skin, and a little return of eruption in opposite side of neck and behind ear. Prescription, Rx. Graph. $\frac{200}{1}$ + S. L. Rest of skin clear.

May, 1916. Patient had not returned since for any more medicine. Wrote to her but letter was returned, "address unknown."

Graphites given because of the oozing sticky character, cracks behind ears, condition of eyes (Graphites often attacking eyelids) and constipated condition. Patient was also what is generally called graphites type, viz.: flabby muscles, and inclined to obesity.

(The difference in potency of the two prescriptions, due only to fact of not having same one on hand.)

REVIEWS

PATHOLOGY

Theories of the Etiology of Pernicious Anæmia. *Vogel, K. M., Jour. Am. Med. Ass'n., 1916, Vol. 66, p. 1012.*

Pernicious anæmia is to be grouped with the hæmolytic anæmias. In bothriocephalus anæmia, the cholesterol ester of oleic acid set free by the decomposing segments of this intestinal worm is the cause of the hæmolysis. In the hæmolytic (per-

nicious ?) anæmia of pregnancy, the placenta seems to give rise to a definite hæmolysin. Hunter supports the view that the cause of pernicious anæmia is a gastro-intestinal toxin, by pointing out that in pernicious anæmia, the iron content of the liver, resulting from red cell destruction, may be much larger than that of the spleen, which would be the case, did the hæmoglobin act in the general circulation.

Study of the structure of the spleen in pernicious anæmia revealed thickening of the arterioles and consequent lumen reduction. This causes hæmostasis and diversion of some of the blood from the sinus into the cell columns of the pulp. Here the red cells seem to be destroyed directly, or are, perhaps, sensitized, rendering them more susceptible to hæmolytic action in the liver. Since these anatomic changes in the spleen are probably permanent, the occurrence of remissions in the disease point to other accessory causes.

Eppinger and King found an increase in unsaturated fatty acids in pernicious anæmia blood. These acids are known to be strongly hæmolytic. Splenectomy reduces their amount.

H. U.

Gelatinoid Carcinoma (Morbus Gelatinosus) of the Peritoneum. *McCrae, T., and Coplin, W. M. L., Am. Jour. Med. Sci., 1916, Vol. 151, p. 475.*

Report of a case of chronic ascites of three years' duration. A tentative diagnosis of hepatic cirrhosis was made, but did not quite seem to apply to the case, because of the very chronic ascites. There was enlargement of both liver and spleen, which later receded. Fifty-seven successful, and several unsuccessful, tappings were made during the course of the illness, and at first there was obtained the usual type of ascitic fluid, but later appeared small masses of gelatinoid material.

At autopsy were found extensive adhesions of all abdominal viscera to each other and to the parietal peritoneum. There was an accumulation of gelatinoid material in the peritoneal cavity, and many nodules of varying sizes were found in the parietal peritoneum and in the adhesions. The nodules were made up of fibrous stroma and gelatinoid matrix, but no definite cellular structure. In fact, with the exception of very scant papilloid growth in a few sections taken from the vicinity of the stomach, it was impossible to detect any histological structure upon which to base a diagnosis. It was assumed that the case is one of gelatinoid carcinoma. Synonyms found in previous reports are: Gelatinous disease of the peritoneum; colloid cancer (Virchow); mucoid cancer; gelatinous ascites; carcinomatous ascites; pseudomyxoma; maladie gelatineuse.

H. U.

Hydrops Tubæ Profluens. *Llewellyn, T. H., and Block, F. B., Jour. Am. Med. Ass'n, 1916, Vol. 66, p. 1018.*

This condition, also known as "intermittent hydrosalpynx," depends upon the closure of the fimbriated end of the Fallopian tube, while the uterine opening remains patulous. The tube fills with serum as in ordinary hydrosalpynx until the pressure rises sufficiently to cause the fluid to escape through the uterine ostium, whereupon the tube collapses and fills anew. It may be, too, that there is a kink in the tube near the uterine end, which becomes straightened as the tube fills with fluid.

Clinically, there is intermittent pain on the affected side, relieved by the appearance of watery uterine discharge. Report of a case follows.

H. U.

Ventricular Hemorrhage: A Symptom Group. *Gordon, A., Arch. of Int. Med., 1916, XVII, p. 343.*

A report of twelve cases, seven of which are secondary effusion into the ventricles from an original extraventricular bleeding, and five are examples of primary intraventricular hemorrhage.

Of the latter, two showed rupture of the vessels of the choroid plexus, two calcarious deposits and thrombi in the vessels of an eroded ventricular wall, and the fifth case showed miliary eneurysm.

In the seven cases of secondary intraventricular infusion, the primary hemorrhage in all occurred in the internal capsule.

Clinically, these cases differed in that primary intraventricular hemorrhage showed absence of marked paralysis whereas secondary effusions give rise to marked hemiplegia.

H. U.

The Gastric Mucosa in Delirium Tremens. *Hirsch, E. F., Arch. Int. Med., 1916, XVII, p. 354.*

The most common lesions in the gastric mucosa of persons dying in delirium tremens are punctate, petechial hemorrhages, but without evidence of acute inflammation about them. Therefore, the gastric disturbance noted in delirium tremens is not an acute alcoholic gastritis. The hemorrhages must be regarded as manifestations of an acute toxemia. Hirsch thinks that "chronic alcoholism alone is of doubtful etiologic importance in causing chronic gastritis." H. U.

BOOK REVIEWS

A Treatise on Medical Practice. By Otto Juettner, A.M., Sc.M., Ph.D., M.D. Five hundred and ninety pages octavo. A. L. Chatterton Co., New York, 1916.

The author limits the somewhat comprehensive title of his book by informing us that it "is intended as a guide for those physicians who are interested in the use of the physical methods." Various conditions are arranged alphabetically, and the application of such forms of treatment as high frequency, galvanism, X-Ray, massage, spondylotherapy, hydrotherapy, Bier's Stasis, and zone therapy is briefly described. The value of diet, rest, and exercise is emphasized. It is to be regretted that the author's philosophical turn of mind leads him occasionally into discussions of his theories of the pathology of certain conditions, notably constipation. As in the case of many other vegetarians, his arguments for the diet which he recommends are more alliterative and sentimental than scientific. When one is told, for instance, that "abstinence from meat is a specific for purity of body and soul," or that "the finer instincts and evidences of soul-life are more apparent in the plant-eater than in the meat-eater," one hesitates to place much confidence in the writer as a scientific man. Much of the material is valuable, and if compiled in a smaller book without so much unnecessary discussion, would be of much use to the physician.

W. O.

Pocket Manual of Homœopathic Materia Medica. By William Boericke, M.D. Sixth edition. Published by Boericke & Runyon, New York, 1916. Price $3.50.

The sixth edition of this manual, with the addition of a new repertory, by Oscar E. Boericke, A.B., M.D., is one of the best and most useful works on Homœopathic Materia Medica yet published.

The thoroughness in treatment of every drug and, at the same time, the selective judgment in the exposition of their characteristics; the homogeneous coördination of the informative plan all through the work are very noticeable. The synthetic tabulated summary on the use and action of drugs, immediately after their scientific and common names, from which can be gathered in an instant the range of efficiency of each remedy, conspicuously enrich the book.

All the verified characteristics of newly proven remedies are also added in this edition, which, however, remains a compact little volume, very easily handled.

Another commendable feature of the work is the concise information given as to the physiological action of the most useful remedies, such as apomorphia, digitalis, marine plasma, etc., remedies which cannot be ignored by any homœopathic physician who wants to raise the standard of breadth and liberality in his conception of the healing art.

E. C.

OBITUARY

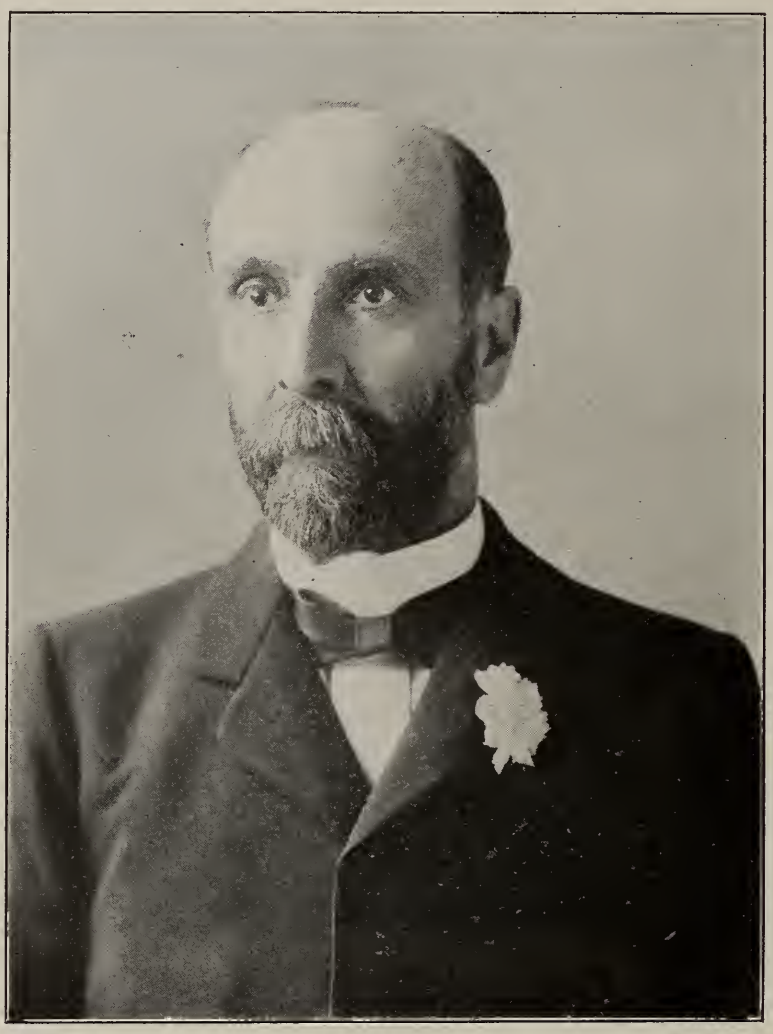
John D. Zwetsch, M.D.

Dr. John D. Zwetsch, for many years in practice in Gowanda, New York, died on May 6, of the present year, the victim of an automobile accident from which his death resulted almost immediately.

Dr. Zwetsch was born in Sheldon, Western New York, on April 30, 1858. He began the study of medicine in 1878 in the office of the late Dr. F. S. Bosworth of Akron, New York, completing his studies in Cleveland Homœopathic Medical College in 1882. Immediately after his graduation he settled in Gowanda and continued in practice there until the day of his death.

Dr. Zwetsch was for thirty years surgeon for the Buffalo & Southwestern branch of the Erie Railroad, and was president of the Association of Erie Railroad Surgeons in 1914 and 1915. In April, 1914, he was appointed by Governor Glynn of New York a member of the Board of Managers of Gowanda State Homœopathic Hospital. He was a member of the American Institute of Homœopathy and of various State and local medical societies.

A splendid tribute to his character and good works was paid by the officiating clergyman at his funeral, and resolutions of respect were passed by the Board of Managers of Gowanda State Homœopathic Hospital and by other organizations with which Dr. Zwetsch was connected.



A. Howard Powers, M.D.

The death of Dr. A. Howard Powers of Boston, which occurred on May 13 as the result of an automobile accident of four weeks before, when he was run into and injured by a reckless chauffeur, came as a shock to most of his friends and colleagues. Up to this time he had apparently been in good health.

Dr. Powers was born in Sutton, Vermont, on March 27, 1855, and was graduated from Boston University School of Medicine in 1885. Two years later, in 1887, he became associated with the School in the capacity of Assistant Demonstrator of Anatomy, later as Demonstrator, and later still and until his death as Instructor in the Department of Surgery. He had been on the teaching staff of the School for twenty-nine years, and for about the same length of time was in the surgical and skin clinics of the Out-Patient Department (formerly the Homœopathic Medical Dispensary) of the Massachusetts Homœopathic Hospital.

In 1895 Dr. Powers was married to Miss Josephine Odell of Roxbury, Mass. Mrs. Powers survives him, with two sons, Paul O. and Donald H. He was an active and influential member of the Bromfield-Tremont Methodist

Episcopal Church of Boston, a member of the Massachusetts Homœopathic Medical Society and its Boston District, also of the Massachusetts Surgical and Gynecological Society; from 1893 to 1910 Medical Director and President of the Medical Mission Dispensary; member of the Boston Association of Montpelier Seminary, and a Republican in politics.

James T. Sherman, M.D.

The *Gazette* receives word just as it goes to press that Dr. James T. Sherman, a former well known and very successful physician of Dorchester District, Boston, died of pneumonia in Newport, Rhode Island, on June 6. A suitable obituary notice will appear in the next number of this publication.

BOSTON DISTRICT MASSACHUSETTS HOMŒOPATHIC MEDICAL SOCIETY

The monthly meeting of the Boston District of the Massachusetts Homœopathic Medical Society was held on Thursday evening, May 11, at the Evans Memorial Building. The names of Drs. Max Goldman and Anna R. Manitoff, both of Boston, were proposed for membership. It was decided to omit as usual the June meeting of the Society. As the first meeting in the Fall will be a public health meeting at which Dr. Allen R. McLaughlin, Commissioner of Health of the State of Massachusetts, will be the speaker. The Suffolk District Medical Society has been asked to meet with the Boston District Society on that evening.

The Society was privileged to hear Dr. Wilfred T. Grenfell of Labrador speak on "Recent Experiences in France." Dr. Grenfell has recently returned from the battlefields of Europe, where he served as surgeon-major with the second Harvard unit, and has a most interesting fund of experiences. The audience accorded Dr. Grenfell a hearty vote of thanks for his favor to the Society.

Benjamin T. Loring, M.D., Pres.
H. E. Diehl, M.D., Sec'y.

HEALTH NEWS ISSUED BY THE UNITED STATES PUBLIC HEALTH SERVICE

Poverty and tuberculosis — tuberculosis and poverty! These are the essential facts which force themselves to the attention of every investigator who faces the problem of that disease. The tenement house district of Cincinnati yields a tuberculosis morbidity just three times as great as the areas where better housing prevails. In 197 families in which tuberculosis existed, the average monthly income for a family of four was approximately $57. After paying the pro rata share for food and rent, a balance of $5.13 remained for each individual to meet all other expenses. Such a low subsistence level works like black magic in the spread of tuberculosis. Moreover, and this is a point over which the public should ponder, the home of the average wage earner was found to be far less sanitary than the average factory and workshop. In regard to all the factors which make for healthful living, ventilation, sufficient light, proper temperature, and freedom from overcrowding, the score was in favor of the factory in nearly every instance.

The city of Cincinnati realized that her tuberculosis death rate was 50% above the average and that it had failed to manifest a tendency to decline. She felt no qualms in making this admission. Rather, she determined that she would learn why, with an efficient health department and favorable climatic influences, she was suffering from twice the mortality from that disease as her neighbor, Pittsburgh. Accordingly, the United States Public Health Service was requested to make a thorough study of the situation and submit a report. To show that something more than mere academic interest obtained, 19,932 workers in 154 factories of the city voluntarily submitted to a physical examination.

The conclusions reached point directly to the close connection between poverty and tuberculosis. The great factor underlying the entire problem was seemingly that of economic conditions. One sixth of all tuberculosis cases came from cheap lodging houses. Alcoholism was a prominent cause, and often accelerated the course of the disease. Occupational hazards and bad working conditions were apparently responsible for about 20% of the cases, but in the majority of instances these hazards were not necessarily inherent in the occupation. Previous tuberculosis in the family occurred in practically a third of all the cases investigated. Dissipation, overcrowding, bad housing, and innate lack of personal responsibility, were also listed as causes.

An interesting feature of the report, and one which has not previously been dwelt upon in studies of this character, relates to the effect of immigration and the rate of growth of the population of a city upon the tuberculosis death rate. It is shown that cities with a population composed largely of racial stock having a limited resistance to tuberculosis are subject to a high mortality rate from that disease, while centers having a slow rate of population increase are likewise subject to a high tuberculosis rate. The evidence is submitted in a comparative table covering sixteen American cities. Almost without exception, those with a high percentage of Irish, Scandinavian and German stock, and those in which the negro population is relatively large, have a correspondingly high mortality, while those where the Italian and Jewish element is proportionately great have a low tuberculosis death rate. Similarly, such cities as Detroit and Cleveland, with high rates of population increase, show a low tuberculosis mortality, while Cincinnati and Baltimore with a relatively small population increase have a high tuberculosis rate. Doubtless the true explanation of this discrepancy is that advanced by the authors, namely, that where the population increase is rapid, new buildings are erected to take the place of old insanitary structures and better housing conditions prevail.

DO YOU KNOW THAT

Efficient muzzling of dogs will eradicate rabies?

The protection of the health of children is the first duty of the nation?

Bad temper is sometimes merely a symptom of bad health?

Insanity costs every inhabitant in the United States $1 per year?

The U. S. Public Health Service has proven that typhus is spread by lice?

Untreated pellagra ends in insanity?

In the lexicon of health there is no such word as "neutrality" against disease?

The death rate of persons under 45 is decreasing; of those over 45 it is increasing?

THE CHILD WELFARE EXHIBIT

The State Board of Health publishes each month an interesting little pamphlet. It is free for the asking, and every physician should request that it be sent to him every month.

Among the interesting things in the April number is an item about the Child Welfare Exhibit, which seems to us a grand thing which cannot fail to be of great value not alone to the rural districts but also to the more populous cities, for there is much ignorance and superstition still abroad about simple matters of hygiene. The report reads as follows:

The lecture service of the Division of Hygiene is growing in popularity, and the requests for these lectures are constantly coming in. The work of the members of the Department is occasionally supplemented by other gentlemen, physicians and dentists, to whom the slides of the Department have been loaned, and who have kindly given their services gratis on account of their interest in promoting public health in their own communities.

The Child Welfare Exhibit has been constantly engaged since last fall, and is now booked until early in June. The following are the April appoint-

ments: Week of April 3, Rockland; week of April 10, Winthrop; week of April 17, Whitman; week of April 24, Lawrence.

In May the exhibit will visit Salem, New Bedford and Lowell.

During the month of March, 106 lectures were given to approximately 15,875 people by 14 members of the Department.

NEW LEGISLATION IN MASSACHUSETTS

Resolves, Chapter 47.

Resolve authorizing the state department of health to provide for the prevention and suppression of syphilis

Resolved, That there be allowed and paid out of the treasury of the Commonwealth a sum not exceeding ten thousand dollars, to be expended under the direction of the state department of health in purchasing dioxy-diamino-arseno-benzol and its derivatives, or other substances of equal or greater value in the prevention of the transmission of syphilis, or in making investigations as to the practicability of manufacturing, or in manufacturing, the same for free distribution to boards of health, hospitals, dispensaries and physicians for use within the Commonwealth in the suppression of syphilis, in such manner and subject to such rules and regulations as the state department of health shall prescribe. [*Approved April 11, 1916.*

General Acts, Chapter 78.

An Act relative to the sale of poisons.

Be it enacted, etc., as follows:

Section 1. Section two of chapter two hundred and thirteen of the Revised Laws, as amended by chapter two hundred and sixty-three of the acts of the year nineteen hundred and twelve, and by chapter five hundred and eighty-five of the acts of the year nineteen hundred and thirteen, is hereby further amended by striking out the words "laudanum, McMunn's elixir, morphia or any of its salts," in the sixth and seventh lines, and by striking out the word "opium" in the seventh line, so as to read as follows:—

Section 2. Whoever sells arsenic (arsenious acid), atropia or any of its salts, chloral hydrate, chloroform, cotton root and its fluid extract, corrosive sublimate, cyanide of potassium, Donovan's solution, ergot and its fluid extract, Fowler's solution, oil of pennyroyal, oil of savin, oil of tansy, Paris green, Parson's vermin exterminator, phosphorus, prussic acid, "rough on rats," strychnia or any of its salts, tartar emetic, tincture of aconite, tincture of belladonna, tincture of digitalis, tincture of nux vomica, tincture of veratrum viride, compounds of fluorine, or carbolic acid, without the written prescription of a physician, shall affix to the bottle, box or wrapper containing the article sold, a label of red paper upon which shall be printed in large black letters the name and place of business of the vendor and the words *POISON* and *ANTIDOTE*, and the label shall also contain the name of an antidote, if any, for the poison sold. He shall also keep a record of the name and quality of the article sold and of the name and residence of the person or persons to whom it was delivered, which shall be made before the article is delivered and shall at all times be open to inspection by the officers of the district police and by the police authorities and officers of cities and towns; but no sale of cocaine or its salts shall be made except upon the prescription of a physician. Whoever neglects to affix such label to such bottle, box or wrapper, before delivery thereof to the purchaser, or whoever neglects to keep or refuses to show to said officers such record, or whoever purchases any of said poisons and gives a false or fictitious name to the vendor shall be punished by a fine of not more than fifty dollars. The provisions of this section shall not apply to sales by wholesale dealers or manufacturing chemists to retail dealers, or to a general merchant who sells Paris green, London purple or other arsenical poisons in unbroken packages containing not less than one quarter of a pound, for the sole purpose of destroying potato bugs or other insects upon plants, vines or trees, except that he shall record each sale and label each package sold, as above provided. Nor shall the provisions

of this section apply to sales of compounds containing not more than fitfy per cent of sodium fluorine intended solely for the destruction of roaches, ants, or other household insects, when sold in sealed metal packages containing not less than one fourth of a pound, plainly labelled in such a manner as to show the purposes for which the preparation is intended.

Section 2. This act shall take effect upon its passage. [*Approved March 28, 1916.*

AMENDED REGULATIONS CONCERNING THE USE OF THE COMMON DRINKING CUP

At a meeting of the State Department of Health held on March 22, 1916, it was voted that the regulations concerning the use of the common drinking cup, made in accordance with the provisions of chapter 428 of the acts of 1910, be amended so as to read as follows: —

On and after July 1, 1916, it shall be unlawful to provide a common drinking cup —

(*a*) In any public park, street or way.

(*b*) In any building or premises used as a public institution, hotel, theatre, public hall or public school, or in any part of any factory, market, office building or store of any kind which is open to the general public.

(*c*) In any railroad station, railroad car, steam or ferry boat.

The term "common drinking cup" as used in these regulations shall be construed to mean any vessel or utensil used for conveying water to the mouth, and available for common use by the public.

Acts of 1910, Chapter 428.

Section 1. In order to prevent the spread of communicable diseases, the state board of health is hereby authorized to prohibit, in such public places, vehicles or buildings as it may designate, the providing of a common drinking cup, and the board may establish rules and regulations for this purpose.

Section 2. Whoever violates the provisions of this act, or any rule or regulation of the state board of health made under authority hereof, shall be deemed guilty of a misdemeanor and be liable to a fine not exceeding twenty-five dollars for each offence.

Section 3. All acts and parts of acts inconsistent herewith are hereby repealed.

AMENDED REGULATIONS CONCERNING THE PROVIDING OF A COMMON TOWEL

At a meeting of the State Department of Health held on March 22, 1916, it was voted that the regulations concerning the providing of a common towel, made under the provisions of chapter 59 of the acts of 1912, be amended so as to read as follows: —

On and after July 1, 1916, it shall be unlawful to provide a common towel —

(*a*) In a lavatory used in connection with any public institution, schoolhouse, hotel, restaurant, theatre or public hall, or in any part of any factory, market, office building or store of any kind which is open to the general public.

(*b*) In a lavatory used in connection with any railroad station, railroad car, steam or ferry boat.

The term "common towel" as used in these regulations shall be considered to mean a roller towel or a towel available for use by more than one person without being washed after such use.

Acts of 1912, Chapter 59.

Section 1. In order to prevent the spread of communicable diseases, the state board of health is hereby authorized to prohibit, in hotels and in such public places, vehicles or buildings as it may designate, the providing of a common towel, and the board may establish rules and regulations for this purpose.

Section 2. Whoever violates the provisions of this act, or any rule or regulation of the state board of health made under authority hereof, shall be deemed guilty of a misdemeanor and be liable to a fine not exceeding twenty-five dollars for each offence.

Section 3. This act shall take effect on the first day of June, nineteen hundred and twelve.

BOSTON UNIVERSITY SCHOOL OF MEDICINE

Commencement exercises were held on June 7, in Tremont Temple, Boston, as usual, with the following list of those to whom were granted degrees:

M.D. *cum laude* (fifth year course)

Ralph Harrison Hopkins, B.S., M.D.,	Wellfleet, Mass.

M.D. *cum laude* degree (four-year course)

Eleanor Milbank Anderson, Ch.B.,	Greenwich, Conn.

Degree Doctor of Medicine

John Constantine Bialas,	Utica, New York.
Alma Armida Binasco,	Genoa, Italy.
Ettore Ciampolini,	Siena, Italy.
Margaret Duyckinck Cummins, M.B.,	Warwick, New York.
David Israel Frankel,	Boston, Mass.
Harry Nathan Ginsburg,	Boston, Mass.
Milo Chester Green, A.B., Ch.B.,	Lynn, Mass.
Clayton Elvin Hoover,	Lancaster, Pa.
Marguerite Emilie Lichtenthaeler,	Reading, Pa.
English Newton McLaughlin,	West Newton, Mass.
Samuel Norman,	Boston, Mass.
Herbert Carroll Ober, D.M.D.,	Cambridge, Mass.
Winfred Overholser, A.B., M.B.,	Wellesley, Mass.
Warren Sylvester Shields, Jr.,	Boston, Mass.
Bessie Beatrice Tharps, A.B.,	Richmond, Virginia.
Lillian May Trafton, A.B.,	Amherst, Mass.
Henry Charles Turner, Jr., Ch.B.,	Boston, Mass.

Degree Bachelor of Medicine

Nathan Gorin,	Woburn, Mass.

Degree Bachelor of Surgery

John Woods Harvey,	St. Johnsbury, Vt.
Samuel Louis Marnoy,	Chelsea, Mass.

The annual Class Day exercises were held on Monday evening, June 5, with an address by Professor William F. Wesselhoeft, M.D., representing the Faculty of the School, and a Class History by Marguerite E. Lichtenthaeler, and the Valedictory by Milo C. Green, Ch.B. A reception by the Faculty, collation and dancing followed the formal program.

ENGLAND WARS ON CANCER

Central Midwives Board Issues New Circular
Cancer of Breast Curable by Early Treatment

That the policy of "business as usual" applies to constructive efforts for the prevention of disease in England is evident from the publication by the Central Midwives Board as recently as March 16, 1916, of a new circular on cancer of the breast. The practice of midwifery in England and Wales is controlled by this Board, and the circular is the newest of a series issued for the instruction of all women practicing this profession and registered with the Board as required by the law. The leaflet on cancer of the breast was prepared by the chairman, Dr. F. H. Champneys, F. R. C. P., and is distributed to the public as well as to midwives.

Pointing out that cancer of the breast unless treated by early removal

always ends in death, Dr. Champneys states that the disease is at first only in the part affected and not in the system. "Every day and even every minute," the circular says, "is of importance and no time at all should be lost. The earliest symptom is a lump in the breast which is usually painless and may be quite small. It may remain without seeming to grow for some time. The only cure for it is early removal. Although it is often easy to be sure that a lump is cancerous, many lumps which begin by being innocent turn into cancer, some times after many years."

Dr. Champneys advises that all lumps except those caused by undoubted and recent inflammation should be removed as soon as they are found, and advises all women who discover a lump in the breast to consult at once a surgeon who is in the habit of dealing with them. If the lumps are not removed and are cancerous, the disease sooner or later spreads through the body and becomes incurable, while if the lumps are not cancerous they may become so. "The removal of an early lump," the leaflet goes on to say, "is generally simple, and if microscopic examination should show afterward that it was not cancerous, a danger for the future will have been averted and the anxiety of the patient and her friends will be relieved." From such an operation there is generally "practically painless recovery in a few days. If the lump proves to be cancerous, however, a further operation is necessary, which, if undertaken early, saves many lives."

According to Dr. Champneys, if women would follow the above advice, much loss of life, many regrets when too late, and much misery would be saved.

PERSONAL AND GENERAL ITEMS

Dr. George B. Rice has removed his office from 220 Clarendon St., to 293 Commonwealth Ave., Boston.

TO BE LET at Somersworth, New Hampshire, a physician's suite of rooms, with heat and plumbing. Rooms have been occupied for several years by a homœopathic physician. For particulars, address C. A. and A. M. Watson, Somersworth, N. H.

Dr. Ella E. Severance, class of 1901 B.U.S.M., has removed from Brookline, Mass., to 47 Cooper St., Camden, New Jersey.

FOR SALE. — A $5,000 practice in the State of Maine for sale. Collections good. Address "H. A. T.," care *New England Medical Gazette*, 80 East Concord St., Boston, Mass.

Dr. John R. Noyes, B.U.S.M. 1904, has removed from 63 Main St., to 47 West Elm St., Brockton, Mass.

The books, instruments and office furnishings of the late Dr. A. Howard Powers are for sale and can be seen at his former office, 8 Cumberland St., Hotel Ilkley, Boston.

Dr. Benjamin C. Woodbury, class of 1905 B.U.S.M., who for the past three years has lectured to the Freshman class of the School on Homœopathy, leaves the United States about August 15 for Honolulu, Hawaii, where he will enter practice. Dr. Woodbury has been in practice in Portsmouth, New Hampshire, for the past eight years, and will be succeeded by Dr. M. Boger, 1915 B.U.S.M., for some months past resident physician at Talitha Cumi Maternity Home and Hospital, Jamaica Plain, Boston.

Dr. Belle J. Allen, class of 1914, B. U. S. M., is under appointment to a professorship in the new Union Medical College for Women, at Vellore, India. Dr. Allen is at present in the United States.

Dr. Leighton F. Johnson, B. U. S. M., 1915, has removed from West Roxbury to Norwood, Mass.

Dr. Anna Chipman Palmer, B. U. S. M., 1888, has removed from Mattapan to 131 Magazine St., Cambridgeport, Mass.

Dr. Frances Low, class of 1912, B. U. S. M., has removed from Providence to Little Compton, R. I.

THE NEW ENGLAND MEDICAL GAZETTE

VOL. LI JULY, 1916 No. 7

Books for review, exchanges and contributions — the latter to be contributed to the GAZETTE only and preferably to be typewritten — personal and news items should be sent to THE NEW ENGLAND MEDICAL GAZETTE, 80 East Concord Street, Boston. Subscriptions and all communications relating to advertising or other business should be sent to the Business Manager, 80 East Concord Street, Boston, Mass.

THE GAZETTE does not hold itself responsible for the opinions expressed by its contributors. Reprints furnished at cost.

THE EARLY HISTORY OF MALARIA*

From the Pharmacological Department of the Evans Memorial, Massachusetts Homœopathic Hospital, Boston

By CONRAD WESSELHOEFT, 2ND, M.D., Boston

It may seem out of place to enter upon the historical side of this subject, but as we expect to investigate our topic from many different points of view it is only fitting that we should begin with an historical foundation. Moreover, by studying the original sources and the development of our present knowledge, and by comparing what our predecessors knew and believed with what we today consider to be facts, we gain a better appreciation of the basis upon which our modern therapeutics rests.

When and where malaria first made its appearance is a matter of conjecture. The chances are that man has suffered with this disease from prehistoric times. Some construe the myth of Hercules and the Hydra to indicate the reclamation of marshes which were uninhabitable on account of malaria. The story of Apollo and the Python has also been interpreted to indicate a conquest of this dreaded disease. Others see references to malaria in the Iliad in the Orphic poems, and in the fifth book of Moses or Deuteronomy.[1] These speculations are very far-fetched. I find nothing in Deuteronomy which suggests intermittent fever, and so far as the Iliad is concerned, the word

* Reprinted from the New Orleans Medical and Surgical Journal.

πυρετὸς, meaning "fever" or "heat," occurs but once, and there is nothing in the line to suggest malaria except the time of year,* Aristophanes, however, uses the same word in a passage which might be construed to refer to the disease in question.

Groff maintains that the ancient Egyptians suffered from malaria, as indicated by the annual recurrence of a fever which is mentioned in the inscriptions on the ruins of the temple at Denderah.

This brings us to Hippocrates, who is invariably given the credit of having been the first to describe malaria and to distinguish the different forms. In his "Epidemics," this ancient medical writer and teacher differentiates a continuous from an intermittent fever and subdivides the intermittents. He says: "Fevers are, — the continual, some of which hold during the day and have a remission at night, and others hold during the night and have a remission during the day; semitertians, tertians, quartans, quintans, septans, nonans."[2] Among the fourteen cases of fever which he describes, none is in any way a typical case of malaria. In his Aphorisms,[3] however, he shows his familiarity with intermittents. Here he speaks of periodical paroxysms coming at the same hour, although a paroxysm is not defined by him as a chill and fever, but merely as a fever.

In the tract on The Nature of Man, written either by Hippocrates or by Polybus, his son-in-law and pupil, there is another pertinent passage concerning fevers: "Omitting those arising with evident pain, there are four types, the names of which are: continued fever, quotidian fever, tertian fever, and quartan fever." This fact is frequently quoted by writers on malaria as the work of Hippocrates, because Galen ascribes it to him. Aristotle, however, seems to have thought that it was written by Polybus.

From all this it would appear that malaria existed in the time of Hippocrates (about 450 — 350 B. C.), since tertian and quartan fevers are in all probability of a malarial nature. But we are not justified in asserting (as is too often assumed) that Hippocrates differentiates malaria from other forms of intermit-

---

*"Καί τε φέρει πολλον πυρετὸν δειλοισι βροτοῖσιν," xxii, 31.

The line refers to the dog star, which "brings much πυρετὸς to miserable mortals." This word is translated by "heat" or "fever," but "fever" is probably correct. In later Greek the word was certainly used in this sense, and ἠπίαλος which perhaps originally meant nightmare, came to mean the shivers preceding a fever, i. e., ague. There is a fragment of Aristophanes (315) quoted by the Scholiast on Vespae 1038, which suggests a malarial fever, ἅμα δ'ηπίαλος πρετοῦ πρόδρομος, which translated means "and at the same time the shiver which is the forerunner of fever." Vespae 1038 has the same word ἠπίαλος, perhaps in the same sense.

tent fevers. What Hippocrates did was to distinguish intermittent from continuous fevers, and to subdivide these intermittents according to the number of days between the paroxysms, giving us a nomenclature which still remains in use. Therefore, for all practical purposes, we may say that the history of malaria begins with the Hippocratic writings, which in themselves imply a long tradition.

Jones[4] informs us that he finds clear references to malaria in the writings of Sophocles, Aristophanes, Plato, Aristotle, Demosthenes, and the inscriptions, but he maintains that the disease did not become endemic in Attica until the close of the fifth century B. C. It is interesting to note that Hesiod, the Bœotian poet, did not mention fever as one of the farmer's plagues, although, as Jones suggests, he would probably have done so had malaria existed. Bœotia is today a notoriously malarial region. According to Puschmann,[5] Erasistratos, who was born about 330 B. C., mentions fevers associated with inflammation of the liver and the "useless spleen." Plutarch,[4] a native of Bœotia, who lived between 45 and 125 A. D., remarked that the poor countryfolk constantly fell ill during their exertions at harvest time, and that fever was one of their great dangers; he even used the term φρενῖτις, which later denoted a pernicious type of intermittent fever.

Celli[6] gives us the most complete history of malaria in Italy. According to this author, the disease raged among the earliest inhabitants of Latium. These people took the first steps in sanitary engineering along the lines of preventive medicine. Recognizing that the stagnant waters of the Campagna were a cause of ill health, they made a network of drains, which have been discovered by recent archæologists. This remarkable drainage system permitted numerous settlements in this territory to grow up and flourish. Nevertheless, the goddess "Febris" continued to be honored in the land, and this implies that fevers were prevalent. Cicero refers to the tradition that Romulus founded his city on a healthy spot in a pestilent neighborhood. The Cloaca Maxima, which was built in the early days of Rome, must have done much to diminish the breeding places of mosquitoes. Livy remarks that the Roman soldiers, after the siege of Capua, declared that they never wanted to go back to the pestilent and barren country about that city ("*in pestilenti atque arido circa urbem loco*"). Among the many Latin writers who mention unhealthy localities, bad airs, autumnal fevers, and swollen spleens, none give us a clearer indication of the existence of typical malaria than Horace. He was very much afraid of it himself, especially in traveling, and alludes to the deadly semitertian, that is, probably, to what is now called pernicious or aestivo-autumnal.

He speaks of the foolishness of attempting to hold out against a fit of trembling at dinner, as to do so would only lead to a disaster. We cannot mistake this reference to the sudden onset of a malarial chill coming, so to speak, out of a clear sky. Celsus enters at length into the discussion of fever, and recognizes the semitertian. Celli cites no less than seventeen writers from Cato to Palladius who make references which indicate the existence of the disease throughout the rise and decline of the Roman Empire. Varro, Columella, Palladius, and Vitruvius suggested that the minute animals seen in the stagnant water of swamps, together with the emanations from the marshes, were the causes of intermittent fevers.[7]

Jones[4] has taken up the influence of malaria upon Greek and Roman history, especially in regard to the prolonged effects of the disease on national prosperity and national character. He maintains that malaria was comparatively rare during the rise of Athens and Rome, and that it increased during the decline in both cases. Moreover, he goes on to say:

> "The change in the Greek character was just that which we should expect malaria to produce in a highly sensitive and cultivated people, while the savage brutality of the later Romans may be due to the same cause. The peculiar effects of a disease on national morality will certainly vary with the prominent national characteristics. The more effeminate Greek grew weak and inefficient; the stern Roman became viciously cruel. But it must always be carefully remembered that other factors, physical and psychological, contributed to the change in both cases. But malaria gave rise to physical conditions which afforded an excellent opportunity for other influences to produce their full effect."

This degrading influence of malaria on moral character is mentioned by North in his "Roman Fever." Just how much bearing it had on the fall of these two cities is difficult to determine. Whether the disease increased because of the conditions associated with the decline or vice versa must be considered. Certainly the Greeks were sufficiently effeminate, and the Romans sufficiently cruel, before their decline began. The luxury and leisure simply gave opportunity for a greater display of these national characteristics. Luxury and idleness tend to bring out the bad traits of any people, but a given toxic substance usually acts in a general direction, the exceptions usually exhibiting the opposite or no effects. That malaria does affect the mentality of the patient is not to be questioned, but the prolonged effect is to make the patient indifferent and melancholy rather than to accentuate the predominant character of the individual. However, this might lead to moral degradation, just as the hookworm disease has brought this about among its victims in the South.

The early Hindu medical writers, Charaka and Susruta, were dominated by the Brahman religion. They recognized three types of intermittents. The quotidian was a disease of the meat, the tertian of the fat, and the quartan of the bones.[8] In an extract from the Sanscrit Susruta, written at least thirteen centuries ago, and translated by Sir Henry Blake, there is a brief enumeration of some of the prominent symptoms of malaria. These symptoms are ascribed to the bites of no less than "twelve different kinds of terrific mosquitoes, with equally terrifying Hindu names. . . . Their bite is as painful as that of serpents and causes diseases resulting from the three humors joined together (wind, bile, phlegm)"; " the bite, as if burnt with caustic or fire, is red, yellow, white, and pink in color, accompanied by fever, pain of the limbs, hair standing on end, pain, vomiting, diarrhœa, thirst, heat, giddiness, yawning, shivering, hiccup, burning sensation, intense cold, etc."[9] The editor who quotes this extract in the *Journal of the A. M. A.* makes the appropriate remark that this " approaches some of the early Greek records of disease in fidelity to fact."

The Arab physician Rhazes (932 A. D.) mentioned intermittent fever, but, as with Galen, his writings on the subject show that he was influenced by the Hippocratic works, nor did he offer anything new. He was also familiar with the works of Charaka and Susruta.

The Chinese of about this period also mention intermittent fever. According to their school, there was a specific drug for each disease, and among the many mineral and vegetable drugs employed by them, arsenic was chosen as the specific for these cases.[8]

Throughout the Middle Ages we find little mention of intermittent fevers except what was borrowed from the ancients, although Celli cites evidence to show that the disease continued to ravage in the Campagna with varying intensity. Paracelsus, who lived in Germany between 1490 and 1541, appears to have had experience with malaria in his practice, and advocates the most grotesque and unique treatment with magic. Mercatus (Luiz de Mercado), who flourished during the last half of the 16th century as Court physician to Philip II and Philip III of Spain, wrote on the subject of intermittent fevers in terms of the humoral vagaries of his time.[7]

In 1624 Adrian Spigelius* of Brussels published an extensive

*Adrian Vanden Spieghel (or Adrian van den S.) was born in Brussels in 1578. He studied at Padua, and practiced in Belgium, later moving to Germany (Moravia). In 1605 he was appointed Professor of Anatomy and Surgery at his alma mater, being the direct successor to Vesalius. This position he held to his death, which occurred at the age of 47 in 1625. He was the first author of an extensive treatise devoted to intermittents. This was

treatise on "Semitertiania."[11] It is the first long work on intermittent fever, comprising four books in all. In the first, he deals with the history from Hippocrates, Celsus, and Galen down to his own time, and then enters into a discussion of the causes. The second book takes up the diagnostics and prognostics, with records of several of his own cases, while the third and fourth are devoted to the treatment. In the elaborate work of this Belgian physician and scholar, who held the position of Professor of Anatomy at Padua, we see a complete reflection of the highest type of medicine in his day. Dominated by the writings of the ancients, and permeated with the extravagant notions regarding the humoral causes of disease, we find him relying on the words of the Greeks and Romans, and to all practical purposes offering nothing new either in the nature or treatment of intermittents. He discusses his own cases without exhibiting any originality, although he does give a clearer picture of a typical malarial paroxysm than any of the earlier medical writers. From him we learn that the disease occurred in Germany as well as in Italy.

Shortly after the death of Spigelius (1625) came the introduction of the cinchona bark into Europe (1632), and with it we have a reawakening of interest in intermittent fever. Here begins a new period in the history of malaria, but before entering into this new development, let us look back at the treatment which was in use up to this time.

Hippocrates in his Aphorisms tells us, "We should purge upward in summer and downward in winter"[3] (IV, 4) — from which we may assume that his intermittents were given hellebore, — "and that we must retrench during paroxysms, for to exhibit food would be injurious. And in all diseases having periodical paroxysms, we must restrict during paroxysms" (I, 11). Plutarch, although not a physician, shows clearly that the Hippocratic directions continued to be followed. Malaria was undoubtedly prevalent in his time, and many of the digestive disturbances of his contemporaries may have been due to manifestations of this disease. In his "Rules for the Care of the Health," we find the following: "Emetics and purges are bad. Dieting is the proper remedy for indigestion. If something must be done, vomiting is the less evil, but violent drugs must

---

published in Frankfurt in 1624, and later included in his "Opera," edited by Van der Linden and published at Amsterdam in 1645. Spigelius was a botanist and internist as well as anatomist, although he apologizes in his introduction to this work for venturing on the domain of others. It is rather surprising that his name is omitted with such regularity by modern authors in connection with the history of malaria. (Bibliography, see Gurlt and Hirsch, Biographisches Lexicon der Hervorragenden Aerzte. Wien u. Leipzig, 1887; also Laird, A. T., Albany Medical Annals. Vol. XXVII. No. 10, p. 726.)

be avoided. Drinking water or fasting for a few days may be tried, or even an injection. Most people take refuge at once in strong purgatives, and suffer for it."[4]

The Romans give us much more explicit directions for treating fevers. They follow Hippocrates to a certain extent in his expectant method during the height of the paroxysm. Celsus recommended blood letting, while Galen, following Celsus in this regard, also mentions scarification, cupping, purgations, and emetics. The basis of Galen's pathology and diagnosis is the proposition that there is no functional disturbance without organic disturbance. The basis of his treatment is the use of contraries or allœopathy. Consequently, to rid the patient of the fever which raged in the veins and vitals, he attempted to cause the patient to throw it off with emetics and purgatives; and to aid in this, he employed scarification, cupping, and venae-section. We find him recommending this last measure especially in those high fevers that occur in the spring and fall.

Just what treatment was used through the Middle Ages is uncertain. The clergy, the quacks, and the old women did more prescribing than they do today. There were seats of medical learning where the works of the ancients were used as text-books, but the profession was not overworked with holders of medical diplomas. Intermittent fevers were said to be due to some disturbance in the proportion of humors, yellow and black bile, phlegm and blood, which had to be rid from the system by the many drastic measures alluded to above. Mercury was the usual purge, as it is now in this disease. In those dark ages it was given to cast off vague humors; in these enlightened days it is also given " to get rid of the bile "[14] or some equally vague injurious substances which are thought to complicate malaria. But we shall come to the subject of mercury later.

Paracelsus was the first to get away from all these humoral vagaries by substituting methods of spiriting away disease. Influenced by the pharmaceutical chemistry of Valentine,* he also broke away from Galenic tradition by introducing the study of pharmaceutics into medicine. His treatment is as follows: — " If the patient, suffering with a quotidian, tertian, or quartan fever, starts to have a paroxysm, put him to bed, cover him up warm, and fill both his hands full of rye. The patient is then to hold the rye in his hands until it gets wet with sweat and until the fever is all gone, after which it is to be taken away and buried under the fence near a grain field."[10] We assume that if

*Basil Valentine, a Thuringian Monk who lived during the fifteenth century, is described by Walsch as " the last of the alchemists, the first of the chemists and the founder of pharmaceutical chemistry " (Walsch, J.J., Old Time Makers of Medicine. N. Y., 1911.)

any of the rye was lost from the hands during the rigor, the doctor was not responsible should a cure not be effected. Anyway the patient must have had his mind taken from his symptoms to a certain extent, which is the basis of "Christian Science" and the "Emmanuel Movement."*

Various charms, such as a blessed amulet, a starved spider, chips of the gallows, etc., were employed by the laity during the sixteenth century to ward off or cure ague.[12] Physicians of rank and learning were by no means loath to employ these measures, as Galen was wont to recommend the wearing of amulets under certain conditions. In this the Galenic doctrines differed from the more rational therapeutics of Hippocrates, who placed dietetics foremost, drugs next, and excluded the supernatural and priestly element from his theory and practice.

Spigelius[11] goes into the treatment in a very thorough manner, covering all the methods advised by the ancients and including a host of the prescriptions used in his own time. He dwells on blood-letting, purgation, and emetics. "The last," he says, "are valuable in benign cases, but should be avoided in the malignant forms." The Pulvis Comitis de Harwick and other preparations of antimony were evidently favorites for internal medication. He also gives indications for the use of clysters, fomentations, and numerous cerates.

To sum up, we may say that, previous to the introduction of cinchona, patients suffering from malaria were subjected to drastic measures of treatment, which, with our present knowledge of this disease, appear to have been anything but helpful. Lucky was the sufferer from intermittent fever who fell into the hands of Paracelsus and his followers, under whose magic, nature was allowed to work unhampered by the crude dosing, bleeding, etc., employed by the learned followers of the ancients, and the advocates of humoral pathology.

---

*We should not be too ready to condemn Paracelsus as a quack. Gordon [13] in his history of medicine uses the following words, "Paracelsus was probably the greatest charlatan and mountebank that ever acquired a celebrity in the profession." The question is whether he was sincere. If his cases of ague did better by holding rye in their hands than when bled, blistered and purged, — and they undoubtedly did, — he was justified in assuming that magic was more efficacious or less injurious than the Galenic methods. We should respect his observations in this respect. Control cases are a very recent development in clinical medicine. Moreover, it was natural that Paracelsus should attempt to explain his success. We must bear in mind that many explanations of our modern therapeutic successes are annually shattered by research experiments.

REFERENCES

1. Deaderick, W. H. A Practical Study of Malaria, Phil. 1911. p 18–23.
2. Hippocrates. The Genuine Works of, Translated by Francis Adams. The Epidemics, Sec. III, 3. New York, 1886, Vol. 1.
3. Idem: Vol. II. Aphorisms, Section IV, 30.
4. Jones, W. H. S. Malaria and History, Annals of Tropical Medicine and Parasitology. Vol. 1, No. 4, 1908, p. 529.
   Malaria and Greek History. Manchester, 1909.
5. Puschmann, Th. Handbuch der Geschichte der Medizin. Edited by Neuberger and Pagel. Jena, 1902, Vol. 1, p. 296.
6. Celli, A. Die Malaria, translated by A. F. Celli, from the 4th Italian Edition. Berlin, 1913. pp. 57, 266.
7. Mannaberg, J. Die Malaria Krankheiten, in Nothnagel's Specielle Pathologie and Therapie. Wien, 1899. Bd. I.
8. Neuburger, M. Geschichte der Medicin. Stuttgart, 1906, Bd. 1.
9. Journal A. M A., Nov. 9, 1912. p. 1733–4.
10. Paracelsus, T. Kräutermann, V. Der Thüringische Theophrastus Paracelsus, Wunder-und Kräuterdocter, III Ed., Leipzig, 1730.
11. Spigelius, Adrian. Opera quae extant omnia. Ex recensione Joh. Antonidae van der Linden. De Semitertiana. Amsterdam, 1645.
12. Kahn, M. Vulgar Specifics and Therapic Superstitions. Popular Science Monthly, 1913. Vol. 83, No. 1, p. 89.
13. Gordon, D. A. The History of Medicine. N. Y., 1910. Vol. 1, p. 209.
14. Journal A. M. A. October 26, 1912, p. 1573.

THE DISCOVERY OF THE CINCHONA BARK

From the Pharmacological Department of the Evans Memorial, Boston

By Conrad Wesselhoeft, 2nd M.D., Boston

The first great epoch-making event in the history of malaria was the discovery of the medicinal value of cinchona bark, from which the alkaloid quinin is derived. This tree is indigenous to South America, where it grows in the moist soil along the slopes of the mountain ranges all the way from Columbia to Bolivia. The original bark came from the cinchona forests[5] of the old Peruvian Empire, which, at the time of the Spanish invasion by Pizarro in 1527, extended from the river Ancasmayu north of Quito to the river Maule in the south of Chile. Thus the term "Peruvian Bark" refers rather to the ancient Empire of the Incas than to the present Republic of Peru. The discovery of the remedial virtues of this famous bark is so entangled with conflicting traditions and inconsistent evidence that I cannot refrain from a humble attempt to unravel the threads. The problem reduces itself to the question whether the natives of Peru taught the value of this remedy to the Spanish invaders, or whether the Jesuits who accompanied these ruthless conquerors found out its virtues for themselves.

The earliest record which we have concerning our subject is that contained in the Anastasis Corticis Peruviae, written by Sebastian Badus and published in Genoa in 1663. The author of this work obtained his information from the manuscript letter of a certain Antonius Bollus, a Genoese merchant who had visited Peru and traded with the Indians.

Unfortunately the date of Bollus' manuscript is not given, but from it we learn that the bark had been known to the Indians of South America "for a long time," but that they had always tried to keep it a secret from the Spaniards. The secret however, gradually leaked out, but became known to only a few Europeans. One of these was the Corregidor of Loxa. The bark, however, did not become generally known until it was used in the case of the Countess of Chincon, then vice-queen of Peru. This occurred, according to Bollus, "thirty to forty years" previous to his writing the manuscript, thus placing the date roughly between 1620 and 1630. The story of the cure of the countess as derived from this manuscript of Bollus is briefly as follows*: —

It happened that in the city of Lima, which is the metropolis of the Peruvian kingdom, the wife of the vice-roy, who was at that time Count of Cinchon — (those are in error who say it was the Marquis of Mancera), — became ill of a tertian fever, a serious and dangerous illness in that region. The rumor of her illness, as is the case with distinguished persons, spread at once through the city and the neighborhood, and even got as far as Loxa. A Spaniard, then holding the governorship of that locality, heard of the illness of the countess, and wrote to the vice-roy in cypher that he, the governor, had a certain remedy,

---

*Footnote — The above is a somewhat abbreviated translation of the following Latin which we admit has offered certain difficulties:

Aegrotabat forte in Civitate Limensi, quae est Metropolis Regni Peruviae. Uxor Proregis, qui tum temporis erat Comtessa del Cinchon (falluntur qui Marchionem de Mancera fuisse dicunt) eratque moribus eius tertiana febris quae febris in ea Regione nedum inquilina est, sed immitis, et periculi plena. Rumor huius aegritudinis (ut sit de Magnatibus) per urbem statim vulgatus ad finitima quaeque loca peruasit, Loxamque usque tenuit. Fluxerint, puto, ab eo tempore, ad id temporis, triginta, vel quadraginti anni.

Praefecturam tum agebat eo loci Hispanus homo, qui de Comitissae aegritudine certior factus, deliberanit per Litteras maritum Proregem admorere, quod postea fecit, in arcanis scribens sibi esse Remedium quod dam, quo si uti voluisset Prorex, sponsor indubius ei erat, conualituram eius uxorem, febrique onmi liberanda. Admonuit de hoc nuncio Uxorem maritus, quae statim annuit, (ut facile credimus, quae nobis profutura speramus) sine mora iussit acciri hominem, a quo suppelias sperabat, iussusque est ideo, ut nil tempori dato, Limam se statim conferret, quod ipse peregit; coramque admissus, quae scriptis dixerat, verbisquoque confirmanit, rogans Proreginam, ut bono esset animo, et fidenti, certoque sciret se se conualituram esse, siquidem suo consilio stetisset. Quibus auditis, deliberatum est de sumendo Remedio; quod sumpsit, et mirum dictu, dicto citius conualuit, stupentibus omnibus."[2]

which if used would most certainly free the vice-queen of her fever. The vice-roy told his wife of the message, and she at once consented (for we easily believe what we hope will benefit us). The governor was ordered to betake himself immediately to Lima. This he did, and, having been admitted to an audience, confirmed what he said in his letter, and bade the vice-queen be of good cheer and be confident of her recovery if she would but follow his advice. When these words were heard, they deliberated about taking the remedy, which she took, and wonderful to relate, got well quicker than can be told, to the surprise of everyone.

The next account of the bark occurs in an old manuscript found by Condamine in the College of Jesuits of Saint Paul at Lima, which appears to have been written in 1696 by one Don Diego Herrera. This asserts that the bark was known to the natives, and used by them as a remedy for intermittent fever.[20]

Condamine, a French botanist, who travelled from Quito to Loxa in 1737, and who devoted much attention to cinchona, credits the natives with the earliest knowledge of the medicinal virtues of Peruvian bark. He learned that the Indians employed the bark in the form of a watery infusion,[4] and he attributed the delay in the use of the remedy by the Spaniards to the hatred which he observed still existed among the natives.*

Joseph de Jussieu,[7] a physician, botanist and mathematician, accompanied Condamine on the journey to Loxa. He seems to have been just as much interested in the question as his companion, and to have arrived at the same conclusion through somewhat different channels. He informs us that it is certain that the Indians about Malacotas were the first to learn the

---

*Footnote — " I'usage du Quinquina était connu des Américains avant qu'il le fut des Espagnols; et suivant la lettre manuscrite d'Antoine Bollus — les Naturels du pays ont longtemps caché ce specifique aux Espagnols, ce qui est tres croyable, vu l'antipathie qu'ils ont encore aujourd'hui pour les conquérants." de la Condamine; Histoire de l'Academie Royale des Sciences, 1738, p. 233.

The history of Peru abounds with stories of the cruelties inflicted by the Spaniards during their conquest of the Peruvian Empire. The following incident of Pizarro's invasion serves to characterize this cruelty, which was not only permitted but encouraged by the Jesuits. Moreover it accounts for the constant mention by authors of the hatred of the natives for their conquerors, which plays an important role in the discovery of the cinchona by the Europeans. Pizarro with his 160 followers arranged an audience with the Inca chief Atahualpa at Cajamarca. The Inca appeared on a golden chair surrounded by 8,000 attendants. Friar Vincente Valverde stepped forward presenting the chief with a bible, which he explained through an interpreter was the word of God. The Inca held the book to his ear, and then expressed his disbelief in the statement. At this the priest immediately cried, " To arms, Christians! these infidel dogs have insulted the minister of your Redeemer. The word of God is thrown under foot. Revenge! Revenge!" Whereupon the Spaniards, ready for this cue, began a slaughter of the innocent and unsuspecting natives."

virtues and efficacy of the cinchona.* Unfortunately his writings on the subject have never been published,** so that our information is derived from references to him by his fellow travellers and from a quotation of his manuscript by Weddell. In this letter Jussieu tells the story of a Jesuit who, being seized with an intermittent fever in the vicinity of Malacotas, excited the compassion of an Indian chief, who restored the health of the sufferer by means of a decoction of cinchona bark. This remarkable cure caused the Jesuit to obtain from the Indians a large supply of the bark, which he brought with him back to his fatherland, where it came to be known as Jesuits' Powder.*** Markham,[13] in referring to this episode, gives the date of the cure of the Jesuit as 1600.

---

*Certium est qui prius notitiam virtutis et efficaciae hujus arboris habuere fuisse Indos vici Malacatos. His, cum, ob calidum simul ac humidum et inconstantiam temperamenti ac inclementiam, febribus intermittentibus maxime essent obnoxi, remedium tam importuni morbi quaesivisse necessum fuit; et, cum, regnantibus Ingas, fuerunt Indi Botanices periti et virtutem herbarum indignatores acerrimi, facta variarum plantarum experientia, tandem Kinakina corticem ultimum ac fere unicum intermittentium febrium specificium remedium invenere." — Quotation of Jussieu's MS. in Histoire Naturelle des Quinquinas. Weddell, H. A., Paris 1849, p. 14.

**The loss of his valuable collections made during 15 years in South America caused Jussieu to go insane, in which state he returned to France in 1771. A work of Jussieu entitled " Reflextions sur deux espéces de Quinquina découvertes nouvellement aux environs de Santa Fe, dans l'Amerique Méridionale," was published in l'Histoire de la Sociéte de Médecins, Paris, 1779, but this refers to two species of trees no longer included in the genus of cinchona. Ruiz named them Quinquino. From one of them we get the syrup of Tulu. [17]

***Forte fortuna, tum unus ex societate Jesu iter habuerat per vicum Malacatos, is laborans febri intermittente, misericordia commotus Indorum dux, Cacique vocant, cognito R. P. morbo: Sine paululum, inquit, et ad sanitatem perfectam te restituam. Hoc dicto, exilit ad montem Indus, corticem dictum attulit et decoctum ipsius patri propinavit. Sanatus (misprinted senatus) et ad perfectam sanitatem restitutus Jesuita, persquisivit quod genus medicamenti applicaverat Indus. Cognito cortice, hujus non exiquam quantitatem collexit Jesuita, et, ad patriam redux, eadem ac in Peruviana regione pollere expertus est, inde notus primo fuit cortex Pulveris jesuitici nomine; deinde Pulveris cardinalitii; et, cum simul inter varia fructum et resinarum specimina, fructus arboris Quinaquina attulerat jesuita, fructum, arboris fugandis febribus intermittentibus existimarunt; nec jesuita contradicere poterat, cum arborem nec viderat nec cognoverat; solummodo corticem attulerat; valeatque Quinquina in febribus fungandis non exigua virtute, Quina-Quina Kina-Kina vocarunt per antonomasiam. Itaque, cum sit Quina-Quina arbor toto genere diversa a cortice Peruviano ut videbimus, vel scribatur Kina-Kina usus receptum, ut destinguatur a Quina-Quina; aut melius, cortex febrifugus ac arbor Maurepasia ut cognoscat posteritas quantum Botanices et laeta scientia illustissimo comiti de Maurepas debent.

Jussieu's MS. quoted by Weddell in Histoire Naturelle des Quinquinas, Paris, 1849, p. 15.

Sir Clements R. Markham, [13] in referring to this episode gives the date of the cure of the Jesuit as 1600, but he is unable to give me the source of this date. His only reference to the subject is the above which we quote in full.

Antoine de Ulloa[19] was a member of the same expedition with Condamine and Jussieu. Ulloa, however, made no personal investigation into the cinchona bark, but derived his information chiefly from his travelling companion, Jussieu. The latter, he says, was delegated to make a special study of this remedy, a mission which he carried out in all its details, including an investigation into the discovery of its febrifuge powers. Accordingly, we should lay especial stress on the opinion of Jussieu, who, as we have seen, came to the conclusion that the natives were familiar with the remedy and taught the method of employing it in intermittent fever to the Spaniards.*

The next author to give us an account of the subject was Don Hipolito Ruiz, who travelled in Peru in 1778. From the result of his inquiries he arrived at the conclusion that the Indians about Loxa knew of the virtues of the bark and employed it in intermittent fevers many years before the Spaniards conquered the country.** His version of the story of the cure of the countess is the most complete on record. The following is a literal translation of the Ruiz's Spanish found in his Quinologia which was published at Madrid in 1792:

"During my stay in Peru I heard at different times from various interested and trustworthy persons who had a very reliable tradition, that in the year 1636 an Indian of the province of Loxa told the Corregidor, then suffering from intermittents, the virtue of quinaquina. He, desirous of recovering his health, asked the Indian for the said bark, and inquired from him the method of using it; which was to make a watery infusion with a fixed arbitrary quantity and to drink of this infusion as the Indians generally do with all their vegetable medicines. Accordingly the Corregidor did as he was instructed, and by this means he became free of the fever, and by continuing the use of the medicine he finally attained the restoration of his health. The same persons assured me in like manner that in the year 1638 the Corregidor being informed of the fact that the vice-queen of Peru was suffering from a tertian fever, he wrote to the vice-king, Count of Chinchon, and sent him a portion of the said bark, informing him of its efficacy and admirable virtue, and the method of employing the same; adding that it would almost certainly cure his wife of the tertian. The viceroy, being of the opinion that there was nobody better than the Corregidor to administer the remedy, summoned him to Lima, and ordered him to make some experiments with it in the hospitals with other patients suffering from tertians

---

*Ulloa states that Jussieu introduced the remedy among many of the Peruvians, who although familiar with its febrifuge virtues, appeared to be afraid to use it until he had demonstrated to their satisfaction that it was not a dangerous drug.[19]

**"Es probable que los Indios de la Provincia de Loxa, tuvieron nociones de la virtue de la Quina o Cascarilla, y puesto en practica el uso contra les fiebres intermitentes muchos anos antes que los Espanoles conquistasen el Peru;...." Quinologia, p. 1. See also Delondre, A. and Bouchardat, A. Quinologie, Paris, 1854.

before proceeding to treat the vicountess. Accordingly, in the presence of doctors of the hospitals, the Corregidor carried out the viceroy's orders, and in a few days all the patients who took the remedy found themselves free of their fevers. With such manifest and auspicious proofs, the viceroy determined to give it to his consort, who, desirous of a recovery, did not refuse to partake of it. The result was that in a few days she was free of the fever, and had recovered her health which she had come to despair of during the last six months."[16]

One who stands out prominently in this discussion is Alexander von Humboldt, whose wide range of knowledge and keen powers of observation lend weight to his opinion. In his *Cinchona Forests of South America*,[6] published in 1821, he expresses some doubt as to the details of the story regarding the countess, expecially as to Cannizares' obtaining his information from the Indians. Humboldt himself never saw the bark used as a medicine by the natives,* except by those employed as bark peelers around Malacotas. Consequently, on the ground that primitive nations adhere with unalterable pertinacity to their customs, their food, and their nostrums, he infers that the natives of South America were not familiar with the febrifuge properties of the cinchona at the time of the Spanish invasion.

Humboldt concludes his remarks with the following timely information:

"In Loxa there is no document to be found which can elucidate the history of the discovery of the Cinchona; an old tradition, however, is current there, that the Jesuits at the felling of the wood had distinguished, according to the custom of the country, the different kinds of trees by chewing their barks, and that on such occasions they had taken notice of the considerable bitterness of the Cinchona. There being always medical practitioners among the missionaries, it is said they had tried an infusion of the Cinchona in the tertian ague, a complaint which is very common in that part of the country."[6]

Tschudi[16] in his *Travels in Peru* (1847) observes that the inhabitants of the Peruvian forests drink an infusion of the green bark as a remedy for intermittent fever.** Spence informs us that the Cascarillas of Ecuador use the bark solely for dyeing purposes.***

---

*"The indians cure themselves (of ague) by lemonades, by the oleaginous aromatic peel of the small green wild lemon, by infusions of Scoparia dulcis, and by strong coffee"; also, by "an excellent febrifuge, the fruit of a new species of Uvaris, which we have described by the name of Uvaria febrifuga." Cinchona Forests of South America, p. 22.

**"I have found it in many cases much more efficacious than the dried kind, for less than half the usual dose produces, in a short time, convalescence, and the patient is secure against returning febrile attacks." Tschudi, Travels in Peru. N. Y., 1847, p. 280.

***This information is derived from the U. S. Dispensatory, 19th Ed. Phil. 1907, not from the Mythologies of Mexico and Peru, by Lewis Spence,

Markham, the eminent historian and geographer, seems to have changed his mind more than once in regard to the discovery. In his *Memoir*[12] (1874), he gives us a version of the cure of the countess, similar in many respects to the story told by Ruiz, but less detailed. Cannizares, he tells us, sent a parcel of the bark to Dr. Don Juan de Vega, who employed it successfully on the countess. It is improbable, he says, that Cannizares learned of the bark from the natives, for he is "convinced that the remedy was unknown to the Indians in the time of Yncas. It is mentioned neither by the Ynca Garcilasso nor by Acosta, in their lists of Indian medicines, nor is it to be found in the wallets of itinerant native doctors, whose materia medica has been handed down from father to son for centuries."[12] He then goes on to remark: "It appears, however, to have been known to the Indians around Loxa, a town in the Andes, about 230 miles south of Quito," citing as evidence the tradition we have already mentioned of the cure of the Jesuit at Malacotas in 1600 by bark given him by the Indians, and, strangely enough, the very part of the tradition which he doubts, namely, that in 1636 an Indian of Malacotas revealed the secret virtues of the bark to the Corregidor Cannizares. Thus Markham appears to reflect doubt on his own contention that the remedy was unknown to the Incas.

In *A History of Peru*,[14] published in 1892, Markham gives us a different version derived from the Jesuit Saldamando, whose *Los Antiquos Jesuitas del Peru* was published at Lima in 1882:—

"A memorable event took place under the government of this viceroy, conferring lasting benefit on the whole human race. The discovery of the febrifuge virtue of the quinine yielding Chinchona trees was due to the Jesuits. The second wife of the viceroy, Donna Francisca Henriquez de Ribera, accompanied him to Peru. In 1628* she was attacked by a tertian fever. Her physician, Juan de Vega, was unable to cure her. About the same time an Indian of Uritusinga near Loxa, in the government of Quito, had given some fever-curing bark to a Jesuit missionary. He sent some of it to Dr. Diego de Torres Vasquez, who was rector of the Jesuit college at Lima, and confessor to the viceroy. Torres Vasquez cured the vice-queen by administering doses of the bark. The countess left Peru in 1639, but died in Cartigina on her passage home. The remedy was long known as countess's bark, and Jesuits' bark, and Linnæus gave the name Chinchona to the genus

---

London, 1907, which we consulted for verification. It is interesting to note that Ulloa in his Voyage de l'Amerique meridionale (Amsterdam 1752) remarks that it is held by some that the Indians thought that the Europeans exported the bark from Peru for dyeing purposes, and that "they actually made some trials of its effects in this way."

*Sir Clements Markham has informed me that this date is an error. It should be, according to Saldamando, "a year after her arrival in 1629."[17]

of plants which produce it. The bark derived from Uritusinga and the forests near Loxa was for many years the only kind known to commerce, being exported from the port of Payta. It was known as crown bark. But various species of this precious tree are found throughout the eastern cordilla of the Andes for a distance of 2,000 miles. The discovery of Peruvian or Jesuit's bark conferred an inestimable blessing on the human race, and renders the Vice-royalty of the Count of Chinchon forever memorable."[14]

The Incas of Peru,[15] by Markham, published in 1910, contains an account of the Inca physicians. The author pays tribute to the medical skill of the Amautas, the name given to the caste of learned men and scribes of the court. He remarks that the cinchona was certainly used locally as a febrifuge, and that the bark was known and used in the province of Loxa as Quina-quina.*

Having taken up the leading references in the order of their publication, let us now turn to a consideration of certain features of interest connected with the discovery of the remedial virtues of cinchona.

In the first place it is only fitting that we should mention two traditions current among the natives of Peru. One, reported by Condamine in 1738, was that a mountain lion suffering with an ague was seen to chew the bark and thereby effect a cure, thus directing the attention of the natives to its curative virtues. The other, reported by Lambert in 1797, was that some cinchona trees were blown over, and lay in a pool, the water of which became so bitter that none could drink it. One of the inhabitants of the neighborhood, however, being seized with a violent paroxysm of intermittent fever, was forced to quench his thirst with the water. His prompt recovery drew the attention of the Indians to the curative property of cinchona.

Secondly we can well afford to devote a little space to the famous countess after whom the cinchona tree was named. Bollus informs us that after her notable recovery the countess was approached by the authorities of the state and asked that she give her endorsement, and that she use her influence to

*" The Amautas also had an extensive knowledge of the use of medicinal herbs and roots, and their advances in surgery are attested by the discovery of skulls at Yucay and elsewhere on which the trepanning operation had been performed. They used infusions of several herbs as purgatives and stomachics, as well as the root of a convolvulus; other herbs were used, for colds and pulmonary complaints, and salves were used, consisting of leaves and seeds of certain plants dried, pounded, and mixed with lard, some for wounds, others for rheumatism. For fevers they used several tonics, including a gentian. The chinchona plant was certainly used locally as a febrifuge but not, I think, universally. In the Loxa province the bark was used, and known as Quina-quina. In the forests of Caravaya an infusion of the Chinchona flowers was given for ague, and called yara chucchu. The name calisaya, the species richest in quinine, is derived from two Quicha words: Cali, strong, and sayay, to stand." The Incas of Peru, Markham, C. R., p. 156–157.

make it known, in order that that medicine which had so wonderfully brought about her recovery might be of similar benefit to others suffering with that same kind of fever.[1] The countess appears to have been willing to do this. Furthermore, so greatly did she treasure the bark that she collected a goodly supply. On her leaving Lima in 1639, she left part of this with her Jesuit advisers, and the rest she carried back to Spain in 1640, as the story goes, to distribute it there among the sick on her lord's estate.[12] According to Markham, her charity is evidenced by local traditions in and about Chinchon* of the cures effected by the Countess' Powder (Pulvis Comtissae), by which name the bark came to be known.[12] Whether she and her husband brought home a very large amount, or whether there were few cases of fever about Chinchon, or whether the Spaniards refused to take the drug, the fact is clear, according to a publication of Sir George Baker[3] in 1785, that a considerable quantity of the substance remained in the hands of the family many years after the count and countess were dead.**

Condamine informs us that Dr. Don Juan de Vega, physician to the countess, followed his patient to Spain a short time later, bringing with him a supply of the bark, which he sold at Seville for 100 reals a pound.

An interesting point comes up here in regard to the spelling of cinchona. Condamine, who was the first naturalist to describe the tree, sent specimens to Linnaeus, the great Swedish botanist. Linnaeus wished to name the tree after the famous countess, but he mistook the spelling of her title. Thus he gave the name Cinchona, Quinquina Condamin, to this new species, which appears for the first time in his *Genera Plantarum*, published in 1742. Markham, in his "Memoir of the Lady Ana de Osorio, Countess of Chincon and Vice-queen of Peru," suggests that Linnaeus strove to correct this mistake only to fall into a graver error, because in the edition published in 1767 at Vienna, the name reads "Cinhona, Quinquina Condamin." This must have been the fault of the printer, as we find the old spelling Cinchona on page 69, and in the index of this same edition. Had Linnaeus attempted to correct his original error he undoubtedly would have changed the original spelling on page 69 and in the index, — the only other two places where the name is used. We are inclined to trace this mistake to the earliest publication on cinchona which we have, namely, that of Se-

*The Castle of Chinchon lies near Madrid.

**The story of the cure of the countess has been made the basis of a poem by Walekenaer in his "Vie de la Fontaine," and it also serves as a background for a novel, "Zuma," written by Madame de Genlis. The latter has disregarded both tradition and fact for the sake of fiction.

bastian Badus where he refers to the lady as the "Comtessa del Cinchon." In his *Memoir*, Markham makes the following fervid plea for the correction of Linnaeus's error:

> "I plead for the correct spelling, as tribute of respect to a great historical family, now passed away; as a right which may justly be claimed by the people of Chinchon; and as the only way by which the memory may be preserved of her who made known to the world the inestimable value of quinquina bark, who was thus a benefactor to mankind, but whose monument has been destroyed, whose place knows her descendants no more, the illustrious and beautiful lady, Ana de Osorio, fourth Countess of Chinchon."*

Though the Countess of Chinchon has generally had the credit of introducing the bark into Europe, there seems to be some doubt as to whether she ever returned from Peru to Spain. Indeed, her very identity is in dispute. We have seen that Sir Clements R. Markham, in 1874, declared that the person meant was the beautiful Ana de Osorio, but that more recently (in 1892) he follows Saldamando and identifies the countess with Dona Francisca Henriquez de Ribera, who died at Cartagena** on her way to Spain, in 1639. Linnaeus's original spelling has remained in botanical and pharmacological literature up to the present day, and its acceptance by the Council of Ghent gives it the stamp of final authority. The family of Chinchon has long been extinct, and to attempt a change at this date would only cause trouble and confusion. Moreover, it appears from evidence presented in this and the following chapter, that the countess, whoever she may have been, was by no means the first to "make known to the world the inestimable value of quinquina bark," if, indeed, she had much of anything to do with the matter.

Now that we have passed in review all the evidence available, let us see if it throws any light on the discovery of the most reliable and one of the most valuable drugs in medicine.

In the first place, we have the legends of the natives, which reflect credit on the intuitive powers of these primitive peoples of South America, and make no mention of Europeans. It is, of course, possible that such traditions could have come into existence even though the Spaniards introduced the bark as a remedy among the natives; but it is at least improbable.

In the second place, we have two traditions; one regarding the cure of a Jesuit at Malacotas in 1600 by bark given him by a native — the earliest cure of a white man mentioned; — the

---

*Lady Ana de Osorio, widow of the Marquis of Salinas, married in 1621 Don Luis Geronimo Fernandez de Cabrera y Bobadilla, fourth Count of Chinchon, viceroy of Peru from 1629 to 1639.

**Cartagena is a flourishing city in the present Republic of Columbia.

other of the cure of the Corregidor Cannizares, who also obtained the bark from an Indian of Malacotas. Then we have the statement by Humboldt[6] that only the Indians about Malacotas had any confidence in the curative value of cinchona bark. Humboldt considers that the bark peelers of Malacotas learned the virtues of the bark from their white employers. It is rather striking that the native bark-peelers of Loxa and Guanccabamba had no confidence in this remedy at the time of Humboldt's expedition and would die rather than have recourse to it.[6] As emphasized by this scientist, primitive peoples adhere with great pertinacity to their traditions; yet it must also be remembered that neighboring tribes often have quite different customs and nostrums. Consequently, we cannot but be impressed by the relation of these two traditions to the observation of Humboldt. This relation suggests the possibility that the Indians about Malacotas were the only ones who ever knew of this remedy, and that they alone, therefore, handed down the traditions of its usefulness.

In the third place, the earlier travelers and scientists who have written on Peru voice the opinion that the remedial virtues of cinchona in intermittent fevers were known to the natives at the time of the Spanish invasion. The earliest mention of our subject is made by a Genoese merchant, Antonius Bollus, who traded in Peru, and whose manuscript letter is referred to in the Anastasis Corticis Peruviae of Sebastian Badus, published in Genoa in 1663. According to this letter, the natives of Peru kept the remedy a secret from the Spaniards for many years; thus implying that the Indians were the original discoverers of its virtues, and that they later imparted their knowledge to the Spaniards. Condamine, Jussieu, and Ruiz studied the subject during their stay in Peru, and all found sufficient evidence to convince them that the Indians were the original discoverers of the value of the bark as a febrifuge. Humboldt alone stands as the consistent champion for the theory that the bark was unknown to the Peruvians at the time of the Spanish invasion, basing his argument on his own observation that the bark was not generally used as a febrifuge by the natives at the time of his expedition. We have already discussed the significance of the fact that the bark was used locally about Malacotas, and we need only add that other travelers have seen the Indians employing various infusions of cinchona in intermittent fevers, and that Markham is of the opinion that the febrifuge powers of the bark were known to the Incas about Loxa.

In the fourth place, the etymology of the names of the cinchona among the Indians is more than suggestive of the natives' valuation of this remedy. Jussieu informs us that they call it

yara-chucchu, or cava-chucchu, *yara* meaning tree, *cava* meaning bark and *chucchu* being their word for intermittent fever. Thus they called the cinchona the intermittent fever tree, and its bark the intermittent fever bark.* As to the derivation of the term quina-quina, the word *quina-ai*, according to Condamine, designated a kind of cloak or covering of the Indians, and was applied metaphorically to the bark of a tree. The repetition of the word in quina-quina serves as a superlative, thus implying a very special bark or the best of bark.**

Finally, a word as to the probability of the Jesuits being the original discoverers of the remedy. The tradition recorded by Humboldt to the effect that the Jesuits were in the habit of chewing the barks at the felling of the trees, and were thus attracted to the bitterness of the cinchona, and that as a result they tried it as a remedy in ague, is almost as great a feat of imagination as the tradition regarding the mountain lion. In the first place, many of the barks of South American trees are intensely bitter; secondly, the act of "chewing" some of these barks is sufficient to produce considerable discomfort, more especially the cinchona bark, and anyone who did much chewing (which we are told was their way of tasting the bark in the forest), would probably give up the habit of chewing barks or he would give up the habit of felling trees altogether. Thirdly, the idea that these Jesuits should experiment with this bark in the numerous fevers which occur about Loxa and so promptly arrive at the conclusion that its efficacy lay in cases of ague is granting too much sagacity to the members of that ecclesiastical order who were wise enough to recognize a good thing when it was pointed out to them, and to introduce the same into Europe. It is indeed worthy of note that Jussieu, Condamine, and Ruiz did not hear of this tradition, in spite of the fact that they made very special inquiries into the traditions connected with the discovery. Moreover, it is our opinion that, had the Jesuits discovered the remedy for themselves, they, being the scribes, would most certainly have given themselves the credit; and this religious order would have honored the man who made the discovery by handing down his name to posterity, to say nothing of making him a saint. The only name of a Jesuit mentioned in regard to the discovery is that of Torres Vasquez, of Lima, who, we are told, obtained the bark from the natives.

---

*"Nec alio nomine apud illos arbor nota quam ab effectu. Vocarunt yarachucchu, cava-chucchu. Yara idem est ac arbor; cava idem est ac cortex; chucchu: horripilatio, frigus, febris horripilatio; quasi diceres arbor febrium intermittentium." Joseph de Jussieu. MS. quoted by Weddell.

**I am informed by Sir Clements Markham that this reduplication is used in all medicinal barks.

We may state in conclusion that the circumstantial evidence from which we must judge favors the theory that the Indians about Malacotas were the first to discover the value of the cinchona bark in malaria, and that owing to the cruel methods employed in the subjection of the Peruvians they did not impart their knowledge of this invaluable remedy to the Spaniards until the beginning of the seventeenth century.

REFERENCES

1. Delongre, A. and Bouchardat, A. — Quinologie, Paris, 1854, see map.
2. Badus, Sebastian, Anastasis Corticis Peruviae, seu Chinae Chinae defensio. Genoa, 1663, p. 16, 22, 23.
3. Weddell, Hugh Algernon. Histoire Naturelle des Quinquinas. Paris, 1849. pp. 1, 2 and 15.
4. Condamine, C. M. de la, Sur l'arbre du Quinquina. Histoire de l'Academie Royale des Sciences, 1738, p. 226.
5. Hutchinson, Thomas J., Two Years in Peru. London, 1873, Vol. II, pp. 179, 182.
6. Jussieu, Joseph de — Ms quoted by Weddell in Histoire Naturelle des Quinquina. S. Paris, 1849, p. 15.
7. Weddell, Hugh Algernon. Histoire Naturelle des Quinquinas. Paris, 1849. pp. 1, 2 and 15.
8. Ulloa, don Antoine de, Voyage historique de l'Amerique Meridionale. Amsterdam and Leipzig, 1752, pp. 275, 276.
9. Ruiz, don Hipolito, — Quinologia, Madrid, 1792, p. 2.
10. Ruiz, don Hipolito, — Description of the Tree Quinquino. In an illustration of the Genus Cinchona, edited by Lambert, A. B. London, 1821, p. 94.
11. Humboldt, Alexander von. — The Cinchona Forests of South America, in an Illustration of the Genus Cinchona, edited by Lambert, A. B. London, 1821, pp. 20, 21.
12. Tschudi, Jotham Jacob von., Travels in Peru. New York, 1847. pp. 279, 280.
13. Markham, Sir Clements R., A Memoir of the Lady Ana de Osorio, Countess of Chinchon. London, 1874. pp. 40, 41 and 73–74.
14. Markham, Sir Clements R., Chinchona or Peruvian Bark, London, 1880, p. 6.
15. Markham, Sir Clements R., A History of Peru. Chicago, 1892, p. 176.
16. Markham, Sir Clements R., The Incas of Peru. New York, 1910, p 157.
17. Saldamando, Enrique Torris, Los Antiguos Jesuitas del Peru. Lima, 1882. p. 181.
18. Lambert, Alymer Bourke. A Description of the Genus Cinchona. London 1797. pp. 39, 40.
19. Baker, Sir George, Observations on the late intermittent fevers; to which is added a short history of the Peruvian Bark. Transactions of the College of Physicians, London, 178 , Vol. III, p. 175.
20. Linnaeus, Carolus, Genera Plantarum. Batavia, 1742, p. 527.
21. Linnaeus, Carolus, Genera Plantarum. Vienna, 1767. pp. 69 and 91.

THE INTRODUCTION AND EARLY USE OF CINCHONA BARK

From the Pharmacological Department of the Evans Memorial, Boston

By Conrad Wesselhoeft, 2nd, M.D., Boston

The date commonly assigned to the introduction of cinchona bark into Europe is that of the return of the count and countess of Chinchon from South America in 1640. It appears, however, from a letter written in 1663 by a Spanish physician, D. Joseph Villerobel,[1a] that this bark was first brought to Spain in 1632, and that it was administered with success to a certain ecclesiastic of Alcala in the year 1639. The veracity of Villerobel would seem to be borne out by the traditions, — already referred to, — that a Jesuit was cured of a fever by means of the bark at Malacotas, in South America, in 1600.[2] It might be argued that de Vega could only have obtained the high price he did at Seville if the therapeutic virtues of the bark had been known by previous experience with it in that country. This is suggested by the proximity of Seville to Alcala.

Like all discoveries in the field of medicine, the Peruvian bark was coldly received by the profession at large. Coming as it did from so distant a part of the world, and imported by the laity and clergy as a "cure," it is not surprising that the learned should have sneered at this exotic drug. The dawn of clinical research in therapeutics was still far distant. The medical profession clung to the doctrines of the ancients, venturing upon new methods only when they originated from their own ranks. Consequently when this new remedy gained a reputation for its febrifuge properties, the enemies of novelty promptly sought passages among the ancient authors to confirm and encourage their opposition; while those who ventured to patronize it likewise scanned their volumes of classics for some Greek quotation which could be construed as evidence in their favor.

The coldness with which the bark was received by the Spanish physicians, however, was counteracted by the zealous activity displayed in its behalf by the Jesuits. This religious order received shipments from their brethren in South America, supported and extolled its virtues with all the weight of their powerful influence, and dispensed it at no small pecuniary profit to their institutions.[3] In 1643 John de Lugo, a Spanish Jesuit, was promoted to the rank of Cardinal. Through the diligence of this dignitary, Pope Innocent X was persuaded to order an investigation relative to the harmlessness and curative virtues of the new drug. As a result of this inquiry, — the credit of which belongs undeniably to the Jesuit Order, — the Pope's first physi-

cian reported that the bark was "both innocent and salutary." With such a recommendation from the highest medical authority, all opposition from the profession ceased in the domain of the pontiff, and Rome became the emporium for cinchona. In 1650 the Father Provincial of the Jesuits returned from South America with a large supply, which he dealt out to his brethren at a convention held in Rome. These returned with their parcels of the febrifuge to dispense it in their respective countries.

The Jesuits' Powder (Pulvis Jesuiticus, Pulvis Patrum or Pulvis Cardinalis) was not long to enjoy such favor, for it so happened that in 1652, the well-known Leopold, Archduke of Austria and Governor of the Low Countries, fell ill of a "double quartan fever," for which the bark was administered according to the Schedula Romana.* This important personage seems to have experienced relief for over thirty days, at the end of which time he suffered a relapse, which so disappointed him that he directed his physician, Chiefletius, to report the case with the idea of discouraging the use of the drug. Chiefletius cheerfully acquiesced, publishing his book in 1653. He attacks the extolled virtues of this remedy by weight of argument and experience; maintaining that it had proved a failure in Brussels, and that in Naples, Florence, Madrid, Vienna, and Paris complaints as to its inefficacy and even deleterious effects were being made. The medical profession seems to have welcomed this work with a sense of relief. It was reprinted in Paris where it met with a cordial reception.

Strangely enough, the answer to Chiefletius was not to be made by the famous doctors of the prelate's court. Cardinal de Lugo saw fit, for some reason, to entrust this task to Fabra, a French Jesuit and philosophical writer. Under the assumed name of Antimus Conygius this author affirmed that, in the year 1653, thousands of patients had been cured in Rome by means of the Jesuits' Powder, adding much in the way of speculation to explain its virtues.[1b]

A vicious reply to the Jesuit Fabra was published by Vopiscus Fortunatus Plempius, Professor of Physic at Luvain, under the name of Melippus Protimus. The efforts of this author against the bark were the results of prejudice and malice, in contradistinction to the more temperate hostility of Chiefle-

---

*The Schedule Romana was to give two drachms of the finely powdered bark just before or at the beginning of the paroxysm. It also suggests infusions with wine or water, and giving the powder in the form of a bolus. It contains general rules of dosage according to the age and individual case. Torti, Therap. Specialis. 1712, p. 4; Werlhof. Observationes de Febribus praecipue intermittentibus. 1764, p. 88; Baker, Trans. College of Phys., Vol. III, 1785, p. 152.

tius. Plempius committed a further error in judgment by openly attacking Harvey's discovery of the circulation of the blood.

This controversy* brought the bark into such disfavor among the medical profession and the laity that its use was chiefly confined to the papal domain. On the other hand, we now begin to hear of a scarcity of the drug. The Jesuits appear to have had a monopoly of the supply, and their price was such that it was deemed a suitable gift for princes. In 1650 it was said to be sold in France "weight for weight at the price of gold." In 1658 twenty doses were sold at Brussels for sixty florins.[4] Even at Rome we find Cardinal de Lugo, himself, in a letter to Badus, complaining of its scarcity and the danger of adulteration. Sturmius, who practiced in Antwerp and was one of the few advocates of this remedy, had a patient who was seized with an obstinate intermittent fever in February, 1658. It was not until the end of the following June that he could procure the bark. Three years later he published his Febrifugi Peruviani Vindiciae. Bartholin of Copenhagen reports, in 1661, that he employed three doses, given him by a friend returning from Italy, in a case of quartan fever with little benefit.

In England the introduction of cinchona was rather more gradual than in Spain and Italy, nor do we find any such violent opposition to it on the part of the medical profession. According to Sydenham, the bark came into vogue about the year 1655, but soon fell into disrepute owing to its inefficacy in preventing a relapse, and also because of some fatalities which followed its administration immediately before the paroxysm. One of these victims is thought to have been an alderman of London, who died in 1658. An epidemic of remittent fever occurred throughout England in this year, and the bark suffered in its reputation because it failed to be of benefit. Oliver Cromwell "died of a sickness of fourteen days, which had appeared an ague in the beginning."[3] The bark was not administered, so it seems, because of certain recent fatalities following its use, although Morton asserts that the failure to use it in this case was due to the fact that it was not yet approved of. This testimony is not in keeping with the fact that in 1658 the "Fever bark, commonly called the Jesuits' Powder," was advertised in a periodical

*For writings on this controversy see: Cortex Peruviae Redivivus (profligator febrium, assertus ab impugnationibus Melippi Protimi, Medici Belgae) a Sebastiano Baldo, Medico Genuense, Genuæ, 1656; Anastasis Corticis Peruviae, seu Chinae Chinae defensio, Sebastiani Badi Genuensis, Genuae 1663). (These two works are by the same author, whose name is spelled so differently. In the copy of the latter which I consulted at the British Museum the spelling Badi has been written in above the printed Bado. The preface is signed Badus, Genuae Dec. 1, 1663); Torti; [9] Mautt De Cortice Peruviano, Roterodam, 1760; Baker, p. 174.3.

newspaper* of London with the approbation of Dr. Prujean, who had held the position of President of the College of Physicians for no less than five successive years. Willis, in the second edition of his "De Fermentatione et de Febribus" (published in 1660), observes that this remedy suspends the paroxysms, but does not subdue the fever. Consequently, when Morton states that cinchona was introduced into medical practice in 1665, we are forced to doubt his accuracy. Moreover, in a letter to Sydenham, dated 1679, Brady, who was Professor of Physic at Cambridge, writes that he had used the bark successfully for about twenty years.[3]

Sydenham took up the bark very cautiously. He was at first inclined to be prejudiced against its use, but influenced by the reports of his contemporaries and his own successful administration of the remedy, he gradually came to be its ardent supporter, although he never relied on it alone in cases of ague,—with the exception of quartans. He seriously objected to the use of the bark during the paroxysm, insisting that to do so too hastily checked the fermentation of the blood, and thus was a source of imminent danger to the patient. At the same time, he emphasized the importance of interrupting the regular process of the paroxysm in tertian fevers by simultaneously purging and sweating. On the other hand, he instituted the procedure of taking two drachms daily during the intermission, which he later modified to two scruples every fourth hour. He was thus the first to advocate the fractional dosage of cinchona, a method which, in the case of quinin, is now being employed by the foremost authorities on malaria in contradistinction to the single large doses given just previous to the paroxysm.

In order to appreciate the medical thought of this great writer and observer, the following quotation is given from his works:

"And first, that we may at least make some conjecture about the nature and genus of agues, it is to be observed that these three Seasons are to be considered in the fits; first, the time of Shaking; secondly, of Ebulition; thirdly, of Despumation. To speak briefly of these things, I suppose it proceeds hence, viz: because the febrile matter, not as yet turgent, was in some sort assimilated by the mass of blood; and being at length not only useless, but become an enemy to nature, does in a manner exagitate and provoke it; whence it comes to pass that being stirred up by a certain natural sense, and as it were endeavoring to escape, it causes a shivering and shaking

*"Mercurius Politicus, comprising the sum of foreign intelligence with the affairs now on foot in the three nations, for the information of the people. From Thursday, December 9 to Thursday December 16, 1658," quoted by Sir George Baker. Transactions, College of Physicians, London, 1785, Vol. 3, p. 190.

in the body, a true witness of its aversion, just as purging potions taken by squeamish persons, or poisons casually taken, use presently to cause a shivering, and other symptoms of that kind."

"All agues begin with shivering and shaking, and are presently succeeded by heat, and then sweat; the sick most commonly vomits both in the cold and hot fit, is very sick, dry and thirsty, and his tongue is very dry, and the like; all which symptoms retreat by degrees, as the sweat comes on; and when it is very plentiful, the fit seems to be at an end, and he that was just now sick seems to be very well, till the fit returns at its wonted time, viz., a Quotidian once every natural day, a Tertian every other day, a Quartan every third day, reckoning from the beginning of one fit to the beginning of the next, though often the last two are doubled; so that a tertian invades daily, the Quartan two whole days, the third being free from a fit; and sometimes also it comes for three days together, when it is a triple Quartan, the ague taking its name from the shape it first assumed, which doubling of the fits sometimes proceeds from the excess and too great activity of the febrile matter, in which case the adventitious fit comes before the first, sometimes also from the loss of strength, the patient being much weakened, and the vigor of the fit broken, either by cooling too much, or by evacuation above measure."

"For in the Winter time the spirits are concentrated, and in their recess gather strength, which being now brisk, the heat of the approaching sun draws out, and being mixed with the viscid humours, (yet they are not so viscid as those in the Fall, the heat foregoing as torrefied), which nature during Winter had heaped up in the mass of blood, while they endeavor to fly away, are, as it were, entangled, and so cause the vernal ebulition, as vessels full of beer kept long in a cold cellar; if they are set near the fire, presently begin to work, and the liquor is apt to fly."[5]

Morton followed Sydenham as the most eminent supporter of the Peruvian bark. In his Pyretologia,[6] published in 1692, he takes an extreme position, asserting that during twenty-five years he had employed this antidote in every season of the year; that, with three exceptions, it had never failed to accomplish a speedy and permanent cure in all forms of intermittents; and that the only mischief he had seen it produce was a temporary deafness. His method was to give one drachm every three or four hours during the interval, "because at that time it may be taken without exciting nausea, and is more certainly retained; and that the virtue of the antidote is conveyed into the body entire, and with great advantage, whilst the poison lies dormant and inactive."[6]

Lister, a contemporary of Sydenham and Morton, did not approve of the way in which these two physicians advocated this nostrum of a quack. The quack referred to was no less a person than Robert Talbor, alias Tabor. Sydenham indirectly condemns this man for concealing his specific for intermittents, while Morton refers to him in the most contemptuous terms.

Talbor[3] learned an effectual method of administering the

bark while serving as apprentice to an apothecary. He entered St. John's College at Cambridge in 1663, where he seems to have had but a short stay. He then set himself up in Essex, where he gained a reputation for curing agues. A few years later he removed to London, where, by his success in these cases, he won the favor of Charles II. On May 2, 1678, by order of his majesty, Arlington commanded the College of Physicians "that you should not give him (Talbor) any molestation or disturbance in his practice," and had him sworn one of his court physicians.[3] It is interesting to note that Sydenham was prejudiced against the bark in 1668, and that it was not until 1680 that he arrived at his most effectual method of giving it. Talbor published a book, entitled "Pyretologia," in which he surreptitiously cautions his reader "to beware of all palliative cures, especially of that known by the name of Jesuits' Powder, as it is given by unskillful hands," adding, nevertheless, "yet is this a noble and safe medicine, if rightly prepared, and administered by a skillful hand."[3] Toward the close of his career he spent the greater part of his time in France. Here his practice was no longer confined to fevers. Persons of the highest rank, including members of the royal household, employed him. Finally, Louis XIV is said to have paid him 48,000 pounds for the secret, and published it for the benefit of his subjects after Talbor's death, which occurred in 1681. This nostrum vender had been raised to knighthood, had served as physician to the courts of England and France, and had a monument erected to his memory in Trinity Church, Cambridge. The secret proved to be an infusion of the Peruvian bark with some aromatics in red wine to be administered during the paroxysm.[3] He is also said to have combined the bark with opium.[7]

Gideon Harvey is another important personage of this period. Although a doctor of medicine and a practicing physician, he outranks Moliere and Bernard Shaw as a satirist on the medical profession. In his Conclave of Physicians,[8] published in 1686, he displays a profound contempt for the commercial doctor, the anatomist, and the theory and practice of the eminent men in the profession. Harvey was not a very learned man, and he was certainly much given to advertising himself. On a question of pure medical theory his evidence might well be discredited. For the present investigation, however, he is not without significance, for he had no ascertainable reason to misrepresent contemporary conditions, as to which alone he is here cited as witness. He informs us that the virtues of the Peruvian bark in quartans had been known for over a hundred years, and that it was revived by a "debauch'd Apothecaries Apprentice of Cambridge, in application to all intermittent fevers."

Harvey himself evidently held a rather poor opinion of the bark, maintaining that many a patient had been "Jesuited to an early grave." He accuses the Jesuit Order of keeping the source of the "Chinchina Bark" secret, with the result that no one could obtain it except from their supply. According to him, it was dispensed at a crown an ounce, and the parcels sold on the market differed from one another in color, taste, weight, resin, etc., "by which men of art have been frustrated in their Cure of Agues."

His remarks regarding its use and abuse are not without interest. "The Decoction, or Infusion of the Bark, doth manifestly heat any that shall take it in the state of Health." He asserts that it is not only useless, but deleterious in continued fevers, and that it is indicated only in intermittents. The ague fit being due to "an high ebulition or fermentation," the bark acts as a "specific styptic," as well as by its purgative qualities. The dangers of its use in agues lie in the too sudden suppression of the fits; consequently he recommends that small doses be given often, that it be discontinued a day or two after the fits cease, that after three weeks a few small doses be taken, and again after six weeks. Although Harvey professes to be able to get along well enough without the bark in cases of ague, it is significant that he should have found it most useful in divided doses, and also that his observations regarding its specificity in agues, its effects on the healthy body, and its variable qualities in commerce precede similar observations from more distinguished writers of a later date.*

The interest in malaria and cinchona at this time was by no means confined to England. In 1712, Torti,[9] an Italian, published an extensive treatise on fevers, in which he lays especial emphasis on the value of "china chinae" in intermittents. This author practiced in Modena, where he seems to have gained a wide experience with the simple and pernicious forms of malaria, though Celli informs us that today this city is comparatively free from the disease. Torti takes up the history of intermittents, and the introduction of the Peruvian bark with the arguments raised for and against it, and he finally classifies the fevers into two main groups; namely, those which do and those which

---

*The specificity of the bark, in intermittents was noted by Lancisi; the relative difference between the specimens of Peruvian bark was brought out by Saunders; the sense of internal heat produced by taking the bark in a state of health was emphasized by Hahnemann; the superior efficacy of fractional dosage has been established by Nocht. It is interesting that Harvey should have given the bark after an interval of three weeks, because we now recognize that relapses are apt to occur in about three weeks following a quinin cure, a fact which will be explained when we come to the morphology of the malarial parasite.

do not yield to the bark. According to him, all fevers benefited by cinchona come under the head of intermittents. Although he takes up the various diseases in which the bark was used by his predecessors and his contemporaries, he maintains that it can be relied on only in intermittents. "Nothing," he says, "is better known at our time in medicine, nothing more certain, than that china china dispels intermittent fevers."* If we substitute quinin for china china and malaria for intermittent fever, we must confess that the words of Torti, written two hundred years ago, apply to the present status of medicine as well as they did to that of his time.

Torti quotes from a letter of Lancisi's in which the latter remarks that in Rome, in the year 1695, the bark proved to be a specific antidote to an epidemic fever caused by stagnant waters. In 1717, Lancisi published his famous work in which he distinguished malaria from other fevers by its etiology.** His observations left him to infer that the common epidemic fevers about Rome were due to the emanations from swamps and marshes, hence the terms "paludism" and "malaria." He even went so far as to suggest that insects such as mosquitoes might be responsible.

There are many other works on intermittent fevers written during the eighteenth century, but in none of them is there anything new. Senac, Medicus, Werlhof,[10] and Stork[11] discussed the pathology and symptomatology. Huxham, Pringle,[12] van Hoven, Home, Alibert,[13] Santorini, Albertini, Lind, and Cullen[14] [15] took up the etiology and treatment.

In regard to the time of administration of the bark and the dosage, we find the same divergence of opinion that exists today. The reasons for this divergence, moreover, were due to the same causes which influence modern medical thought, namely, different conceptions as to the nature of the disease and the modus operandi of the drug, and different clinical observations on the part of individual physicians. Thus Sydenham based his treatment on the idea that the cathartic property of cinchona removed the "turgent febrile matter." Torti[9] was not satisfied with this explanation, as he noticed that other cathartics did not have this specific curative power in intermittents, nor did the bark necessarily have to produce catharsis to effect a cure.

---

*"Ab eo autem tempore coepit adeo clarescere in dies hujusce fama Febrifugi, ut jam nostro aevo nil notius sit in Medicina, nil certius quam Febres Intermittentes China China depelli." Francisci Torti, Therapeutice specialis. Mutinæ, 1712, Lib. I, Cap. I, p. 5. (Torti lived from 1658 to 1741.)

**Lancisi, Joannes Maria (1654–1720). De noxiis paludum effluviis, eorumque remediis, Rome, 1717.

From his large experience he concluded that small doses given a considerable time before the paroxysm acted with better effect than larger doses given just before the paroxysm, although he admitted that the latter method sometimes produced good results. His method was to give two drachms just after the fever subsided, then one drachm the following day, to be followed by a drachm every other day during the second week.

Home gave the bark in one series of cases just before the paroxysm, and in another just after it. He found that the bark "was never more certain in its operation than when it is administered immediately after the close of one paroxysm, or forty hours before the commencement of the succeeding one."[13] Alibert preferred this method, remarking that "the success of the bark depends less on its quantity than on the manner in which it is exhibited."[13] Lind advocated giving opium during the paroxysms, to be followed by a dose of the bark when the fever had subsided. Saunders, who seems to have had admirable success with the red bark, uses the following words: — "It is seldom I have found it necessary to give more than half a dram every two hours in the interval of the fit, and in no one intermittent, even of a Quartan type, have I found it necessary to give more than six drams between the paroxysms."[4] Withering, in a letter to the last named author, remarks that he never had occasion to give more than thirty or forty grains every four hours between the fits.[4]

Werlhof[10] noticed that relapses usually took place after three weeks in tertians and after four weeks in quartans. From this observation he suggested renewing the administration of the bark at the time of the expected relapse. Alibert[13] confirmed Werlhof's observations, but he suggested that as the bark acted as a prophylactic, it should be given one week before the expected relapse.

We cannot go into all the various theories as to the modus operandi of the bark which were propounded during the eighteenth century, but it will be of interest to note the general trend of thought. We have seen that Torti criticized the speculations of Sydenham regarding the cathartic properties of cinchona. Brown[13] maintained that the bark acted as a stimulant or general tonic. Saunders remarks that "it seems more reasonable to refer its action, as an antiseptic, to its tonic power on the moving system, than to any primary action on the animal fluids."[4] Alibert takes exception to the hypothesis that cinchona cures intermittents by its antispasmodic action, on the ground that the more reliable antispasmodics showed no curative powers in these cases. Albertini advanced the explanation that the bark worked by exciting definite critical evacuations either through

the sweat, stool or urine, which differed from the crises produced by other drugs in this disease.[13] A few words from Cullen's Lectures on Materia Medica, published in 1773, will show how little progress was made in the theory and practice pertaining to our subject since the time of Sydenham. We must not confuse the term antiseptic as used by Cullen with the bactericidal meaning which it conveys today.

"I am very ready to allow with Dr. Pringle that a putrescency accompanies Autumnal Intermittents, and that the Bark is noted for its anti septic quality. But the small quantity given, and still more, the very smal quantity extracted, and the little that must be absorbed of that quantity extracted, to me would seem to have very little effect in preventing the putrescency of the fluid. Much more do I imagine (and Dr. Pringle consents to it, and enumerates other Astringents which have the same property) that the Bark, in such cases, acts by restoring tone to the fibres, debilitated by the putrefaction."[14]

Hence its usefulness in all putrid fevers, continued or otherwise, and in "putrid Diatheses," although he considered it o greatest value when distinct remissions occurred. His practice in intermittents was to give emetics during the chill, opiates dur ing the fever and Peruvian bark with "metalic tonics" during the apyrexia.

Polypharmacy was at its height at this time. The recognized fact that cinchona was a specific in malaria did not deter practitioners from mixing this medicine with other drugs. Opium and mercury were the most commonly used adjuvants to the bark, although alum, iron, antimony, cayenne pepper, chamomile, and a host of others were prescribed.

Much discussion took place regarding the use of mercury. Sydenham remarked that "to add anything to the bark argues either ignorance or craft."[3] It is perfectly obvious, however, from his writings that he did not practice what he preached, or he must have admitted himself a sinner in one or the other respect. He did not consider a preliminary mercurial purge to be always necessary for the action of cinchona. Stork, Pringle and Senac strongly advised that the viscera be well emptied by mercury in order that the humors might not be pent up by the astringency of the bark. Saunders, on the other hand, deplored any delay in the giving of cinchona, claiming that in the intermittent fevers of "low and marchy situations," "the use of either emetics or purgatives, as preparatory, is not only unnecessary, but in some cases productive of greater debility, and therefore to be avoided."[4] Of all the drugs used in the seventeenth century none was more abused than mercury. It was natural that the purgative powers of calomel should have been used to rid the body of humors, but we are horrified at the

enormous doses so often carried to the extent of bloody evacuations and salivation to the satisfaction of the prescriber.

The ancient therapeutic measure of bleeding was still practiced on a large scale. Torti was the first to object to this procedure in intermittents, but he admitted that under certain conditions it was advisable. Every other writer of the eighteenth century gave indications for venaesection in fevers, agreeing that it was of the utmost value when the blood drawn off was "fizy."

Two notable substitutes for the bark were brought forward during this period. Renaud and Homberg in France found galls of great service in agues, and explained the benefit derived as due to the astringent properties which cinchona also possessed. The Academy ordered Lemery, Geoffroy and other members to make a trial of this drug, and their report was that galls did cure intermittents, though not so constantly as the Peruvian bark.[14] The other substitute was arsenic. In 1786 Fowler introduced his "mineral solution" — now known by the author's name as "Fowler's Solution," — as a cure for agues and periodic headaches. He cites no less than 247 cases treated by him in private and hospital practice, giving tables of the results. His conclusion was that this medicine was as efficacious as the bark when given in 12-drop doses two or three times a day. A contemporary condemns the use of this substance with the remark that "it cannot be deemed to be a proper remedy for an intermittent fever, whilst an intermittent fever is less formidable than arsenic."[3] This same author does not object to the use of mercury to the point of salivation.

Cardinal de Lugo was the first to call attention to the danger of adulteration of Peruvian bark suggested by the great and sudden demand for it throughout Europe.* The first bark brought over was the red bark from the trunk of the cinchona tree. Later, however, the quill bark from the branches was introduced with success, but owing to the increased demand it was adulterated, after which it naturally became less efficacious. As we have already seen, Harvey maintained that the differences in the bark sold on the market accounted for many of the failures by physicians to cure agues. It seems that the red bark went out of fashion, and during the period that the quill bark took its place there was considerable dissatisfaction. Finally, William Saunders brought to the attention of the profession in England the fact that the red bark was that used by Sydenham, Morton and the other early pioneers who claimed such

*Epistola Juan Cardinalis de Lugo al Signor Sebastiano Bado. Rome, October 4, 1659. Incorporated in the first chapter of the Anastasis Corticis Peruviae of Badus.[1a]

good results from it, and that in his own practice and hospital cases he had found the red bark efficacious in agues where the common bark sold on the market had been used previously in vain.[4] Corrected in this matter of pharmaceutics, cinchona again gained favor among the physicians and we hear little more criticism of its value in malaria.

REFERENCES

1a. Badus, Sebastian. Anastasis Corticis Peruviae, seu Chinae Chinae defensio. Genoa 1663, pp. 16, 22, 23, 24, 202.

b. Idem. Cortex Peruviae Redivious, Genua. 1656, p. 35.

2. Markham, Sir Clements R. A Memoir of the Lady Ana de Osorio, Countess of Chinchon. London, 1874, p. 40.

3. Baker, Sir George. Observations on the late intermittent fevers; to which is added a short history of the Peruvian Bark. Transactions of the College of Physicians, London, 1785. Vol. III, p. 173, 216 et al.

4. Saunders, William. Observations on the Superior Efficacy of the Red Peruvian Bark, in the Cure of Fevers. London, 1783, pp. 10, 32, 42, 57 and 99.

5. Sydenham, Thomas. The whole works of, 5th Ed. from the original Latin by J. Pechey. London, 1712, pp. 36. 37, 233.

6. Morton, Richard. Pyretologia, seu Exercitationes de Morbis Universalibus Acutis. London, 1692.

7. Hirschel, Bernhard — Geschichte der Medicin. Wien. 1862. p. 243.

8. Harvey, Gideon. The Conclave of Physicians, London. 1686. Pt. I. p. 138. Pt. II, pp. 124, 126, 135, 136.

9. Torti, Francisci, Therapeutice Specialis. Mutinae, 1712.

10. Werlhof, Paul Gottlieb. Observations de Febribus prcacipue intermittentibus. Venice, 1764.

11. Stork, Joan. Melch. Pyretos Hemitritaios Celsi et Galeni Cortice Peruviano Curatus, in Fasciculus primus Operum minorum Medicorum et Dissertationum. Vindobonae, 1775, p. 251.

12. Pringle, John. Observations on the Diseases of the Army. London, 1765, pp. 99, 713–199.

13. Alibert, J. L.: A Treatise on Malignant Intermittents. 3rd Ed Trans. from the French by C. Caldwell. Phil. 1807. pp. 236 241, 249 and 250.

14. Cullen, William: Lectures on the Materia Medica. London, 1773. Vol. III, pp. 287 and 290.

15. *Ibid:* First Lines of the Practice of Physic. 3rd Ed. Edinburgh, 1781. Vol. 1, p. 67.

16. Fowler, Thomas. Medical Reports of the Effects of Arsenic in the Cure of Agues, Remitting Fevers, and Periodic Headaches. London, 1786.

CLINICAL DEPARTMENT

Case F. Arterio-sclerosis: — The patient is a man 64 years old. For some years he has been growing more irritable both in his business and in his domestic life. A few months ago he had a sudden weakness of his left arm and leg, which wore off after a few days. Two months ago he had diphtheria and made a good recovery. However, after this he was sleepless and more irritable and was much run down.

The physical examination was as follows:

General appearance — Patient is a well built, developed and nourished 64-year old man; gray hair and moustache, slight alopecia; skin is white, warm, dry and of fairly good color. Patient wears a truss for a right inguinal hernia. Nose is deformed, due to previous fracture of the nasal bone.

Respiratory System — Breathing is regular, with a slight degree of obstruction due to the deformed nose; chest symmetrical and well developed; chest expansion fairly good; lungs show no pathological rales or fremiti.

Alimentary System — Both upper and lower teeth are false; tongue slightly coated; throat negative; abdomen is distended and tympanitic.

Circulatory System — Pulse 78; blood pressure, systolic 148, diastolic 95. Peripheral blood vessels are sclerosed. Heart rhythmical, slightly irregular with a pre-systolic murmur heard best in the aortic region. First cardiac sound is rather faint.

Glandular and Genito-urinary Systems — Negative.

Extremities — Dynamo-metric grip of the right hand is 80; left, 60. Feet are cold and clammy. There is a scar on the left foot from injury caused by an axe.

Neurological Examination — Pupils are large and react to light and accommodation readily; tongue protudes slightly to the left of the median line; face is slightly assymetrical, left side being involved. All other reflexes were found to be present and equal; no evidence of any pathological reflexes observed. Patient complains of a numbness of the entire left side, including the arm, chest, abdomen and leg, due to numbness caused from his accident. This is more severe when the patient is tired or slightly excited. The left side is more sensitive to cold than the right. On examination, however, there is no evidence of any hypesthesia. Stereognostic sense of both sides was normal.

The urine was negative, as was also the blood.

Physical Diagnosis — Arterio-sclerosis.

The patient had baths and massage as well as a regulation of his diet. His main treatment, however, consisted of auto-condensation from a Wapler coil.

The important thing about blood pressure is the relation between

the systolic and the diastolic pressure; this, under normal conditions, should be from 20 to 30 m. of mercury. It will be seen that this man's circulatory equilibrium was much improved. And coincident with this came a decided improvement in general health, sleep and temperament.

	Milleamperes	Duration	Blood Pressure Before		After	
June 5	800	7 min.	S-150	D-80	S-140	D-90
" 6	800	10 "	S-150	D-85	S-140	D-95
" 7	800	10 "	S-150	D-90	S-135	D-100
" 8	825	10 "	S-155	D-100	S-145	D-95
" 9	850	10 "	S-145	D-100	S-140	D-105
" 10	750	10 "	S-142	D-100	S-120	D-100
" 12	800	10 "	S-144	D-100	S-125	D-105
" 13	800	10 "	S-145	D-110	S-125	D-110
" 14	800	10 "	S-150	D-120	S-125	D-110
" 16	750	10 "	S-145	D-120	S-130	D-110
" 17	750	10 "	S-145	D-120	S-130	D-110
" 19	750	10 "	S-145	D-120	S-130	D-110
" 20	700	10 "	S-145	D-110	S-130	D-110
" 21	750	10 "	S-142	D-120	S-125	D-110
" 23	750	10 "	S-140	D-110	S-130	D-110

UNITED STATES PUBLIC HEALTH SERVICE

The Malaria Problem

Four per cent of the inhabitants of certain sections of the South have malaria. This estimate, based on the reporting of 204,881 cases during 1914, has led the United States Public Health Service to give increased attention to the malaria problem, according to the annual report of the Surgeon General. Of 13,526 blood specimens examined by government officers during the year, 1,797 showed malarial infection. The infection rate among white persons was above eight per cent, and among colored persons twenty per cent. In two counties in the Yazoo Valley, 40 out of every 100 inhabitants presented evidence of the disease.

Striking as the above figures are, they are no more remarkable than those relating to the reduction in the incidence of the disease following surveys of the Public Health Service at 34 places in nearly every State of the South. In some instances from an incidence of fifteen per cent, in 1914, a reduction has been accomplished to less than four or five per cent, in 1915.

One of the important scientific discoveries made during the year was in regard to the continuance of the disease from season to season. Over 2,000 anopheline mosquitoes in malarious districts were dissected, during the early spring months, without finding a single infected insect, and not until May 15, 1915, was the first parasite in the body of a mosquito discovered. The Public Health Service, therefore, concludes that mosquitoes in the latitude of the Southern States ordinarily do not carry the infection through the winter. This discovery indicates that protection from malaria may be secured by treating human carriers with quinine previous to the middle of May, thus preventing any infection from chronic sufferers reaching mosquitoes and being transmitted by them to other persons.

Although quinine remains the best means of treating malaria and is also of marked benefit in preventing infection, the eradication of the disease as a whole rests upon the destruction of the breeding places of anopheline mosquitoes. The Public Health Service, therefore, is urging a definite campaign of draining standing water, the filling of low places, and the regrading and training of streams where malarial mosquitoes breed. The oiling of breeding places, and the stocking of streams with top-feeding minnows, are further recommended. The Service also gives advice regarding screening and other preventive measures as a part of the educational campaigns conducted in sections of infected territory.

This study is typical of the scientific investigations which

are being carried out by the Public Health Service, all of which have a direct bearing on eradicating the disease. The malaria work now includes the collection of morbidity data, malaria surveys, demonstration work, scientific field and laboratory studies, educational campaigns, and special studies of impounded water and drainage projects.

Pneumonia

Ten per cent of the deaths in the United States result from pneumonia. Tuberculosis and heart disease, each causing one-ninth of all fatalities, are the only diseases which outrank pneumonia among the legion of the men of death, but in certain cities pneumonia is steadily increasing and even has surpassed the mortality from tuberculosis. Seventy per cent of all cases occur between December and May. It is distinctly a cold weather infection, seemingly brought by wintry blasts, but especially prevalent during the winter season only because its victims are rendered more susceptible at that time by exposure, debilitating influences and the presence of predisposing infections.

Pneumonia principally affects those at the extremes of life, but no age is exempt. It is invariably a germ disease. The predisposing and exciting organisms are so numerous that it would be futile to attempt their enumeration. Many of them are constantly present in the mouths and throats of healthy persons, and it is only through the aid which we unwittingly extend to them that they are transformed from harmless organisms to one of man's most powerful enemies.

The presence of other diseases is the great predisposing cause of pneumonia. They prepare the soil for invasion. Holding first rank in this category is influenza, the increased incidence of pneumonia at any time being largely due to an existing epidemic of la grippe. Individuals suffering from this infection are peculiarly susceptible to respiratory complications and should properly observe every hygienic rule. Inflammation of the upper air passages, pharyngitis, bronchitis, and tonsillitis, often predispose to the development of the disease, particularly among the aged and infirm. The acute contagious diseases of childhood, more especially measles and whooping cough, frequently prepare the way for pneumonia. Any one who through neglect or carelessness permits the spread of these infections is therefore open to the severest condemnation. Exhausting disease of whatever nature, is often sufficient to so reduce our resistance that we are unable to cope with organisms which should be easily overcome, and hence predisposes to the infection.

Debility, either temporary or chronic, developing from any cause, increases susceptibility. Because of this the disease most often attacks those at the extremes of life. Among debilitating influences must be mentioned cold, exposure to penetrating winds, and the chilling of body surfaces as a result of wetting. The combination of lack of food and fatigue proves particularly disastrous during the winter season and is a condition to be avoided whenever possible. Bad housing, mental or physical harassment, and overwork are alike the advance agents of the infection. Overcrowding, in street cars, theatres, and other public places, is unquestionably in part responsible for the spread of pneumonia in cities, as far greater opportunity is thus offered for the dissemination of the predisposing diseases through indiscriminate coughing and other means of infection, as well as the directly injurious effects which inevitably result from exposure to such environment. The overheating of rooms is also seemingly harmful. Promiscuous expectoration may be, and probably is, a factor in infection and consequently should be avoided by every citizen. A remaining most important agent should be mentioned, — alcohol. It is in truth the handmaiden of pneumonia, and there is none more certain or more sure of success, especially if liberally and continuously used.

While the foregoing facts constitute in part our knowledge of the reasons for the widespread dissemination of an infection which carries with it a mortality of from ten to thirty per cent, it should be remembered that our scientific data are not yet complete. There are problems connected with immunity, predisposition, and the occurrence of epidemics which are yet to be solved. It is known that pneumonia frequently attacks those who are perfectly well, and who apparently have observed every hygienic rule. Whether this is due to the increased virulence of the organism or to other causes is unexplained. It is, however, recognized that avoidance of the factors so briefly enumerated will in large part diminish individual susceptibility and therefore the incidence of the disease.

REVIEWS

Hookworm Disease. *Annual Report of the Rockefeller Foundation. 1913–1914.*

This report describes the efforts on the part of the International Health Commission in the work of treatment, cure, and eradication of hookworm disease which prevails in a belt of territory encircling the earth for 30 degrees each side of the equator.

In some countries approximately 90% of the entire population have been found to be affected.

The resolutions creating the commission embodied two tasks:

(1) The extension to other countries of the work of eradicating the disease, as opportunity might offer.

(2) So far as practicable to follow up treatment and cure of this disease by the establishment of agencies for the promotion of sanitation publications, and the dissemination of knowledge of scientific medicine.

As contemplated, relief and control of the disease in a given country involves (1) A survey to determine the geographical distribution and approximate means of infection. (2) Microscopical examination of the effects upon people, and cure whenever possible. (3) Establishment of sanitation upon such a basis as will prevent future soil pollution.

As a beginning but one village in British Guiana, Agricola, with a population of 1,330, was included, then later the area was extended. At this place an examination of the entire population was made, and all infected persons received treatment. After the initial treatment careful re-examination of every patient was made, and a weekly course of medicine administered until a cure was effected.

The government agreed to coöperate to the extent of undertaking the work of sanitation and prevention. Similar work has been done at St. Lucia, St. Vincent, Grenada, Jamaica, Panama, Costa Rica, and in Egypt.

Syphilitic Disease of the Arteries. *Alexander McPhedran, New York State Journal of Medicine. January, 1916.*

The subject of this resume deals with the recognition of morbid chancres and symptoms resulting from syphilitic infection of walls of blood vessels. Arteries seem particularly prone to the invasion of this infecting organism, especially those of the Cerebrum, others being the Aorta and Coronaries.

Symptoms:

(1) Disturbance or arrest of blood supply of an organ or tissue.

(2) Pressure as of an aneurysm or gumma on surrounding structures.

(3) Possibly a spasm of the heart or aorta arising from areas of weakness caused by the location of the disease, with preceding aneurysmic conditions.

Observations upon the Endamœba of the Mouth. *Journal of Infectious Diseases. February, 1916.*

Endamœba Gingivalis. (Buccalis.)

This article comprises an epitome of the history of work on this amœba, and a critical study of the literature on the subject. It is reported that at the present time the only proof we possess of a possible etiological relation of Endamœba Gingivalis to Pyorrhea Alveolaris consists in its almost constant presence in lesions of the latter disease, and also in the fact that the emetin properly administered greatly benefits a large majority of patients suffering therefrom. However, no absolute experimental proof of such etiological relationship of this parasite to pyorrhea exists, while as against this interdependence, the following facts may be advanced:

(1) The occurrence of this parasite in a large percentage of healthy mouths, for in most cases they may be scraped off healthy teeth and gums.

(2) Their presence and persistence in mouths of patients treated with emetin, even when marked improvements in clinical symptoms have taken place.

(3) Their absence in some typical cases of pyorrhea.

(4) Lack of improvement with the administration of emetin in numerous instances of the disease.

(5) The fact that although endamœba may disappear upon treatment with emetin, this action might be brought about as well by direct effect upon the organs, and possibly the improvement that follows its administration may indicate such a favorable action upon the tissue cells.

BOOK REVIEWS

Refraction of the Human Eye and Method of Estimating the Refraction, including a section on the fitting of spectacles and eyeglasses, etc. By James Thorington, A.M., M.D., Emeritus Professor of Diseases of the Eye in the Philadelphia Polyclinic and College for Graduates in Medicine; Member of the American Ophthalmological Society; Fellow of the College of Physicians of Philadelphia, etc. Three hundred and forty-four illustrations, twenty-seven of which are colored. 407 pages. Philadelphia: P. Blakiston's Son & Co. 1012 Walnut St., 1916. $2.50 net.

Thorington, long considered a standard authority on refraction, has in this new work, consolidated and brought up to date the matter formerly published in three treatises entitled "Refraction and How to Refract,"

"Prisms" and "Retinoscopy." The arrangement of the work is excellent, and the descriptions of the various phenomena so clear and concise that they should be easily comprehended by the beginner in the study of optics, and yet such an array of facts are set forth as may well hold the interest and attention of experienced ophthalmologists.

Beginning with light and its refraction, first by prisms, then by lenses, the author takes up the human eye and its refractive media, gradually leading up to the correction of errors of refraction in the eye by spectacles and eyeglasses. There is a chapter on the use of the Ophthalmoscope containing a very intelligent discussion of its theory and practical use. Several chapters are devoted to Retinoscopy, which the author very justly declares the most important objective method of estimating refraction. Practical and careful directions are given for its application. The various other objective tests are described and their relative value given; followed by careful directions for the carrying out of the subjective method through work with the trial case. Attention is called to the value of a methodical routine of examinations and a precise record of findings, and finally directions are given for measurement of spectacle frames and the proper setting of spectacles and eyeglasses. The latter subject is one usually almost if not quite ignored in works on ophthalmology and refraction. The work can be recommended to the student as the most practical treatise on refraction.

A. W. H.

Psychology of the Unconscious (an authorized translation), by C. G. Jung, M.D. Published by Moffat, Yard and Company, New York. Price $4.00.

This is a brilliant contribution to the Science of Psycho-Analysis and Analytic Psychology.

The work has been edited and translated by Beatrice M. Hinkle, M.D. It is an outgrowth of the method of psycho-analysis, first developed by Freud, whereby the unconscious minds of individuals were subjected to analysis. Dr. Jung starts with the conception of a primal energy of life, comparable to the energy of physics, which, manifested in the human being in the various forms of his activity, he calls *Libido*. This force he conceives as a living power used instinctively by man in all the automatic processes of his functioning, in his creative desires and interests, the varied processes being but different manifestations of this energy. By means, then, of his understanding the individual can consciously direct and use this power by virtue of its quality of movability and flexibility. In short, through a deeper self-consciousness, man is destined to become the shaper and creator of his own destiny.

The book is deeply scientific and requires close attention, but the translation has been well done, which helps very much. To those interested in the psychology of the emotional life and the problem of hysteria it will prove fascinating reading.

A. H. R.

The Freudian Wish and Its Place in Ethics, by Edwin B. Holt. Published by Henry Holt and Company, New York. Price $1.25.

Professor Holt here reviews Freud's work in its ethical aspect. He shows what support this newest of psychological theories affords to the ancient identification of Virtue and Knowledge, and while giving due consideration to the well known Theory of Dreams he is careful to indicate its subordinate place in the whole of Freudian theory. The illustrations of slips of the tongue, slips of the pen, and wit make the book as lively as it is stimulating.

We can heartily recommend this book as the best concise summary of Freud's Psychology of the Emotions that we have yet seen. The importance of the far reaching deductions cannot be over-estimated.

The author is a disciple of the behaviouristic school and his supplement entitled "Response and Cognition" will be read with keen interest by those who are searching for a natural explanation of mind.

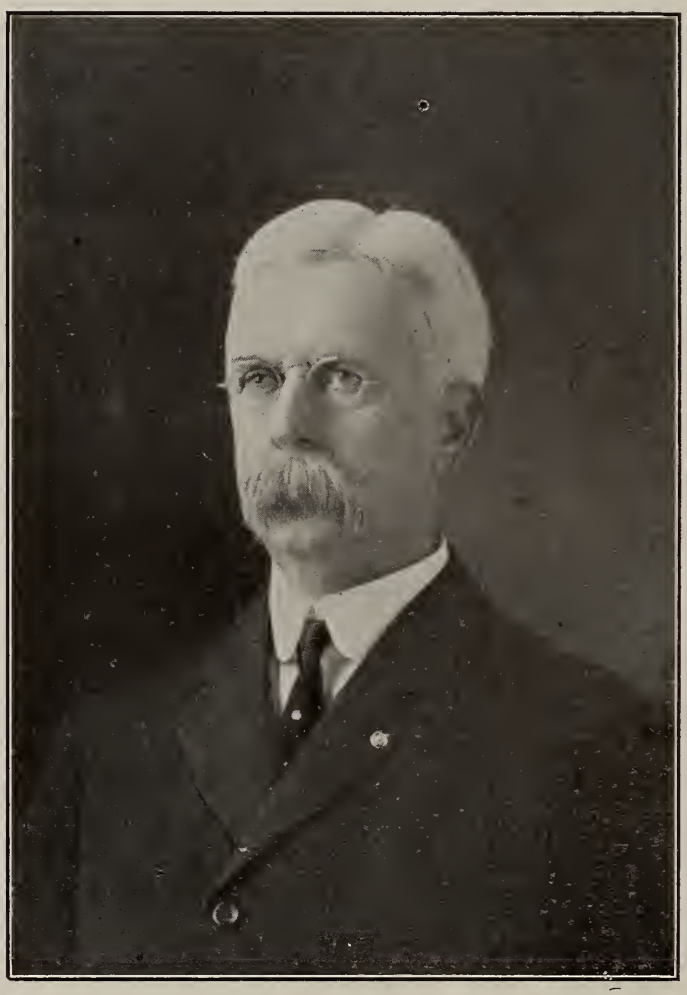
A. H. R.

OBITUARY

James T. Sherman, M.D.

Dr. J. T. Sherman was born on January 16, 1849, in Newport, R. I., and his early education obtained there. He was a graduate of the New York College of Physicians and Surgeons, and later entered New York Homœopathic Medical College, from which he graduated in 1869.

Dr. Sherman began the practice of medicine in Neponset, Mass., but remained there only a short time, removing to Dorchester, a near-by suburb of Boston. For a short time he was



James T. Sherman, M.D.

associated in practice with the late Dr. Luther M. Lee, but soon entered practice independently, continuing as a successful practitioner from 1875 to 1913. Since 1913 his health has not permitted him to attend to active practice. For many years Dr. Sherman was attending physician at the Municipal Smallpox Hospital of Boston and therefore became a recognized authority in the diagnosis and treatment of that dread malady. Dr.

Sherman died of pneumonia on June 6, 1916, in Newport, his birthplace. He leaves a widow, two daughters and a son, besides a wide circle of friends and former patients.

Frederick H. Sage, M.D.

Dr. Frederick H. Sage of Middletown, Connecticut, died of pneumonia on June 7 of the present year, at the age of fifty-five.

He was born April 25, 1861, almost at the outbreak of the Civil War, in Cromwell, Conn., a direct descendant of David Sage, one of the early settlers in Connecticut, and was a graduate of New York Homœpathic College of the class of 1884.

Immediately after graduation he settled in Middletown, where he built up an extensive practice. During a severe scarlet fever epidemic in the early '90's Dr. Sage took an active and influential part in stamping out the scourge.

He was a member of the Connecticut State Homœopathic Medical Society and of the American Institute of Homœopathy, and was one of the appointees of the first board of trustees for the Connecticut State Hospital for the Insane, at Norwich.

Dr. Sage leaves a widow, formerly Miss Bessie B. Ackley, and two sons, H. Ackley Sage and Newell R. Sage.

SOCIETIES

MAINE HOMŒOPATHIC MEDICAL SOCIETY

The fiftieth annual meeting of the Maine Homœopathic Medical Society was held in Augusta on Tuesday, June 13th, 1916, with the following program:

Reading of minutes and appointment of auditing and nominating committees.

Scientific session, morning.

"Conservation of Homœopathy," by Edward S. Abbott, M.D., Bridgton.

Reading of one of the first papers of fifty years ago.

"A Sermonette; Peace Among Doctors and Good-will to the Laity." Ethel H. Walters, M.D., Fairfield.

Reading of reports of various committees.

Luncheon at New Augusta House.

Afternoon session.

Reception to delegates.

"How Can We Strengthen Homœopathy in Maine?" L. A. Brown, M.D., Portland.

"The Diagnosis and Treatment of Various Forms of Deafness." H. P. Bellows, M.D., Boston.

"Two Years with Twilight Sleep." Edwin W. Smith, M.D., Boston.

Banquet at New Augusta House.

Evening session.

History of the Maine Homœopathic Medical Society, John A. Hayward, M.D., Secretary, Portland.

Address: "Hahnemann's Homœopathy." John P. Sutherland, M.D., Boston.

CONNECTICUT HOMŒOPATHIC MEDICAL SOCIETY

The sixty-sixth annual meeting of the Connecticut Homœopathic Medical Society was held at the Hartford Club, Hartford, on May 16th, 1916, and the following list of officers elected for the ensuing year:

President: E. L. Bestor, M.D., Hartford.
Vice-President: M. Z. Westervelt, M.D., Litchfield.
Secretary: Richard Blackmore, M.D., State Hospital, Norwich.
Treasurer: Henry P. Sage, M.D., New Haven.

The following resolutions by Drs. H. A. Roberts and Royal E. S. Hayes were voted on and adopted:

"*Be it resolved*, that there be added to Section 5 of the By-Laws of this Society a new clause marked b, to wit: It shall be the duty of the Executive Committee to arrange for each regular meeting of the Society, papers, addresses, or discussions upon Homœopathic Materia Medica, Homœopathic Therapeutics or Homœopathic Philosophy; or to appoint a person, bureau, or committee to execute that duty."

The scientific program was as follows:

"Gastric Ulcer and Carcinoma of the Stomach." H. M. Imboden, New York City.

"Chemical Findings and Other Means of Diagnosis." H. M. Eberhard, M.D., Philadelphia.

"Surgical Treatment, Operative Treatment." Illustrated by motion picture films. William H. Bishop, M.D., New York City.

Demonstration of Efficiency of Clinico-Motion Pictures for Teaching Surgery. William H. Bishop. M.D.

"Homœopathic Medical College of the Future. What Must It Be?" Rudolph F. Rabe, M.D., New York City.

"Peliosis Rheumatica." (A clinical study.) E. H. Linnell, M.D., Norwich, Conn.

Annual Meeting of Alumni Association of B. U. School of Medicine

The annual meeting of the Boston University School of Medicine Alumni Association, President, H. G. Batchelder, M.D., was held at Young's Hotel, Boston, on the evening of June 6. Various reports were read, the Treasurer's being of special interest in showing the prosperous financial condition of the association, there being a balance of $5,334.01 in the treasury.

On motion of Dr. Edward E. Allen it was voted to pay $150 instead of $125 each year to the school to meet the increased tuition fee.

Ninety-eight members and guests enjoyed the banquet which followed the meeting.

The post-prandial exercises consisted of remarks by the retiring President. Dr. H. G. Batchelder; President Murlin, of Boston University, Dr. Edward E. Allen, Registrar of the School, and Mr. Milo C. Green, valedictorian of the graduating class. Eighteen members of the class of 1916 were entertained by the association and presented with certificates of membership according to custom.

Music was furnished by Miss King and Miss Marshall, and an interesting "fish and game" lecture was given by Mr. J. Franklin Babb.

After a few remarks by the new President, Dr. John H. Bennett, of Pawtucket, R. I., the meeting adjourned.

The newly elected officers are:

President: Dr. John H. Bennett.
First Vice-President: Dr. R. F. Eaton.
Second Vice-President: Dr. Wesley T. Lee.
Secretary: Dr. H. L. Babcock.
Treasurer: Dr. Howard Moore.
Auditor: Dr. N. R. Perkins.
Directors: Dr. H. G. Batchelder, Dr. P. G. Browne, Dr. Edwin R. Lewis, Dr. Conrad Smith, Dr. Elizabeth Ross.
Advisory Committee: Dr. Herbert D. Boyd.

THE AMERICAN INSTITUTE OF HOMŒOPATHY AT BALTIMORE

The 1916 meeting of the American Institute was held at Hotel Emerson, Baltimore, June 25 to July 1, with an approximate attendance of eight hundred members and guests.

The session opened on Sunday evening with the usual memorial service for deceased members, Dr. R. A. Adams, Rochester, New York, necrologist. The list of names of those who have died since the 1915 meeting, or whose deaths were not known at that time, was a long one, as follows:

Eugene W. Beebe, M.D.
James A. Bennett, M.D.
Arthur F. Bissell, M.D.
Alonzo P. Bowie, M.D.
John W. Branin, M.D.
Amelia E. M. Burroughs, M.D.
Israel B. Chantler, M.D.
Charles A. Church, M.D.
Charles H. Colgrove, M.D.
M. Louisa Cummings, M.D.
J. B. Gregg Custis, M.D.
John T. Detwiller, M.D.
George M. Dillow, M.D.
Albert W. Forbush, M.D.
Gertrude Gooding, M.D.
Herbert A. Harrison, M.D.
Frank D. Harter, M.D.
William G. Hartley, M.D.
Robert B. House, M.D.
Duncan Macfarlan, M.D.
Sarah J. Millsop, M.D.
Anton E. Neumeister, M.D.
Arthur W. Palmer, M.D.
Andrew J. Richardson, M.D.
Thomas Shearer, M.D.
Charles N. Shellenberger, M.D.
Lewis Sherman, M.D.
James T. Sherman, M.D.
Standley G. Small, M.D.
Winfield Smith, M.D. (died in 1914)
George W. Spencer, M.D.
George P. Sword, M.D.
Charles N. Thomas, M.D.
Gabriel F. Thornhill, M.D.
Phillippina Wagner, M.D.
Ziba D. Walter, M.D.
George H. Wilkins, M.D.
Ida M. Wright, M.D.
Franklin D. Worcester, M.D.
David B. Umstead, M.D.
John D. Zwetsch, M.D.
T. Franklin Smith, M.D.

The annual address of the president was made by President Henry C. Aldrich, of Minneapolis, at exercises held on the roof garden of the hotel on Monday evening, June 26, at which time addresses of welcome to the State of Maryland and the city of Baltimore were made, with a response on behalf of the Institute by Second Vice-President Cornelia C. Brant, Dean of the New York Homœopathic Medical College for Women.

At the close of the addresses, a reception by Institute officers was held, followed by dancing and refreshments.

The election of officers resulted as follows:

President: Wm. W. Van Baum, M.D., Philadelphia.
First Vice-President: Claude A. Burrett, M.D., Columbus, O.
Second Vice-President: Florence N. Ward, M.D., San Francisco.
Secretary: Sarah M. Hobson, M.D., Chicago.
Registrar: W. O. Forbes, M.D., Hot Springs, Ark.
Censor: Anna Johnston, M.D., Pittsburgh, Pa.
Trustees: W. B. Hinsdale, M.D., Ann Arbor, Mich.; Scott Parsons, M.D., St. Louis, Mo.; J. P. Sutherland, M.D., Boston, Mass.

The social features of the session were many and delightful.

On Tuesday the Institute members and guests, about four hundred strong, went in special cars for a long trolley ride to Bay Shore, where a fine "sea food supper" was enjoyed. On Wednesday, thanks to Southern hospitality, the visiting ladies were taken for an afternoon of automobiling through the finest parts of Baltimore and its beautiful suburbs, and on Thursday many members and guests took the trip to Annapolis to visit the United States Naval Academy there.

A fine musicale on Friday evening concluded the Baltimore features of the meeting, and on Saturday quite a company went on to Washington for an afternoon as the guests of the Washington Homœopathic Medical Society. Lunch was served at the New Ebbett Hotel, then all were taken for an automobile trip around the city and exercises at the beautiful Hahnemann monument in Scott Circle. These included a brief address by Dr. Swormstedt of Washington, President Henry C. Aldrich, and the following lines by Dr. C. E. Walton of Cincinnati, who was President of the Institute at the time the monument was unveiled, sixteen years ago:

THE HAHNEMANN MONUMENT

Within the shelt'ring grasp of granite arms
He sits, and meditates upon the truth
Vouchsafed to him, the porcelain painter's son.
With sharpened vision of a seer he sees
Before him spread, in panoramic scroll,
The vision of eternal Truth blessing
The nations of the earth. Though now enslaved
In ignorance, the time must come when all
Shall see fulfillment of the prophecy
From lips Divine; " The Truth shall make you free."

At the conclusion of the exercises and after the photographer had posed the company for a group photograph, the visitors were taken for an automobile ride around Washington; Dr. Richard Kingsman, leader. After the ride, some attended clinics and others enjoyed a fine band concert on the White House grounds given by the U. S. Marine Band.

Some of the company remained in Washington for a longer stay, while others left that night for home and professional duties.

The next meeting of the Institute is to be held in Rochester, New York, in June, 1917.

BOSTON UNIVERSITY LUNCH AT BALTIMORE

A very pleasant occasion was the Boston University lunch, held on Thursday, June 28, at Hotel Emerson, Baltimore, and presided over by Dean Sutherland with twenty-nine at table. There were present Drs. Sutherland, E. B. Hooker of Hartford, N. R. Perkins of Boston, Geo. E. Percy of Salem, W. A. Siebert and wife of Easton, Pa., H. E. Fernald and wife of Cohasset, Mass., M. E. Hanks of Chicago, A. H. Ring of Arlington, Mass., A. B. Ferguson of Portland, Maine, Sarah M. Hobson of Chicago, Ella D. Goff of Pittsburgh, Elinor Van Buskirk-Cummins of New York, Cora Smith King of Washington, H. Ulrich and wife, Dr. and Mrs. Watters, Mrs. L. G. Knowles, Drs. F. H. MacCarthy, W. Overholser, H. L. Babcock, H. W. Nowell, and James Krauss of Boston, Louise Ross of Washington and R. L. Emery of Rockport, Mass.

THE MILK PROBLEM

" There is hardly a community in the whole country which can be said to be more than half-way trying to prevent the waste of infant life."

" No community with an infant mortality rate of over 50 can claim that its babies are getting anything like a square deal." These are the statements made by the New York Milk Committee as a result of a survey of the work done and results accomplished during the past ten years in a large number of cities throughout the United States.

In a bulletin which the committee has recently issued and addressed to the mayors, health officers, editors, citizens and taxpayers, is given the statistical results of its investigation. The committee's questionnaire was sent to the health officers of 252 cities. Infant mortality statistics were obtained for 144 of these. From the remaining 108 either no reliable data could be obtained or the health officials were unwilling to supply the information which the committee requested. Out of the 144 cities furnishing information, 46 were cities of 100,000 or more population, 32 were cities of 50,000 to 100,000 population and 66 were cities of 15,000 to 50,000 population, according to the last United States census.

Of the cities with a population of 100,000 or more, a baby born in Omaha, Neb., was found to have four times as good a chance to live to celebrate its first anniversary of its birth as a baby born in Nashville, Tenn., or Fall River, Mass. In the cities under 100,000 and over 50,000 population, a Salt Lake City baby has over three times the chance of surviving the first year of life that a Passaic, N. J., or Holyoke, Mass., baby has. While in cities between 25,000 and 50,000 population, a La Crosse, Wis., baby has an advantage of more than six to one over a Montgomery, Ala., or Perth Amboy, N. J., baby.

Mr. Taylor, the Director of the New York Milk Committee, maintains that it is the community rather than the individual that has power to reflect the ultimate credit on itself and its individuals in baby saving as in everything else. He states, no community can excuse a high infant death rate on the ground that conditions are unfavorable. We now know that conditions which endanger the health and lives of babies can be corrected if only the known preventive measures are applied; it will, of course, cost more to safeguard babies in some communities than other communities, but is not baby saving a duty and the real basis of future City, State and National preparedness?

HEALTH INSURANCE

In response to public interest in health insurance the Massachusetts Legislature has created a commission to study social insurance with special reference to sickness. The State Department of Health and the Bureau of Statistics are directed to coöperate with the commission of nine members which will prepare a report and recommend the form of legislation to be introduced in January, 1917. California has a similar State Commission already at work on this problem which is attracting wide attention since the introduction this year of bills for health insurance in Massachusetts, New York and New Jersey. Proponents of this legislation believe it will bring about a movement for "health first" comparable to the "safety first" campaign which followed workmen's compensation for accidents.

U. S. Department of Agriculture Issues Decision on Gluten Products and Diabetic Food — Defines Diabetic Foods

Food Inspection Decision No. 160, recently issued by the U. S. Department of Agriculture, for the guidance of officials of the Department in enforcing the Food and Drugs Act, fixes a definite limit to the amount of starch and sugar that may be present in certain gluten products and diabetic foods, and also fixes the amount of nitrogen that must be present in certain of these products, and makes requirements as to moisture and other constituents. The decision covers ground gluten, gluten flour, self-rising gluten flour, and "diabetic" foods. The definitions and standards as stated in the Food Inspection Decision were recommended by the Joint Committee on Definitions and Standards, consisting of representatives of the U. S. Department of Agriculture, the Association of American Dairy, Food, and Drug Officials, and the Association of Official Agricultural Chemists. These two associations have already adopted the definitions and standards.

Investigations by the officials in charge of the enforcement of the Food and Drugs Act have shown that various food products have been placed on the market from time to time that are recommended by the manufacturers for use by people suffering from diabetes. It is generally held that the foods best suited to persons suffering from diabetes are those which contain little or no starch and sugar. Some of the foods placed on the market and recommended by the manufacturers for use in diabetes have been found to contain nearly as much starch and sugar as ordinary products, so that they were of no more value in the treatment of diabetes than ordinary food products that could be purchased more cheaply. The diabetic patient can avoid ordinary food products that contain considerable quantities of starch and sugar, as the composition of these products are generally known. In the case of prepared foods advertised for use in diabetes, however, the patient may be misled into eating quantities of starch and sugar that might be positively injurious.

Hereafter such products should meet the requirements of Food Inspection Decision No. 160, which are as follows:

Ground gluten is the clean, sound product made from wheat flour by the almost complete removal of starch and contains not more than ten per cent (10%) of moisture, and, calculated on the water-free basis, not less than four-

teen and two-tenths per cent (14.2%) of nitrogen, not more than fifteen per cent (15%) of nitrogen-free extract (using the protein factor 5.7), and not more than five and five-tenths per cent (5.5%) of starch (as determined by the diastase method).

Gluten flour is the clean, sound product made from wheat flour by the removal of a large part of the starch and contains not more than ten per cent (10%) of moisture, and, calculated on the water-free basis, not less than seven and one-tenth (7.1%) of nitrogen, not more than fifty-six per cent (56%) of nitrogen-free extract (using the protein factor 5.7), and not more than forty-four per cent (44%) of starch (as determined by the diastase method).

Gluten flour, self-raising, is a gluten flour containing not more than ten per cent (10%) of moisture, and leavening agents with or without salt.

"*Diabetic*" *food.* Although most foods may be suitable under certain conditions for the use of persons suffering from diabetes, the term "diabetic" as applied to food indicates a considerable lessening of the carbohydrates found in ordinary products of the same class, and this belief is fostered by many manufacturers on their labels and in their advertizing literature.

A "diabetic" food contains not more than half as much glycogenic carbohydrates as the normal food of the same class. Any statement on the label which gives the impression that any single food in unlimited quantity is suitable for the diabetic patient is false and misleading.

The foregoing definitions and standards are adopted as a guide for the officials of this department in enforcing the Food and Drugs Act.

PUBLIC HEALTH SERVICE HOSPITALS CURB TRACHOMA

The establishing of small trachoma hospitals in localities where this contagious disease of the eyes is prevalent presents the best solution of the trachoma problem, according to the statement contained in the annual report of the Surgeon General of the United States Public Health Service. The Service now has five trachoma hospitals in the three states of Kentucky, Virginia and West Virginia, and so great has been the number of applicants for treatment that a waiting list has been established. In the past fiscal year 12,000 cases of trachoma have been treated, the larger proportion of which were cured, while those in which a cure was not effected have been greatly improved and rendered harmless to their associates. The great majority of these trachoma patients were people who lived in remote sections far removed from medical assistance, and who, but for the hospital care and treatment provided would have remained victims of the disease practically the remainder of their lives.

"When it is considered," the report of the Service states, "that thousands of persons suffering with trachoma, a dangerous contagious disease, would otherwise remain untreated, it is realized how far-reaching results have been obtained through these trachoma hospitals and the other public health work done in this connection. It would be impossible to estimate with any degree of accuracy the number of people who have been saved from contracting this communicable disease by thus removing these thousands of foci of infection."

In addition to treating persons with the disease the hospitals have been used for educational work. Doctors and nurses have visited the homes of the patients and have explained how to prevent the development and recurrence of the disease. One thousand three hundred and eight such visits were made during the year in Kentucky alone. "It has taken some time," the report continues, "to educate the people afflicted with this disease to the importance of cleanliness and the use of simple hygienic measures in their daily life." That results have been obtained is evidenced by the noticeably better observance of hygienic precautions by those among whom the work has been done.

In addition to the hospital work, surveys were made in 16 counties in Kentucky, especially among school children. Eighteen thousand and sixteen people were examined, 7 per cent being found to have trachoma. Similar

inspections in certain localities of Arizona, Alabama and Florida resulted in finding the disease present in from three to six children out of every hundred. Periodic examination of school children for the disease and the exclusion of the afflicted from the public schools, are two of the recommendations the Public Health Service lays emphasis upon.

One of the special features of the trachoma work was the giving of lectures and clinics before medical societies in various counties where trachoma hospitals could not be established. Patients were operated upon in the presence of physicians and the most modern methods of treatment demonstrated. Throughout, the purpose has been to stimulate local interest in taking up the campaign to eradicate trachoma.

STATE HEALTH DEPARTMENTS FIGHTING CANCER

New York "Health News" Urges Vigilance and Early Surgical Removal. Delay Chief Cause of High Death Rate

Among the many agencies now active in the campaign against cancer, several of the most progressive state boards of health are making notable efforts to spread the gospel of hope which is found in the early recognition of the danger signals of the disease and its prompt and competent treatment. The health authorities of Massachusetts, New Hampshire, Ohio, Indiana, Michigan, Virginia, North Carolina, Kentucky, West Virginia and Idaho have been especially active in disseminating trustworthy information and advice about the prevention and cure of cancer.

The New York State Health Department, under the leadership of Commissioner Hermann M. Biggs, is the latest to enlist its forces in the war against cancer. The entire March number of "Health News," the Department's Monthly Bulletin, is devoted to consideration of the nature, prevalence and treatment of malignant disease with the object of creating among the people "a healthy vigilance which leads to the taking of expert advice on the first appearance of danger signals."

"There is nothing that any one of us can do to prevent the occurrence of cancer except in avoiding certain specified causes of local irritation" says "Health News" in an editorial which opens the discussion. "On the other hand, there is incontrovertible testimony as to the probability of its cure in a large percentage of cases if taken in time. That cure consists in the complete surgical removal of the growth at the earliest possible moment. Early diagnosis, early removal — there is not, now nor has there ever been any other successful method of curing the disease."

The leading article in this special issue of the Health Department's Magazine is by Dr. Francis Carter Wood, Director of Cancer Research at Columbia University. Additional papers are contributed by other notable figures in the scientific world, including Frederick L. Hoffman, LL.D., Statistician of the Prudential Insurance Company and Chairman of the Statistical Advisory Board of the American Society for the Control of Cancer, and Dr. Harvey R. Gaylord, Director of the New York State Institute for the Study of Malignant Disease.

Writing on "What People Should Know About Cancer," Dr. Wood endeavors to dispel some of the mistaken popular notions which have grown up regarding this disease. He disposes of the stories regarding "cancer villages," "cancer houses," or "cancer belts," briefly showing that the occurrence of a number of cases in a house usually is due to the fact that the occupants are old people; that "cancer villages" usually are small towns from which most of the young people have emigrated, and that in like manner "cancer belts" are found to be sections of the country where the population is distinctly aged.

The idea that cancer is hereditary is likewise made light of by Dr. Wood, and he declares that there is no reason whatever to worry because one member of a family has suffered from the disease. "It does not at all follow that any other member of a family will have it," says Dr. Wood, and quotes from the laws governing statistics to show that if there are two or more cases in a family it is due purely to chance.

The quackery which is practiced by unscrupulous people in the treatment of cancer is severely censured both by Dr. Biggs and by Dr. Wood. It is made perfectly plain that cancer is comparatively easy to cure if it can be taken in time. The Bulletin declares that if the simple truth is thoroughly established that cancer begins in comparatively innocent form and in most instances in a recognizable form, it can be successfully combated. Dr. Hoffman in his paper emphasizes "the supreme importance of the earliest possible diagnosis and the incalculable value of the earliest possible medical and surgical treatment." Dr. Wood puts stress on the declaration that if the disease can be diagnosed in its early stage, the cancer can be removed with very great possibilities as to permanent cure. "The Commissioner of Health takes this opportunity," says Dr. Biggs, "to warn the people of the state against the expenditure of money — often ill-afforded — the raising of false hopes, and, above all, the waste of precious time through the use of alleged cancer cures and consultation with their unscrupulous purveyors."

In anticipation of a popular demand for information regarding cancer, a large edition of the "Health News" for March has been printed. Any one who desires the full information as contained in the magazine may secure a copy of the publication, free of charge, by addressing the State Department of Health at Albany, N. Y.

PEDIATRIC NEVERS

Never give a child a dose of medicine without a clear and definite indication.

Never forget that the most reliable antipyretic measure for infants is the use of cold.

Never employ quinine for the reduction of temperature in children, except in cases of malaria.

Never fail to first clear the mouth and pharynx of mucus in all cases of asphyxia.

Never forget that nothing so well indicates that a child is thriving as an increase in weight.

Never forget that woman's milk is the ideal infant food.

Never be satisfied with a feeble cry in a newly-born child; if it does not cry naturally and loudly during the first few days of its existence, spank it.

Never fail to insist that the mother train the child to regular nursing habits.

Never experiment too long with unsatisfactory mother's milk; if it cannot be made to agree with the child in two or three weeks, get a wet nurse or start artificial feeding.

Never make a diagnosis of poliomyelitis or rheumatism or malignant disease in a child until you have ruled out infantile scurvy.

Never fail to operate on a case of tongue-tie, unless the child is a bleeder.

Never refuse the child ice to suck in cases of catarrhal stomatitis.

Never fail to impress on the parents of a choreic that the general management of the case is as important as the administration of drugs.

Never hesitate to say that whooping cough is one of the most contagious and dangerous diseases known.

Never forget that severe and fatal nephritis may follow a mild case of scarlet fever.

Never make a child with measles swelter under thick covering; light covering should be used during the entire febrile period.

Never neglect to give a daily warm bath to a child as soon as the rash of measles has subsided; follow by inunctions, to facilitate desquamation and prevent the dissemination of the fine scales.

Never constrict the child's limb in any way after it has been vaccinated.

Never neglect to examine a child for diabetes if polyuria is present.

Never confuse empyema with unresolved pneumonia, pleuro-pneumonia, or tuberculosis.

Never make light of an attack of bronchitis in an infant; every such attack should be regarded as a possible precursor of pneumonia.

Never regard a case of whooping cough as over until you are sure that all dangers from broncho-pneumonia are past.

Never make a diagnosis of scarlet fever from the eruption alone, as a great many skin eruptions resemble it.

Never forget that the greatest danger in measles arises from pulmonary complications, and the frequency is greatest in children under two years of age.

Never neglect the ears in scarlet fever because there is no pain or tenderness; otitis may develop without these symptoms. — *Med. Rev. of Reviews.*

AN INTERESTING OLD ITEM

Copy fr. old paper lining of trunk
Boston Morning Post March 2, 1841 Charles Gordon Greene, Editor

Error Rectified

The Undersigned, with surprise, learns that the following misrepresentation is in circulation in this city and vicinity, viz:

"Dr. Coggswell, the Homœopathic physician charges more for advice and visits than even Drs. Warren, Jackson or Channing."

Suffice it to say he has invariably charged the same as his professional brethren of the allopathic or common practice and to patients in moderate circumstances he makes a liberal deduction from the usual fees.

Touching the paternity of this maliciously false report, he will suppress his opinion — believing an enlightened community will decide correctly.

Being the only regular Homœopathic physician in Boston and having repeatedly disappointed patients from the neighboring towns who have called at his residence when professionally absent, the undersinged will hereafter be at his office (39 Front St. near Kneeland) from 10 to 11 A.M. and from 3 to 4 P.M. every day for the reception of patients in and out of the city.

References in Boston:

Hon. Daniel Webster	Hon. Rufus Choate
Bradfor Sumner Esq.	George Bancroft Esq.
Rev. Silas Aiken	Rev. O. A. Skinner

Several letters may be seen at Mr. J. B. Dow's bookstore, No. 362 Washington St.

F. Coggswell.

HOW TO STERILIZE A TOOTHBRUSH

The controversy regarding the desirability of the tooth brush, both sides of which have been represented in these columns, seems to have emphasized at least this one valuable point — that the toothbrush, if used at all, must be clean. In *The Dental Summary* (Toledo, O.), Dr. Hugh W. MacMillan, a Cincinnati dentist, gives some directions regarding the proper sterilization of this common utensil, which few users seem to think requires protection of any kind from the wandering germ. Dr. MacMillan thinks that it is now generally conceded that an unsterile brush may be a greater hindrance than a benefit to the health of a mouth. The toothbrush, he says, is tolerated because a satisfactory substitute or a suitable sterilizing agent for it has not been discovered. He goes on:

"Almost everybody agrees that second to thorough mastication of coarse foods, a sterile brush properly used is the best agent that we can employ for stimulation of the gums and cleaning the teeth. The whole problem is to find a method of sterilizing which can be accomplished quickly and easily without destroying the brush by boiling or strong antiseptics, which will furnish the brush in a dry state preparatory to using, and which will not consume an appreciable length of time in consummating.

"After considerable thought for a simple and efficient method of mouth-hygiene, the following plan seems to solve most difficulties. The patient is advised to keep an approved toothbrush and a salt-cellar (preferably aluminum) as his mouth-hygiene equipment. After properly brushing his gums

and teeth, sufficient salt is sprinkled in a glass of warm water to make a normal salt solution (approximately half a teaspoonful of salt). This is used as a mouth-wash. The brush is then held under the running water and cleansed as thoroughly as possible. Salt is then sprinkled upon the brush. The salt is dissolved on the wet brush and penetrates thoroughly to the centre of the tufts of the bristles. The brush is then hung in the usual place. When it is again needed, the water will have been evaporated, leaving a deposition of salt crystals in and around every bristle. Can you imagine germs living in such an environment? Use the brush as it appears, covered with salt, or, if too salty, knock off the excess salt and apply your favorite powder.

"This procedure thoroughly sterilizes and toughens the bristles, can be done without loss of time, and provides on the brush an efficient antiseptic for promoting mouth-hygiene."

Changes in Faculty of Boston University School of Medicine

The Faculty of Boston University School of Medicine has made the following additions to its teaching force for 1916–17:

Samuel A. Clement, M.D., *Instructor in Contagious Diseases.*

Alberta S. Guibord, M.D., *Instructor in Psycho-Analysis and Therapy.*

Francis H. MacCarthy, M.D., *Clinical Instructor in Diseases of Children.*

Howard Moore, M.D., *Lecturer on Orthopædics.*

Elizabeth Ross, M.D., *Lecturer on Bacteriology* (from Instructor in Pathology).

Helmuth Ulrich, M.D., *Lecturer on Hæmatology* (from Instructor in Pathology).

Dr. Frank C. Richardson's title on the Faculty has been changed from *Professor of Neurology and Electro-Therapeutics to Professor of Nervous Diseases.*

Dr. Alonzo G. Howard has been made full Professor and the head of the new department of Orthopædic Surgery with Dr. Howard Moore as Lecturer.

PERSONAL AND GENERAL ITEMS

Dr. Conrad Wesselhoeft, 2nd, has gone to the Mexican war front as First Lieutenant of the Medical Corps, 8th Massachusetts Infantry.

Dr. H. B. Denman has removed from Pawlet, Vermont, to Springfield, Vermont, to take the practice vacated by Dr. H. M. Morse.

Dr. Stacy W. Boyle (N. Y. Hom. Med. Coll., 1908), son of Dr. Chas. C. Boyle of New York, has opened an office in Middlebury, Vermont. This is an old homœopathic stronghold, and the profession wishes for him as great success as that of some of his predecessors.

TO BE LET, at Somersworth, New Hampshire, a physician's suite of rooms, with heat and plumbing. Rooms have been occupied several years by a homœopathic physician. For particulars address C. A. and A. M. Watson, Somersworth, New Hampshire.

A Fine Opening for a Young Physician

By the death of Dr. Frederick H. Sage, of Middletown, Conn., a successful practitioner of thirty-two years experience, a large clientele is left without a physician. Middletown has a population of over twenty thousand and has always liberally sustained Homœopathy. For particulars write to Mrs. F. H. Sage, 64 Main St., Middletown, Conn.

Dr. Edwin R. Lewis (B. U. S. M., 1901), Assistant Superintendent of the Massachusetts Homœopathic Hospital, and Dr. Margaret D. Cummins (B. U. S. M., 1916), were married at Goshen, New York, on June 15. They will make their home at 272 Allston St., Brighton.

Dr. John R. Noyes (B. U. S. M., 1904), of Brockton, Mass., was married on June 17th to Miss Frances Hughes, of New York City.

Dr. Nathan H. Garrick (B. U. S. M., 1915), was married on June 7 to Miss Rose De Vaney, of Reading, Mass.

Dr. Maria W. Norris, of Grand Rapids, Mich., has removed her office from the Shepard Building to 21 Prospect Ave., N. E. Dr. Norris gives special attention to dietetics.

Dr. Helmuth Ulrich, of the class of 1911 B. U. S. M., and assistant editor of the *New England Medical Gazette*, was married in Wilmington, Del., on June 20 to Miss Ethel C. McK. Beacham.

"The Evans Memorial for Clinical Research is desirous of coming into communication with as many physicians as possible who have used bacterial vaccines in the treatment of typhoid fever for the purpose of collecting statistics concerning the efficiency or non-efficiency of the method as a therapeutic measure. If any who have done this even with only one or a few cases will send their names and addresses, blank forms will be sent to them upon which uniform reports may be made. The credit will be given to each in any reports that may be published. Kindly address all communications to Dr. W. H. Watters, 80 East Concord St., Boston, Mass."

Notes from Hahnemann Medical College of Philadelphia:

The class of 1893 of Hahnemann Medical College of Philadelphia is raising a $3,000 fund for endowment, and the class of 1896 has pledged the education of one student.

The Alumni Association of the College at its June meeting elected the following officers:

President: Dr. R. L. Piper, Tyrone, Pa.
First Vice-President: Dr. H. I. Silvers, Atlantic City.
Second Vice-President: Dr. G. E. Manning, San Francisco.
Third Vice-President: Dr. H. C. Aldrich, Minneapolis.
Secretaries: Drs. B. K. Fletcher and W. C. Hunsicker, Philadelphia.
Treasurer: Dr. Wm. H. Keim, Philadelphia.

WHOLE WHEAT BREAD

Physicians wishing to prescribe whole wheat bread to their patients will find the following recipe for making it both satisfactory and convenient. It makes a wholesome and delicious bread which can scarcely fail to be enjoyed:

1 Quart Enright's "All o' the Wheat."
1 Quart Franklin Mills Whole Wheat Flour.
½ Cup of molasses.
1 Yeast cake.
1 Teaspoonful of salt.
1 Tablespoonful of shortening.

Add sufficient water to make a soft dough. Raise and bake as usual. This is a true and tried rule, makes three loaves, and once the taste for bread like this is established it would be rare indeed to find any one willing to go back to the old white flour bread.

Business Manager.

CORRESPONDENCE

A Letter from the Belgian Scholarship Committee 309 Wilkins Building, Washington, D. C.

March 28, 1916.

Editor of the New England Medical Gazette,
422 Columbia Rd., Boston, Mass.

My dear Sir:

I am sending to you enclosed a short sketch of the Belgian Scholarship work which I believe will prove of interest to the readers of the New England Medical Gazette. If you would publish this outline of our aims and objects, either in whole or in part, or make use of it in some other way, the favor would be most highly appreciated.

I wish to lay stress upon the fact that ours is not simply a relief work, but also to greater extent a work of *Reconstruction*.

Trusting that you will help us as much as you can, believe me, dear Sir,

Yours sincerely,

Dr. George Sarton.

A WORK OF RECONSTRUCTION

The Belgian Scholarship Committee was founded about a year ago in Washington by the well known author, scientist, and traveler, Dr. Nevil Monroe Hopkins. At first it confined its activities to the District of Columbia and its aim was simply to collect money for destitute scholars, but its scope has become broader and broader. The committee now includes among its members the Presidents or Chancellors of the following Universities: Johns Hopkins, Princeton, Michigan, Missouri, Leland Stanford, Pennsylvania, George Washington, State of New York, Nebraska, — and many other leading men of this country.

The aims of the Belgian Scholarship Committee are the following:

1. To give to the Belgian scholars, writers and artists a chance to resume their work of art or science. To accomplish this aim the Belgian Scholarship Committee acts as a clearing bureau between the American Universities, and other educational institutions and the Belgian victims of the war.

2. To raise a fund for the reconstruction of a new and better Belgium, especially in the educational field.

The first aim is only of a temporary nature; the second one becomes every day more important. Our ambition is to be ready, as soon as the war is over, to help in putting Belgium on her feet again for a new and greater career.

We are appealing for books to the American libraries; we hope that they will be willing to give some of their duplicate copies and also that we shall receive free sets of their publications from the educational institutions and learned societies.

We cannot afford to store and keep the books until the end of the war. Therefore, we do not ask for books, but rather for promises of books. We suggest that the whole business be managed in the following way: Each Library would simply send us a list of the books that it is willing to give to Belgium. This list would contain all bibliographical information that is necessary to identify the books without mistake (author, title, number of volumes, date and place of publication, editor). We should acknowledge receipt of these lists, and enter them on a duplicate list on cards. After the war, as soon as circumstances permit, the Belgian Scholarship Committee would write a letter to all the Libraries, recalling their promise, and asking them to send all the books to some central storehouse in New York City, from where they could easily be shipped to Belgium.

We shall concentrate our efforts upon the making up of a collection of American books — books published in America, or relating to American affairs. We should thus be able to offer to Belgium, soon after the war, an

American Library. No gift would be more appreciated and would do more to bring about a better understanding of American conditions and ideals, and greater international friendship.

Of course books given by publishers and authors will also be welcome. We would suggest leaving in each book its former exlibris, a short note being added to show how and when the transfer to Belgium was made. Dedications by the authors would be also much appreciated. The value of the collection would be in this way considerably increased. It would really constitute a lasting souvenir of America's generosity and sympathy.

We are also appealing for money. Money is needed to help Belgian scholars and artists; money is needed to carry on our activities; lastly we must be able to remit a huge reconstructiou fund (to be used for educational purposes only) to the Belgian people when the war is over.

We cannot expect to be helped by the general public, as is the case for the general relief fund, but we earnestly appeal to the elite of the American people, — to those who are especially interested in the development and diffusion of knowledge and art.

The best way to show one's sympathy is to become a Fellow or Member of the Belgian Scholarship Fund for the duration of the war and two years thereafter. The Associate members agree to subscribe at least Ten Dollars a year; the Sustaining members at least One Hundred, and the Fellows a thousand. Please draw checks to the order of John Joy Edson, Treasurer, and send them to the Belgian Scholarship Committee, 309 Wilkins Building, Washington, D. C.

When the war is over the Belgian Scholarship Committee will publish a book containing a complete record of its activities and a list of the Fellows and Members whose devotion made it possible.

We wish to lay stress upon the fact that ours is not simply a relief work; it is essentially a work of Reconstruction, making for international friendship and peace.

George Sarton,
D. Sc.
University of Ghent, Belgium,
Secretary of the Committee.

5. 1603.

" A Work of Reconstruction"
Belgian Scholarship Committee
309 Wilkins Bldg., Washington, D. C.

I, the undersigned, agree to subscribe $..... a year, for the duration of the war and two years thereafter, to the **Belgian Scholarship Fund.** I wish that my name be entered in the list of its..... { Members. / Fellows. I enclose cheque for $....., being my subscription for 1916.

Date:.....

Associate Member, $ 10.00 a year *Signature:*.....
Sustaining " $ 100.00
Fellow. . . . $1000.00 *Address:* .....
Please draw cheque to the order of " JOHN JOY EDSON, Treasurer," and mail to above address

---

1916 AUTOMOBILE BLUE BOOKS OUT GREATLY REVISED

Good Roads Movement has Added Thousands of Miles of Improved Highways

The 1916 touring season has officially opened with the appearance of the 1916 Automobile Blue Books on the market, completely revised and greatly enlarged in scope. The new issue comprises eight volumes in all, a new Southern Volume having been added covering the southeastern states. The territory covered by each volume follows:

Volume 1 — New York State and Adjacent Canada.
Volume 2 — New England and Maritime Provinces.
Volume 3 — New Jersey, Penn., Del., Md., D. C. and W. Va.

Volume 4 — The Middle West States.
Volume 5 — Mississippi River to the Pacific Coast.
Volume 6 — The Southeastern States.
Volume 7 — Metropolitan Automobile Blue Book.
Volume 8 — Pacific Coast Blue Book.

In no year previous to 1915 has the good roads movement shown a greater development. There is hardly a state in the popular touring sections that has not added hundreds of miles to its total of state and country roads. All of these new roads covered personally during the past year by B. B. Field Scouts, appear in the new books, ready for the 1916 tourists.

That motor touring on the largest scale in history will be had during the coming year is the general belief of the publishers as borne out by the fact that they have published almost double the quantity of Blue Books that were put on the market in 1915. The same opinion has been universally expressed by other authorities in the automobile world. This feeling of confidence seems to be well founded by the following factors: the probability of the war in Europe continuing at least throughout the summer will still prevent the wealthier class of car-owners from going abroad; the tremendous increase in the output of pleasure cars compared with previous years; the sudden wealth that has poured into this country directly due to the war and its demand upon our industries has created thousands of new spenders.

PILOT ROAD MAPS IN NEW YORK AND NEW ENGLAND VOLUMES BECOME PERMANENT FEATURE

The Pilot Road Maps included in the New York and New England volumes for the first time in 1915 have met with the greatest approval and will become a permanent part of these volumes. They are based on the scale of 3 miles to the inch and show the entire net work of crossroads not shown in the regular maps and running directions of the Books proper. Thousands of miles of new and improved roads are included in each of these volumes for 1916. Volume No. 2 alone, has 20,000 miles of revised data.

PROMINENT AUTO CLUBS ADOPT BLUE BOOKS

The A. A. A., as usual, has adopted the Blue Books for 1916 as their Official Guide. In addition, eleven of the most prominent local Auto Clubs have arranged with the publishers for special Club Edition of the book to be given free to their members. These clubs, of which the list follows, are some of the most active organizations in the country which are now working in the interests of motoring in general and good roads in particular: Auto Club of Cincinnati, O., Auto Club of Cleveland, O., Auto Club of Delaware Co., Penn., Auto Club of Denver, Colo., Auto Club of Jamestown, N. Y., the Louisville Club of Kentucky, Auto Club of Maryland, the Ohio State Auto Club, Auto Club of Philadelphia, Pa., the St. Louis Club, and the Auto Club of Toledo, O.

KENTUCKY FEUDS

Not many years ago Clay County, Kentucky, was one of the most notorious counties for the famous feuds that broke out continually. The newspapers made frequent mention of the Baker-Howard feud that was waged bitterly. To-day there is no newspaper notoriety for Clay County, for there is no feud there. The remarkable story of what conquered the feuds is to be told in The Sunday School Times by a well-known writer who visited the county and met the man who is the hero of this thrilling story. This man who brought about the transformation in the county was once in the thick of the feud himself. A three weeks' free trial of The Sunday School Times may be had (as long as the supply lasts), for a post card request, asking for "Kentucky Feuds," addressed to The Sunday School Times, Philadelphia, Pa.

THE NEW ENGLAND MEDICAL GAZETTE

VOL. LI AUGUST, 1916 No. 8

Books for review, exchanges and contributions — the latter to be contributed to the GAZETTE only and preferably to be typewritten — personal and news items should be sent to THE NEW ENGLAND MEDICAL GAZETTE, 80 East Concord Street, Boston. Subscriptions and all communications relating to advertising or other business should be sent to the Busines Manager, 80 East Concord Street, Boston, Mass.

THE GAZETTE does not hold itself responsible for the opinions expressed by its contributors. Reprints furnished at cost.

POLIOMYELITIS

The child plague, as the newspapers are calling *poliomyelitis anterior acuta*, is just now giving the health officers in New York and Massachusetts much concern. The July reports for the State show that nearly double the number of cases usually reported for the month have already been recorded (77 cases up to July 25th). The two main centers are in the Western part of the State, namely, Westfield and North Adams. Other cases are scattered through Springfield, Fall River, New Bedford and other towns and cities. It has been proven that some of the children affected in North Adams came from New York.

In a valuable paper upon the disease appearing in the Boston *Medical and Surgical Journal* of July 20, 1916, Francis R. Fraser writes as follows:—

"The evidence at present available on the manner of conveyance of the virus of acute poliomyelitis points to the importance of personal communication of the infection.

Acute cases, recovered cases, mild cases, abortive cases and human contacts are all capable of conveying the infection. Any methods of isolation and quarantine that may be deemed necessary as preventative measures require for their efficient administration that all cases, including the abortive forms, should be recognized early.

The diagnosis of acute poliomyelitis is not of great difficulty after paralysis sets in, but is of extreme difficulty in the pre-para-

lytic period and in mild and abortive cases. The acute stages may be divided into four periods. There is first a period of incubation, when no symptoms are present and when the patient is apparently perfectly well. The length of the incubation period is difficult to ascertain, largely because of the difficulty of determining the source and time of infection, but has been variously computed to be from two to ten days, and may be as long as three weeks. A study of the experimental disease in monkeys, which simulates the disease in human beings very closely, shows that in monkeys there is an incubation period varying from three to forty-six days or longer. The second or pre-paralytic stage is marked by a sudden onset. From the statistics of the Vermont epidemic of 1914, it is found that of two hundred and eighty-four cases, one hundred and seventy gave a history of excellent health before this onset; in ninety-seven the health is recorded as good, and in eighteen as poor. The pre-paralytic period may be entirely absent, and this is commonly seen in the sporadic cases, but in epidemics it is almost always present. In one hundred and twelve cases admitted to the Hospital of the Rockefeller Institute during the years 1911 and 1913, in whom the time of onset of the pre-paralytic period could be definitely ascertained, the average duration of this period was over two days. The longest period in this series was fifteen days, although in a few cases the pre-paralytic and general symptoms have disappeared entirely for a few days, only to return with paralysis. The third period follows the second immediately; it is characterized by paralysis or weakness of muscles, in addition to symptoms that characterize the earlier period. The paralysis may be developed suddenly without further spread, or the further involvement of muscles may continue for an indefinite period, usually for a few days only, and seldom for more than ten days. In the fourth period no further spread takes place; the patient's general symptoms are still present but are subsiding. This period occasionally ends abruptly, as if by crisis, but is more often prolonged, the symptoms disappearing gradually. It may be many weeks before the pain and tenderness and other acute symptoms disappear. With this period the acute stages may be considered to end, and it is then the results of the disease that have to be dealt with.

The lack of definition of these periods is to be expected since they are defined by symptoms which are only the outward evidence of the disease process that is taking place in the body generally, and in the central nervous system in particular."

It is well proven that poliomyelitis is an infectious and probably also a contagious disease. Its virus has been shown by Flexner to be a filterable bacterium received principally through

dust from the air breathed and has its focal starting point in the mucous membrane of the nose and mouth. With this idea in mind our able Health Commissioner, Dr. McLaughlin, with his now well-organized corps of assistants, has laid down the rule that in all infected districts the streets shall be washed down with water at least twice a day, that all dirt holes shall be cleaned up and that the public drinking places, soda fountains, and the like shall use separate drinking cups for each customer. For travel the Federal authorities do not yet require adults to have certificates, but these will be issued to those children who do not reside in infected premises.

An "Issue of Blood"

Not a "comedy of errors" but a tragedy of errors lies behind the words Uterine Hemorrhage. From the time of the biblical woman who had an "issue of blood twelve years" up to the present, women have concealed this weakness, doctors have blundered over it, and death has taken its toll regularly in consequence. The tragedy lies in the fact that the "issue of blood" is but a symptom of a generally curable disease, could it be promptly recognized.

In spite of the campaign of education relative to physical ailments and the general dissemination of knowledge concerning the early symptoms of all chronic diseases, there remains a large class of women, — and they do not all belong entirely to the uneducated, — who stubbornly refuse to be concerned over any unusual appearance of blood from the genital tract.

In spite of our post-graduate schools, our medical societies, and our text-books and journals, there are doctors (and they do not all live in the backwoods) who are so indifferent to the significance of an inter-menstrual or a post-climacteric flow that they fail to make a pelvic examination of women showing this significant sign of disease, and thus they become partners in crime with the grim figure who wields the scythe.

There are today waiting in the reception room of thousands of doctors, women who for the first time have come to consult the physician for "an issue of blood." What verdict will they receive? The majority of such women will receive a painstaking examination and advice upon appropriate treatment, which if followed will in all probability terminate the abnormal flow in ninety per cent of the cases treated. But it is the minority of these women who are awaiting an examination that demands our attention. Some will receive a prescription and no examination. Some will receive a perfunctory examination and a tampon. Some will be "jollied" by a kindly

medical man who never alarms any one and will be told to go home and "forget it." From fifty to seventy-five per cent of this minority who have been thus deluded, will, if they seek no other medical advice, eventually come to the operating table for an operation which through needless delay will be of a serious character.

When the physician who ministers to the physical ailments of women, either in general or particular, learns and acts promptly upon the fact that every inter-menstrual and post-climacteric "flow" is portentous of evil, then there will be fewer invalids and less deaths from "womb trouble."

But what of the other large class who are not in the waiting rooms of the physicians, yet who are quite as much in need of his advice for this "issue of blood"? It is for them that our line of education must be extended and particularized. The aversion to going to a doctor because of the patient's fear of being told that she has a tumor or a cancer has never averted such a condition. It has in innumerable instances hastened death. Too much cannot be said to adult women in our public health talks of the desirability of seeking promptly medical advice concerning a uterine flow which is at all abnormal to the regular menstrual cycle.

Royal Honors to an Homœopath

Dr. Leon Brasol of Petrograd has recently been knighted by royal order in recognition of his work as Superintendent of the Petrograd Homœopathic Hospital. The notice of his decoration was sent in the following letter: —

"His Imperial Majesty, in view of the services rendered by you to the Red Cross Society in the present war, has been graciously pleased on the 14th day of November, 1915, to make you a Knight of the Order of St. Vladimir of the 4th degree.

"Congratulating you on this Imperial Act of Grace, I have the honor to inform your Excellency that the cross and patent will be despatched later."

Previous to this decoration, in December, 1914, Dr. Brasol was promoted "*for distinguished services*" to the rank of Actual State Councillor, which rank corresponds to that of Major-General in our Army.

Petrograd Homœopathic Hospital is doing work recognized by the Red Cross Society. From September, 1914, to November, 1915, its forty beds have been full, and three hundred sick and wounded soldiers passed through its wards in that time. Patients

were sent to it by the Petrograd Military Distributing Hospital (allopathic), an official acknowledgment of Homœopathy.

Dr. Brasol is a corresponding member of the American Institute of Homœopathy, so that in the honor conferred upon him the Institute is honored.

Apropos of the International Homœopathic Congress

At the London meeting of the International Homœopathic Congress held in 1911 it was voted to hold the next session of the Congress in Berlin in 1916, and certain preliminary arrangements had been made, but of course the terrible European conflict made this meeting impossible. It was therefore voted at the recent meeting of the American Institute of Homœopathy, held at Baltimore, June 25 to July 1, to pass the following resolutions:

"RESOLVED, that the American Institute of Homœopathy in its 72nd annual session now being held at Baltimore, Maryland receives with appreciation the accompanying brief reports of the work done by the International Homœopathic Council during the years 1912, 1913, 1914, 1915, and commends the work of said Council in its propagandistic efforts since the International Homœopathic Congress which was held in London in 1911.

"RESOLVED, that a committee of three be appointed by our President empowered to make arrangements in conjunction with the International Homœopathic Council for an International Homœopathic Congress at as early a date as may be consistent with the politico-economic condition of the world."

How far in the future this date must be no man living can say, but let us fervently hope that the great obstacle to its appointment may be speedily removed and the world once more enjoy the blessings of peace, although not in this day and generation can the awful results of the war be overcome or forgotten.

Dr. E. Petrie Hoyle

Those of our readers who have met the genial Dr. Hoyle on his visits to America, — and his friends here are not few, — will be interested to learn further of his medical work in the present European war, to which he has given all his time and strength since the very first.

In the early period of the war he was at Furnes, Antwerp and Malines, with the Red Cross, then as one of the staff at the Anglo-French-American Hospital at Neuilly. From May

30, 1915, to May, 1916, he served as Medicin Chef in the military hospital at Rubelle, with forty beds. During his service two hundred cases were treated without a death, besides thirty-five civilian patients, old men trying to do the work of young ones and getting hurt.

Dr. Hoyle is now with the Ulster Volunteer Hospital at Lyons, recently moved from Pau. The hospital was made over from an old convent and has a capacity of one hundred beds (only eighty at present furnished), and two motor ambulances It is close to the railroad station and is filled with wounded soldiers from Verdun. The time of hospital residence of patients is being shortened, Dr. Hoyle writes, and the men are being hurried back to the front as soon as possible!!! The staff consists of three, the chief, Dr. Hoyle, and a woman anæsthetist. The nurses are volunteers, ladies accustomed to luxuries, who are doing all the ward work. The operating-room sister was trained in Cambridge, Massachusetts.

Dr. Hoyle writes that the contributions sent him a year ago have been spent for comforts and drugs for the soldiers, and he would be glad of further funds. He supplies his own homœopathic drugs, — Calendula, Hypericum, Symphytum particularly. The *Gazette* will be very glad to forward any contributions of money which our readers wish to make. As Dr. Hoyle is giving his time, is it not our privilege as well as our duty to help with our money?

A POST-GRADUATE COURSE IN MEDICINE FOR PRACTICING PHYSICIANS

Extension training in medicine for regular practitioners is essentially a new departure. The Bureau of Education at Washington has just received an account of an apparently promising experiment in this direction undertaken during the present summer by the University of North Carolina in cooperation with the State Board of Health. The outline of the plan is as follows:

Groups of six towns situated relatively close together are selected as the territory for a single instructor. In each town a class is formed, composed of physicians from the town itself and from the surrounding country. A skilled scientist is then brought from one of the centers of medical progress, to give instruction for sixteen weeks in each circuit of towns. His procedure is to lecture to the class in the first town on Monday morning, for example, and to hold a clinic in the afternoon. On the next day he proceeds to another town, lectures and holds a clinic, then to another, and so on, returning to the first as soon as the round is completed. Each class thus gets sixteen lectures, with accompanying clinical demonstrations, during the course.

The University has already inaugurated two such courses which are being given by specialists in children's diseases. Each class section numbers from ten to fifteen physicians, and a total of about 150 physicians is already in attendance. The expenses are borne by the physicians taking the course. The University and the State Board of Health, with the aid of a local secretary in each town, manage the course. The University selects the lecturers.

ORIGINAL COMMUNICATIONS

DIARRHŒA IN INFANCY

By Orville R. Chadwell, M.D., Boston, Mass.

There is scarcely a subject in the study of pediatrics over which more discussion has occurred or, at least in the past, has resulted in more confusion to the mind of the average physician, than the facts concerning the diarrhœal conditions of infancy. Groups of workers, all with authority to speak, have differed violently over the etiology, and consequently, as will be seen, over the treatment. One series of investigations has promptly contradicted another series, and if one would form any conclusion from the mountains of literature, it would be that babies in Germany and France must suffer entirely differently from babies in America, and those in New York must differ greatly from those in Boston, at least when these babies have diarrhœa as a symptom and when the condition behind the symptom needs treatment. Shall the classification be according to pathology, etiology, or symptomatology? Shall the patient be fed protein or carbohydrate, and if carbohydrate, shall it be lactose or maltose or starch? Shall drugs be administered or shall the dependence be on diet? All sorts of opinions have been expressed on points as important for consideration as these mentioned, and unanimity seems a far-away point. It is presumed that the greater number who read this paper are those in general practice, and the attempt will be made to offer what seems to be the more generally accepted views of those who specialize.

Classification.

Generally today the sick infant in whom diarrhœa is the chief symptom of illness falls into one of three groups, namely, those suffering from

I. Indigestion
II. Indigestion with fermentation
III. Infectious diarrhœa.

The old terms gastro-enteritis, ileo-colitis, dysentery, cholera infantum, etc., are still used, but it will generally be found that these fall rather naturally into one of the above three groups if the weight of consideration is placed properly on the etiology, symptomatology and definite pathology, but it must be acknowledged that the symptoms attending a *severe* case, falling properly in one group, may so closely resemble the symptoms attending a *mild* case in another group that confusion in classification is not easily avoided.

I. INDIGESTION.

When diarrhoea is a symptom of indigestion it means that the infant's digestive function is incapable of properly caring for the amount of either fat, carbohydrate or protein of mineral elements given in the child's dietary, and it first must be determined which element in the food is failing of digestion. Many authorities believe that an *improper balancing* of the food elements causing indigestion is directly responsible for the more serious symptoms seen when fermentation or infection occur, so that a consideration of the results following over-feeding of either fat, carbohydrate or protein is of no small importance. No consideration will be given here to indigestion from salt metabolism.

(*a*) *Indigestion from excess of fat.* The feeding history may give important information directly. The unintelligent use of high fat top milk is commonly encountered in home modifications and the amount of fat actually given the child when much less was prescribed may explain all the symptoms. The following case illustrates this point: A mother of average intelligence presumably following specific written instructions as to the amount of cream removed from her milk supply, was found to be giving, when the child became seriously ill, a 12% fat instead of a 3% fat as intended by her physician. This may raise the question whether home modification can ever be trusted to an untrained person.

If acute indigestion from fat exists the following symptoms are usually present: — acid, creamy vomitus, loss of appetite, not infrequently fever, and stools with soft curds even resembling curdled milk or cream. In very severe cases fat drops may actually be seen in the stools, which resemble those following the administration of castor oil. Examination of the stools in the laboratory to establish the presence of neutral fat or excess of fat in the form of fatty acids is of great importance for accurate diagnosis. It must be said that fat indigestion is more commonly a chronic condition with a history of stationary weight and vomiting, with dry, crumbly, alkaline, soapy stools, and the diarrhœa more commonly seen from excess of fat in the diet is chronic, with green movements and the general appearance of approaching or existent atrophy, or to use the old term, marasmus.

The importance of a careful history as to the feeding, and the examination of the stools, is reiterated.

(*b*) *Indigestion from excess of carbohydrate.* This form of indigestion may be the result of too much sugar or starch. There is little doubt that the particular form of sugar used, whether lactose, saccharose or maltose, may cause

variation in the tolerance of the individual infant for sugar in general. As a rule the sugar indigestions as usually seen are chronic. The careful scrutiny of the amounts and kinds offered the child, as brought out in the feeding history, may promptly suggest the line of treatment to be followed in correcting the digestive disturbance. A history of feeding on condensed milk is suggestive of excess of cane sugar, and the use of large amounts of the proprietary dextri-maltose preparations in order to produce gain in weight may occasionally cause disturbance of the bowels.

One great difficulty in diagnosing this form of indigestion lies in ruling out the effects resulting from the action of the fermentative micro-organisms. In the presence of active colonies of these bacteria even moderate amounts of carbohydrate may result in symptoms commonly accredited to excess of this element, namely, frothy, acid, excoriating movements with irritation of the buttocks and the presence of colic. If the offending sugar is *lactose* or *saccharose* the color of the stools is likely to be green, and if *maltose* has been fed the color may be more of a brown. A tendency to acid, watery vomiting may be an accompaniment. If fever is present there should be considerable hesitation in classifying the case as a simple indigestion and not as belonging in the second general group, namely, indigestion with fermentation. Several investigators have deliberately fed very large percentages of sugar, particularly lactose, without producing fever, i.e., toxæmia, and, as is well known, so many infants take large amounts of cane sugar in condensed milk for quite long periods without any febrile signs of intolerance (toxæmia). So that some doubt is cast as to the existence of indigestion from excess of sugar *per se*.

The diarrhœa resulting from excess of starch can more easily be diagnosed by the examination of the stools, where dilute Gram's iodine easily brings out the undigested starch granules. Here again a history of feeding some proprietary starch-containing mixture may suggest the diagnosis. The symptoms of indigestion from too much starch vary but slightly from those resulting from excess of the other carbohydrates, and again due weight must be given to the possibility of bacterial fermentation.

(*c*) *Indigestion from excess of protein.* In the substitution of cow's milk in some modification for human milk, the large amount of *casein* in the protein element frequently causes indigestion, and it is the symptoms of protein intolerance that the physician is most commonly called upon to combat. The stools when diarrhœa is present are apt to be alkaline and brown in color, watery or gelatinous in consistency, and containing the tough casein curds. Colic and the vomiting

of curds may accompany, but fever is rather less common than in indigestion from too much fat or carbohydrate.

After giving so much space to the discussion of simple elementary indigestion, and this certainly must not be disregarded in diagnosis, it is not so often the cases belonging in this first general group that cause anxiety, but it is the *acute* diarrhœal conditions that belong properly to the second and third groups that swell the statistics on infant mortality and tax the ability of the physician most seriously. When to *simple indigestion* is added the effect of bacterial fermentation, the patient must be classed with the group of cases suffering from

II. INDIGESTION WITH FERMENTATION

This condition, often called *fermentative diarrhœa*, *alimentary intoxication*, and *gastro-enteritis*, may be, as previously mentioned, a more serious stage of indigestion. The serious symptoms characterizing this malady are, however, the results of absorption from the intestinal tract of poisonous substances produced by the activities of certain *micro-organisms*. These bacteria, whether present normally in the digestive tract or introduced from without, are capable of using the various food elements as culture media for their own multiplication, and thus causing *toxæmia*. Investigation as to the identity of these fermentative bacteria is still unproductive of definite knowledge, and no attempt will be made in this paper to mention the various groups which have been at one time or other found present in this condition. The term *fermentation* is intended to include the term *putrefaction* throughout this article.

The symptoms presented by the infant vary greatly in severity. *Vomiting* may or may not occur. If it does it has no marked characteristic. *Fever* is present, and generally the curve shows a moderate elevation for from three to five days. *Colic* is common, and generally some *distension*, but no spasm on pressure. The character of the stools will vary inasmuch as the fermentative media may be either fat, carbohydrate or protein according to the facultative selection of the micro-organisms, one or several. If the fat or carbohydrate is utilized the stools are likely to be acid and green in color, and of watery, frothy consistency. Their acidity will irritate the mucosa, so that an excess of mucus is frequent, and the skin about the anus is likely to be excoriated. If the bacteria utilize protein in their activities the stools are more apt to be alkaline, brown and putrid. In severe toxic cases a musty odor is a bad prognostic sign. If the stools are frequent and profusely watery the skin may feel dry, a symptom for consideration on the part of the physician. The *toxæmia* may be very pronounced, even in cases

with no alarming diarrhœa signs, and acidosis, convulsions, etc., occur in these toxic subjects. As this condition is truly a toxæmia and not a septicemia, involvement of the other organs in not expected. The *urine* may contain some albumen and the acetone bodies, and if a *leucocyte count* is made an increase in the polynuclear forms will be found. Of course there will be some *anorexia*, but no startling loss of body weight is usually seen.

III. INFECTIOUS DIARRHŒA

This condition may be more familiar under the classification of *ileo-colitis*, *dysentery* or *cholera infantum*. The considerations involved in the discussion of this serious disease are almost too numerous for a paper of this sort. The direct *etiological factor* is a micro-organism belonging to one of three groups (a) the *dysentery bacillus* in its various forms, (b) the *gas bacillus* (probably) and (c) several of the *pus-producing organisms*. The invading bacterium actually invades the structure of the digestive tract, giving a definite pathology, and generally these pathological lesions are confined to the colon and lower portion of the ileum, hence the old term ileo-colitis. The severity of the lesions varies from a catarrhal inflammation of the mucosa to deep ulceration and infiltration about the Peyer's patches and solitary follicles of the canal. In the severest types sloughing of membrane and gangrene may occur. By the entrance into the blood stream of the micro-organisms there is a resulting *septicemia*.

The condition is one seen practically only in hot weather. Probably the climatic conditions are contributory to the infection only by lowering the individual resistance of the infant and enhancing the virulence of the invading bacteria.

There is nothing in the symptomatology indicative of the identity of the particular micro-organism causing the disease except that sharply *acid* stools may suggest the gas bacillus as the infecting agent rather than some member of the other groups. The disease is rather less commonly due to the gas bacillus, however, and this is a point to be remembered in treatment.

The onset is sudden as a rule, and violent. *Diarrhœa* is an early and serious symptom. The first stools are *fecal*, followed in 24 to 36 hours by those containing *blood*, *mucus* and *pus*. The presence of the latter may have to be determined by the microscope. The daily number of movements varies, but twenty is not an unusual number even in cases of moderate severity. *Pus* may not appear until late, and this statement is also true of the membrane. Because of the character and location of the lesions *tenesmus* and *pain* are common. The abdomen as a rule is notably *sunken*, and there may be some *tenderness* over the colon.

Fever is present, persistent and variable as to the highest point of elevation. The *stools*, though often small in amount, drain the tissues rapidly and the *skin* becomes dry, the *urine* scanty and dark. It may contain *albumin* and not infrequently the *acetone bodies*. If *acidosis* is present, *vomiting* is not uncommon.

While these symptoms enumerated are typical of the average case, it must not be forgotten that true cases of infectious diarrhœa, but of a *very mild form*, are seen wherein the diagnosis from acute indigestion or indigestion with fermentation must be determined by stool examination alone, though in infectious diarrhœa some elevation of temperature is more persistent.

From this benign type the severity of symptoms may vary greatly to include the *fulminating* cases with *extreme hyperexia*, *uncontrollable vomiting*, profound *toxic* symptoms, *emaciation* to an extreme degree, and *death* following in from one to five days. The term *cholera infantum* is probably correctly applied to this fatal condition, although some writers mention this disease as an entity. The entrance of the bacteria into the blood stream explains the serious *pulmonary* and *renal* complications not infrequently following the course of the diarrhœa.

DIAGNOSIS

The diagnosis which will properly classify a case of *acute* infantile diarrhœa as belonging to one of the three groups discussed is not always easy, as shown by the reasons mentioned in the discussion.

Fever for several days points against a simple indigestion. If persistent for a week or more it points to a probably infectious diarrhœa.

If *distension* is present it is rather suggestive of indigestion with fermentation. Conversely, the markedly *retracted abdomen* points to an infectious diarrhœa.

Pain is common to all types, but *tenesmus* generally to the cases of infectious diarrhœa.

In infants, typhoid may be confused with the diarrhœas, but in typhoid the blood rarely shows any polymorphonuclear increase in the blood examination, and a Widal test may help establish diagnosis. Examination of the stools microscopically may be the only definite means of determining the condition.

Intussusception must be differentiated from an acute onset of infectious diarrhœa. In the former condition there are generally seen three important symptoms: —

(*a*) *Agonizing pain*, causing the infant to scream, at the time the telescoping of the bowel occurs;

(*b*) *Shock*, quite definitely existing for some little time, and the presence of blood and mucus *without* fecal material;

(*c*) *Tumor* also may be felt in intussusception. *Distension* is more likely in this condition also. Fever, vomiting, leucocytosis are common to both.

It must not be forgotten that an intussusception may occur in the course of an infectious diarrhœa. In this instance a careful history is of great importance and careful examination of the abdomen for the presence of tumor.

PROGNOSIS

The prognosis, while governed, of course, by the diagnosis, may be grave in any severe cases. An acute *indigestion* may become chronic and pass into the severe stages of malnutrition. An *indigestion with fermentation* presenting marked toxic signs should cause anxiety and a doubtful prognosis. An *infectious diarrhœa* is always serious. The previous history and the general condition of the little sufferer must govern prognosis in all conditions. Persistent sultry weather and bad environment which may not be improved may definitely alter prognosis. The presence of acidosis will warrant a guarded opinion.

TREATMENT

Certain features of treatment are applicable to all three forms of diarrhœal disease.

Castor oil to clean the intestinal tract is indicated in the beginning of every case of infantile diarrhœa. One dose of two drams is generally sufficient. If this is vomited, *washing of the stomach* may be indicated and is not difficult in so small subjects, as a rule.

Irrigation of the colon with normal saline is often advisable, but seldom more than *once a day*. If acidosis exists, sodium bicarbonate may be added to the saline for the first washing. The amount should be two drams to the pint of saline.

Withholding all food for twenty-four hours, but *giving water freely* if possible, is a safe rule in all cases, no matter what the diagnosis.

If the little patient can be placed in surroundings cooled by sea breezes, this change of atmosphere may in itself work wonders. Removal of the child out of doors in the shade, carefully screened from flies, is desirable, but of course of less importance when dealing with a simple indigestion.

If the *fever* is high and the weather very hot, *cool sponging* without too much disturbance of the child may help. All this is in the way of general treatment.

DIET

In *indigestion*, if the diagnosis can establish the particular element which fails to be properly digested, the logical treatment is the complete withdrawal or the considerable reduction of that element in the food.

However, beyond the consideration of the *acute* signs of indigestion, with *diarrhœa* as a chief symptom, this paper is not intended to deal, as that discussion would more properly concern the care of a feeding case.

The treatment of *indigestion with fermentation* or of *infectious diarrhœa* can scarcely be successful unless some consideration be given the habits of growth and general behaviour of the invading bacteria as they exist in the intestine. Whether they flourish on carbohydrate (i.e., cause true fermentation) or whether they grow best on protein (i.e., cause putrefaction) are highly important factors in governing the selection of diet for the infant. Unfortunately without laboratory examination of the stools there can be no exact, intelligent procedure in the beginning, for time must be given for these examinations to be made. While not at all scientific, it is often necessary to guess on what evidence is present as to the nature of the infection, and to proceed in treatment until failure to improve or aggravation of symptoms suggest that mistake in diagnosis has been made. It is rather more general experience, however, that the majority of these diarrhœa cases are the results of *protein* putrefaction, and until there is certainty that the diarrhœa results either from indigestion of too much carbohydrate, or that the *gas bacillus* is the infecting agent, it is generally safe to begin feeding barley water sweetened with lactose, making a 7% solution of the latter, after the period of starvation. There are some mothers who become very anxious over the starvation of their children, and they may be comforted, if this amount of food is offered from the beginning, as most children refuse this starch and sugar mixture and so the digestive organs are given a rest, anyway.

It has been felt in the past that the use of maltose was contra-indicated in these acute diarrhœas. In theory its more rapid absorption leaves insufficient residue in the intestine for the formation of a culture medium favorable to the growth of the lactic acid bacillus. The presence of the latter in large numbers is desirable because in the presence of this organism fermentative processes are retarded. There is evidence, however, that the maltose-dextrin preparations are fermentable, and when the baby is losing weight and energy so very rapidly, as during these fermentative or infectious processes, some food which can be easily and rapidly assimilated seems desirable. If it be true

that malt sugar is *not* fermentable, and that if in infections with the gas bacillus, for instance, fermentation of food is undesirable, then the feeding of maltose in some form is indicated, if only to aid the nutrition of the child. The maltose can be used in place of lactose in barley water if desired.

Whether lactose or maltose be used, as soon as the condition of the patient is improved it is easy to restore the protein element in the dietary by the very gradual addition of milk to these carbohydrate solutions until the usual dietary is established. As the milk is added it is generally wise to boil the mixture to increase the digestibility of the casein.

If the laboratory tests show the infecting organism to be one which would contra-indicate the use of the carbohydrate dietary (chiefly in gas bacillus infections) then only sugar or starch enough to favor the growth of the lactic acid bacillus should be given, and broth, albumin water or if possible albumin milk (Eiweissmilch). As soon as the stools begin to return to the normal (particularly as regards color) the carbohydrate element can be gradually restored by the addition of starch or maltose dextrin to the milk, or the broths thickened with barley, vermicelli, etc.

Whatever is fed, it is well to feed rather small quantities, to the babies, and at short intervals.

Frequent mention has been made of the lactic acid bacillus in this discussion. There is ample evidence that most of the bacteria which cause the diarrhœas are much inhibited in their action in the presence of this organism. This knowledge has resulted in the feeding of buttermilk or milk ripened with the cultures of the Bulgarian strain of the lactic acid bacillus. Finkelstein's Eiweissmilch or albumin milk has been recommended largely because of this lactic acid factor. It is, however, rather general experience that infants take these preparations only after considerable urging and then only in small amounts. On the other hand, cultures of the lactic acid bacillus can be given in sterile sweetened water rather easily, in fact, in place of plain water if necessary. Therefore it can do but little harm in the presence of either one of these diarrhœal infections to begin the administration of the lactic acid bacillus in culture early with the precaution of keeping low the amount of carbohydrate, where gas bacillus infection is suspected.

The return to the usual diet should be made with caution, and the appetite of the child, the character of the stools, and the temperature chart should be carefully considered. Relapses are easily provoked by too great haste in feeding.

Too great loss of body fluids must be constantly guarded against. It is a good habit to feel daily the texture of the skin

by pinching the infant's cheek, and in the very young to notice the depression of the fontanelle. If the skin is dry and the fontanelle depressed, water must be furnished the tissues in some way, preferably, of course, by mouth. If the stomach is intolerant, then a salt water solution should be introduced by some modification of the Murphy-Fowler drip into the rectum, or injected directly into the subcutaneous tissues.

If there results from infectious diarrhœa a profound septicemia, some benefit has been claimed from injecting into the blood stream a 2.5% dextrose solution, in saline, to the amount of four ounces three or four times daily.

In the extreme cases stimulation by alcohol, caffein or camphor may be necessary. The latter seems to work well in children and is generally given subcutaneously in doses of one or two grains in oil.

Medicines, beyond the remedies indicated by the individual symptoms, are of doubtful value. It is no longer a good practice to give intestinal antiseptics or astringents such as bismuth. In certain cases where great irritability and tenesmus of the anus is persistent, the little sufferer will get rest and comfort from the judicious use of the deodorized tincture of opium, giving just enough to soothe the activity of the lower bowel.

TO SUMMARIZE. (TREATMENT)

Clean out intestines. (Castor oil)
Wash out stomach and bowels if necessary.
Withhold food for twenty-four hours if necessary.
Sponge with cool water to reduce fever.
Get patient out of doors or at seashore if possible.
Screen from flies.
Have examination of stools, to establish diagnosis and infecting agent.
Meantime, begin barley water sweetened with lactose or maltose dextrin.
Feed good cultures of the lactic acid bacillus in sweetened water.
If gas bacillus infection, give but little carbohydrate and rely on buttermilk preparation or clear broth or albumin water, etc.
Return to normal dietary cautiously.
Replace loss of body fluids by water or salt solution.
Combat septicemia with dextrose solution.
Stimulate if necessary (*camphor*).
Medicate only as indicated.
Guard prognosis.

19 Bay State Road.

THE PRESENT STATUS OF INFANT MORTALITY AND THE LOOK FORWARD*

By Francis H. MacCarthy, M.D., Boston

Something like two and a half million children are born in the United States in a single year. It is variously estimated that between two hundred and fifty and three hundred thousand of these babies die during the first twelve months of life. Nearly two hundred thousand more die during the next four years, so that over four hundred thousand of the two and a half million die during the first five years of life. This is heavy campaigning surely. Few great wars take such heavy toll of human life. The figures become still more impressive when it is considered that this tremendous sacrifice of child life is not the record of one year only, but of every year, and has been going on for decades. Such losses at the very beginnings of life can be regarded as nothing less than a national calamity. since they represent an economic waste of hundred of thousands of potential citizens having boundless possibilities of helpful achievement for home and country.

In the light of the splendid advancement in the industrial arts, and the marvellous development of natural resources, it seems incredible that a great nation could have so long remained dormant and neglectful in regard to the protection of the country's greatest resource — men and women in the making. In ten years the nation had lost nearly three million babies under one year of age. The facts gradually found their way into the newspapers, national consciousness was aroused, and the excessive infant mortality became recognized as a great national problem of vital importance.

In the year nineteen hundred and ten, from twenty to twenty-five per cent. of all deaths occurring in different sections of civilized countries and under widely different conditions were of babies under twelve months of age. Considering the mortality records of this country only, it appears that in the period 1906 to 1910, in the sixty largest cities of the United States, deaths under one year averaged 19 to 20 per cent. of the total mortality. Statistics for the year 1915 show that infant deaths average between 17 and 18 per cent. of the total mortality in these same cities. Thus, in New York City infant deaths constitute 18.2 per cent. of the total mortality; in Boston 17 per cent.; in Buffalo 20 per cent.; in Chicago 17.9; in St. Louis 11.8, and in Los Angeles 9 per cent.

---

* Chairman's address, Bureau of Pediology of the Institute of Homœopathy at Baltimore, June, 1916.

Of fifty cities in the United States having a population over 100,000, Fall River, Mass., one of the large manufacturing cities of the East, and having a population of about 120,000, has the highest percentage of deaths under one year, 31.9 per cent. of the total mortality.

Many of the large manufacturing cities have high infant death rates. In the city of Lowell, Mass., infant mortality is 25.3 per cent. of the total number of deaths; in New Bedford 28.8 per cent.; and in Lawrence, Mass., 28.2 per cent. Many of the mothers are obliged to work just before, during and very soon after pregnancy, bottle feeding is common, and the babies get little maternal care.

Omaha, Neb., has the lowest infant death-rate of any of these fifty cities, the rate for the year 1915 being 47 per 1,000 births; 7.3 per cent. of the total deaths were infants under one year. Omaha has a population of 124,000, a general death-rate of 11.7, and infant mortality has decreased from 118.8 per 1,000 births in the period 1906 to 1910, to 47 in 1915. Omaha is recognized by the Bureau of the Census as a registration city.

The statistical report of a survey of infant mortality of 144 United States cities recently completed by the New York Milk Committee shows that Passaic, N. J., having a population of 55,000, has the highest infant mortality, the rate being 193 per 1,000 births. The total mortality was 904, 385 of this number of deaths being infants under one year of age, or 42.6 per cent. Other high rates are 37.9 per cent. for Perth Amboy, N. J., and 33.8 per cent. for Lorain, Ohio.

Of the 144 cities, those having the lowest infant mortality are the residential cities having populations from 20,000 to 45,000, where live people well-to-do or wealthy, where health and infant welfare departments are well organized, and wealth purchases ideal living conditions. Such cities are San Diego, Cal., where infant deaths constitute 5.3 per cent. of the total number of deaths; Brookline, Mass., 6.1 per cent.; Berkeley, Cal., 8.9 per cent.; Newton, Mass., 13 per cent., and Montclair, N. J., 13.9 per cent.

Of the 144 cities, five had infant mortality rates of 50 and less per 1,000 births, 20 had rates of 70 and less, and 59 had rates of 90 and less. Seventy-four of the cities had a rate under 100 per 1,000 births.

How do infant mortality rates in the United States compare with those of European cities? Comparing the statistics for the year 1913, which are the latest available, we find that of 34 of the largest European cities, 21 have a rate over 120 per 1,000 births. Of the 34 largest cities in the United States there

are only nine having a rate over 120. The following table compares the rates of European and United States cities:

Table I. Comparative Infant Mortality Cities of Europe and United States, per 1000 births.

European Cities		*United States Cities*	
London	105.4	New York City	102
Paris	99.3	Philadelphia	112.7
Berlin	137.3	St. Louis	99.5
Glasgow	128.3	Boston	107
Vienna	156	Cleveland	145.8
Birmingham	128.9	Detroit	132.7
Edinburgh	97.7	Seattle	66.2

The highest rates for Europe are found in Russia, where in some districts, half the children born die during the first year. The rate for Moscow is 278.7. The lowest rates are found in Copenhagen, 102.7, and Stockholm 66.5. Altogether, it may be said that infant mortality in the United States compares more than favorably with that in European cities and countries.

Coming now to the direct causes of infant mortality, and the relative influence of each of the disease groups, the principal causes are shown in the table below, and represent the latest statistics obtainable from the Federal Government.

Table II. Principal causes of death during the first year of life. Registration Area of the United States, 1913.

Cause of Death	*No. of Deaths*	*Per cent.*
Congenital Deb.	52,865	33.16
Diseases of Dig. Sys.	43,243	27.12
Dis. of Resp. Sys.	25,274	15.85
Malformations	8,813	5.53
Contagious Dis.	6,621	4.15
Dis. Nerv. Sys.	6,047	3.75
Injuries at birth	5,131	3.21
Tuberc. (all forms)	2,353	1.47
Syphilis	1,894	1.18
Ill-defined Dis.	3,134	1.96
All other causes	9,495	6

Looking at this table one is impressed at once with the great importance of the first three groups. It will be observed that these three constitute over 75 per cent. of the total infant mortality, and in the same order they also influence the mortality statistics of the large cities.

It is often very difficult to get at the real cause of death.

Although mortality records are becoming more and more complete, many death certificates are improperly filled out. Very frequently the return made to the health department covers only the last thing which happened to the child. Thus, the health certificate may give the only cause of death as acute gastro-enteritis, when a condition of marasmus had existed for months before the final few days of acute illness, and was the most important factor.

Briefly let us glance at each of the three groups separately. It will at first be noticed that congenital debility, prematurity and marasmus stands pre-eminently at the head of the list as causing the largest number of deaths under one year, 33 per cent. of all deaths being due to these causes. Over one-half the mortality of the first month of life, and a third of the fatalities of the first year, are due to this group. Of this number 15,880 lived less than one day, 29,000 less than one week, and 37,783 less than one month. About half these infants die of premature birth, or a feebleness at birth, which does not permit of separate existence.

It is estimated that one birth in every six the world over is premature. It is interesting to consider the influences and conditions of national life productive of prematurity and weakness at birth. The causes are in many cases fundamental and have to do with the life of the people. Syphilis, alcoholism and lack of maternal vitality due to faulty early training are some of the factors.

Deaths due to diseases caused by some fault in nutrition are also included in this first group. Such disorders are inanition, malnutrition and marasmus, and are very largely concerned in producing the heavy infant mortality of large cities in the summer.

This brings us to the second large group, diseases of the digestive system, 43,243 deaths, or 27 per cent. of the total mortality being due to these diseases.

Unsanitary living conditions, lack of care, faulty methods of feeding, and undoubtedly congenital weakness in many cases, are back of the digestive disorders. Probably artificial feeding is the most important factor. The most ignorant mother can usually successfully nurse her infant; breast feeding requires practically no experience, but artificial feeding requires considerable intelligence, much care, and that which is often unobtainable, money to purchase suitable materials and clean milk.

The third group comprises the acute diseases of the respiratory system, which are responsible for 25,274 deaths, or 15.8 per cent. of the total infant mortality. Overcrowding in poorly ventilated rooms is a very important factor in causing these

diseases. The largest number of fatalities occur during the third week of life. Malformations of the heart, intestines, etc., which render the continuation of life impossible, were responsible for the deaths of 8,813 infants, the mortality being 5.5 per cent of the total. Most of the deaths occur during the first week, and the number of deaths from this cause have almost doubled since 1910.

A study of the mortality due to contagious diseases shows that the number of deaths in 1913 is about the same as that of 1910, which would suggest that they are fairly under control, but that there is still much to be done in the way of better housing, improved sanitation, and school inspection that is something besides a name, and not the spoil of politicians.

Syphilis is reported as having caused 1,894 infant deaths, 1.2 per cent. of the total infant mortality being due to this cause. It is well known, however, that many deaths attributed to prematurity, marasmus and congenital debility, are in fact due to syphilis, and I believe if all the infant deaths and antenatal mortality could be accurately accounted for, the infant death rate from syphilis would be much larger. Gerrish, in his book on "Social Diseases," estimates that 10 per cent. of the population of New York has syphilis, and that 80 per cent. of it is acquired between the ages of 19 and 35 years, the reproductive period. Ten per cent. would mean that there are something like 475,000 cases in New York City alone. Fischer estimates that 18 per cent. represents the number of luetic cases in the United States, and he further states that there are 250,000 deaths each year due to syphilis. Osler puts syphilis in a class next to tuberculosis as a death dealing agent.

To my mind, one of the most interesting investigations as to causes of infant mortality was made by Dr. J. Whittridge Williams, Professor of Obstetrics in Johns Hopkins, somewhat over a year ago. He made a study of the causes of fœtal deaths which occurred in 10,000 consecutive admissions to the obstetrical department of Johns Hopkins Hospital. The investigation was very thorough, every one of the 10,000 after-births being subjected to microscopical examination, and nearly 90 per cent. of the 705 deaths were subjected to autopsy, thus obtaining the cause of death with more than usual accuracy. The most striking feature of the investigation was that syphilis was by far the most common etiological factor concerned in 705 fœtal deaths, 26.4 per cent. being caused by this disease. Furthermore, microscopical study of the placenta showed that 350 syphilitic children had been born of the women under consideration. This investigator regards syphilis as the most common single cause of fœtal death. Altogether, the evidence piles up

that syphilis is the real hobgoblin with fangs, horns and claws, that destroys infant lives.

Right here seems a good place to mention the work of another investigator at Johns Hopkins, Dr. Mall, Professor of Anatomy, who, in his earlier studies regarding the development of the human embryo, estimated that the frequency of still-births was one third the number of live births, but the closer his observation, and the longer his experience, the more confidence he has that the incidence of stillbirths is at least one-half the number of live births; that is, for every thousand live-born children, there are at least 500 born dead.

If syphilis is the most common cause of antenatal mortality, then it must be the cause of a very large postnatal mortality, for the same causes which effect the fœtus influence the new born infant.

In the light of all the facts, what do they suggest in the way of constructive effort, and what is the outlook for the future?

First. The splendid work accomplished in the short space of time covered by the last ten years, demonstrates beyond question that a very large number of infant deaths can be prevented in a relatively short time, without very great effort, and at small expense.

Second. The marked reduction in infant mortality during the last ten years. has been accomplished very largely by the decrease in the number of deaths due to diseases of the digestive system, while the mortality due to congenital debility and diseases of the respiratory system, although somewhat reduced during the last two or three years, still remains disproportionately high. The reduction in the death rate due to digestive disorders is very encouraging, but these diseases still remain the second largest factor productive of excessive mortality.

Prenatal and follow-up work will decrease the number of these deaths. Infant welfare work has increased breast feeding, but there are still too many women who discontinue nursing far too soon, often without good reason, and I am sorry to say that the doctor is too often to blame for this.

Third. That prematurity and weakness at birth are the chief causes of infant mortality, that they take heaviest toll of babies of native-born mothers, and that syphilis is the chief etiological factor in causing antenatal deaths, demands large endeavor along prenatal lines of work, and earnest investigation as to the causes of these antenatal deaths.

Fourth. Infant welfare work has as yet produced little reduction in the mortality due to diseases of the respiratory system, the third largest cause of infant mortality. The death-rate due to these diseases is by far the highest among infants of Italian

mothers, probably due to the fact that most of the Italian people who come to our shores are from southern Italy, where they live, work and play much in the open; on coming to our large port cities they crowd into dark, poorly ventilated city tenements, and during the cold months shut themselves up in window-closed rooms. As the nurses from welfare stations and social centres extend their visits more and more into the crowded districts of our large cities, teaching the people that light, air and cleanliness are necessary for the rearing of healthy babies, the mortality from these diseases will be reduced. We may also hope for, and endeavor to develop, an enlightened public conscience which will demand the destruction of the dark, rat-infested, noisome rookeries in our large cities, where many of these people live.

And who can measure the tremendous social significance and educational value of the tireless and unselfish work which is being done by welfare station nurses and doctors all over the country? The work is very practical. The nurses visiting the mothers in their homes get at fundamental conditions. They are able to remedy many faulty methods and conditions of living themselves, and the work has become so thoroughly organized that the more complicated causes receive the attention of co-operating agencies. Over 53,000 visits were thus made by the fourteen nurses connected with the Boston Baby Hygiene Association last year. Each home visited becomes a centre in the community for the dissemination of knowledge, which makes for better mothers, better fathers and better homes.

The New York Milk Committee sound a militant note when they say on their 1916 Survey of Infant Mortality, "No community with an infant mortality of over 50 per 1,000 births can claim that its babies are getting a square deal."

The present infant mortality is a blot on the national escutcheon. No town, no state, no nation, can afford to to erate the faulty conditions fundamental to heavy losses of infant life.

The average cost in Boston of the preventive work done by the nurses who encourage and teach the mothers in their homes, is 90 cents per month.

It is safe to say that no great work for social reconstruction can be done with less expenditure of time and money, and with more certainty of obtaining far-reaching benefit for the upbuilding of the race.

THE STORY OF THE DUCTLESS GLANDS*

By Horace Packard, M.D., F.A.C.S., Boston, Mass.

Mr. President and Members of the Mass. Homœopathic Medical Society:

Sometime last January an order reached me from President Martin that a paper would be expected from me at this meeting, on "The Ductless Glands." At first I was a bit embarrassed by this command to prepare a paper upon a subject so apart from the field which has been my life work.

On further contemplating the matter, however, the conclusion was reached that since the function of the ductless glands touches nearly every physiological phase of the animal economy, every physician should be conversant with the known facts of their anatomy, physiology, and pathology, be he a surgeon, internist, gynecologist, ophthalmologist, or dermatologist. The physiological and pathological phenomena of the thyroid are of absorbing interest to the surgeon, as are also in a lesser degree those of the pituitary. The nutritional changes in the skin and its appendages incident to pathological changes in the pituitary, the thyroid and the adrenals furnish a field for the dermatologist. The eye symptoms incident to tumor growth in the pituitary lap on the field of the ophthalmologist. The subtle influence of the ovaries upon the well being of the woman is a factor which the gynecologist must always have in mind, while with the internist all the known functions of the ductless glands are of such importance in the differentiation of the finer subtleties of organic and pyschic life that he must know them in all their vagaries and caprice.

The deplorable fact about the ductless glands is that the sum total of our knowledge of them is still very small. What we don't know vastly outweighs what we do know.

The title head of this address may seem unfitting in phraseology for a paper before a scientific body, but I assure you that before I am through the narrative which I am to unfold you will have the romance of a story and the pathos of a tragedy, for there is always a halo of romance about great discoveries which bring knowledge of things previously unknown, particularly if such discoveries are of service to the human family either in the prevention of disease and saving of human life, or contribute to the sum total of human prosperity and comfort in material ways. The names of Graves, Basdow, Addison and Horsely are unknown and unsung by the world at large, but their dreams and visions brought to us nearly all of what

* Read before the Mass. Homœopathic Medical Society, April, 1916.

we now know of the subtle influence of the little tufts of tissue scattered about the animal body which we know as ductless glands.

The tragedy of this story is the history of human lives which have been warped and welded into almost another species of beings — the giant, the acromegalic, the dwarf, the cretin, the deaf mute, the idiot, and the bronzed victims of Addison's disease.

The giant has always been an object of great general interest, and as will be shown later scientific interest has immensely increased since evidence has accumulated that giantism in the human family is caused by an over-secretion of the pituitary, coincident with birth or beginning very early in life. The strange and grotesque changes of acromegaly, the wonder and amazement of medical history, have been traced to hyperpituitarism.

The dwarf has figured as the petted favorite of kings and queens as well as a feature of attraction in places of amusement. It adds a further interest to learn that probably most cases of dwarfism are caused by faulty action of the pituitary or thyroid.

The difficulty of finding out much about the function of the ductless gland is greater than that attending almost any other structure of the body, because having no duct of secretion, none can be secured for analysis or experimentation; and furthermore they are some of them buried deeply away in such close relation with other vital structures that they can not safely be reached in life and are therefore rarely accessible for examination until after death.

What the material is, therefore, which is poured into the blood no one knows, for none has even been recovered. From the fact, however, that certain toxic substances, e.g. (pituitarin thyroidin, adrenalin), have been separated from the substance of these glands, it is assumed that a material secretion is given off and the substance or fluid is called a "hormone," — a newly coined word meaning a stabilizing agency.

There is some theoretical evidence that the ductless glands constitute a system the units of which are linked together by the sympathetic nerves and ganglia.

The literature of the ductless glands is fairly voluminous but includes much which is merely records of laboratory experiment, and some of it contradictory. Nearly all we have of modern scientific knowledge regarding these interesting structures date from the last half of the 19th Century.

Sajous, Internal Secretions, 2 vols. of about 1,600 pages, appeared in 1903.

Swale Vincent, of about 500 pages, in 1908.

Cushing, of about 350 pages, in 1912.

Falta, of about 600 pages, in 1914.

The difficult and almost impossible duty falls upon me this afternoon in the small space of time allotted to this subject to condense this 2,500 pages and more of literature on the ductless gland into fifteen or twenty. This is not so difficult as would at first seem, for of real positive knowledge on this subject we have but little. Those matters which lap over onto the field of the gynecologist, the dermatologist, the opthalmologist, and the neurologist, I shall but lightly touch upon, leaving them for specialists in those departments to amplify.

ENUMERATION OF THE DUCTLESS GLANDS AND THEIR DIFFERENTIATION FROM OTHER GLANDS

According to strict anatomical differentiation, there are but five ductless glands,— the Pineal, the Pituitary, the Thymus, the Thyroid and Parathyroids, the Adrenals (2).

There are four other glands which are dual in their function, i.e., sufficient evidence is at hand to believe and accept that in addition to a known and fairly well understood external secretion, they provide an internal secretion without which the normal functions of the body cannot go on. These are the Liver, the Pancreas, the Testicles, the Ovaries.

The Pineal Gland, or Pineal Body as it is sometimes called, is located in the third ventricle of the brain. It is a diminutive thing, only about the size of a pea, and shrinks away to a mere rudimentary structure after the 17th year. Whatever function it has apparently is spent in early life, and judging by experiments on lower animals and autopsies it appears to exercise some control over the general growth and development of the genitals. The prevailing opinion seems to be that while deviation from normal function modifies body development, it is essential to life.

THE PITUITARY GLAND

The Pituitary Body — The Hypophesis. Very great interest centres about this ductless gland. Its very situation makes it interesting, located as it is at the base of the brain entirely within the cranium, in a bony fossa — the sella tursaca — in the body of the sphenoid bone. It is also diminutive in size, weighing only about a dram and a half. It consists of two lobes, an anterior consisting of epithelial tissue, and a posterior of nerve tissue.

The first and foremost momentous fact about it is that animal life can not go on any considerable length of time without it. All confirmed laboratory experiments show that it is a

vital organ essential to life. Our meagre knowledge of the pituitary has been gained through many difficulties and embarrassments, because it is a ductless gland and because it is so deeply buried away at the base of the brain in such close relation with other vital centres that experimental operations on animals have many times proven contradictory and unsatisfactory.

In late years, however, with greater care in operative work, and observation of high degree of asepsis and maintenance of control cases, coupled with clinical histories and post-mortem findings, certain well-defined conclusions have been drawn.

1. Over-secretion (early hyperpituitarism) from a congenitally over-developed pituitary causes giantism.

2. Over-secretion (late hyperpituitarism) from an acquired over-development of the pituitary causes acromegaly.

3. Under-secretion (early hypopituitarism) from a congenitally small pituitary causes obesity, retarded growth, increased carbo-hydrate metabolism, nutritional skin changes, polyuria, and nondevelopment of the sexual organs.

4. Under-secretion (late hypopituitarism) from acquired lessening in the secreting tissue of the pituitary.

Giantism is an extraordinary and marvelous departure from normal growth and is fascinating to study. A person who reaches a stature much above six feet six inches borders upon giantism. Nature draws rather strict limitations upon growth; it normally ceases with the full establishment of puberty. It is just here that we see some kind of a correlation between the function of the pituitary and the generative organs. The pituitary seems to furnish the stimulus to growth up to puberty. Normally the testicles and ovaries get in their work and stabilize it. It appears that now and then in the early years of life the pituitary body develops in size and function beyond the normal with growth by leaps and bounds beyond all normal precedent.

These gigantic individuals are as a rule short-lived, ordinarily living not much beyond the third decade, although they have in exceptional instances reached the sixth decade. The greatest height reached is 8 ft. 7 in., and the weight has reached 450 lbs. and more. There is no history of any giant who has shown extraordinary mental vigor; on the contrary, they have been mostly below normal in this respect. Some have exhibited great physical strength in some part of their life, but usually, later have lapsed into weakness and flabbiness, and have finally died borne down by their own very superincumbent weight.

Acromegaly. What a strange and startling transformation! A comely youth of fine and well-molded features gradually takes on facial alterations which make him a changed being.

This usually appears at the second or third decade of life. The bones of the face and cranium thicken enormously, the supra-orbital ridges become pronounced, the cheek bones more projecting, the jaw widens and pushes forward, the teeth separate, the hat band measure increases, the normal body prominences increase in size, the hairy growth is enormously augmented all over the body.

It is very well established that this condition is the result of adenomatous increase in size of the pituitary (increased output of secretion). If the tumefaction is such as to press upon neighboring structure, we have what are called neighborhood symptoms, e.g., frontal headache, diplopia, hemiopia.

The Obesity and Dwarfing of Hypopituitarism.—Congenital deficiency of the secretion of the pituitary coincident with the early years of life results in most extraordinary disturbance in metabolism and particularly of fat metabolism. Coincident with obesity is extraordinary carbohydrate tolerance — the craving for and ingestation and assimilation of sugar is a marked and distinguishing feature of this condition. With these occur concomitant nutritional changes in the skin (œdema, dryness, falling out of hair in patches) subnormal temperature, dulling of intellect, with irritability, suppression of the sexual function.

Hypopituitarism of Later Life.—These are about the same as those of early life (except for the dwarfism), — obesity, loss of hair, loss of sex function, carbohydrate tolerance, subnormal temperature, dulling of the intellect.

Treatment.—In cases of hypopituitarism, pituitary feeding has been followed by temporary improvement, but the outlook from that source does not seem encouraging. In cases of tumor of the pituitary something has been done surgically in removal of portions of glandular enlargements, cysts and other growths, with relief in same cases.

The Thyroid and Parathyroids. — The thyroid and parathyroids are so intimately related anatomically that they must be considered together.

For a long time the parathyroids were practically unknown; at least their importance was unsuspected. It was not until 1880 that it was discovered that they have an important function of their own and life can not go on without them. Prior to this discovery, all surgical and experimental work upon the thyroid was unsatisfactory and baffling. It is now known that the thyroid holds some important functional control over metabolism, the parathyroids over nerve control. Loss of the thyroid causes a symptom complex known as myxœdema, and shortening of life; loss of the parathyroid causes tetany and death.

The anatomical relations of the thyroid and parathyroid

vary in different races of animals. In a general way it may be stated that in the carnivora the parathyroids, while located very close to or upon the thyroid, are sufficiently apart so that by careful dissection the thyroid may be removed separately. In the herbivora two or more of the parathyroids are imbedded within the thyroid. It will be appreciated therefore that the difficulties which beset the efforts of the early investigator before it was known that the parathyroids held any important place in the animal economy, were very great, and this accounts for the contradictory results of animal experimentation recorded in the earlier writing upon this subject.

The location of the thyroid and parathyroids and their accessibility for surgical and experimental work has made much greater progress possible than with some other of the ductless glands. Much deviation from normal in size of the thyroid is easily determined by inspection and palpation.

Glandular enlargement of the thyroid (hyper-thyroidism) produces a syndrome of rather constant and well defined symptoms which we call Exophthalmic Goitre.

This condition is so comparatively common and well known that it hardly calls, in a paper like this for extended comment. When in its full development the enlargement of the thyroid gland is of a soft resilient and almost pulsating character, the bulging of the eyes, the tachyo-cardia and tremors are unmistakable.

The treatment of this condition may be either medical or surgical. Many cases, especially in their early stages, have recovered under the well indicated drug, belladonna. Nowadays most of the advanced cases are operated on and the thyroid removed in part (leaving a small fragment only behind) and scrupulously saving the parathyroids. It appears that animal life may go on if one-sixth of the mass of the normal thyroid remain.

Total loss of the thyroid through operation or atrophy always results in a syndrome of symptoms known as cachexia strumipriva, thyropriva, myxœdema.

In a fully established case of myxœdema the symptoms are unmistakable. The skin assumes the appearance of œdema, especially about the face, the cheeks, the eyelids, about the nose, the supra-clavicle spaces, the dorsal surfaces of the hands and feet. This is not true œdema; it does not pit on pressure. The whole skin becomes a yellowish putty color, dullness of intellect supervenes, the hair about the genital disappears, the sexual function fails, the menses cease.

Considerable has been accomplished in the treatment of this condition of hypothyroidism by thyroid feeding. An active principle, thyroidin, has been separated from the glands of lower

animals, but the whole gland dissected and reduced to powder seems to do better.

The parathyroids do not seem to undergo material changes. The only knowledge we possess regarding their function is a negative one brought about by their unwitting removal in thyroidectomy for goitre, and experimental removal in lower animals. The result is always the same, — tetany and death. It is estimated that two may be removed and the remaining two will suffice to sustain equilibrium. Parathyroid feeding does not seem to be of much avail in these cases.

Congenital absence or deficiency of the thyroid is common in some countries, particularly in the deep valleys of Switzerland and the Tyrol. The victims of this pathological state are called cretins. A cretin is a dwarf of low mentality or idiocy, does not develop sexually, epiphysical lines fail to close; fontanelles remain open; hair fails to appear about the genitals; umbilical hernia very common; voice does not change; many deaf mutes.

The Adrenals.—The adrenals are two in number and each is a dual gland (corresponding in some degree with the pituitary and thyro-parathyroid). Each gland is dual anatomically and functionally and has a cortex of glandular tissue and a medullary portion of nerve tissue. This nerve tissue is evidently of ganglionic character and apparently has specific characteristics which differentiate it from ordinary ganglionic nerve tissue. It stains a brownish color with the salts of chromic acid and has therefore received the designation chromaffin tissue. There are other islets of chromaffin nerve tissue scattered in various parts of the body — at the bifurcation of the carotid, upon the solar plexus and at the tip of the coccyx, but it is unknown whether they are correlated in any way with the adrenal chromaffin tissue.

The ardrena's are hidden away deeply within the abdomen one on the upper pole of each kidney. Their inaccessibility has, been a handicap to study of their diseases. They are never seen in the course of surgical operations on the kidneys. Autopsy findings have shown pathological changes of various kinds, — adenomata tuberculosis, cirrhosis, atrophy, chronic inflammation, malignant disease.

As in the case of the other ductless glands, it has been exceedingly difficult to secure much authentic knowledge of their physiological functions.

The first important known fact is that they are essential to life. Laboratory experiments on lower animals are conclusive on this point, — death always occurs in a few hours following total removal. Our further knowledge of the physiological activities of the adrenals is derived from comparison of clinical histories and autopsy findings, and laboratory experimentation

with toxic substances which have been secured from adrenal substance of lower animals. It appears that hyperfunction of the adrenals induces exaggeration of sexual characteristics and increased hirsutes. Precocious children who develop early with strong libido sexualis and exaggerated hairiness are probably the subjects of hyperfunction of the adrenals from congenital oversize or adenomatous overgrowth.

Addison's disease is of pivotal interest in a study of the adrenals. It is supposed to be caused by functional insufficiency. This, however, is open to question, for cases are reported which have exhibited the typical syndrome of Addison's disease while autopsy findings have shown apparently normal adrenals. Conversely, many instances are on record of extensive pathological distrophy of the adrenals without Addison's syndrome. It is generally accepted, however, that adrenal functional insufficiency from atrophy, sclerosis, neoplastic degeneration, or tuberculosis is the underlying cause of Addison's disease.

Clinically, the disease manifests itself by fatigue, progressive muscular weakness which finally becomes extreme, nausea and vomiting, and maybe diarrhœa, hiccough, diminished or absent knee jerk, insomnia, mental depressional loss of memory, vertigo, fainting, singultus, rheumatoid pains in back and extremities, pulse small and weak, reduced blood pressure, subnormal temperature, dyspnœa, emaciation and pigmentation of the skin. This pigmentation, important from a diagnostic standpoint, begins on the face, neck, and hands, and areas subjected to constant pressure and friction from the clothing, and finally borders the lids and becomes exaggerated in the areola of the nipples. The linea alba darkens and also the genitalia and folds about the anus. The pigmented area may be either light or dark brown, and sometimes the whole body changes to a coppery tint. The hair sometimes darkens. The disease is slow in its progress and as surely fatal.

Toxic substances exhibiting properties which are of great interest from a physiological and therapeutic standpoint have been recovered from adrenals of the lower animals.

Takamane, a Japanese physician, and simultaneously Aldrich, an American, succeeded in isolating an active material from the medullary portion of the adrenal which is known commercially as Adrenalin. This has proved to be a substance of quite remarkable properties, throwing considerable light upon the probable function of the ganglionic portion of the adrenals. Introduced into the circulation adrenalin contracts the arterials and capillaries, causes a marked and positive rise in blood pressure, increased rapidity of heart beat and dilatation of pupils.

It appears, therefore, that at least one important function of

adrenalins is as a stabilizer of blood pressure and that the material which accomplishes this is given forth from the medullary portion of the glands. It is quite generally accepted that the cortical portion influences in some subtle way the genital sphere, the growth of hair, the production of lethacin and pigment, and exerts an antitoxic influence.

This ends our study of the real and strictly ductless glands. The subject, however, is not quite complete without a brief reference to the liver, pancreas, testicles, and ovaries. These deliver to the outer world by the way, respectively, of the hepatic ducts, the canal of Wirsung, the vas deferens and the Fallopian tubes, the well known individualized products of their physiological activities. The glycogenic function of the liver, a purely internal elaboration of material delivered directly to the blood stream, needs but passing reference in a paper of this character. The supplementary function of the pancreas is less well known but is generally accepted as of equal importance with the glycogenic function of the liver. A considerable portion of the total volume of the pancreatic tissue apparently has no relation functionally with that portion which secretes the pancreatic juice. Scattered about amongst the externally secreting pancreatic tissue are islands of tissue (The Islands of Langerans) of a totally different kind and apparently possessing a wholly different function. These collectively have come to be known as the "insular portion" of the pancreas, and as far as physiological research has gone seem to possess a subtle influence on carbohydrate metabolism. It is generally accepted that diabetes mellitus is caused by insufficiency of the insular portion of the pancreas. Since the liver is the great factory of the animal body for the conversion of glucose into glycoges and the comparative insignificance of the insular portion of the pancreas, in volume at least, negatives any theory of a direct metabolic function, it appears most probable that its control over carbohydrate metabolism is in the nature of a stabilization through direct nerve influence or the internal secretion or of a stabilizing hormone.

Lastly, the testicles and ovaries appear to have some sort of a profound influence in shaping and moulding the animal body and the stimulation of certain emotions, quite apart from the strictly generative function. This is attributed to an interstitial tissue found in the testicles and an assumed similar tissue of the ovaries, quite apart and distinct from the glandular structure of these organs. All this is well borne out by the repeatedly observed results of early castration — sexual differentiation fails of fulfillment, whatever of stabilizing influence the organs normally furnish is absent; form, figure, and stature

are markedly divergent from the normal; the castrated male becomes a eunuch with well-defined eunuchoid characteristics. Castration of the female in adult life is of more than passing interest because in recent years it has been done so many times as a surgical measure. Such removal of the ovaries is always followed by a syndrome of symptoms comparable with the normal climacteric and sometimes infinitely more severe. The noticeable feature which has developed as a result of study of these exhibits and physiological experiments is that ovarian tissue from lower animals fed to such cases often affords striking relief.

Summary and Conclusion. — 1. Our knowledge of the ductless glands and their function is, up to the present time, very meagre and fragmentary.

2. The ductless glands, individually and collectively, are essential to life. Total removal of either the pituitary, the thyro-parathyroids, or the adrenals always result in death in a very few hours. The pineal and the thymus are supposed to expend their functional energy in very early life and then undergo involution.

3. Surgical reduction of the pituitary and the thyroid in cases of hyperfunction has resulted in improvement.

4. Physiological therapy offers some hope of relief in some cases of hypofunction of the pituitary, thyro-parathyroids and the adrenals, and some of the other glands of double function. Pituitary, thyroid and para-thyroid substance and toxic material from the adrenals are now available as pharmaceutical products for physiological experimentation and therapeutic use.

5. No department in experimental medicine offers a more alluring field for research than the Ductless Glands.

DYSTOCIA*

By Orange S. Runnels, M.D., A.M., F.A.C.S., Indianapolis, Ind.

That a prospective mother should be called upon to give her life and perhaps that of her offspring also in the attempt to effect reproduction is abhorrent to all that is righteous in human thought, and is obviously contrary to the Creator's design. In this benign world, where the trend of all evolution is onward to a better creation, assurance has been given that "seed time and harvest shall not fail." Hard, difficult, embarrassed and disastrous labor does not accord, therefore, with a physiological function which provides for a birth that shall proceed to its accomplishment smoothly, expeditiously and safely under the exercise of the natural forces.

---

* Read before the Indiana Institute of Homœopathy, Indianapolis, May 17, 1916.

Easy birth prevails throughout nature, and is the rule among all primitive races. Difficult birth is an acquisition of civilization and is more or less a perversion of, or interference with, the exercise of natural powers. With the refinements of modern life, coupled with the embarrassments due to our physical evolution, have come lessened resistance and greater susceptibility to malign influences. Departures from natural functions, therefore, do not occur without a cause; there is a reason always for malperformance of function. Dystocia is an effect rather than a cause;—a proof that things have been permitted to drift from their moorings and that prevention has not been exercised at the opportune moment.

Let us here consider some of the teachings of obstetric experience, in order that escape may be made, for the most part, from the heavy tax imposed by a labor gone wrong.

The reproductive act must embrace all that transpires between the time of conception and the end of the puerperium; all that is incident to, or because of, the birth of a child.

No woman should attempt the performance of woman's work in the world, the reproduction of her kind, without being physically competent to do so. Here as elsewhere in human endeavor — and here vastly more than in any other human enterprise — matters should never be permitted to drift, or to go haphazard. Every candidate for the puerperal act should have undergone rigid physical examinations and have every step taken to make certain, beyond the peradventure of doubt, that a natural labor can be counted upon. This rules out all of the physically incompetent, or those who are functioning badly; it demands that all handicap shall be removed before the contest shall begin and that the prospective mother shall come to the test in prime condition to win her laurels. This is necessary if the most of the causes of dystocia shall be prevented by removal before they become active, and the rule established that the incident of motherhood shall be a natural function from start to finish.

Unfortunately for the parturient woman, provision of this kind is a thing too often neglected, and she is left to drift to her doom.

It is time, therefore, that obstetric art, and especially the dreadful part of it, shall no longer be a service of afterthought, or eleventh-hour attempt to rectify that which should have been prevented, or never have been permitted to go crooked.

This, I grant, is a statement in the abstract and a matter somewhat of the ideal; but it is realizable to a great extent. It is possible to avert calamity at maternity, almost wholly,

not forgetting that there are at least two lives at stake, and that the sacrifice of either cannot be condoned.

Having prepared the field of motherhood by great thoughtfulness, through all the antecedent months and years of the principal lives in question, by making valiant, if possible, all who are in any way crippled or disabled in their forces, the duty of preparation has been performed and the mother-to-be is in condition to enter upon her gestation. If prophylaxis has been faithfully done, by the removal of all causation of physical embarrassment of whatever kind, and the establishment of an unimpaired resistance, the succeeding nine months with life in utero will be, with rare exceptions, without fear, and the experience at delivery vastly simplified for all concerned.

It goes without saying, also, that an intelligent oversight shall be continued throughout the period of gestation and that any deviation from the normal course shall have correction, especially as the end of the term approaches, when all possibilities and probabilities must have consideration. Thus, and not otherwise, should the approach to childbed be made; thus, and not otherwise, should obstetric art, in a given case, be displayed. Such a thing as discovery of an unfavorable condition in the person of the patient after labor has begun should be regarded as gross negligence and evidence of blunder. Whether the diameters of the passage are adequate and delivery without surgical intervention is possible should be known beforehand and the steps necessary for such a contingency be provided for. Every labor is a surgical operation and should never be entered upon without rigid surgical precautions. Every labor must be approached with the fact in mind that complications and crises may arise in any labor, calling for the exercise of the highest art known to man; and readiness for such a service is ideal preparedness. For this reason it is that every approaching case of obstetrics is a hospital prospect, and should have hospital care, wherever its attainment is possible.

Accouchement implies manual intervention; and since every hand can be the conveyor of dirt, a new command has been given: "Thou shalt not infect any human being." All sepsis is at first from without, it is imposed, or planted, and the obstetric field is especially fertile. Sterilized rubber gloves have already saved millions of human beings. Sterilization implies absolute cleanliness of that which acts and that which is acted upon; of the surgeon and his subject. Thus is puerperal sepsis disposed of, and child-bed fever and all that infection is capable of ruled out. Every barehanded midwife is a criminal; and every unwashed woman in childbirth, with pudendum unshaved, can be the conveyor of elements that may prove to be her fatality.

The time of delivery having been announced, the exact presentation of the child must be determined. Every malposition must be detected and corrected, if possible, at the beginning of uterine contraction and before the difficulties of such a situation have become appalling. The elements of the problem must be determined at the start. We must know whether or not the coast is clear and whether the labor promises to be normal or abnormal, ordinarily easy or exceptionally difficult.

The duty of the midwife, in normal labor, is "watchful waiting" for an opportunity to help. Assurance having been gained that difficult labor is not to be apprehended, expectancy is the order of the day; a few doses of Gelsemium, if needed, may be given to establish the "pains," to soften a rigid os uteri and to favor cervical dilatation. When dilatation to the extent of two or three fingers has been attained, and the contractions are feeble and inefficient, a hypodermic of pituitrin — $\frac{1}{3}$ cc. — is called for, to turn on the dynamo, the vis-a-tergo. This may be repeated at one-half hour intervals; but care should be taken not to employ this energetic agent too early or repeat it too often, as injury can follow its abuse. A more beneficent agent to facilitate labor and favor uterine contractions, both before and after the expulsion of the child, has not been discovered than pituitrin.

There is a tide in the affairs of birth-giving which if taken at the flood leads on to fortune; but which if allowed to pass unutilized introduces difficulty. This knowledge every obstetric boatman should possess. The boat aground means tugging and pulling and poling, and perhaps unloading, before progress can be made. Whether more vis-a-tergo is needed, more power from behind is required, or resort must be had to the vis-a-fronta, or pulling, instead of pushing, is the decision next in order.

Nature has wisely impounded a head of water to serve as a lubricant when bone meets bone and membrane and muscle need to be relaxed and kept slippery. With dilatability of cervix assured and dilatation attained; with the maternal parts in a fine state of lubrication and long before the waters have wholly escaped and the parts have become dry, engorged with venous blood, and their elasticity lost, the moment has come when obstetric forceps can be used to great advantage in conserving the forces of the mother, and for insuring "safety first" to all concerned. Moderate traction exerted as the body is rounding the promontory and getting its direction in Carus's Curve, will be a godsend very often in favoring a speedy and safe delivery. By simply keeping the baby moving, engorgement of tissues will be averted and a happy termination

assured. Of course, this does not mean that force is to be exerted to a baneful extent. As soon as the procession is moving on, the forceps are to be unlocked and gently withdrawn while the presenting part makes its demand on the perineal muscles, — advancing and receding, as the pains recur, — until the expansion reaches its greatest and the pean of victory is sounded by the new arrival.

This is the teaching of ripened experience, and with me, the labor without help of forceps is rare indeed. Instead of being relegated to the junk heap or brought to service only in severe and far advanced cases, and long after its splendid service should have been rendered, the obstetric forceps will play its helping part in myriads of cases where dystocia and sorrow are incipient or at their worst.

The term dystocia, coined long since, is still applicable to many cases, both actual and prospective. We are often confronted by mechanical problems and demands for quick delivery, that make necessary the abandonment of all expectant methods, in order to avert dire peril and certain death to mother or child or both.

A malposition — impossible to nature's relief — requires an obstetric operation. This has been recognized and performed with greater or less percentage of mortality from time immemorial. How dismal this pathway has been can be realized as one scans the record in the light of today. Condemnation of the life of the child, in order to conserve the life of it's mother, was the rule, and every means for its accomplishment was resorted to. Anything to lessen the diameter of the body to be born was the foremost thought; hence embryotomy; embryulcia; evacuation of the cranial cavity; cephalotripsy or crushing the skull; division of the clavicles; to narrow the shoulders; evisceration of thorax and abdomen; and extraction of the baby piecemeal, anything and everything to empty the uterus, and all gone through with after hours or days of partially or wholly locked labor; — with the parts of the mother partially or wholly gangrenous; with unavoidable injury, and much rough handling of the tissues along the uterine way, and all under the most favorable septic idealism; — all this is recounted in books not yet fifty years old, as the highest style of the then obstetric art.

In a service where emergencies may be counted upon beforehand, as in all cases of deformed pelvis; or where the measurements are scant, fibroid tumors present, high percentage of albuminuria in evidence, and eclampsia probable, or placenta previa is present, or any development that may require of the accoucheur quick resolution to act, there should be a course of

education of the family in progress anticipating such possibility. Agreement should be reached beforehand between surgeon and those concerned as to the course of action in case of crisis. Shall the surgeon and his advisers be restrained for hours or days, when the lives of mother and offspring are in jeopardy, while parley ensues and frightened people are unable to agree upon a course of action that must be taken quickly, if the result is to be the most favorable? I say the wise physician and surgeon will not accept retainment in case of such possibilities of grave peril with his hands tied, till ignorant people can be educated to consent. The patient herself should be excluded from this school, for prudential reasons, but the reigning powers in every family should be at one with the surgeon in case a contingency should arise. Even with freedom to act assured, expedition is often too tardy in reaching the goal; especially if the patient is yet to be transported to a hospital and preliminary precautions taken.

The good obstetrician cannot be a pacifist; he cannot be a believer in the supine policy of waiting until an emergency is announced before taking steps to meet it — if it come, —or be in positive readiness to act promptly when it comes. Millions for preparedness are well spent, even if demand is never made upon the munitions; there can be no loss worth mentioning where human life has been conserved by readiness to take a step when it will do the most good.

For want of time I cannot consider all the measures advanced to remedy dystocia, as each case may present an indication peculiar to itself. But in general the indication to produce a living child with the greatest measure of safety both to the life-giver and the life-getter is very frequently speedy delivery.

When, as before said, ordinary measures to promote delivery have been in commission for a reasonable time and knowledge is had that the best interests of two or more lives cannot be conserved by further expectancy, no time should be lost in bringing the labor to a quick and safe ending. By utilizing the opportune time, what promises to become a most hazardous and destructive dystocia may be converted, in a few minutes, into a smooth convalescence, — a lying-in without special hazard. Discarding all operative measures that call for division of bony or cartilaginous tissues and the employment of further hours of precious time and taxation of exhausted strength, while effecting delivery, instrumental or otherwise, by the vaginal way, Cæsarian section has gained the ascendancy and has established its right of priority. The rapidity of its performance, when, where and by whom you will, and under all conditions of ideal

preparedness, make it the measure of choice almost without exception. Under such favorable employment it becomes an operative procedure with hazard practically no greater than exploratory incision, and brings the percentage of mortality of mother and offspring almost to nil. Certainly no greater contribution to the science and art of midwifery has ever been made than that furnished by the finished technic of this operation for immediate delivery. For whatever the occasion of the dystocia, the indication for the quick cessation of the peril is met by the removal of the cause. How beneficent this is in cases of placenta previa, eclampsia, and all those instances of deformity and malposition, after labor has been impeded already to a dangerous degree, let those tell who have been relieved from such a menace by the quick division of the parietes of abdomen and uterus and the immediate birth of the child secundum artem.

A single pat illustration occurring in my own service must suffice: A prima gravida, age 24, in gestation for six months, developed a high percentage of albuminuria in two days time. She was seized with terrific convulsions at ten P.M. Her physician was summoned and remained the night through doing his best to avert further return of eclampsia; but the seizures became more frequent and prolonged until six A.M., by which time a half dozen attacks had recurred and their severity had become very alarming. By this time consent of the family was gained to accouchement force. Quick transference of the patient to the hospital was made, when at eight A.M. two other seizures having occurred, making eight in all, it was exceedingly doubtful whether she could further survive. Labor had not begun. Extraction of the fœtus, dead for three or four days, per Cæsarian section, was the work of but a few minutes. The result was most happy; there was no return of the eclampsia; the albuminuria disappeared wholly in a few days, her lying-in was without morbidity — a normal record — and her quick return to good health was ideal.

Conclusions. — In all cases of malrelation between fœtus and pelvis, or when the conditions are such that we know absolutely that no living child can be born, per vaginam; or whenever delivery of child cannot be made without much delay, and stasis of blood-circulation in the maternal parts is taking place; or when the exhibition of much force, rough handling and consequent tearing or sloughing of the tissues must accompany the delivery; or whenever placenta previa is announced and much hemorrhage and great hazard to mother-life and child-life is inevitable; or eclampsia with its dreadful possibilities is a strong probability or a stern reality; and in all cases where for any reason the birth cannot be effected without such delay as to

render the maternal tissues morbid, inelastic and the cultural medium of dead-sepsis during the puerperium: — I say in every instance where delivery by the natural route is a great hazard to either mother or child there should be no hesitation about the employment of Cæsarotomy with choice of such time and place and experienced help as to insure a quick and safe delivery of a living child and a lying-in devoid, almost absolutely, of the perils of sepsis. I say that the quick transformation of such a combination of circumstances, freighted with disease and death — a veritable sea of disaster — into a phase of life compatible with a peaceful, serene and enjoyable existence to all — a smooth sea and happy sailing — is the highest attainment of human art. It is the goal of the ideal in helpful accomplishment.

ADDRESS FOR FACULTY TO THE 1916 GRADUATING CLASS OF BOSTON UNIVERSITY SCHOOL OF MEDICINE

By Prof. William F. Wesselhoeft, M.D., Boston

We are gathered together here this evening to bid God-speed to the members of the graduating class. They have creditably finished the preparation for their life-work and are now about to go out into the community and become of service to its needs.

Because of the great development along the different lines of medical activities that has been going on, in recent years particularly, a graduate today has a very different vista of his future work than was the case of the graduate in medicine a generation ago.

In recent years the work of the physician has branched out into many different channels, and in the medical school is laid the foundation for future work along many different lines. This makes the problem of what branch to follow and in what place to settle, more complicated each year; while, at the same time, there are more lines from which to choose.

The purpose of our work is the same now as it always has been, — to cure the sick and to relieve suffering; but the interpretation of how to cure, and how to relieve, has taken on a far greater scope, and this enlarges yearly.

In 1846 anæsthesia was first successfully administered at the Massachusetts General Hospital in this city of Boston. This was the greatest step in advance in medical help since Hahnemann dared to oppose the practice of his day, and founded a system of therapeutics based upon observation and experiment. Immediately surgery took on an entirely new aspect, to the profession and to the laity. The surgeon could now oper-

ate without haste, and with deliberation and care, which was often impossible when the patient was struggling under the pain of the operation, and he was relieved of the horrible dread and frightful agony of the procedure.

In 1867 Lister in England, impressed by the work of Pasteur in establishing the cause and cure of the silk-worm disease in Southern France, conceived the idea that wound infection was due to bacteria introduced from without. He developed methods to avoid such infection, and introduced to the world antiseptic surgery.

His own methods, modified by others, have led to the elimination of the serious dangers from wounds, and the safe surgery of today is entirely dependent upon that cleanliness which removes from contact with wounds, infectious germs. It is owing to these two great discoveries that the surgeons of today are able to operate with safety and without pain, on all parts of the body.

With safe operative measures and with an increasing knowledge of disease processes and products, many diseases and conditions hitherto hopeless have been robbed of their dangers and have become readily curable.

Not only in the field of what is known as general surgery, but in the eye, the ear, nose and throat, the dealing with deformities and congenital abnormalities, has the use of these two great measures — anæsthesia and surgical cleanliness — enabled able workers to advance their art to high perfection and practice.

The recognition of the true causes of many diseases other than surgical has been equally a triumph of modern times. Following the study of infection by germs established by Lister and Pasteur, others have advanced the study of infectious agents, have devised means of isolating and cultivating the different varieties, and gradually have demonstrated the origin and the cause of many diseases with absolute precision.

This has led to the great field of preventive medicine, which today stands in importance as a department of medicine second to none. It is one thing to recognize as a cause of disease a certain noxious agent, but it is another to find out how that agent is introduced into the human being or animal to cause his illness. The investigation of such questions has been ably carried on by a host of investigators, and we now know, as examples, that the bite of the flea carries the germ, from the stricken rat to man, of the plague that has been a menace in the East for ages; that the malaria organism is carried from man to man by the female mosquito of a certain species; and that the common fly is not merely an annoyance, but is a common

carrier to our food of the typhoid germ, and other filth diseases.

The causative factors, and the means by which they are introduced, of yellow fever, cholera and many other dangerous epidemic diseases are now clearly known. Measures for their prevention have been so successfully devised and developed, that the plague spots of the world are in process of elimination.

The work to establish these facts of infection and prevention has led medical men into the most dangerously unhealthy regions of the world, and to the most daring personal experimentation. In 1900 were reported the experiments that established the fact that yellow fever was alone transmitted by a certain mosquito. All sorts of tests were made. Men lay in beds and bedding in which yellow fever sufferers had died; others allowed themselves to be bitten by mosquitoes which had previously fed on yellow fever patients; Dr. Carroll, who first submitted himself to the test of the bite of the infected mosquito, happily recovered from an attack of typical yellow fever, while a co-worker, Dr. Lazear, died from the effects of an accidental bite of a mosquito, with which he was experimenting.

It is asserted that the greatest engineering operation the world has ever known — the building of the Panama Canal — would have been impossible but for the safety of the workmen from the diseases of the Isthmus, which has been secured only by the knowledge and devotion of the medical men working for our Government.

This has all been for the welfare of the human race. The work is still being carried on with the same spirit of devotion and the same self-sacrifice, and it is an honor to belong to a brotherhood which send men grace.

Institutions devoted to research and generously endowed, are carrying on scientific investigation along many lines. In these, brilliant men are consecrating their energies to the searching out of truths for the advantage of their fellows.

Care of the sick of all kinds is being provided for in institutions of great variety, where disease is studied with all the advantages of a central plant, with modern accessories of laboratories devoted to practical investigations and research, and all call for the services of men well educated in the various branches of medicine. The workers in such institutions are constantly adding to the sum of medical knowledge, and each year develops new work for graduates in medicine.

It is becoming more generally appreciated that the welfare of the community depends upon healthy parents, and on the physical and intellectual care of the child during the periods

of infancy and youth, to insure healthy manhood and womanhood. This can be gained only by a knowledge of harmful agents and how they may be avoided. The public are learning gradually, what the medical profession has long known, that there are certain social evils, very difficult to deal with, which must be acknowledged, nevertheless, and which are a constant menace to our youth. Ignorance and innocence are not synonymous terms, and innocence is but poorly guarded by ignorance. Our youth are entitled to know not only the difference between right and wrong, but between safety and danger, and knowledge, however distasteful, that helps to guard the welfare of the individual, should not be withheld. Our youth should go out into the world from their sheltered homes, as they all must go, with the knowledge of how to protect themselves, and why, and I hope the time will shortly come when a knowledge of these matters will be a part of every girl's and boy's education. We of the medical profession constantly see lives wrecked because of ignorance of these matters, when, not the disapproving finger of warning, but the knowledge of consequences, would have averted catastrophe. The medical profession knows, and is willing to impart its knowledge. The parents and the teachers of our youth should acquire that knowledge and communicate it to those for whose education and health they are responsible, and at an age when it will be useful to them.

Owing to the increase in knowledge, the practice of medicine generally has undergone a great change in a comparatively few years. Formerly the family physician was considered capable of bringing to bear upon all ills arising all that medicine in the broad sense could offer. Now, all this is altered. With the great development in all the various branches of medical knowledge and activities, there has arisen a marked tendency to specialize. This tendency is on the increase, as is natural; for only by devoting himself entirely to any one of the well developed specialties can a physician become proficient and capable in his chosen line, and do work of the highest order.

In the cities, where the population is dense, great hospitals are established, and a large number of patients enables the specialist in any line to study and treat cases of the greatest variety. Constantly, important additions to his art are made by means of these opportunities. As the work improves, more people are benefited, and the standard of work is constantly raised. Outside of the cities, there have, in recent years, sprung up hospitals which not only benefit the immediate population, but are of great value to the physicians of the neighborhood in stimulating them to study their cases under improved conditions, and see a greater variety of interesting groups. The large indus-

trial plants, the railroads, shops, and factories, all have their physicians, who gain experience and profit by the work.

The problem of how best to bring to bear upon the individual case all that the medical profession can offer is an interesting one. Formerly the family physician was regarded as the final authority and court of appeal, and in thinly settled districts this condition still obtains. In the great medical centers the wise family physician has become relatively scarce, as compared to a generation ago, but he still stands as the chief reliance and trusted guide in illness. Through him, when conditions arise needing special treatment, advice is best given as to what further aid to call and where to obtain it.

It has been said that the very poor, who receive aid in illness from the great public hospitals, get the best that medicine can give. Here they are admitted, their cases are considered from every point of view, all special examinations called for are made, and the most approved treatment applied, at little or no expense to them. That this is true, there is little doubt. Those who have ample means can obtain the same treatment by calling in various specialists, and having thus thorough analyses made of their cases and the proper treatment applied, but at great expense. Between these extremes are the great body of people to whom illness is not only a grievous burden, but a grievous expense. It is just here that the medical profession stands out in the best and clearest light. It is rare to find the general practitioner who does not give the best that is in him to the service of his patient. He makes his charges to suit his patient's means, and, while he has a limit to the highest charge he makes his rich client, he has no limit to the reduction, even to zero, that he makes to his poor. Every physician carries willingly, and gladly, poor patients against whom his books show no charge. Around every physician is a group of specialists whom he consults in cases requiring their special aid, and these specialists are as glad to aid him with his patients of moderate means or his very poor, from whom they receive little or nothing, as they are to be called to his cases in which the large fee is expected to be paid.

We hear of the enormous fees paid in some cases, but these are very rare; and still, it is surely as proper that large fees be paid, by those having the means, for the highest kind of work that can be done when life itself is in peril, as that large fees be paid our legal brethren when valuable property only is at stake. It is impossible to organize the general practice of medicine, and apply it at large, with the same efficiency with which it is organized in a large general hospital, but each year there is an advance, and that advance is dependent upon the improve-

ment in the education of the young practitioner and the conscientious work that he does.

The great majority of graduates in medicine still go out into a general practice, or into the practice of some special subject which brings them into direct contact with sickness.

According to statistics, compiled from membership in medical societies throughout the country, the proportion is about fourteen in general practice to one working in special lines. The large centers are well supplied, so that all sufferers have access to the best modes of care and treatment; but in these centers competition is keen, and a long time is required for the young doctor to become firmly established. There are, however, large opportunities for practice in the clinics, and for apprenticeship in the specialties.

The less thickly settled districts are not so well supplied, and here are large opportunities awaiting earnest and well qualified graduates. They can bring into the country the knowledge they have acquired, and apply it earlier. Transportation is now so well developed that assistance from the cities can be readily obtained in difficult and serious cases, and patients can usually be sent to hospitals when that is necessary. The doctor becomes more quickly established, and he can more readily become of prominence in his community. In the towns and villages it is more common to find the doctor on the committees of schools, and libraries, and in the directorship of other public affairs, than in the cities, as he is quickly recognized as having had greater educational advantages than his neighbors, and is called upon for a wider service.

Wherever he settles, or whatever line of medical work he elects, it is uncommon for the graduate in medicine to amass great wealth, but a competence is rarely lacking the conscientious, industrious physician. The reward he gains is not measured in dollars and cents, but in the trust, confidence, and affection which he inspires, and the satisfaction which good work well done brings. Perplexities, anxieties, failures and disappointments are his inevitable portion, but they are more than counterbalanced by the successes which will attend his earnest efforts.

Wherever he settles, he carries with him a great responsibility. He is a member of a profession from which his fellows have always expected a high order of sincerity, integrity and square dealing, and he represents in himself those standards among his clients. Deception of self or of others has no place in his dealings.

Members of the class of 1916, you may be assured that the Faculty and the College will be interested in your career, be gratified by your success and feel pride in your achievements.

We expect and believe that you will prove faithful to your trust, and I would say in parting to the graduates going out into the world, what was said by Polonius to his son:

"This above all: To thine own self be true, and it must follow as the night the day, thou canst not then be false to any man."

A LETTER FROM DR. CONRAD WESSELHOEFT, 2nd, FROM THE MEXICAN BORDER

Camp Cotton, El Paso, Texas,
July 13, 1916

The sudden call to arms and the mobilization of our National Guard on the Mexican border is a very serious matter so far as the life and health of these soldiers is concerned, whether or not they go into Mexico. Men from the Northern States cannot be expected to adapt themselves instantly to this terrific heat and the alkali dust. They are not hardened soldiers, although many officers and men have seen hard service before; on the contrary they were jumped from peaceful occupations to a short camp life at Framingham, followed by a long, hard six-day and night journey in day coaches to a semi-tropical climate to be exposed to severe heat and the invasion of organisms to which their systems have never been immunized. So far, the men have had comparatively few heat prostrations, in this regiment only about five a day. Diarrhœa, however, is becoming very prevalent. So far it has not been fatal, but the patients suffer from severe abdominal cramps and great prostration. The alkali dust seems to be responsible for a number of cases of bronchitis with asthmatic breathing. Venereal disease, gonorrhœa, has gotten a start, and is due to the notion among some men that they must have sexual intercourse in order to keep healthy, and to another mistaken notion that the prophylactic treatment which they are forced to take if they have had intercourse is a sure preventive.

The function of a regimental surgeon is chiefly that of a health officer. Only the crudest medicine and minor surgery are practiced. All patients too sick to remain in quarters are shipped directly to the base hospital, where they are not heard from again until their return. The work in camp is to keep the men healthy. Constant inspection of kitchens, wash sinks and latrines is our chief occupation. All kitchen utensils and incinerators are inspected twice a day. Everything which offers food for flies, such as a speck of food on a knife, is condemned, and that company kitchen is reported at headquarters. For the

absence of active fighting we have the great responsibility of the health of the camp. It was a surprise to me to find how keen the officers are on sanitary principles. But with all our care to keep this camp scrupulously clean I fear an epidemic, as we are within a hundred yards of a stock yard, where flies are gathered from all this section of the country. Cases of typhoid fever are within five hundred yards of us, and there is an epidemic of diphtheria in El Paso.

The spirit among the men and officers is excellent. Discipline is on a high plane, as everyone is aware of the danger of our position should trouble begin, and of the serious consequences which might follow should discipline become lax. Fortunately, the nights are cool and comfortable so that when free from duty every man is insured a good night's rest. We do not need to have the clock set back, because we go to bed early when we get a chance, and the camp wakes up with the chickens, roll call being at 6 a. m.

I do not regret being here in the least. Regardless of the pride one feels in serving the flag, it is a wonderful experience to be under military discipline, to become accustomed to the fact that orders must be carried out, and carried out punctually. It is a simple matter to "pass the buck," as we say, so far as doing the work is concerned, but the responsibility of seeing to it that the work is done, and done as ordered, can never be shifted by any one from General Bell down to a corporal. Having had two years training in a German school this matter of discipline comes easy to me, but the regulations and enormous amount of red tape in the way of reports, communications, transfer slips, etc., can be learned only by experience and the continual study of the manual of regulations.

Just one word in regard to the preparedness hysteria. All you men who marched in that parade representing the Medical School and Hospital — I failed to respond — have about as much idea of what it was all about as turkeys have about Thanksgiving. I didn't know what it was all about, so I was not enthusiastic. Now I realize that it was hysteria through and through. It did not help recruiting, and some of those who marched or rode — yes, even in military uniform — turned out to be a lot of pikers when it came to taking the Federal Oath. That kind of military enthusiasm is no credit to the country. If some of those who marched knew what working out in this temperature is, and what a Texas wind storm is, they would know what military preparedness for this country means. That parade was an opportunity to carry a flag and to advertise. I realize that the Hospital had to play its part in it for advertising reasons only. But at this minute, as I sit in my tent with

six Mexican machine guns just two hundred yards away pointed in this direction, I feel the necessity for military preparedness in the United States. I don't know any more about the Mexican situation than you do in the North — probably less. However, I have far more respect for Carranza than Dr. Grenfell has for the Kaiser, but as I know as little about the Mexicans as Dr. Grenfell knows about the Germans, I choose to refrain from discussing our neighbors against whom we are mobilized. For the sake of these vigorous, healthy, armed men and those whom they have left at home, I hope this whole affair can be settled by diplomacy rather than by warfare. Such an achievement would raise us above those European powers one and all who preferred the latter.

Conrad Wesselhoeft,
1st Lieut. Medical Corps, 8th Mass. Infantry.

THE DOWLING METHOD OF NASAL TAMPONADE IN GENERAL PRACTICE

By Crawford R. Green, M.D., Troy, N. Y.

The reports of researches in the domain of the specialties very often presents to the general practitioner, absorbed in the daily routine of clinical medicine, a mystic maze in which he takes scant interest and of which he has but little comprehension. This is particularly true of achievements in the specialties of eye, ear, nose and throat. The general practitioner appreciates in a general way the value of all such discoveries; but he realizes that their application is largely confined to his highly trained colleagues who are practicing as specialists. Nevertheless, if he keeps in touch with the progress of these specialties, he is occasionally rewarded by unearthing a nugget of pure gold, — some method of procedure capable of accomplishing much in such a simple manner that it is at once ready for use by every physician of ordinary intelligence.

Such a procedure is the Dowling method of nasal tamponade. This was evolved by its originator, Dr. J. Ivimey Dowling, of Albany, after a long study of the intimate relationships existing between conditions of the accessory nasal sinuses and conditions of the optic nerves, retinal and choroidal diseases, affections involving the iris, conjunctival and corneal diseases, muscular errors, and conditions of erratic refraction in which glasses are frequently changed without benefit. In all this wide range of conditions drainage of the accessory nasal sinuses has been shown to result in marked improvement, often so striking

as to seem to the uninitiated but little short of miraculous. Dowling's original experiments were directed toward discovering some simple method for securing the drainage of the sinuses. After unfavorable experiment with many other agents, this result was finally accomplished by the employment of nasal tampons of argyrol, forty grains to the ounce.

From the original purpose of relieving ocular conditions, experience has elaborated for this method of treatment a much wider field of utility, for it has been found to give striking benefit to many acute and chronic affections of the nose and sinuses, acute and chronic inflammations of the Eustachian tubes, middle ears, and even the pharynx and the larynx.

The tampons, which are inserted into the nares under full illumination with the head mirror through an ordinary wire nasal speculum, are made from long fibre cotton (the ordinary sterilized absorbent cotton) wound around a long, smooth, wire applicator. The amount of cotton necessary to make the tampon should be flattened and stretched to the desired length and thickness and then wound around the applicator and saturated with the argyrol solution. It is always advisable to inspect the nose before introducing the tampon, in order to determine the width of the nares and the presence of any irregularities, for the tampon should be sufficiently long to fill the middle meatus without undue discomfort. The tampons should always be placed in both nares. They are left in position for from ten minutes to one hour. They are then removed by gently withdrawing them with an ordinary tissue forceps, and the nares are thoroughly cleaned with a nasal douche. Before the treatment is begun, the patient should be supplied with several squares of gauze, for there will be considerable dripping of argyrol from the anterior nares and the patient is likely to sneeze copiously during the treatment.

It is not the purport of this article to enter into a technical consideration of the results of this treatment in diseases of the eye and ear, nor to discuss the theory of its action. These have all been thoroughly explained by the originator of the treatment and by others. The aim is merely to emphasize its applicability to many conditions in the every-day practice of general medicine. The writer has been familiar with this treatment, as patient and physician, for nearly ten years; he has followed it from its incipiency to its full development; he can vouch for its worth.

Among the most common of the conditions to which the treatment is applicable is reflex headache, whether it have its origin in ocular disturbances or in disturbances of the sinuses *per se*. In fact, the treatment is so beneficial in so many

cases of chronic headache that it is worthy of trial even in case where the cause is not positively known to arise from the sins uses or any of the organs of special sense. It is astounding, in the light of our present knowledge, how little attention is paid to the condition of the accessory nasal sinuses. The catarrhal headaches of congestive type that are caused by the locking up of secretions in these cavities are extremely common, and, in the majority of cases, all the victims receive is palliative treatment with, too often, an erroneous diagnosis of the causative condition. Headache tablets, powders, nostrums may give temporary relief, leaving a dull unclear sensorium behind it; the Dowling tamponade *cures* by removing the cause and leaves behind a clear sensorium and a sense of exhilaration and well being that is the result of the removal of a constant irritation. The exhilaration and ability to think clearly is a striking immediate effect of the treatment. This result is well demonstrated by two patients who have been under the author's observation for several years. One is a lawyer; the other is the treasurer of an important manufacturing company. Both have been long sufferers from catarrhal sinusitis. Almost invariably, before undertaking any unusually important work, these men will appear with a request for tamponade because it makes their brain seem so clear and they can concentrate their minds so easily upon their problems.

Relief from headache by this treatment is in many cases so immediate that a patient who comes to the office with severe headache frequently goes out with his head absolutely clear. The chief result, however, is that many patients who have suffered for years from severe and frequently recurring headaches are relieved altogether from having headaches. To this end the treatment must naturally be persisted in for some time. The treatment must be given twice a week, once a week, or perhaps once in two weeks, as conditions seem to indicate, and the persistency is well rewarded. The writer has cared for patients who have received this treatment regularly every week or two for three months, six months, a year. Formerly, they suffered from severe headaches which incapacitated them from work for a day or more every week, every two weeks, or every month. They now pass month after month without a single headache, or, if they should have headache, they know where and how to receive prompt relief.

There are, as already indicated, many reflex headaches of various origin that may be relieved by this method of treatment, and inflammatory conditions of eyes, ears, nose and throat are alleviated by drainage of the sinuses, even though the cause is not cured. It is thus a valuable accessory treatment in a wide

range of disturbances, and in the hands of the general practitioner it is a harmless beneficient agent for the relief of patients who have not access to the specialist or who are incurable or inoperable.

During the epidemic of influenza in the winter of 1914-1915 there was an unusual number of cases complicated by infected accessory sinuses. These patients suffered greatly from tenderness and sensation of fulness over the sinuses; their headaches were intense; many of them had facial neuralgias. They were bedridden or confined to the house and in most cases unable to consult the specialist. The response of these cases that were treated by argyrol tamponade was remarkable. Drainage was prompt and efficient, and the comfort of the patients was quickly restored. Many of the patients were doubtless saved from operations and some probably from chronic invalidism or death, for no other known agent, beyond radical operation, could possibly have accomplished the results of this simple procedure.

In aborting and relieving acute rhinitis, argyrol tamponade is very valuable. It is doubtful whether any method of treatment could give more prompt relief at any stage of rhinitis; but particularly in the early stage, when quick results are looked for, it is most dependable. The patient who has once observed a coryza to disappear almost at once after this treatment wastes no time getting to the physician's office when the next cold is "caught." Many hay fever patients, with similiarly turgescent membranes, receive so much comfort from this treatment that they are quite willing to return for daily treatments. It is, indeed, well worth adding to one's armamentarium as an auxiliary in the treatment of that most intractible disease.

Of all classes of head cases which the Dowling tamponade has enabled the author to relieve, none has given more conspicuous results than the cases of chronic nasal catarrh. This condition is so prevalent that in every large general practice there are doubtless many patients who have settled down to accept the condition as one that is beyond relief and that has to be tolerated through life. These patients have used all sorts of oils and sprays and nasal douches to no avail. The crusting of the nostrils, the dry, oppressed sensation, the inability to breathe freely through the nose, the discharge of yellow, stringy mucus, and the dropping of mucus into the throat, are among the most familiar of phenomena, — so familiar, indeed, that many a sufferer will consult the physician for some other trouble and never even mention it. Persistent treatment with argyrol tamponade, week after week, month after month, *cures* this condition so that it stays cured. The experience of the writer

merely adds to that of many other observers in this most prevalent condition.

Among the most annoying of all conditions with which the general practitioner has to contend are disturbances of the ear. The general practitioner as a rule has but little knowledge of ear conditions, and he is untrained in the use of the instruments necessary to relieve them. In almost all catarrhal ear disturbances the argyrol tamponade treatment is of decided benefit. It relieves congestion, it improves the hearing, and it removes that most distressing condition referred to as "head noises." A patient has an almost constant buzzing sound in her ears for more than a year which she referred to as her "bees." This patient had an atrophy of the auditory nerve; she was growing progressively deaf; cure was beyond hope. The writer tamponed her nose two or three times a week for three or four months. She improved steadily until the head noises entirely disappeared, although she continued gradually to grow deaf. Treatment was discontinued, the noises recurred; treatment was resumed, and they disappeared.

No discussion of the Dowling tamponade could be complete without some mention of its value as a diagnostic aid. As a means of detecting hidden infection it has proved again and again to be of the greatest service, for in the presence of pathogenic micro-organisms these tampons are bleached to a yellowish tinge or are completely decolorized, while, if there be no infection, they retain the brown color of the argyrol upon their removal from the nose. Dowling says: "In the event of progressive disease of the optic nerves or other ocular diseases, in which radiographs seem to indicate normal sinuses, there may yet be sufficient residual infection to influence the progress of ocular diseases, the membranes being infected to the point of saturation, with resulting ostilio of proximate parts. A positive reaction obtained in progressive diseases should suggest the advisability of operation, providing some improvement is observed through the use of the tampons as a therapeutic measure, and this despite the negative results of the radiographs."

The writer has seen some remarkable results in ocular conditions from this method of treatment, but these are cases that have been treated by others who practice ophthalmology. In ophthalmology, indeed, argyrol tamponade has its greatest field of usefulness. The writer's personal experience warrants the conclusions that:

1. Drainage of the sinuses is readily accomplished by the Dowling treatment, which can sometimes be demonstrated by the transillumination of the sinuses and certainly by the relief which the patient experiences.

2. Many persistent and recurring headaches of long standing can be positively cured by it.

3. Acute nasal catarrh can be aborted and chronic catarrhal conditions of the nose and sinuses can be relieved or cured.

4. Many catarrhal conditions of the ear and distressing cases of "head noises" can be ameliorated or removed.

5. The treatment is so simple and its results are so beneficent that every general practitioner should put it to daily use.

CLINICAL DEPARTMENT

Case F–8. *Acetonuria During Pregnancy.**

Mrs. G. Age 20. Family and personal history negative; Wasserman and gonococcus tests negative; pregnancy began in November, 1915; confinement expected during the latter part of August, 1916.

Urinalysis, June 15th, 1916.

Quant.	Sp. Gr.	Sugar	Alb.	Acetone	Urea	Casts
96 oz.	1016	0	0	0	.8	0

June 21st, 1916.

Quantity	Sp. Gr.	Sugar	Alb.	Acetone	Urea	Casts
52 oz.	1016		0 Trace	Present	1.2	0

Patient began to have nausea, vomiting and pain in stomach. She cried with pain and was much frightened. Was put on a milk diet and given soda bicarbonate by the physician in charge. Later the diet was changed to small quantities of mixed diet.

June 27th, 1916.

32 oz.	1030	0	0	Very pronounced	3.6	0

June 28th, 1916.

Patient complaining of nausea and constant heartburn. She vomited large curds of milk, one long like a banana and nearly as large. Had gas in bowels. Voluntarily spoke of feeling much worse after 4 P. M. (This was the first time I had seen her.) I put her on a full diet in small quantities, discontinued the soda bicarbonate and prescribed Lycopodium 1m 2 powders.

---

* This and the following case are reported by Dr. Mary Parker from the Medical Clinic of the Out Patient Department, Massachusetts Homœopathic Hospital.

June 30th, 1916.

Patient said she felt well. No more nausea, vomiting or pain.

Urinalysis July 7th, 1916.

Quant.	Sp. Gr.	Sugar	Alb.	Acetone	Urea	Casts
20 oz.	1010	0	0	0	.6	0

July 14th, 1916.

Patient has been eating well and has no return of symptoms thus far.

[Editor's Note. — This is a very pretty instance of the right drug in the right place. It is unusual to have such a good series of urinary analyses to give tangible proof of the result so much more so than to be told merely that the patient felt better. The acetone actually disappeared, and, what is quite as important, the urea (3.6) showed that the poison was being eliminated. This case should lead us all to think of lycopodium in the vomiting of pregnancy where the urea is very low and acetone present. This latter fact can frequently be guessed by the peculiar chloroform odor of the breath. In addition we must remember that the lycopodium patient is worse between 4 and 8 P. M. and from warmth; she likes cool air and motion. She is irritable and may have sour vomiting between chill and heat.]

Mr. E., age 59; contractor and steam-fitter. A tall, large man, has suffered for fifteen years from bronchitis and asthma and has lately given up work on account of it.

March 8th, 1916. Came to the Clinic and while waiting his turn was obliged to stand on doorstep to get the air because he felt choked in the house. Feels suffocated in a close room He complains of frequent spells of wheezing which are much worse on lying down and at night, when the wheezing is so loud that it keeps his wife awake. He has attacks of wheezing and choking every time he takes the slightest cold in the winter. He feels weak, having had so many attacks lately. Mentally he is anxious and frightened about himself.

Prescription — Arsenicum Album. 30x 3 powders, one every two hours, followed by saccharum lactis.

March 22nd, 1916. Patient has no more choking spells. He can lie down and sleep. Coughs in the morning until he raises a lump of tough mucus, otherwise no expectoration. He still wheezes a little at times, and complains of rheumatic pain in right instep and ankle.

Prescription — Bryonia 1m 1 powder.

April 1st, 1916. Patient feeling much better and has been looking for work. He wheezes up a little towards night, but sleeps well. He is seldom thirsty and his appetite is all right.

Prescription — Pulsatilla 1m., 2 powders and saccharum lactis.

April 22nd, 1916. Patient has gone to work and is feeling very well. He lives on a hill and can walk up with no difficulty in breathing.

Prescription. — Saccharum lactis.

April 29th, 1916. Patient is working all day and feeling fine. He climbs stairs and walks up hill easily but still wheezes a bit toward night.

Prescription — Puls. Pulsatilla 1m., one.

July 8th, 1916. Patient is feeling very well with no return of symptoms.

In the first prescription of Arsenicum, he gave two symptoms, of wheezing worse lying down, at night, was mentally so frightened about himself, which is always so strongly indicative of Arsenicum. Later his only symptom seemed to be the wheezing in early evening. That together with lack of thirst, led me to prescribe the Pulsatilla.

SLIGHTLY MIXED

" My cousin, who teaches school in Roxbury, received this," writes F. A. M.:

" Willie tells me you've begun asking him where's his glasses. I want to tell you he has had his adams and tonsils removed this summer and he don't need them." — *Exchange.*

OBITUARY

Dr. T. Franklin Smith

Dr. T. Franklin Smith, Treasurer of the American Institute of Homœopathy since 1900, died suddenly on June 6 at the age of eighty-three years. Dr. Smith succeeded the late Dr. E. M. Kellogg in office, on the death of the latter, having previously served as Assistant Treasurer since 1891. He was a member of the Institute from 1860, and during the Civil War served his country in the capacity of assistant surgeon, with the rank of major. Following the war he was appointed Examining Surgeon for pensions, which office he held for more than thirty years.

Dr. Smith was a graduate of New York Medical College, class of 1860, and, except for the time spent in the army, his practice was in New York City. In his death the Institute has lost a devoted servant and counselor, and many mourn him as a departed friend.

Harris H. Baxter, M.D.

Dr. Harris H. Baxter, one of Cleveland's oldest and ablest physicians, died in that city on July 9 of the present year. Dr. James C. Wood of Cleveland writes of Dr. Baxter as follows:

"Doctor Baxter was born near Mount Vernon, Ohio, August 15, 1846, the son of Doctor John Baxter. Like so many successful business and professional men who find their way to the city, his early manhood was spent on a farm, and in his reminiscences of later years, especially during the periods of physical depression which characterized his last months, his mind reverted to those rural scenes, the memory of which brought him untold happiness. He was educated in the public schools of Mount Vernon, and the Highland Military Academy, of Worcester, Massachusetts.

"Early in 1865 he came to Cleveland and entered the College of Homœopathic Medicine, now affiliated with the Ohio State University. He received his medical degree in 1867 and, except for two years, during which time he was located in Columbus, lived and practiced medicine in Cleveland, being intimately identified with the city's growth and institutional development. For more than forty years he was a faithful and conspicuous member of the Faculty of his Alma Mater. He was a charter member of the Cleveland Homœopathic (Huron Road) Hospital, and its early success and popularity was in no small degree due to his enthusiasm and financial support. For more than thirty years he gave his time and skill to the hospital as a staff member. He was a founder member of Troop A and for many years one of its officers. He was honored by the various state and local medical organizations of his school, and has presided as either president or vice-president over the destinies of all of them. He was for fourteen years a member of the Ohio State Board of Medical Registration and for several years president of that Board. He was a member of the Union and Euclid Clubs.

"Doctor Baxter was married in 1888 to Miss Ellen Sacket, who survives him. One of his chief characteristics was his affection and love for young men, and one of his greatest pleasures was to entertain them in his happy and hospitable home.

"Although of a retiring disposition, Doctor Baxter was a man of pronounced views and was uncompromising in his determination when he believed that he was in the right. There was never any question as to where to find him. There were few physicians ever more beloved by their patients than was Doctor Baxter, which is the final test of a physician's character. He was held in equally great esteem by his hundreds of students for his high ideals and his scholarly attributes; and he was looked upon as friend and counselor by his brother physicians who, when the word went out that he was gone, spoke in tremulous voices of their loss. When he was finally laid away there came from all parts of the country patients and students and professional associates whose lives had been touched by his life, that they might for the last time do homage to their physician and friend."

Dr. Baxter had been a member of the American Institute of Homœopathy since 1868 and his quiet presence and wise counsel will be greatly missed at its meetings.

Anna D. Varner, M.D.

Dr. Anna D. Varner, one of the most prominent women practitioners in the State of Pennsylvania, died on June 26, 1916, at her residence, 726 South Ave., Wilkinsburg, Pennsylvania.

Dr. Varner was born in Alexandria, Pennsylvania. She was educated in the public schools, Wooster University, and Cleveland Medical School. For two years she practiced in the Philadelphia hospitals. Dr. Varner was a member of the American Institute of Homœopathy, and of the Homœopathic Medical Society of Allegheny County. She was a leading member of the State organization of the Women's Benefit Association of the Maccabees, being Chairman of the Free Hospital Service Board, established in the Homœopathic Hospital, Pittsburgh, and great medical examiner of Pennsylvania. She was also district examiner for Pittsburgh and vicinity of the Protected Home Circle; and recently she had been appointed medical examiner for the female employees of the Westinghouse Electrical & Manufacturing Co. Dr. Varner was a member of the Second Presbyterian Church of Wilkinsburg and was actively identified with the work of the church. She also devoted much time to charitable work in Wilkinsburg and vicinity.

BOOK REVIEWS

Manual of Diseases of Women, By Henry Schmitz, A.M., M.D., F.A.C.S., Professor and Chief of the Department of Gynecology, Chicago College of Medicine and Surgery, Medical Department Valparaiso University; Surgeon, St. Mary's of Nazareth Hospital; Gynecologist, Frances Willard Hospital, Chicago, Ill. Chicago, Cleveland Press, 1916.

The author's excuses or reasons for writing this book are given thus: "This volume was written on the numerous requests of students attending the author's lectures and clinics at the Chicago College of Medicine and Surgery."

It is all and no more than the title indicates, a Manual of Diseases of Women. To the student of medicine or the beginner in a gynecological course the book is very valuable, as it takes up many, if not all, of the minor points of the physiology and pathology pertaining to diseases of women. Many of these minor points have never been sufficiently studied by the average practicing physician.

The book is not illustrated, but the descriptive matter is clear and concise.

D. G. W.

A Manual of Gynæcology and Pelvic Surgery for Students and Practitioners, by Roland E. Skeel, A.M., M.S., M.D., Associate Clinical Professor of Gynecology, Medical School of Western Reserve University; Visiting Surgeon and Gynecologist to St. Luke's Hospital, Cleveland; Fellow of American Association of Obstetricians and Gynecologists; Fellow of American College of Surgeons. Two hundred and eighty-nine illustrations. P. Blakiston's Son & Co., 1012 Walnut Street, Philadelphia.

A feature which distinguishes this book from most others upon the same subject is its profusion of references to other text books and authors upon the subject considered. It therefore is especially useful when a reader is seeking the opinion of various authorities concerning an operation or the discussion of opinions.

The book is unusually well illustrated, and the flexible binding renders it attractive in form.

We are thoroughly in accord with the author's statement when he says: "Every endeavor has been made to treat the subject of gynecology as it really exists, viz.: as a highly specialized branch of general surgery bearing a close relationship to obstetrics, and demanding a thorough knowledge of general medicine for a proper appreciation of its relative importance in the medical field with its multiplicity of specialties."

There can be no doubt that gynecology is a highly specialized branch of general surgery.

D. G. W.

The Ductless Glandular Diseases, by Wilhem Falta, Vienna, Translated and Edited by Milton K. Meyers, M.D., Neurologist to the Lebanon Hospital, and to the Dispensaries of the Jewish and St. Agnes Hospitals, Philadelphia, etc., with a foreword by Archibald E. Garrod, M.D., (Oxon.) F.R.C.P. (London), F.R.S., Physician to St. Bartholomew's Hospital, London. Second Edition, with 101 illustrations in the text. P. Blakiston's Son & Co., Philadelphia. Price $7.00 net.

There are few medical readers today who are not more or less familiar with the new "physiology of the ductless glands." There are still fewer who are not interested in all that is written concerning them. No impartial reader can accuse Dr. Falta of failing to go into the depths of minuteness in writing his book "The Ductless Glandular Diseases." It is intensely interesting from cover to cover.

If one read only the chapter on Tetany he would feel well repaid for his ownership of the book. Second in interest comes the chapter on Eunuchoidism. We are just beginning to have some understanding of these peculiar individuals who without being castrated have yet never attained full sexual normality.

Dr. Falta's work represents a deal of painstaking labor which will contribute materially to a better understanding of those obscure diseases which have their life-spring in some one of the ductless glands.

D. G. W.

Modern Medicine and Some Modern Remedies by Dr. Thomas Bodley Scott, author of "The Road to a Healthy Old Age," with a preface by Sir Lauder Brunton, Bart., F. R. S. Paul B. Hoeber, 67 East 59th St., New York City. Price $1.50.

Dr. Scott has written a pleasant, chatty little book, the kind one likes to read at the end of the day. He is a general practitioner and pleads for a more frequent recording of the experiences of the family doctor as being of quite as much value as the writings of the hospital men who compile most of our books, while giving a different viewpoint.

There are four subjects discussed: (1) Disorders of the heart. (2) Arteriosclerosis. (3) Therapeutic Speculations and Doubts. (4) Chronic Bronchitis and Bronchial Asthma. These discussions are thoroughly modern and advanced, yet are couched in such readable form that one hardly realizes that he is absorbing the latest scientific medical thought. Dr. Scott lays great emphasis upon the importance of diagnosis. In the chapter on "Speculation and Doubt," he touches upon many subjects about which the concensus of opinion is still unsettled, i.e., The use of electricity in arterio-sclerosis. The increasing knowledge of hormones and of the endocrime glands and internal secretions.

Altogether this little book stimulates one's thoughts in many directions and presents many practical deductions.

A. H. R.

Examination of the Urine and other Clinical Side-Room Methods, by Andrew Fergus Hewat, M. B., Ch. B., M. R. C. P., Ed. Tutor in Clinical Medicine, University of Edinburgh; Lecturer Edinburgh Post Graduate Vacation Course. Fifth Edition, Paul B. Hoeber, 67 East 59th Street, New York City. Price $1.00 cloth.

This little pocket manual is a concise description of the essential laboratory tests for Urine, Blood, Sputum, Pus, Gastric contents and Feces, culled from the larger works and arranged in a most convenient form for ready reference. It is practical and well up to date. Few would attempt to carry all the tests and methods in memory, and such a book is a great time-saver. In it the author limits himself to the methods, making no clinical deductions. The book is well indexed.

A. H. R.

PREVENTION OF INFANTILE PARALYSIS
UNITED STATES PUBLIC HEALTH SERVICE

To control the present epidemic of infantile paralysis, according to a statement issued by the United States Public Health Service, the chain of infection between persons harboring germs of the disease and the well members of the community should be broken. Infantile paralysis is probably caused by a very minute organism found in the nasal, mouth and bowel discharges of those who have the disease or who are carriers of the germ without themselves suffering from the ailment. All of the steps in the spread of the infection are not known, but if this germ can be prevented from passing from the infected to the well person, the disease will cease.

Infantile paralysis is not a disease of recent origin. Sporadic or scattered cases have occurred throughout the country for many years, but it is only during the last decade that the infection has assumed epidemic proportions in the United States. The present epidemic in New York City, on account of its magnitude and virulence, has awakened the residents of many communities to the danger of the importation of the disease into their own midst. This danger is real, but if due precautions are exercised it is believed that the epidemic will subside.

The actual control of the present epidemic must be left to the city, State and Federal health authorities. These organizations will properly quarantine and care for affected persons, prescribe sanitary measures, and limit as may be necessary the travel of individuals in order to protect neighboring districts from the infection. Individuals and communities, however, can do much toward their own protection.

Poliomyelitis is probably spread directly or indirectly, through the medium of infective secretions. Account must therefore be taken by communities of every means by which such secretions are disseminated. Promiscuous expectoration should be controlled. The common drinking cup affords a method for the interchange of material of this nature and should therefore be abolished. Rigid cleanliness of glasses and utensils at soda fountains, in saloons and other public places should be enforced. Flies, roaches and other vermin, by coming in contact with infective secretions, may possibly convey them to our food and thus directly bring about the development of disease. Therefore eliminate insects. Street and house dust bear a definite relation to the spread of many infections, and it is not unreasonable to presume that they may be a factor in the dissemination of infantile paralysis. Maintain strict cleanliness of streets, yards and alleys in order to prevent the breeding of insects and other vermin. See that all garbage and waste are properly cared for and collected at regular and frequent intervals. Guard all food supplies, especially milk and other perishable products. Digestive troubles of children arising from the ingestion of food of questionable quality may lower resistance. Assemblies of children in infected localities are to be discouraged, if not actually forbidden.

While these measures are in a sense general, and applicable to many epidemic diseases, their importance should not be overlooked.

Individual preventive measures may be thus summarized:

Summon a physician at once and immediately notify the health officer of the presence of the disease. If the disease is present in the community, medical aid should be sought whenever a child is sick, no matter how light the illness; many cases of infantile paralysis begin with a slight indisposition.

Should the illness prove to be infantile paralysis, isolate the patient, place a competent person in charge, and reduce all communication with the sick-room to a minimum. Hospital care is preferable, not only for the child but in order to better safeguard against the spread of the disease. The sickroom should be well ventilated and screened. Nasal and mouth secretions should be received in cloths, placed in a paper bag, and burned. The clothing of the child, the bed linen, and the excretions should be disinfected in the same manner as for typhoid fever, that is, by boiling, the long continued application of 5 per cent carbolic, or other well recognized disinfectant. The same is true for dishes and drinking vessels. Nurses should exercise the same precautions as regards cleanliness of hands in caring for infantile paralysis patients as for those afflicted with other infectious diseases.

A child may convey the disease to others even after a lapse of several weeks. For this reason quarantine should be maintained for a considerable period, usually from six to eight weeks, and the above precautions should be adhered to during this time. Disinfection of the room following recovery is advisable.

GIVE THE BABY A CHANCE

Bad air, bad milk, over-crowding, poverty, dirt, ignorance, heat — these combine in summer to kill the city baby. It seems as though the brunt of the cities' sanitary sins were focused on the baby. The baby didn't ask to come, to live in a hot, dark, air-tight tenement, to be fed on dirty, half spoiled milk, to be pestered with flies and mosquitoes. He is not responsible for any of these conditions and it is his right that he have fresh air, clean surroundings and decent food. The United States Public Health Service issues free of charge to all applicants a bulletin on "The Summer Care of Infants." It should be in the hands of every mother.

PERSONAL AND GENERAL ITEMS

Dr. Donald S. Hepburn, B. U. S. M. 1914, has removed from Buffalo to Bloomfield, New York.

Dr. Alice M. Patterson, class of 1893, B. U. S. M., is interne at Danvers Insane Asylum, Danvers, Massachusetts.

Dr. Alice Z. Patterson-Murphy, class of 1896 B. U. S. M., is on the teaching staff of the New York Homœopathic Medical College and Hospital for Women, as Lecturer and Demonstrator of Anatomy, and is located at 600 Academy St., New York City.

Dr. Louise Ross, B. U. S. M., 1907, has removed her office to 1731 Columbia Road, N. W., Washington, D. C.

Dr. Lydia Baker Pierce, B. U. S. M., 1906, has accepted appointment at Pennsylvania State Hospital, Allentown, Pa., and has begun service there.

Dr. Chas. A. Eaton and Adalieta Shaw Eaton (B. U. S. M., 1908) have removed from Portland, Maine, to 522 Audubon Road, Brookline, Mass. The former has taken an office at 535 Beacon St., Boston, for the practice of his specialty in pathology.

Dr. Eliza B. Cahill has removed from Hotel Westminster, Copley Square, to 296 Newbury St., Boston.

Dr. Frank W. Patch has opened for the summer months, as an adjunct to Woodside Cottages of Framingham, a cottage at Land's End, Cape Ann, two miles from the village of Rockport, Massachusetts.

THE NEW ENGLAND MEDICAL GAZETTE

VOL. LI SEPTEMBER, 1916 No. 9

Books for review, exchanges and contributions — the latter to be contributed to the GAZETTE only and preferably to be typewritten — personal and news items should be sent to THE NEW ENGLAND MEDICAL GAZETTE, 80 East Concord Street, Boston. Subscriptions and all communications relating to advertising or other business should be sent to the Business Manager, 80 East Concord Street, Boston, Mass.

THE GAZETTE does not hold itself responsible for the opinions expressed by its contributors. Reprints furnished at cost.

PATHOLOGY IN ITS RELATION TO THERAPEUTICS

Dr. Cowperthwaite, in the *Homœopathic World* (London), August, 1916, discusses the above subject.

There are two views about it: one, that pathological anatomy is of little or no value in the study of homœopathic drug action, the other that homœopathy will be doomed to failure unless its exponents take account of the pathological results produced by drugs, and prescribe in accordance with these results.

With our present imperfect knowledge, symptoms must still form the chief guides in prescribing, and pathological changes must, as yet, be considered secondary in importance, because many cases present no pathological changes, or, should they be present, the physician is "quite liable to err in his diagnosis as to their true character." Again, many drugs of apparent therapeutic value show "no evidence whatever of power to produce pathological changes in the human or animal organism."

The pathological changes are to be looked upon as merely one of the indications for one or another drug; but pathology has been neglected by therapeutists and should receive more attention, because as our knowledge of morbid structural alterations increases, it becomes apparent that this knowledge will be one of the most important means for arriving at a correct drug selection.

The establishment of research institutions in connection with

homœopathic schools and hospitals is a hopeful sign of the trend of homœopathic thought, and should be productive of noteworthy results.

Revision and sifting of the existing chaotic mass of our materia medica is, however, more important than the addition of provings of new drugs, for "we have already a sufficient number of remedies recorded. . . . What we need is a more complete knowledge of those we already have, instead of attempting to prove other remedies of, to say the least, questionable therapeutic value."

H. U.

THE LIMITED VALUE OF BROMIDES IN THE TREATMENT OF EPILEPSY.

It will be of interest to the homœopathic physician to note the waning faith which seems to be spreading amongst our brothers of the old school in the use of the bromides. An interesting paper entitled "The Limited Value of Bromides in the Treatment of Epilepsy" appears in the July number of the *Medical Review of Reviews*. The conclusions reached by the author, Dr. Wm. T. Shanahan, are about what many of our leading homœopathic physicians of experience reached years ago. We quote the article in full:

"Since Sir Charles Locock first reported, some sixty years ago, a marked improvement in certain epileptics to whom he had administered bromide of potassium, bromine and its salts have been used more or less extensively in the treatment of epilepsy. In fact, by many who have not given sufficient study to the matter, the bromides have been considered as specific. Hare[1] stated twenty-six years ago, in referring to the use of bromide of potassium, "Every voice in the profession supports it." He qualifies this statement, however, by saying, "This drug is not, however, a 'cure-all.'" He further states, "There is no other drug known which can be relied upon so absolutely or which is so powerful in its actions and void of toxic effects, unless given in enormous doses." He calls attention to the action of bromide of potassium in disordering the digestion, and also that the drug should be pushed to secure physiological effects. Albertoni[2] in his experiments demonstrated that the bromides decreased the excitability of the cortical structures.

Since the use of bromides in the treatment of epilepsy was first advocated, benefit has been obtained in some

---

[1] Epilepsy, Its Pathology and Treatment, 1890, page 183,
[2] *Arch. f. Exp. Path. und Therapie*, XV, 256,

epileptics by its intelligent use, whereas an untold amount of harm has resulted in a vast number of epileptics, consequent upon indiscriminate administration of various bromide preparations. I have personally observed a considerable number of epileptics and individuals presenting epileptiform seizures, who improved materially under a small dosage of bromine in one form or another, this medication, however, being but one part of the treatment given. I feel as many others in regard to the bromides, that they have a much narrower field of usefulness than is ordinarily held. The effects of the bromides on the mentality of the individual receiving them is oftentimes such that in many instances permanent damage has been done. The bromides act as irritants to the gastro-intestinal tract, their tendency being to interfere materially with the normal functioning of the same, as evidenced by the constipation, foul breath, coated tongue, anorexia, etc., seen in the patient taking considerable bromides. The interference with the functions of the nervous system, as manifested by incoördination, disturbances of speech, etc., are also often observed. Occasionally a condition of excitement is observed in a patient under bromide medication.

In comparing results of treatment in the institution and in the outside world, it should be borne in mind that the majority of the former have had their epilepsy, as a rule, for many years previous to their coming under its care. On the other hand, many of those seen outside the institution are early cases, consequently a more favorable type for successful treatment. Careful study of the individual epileptic will sometimes reveal abnormal conditions, successful removal of which will improve the general health of the patient to such an extent that the symptoms of epilepsy are subsequently much less in evidence, if not permanently in abeyance. As you are aware, the finding of the exact exciting cause of the epileptic phenomena is often, as a rule, difficult or impossible. The predisposing cause of an epilepsy may be seemingly apparent, such as, e.g. heredity, transmission of a defective nervous system, but in many instances no such predisposing cause can be definitely established.

That bacterial infection might play a causative rôle in the production of epilepsy was considered years ago, and is again being brought forward by a writer in one of our medical journals. Personally, I must have more convincing evidence before believing that the alleged direct infection described can produce epilepsy. The epilepsies are seemingly due to so many underlying factors that one would feel almost convinced that there are multiple causes in action to produce the symptoms of this disorder.

It has long been a recognized fact that in the treatment of those epileptics of normal, or approximately normal mentality, it is essential to secure their active coöperation in the carrying out of the treatment prescribed, thus arousing confidence in the results to be obtained, before the improvement hoped for can be had. To quote from a former paper presented by the writer, "It has been well said that the subject of epilepsy is one that embraces, perhaps more than any other limited department of medicine, the whole range of therapeutics." Sieveking,[3] a writer of sixty years ago, stated: "In epilepsy the results have been, if not barren, yet unsatisfactory; and still the disorder constantly attracts new inquirers, each anxious that he may succeed in lifting the veil that shrouds the mystery. We are justified in expecting more decided benefit from a full development of our hygienic resources in combating epilepsy than by reiterated experiments with drugs. Epilepsy is a disease of the whole man and not of any one organ or system of organs alone. In many instances there is no doubt that the result of treatment is merely a temporary arrest or postponement of the affection, which is erroneously regarded as a cure." Sieveking also tells us that "There is not a substance in the materia medica, there is scarcely a substance in the world, capable of passing through the gullet of man, that has not at one time or other enjoyed the reputation of being anti-epileptic."

When bromides are used, bromism is not necessary to obtain the physiological effects looked for. Hand in hand with the administration of the bromides can be carried out common sense regulation of the individual's mode of life, especially as to diet, hygiene, occupation, recreation, etc. The administration of the bromide salts in connection with a salt-free diet, as first advocated by Toulouse, has brought about material benefit in the treatment of many patients. Bromine may be administered not only in the form of bromide of potassium, sodium, ammonium, etc., but in the form of an emulsion, such as Bromipin, or in a more or less disguised form as Brometone, Sabromin, Sedobrol, etc. The moral treatment, to include self-control, personal discipline and strict rules of conduct, is of essential importance in the treatment of epileptics. This has again been especially brought forth by recent writers, among them Clark, MacCurdy, MacRoberts, etc., the treatment being based upon careful analysis of the personal history of the individual epileptic so as to readjust his attitude toward society and his particular environment. With the vast majority of all cases of epilepsy, presenting their symptoms early in life, lending great weight to the theory that the condition is, as a rule, the

[3] Sieveking: On Epilepsy, 2nd edition, London, 1861.

result of a primary defect in the structure of the central nervous system with, in consequence, unstable nerve cells, one could not expect by administering sedatives, such as bromides, to do away with the effect of such structural incompleteness in this vital part of the human economy. It has long been held, and in my opinion justly, that the majority of epileptics indicate that the individuals so afflicted are subnormal. If in certain epileptics the symptoms are the result of a disturbance of the proper relationship of the various internal secretions, the so-called endocrine glands, with consequent upset of the entire individual, how can the administration of bromides bring about permanent readjustment to the normal state?

It is frequently observed by the average physician that any new treatment of an epileptic, no matter what it consists of, produces benefit in consequence of the hope aroused in the individual, thus securing a better coöperation, and also the more careful regulation on the part of the physician of the patient's mode of life. The congenital defect cannot be removed, but the advertising quack still guarantees marvelous cures of epilepsy as has been the case for long periods of time. As a rule, the remedies so advertised are bromine, or its salts, in one form or another, usually the bromides, potassium and sodium, oftentimes but crudely disguised. Research has up to the present time failed to establish logical proof beyond doubt that some of the epilepsies are due to perversion of the functioning of the gastro-intestinal tract, whether the result of an abnormalty of the gross architecture of the intestine itself, or a pathological change in the wall of a portion of the entire tract. Many patients are reported as cured of epilepsy when there has been but temporary remission of a few weeks or months, a condition commonly observed, irrespective of any or no particular treatment, in those having this disorder.

Bromides, as a rule, but mask symptoms and underlying causes of the disorder existing in the individual as present at the beginning of the bromide medication. Because an individual has had a few convulsions, he should not necessarily be classed as epileptic; the entire syndrome should be carefully considered in each instance before the final diagnosis of epilepsy is made. The most characteristic symptom in epilepsy is the interference with consciousness. In the great majority of epileptics in whom the condition has been present for any considerable period, there exists permanent organic change in the brain, consequently the prognosis is necessarily not a good one so far as cessation of symptoms may be concerned. Some of these chronic patients, under strict treatment, may be improved, perhaps materially, but the condition not entirely cleared up. Associated with the

careful hygienic and dietetic treatment of the epileptic, any surgical methods which may be indicated for the non-epileptic should be made use of. In the younger patients, careful educational efforts should be applied, and in older epileptics interests kept alive by suitable occupation, depending on the proclivities of the particular individual. It is a well known fact that abrupt cessation of bromide medication often results in an increase in the number of seizures, not infrequently a true status occurring.

As an illustration of the general result obtained from bromide medication, at the Craig Colony for Epileptics the average amount of bromine and bromide salts used per patient during the year 1902 was 10.8 oz., the average number of seizures during that year being 98. In the year 1904, the average dosage per patient was 15.6 oz., with the average number of seizures 124. In 1906 the average dosage per patient during the year was 12.2 oz., and the average number of seizures 136. From 1908 there was a marked lessening of the bromides administered, so that from 1909 to date, the average dose for the entire year has been less than $\frac{1}{2}$ oz. It is interesting to note that with the material reduction in the amount of bromides, there has not been an increase in the average number of seizures; on the contrary, the latter during 1915 was 95, with the average per capita dosage of bromides .45 of an ounce.

In conclusion, I desire to say that my intention in presenting this time-worn subject of bromide medication will be accomplished if it is made apparent that the bromides in the treatment of epilepsy have a much more restricted application than is ordinarily considered to be the case."

ORIGINAL COMMUNICATIONS

A CONSIDERATION OF SOME MATTERS RELATING TO DIET IN HEALTH AND DISEASE *

By Clarence Bartlett, M.D., Philadelphia, Pa.

The present widespread interest in matters pertaining to diet is not of recent growth. For half a century, possibly more, the profession has taken a lively interest in the subject as evidenced by the great popularity of technical literature on food and disease, the publication of diet charts, and the many dietetic preparations exploited in the medical periodicals. The laity likewise has evinced an interest, and is ever ready to read various newspaper articles as well as certain textbooks on "what to eat, and why."

Having been an industrious student of most of this medical literature, and noting the many inconsistencies which we are asked to accept as medical gospel, it occurred to me that the time would be profitably spent if I were to invite you to consider with me some questions relating to the dietetic management of disease, and incidentally as having some bearing thereon, the dietetics of health.

First let me pay my respects to a certain class of proprietary foods. Those that are good can with but few exceptions be duplicated for all practical purposes by the majority of housewives and nurses, and are permissible when home manufacture is rendered impossible by conditions. There are others, however, that have attained great commercial success by reason of the endorsement of physicians. Among this list we find sweetened alcohol and water, ground-up cottage cheese, mutton fat and stale eggs, *alleged* beef extracts, etc., etc. Their widespread use in sick rooms is a sad testimonial of the gullibility of a certain class of the medical profession. The last few years have developed a healthy skepticism even among these doctors, and foods of questionable merit now find a limited market in professional circles. The manufacturers now go boldly to the public, which, as in the days of Barnum, still loves to be humbugged not only by the preparations themselves, but by the false statements found in the literature extolling the same. It is a safe rule of practice to insist that with but few exceptions, the sick shall be fed on the products of the home kitchen.

A regulation of diet presupposes that there is something in

* Read before the American Institute of Homœopathy, June 28, 1916. Printed in the current number of Journal of American Institute of Homœopathy.

the patient's eating habits requiring correction. The error may reside in the nature, quality or quantity of food consumed, the time spent in eating the same, and regularity in attendance upon meals and manner of cooking. This discovered and eliminated, it is seldom that one need go further in interfering with the patient's previous habits. Unfortunately it is not always an easy matter to discover the truth. Patients are only too ready to give themselves good references. To determine the actual state of affairs, it has been my custom for many years to request patients to bring to me for review an itemized list (covering the period of one week) of articles and their quantities and methods of preparation taken at the various meals, the hours of eating, and the time occupied. As a result I have gleaned information diametrically opposed to the statements made to me when taking the initial anamnesis of the case. Patients who claimed to have good appetites confessed in writing to a quantity that was good for but bare subsistence; others, presumably delicate, admitted the consumption of quantities that would tax one's credulity. Some admitted eating at very irregular hours, others bolted their food, some rushed to the table tired from physical exhaustion or mental excitement, and still others rested not a minute, but hastened back to work still masticating the last morsels of their meals. My system has enabled me to get a prompt line on errors of diet, etc., and, by their prompt elimination, effect a speedy cure.

Whether sick or well, man must be given sufficient to maintain his nutrition. In the course of acute diseases, this injunction has no place, because the primal indication is rest of the digestive apparatus. A few days' abstinence fulfils the indication and does no harm. In chronic disease, the problem is a more difficult one, because while combatting an illness, the patient's general condition must be kept at the highest possible standard. Many of us incline to the lines of least resistance, and after a few words of advice, permit patients to follow their own inclinations in the selection of foods, remarking that each one knows the failings of his own stomach, or the needs of his own system. This does not always hold good, as most of us can testify by experience. For example, a certain gentleman made it his boast that for well nigh to forty years, he had had beefsteak for breakfast and roast beef for dinner every day, and claimed to be wonderfully robust. Finally he weakened, and his blood pressure became high. He refused to recognize the warnings until an apoplectic seizure appeared. Then he repented and reformed. He now partakes of less meat and more vegetables. That he lived in good health as long as he did is more of a compliment to his elegant constitution than it is a testimonial

to an intemperate beef regimen. On the other extreme, we have the vegetarians, who make their diet their religion. As with the roast beef eater, it is simply a question of the constitution's ability to withstand the strain of a one-sided diet. Sooner or later, most of them weaken prematurely, while others do not attain the highest type of mental and physical vigor of which they are capable. The mere fact that some people under the restricted regimen live on and are healthy does not establish the fact that all people can do the same with identical results. We are wise, I believe, if we accept the prevalent doctrine that the best possible mental and physical health is secured by a mixed diet into which all the elements of nutrition enter. The proportion of proteids, carbohydrates, and hydrocarbons of said mixed diet are likely to vary with the physiological demands of the individual based upon his idiosyncrasies and the character of work which he is called upon to perform. Unfortunately there is no way of determining *a priori* what the relative proportions of these elements of nutrition shall be, and we are forced to rely upon experimentation and results. With sensible people, the appetite takes care of this question.

As with medicines, diet should be ordered with a logical end in view and upon definite indications. It is not sufficient to prescribe empirically, and it is always wise to ask ourselves just as we would if we were advising a surgical operation, what we hope to accomplish and does the end justify the means. Let us take a case of cholelithiasis or cholecystitis, for example. Time after time have many of us relieved — we are opinionated enough to call it "cured," — gall bladder dyspepsia. We individualize our cases carefully, and by a combination of diet, rest and medication, there is a temporary clinical recovery. Sometimes there is no recurrence, but we are never assured of this happy result in advance. In the majority there is a relapse, after a long interval it may be, but the relapse comes nevertheless. Each one of these returns is attended or succeeded by certain pathological changes in the gall bladder and adjacent structures, until finally that particular portion of the body is but a mass of scar tissue and entanglement of organs making surgical intervention an extra-hazardous procedure. Then we have forced upon us the conclusion that we have erred in not advising in the beginning what is now recognized as a perfectly safe operation when undertaken early. Results of palliative or so-called conservative treatment may be even more disastrous in that the long continued irritation may result in malignant disease of the biliary apparatus. We should not then resort to palliative treatment by diet any more than we would by analgesics when prompt radical measures offer a reasonable prospect

for a cure It is poor consolation to be able to say when viewing the widespread changes at autopsy "Just see to what an extent my therapeutics carried the patient before he succumbed." Do not understand me for one minute as against advising conservative or temporizing measures for the first seizure, but having given the necessary relief, I must insist that it is good advice that one make sure by repeated examinations that the recovery is real and not apparent.

What has just been said respecting gall-bladder disease applies with equal force to gastric ulcer. For this malady we have two plans of general medical treatment advised, each one based upon sound reasoning, and each succeeded by good results. One is the Lenhartz diet, and the other is known as general and visceral rest. Notwithstanding their value, relapses occur in the majority of cases. Some of these are due to carelessness on the part of the patient; some are relapses in name only because treatment never accomplished anything more than clinical recovery, the anatomical changes having proceeded without interruption. The ulceration may have progressed, or there may have been actual healing, but the cicatrization is succeeded by such natural processes as perigastric adhesions, hour-glass stomach, stenosed pylorus, or carcinoma. We may excuse the return of symptoms as we may, but we cannot make out of the case anyth ng better than a relapse which must be managed or treated as such. I would counsel always medical and dietetic treatment as the first choice in the absence of definite indications to the contrary in all cases of gastric ulcer; I might pursue the same course with the first relapse; but a second return of symptoms means that in all loyalty to the patient, the surgeon and not the physician should act. If, as often happens, nutrition is so badly undermined by the mechanical interference with gastric function, a diet which will force nutrition, administered through the tube if need be, is necessary. This diet must be one of high caloric value. Starting the day with a lavage, followed immediately by the administration per tube of two ounces of olive oil, and this again by a mixture of eight ounces of milk, two eggs, and one ounce of sugar, the total meal epresenting 960 calories. The egg, milk and sugar mixture may be administered at three to four-hour intervals through the day by the mouth. If it is desired to vary the diet somewhat, the mechanical difficulty must be borne in mind. Any substitute food must be finely comminuted, and of a highly nutritious character.

A very large proportion of the dyspepsias originate elsewhere than in the gastro-intestinal tract, and must be treated according to causal indications. Notable among these are the indigestions due to chronic appendicitis, gall-bladder disease, cardiac

inadequacy, tuberculosis, syphilis, gout, etc. I have already paid my respects in part to gall-bladder disease. The subject is sufficiently important to demand additional remarks. The difficulty in their early recognition in the past originated in our false conception of their clinical results at the time of their inception. It is now antiquated to wait for paroxysms of biliary colic or acute or virulent cholecystitis before establishing the diagnosis. We now recognize that gall-bladder patients not uncommonly suffer from what was formerly accepted as a harmless dyspepsia, the chief manifestation of which was flatulence or gas. We administered drugs to check fermentation or to aid in the expulsion of gas; we prescribed a diet that would not ferment. We amused the patient, won his admiration for our astuteness, and nature was good, and the symptoms disappeared for a time. In the end, the surgeon claimed his own. Fat, fair, forty and flatulent is not a bad symptomatic quartet for the early diagnosis of the gall-stone disease.

If cases of gall-bladder disease are to be treated medically, the pathology must be kept in mind. Formerly, it was the custom in cases of chœlithiasis to prescribe foods to limit cholesterin formations. This is admitted in scientific circles to be a fallacy. In the first place, all calculi are not of the cholesterin variety; and in the second place, their formation is dependent not upon metabolic errors, but upon infection. It follows, then, that the proper dietetic treatment of gall-bladder disease is that which builds up the defensive mechanism of the system, thus diminishing the chances of local infection. Of course, any diet designed to get rid of gall-stones already existent is a manifest absurdity.

Although the fact that an abstemious diet is capable of producing dyspepsia has been known for nearly forty years, it is only within a comparatively recent period that it has received general recognition. We may have gone to extremes in the frequency with which we diagnose "starvation dyspepsia"; still the general statement that half of the dyspepsias observed in practise are of this variety is worthy of considerable respect. The victims of this malady are recruited mainly from that large class of subjects who study health matters closely, and are especially careful in matters relating to food. Feeling some epigastric discomfort, some one article of diet is charged with being the "criminal" and banished at once. Symptoms continuing, the diet is still further restricted. Eventually the patient is limiting himself to less than one half the quantity of food required by a person of half his physical activities. Fortunate indeed is he if his errors are corrected before the general malnutrition has continued sufficiently long to produce secondary

tissue changes. The majority of cases of this kind coming under my observation have made good recoveries; but others by reason of many years of watchful waiting for symptoms have expectation of gastric disturbance so thoroughly grounded within them, as to require more or less stern supervision. Some of them have been trained for a morbid stomach since childhood days. Part of this training has been hysterical, and part of it has been pseudo-scientific. The result is the same in either case. This subject of feeding youth and adolescence must be considered from a common sense standpoint, and the value of the course pursued must be judged by results. I feel assured from what I have seen that a stomach to attain functional strength must be exercised. Comfortable digestion depends upon the integrity of the gastric muscularis. If this is strong and food does not stagnate in the stomach, that organ can be in fairly bad shape without disturbing its owner. The moral is that the gastric muscle should be trained by working it, just as we train a biceps. This should be accomplished by giving food that makes use of the gastric muscular capacity but does not abuse it. The practice of pampering the stomachs of youth and adolescence is to my observation irrational. Let the growing boy and girl exercise their stomachs at will with standard foods properly cooked and properly eaten, and nothing but good can come from it.

Constipation is one of the great bugbears of the world, and nostrum venders have turned the fears of the many over to their financial profit. As a matter of fact but few persons who believe themselves constipated are really so, and require no treatment, dietetic or otherwise, for such a condition. It is easy enough to prove or disprove my statement in any individual case. Nineteen hours are required for food to pass from mouth to anus. Administer to the patient a capsule containing ten grains of carmine, and note the time. Then note when the red stain appears in the stool. To obtain accurate schedules, it may be necessary to repeat the experiment a couple of times. Numerous have been the times in which I have demonstrated in cases of so-called obstinate constipation that food travels the entire alimentary tract on normal time or even in much less than nineteen hours. The treatment of such cases is obvious. Other cases are apparently constipated only because they take food of such high nutritive quality that there is but little waste residue. There is not sufficient waste to cause a daily evacuation. Some of the pill-takers have been made such by habit. The constant taking of the pill trains the intestines to the need of unnatural stimuli. Again the treatment is obvious. Concerning foods for these patients, good judgment must be exer-

cised, for badly prescribed foods are as bad as the pill. Their administration simply substitutes one form of intestinal irritation for another. It matters not if these "cures" received the sanction of the Roman emperors or the Caliph of Bagdad. This delving into ancient history may seem frivolous to my hearers, but it is only recently that a manufacturer flooded a community with his circulars concerning a food the value of which had been fully determined by these long defunct gentlemen, and the public "fell for it." The general principles governing the diet of constipated subjects is well settled and needs no discussion from me.

The best method of dieting the gouty is universally acknowledged to be the administration of a minimum of nitrogenous foods, entire abstinence from alcoholic beverages, and a maximum of water drinking. Good results are obtained in the relief of acute attacks, but gouty subjects are prone to dietetic recklessness; hence the failure in obtaining permanent results. Judgment is required in order to strike the proper balance. Unless this is exercised, patients are in danger of being rendered anæmic by the limited supply of food, and it profits them not at all if we cure the gout but produce general malnutrition.

Gout brings to mind the subject of the many types of polyarthritis which are in no sense metabolic disorders but are now accepted as dependent upon cryptic infections. Formerly these patients were treated by an exclusive vegetable diet, and were rendered anæmic and emaciated thereby. Even now there are would-be authorities attempting to exploit a starvation treatment, the daily diet having a total of about 1200 calories. I believe that the best results are obtained by good feeding and a mixed diet. We must not forget that arthritis deformans and its congeners have no relationship to gout and the uric acid diathesis.

As to the dietetic management of chronic renal disease, I must confess considerable misgivings. Theoretically, a vegetable and milk diet should give the best results. Practically, theory is confirmed in but a few cases. Within recent years the discovery of a reliable method for determining the state of renal function has excited renewed interest in the subject which is now undergoing careful investigation by numerous physicians. For the present, we must each one follow out his own lines and determine the results of his treatment by regular repetition of the thallein test rather than by the old-fashioned routine urinary analyses. Any treatment that does not maintain or increase the functional capacity of the kidneys is not a good treatment.

The time at my disposal is too limited to consider all the phases of my subject. In the time remaining, I will refer to

certain general principles which are of the greatest importance. As food is given to maintain nutrition, all diets should be of the high caloric class if they are to be successful. The condition of the patient may not permit this. In that case we must start as best we can and go higher as conditions improve. As food stuffs are limited in number and all standard foods are good, we find that it is more our duty to reduce the raw product to a state where it can best be assimilated. In the majority of cases, the important thing is the cooking. There is plenty of good food in the world, but very few good cooks. As the German proverb has it: "The Lord made the food, but the Devil made the cooks." Many a man is anæmic, dyspeptic, grouchy, etc., because his cook is no good. Take the problem of bread for example. Today, very little bread is baked in the homes, and the business has gone to the large baking companies. This change may have occurred for economic reasons. But I do not believe it, for many a man sighs for good home-made bread, *and does not get it.* He may get bread, but it is not so good as that furnished by the baking company. So he foregoes home-made bread. Over half the specimens of domestic manufacture that I have examined are sour, heavy, half-cooked, or overcooked, stuff sufficient indeed to be of great assistance to the Devil in his work on earth. Is it any wonder that physicians tell patients not to eat fresh bread, but rather take it stale or one day old? All of this talk against fresh bread as an article of diet is exaggerated. Fresh bread is good, and when a man gets it to his liking, he is too apt to overeat or to eat rapidly, and then comes his undoing. Let fresh bread be eaten with the same moderation and deliberation as the stale article, and I believe it will give no trouble whatever. Another heresy is "tomatoes are acid." Well they are acid, but as a matter of fact they contain less oxalic acid than spinach or prunes, which in the minds of the people are "good for you," and ditto for onions.

Another excellent general principle is that which relates to resting after meals, and I might say resting at meals. Many a dyspeptic is so only because he rises from the table to resume his activities. As to rest at meals, have none of you ever noticed how when at a jovial banquet you go through the entire menu and feel well the following day? Good fellowship did it; you had mental rest at that meal. Had you jumped up from the table immediately after the last course, without listening to the speeches and the songs, dire would have been your punishment. Rest after meals is a golden rule of therapeutics.

The last general principle is that people should eat enough, but not too much. Everyone believes this, but few follow it out.

The old saying that the platter killed more than the sword held good from the beginning of the world until two years ago, and then it was not the platter's fault that it lost prestige.

With the subject I have chosen, it would be possible to talk for many hours. I might refer to the diet of oxaluria, the intestinal toxæmias, and numerous other topics. My main desire in presenting this paper was to start a discussion. Everyone has his own ideas, some good, and some not so good. Each one of us has had experiences of which some other is ignorant. Let us debate and improve.

PSYCHASTHENIA

By Clarence C. Howard, M.D., New York City

The disease known as psychasthenia is one which has but comparatively recently come to the knowledge of the medical man as an entirety, although the abnormalities of the condition have been recognized for several decades. During the past century manuals on neurology have differentiated the symptoms as being opposed to insanity, but have not recognized them as a separate disease. In many instances the mental abnormalities are thought to be those of insanity; again, the neurasthenic symptoms lead to a diagnosis of neurasthenia. An analysis of the symptoms shows its difference from insanity. As soon as there is assurance that the patient is dominated by some one delusion, the diagnosis may then be designated as insanity. This symptom does not occur in psychasthenia, the delusions in this case being of a kaleidoscopic nature.

The disease should be recognized as a separate entity, with its own etiology, set of symptoms, course, treatment and prognosis. A cure is very important, and the physician should concentrate his efforts to this end in each case which he encounters. If allowed to remain without proper treatment it will ultimately evolve itself into some organic or functional disease due to malnutrition, in some instances death resulting. These patients, however, do not become insane.

It is my belief that today there are many cases confined in insane asylums, diagnosed as insanity, which are nothing more nor less than psychasthenia. The mental abnormalties, phobias, and impulses of a morbid nature have been misleading, resulting in commitment to an asylum. If the case had been studied more thoroughly, and a suitable length of time elapsed for observation of the disease and its variations, the patients in question might have been cured.

The component parts of psychasthenia are an irregularity of

mental action, manifesting itself in obsessions and errors in judgment, the emotional state being predominated by fears, morbid impulses and ideas, and psychic pains. The condition differs from insanity in the fact that there are no fixed delusions, and illusions and hallucinations play but a small part, while in insanity these predominate.

The predisposing cause of the disease is an inherent or acquired neurosis. The constitutional form usually first manifests itself at pubescence. The acquired form occurs in later adult life.

The symptoms of the inherent form of the disease frequently appear in children, producing nervousness, irritability, fear and morbid impulses. The condition is very similar to that occurring in adults, the ideas and impulses being of a less mature type. The child becomes anæmic, loses appetite, fatigues easily, is unable to concentrate or succeed in school work, and frequently masturbates. When the latter occurs, the child should be closely watched while in bed, and the habit controlled. If the psychasthenic condition occurs in childhood, the patient should be taken from school and sent to the country for rest and change. An active out-of-door life is advised, and the mind should be kept occupied without taxation to the child. The symptoms, when occurring in chidhood, usually disappear, often recurring later in life, perhaps at the climacteric.

The exciting causes of psychasthenia are overwork, worry, continual strain, great disappointment, shock, oxaluria, lithemia, auto-intoxication, anxiety and post-operative conditions, — in fact, any of the vicissitudes of life may bring on the disease. A normal person is less likely to develop it than one predisposed to a neurosis.

One phase of the condition is an absolute dissatisfaction with existing conditions. The patient desires a constant panorama of changes in mode of living, scenes and environment. Without reason a married woman will desire to take up some mental occupation, or to earn her living. Men, having pursued one line of business for years, may contemplate a professional life.

The delusions which are present in psychasthenia are not fixed, and never dominate the entire life of the patient. They are constantly changing, and if one idea or fear is dispelled, another immediately succeeds it. There is a continued mental unrest, and the patient's mind is filled with schemes and plans to change his own mode of living, or that of others. His system of reasoning may be correct, but he starts out with illogical premises. The condition amounts to more than a restlessness. If a prescribed course of action be suggested to the patient, it will be opposed, or a different course suggested. The trend of

thought is a constant contradiction, and a field of transient delusions — a vacillating mental condition.

Another phase of the disease is psychopathic sexualis. This is manifested in sexual irregularities, and prevalence of sexual thoughts and acts. Masturbation may be due to a local irritation, or a habit acquired in childhood. The morbid fears which occur in psychasthenia are numerous and varied. They are never based on any fundamental principle, nor do they show any reasonableness. They range from mere trivialities to very involved processes. At times a patient may fear he will commit some immoral act, do wrong, or commit an error. A religionist may fear he will commit the unpardonable sin. The patient may fear contamination or infection; may be afraid to take a medication, that it will poison him; may fear open spaces, or closed spaces; fear suffocation; may fear being committed to an asylum; that he is being watched; afraid to be alone; may imagine husband or wife is not true, or imagine that the marriage is unhappy; may fear temptation to jump off from a great height; may imagine some illness and fear that food or medications will render it worse; may fear that relatives or friends are conspiring against him.

The impulses occurring in the disease are usually more or less of a childish or mischievous nature. The patient may count steps, cracks in the sidewalk, buttons on another's coat, books on a shelf; will desire to touch a certain object; to destroy, by fire or otherwise; to steal, and conceal for no apparent purpose; to hide the clothing; to go out alone and wander about the streets with no aim or destination.

Impulses of a more or less strenuous nature sometimes develop, as suicidal or homicidal tendencies, although there seems to be no vicious attitude. The distinction between these impulses and those occurring in insanity is, that patients rarely succeed in the suicidal or homicidal attempt, unless by accident, the threats or attempts on their own lives or those of others seeming to be more for effect and to convey the idea that they are desperate, than a true intent to kill. In insanity the intention is to be successful.

The ideas and impulses occurring in psychasthenia are limited to the intellectuality of the individual, his mode of living and environment.

Instability of conduct is a very characteristic symptom. There is no continuity or regularity of action. The patient is erratic and often eccentric. A serious conversation with a psychasthenic is impossible. There is frequently an abnormal irritability, the actions of others being misinterpreted, and their offers of kindness or assistance misconstrued as being of evil or

ulterior motives. They may buy useless and unnecessary things, run up bills, and spend money impulsively, but the megelomania at times occurring in insanity does not exist. Contracts may be made to carry out certain plans or policies of business, and no effort will be made to carry them out. A patient in this condition will be absolutely undependable and irresponsible, often having a diminution of volitionary action.

Psychic pains are very marked, spinal, abdominal and head symptoms being the most common. They are usually gradual in onset, persisting for many weeks or months in some instances, and show no response to narcotics. The description and area of pain pointed out by the patient is lacking in anatomical continuity. He may locate and describe a pain or discomfort on one day, and the following day describe an entirely different condition. The doctor may reason with and convince him that there is no pathological condition in the part described to cause such pain, and another appears on the morrow. It is a feature that there is never a pathological condition in the organ or area which the patient complains of, nor do the sequelæ of an ordinary diseased part appear.

Organic and functional disorders may develop as a result of malnutrition if the condition be allowed to continue for months or years. With proper treatment the condition will be cured.

The acquired form of psychasthenia may result from some accident, loss of a relative, shock, injury, overwork, unhappy marriage, psychic trauma or post-operative condition, also, as mentioned before, it may be the result of oxaluria, lithemia or auto-intoxication. This type of the disease is not as difficult to cope with, and the symptoms are not always similar. Morbid fears are the predominant feature in this condition, but the morbid impulses and immoral ideas are not likely to occur. An absence of interest in surroundings or occupation, a lack of concentration and volition, and a desire to sit for hours alone and unoccupied, are features. With a complete mental rest, change of surroundings and out-of-door life, or with the "rest cure," the condition will clear up.

The environment and atmosphere of an insane asylum for a person in a psychasthenic condition are extremely obnoxious. The mind should be kept busy every moment of the day without the patient having to exert himself to do so, and time should not be allowed for him to dwell upon his own condition. The state of mind of those about him in an asylum or sanitarium devoted to the treatment of mental cases acts as a continual suggestion for new symptoms in themselves, and the stimuli for these imaginations are ever present.

The prognosis of psychasthenia is good, provided the patient has proper treatment and mental occupation. The course of the disease may be many months, and if not properly treated the condition may become chronic, covering a period of several years.

It is a pathetic state of affairs that patients suffering from psychasthenia may not be admitted to the general hospital. This precludes the patient of moderate or no means from having the proper treatment. The sanitoriums for nervous diseases are prohibitive in their rates except for the very rich. This leaves the choice of the insane asylum or no treatment at all for the poor, except for the inadequate and oftentimes unintelligent care by members of the family, usually too busy with household cares and children to be able to devote any or enough time to the patient, and these people can ill afford the trained nurse.

As stated before, the effect of an insane asylum upon the psychasthenic is obnoxious, as these patients are not insane, and they do not belong in such an institution.

As early as 1830 the distinct symptoms of psychasthenia were recognized as differentiated from insanity, but were often mistaken for such.

Another existing state of affairs which we must recognize, is the fact that a medical student in his four years course rarely comes into personal contact with a psychasthenic. There being no neurological ward in the general hospitals, he has little opportunity to study these cases. An occasional case, complicated by a surgical condition, does not train the medico in embryo to recognize the various conditions as he will meet them in his private practice. The first case which he may encounter after graduation will puzzle him and cause him much anxiety, oftentimes the patient being committed to an asylum where no real insanity or dementia exists.

Again, the average training school for nurses, except those where is made a specialty in mental diseases, provides little or no training in these lines. A nurse, called by a neurologist or general practitioner, and put in charge of a case of psychasthenia or some similar condition, is on unaccustomed ground. The patient being physically well except for some psychic pains and discomforts, the nurse is unqualified to do for her. A neurological ward in the general hospital would give the pupil-nurse experience in this line of nursing, and upon graduation she would be fitted for this important field, in addition to her orthodox medical and surgical skill.

Physicians should realize the essentiality of working together and using their influence to have these psychasthenic patients admitted into the wards of the general hospitals for proper

treatment. If the condition be allowed to continue and nothing done to retard it, an inherent neurosis may appear in the next generation.

To recapitulate, I will enumerate the features which distinguish psychasthenia from insanity: — transient delusions which never take complete possession of the patient; the absence of any hallucinations or illusions; physic pains; instability of conduct; impulses of a childish or mischievous nature; the sham attempts at suicide or homicide; the erratic and eccentric mental operation, with no continuity of ideas, constitute the psychasthenic.

616 Madison Avenue, New York City.

HAHNEMANN'S HOMŒOPATHY*

By John P. Sutherland, M. D., Boston, Mass.

What is Homœopathy?
What did Hahnemann mean when he used the word?
Did Hahnemann often make use of the word Homœopathy?
Is Homœopathy a science or is it an art?

It is my purpose briefly to review Hahnemann's ideas on the general subject expressed in these questions in the hope that some of the more or less prevalent misunderstandings may be illuminated and possibly removed. It is certainly desirable that homœopathists should be unanimous in their opinions concerning the position of Homœopathy among the arts and sciences and should possess also a clear idea of Hahnemann's opinions. Hahnemann has spoken clearly, very definitely and with much positiveness in his writings, and it would seem scarcely possible to misunderstand him. I imagine that if his followers were more thoroughly familiar with his writings there would be greater certainty concerning Homœopathy's position among the practical affairs of life, and greater possibilities of securing for Homœopathy the universal recognition which it merits.

First of all let me ask when and where Hahnemann first used the word Homœopathy? It would help us very materially to be able to state just when it was first used. I have not been able to answer this question to my own satisfaction. Reference to his writings will show that he did not use it very frequently. Nevertheless it is a demonstrable fact that the *idea* of Homœopathy, or of similars, first occurred to Hahnemann when he was attempting to explain the febrifuge action of Cinchona, and the idea resulted from his initial proving of the drug in his own person. He says in reporting his experiences, "all

*Read before the American Institute of Homœopathy, June 27, 1916

the old symptoms with which I was familiar in ague appeared one after another. Also, those particularly characteristic symptoms which I was wont to observe in agues . . . all put in an appearance." (Hughes' "Principles and Practice of Homœopathy," p. 4.) The first plain and explanatory statement concerning Homœopathy offered by Hahnemann which I have been able to find, however, is in his wonderful "Essay on a New Principle for Ascertaining the Curative Powers of Drugs" (Lesser Writings, p. 256), written in 1796, where he says "*Every powerful medicinal substance produces in the human body a kind of peculiar disease; the more powerful the medicine, the more peculiar, marked and violent the disease.*

"*We should imitate nature*, which sometimes cures a chronic disease by superadding another, *and employ in the* (especially chronic) *disease we wish to cure that medicine which is able to produce another very similar artificial disease* and the former will be cured; *similia similibus.*" This essay of 55 pages gives some evidence of the work Hahnemann had been doing during the six years since he had translated Cullen's "Materia Medica." It is rich with suggestion and contains very numerous references to similarity of action between drug and disease (symptom-similarity), but nowhere in the essay is the word "Homœopathy" used.

Naturally if we want to know what Hahnemann's views were concerning Homœopathy we turn to the "Organon," because this work summarizes in a marvelously condensed, clear, logical and unmistakable way his matured conceptions and settled convictions. But we must bear in mind the fact that this important work is accessible to most of us only in the English translations, of which there have been several, the most noted being that by R. E. Dudgeon and the one by Conrad Wesselhoeft. We must remember also that in the course of twenty-three years, during which time five editions of the work were printed, Hahnemann was patiently continuing his literary studies; heroically and enthusiastically pursuing his investigations in drug pathogenesy by "provings" on himself, his family, his friends and pupils; and scrupulously analyzing his accumulating experiences with his newly developed system of practice. Therefore, the last edition, which appeared in 1833, contains many statements, conclusions and opinions not found in the first edition of 1810. Concerning this first edition I wish to call your special attention to a fact which has not, I think, been appreciated at anywhere near its real significance, viz., that only two or three years ago there appeared a fresh translation by Dr. C. E. Wheeler of London, as a volume of the popular "Everyman's Library." A year or so later the book was to be had in this country, and it seems to me a duty for every homœ-

opathic physician to have a copy and to familiarize himself thoroughly with its contents.*

These three translations I have examined with the idea of finding out what use Hahnemann made of the word "Homœopathy" and its derivatives. The results of my search may be summarized as follows: † In Wheeler's translation of the first edition we find that

The word "homœopathic" is used 56 times,

The word "non-homœopathic" is used once,

The word "homœopathically" is used 17 times.

The word "homœopathicity" is used twice (in paragraphs 125 and 244), and it should have been used in paragraph 177 in place of the word "homœopathy" which occurs evidently by mistake. This would have made three uses of the word "homœopathicity."

The word "homœopathy" occurs but twice, and in one of these times, in paragraph 177, as just noted, it is used by mistake. Thus in paragraph 199 is to be found the one and only use in the text proper of this edition of the "Organon" of the word "Homœopathy." The paragraph reads, "No other diseases require any special directions for their cure. They obey, all of them, the eternal law of Homœopathy, to which there is no exception."

In paragraph 177 we read, "The rational cure of all such diseases depends entirely on the internal administration of a medicinal force, suitably adapted by its homœopathy to the whole symptom-complex. . . ." Evidently "homœopathicity" should have been used here instead of "homœopathy."

In Dudgeon's translation of the fifth edition (twenty three years having elapsed since the first edition was published), we find the following uses of the noun "homœopathy," or its derivatives:

"homœopathic" occurs 124 times,

"unhomœopathic" occurs 5 times,

"homœopathically" occurs 34 times,

"homœopathicity" occurs twice, and

"homœopathy" occurs twice (paragraphs 76 and 186; and it is interesting to note that in paragraph 186 of the Wesselhoeft translation we find in what seems much choicer phraseology "homœopathic treatment" instead of Dudgeon's "homœopathy"). The word "homœopathy," therefore, is used but twice by Dudgeon and its derivatives 165 times:

---

* "Organon of the Rational Art of Healing" by Samuel Hahnemann. London: J. M. Den & Sons, Ltd. and New York: E. P. Dutton, & Co., Everyman's Library, translated by C. E Wheeler, M. D.

† Reference is made only to the text itself; the numerous explanatory notes of author and translator are not included in the summary.

In Wesselhoeft's translation of the fifth edition we find the word "homœopathic" used 132 times,

"unhomœopathic" is found 5 times,

"non-homœopathic" is found once.

"homœopathically" is found 16 times, and

"homœopathicity" is not used at all; while

"homœopathy" is used five times, a total of 159 against Dudgeon's 167. In paragraphs 53 and 54 Dudgeon makes use of the adjective "homœopathic" in place of Wesselhoeft's noun "homœopathy." In paragraph 205 Wesselhoeft introduces the word "homœopathy" for the sake of simplicity, and to break up one of Hahnemann's long sentences of 22 lines which Dudgeon heroically undertakes to render quite literally In paragraph 269 Wesselhoeft briefly and euphoniously says "To serve the purposes of homœopathy . . . ", where Dudgeon says "The homœopathic system of medicine develops for its use . . ."

We find, therefore, that in only one paragraph, number 76, do both translators use the word "homœopathy." Dudgeon's phraseology reads "Only for natural diseases has the beneficent Deity granted us, in Homœopathy," etc., while Wesselhoeft says, "It is only through homœopathy that Providence has vouchsafed us," etc.

In contrast with this infrequent use of the word "homœopathy" in the text of the "Organon," in the Preface to the *fifth* edition we find Wesselhoeft using the noun 9 times against Dudgeon's 6. It is curious to find that in the "Preface" to the *first* edition, as given both by Dudgeon and Wheeler, there is *no use whatever made of the word.*

In answer to the question, "What did Hahnemann mean when he used the word homœopathy or its derivatives"? one should be referred to the "Organon," where a sufficiently explicit answer may be found, not once or twice, but many times. For instance, in section 17 of Wheeler's translation of the first edition we read, "If, now, experience should show (and indeed it does show) that a given disease-symptom is only removed by the very medicine which has produced a similar symptom in a healthy body, then it would be probable that this remedy is able to uproot that disease-symptom by virtue of its tendency to call forth a similar one." And in section 31 we read, "The great homœopathic law of Cure rests on this law of man's nature, revealed by experience, that diseases are only destroyed and cured by similar diseases. The homœopathic law may be thus formulated; that a disease can only be destroyed and cured by a remedy which has the tendency to produce a similar disease, for the effects of drugs are in themselves no other than artificial diseases." In the "Introduction" (A Review of Physic) to

the Wesselhoeft translation of the fifth edition, page 43, we read, " . . . *In order to cure gently, quickly, unfailingly and permanently, select for every case of disease a medicine capable of calling forth by itself an affection similar* (ὅμοιον πάθος) *to that which it is intended to cure.* Hitherto none *taught* this homœopathic method of cure. . . ."

In section 24 we read, " So there remains no other manner of applying drugs in the cure of diseases, but the homœopathic method, in accordance with which we select a drug to meet the totality of symptoms of the case of disease, which drug should possess the power and inclination in a higher degree than any other (of all drugs known and proved with regard to their tendency to alter the feelings of a healthy person), of producing an artificial morbid condition most similar to that of the natural disease." In Dudgeon's translation of the fifth edition in section 26 we read in part, " . . . A weaker dynamic affection is permanently extinguished in the living organism by a stronger one, if the latter (whilst differing in kind) is very similar to the former in its manifestations." Can there be any doubt that Hahnemann's idea of Homœopathy was the idea of symptom-similarity between the drug and the disease, and that such an idea can be expressed in the guiding rule " *similia similibus curentur*," let simi ars be treated by similars? And can there be in the light of these quotations (and many more that might be made) any reasonable objection to defining Homœopathy as the method of treating diseases in accordance with the formula " similia similibus curentur," let similars be treated by similars?

Probably there would be less confusion than there seems to be on this question if one settled in his own mind what attitude to take towards the question " Is Homœopathy a Science or an Art?" Here again we find the unequivocal answer in the " Organon." The very titles used are definite and form a sufficient answer to the question; for instance, " Organon of the Rational Art of Healing " (Wheeler); " Organon of Medicine " (Dudgeon), whose translation of the Preface to the first edition (first paragraph) reads, " According to the testimony of all ages, no occupation is more unanimously declared to be a conjectural art than medicine . . . "; and " Organon of the Art of Healing " (Wesselhoeft), who makes Hahnemann say in the Preface to the fifth edition " Homœopathy is a simple art of healing, unvarying in its principles, and in its methods of applying them."

Even a cursory reading of the text of the " Organon " shows it to consist chiefly of arguments and directions for treating sick people in accordance with an unvarying formula. In this unique text-book we find minute directions for the examination of patients; with instructions as to which symptoms are to be con-

sidered of chief importance in the making of a prescription; as to the collection of plants, and the preparation, preservation and dispensing of drugs; as to the best methods to be used in proving drugs upon the healthy, the diet to be observed by the prover as well as the patient; as to the dose to be administered and its repetition, as well as many other rules of procedure in the treatment of sick people. The evidence would seem to be conclusive that Hahnemann was dealing with an art, not a science, when he wrote his famous "Organon." Recognition of this fact would have made impossible the many discussions — some of them acrimonious — concerning the use of the word "curantur" as expressive of a law, or "curentur" as announcing a guiding principle or working rule. It may be well to remind ourselves that science means simply "Knowledge," and is defined (Century Dictionary) as "Knowledge gained by systematic observation, experiment and reasoning." "Knowledge regarding any special group of objects, coördinated, arranged and systematized;" and that art (by the same authority) is defined as "A system of rules and traditional methods for facilitating the performance of certain actions; acquaintance with such rules or skill in app'y-ing them, as in a manual trade or handicraft, technical profession or physical accomplishment; as the *art* of building or of engraving, the healing *art*," etc., "in this sense opposed to *science*."

To reason by analogy, — one would say that navigation is an art, a way of doing a certain thing, of sailing a ship. Like all arts, successful navigation is governed by rules of procedure. Like all arts, again, the rules of successful navigation are based on experience and observation; upon knowledge or science such as astronomy, geography, mathematics, etc. So one may claim that Homœopathy is an art; a way of doing a certain thing; viz., restoring health to the sick; a department of medicine or of the great art of healing; its guiding rule being the well-known "*similia similibus curentur*." The sciences used by the homœopathist are those common to all medical practitioners, — the fundamental sciences of medicine. In addition, the homœopathist bases his particular practice upon the science of drug-pathogenesy, the only science characteristic of, or developed by, Homœopathy. All this is embraced in that marvelously explicit third paragraph of the "Organon." in which is summarized those things necessary to one who would become a "true master of the art of healing." The physician must *know* diseases; that is, pathology and all it includes, such as etiology, nosology, diagnosis, prognosis He must *know* drugs, that is, drug pathogenesy, as revealed by toxicology, provings on the healthy, over-dosings, etc.; and also pharmaceutics. He must

know how to adapt the drug to the disease; and it was right here that the genius of Hahnemann showed itself in all its originality and clearness of vision. It was Hahnemann who proved so conclusively that there are three, and only three, principles according to which drugs can be applied in the treatment of diseases, viz., (1) the antipathic method, in accordance with the rule "*contraria contrariis curentur*"; (2) the heteropathic method (empirical) without a formula, and (3) the homœopathic method under the guidance of the rule "*similia similibus curentur*," the application of which presupposes the possession of knowledge of drug-pathogenesy and familiarity with the correlated rules indicated by the guiding formula and the well-known phrases, "*totality of symptoms*," "*the single remedy*," and "*the minimum dose.*" The physician finally must *know* the obstacles in the way of recovery and *how to remove them.* This part of the physician's knowledge and art is much neglected in medical studies and teaching and consideration generally, and yet it is one of the most important of Hahnemann's teachings. In this connection he clearly points out, more definitely and convincingly than (to my knowledge) any of his disciples have, the limitations of homœopathy, and here also he acknowledges in most generous and decisive terms the importance of hygiene and sanitation, of dietetics, of psychology, both etiologic and therapeutic, and of surgery.

Those who prefer to think of homœopathy as a science should find comfort in Hahnemann's frequent use of the word "law" as used by all his translators. The following instances are presented to show the frequency of its occurrence, as well as the context:—

Paragraph 18 — ". . . then it cannot be doubted that the *law* has been discovered whereby this medicine has brought recovery to this disease, namely, the *law:* 'Similar symptoms in the remedy remove similar symptoms in the disease.'"

Paragraph 20 — "This eternal, universal *law* of Nature, that every disease is destroyed and cured through the similar artificial disease which the appropriate remedy has the tendency to excite, rests on the following proposition; . . ."

Paragraph 31 — "The great homœopathic *law* of cure." "The homœopathic *law* may be thus formulated: that a disease can only be destroyed and cured by a remedy which has the tendency to produce a similar disease, for the effects of the drugs are in themselves no other than artificial diseases."

Paragraph 142 — "When this happens the homœopathic *law* allows no second dose of the same medicine to be given."

Paragraph 152 — ". . . chosen most carefully in accordance with the homœopathic *law*, . . ."

Paragraph 199 — "They obey, all of them, the eternal *law* of homœopathy, to which there is no exception."

These quotations from Wheeler's translation of the first edition of the "Organon" could be effectively used in support of the claim that Hahnemann believed in a natural law of cure which is expressed by the phrase "*similia similibus curentur*," which is ordinarily translated "likes are cured by likes." Even if this is all correct the statement of a law of cure, which would be of scientific interest, is not equivalent to giving directions of procedure in the treatment of a case, which is what the practitioner of an art wants and needs. The treatment may be, and in the case of homœopathy we may admit that it is, based on a law of cure; but our actions are guided by the formula "*similia similibus curentur*," let likes be treated by likes. This last is a rule of practice, and in the "Organon" we find every needed convincing evidence that homœopathy was considered by Hahnemann, and is in fact, a method of practice, the curative art of healing, a system of pharmaco-therapeutics, and nothing else.

It is curious, considering the vast importance attached to the formula "*similia similibus curentur*" by many of Hahnemann's followers, that he himself made exceedingly infrequent use of it. The text of the "Organon" does not contain it, though in section 263 of Wheeler's translation the phrase "*contraria contrariis curentur*" is found. Hahnemann rather frequently uses "*similia similibus*," just as he does "*contraria contrariis*," but stops there. The "Introduction" to the fifth edition, however, presents in Dudgeon's translation, page 38, both formulas, "*contraria contrariis curentur*" and "*similia similibus curentur*"; while unfortunately in the same paragraph in the Wesselhoeft translation "*similia similibus curentur*" and "*contraria contrariis*" are used. In this case Dudgeon, who is more literal in his work than is Wesselhoeft, is correct.

I am convinced that thoughtful study of the "Organon" will show it to be the most notable book for its size ever written in medicine. It will teach us as no other book can what Hahnemann meant by "Homœopathy"; and among other things it will demonstrate that Hahnemann had a phenomenally high ideal of the sole duty of the physician; that he had a comprehensive view of the art of medicine; a full knowledge of the limitations of homœopathy, as well as of other methods of treatment; and a very precise opinion concerning homœopathy's relationship to other therapeutic methods. These points perhaps can be summarized by a chart method as follows: —

HAHNEMANN'S HOMŒOPATHY

as elaborated in his "Organon" is based upon the high ideal that

The physician's highest and only calling is to *restore health* to the sick, i.e., to cure (1)

Therefore (vide 3) he must

(1) KNOW diseases — pathology { Etiology / Nosology / Diagnosis / Prognosis

(2) KNOW drugs { *drug pathogenesy* { *toxicology* / *provings on the healthy* / *overdosings* ; pharmaceutics }

(3) KNOW how to adapt the drug to the disease (Pharmaco therapeutics) { antipathic method — contraria contrariis curentur ; heteropathic method — empirical ; *Homœopathic method* the only direct curative method { *similia similibus curentur* / *totality of symptoms* / *single remedy* / *minimum dose* }

(4) KNOW the obstacles in the way of recovery and *how to remove them* { hygiene — sanitation / psychology (etiologic and therapeutic) / dietetics / surgery

In conclusion it would seem as if we were fully justified in considering Hahnemann's Homœopathy to be an art, not a science; a therapeutic specialty in the great field of medicine; simply a method of treating sick people in accordance with the guiding curative rule, "*Similia Similibus Curentur*"; and that in order to practise this art successfully the physician must base his diagnosis, prognosis and prescription upon the *totality* of the symptoms; must *know* drug pathogenesy and use but one drug at a time in a dose sufficiently small to avoid producing a marked "aggravation." By utilizing these rules and abiding by the simple injunctions contained in the "Organon," one may be qualified to "act thoroughly, and to the purpose, as a true master of the art of healing."

(Note. — The italics show the essential features of homœopathy.)

WHAT THE NEWER METHODS OF TREATING SYPHILIS MAY MEAN TO THE GENERAL PRACTITIONER AND SPECIALIST

By Alonzo C. Tenney, M.D., Chicago, Ill.

Under this subject I wish to subdivide the discussion as follows:

First: The newer methods of diagnosis.

Second: What these newer methods of diagnosis are worth in a prognostic way.

Third: The results which may be attained by the newer methods of treatment.

Under the first heading I will call your attention briefly to the fact that a few years ago the diagnosis of syphilis depended upon the recognition or history of a true Hunterian chancre; the presence or distinct history of cutaneous and mucus membrane lesions; the existence or distinct history of lesions which were palpable or visible in the deeper tissues, i.e., the bone lesions marked by periostitis or gummatous formations, and the therapeutic response following the administration of mercury or the iodides.

Contrast this situation with the present, where all lesions of an active character are practically very rare, due to the earlier recognition and the more thorough treatment now employed. Those diseases formerly grouped under the heading of parasyphilides such as tabies dorsalis, cerebro-spinal syphilis, general paresis and the numerous involvements of the special senses, especially those involvements of the eye and ear which proved so baffling from both a diagnostic and therapeutic standpoint, are now recognized and treated as active syphilis with very gratifying results.

This change in the situation has been brought about by the discovery of the Wasserman reaction and all its variations. To the Wasserman we have added the differential cell count of the blood, the examination of the spinal fluid for increased and altered cellular content and the presence of globulin.

Today a patient presenting obscure or ill-defined nervous or special sense derangement is given a thorough neurological examination, a careful ophtholmoscopic examination, as well as a searching examination of the ear, nose and throat. Lumbar puncture is performed, and a Wasserman test is made of the spinal fluid and blood at the same time. The spinal fluid is examined for increased and altered cellular content, and the differential count of the blood is made. The spinal fluid is also

tested by one or more of the numerous methods to determine the presence of globulin.

These measures practically establish or exclude the existence of a luetic taint as the etiologic factor, thereby directing the treatment along the proper channels while there is still a possibility of arresting the progress of the disease.

These newer methods of diagnosis therefore mean earlier recognition by the general practitioner, as well as by the specialist of pathology which, unrecognized, would mean the hopeless situation which so frequently overtook patients a few years ago and left them with impaired tissues and organs. This impairment of tissues and organs frequently was of such a nature that when unmistakable symptoms of its existence were discoverable the damage was irreparable.

The second point refers to the value of these newer methods of diagnosis in a prognostic way. The answer is partly expressed in what has preceded. The earlier the diagnosis the better the prognosis with any treatment which is at all effectual. Had we no better treatment to offer today than twenty years ago, the improvement in our methods of diagnosis would still mean a better prognosis. No argument whatever is required on this point and I will only mention a few of the conditions where the early diagnosis is of great value.

Syphilitic chorio-retinitis, syphilitic iritis and keratitis within the realm of the eye specialist; specific involvement of the internal ear and the auditory nerve with the aurist and the numerous ulcerations in the nose and throat, which sometimes baffle the nose and throat specialist, especially when these lesions involve the vocal cords, are all conditions which should be recognized at the earliest possible moment in order to attain the best results. Sometimes every hour's delay in the diagnosis means appreciable impairment in the final result.

With the neurologist, the earlier the recognition of cerebrospinal conditions of a luetic character the better the chance of saving the threatened tissues and thereby preventing the full development of the disease in question.

When we couple the advantages of an early diagnosis with the advantages of modern treatment the possibilities for good are greatly enhanced.

In that expression "modern treatment" lies tremendous possibilities for good or evil. The mere administration of some of the newer arsenical preparations does not constitute modern treatment. Too frequently we see physicians who have made no careful study of the problems involved in Salvarsan therapy giving one or more doses of this drug without any reference to time or place in the general treatment, with the belief thar they

are employing modern treatment. True, they are employing modern remedies, but they are not employing them in a modern way, and, therefore, their treatment may be more damaging than beneficial.

It is essential in the use of the newer remedies to have an accurate knowledge of the dangers involved and the result which it is desired to attain. The recognition of the fact that general complications of a serious nature may result from the use of these drugs or of mercury, at an inopportune time in the course of the treatment, is essential. The dangers to be guarded against when changing from arsenical to mercurial treatment, and back again, must be fully understood. The dangers of overdosing and lastly, but not least, the danger of lowering the general vigor and vitality of the organism of the patient must be kept in mind. There is also the very important matter of elimination, which is so frequently the underlying defect when we speak of idiosyncrasy. It is the writer's observation that very few, if any, patients have a real idiosyncrasy to mercury, but that many do not have proper elimination without special attention thereto.

In this connection it is too frequently the habit of patients and physicians to " try " various lines of more or less ineffectual treatment, and when irreparable damage has been done by the steadily advancing disease and the patient is in a practically hopeless condition to seek thorough and systematic modern treatment. Too frequently the results in those instances are distressing to the patient and disappointing to the specialist. We are frequently impelled to attempt the things which we fear are impossible in the hope of alleviating the distress or discomfort of the afflicted. The limitations of our modern therapy are not as yet fully known. In many instances the possibilities are greater than we know. In some they are less than we anticipate. The result of this uncertainty leads to new discoveries and to more accurate knowledge.

Specifically the writer wishes to emphasize the following as among the results which may be obtained by modern methods of treatment when thoroughly, systematically and conscientiously carried out by both the physician and the patient.

First: The early control of all fulminating symptoms.

Second: A positive limitation of the progress of the disease and the extent of the injury to the human body.

Third: In over 90 per cent. a positive cure, which will give at the end of three years, in the majority of instances, a negative Wasserman of blood and spinal fluid and normal conditions, so far as can be ascertained, of the tissues of the body.

Fourth: Early recognition and consequently early control of all "para-syphilitic" lesions.

Fifth: A much better prognosis than it was ever possible to give formerly regarding both primary and late lesions. Even tertiary lesions, if promptly diagnosed, will generally give prompt response to treatment.

It is, of course, understood that we recognize the difficulties encountered in the treatment of cases which are persistently Wasserman negative. Also the difficulties encountered in the treatment of cases of the vascular type and those in which there has been such damage to the general integrity of the tissues and the vitality of the patient is so lowered that proper treatment cannot be satisfactorily administered.

With these reservations it is the writer's opinion that it is practical to assure in the great majority of cases, if taken early, very satisfactory results from thorough and painstaking treatment.

A FEW STUDIES IN DRUG PATHOLOGY

Conducted by the Department of Materia Medica, College of Homœopathic Medicine, Ohio State University

By Albert E. Hinsdale, A.B. M.D., Professor of Materia Medica and Clinical Therapeutices

R. V. Hadley, M.D., Laboratory Assistant

Columbus, Ohio

The following descriptions represent the microscopical findings produced by certain Homœopathic remedies upon a few of the tissue proclivities. These studies are reported with the following objects in view: (1) to demonstrate that drugs do act upon certain organs, and (2) to furnish a rational pathological basis for the symptomatology of the particular remedy as regards the tissue in question. The tissues, in each case, after sectioning, were stained in hæmatoxylin and eosin.

Guinea pig lung. One drop of a saturated solution of Phosphorus in olive oil was given to the animal twice a day for twelve days, at the end of which time the animal died. Sections of the lung showed a pronounced congestion and beginning red hepatization in spots around the bronchi. The blood vessels are packed with blood elements, as are the capillaries around and between the alveoli. Many of the air sacs contain an exudate consisting of red blood cells, blood shadows and fibrin. The larger bronchi are filled with an exudate composed of fibrin, blood cells, and disintegrated epithelium. The findings give a picture of broncho-pneumonia, and give an explanation

for the blood streaked sputum of Phosphorus which is a characteristic indication for the remedy in certain pulmonary complaints. Other symptoms for this remedy may likewise be explained by these findings.

Rabbit lung. Ten drops of a saturated aqueous solution of Kali bichromicum was given to the animal twice a day for thirteen days, then the animal died from its effects. Sections of the lungs showed congestion around the larger blood vessels and bronchi and a beginning exudation into the air sacs. The bronchi contain exudate, but the epithelium is in good condition. The pathological picture is more of a bronchitis than a pneumonia. There are evidences of a beginning pleuritis.

Guinea pig lung. Ten drops of a saturated aqueous solution of Antimonium tartaricum was given twice a day for four days, then twenty drops twice a day for two days, when the animal died from the effects of the drug. The findings are as follows: the deeper portion of the lung around the bronchi and large blood vessels is consolidated, while the superficial portions of the lobe show no exudate in the alveoli. The preponderance of leucocytes in the exudate is diagnostic of grey hepatization. Shadows of red blood cells and fibrin are also present. Desquamated epithelium are found in the bronchial exudate. The microscopical view of the lung, when mounted in formalin-gelatin medium, shows a tissue far from one of normal appearance.

Guinea pig lung. Two drops of the tincture of iodine administered twice a day for twenty-two days, when the animal was killed with chloroform. Microscopical examination reveals a lung in a state of complete consolidation. The blood vessels, alveoli, and bronchi are packed full of exudate. Here and there are seen lobules which are beginning to break down into abscesses. To the unaided eye, the changes which the drug has produced are grossly quite apparent. The pneumonic process induced by the drug made its appearance very soon after its administration, which is a confirmation of one of the indications calling for Iodine in pneumonia, namely, "a rapid extension of the consolidated area."

Rabbit lung. Twenty-five drops of the tincture of Chelidonium was given twice a day for thirty-one days, then the animal was killed by chloroform. The pathological picture is one of extreme congestion in the superficial portions, while the deeper parts of the lung are in practically a normal condition. The lung structure is broken down where the congestion is the most severe. The pleura is noticeably thickened and inflamed about this area. It has long been known that Chelidonium has an action upon lung tissue, yet it seems as though the remedy is

not frequently looked upon as a medicine for pulmonary complaints as its clinical indications and pathological findings warrant.

Rabbit lung. Ten drops of the tincture of Bryonia was administered twice a day for nine days, when the rabbit died from its effects. Sections show a picture resembling closely a pneumonic process in the stage of gray hepatization, as evidenced by the preponderance of leucocytes. The pleura is not appreciably affected, not as much as is to be expected. Of the various drugs which affect the lung, it appears that Bryonia produces the best similia of a lobar pneumonia.

Rabbit liver. Chelidonium (administered in the same way as described under the lung description) produces more of an edematous than of a congestive condition. The majority of the liver cells are swollen and filled with fluid, while the liver threads are separated by the same cause. As in the liver affected by Bryonia, the continued pressure is beginning to cause degeneration of the parenchymatous cells. A bile stasis is shown by the droplets of bile through the sections. A study of the symptomatology of the drug in hepatic difficulties shows that the remedy is more apt to be indicated in enlargements of this organ when not due to congestions than when an excessive blood supply is present.

Rabbit liver. Bryonia (administered in the same way as described under the lung description) produces the following effects upon the liver: a picture chiefly of congestion is presented. The areas about the center of the lobules are principally affected, the capillaries extending outward toward the periphery being packed with red blood cells. More or less congestion is shown even near the periphery of the lobule. In some areas, the pressure exerted upon the cells is beginning to cause degeneration of the parenchyma. Minute droplets of bile are seen scattered throught the section, which denote a bile stasis. An edematous condition is found within and between the cells.

Guinea pig liver. Phosphorus (administered in the same way as described under the lung description) produces: pale areas plainly visible to the naked eye. Microscopical examination shows that these areas take little or no stain, which is significant of necrosis of much of the liver tissue. Necrosis, fatty degeneration and infiltration are the principal changes here. Minute globules of fat can be seen both in and between the liver threads of cells. The necrosis is more noticeable around the blood vessels. No increase in interstitial tissue is seen; this would probably be seen in a more chronic case of poisoning. The absence of any congestion or inflammatory conditions is the reason why Phosphorus has so little pain in its symptomatology.

Rabbit liver. Five drops of a saturated aqueous solution of Mercurius corrosivus was given twice a day for four days, when the animal died from its effects. Sections reveal a condition that has gone past that of congestion, and a true hepatitis is present. In some areas, small abscesses are beginning to form in the center of the lobules. Large globules of bile are scattered irregularly throughout the section. The interstitial tissue is not noticeably increased. Some edema is present.

CONSTIPATION

By M. Louise Chadwick, M.D.

The passing of the late Dr. Metchinoff of the Pasteur Institute, Paris, has recalled to the world how much humanity is indebted to him for his patient investigations and discoveries in regard to the function of the colon, and the influence of its neglect upon the health and well being of mind and body.

Because the colon has been looked upon as a "mere waste receptable," we have forgotten that even a waste receptacle demands care and attention and if neglected, may make itself most obnoxious.

The function of the colon is to cast out residue after food digestion is completed. If proper food is eaten and in proper quantities *and combinations*, if the entire digestive tract functions promptly and efficiently, and if the colon is active, all is well; but under present conditions of civilization and artificial living such perfection is rare.

X-ray investigation has proved that under ordinarily normal conditions of today food taken into the stomach passes through the small intestine, the residue reaching the ascending colon (a) in five to six hours; it reaches the lowest point of the descending colon (b) in ten hours; there it lies for six hours; and in the rectum for two hours more, being discharged in eighteen hours from the time it enters the colon.

Under ordinarily normal conditions, then, waste matter lies in the colon, somewhere along the route, for eighteen hours. This waste matter is not, however, wholly food residue; but has gathered to itself during the progress of the food from the stomach, bile, remains of pancreatic juice, mucus, excretory substances thrown off by the intestinal lining, together with various microbes and poisons produced by microbes (indol, skatol, pyrol, et al). Strassburger has demonstrated that 50 per cent of fecal matter is made up of bacteria, and Roger has demonstrated that of the 160 species of bacteria formed in nor-

mal feces, one third of them possess disease-producing properties. In the feces of those who take a high proteid diet (meat and eggs) are found fully twenty putrefactive bacteria which form highly toxic products — one, the bacillus of Welch, which produces large quantities of offensive gas and highly active poisons. This bacillus is found in an active growing condition in all raw meats and in salted and dried fish. Not a large per cent of these bacteria are found active in the feces; but all have in their time produced their poison while breaking up the proteid on which they feed; indeed, the bacterial laboratory analyses of fecal matter, which is already a part of the regular regime in some institutions, throws light upon many a blind and puzzling chronic case.

Constipation is a slowing up of intestinal activity and consequent ineffective casting out of this fecal matter.

CAUSES OF CONSTIPATION

This slowing up of intestinal activity is brought about by:

(*a*) a diet so liquid and so lacking in solids that a lack of bulk results;

(*b*) a diet so concentrated that a similar condition is brought about;

(*c*) pasty cereals, new bread, hot biscuits, and all doughy food;

(*d*) a highly proteid diet (meat and eggs) — and for two reasons; first, that there is little residue in a proteid diet, and secondly, that excess of proteid produces putrefactive processes in the intestine which in turn produce an alkaline condition of feces paralyzing to the activity of the intestinal muscles;

(*e*) hasty eating, which throws into the stomach, and later into the intestine, food which, because so slowly digested, putrifies, thus disturbing the whole digestive tract;

(*f*) milk, because the human alimentary canal cannot well digest the casein of milk;

(*g*) monotonous diet or food which is not "relished";

(*h*) exclusive use of cooked foods;

(*i*) hot foods and hot drinks;

(*j*) condiments of all kinds, since these are wholly undigested and so pass on into the colon where they set up mucous irritation;

(*k*) irregular feeding, because it prevents the intestines from acquiring a habitual rhythmic peristalsis.

In a normal alimentary canal, the peristaltic movement is set up at once by the introduction of food into the stomach, and a "bowel movement" would consequently (and in savages

does) follow each feeding. That there are few normal alimentary canals, except among savages, need hardly be stated.

(*l*) tea and coffee are constipating because astringent;

(*m*) insufficient drinking of water, which produces dry feces;

(*n*) resisting the "call of nature" until the call is "lost" is one of the most prolific and most regrettable causes of constipation; — the reason is obvious;

(*o*) tobacco, laboratory experiments have proved, deadens the activity of the sympathetic nerves, and without the activity of the sympathetic nerves rhythmic intestinal activity is impossible;

(*p*) all narcotics, bromides, sleeping powders, etc., deaden the activity of the entire alimentary tract.

(*q*) laxative drugs are most pernicious; they produce a most obstinate constipation — a constipation difficult to cure; these laxative drugs over-stimulate, irritate and later destroy capacity for stimulation or irritation of the nerves of the intestinal walls. And when this condition is brought about, the intestine becomes a passive instrument for the intake of residue, but with little capacity to force it forward.

That alimentary toxemia must result from the retention of these poisons in the colon is self-evident. And since the colon is more or less supplied with glands of absorption (fortunately least in the locality of the descending colon and sigmoid flexure) these poisons are absorbed into the blood; and what disease exists in which a present toxemia would not play a modifying part and prove more or less of an aggravating factor?

That a person may be constipated for years and not consciously suffer from it is true; for Nature struggles hard against our ignorance and our wilfulnesses. She has provided many and strong defences. For example, the mucous membrane of the alimentary tract itself is Nature's filter; the liver and the kidneys are powerful destroyers of poisons, and we know now that the thyroid, the suprarenal capsules and the spleen, even the pitiutary body assist also in the destruction of poisons. Nature's defences give way in time, however, as the almost general never-sick but never-well condition of the middle-aged human testifies.

In 1914 the Royal Society of Medicine of Great Britain devoted a generous period to the matter of alimentary toxemia. From the minutes of this convention we learn that the speakers enumerated more than thirty poisons to be found in a torpid intestine, and among the pathological conditions attributed to intestinal poisoning these physicians enumerated: distension, dilatation and prolapse of the stomach; congestion and con-

sequent torpidity of the liver — (from which follows a marked lessening of bile, that secretion so essential to the well-being of the intestinal mass); weakening and atrophy of the intestinal walls; foul gases and foul smelling stools; chronic appendicitis; enlargement of the pancreas and spleen; diarrheas; while in the realm of "nerves" were enumerated headaches; indigestion; sleeplessness; sleep that does not rest; twitching of eye muscles; indecision, forgetfulness; mental depression and fears; confusion; irritability; indifference; eyestrain; backache; heavy, grippy sensation; also lumbago; skin eruption (acne, hives, etc.), and that general lack of strength and endurance commonly known as nervous debility and which the patient herself often describes as "always tired," or "never-sick but never-well."

In this meeting, Dr. W. Bezely said, "There are few phases of cardiac or vascular disease with which some part of the alimentary tract is not causatively associated."

As to the eyes, Dr. W. Long said, "As an opthalmic surgeon I look forward to a future when many serious eye troubles will cease to occur because the physician shall teach mothers how to feed their children and the dentist shall impress upon the public the importance of proper mastication and hygiene of the mouth."

Dr. Abuthnot Lane is quoted as saying, "I do not believe that tubercle and rheumatic arthritis could obtain a foothold except in the presence of intestinal stasis." Dr. Lane also says, "Auto-intoxication plays so large a part in the development of gynecological conditions that the conditions may be well regarded by the gynecologist as a product of intestinal stagnation. And Herter shows that certain putrifactive colon organisms are always present in the stools of patients suffering from rheumatic gout.

Dr. J. H. Kellogg of Battle Creek, whose research in the domain of the alimentary canal must be acknowledged by all schools of medicine, finds, based upon his years of experience, that many maladies are so *aggravated* by inactivity of the intestines, that it becomes a prominent factor in the treatment of the diseases, viz: "All catarrhs, all rectal troubles; enlargement of liver and spleen; all stomach disorders." A pseudo angina pectoris Dr. Kellogg finds to be frequently associated with chronic constipation. Arterioschlerosis (he quotes from Bouchard and other authorities) is one of the common results of chronic constipation. "Long continued poisoning from chronic constipation is frequently indicated by the presence of pus, albumen and casts in the urine; bacterial examination of the urine often reveals the presence of colon germs. Floating right kidney, he believes to be often due to stasis in the ascending colon

from the anatomical fact that the right kidney is so closely connected with hepatic flexure."

One seldom finds a person suffering from insomnia who is not constipated; and this because of the irritation of the brain from poisons which have been absorbed from the colon into the blood.

Dr. Kellogg quotes Ross as saying: "Cancer is due to abnormal cell growth; cholin and cadaverin, two powerful augmenters of cell growth, are found in the products of putrefaction of flesh and protein. Guinea-pigs, experimented upon with cholin and cadaverin, present all the characteristics of cancer."

Exopthalmic goitre and myxedema, Dr. Kellogg does not hesitate to say, are due to long overwork of the thyroid gland in striving to destroy colon poisons.

A high proteid diet produces in the intestine, brenzcatchin, — a poisonous brown coloring substance which manifests itself in "liver spots"; dingy complexion; brown circles around the eyes, etc. Since it is the function of the suprarenal capsules to destroy this poison, the presence of the spots indicates that the suprarenal capsules have become defective or are otherwise overworked. Dr. Abuthnot Lane, who first demonstrated the removal of the colon, says that the fading of these spots is evident in a few days after the operation and that they completely disappear in a few weeks. The connection, then, between intestinal poison, the pigmentation, and the suprarenals is obvious.

Eczema, it has long been known by skin specialists, is due to intestinal disturbances. Dr. Bulkley, our eminent New York skin specialist, claims "that most cases, even chronic, are curable by a dietary that excludes proteid bacteria from the intestines and accelerates activity of the colon. Psoriasis, that obstinate form of skin disease, is seldom curable without restoration of the normal activity of the colon."

Accumulation of fecal matter in the intestines, with its consequent poisoning, often gives rise to a fever so resembling malaria that it is often treated with drugs as such. These cases occur in people who have an inflammation of the colon— and often when their cases are treated hydropathically, an accumulation of mucus comes away with the enema; after which the fever subsides at once.

The presence of a certain quantity of gas in the intestine is normal; it aids peristalsis. Excessive gas, however, is due to the action of bacteria on food stuffs; and foul smelling gas indicates the presence of putrefaction in the intestine together with the pernicious bacteria that accompany putrefaction. Gas formation is due, not as once supposed, to starchy foods,

but to the stagnation at some point in the alimentary tract — in the stomach or in the intestine. Flatulence in the colon always indicates the presence of decayed feces; and if not relievable by enema, indicates incompetency of the ileocæcal valve (*c*) — a condition that one cannot afford to further neglect.

KINDS OF CONSTIPATION

Simple Constipation — which every one has as the result of wrong eating and wrong habits. The bowels move daily, perhaps, but the colon is far from being completely evacuated. There is as yet no disturbance of the mechanism of the colon; poisons are, however, retained and nervous and other symptoms develop sooner or later. Even simple constipation should not be neglected when we consider that a normal peristalsis should pass along the entire intestinal tract every time the stomach end is stimulated to action by the intake of food.

Accumulative Constipation — as its name implies — occurs when masses of feces accumulate. This accumulation occurs at the lower sagging part of the colon (*d*) and shows that the mechanism of the rectum is beginning to be disturbed — or that sensibility is lessening. If neglected, complete loss of reflex — " call " — follows.

Latent Constipation — the bowels still move daily — or regularly — the " call " or reflex is still active; fecal matter is not accumulated in the rectum; nevertheless somewhere along the tract there is delay and the feces are dark and ill-smelling. An incompetent ileocæcal valve (*c*) is most frequently the cause; and the presence of intestinal gas *from which relief is not attainable by enema* is a keynote in diagnosis, since in these cases, the gas escapes backward, as it were, into the small intestine — a condition which obviously should never occur and which never could occur were the guard — the ileocæcal valve — alert.

Of the chronic cases that present themselves at the doctor's office, there are two classes — First: those that do not " believe in auto-intoxication," or at least do not recognize it in themselves. These it is the doctor's privilege to convince — if he can. Patients will say that they are never constipated; will report a daily movement; but on closer questioning, their movement will prove to be far from sufficient to clear the colon, especially in consideration of Dr. Kellogg's statement that with every intake of food at the stomach end of the alimentary tract, peristalsis is set up the whole length of the tract and that in a normal savage, this peristalsis would end in evacuation. These patients are the despair of the earnest physician; and by the

superficial physician are labelled hysterical or neuræsthenic; — or that overworked scapegoat, the climacteric, is held responsible, — all terms of scorn as used by the physician who has neither time nor scientific zeal to search for causes. The suffering of these patients, except when auto-intoxication has made deep inroads upon health, are not sufficiently acute to put the superficial physician on his mettle; but to the patient they spell defeat and misery. These are the "chronics" who come to the doctor patiently, on and on, seldom if ever suffering intensely, not in danger of immediate dissolution, but never knowing the joy of living because of the various depressions, physical and mental, which accompany a condition of auto-intoxication.

The other class admit that they are constipated; they recognize it and are worried about it; they have tried every known cathartic, and cathartics are failing them. The cathartic habituè is most difficult to cure; but, barring out organic complications or old age, the specialists along this line tell us that very few cases are incurable.

It may take time and it will require something more than pills on the part of the doctor as well as persistence and patience on the part of the patient. But with special diet, special massage, hydrotherapy, vibration, the sinusoidal current and thermo-penetration, much can be done for these cases. Much is being done for them in hydropathic institutions, and the methods of these institutions are open to any physician who wishes to investigate.

Wisely or unwisely, there is today a reaction in the minds of the laity against drugs; and it is the discouraged chronic who is turning to "drugless healing" of all kinds for help; but it is the superficial doctor who considers his duty towards his patient finished when he passes out the bottle of pellets who is largely responsible for the disaffection of the laity. Pellets have their function, and nothing can fill their true, legitimate field, but the field has its boundaries, and it is the modern doctor's privilege to recognize those boundaries and look over into the abutting provinces. We submit the following suggestion for

THE SUPPLEMENTAL TREATMENT OF CONSTIPATION

First, the patient must be made to appreciate the *chemistry of digestion* in order that he may do his part; he must live hygienically, avoid tobacco, alcohol, rich food, high proteid diet, irregular or hasty eating, etc.

Diet is most important of all measures; not only must it afford moisture and bulk to the feces; but foods must be *rightly*

combined. All gases in a chemical laboratory may be excellent so long as rightly combined, but they become most destructive when wrongly combined. Many a patient will outline to her physician a perfectly normal, wholesome, dietary regime; but on investigation one finds that she makes most atrocious combinations; sugar — *and* milk with her cereal; fruits with vegetables, etc., etc.

TREATMENT FOR CUMULATIVE CONSTIPATION

The chief cause of this having been neglect of call until the reflex is more or less lost, this reflex must be restored by establishing regular habits. First of all, the rectum and sigmoid must be thoroughly evacuated by enema. This is repeated day after day until no hardened fecal matter comes away. The bowel must then be kept clean by systematic use of enema until it regains its normal size and activity. Temporary dilation with water does not weaken the intestinal wall; permanent distension with feces does.

The use of the sinusoidal current aids greatly in this restoration. In obstinate cases it may be necessary to use the proctoscope in order to introduce the electrode into or beyond the sigmoid. Often the proctoscope reveals tiny abrasions which, naturally, favor quick absorption of poisonous feces.

Paraffin treatment, (oil *per se*) when once the intestine has been cleared, is excellent if not kept up too long. The laity are in danger of using the paraffin preparations now so widely advertised too freely, until the lining of the intestine becomes so "oiled" that the lighter fluids, the natural secretions of the glands of both intestines, large and small, are unable to penetrate the oil and perform their normal functions.

Often hemorrhoids or sphinctor spasms exist in cases of accumulative constipation. Hot fomentations or sitting over boiling hot water will often relieve the spasm as well as the pain.

A special paraffin which melts at not less than 102 degrees F. introduced into the rectum with a piston syringe is excellent — the patient then taking a knee chest position for three or four moments, breathing deeply. This special paraffin cools at the body temperature and forms a soothing lubricating ointment. This treatment is useful, since in these accumulative cases the mucus membrane of the rectum and sigmoid is dry and often sore.

TREATMENT FOR ILEOCÆCAL CONSTIPATION

In this form there may be diarrhœa as well as constipation, and mucus is often found in the stools.

It is best in these cases to give a bismuth test meal and examine with X-ray in order to locate the exact point of stasis, since ileocæcal insufficiency may not, in advanced cases, be the only trouble.

Hot fomentations to the spine and abdomen are useful; they allay pain at once. The wet girdle (cold) worn at night is most effective.

High enemas are at first necessary to wash out the accumulated toxins, but the point of disturbance in ileocæcal constipation is beyond the reach of water. (If one doubts that the intestinal wall has capacity for absorption, let him note the copious discharge of urine, which usually follows a high enema.)

The sinusoidal current is, of course, indicated here as well as in other constipations. Diathermy too is particularly useful in this, as in all disturbances of the colon, in that its heat reaches the deep tissues — an advantage over all other heat application. There is also a special massage movement for this disturbance. This is usually corrected by a few high flushings followed by laxative diet.

SIMPLE CONSTIPATION

Food is nature's laxative. The laxative qualities are due to the flavor and taste, to bulk, to moisture and to chemical properties. Proteids are toxic; therefore proteid should be kept at a minimum; uncooked foods are antitoxic, therefore should be encouraged; fruits are the most antitoxic of all foods, therefore should be used abundantly.

In order to obtain bulk, food containing cellulose should be eaten; the concentrated foods of civilized life furnish far too little bulk; and without bulk, the intestinal muscles have little to exercise upon. Sterilized wheat bran, mingled with morning cereal, forms the two ounces of cellulose which should be eaten daily.

Agar-agar, especially that manufactured under the name of Regulin, is a most effective stimulant to the intestine, and it provides bulk as well. Also its affinity for water is great; therefore sufficient moisture to the intestine is assured by it. These agar-agar preparations provide bulk where the cellulose of green vegetables fails, for the reason that agar-agar is not digested by any of the digestive fluids. Two ounces a day will, under any ordinary condition, produce two large, long, consistent stools a day; a larger amount may be taken, however, as it requires no work of the digestive apparatus other than the intestinal exertion to move it along, which is an advantage rather than disadvantage in all cases of intestinal torpidity.

THE CHEMICAL COMPOSITION OF SOME COMMON FOODS*

By William A. Pearson, Ph. C., Ph. D., M. D., Professor of Chemistry, Hahnemann Medical College of Philadelphia

It is the purpose of this paper to give the analytic results obtained by students of The Hahnemann Medical College, Class 1919, upon the chemical analysis of some common foods.

Not only are the percentages of fat, carbohydrate and protein given, but the number of calories in definite amounts of food, and the amount of each food constituent obtained for ten cents.

All foods analyzed were purchased on the open market in Philadelphia in January, 1916.

The prepared foods were obtained from Horn and Hardart's Automat Restaurant, Market Street and City Hall Plaza.

(*Geckler*)

Corn Meal — Purchased at Acme Tea Company Stores, at 2½c per lb.

	Per cent	Cal. per lb.	Cal. for 10c	Grams for 10c
Carbohydrate	73	1357.32	5429.30	1324.22
Protein	9.2	171.06	684.24	166.88
Fat	7.7	295.22	1180.91	126.98
Ash	1.2	.....	.....	.....
Total		1823.6	7294.45	1618.08

Cocoanut — (grated) — 2c per oz. (*Prugh*)

	Per cent	Gms. lb.	Cal. lb.	Gms. 10c	Cal. 10c
Protein	6.22	28.21	115.66	8.7	35.61
Carbohydrate	29.1	131.99	540.15	40.9	167.69
Fat	56.5	256.78	2388.05	79.6	740.28
Ash	1.5	6.8	.....	.....	.....
Total		423.78	3043.85	129.2	943.58

Bananas (*Vischer*)

	Per cent	Cal. per lb.	Gms for 10c	Cal. for 10
Carbohydrate	24.8	461.16	204.64	839.05
Proteins	0.8	14.8	6.6	27.06
Ash	0.7	.....	5.7	....
Fat	0.2	8.43	1.65	16.3
Total		484.39	218.59	882.41

Fruit Jelly — (Heinz) — Weight of Jelly 344.2 gms., price 30c (*Taggart*)
Weight of jelly on label 11 ozs., amount for 10c 114.7 gms.

	Per cent	Gms. per lb.	Cal. per lb.	Cal. for 10c
Fat	....	.....	.....	.....
Carbohydrate	65	224.25	919.42	306.47
Protein	....	.....	.....	.....
Ash	3.2	10.9	.....	.....
Total		235.15	919.42	306.47

*Read before the Bureau of Clinical Research, A. I. H. 1916. Published in the Journal of the *A. I. H. Repl.*, 1916. Printed in current number of Journal of American Institute of Homœopathy.

WHOLE WHEAT BREAD (*Holland*)

	Per cent	Gms. lb.	Cal. lb.	Gms. 10c	Cals. 10c
Protein	9.8	44.4	182.04	73.5	301.35
Carbohydrate	42.4	192.0	787.2	318.00	1303.8
Fat	4.4	19.9	186.07	33.0	306.9
Ash	1.5	.....	.....	.....	.....
Total		256.3	1155.31	424.5	1912.05

CHOCOLATE CANDY — 226 gms. for 10 cts. (*Paxson*)

	Per cent	Gms. lb.	Cal. lb.
Ash	2	4.52	
Protein	3.82	8.59	35
Carbohydrate	70.30	158.88	651
Fat	5.60	12.66	118
Total		184.65	804

NORWAY HERRING — Price 16c per lb. (*O' Neill*)

	Per cent	Gms. lb.	Cal. lb.	Gms. 10c	Cal. 10c
Protein	23.3	106.688	437.42	72.18	273.38
Fat	12.4	56.246	523.08	35.128	326.929
Carbohydrate	....	.....	.....	.....	.....
Ash	10.7	48.535	.....	.....	.....
Total		211.469	960.50	107.308	600.309

MACARONI — Price per lb. 13c — Amount received for 10c 12 ozs. (*Kistler*)

	Per cent	Gms. lb.	Cal. lb.	Gms. 10c	Cal. 10c
Protein	13.32	60.3	247.2	44.3	181.6
Carbohydrate	73	330.6	1355.4	245.2	1005.3
Fat	0.30	1	9.3	1.0	8
Ash	0.40	1	....	....	....
Total		392.9	1611.9	289.5	1194.9

PEANUT BUTTER — 15c per lb. (*Pettler*)

	Per cent	Gms. lb.	Cal. lb.	Gms. 10c	Cal. 10c
Protein	23.67	107.36	43.99	40.18	164.74
Fat	40.3	182.8	1701.00	58.42	543.3
Carbohydrate	16.4	74.4	305.17	27.85	114.18
Ash	7	.....	.....	.....	.....
Total		364.56	2050.16	126.45	822.22

DRIED BEANS — 10c per lb. (*Wenert*)

	Per cent	Gms. lb.	Cal. lb.	Gms. 10c	Cal. 10c
Protein	20.1	91.17	373.81	91.17	373.79
Ash	14.3	.....	.....	.....	.....
Fat	1.05	4.76	442.84	4.76	44.26
Carbohydrate	57.50	260.82	962.27	260.82	1069.36
Total		356.75	1778.92	356.75	1487.41

BUTTER — Gold Seal Brand sold by Robinson and Crawford — 40c lb. (*Marcbeker*)

	Per cent	Gms. lb.	Cal. lb.	Gms. 10c	Cal. 10c
Protein	1.0	4.1	1859.76	1.022	1.02
Fat	84.67	383.66	1746.58	95.915	196.8
Carbohydrate	.....	.....	.....	.....	.....
Ash	3.33	1.13	.....	.3776	.....
Total		389.07	3606.34	97.3146	197.82

CALIFORNIA FIGS — 277 gms. for 10c. (*Ursprung*)

	Per cent	Gms. lb.	Cal. lb.	Gms. 10c	Cal. 10c
Protein	3.5	15.87	65.06	9.70	39.77
Fat	0.8	3.63	33.75	2.21	20.55
Carbohydrate	63.5	288.00	1180.8	175.90	721.19
Ash	2.8	12.70	.....	.....	.....
Total		320.16	1279.61	187.81	781.51

BUCKWHEAT FLOUR — 756 gms. or 1¾ lbs. (6c pound) cost 10 cents (*Hamer*)

	Per cent	Gms. lb.	Cal. lb.	Gms. 10c	Cal. 10c
Protein	9.5	43.09	176.67	68.94	282.58
Carbohydrate	64.4	9.07	1197.68	467.38	2016.29
Fat	2.0	292.11	84.37	14.51	134.99
Ash	1.8	.....	.....	.....	.....
Total		344.27	1458.72	550.83	2433.86

WHITE BREAD — (Jones) (*Hobart*(

	Per cent	Gms. lb.	Cal. lb.	Gms. 10c	Cal. 10c
Protein	9	40.8	167.37	70.8	290.28
Fat	2.05	9.29	86.48	8.06	74.958
Carbohydrate	51.4	233.15	955.91	404.38	1657.958
Ash	.64	.....	.....	.....	.....
Total		283.24	1209.76	483.24	3023.196

EGGS — 45c dozen (*Banyard*)

	Per cent	Gms. lb.	Cal. lb.	Gms. 10c	Cal. 10c
Protein	13	....	.....	....	.....
Fat	11.5	....	.....	....	.....
Carbohydrate	....	....	.....	....	.....
Ash	.86	....	.....	....	.....
Total		7.82	659.42	189	224.86

ICE CREAM (*Banyard*)

	Per cent	Gms. lb.	Cal. lb.	Gms. 10c	Cal. 10c
Protein	3.3	....	....	....	.....
Fat	4.5	....	....	....	.....
Carbohydrate	8	....	....	....	.....
Ash	....	....	....	....	.....
Total		115	395	224	195.1

RAISINS — "Sun Maid" Seeded Muscat — California Associated Raisin Co. 15 oz. net for 12c — 12.5 oz. for 10c or 354.37 gms. (*Sheaffer*)

	Per cent	Gms. lb.	Cal. lb.	Gms. 10c	Cal. 10c
Protein	2.11	9.59	.....	7.48	30.67
Fat	3.10	14.06	.....	10.98	102.11
Ash	2.86	12.97	.....	10.13	.....
Carbohydrate	69.06	313.25	.....	244.73	1003.39
Total		349.87	1456.18	273.32	1136.17

CREAM CHEESE — Cost 28c per lb. or 7 cents for 102.9 gms. (*Kropp*)

	Per cent	Gms. lb.	Cal. lb.	Gms. 10c	Cal. 10c
Protein	25.6	105.2	431.32	37.5	153.75
Fat	34.1	140.0	1302.0	50.0	465.0
Carbohydrate	2.3	9.2	377.2	3.2	13.12
Ash	3.6	14.8	... ...	5.2	.....
Total		269.2	2110.52	95.9	631.87

APPLE STRUDEL — Horn & Hardart — Total weight purchased 195.5 gms. (*Marbecker*)

	Per cent	Gms. lb.	Cal. lb.	Gms. 10c	Cal. 10c
Protein	7.3	34.19	140.17	24.62	100.94
Fat	9.4	38.92	361.95	32.84	305.41
Carbohydrate	35.4	140.32	575.31	118.40	485.44
Ash	.2	.90	.....	.78	.....
Total		214.33	1077.43	178.64	891.79

COCOANUT PIE — Horn and Hardart, 5c per cut. — 144 gms. (*Taggart*)

	Per cent	Gms. lb.	Cal. lb.	Cal. 10c
Fat	22	31.68	294.81	.....
Carbohydrate	35	50.4	206.64	.....
Protein	6.96	10.08	41.33	.....
Ash	2	2.88	.....	.....
Total		95.04	542.78	1085.56

BEEF PIE — Horn and Hardart (*Hamer*)

	Per cent	Gms. lb.	Cal. lb.	Gms. 10c	Cal. 10c
Protein	3.1	14.06	57.05	5.87	24.07
Carbohydrate	15.3	69.4	284.54	28.97	118.77
Fat	2.0	9.07	84.36	3.78	35.22
Ash	1+	.....	.....	.....	.....
Total		92.53	425.95	38.62	178.06

ROMAN PUNCH — Horn and Hardart (*Prugh*)

	Per cent	Gms. lb.	Cal. lb.	Gms. 10c	Cal. 10c
Fat	11.75	52.97	492.02	24.5	218.5
Carbohydrate	53.2	241.31	989.37	106.4	436.24
Protein	18.75	84.32	347.65	37.5	153.75
Ash	.75	3.4	.....	.....	.....
Total		382.50	1829.04	168.4	808.49

CHOCOLATE ECLAIR — Horn and Hardart 5c. (*Geckler*)

	Per cent	Cal. per lb.	Cal. 10c	Gms. 10c
Carbohydrate	25	.....	173.23	42.25
Protein	2.1	.....	14.56	3.55
Fat	23.5	.....	369.40	39.72
Total		.....	557.19	85.52

CHEESE CAKE PIE — Horn and Hardart (*Vischer*)

	Per cent	Gms. 10c	Cal. 10c	Cal. lb.
Carbohydrate	.81	2.4	9.8	29.52
Protein	7.6	24.34	99.22	282.64
Fat	23.32	74.70	694.20	1967.30
Ash	6.2	19.8	.....	.....
Total		121.24	703.22	2279.46

CHOCOLATE CORNSTARCH — 260 gms. for 10c — Horn and Hardart (*Paxson*)

	Per cent	Gms. lb.	Cal. lb.
Protein	0.94	2.44	10
Carbohydrate	47.00	122.00	300
Fat	8.00	20.80	193
Total		145.24	503

PEACH PIE — Horn and Hardart — 130.5 gms. for 5c. (*Ursprung*)

	Per cent	Gms. lb.	Cal. lb.	Gms. 10c	Cal. 10c
Protein	6	27.2	97.52	15.6	63.9
Fat	7	31.75	295.27	18.27	169.9
Carbohydrate	31	140.6	576.46	80.91	331.7
Ash	1.5	6.8	.....	.....	.....
Total		206.35	969.25	114.78	565.5

LEMON MERINGUE PIE — Horn and Hardart (*Pettler*)

	Per cent	Gms. lb.	Cal. lb.	Gms. 10c	Cal. 10c
Protein	3.26	14.78	60.6	10.167	41.685
Fat	8.0	36.29	337.5	24.96	232.128
Carbohydrate	35.5	154.64	634.0	110.76	454.116
Ash	3.2	.....	.....	.....	.....
Total		205.71	1032.1	145.887	727.929

FRENCH CREAM CAKE — Horn and Hardart (*Sheaffer*)

	Per cent	Gms. lb.	Cal. lb.	Gms. 10c	Cal. 10c
Protein	11.91	54.02	.....	21.44	87.90
Fat	6.25	28.35	.....	11.25	104.62
Ash	3.15	14.29	.....	5.67	.....
Carbohydrate	49.40	224.08	.....	88.92	364.57
Total		320.74	1403.95	128.28	557.09

APPLE DUMPLING — Horn and Hardart (*Kropp*)

	Per cent	Gms. lb.	Cal. lb.	Gms. 10c	Cal. 10c
Protein	1.98	86.1	36.08	11.0	45.1
Fat	30.0	136.0	1265.54	166.8	1551.24
Carbohydrate	4.46	19.9	82.82	24.6	100.86
Ash	1.24	5.6	.....	6.8	.....
Total		247.6	1384.44	209.2	1697.20

The Talitha Cumi Maternity Hospital offers a course of instruction, covering a period of three months, for two senior nurses from other hospitals, or two graduate nurses, accepted the first of each month.

Outline of course on application, to superintendent of nurses.

Miss C. G. Briggs,
R. R. M. H. H.

215 Forest Hills Street,
Jamaica Plain, Mass.

Staff

W. F. Wesselhoeft, M.D.
G. H. Earl, M.D.
H. L. Houghton, M.D.
S. A. Kimball, M.D.
Conrad Wesselhoeft, 2nd, M.D.
Mary Parker, M.D.
Alice H. Bassett, M.D.
Fredrika Moore, M.D.

CLINICAL DEPARTMENT

Case F–9. Simple Involution Melancholia:—The patient is a New England woman 69 years of age. She has lived a quiet, rural life, her husband being a successful farmer. She has had two healthy children, a son and daughter who are well and married.

Daughter says that patient has always been of worrying temperament and nervous, somewhat self-centered, but well and over-conscientious in her work. Husband died of pneumonia in March, 1915, at the age of 81. Patient took his death overseriously. She was executrix of the estate, and this worried her. She tried to keep the farm running and thought she lost a lot of money, when as a matter of fact she did not.

Patient has had to have a nurse off and on since her husband's death. She wanted to be alone and to cry, had little appetite, though never a large eater, slept fairly well up to two or three in the morning and then napped. Bowels O. K. Urine normal.

Physical Examination shows patient to be a fairly well-built but poorly nourished woman; gray hair; skin dry, warm and wrinkled; has a deformed right middle and ring finger; a slight degree of scoliosis of the spine towards the left side.

Respiratory System: Nose and nares negative; breathing is normal; chest is symmetrical, and lungs show no pathological rales or fremiti.

Alimentary System: False upper teeth; abdomen rigid and retracted; stomach and liver normal in size, position and outline.

Circulatory System: Peripheral blood vessels are sclerosed; no evidence of any edema. Pulse 84. Blood pressure: Systolic, 166; diastolic, 90; hemoglobin, 95. Heart tumultous but otherwise normal.

Glandular and Genito-urinary System: Negative.

Neurological Examination: All normal reflexes were found to be present, active and equal. Both patella were somewhat sluggish.

Mental Examination: Shows patient to be orientated for person, place and time. Has not a thorough insight into her actual mental condition. Both remote and recent memory fairly well preserved. No history or evidence of any hallucinations, illusions or delusions. Emotional tone depressed and at times agitated.

Conduct: Patient is continually worrying about the loss of money and over the mismanagement of the estate left her by her

husband and of which she was made executrix. Flow of thought is slightly retarded at times.

Provisional Mental Diagnosis: Senile dementia of arteriosclerotic origin.

This patient was admitted to an institution on a voluntary paper, i.e., she signed a voluntary paper promising to give three days' notice in writing before leaving without the consent of the superintendent.

During her stay she grew progressively worse, more unreasonable about her obsession that she had mismanaged her affairs and had no money. Her restlessness increased and she would walk the floor wringing her hands most of the day and much of the night, at other times she would sit in her room alone, gazing into space. Her field of thought narrowed down to her hypochondriacal ideas and she could not get beyond them. She had no interest outside of herself. Finally she decided that she must have been very bad or done something wrong for which her condition was a punishment.

Sleep could only be obtained with bromide and veronal. Prolonged baths had no effect. Often she had to be undressed and put to bed under much resistance. This state of affairs continued into July, when she developed pneumonia and died in about a week.

This is a typical case of rather rapid, simple involutional melancholia.

The most common causes of this condition are grief, stress, infectious diseases and the climacteric (Chase). It is most common between the ages of fifty and seventy and its course is progressively down hill. It is characterized by uniform depression, with fears, various delusions of self-accusation, of persecution and hypochondriacal ideas. There is some clouding of the mind, so that the patient does not reason logically. The train of thought is circumscribed and the power of elaboration diminished. Attention to environment becomes gradually less, while it becomes more fixed upon the morbid ideas. Appetite is at first capricious, and finally food is disregarded, the patient having to be urged to eat, sometimes even tube-fed.

In the early stage of the involutional psychosis, when the symptoms are only slightly neurasthenic, it is difficult to persuade the family that the patient is "breaking up." They are apt to try one doctor or hospital after another, looking for the impossible. I have such a case now. Patient fatigues easily, has no power of fixation of attention, so that she will not read nor do any consecutive work. Her appetite is capricious. She insists that she cannot sleep without a powder (sacrum lactis) each night. She worries excessively over a most trivial incident

while totally neglecting a very important event of recent occurrence But she is amiable and presents a normal appearance and carries on a fairly good conversation. She has been to many doctors and three institutions within three months, and the family are not yet convinced of her real condition. The involutional psychosis, including senile dementia, present several fairly well defined sets of symptoms. There are cases which more rapidly settle down into acute fears and agitation, with marked apprehension. They claim that nothing exists, no houses, no food, no people are alive. Insomnia is persistent, and they are apt to be extremely suicidal.

The more typical senile dementias include simple senile deterioration, senile confusion and senile delirium. All of these show post-mortem atrophy of the cerebral mantle. In the early stages remedies will help to bring comfort, and when arteriosclerosis can be demonstrated, electrical autocondensation may assist restlessness and insomnia, and for a time put off the inevitable mental deterioration. In the last stage good care is the most that can be offered, and suicidal attempts must be carefully guarded against.

REVIEWS

PATHOLOGY

Myxoma-Like Growths in the Heart, Due to Localizations of Spirochæta Pallida. *Warthin, A. S., Jour. of Infect. Dis., Aug. 1916, Vol. 19, p. 139.*

Five cases of congenital syphilis in infants presented translucent nodules in the myocardium. They resembled myxomas and, microscopically, were found to consist of edematous gelatinous connective tissue and remains of atrophic muscle fibres.

When stained according to Levaditi, they were found to be colonies of spirochæta pallida occurring in enormous numbers. They did not resemble ordinary gummata.

These syphilitic nodules are relatively rare, and they may be mistaken for myxomata.

H. U.

THERAPEUTICS

The Action of Various "Female" Remedies on the Excised Uterus of the Guinea Pig. *Pilcher, J. D., Delzell, W. R., and Burman, G. E., Jour. Am. Med. Ass'n., 1916, Vol. 67, p. 490.*

This is a report of experiments with various ingredients of some proprietary or patent medicines, for which more or less

extravagant claims of therapeutic value had been made by the several manufacturers.

Strips of uterine muscle of the Guinea-pig were used for the experiments. The following drugs exerted recognizable action upon the muscle:

Unicorn Root (Aletris Farinosa)
Pulsatilla (Pulsatilla Pratensis)
Jamaica Dogwood (Ichthyomethia Piscipula)
Figwort (Scrophularia Nodosa)
Valerian (Valeriana Officinalis)
Lady's-Slipper (Cypripedium Pubescens)
Wild Yam (Dioscorea Villosa)
Life Root (Senecia Aureus)
Skullcap (Scutellaria Lateriflora)
Blue Cohosh (Caulophyllum Thalicteroides)

The inactive drugs were:

Black Haw (Viburnum Prunifolium)
Cramp Bark (Viburnum Opulus)
Squaw Vine (Mitchella Repens)
Chestnut Bark (Castanea Dentata)
False Unicorn (Chamælirium Luteum)
Passion Flower (Passiflora Incarnata)
Blessed Thistle (Cnicus Benedictus)
Saint Mary's Thistle (Silybum Marianum or Carduus Marianus)
Motherwort (Leonurus Cardiaca)
Sodium Valerianate (Up to 1 : 1000)

H. U.

Variation in the Platelet Count

Duke, W. W., Jour. of Am. Med. Ass'n., Nov. 6, 1915, Vol. LXV, p. 1600.

Generally, the number of blood platelets is increased in chronic and, diminished in acute diseases. Duke injected rabbits with diphtheria toxine benzol, tetanus toxin, killed typhoid bacilli, and tuberculin, and used th Roentgen ray. He found that these agents (except tetanus toxin) in larg doses caused a diminution in the number of platelets, and in small doses a rise. This is due to the stimulating action of small doses of a substance that in larger doses acts as a poison.

The hæmatopoietic tissue (bone marrow) is stimulated by the smaller doses to increased activity and consequent increase of platelet output; whereas larger amounts poison this tissue, and the platelets become less numerous. Similarly, acute diseases (diphtheria), elaborating a large quantity of toxin suddenly, overwhelm the bone marrow, and the low platelet count results; in chronic conditions (tuberculosis, nephritis), on the other hand, the small amounts of toxin formed per unit of time causes an increased count by its stimulating effect.

(*These findings are in accordance with Arndt's "Law," and are of evident interest to the student of homœopathic drug application.*)

H. U.

BOOK REVIEWS

Ultra-Violet Light by Means of the Alpine Sun Lamp. Treatment and Indication by Hugo Bach, M.D., Bad Elster, Saxony, Germany. Authorized Translation from the German. Published by Paul B. Hoeber, New York, 1916. Price $1.00.

This little book described the Alpine Sun lamp, an apparatus for producing an almost pure ultra-violet light which can be attached to an ordinary electric light socket. While it especially expounds the virtues of this particular lamp, the explicit directions given as well as the broad field of its therapeutic usefulness make it extremely valuable and interesting and stimulate one with a desire to have such a light at hand. Any one who has given thought to the matter of light therapy, and especially those who have used it or taken advantage of the sun's rays, know what an extremely useful method of treating many ailments both local and systemic it is, and will do well to avail himself of this explicit little volume.

A. H. R.

Mental Medicine and Nursing. For use in training Schools for Nurses and in medical classes, and a ready reference for the general practitioner, with seventy-eight illustrations, by Robert Howland Chase, A.M., M.D., Physician-in-Chief, Friends Asylum for the Insane; late resident physician State Hospital, Nomstown, Pa.; Member of the American Medical Psychological Association. Member of the Neurological and Psychiatric Societies, Philadelphia. Published by J. B. Lippincott Company.

The book comprises two hundred and forty-four pages and has more solid meat between its covers than any book we have received for same time. Though originally intended for the instruction of nurses, it is admirably suited to the use of the physician who graduated before modern psychiatry was taught in the medical schools. Its classification of mental disease is a sane compromise between the old and Kreplenian.

First, there is a brief review of the anatomy of the nervous system well illustrated; next an excellent section on normal and abnormal psychology. There the various diseases are given in outline, and finally a splendid section on the modern treatment of the insane including the use of water, drugs (old school), diversional occupation, food and feeding and artificial feeding, suicide and homicide. As an appendix is added an address on poisons and antidotes. There is a good index. We can heartily recommend the book.

A. H. R.

Cerebellar Abscess, its Etiology, Pathology, Diagnosis and Treatment, including Anatomy and Physiology of the Cerebellum. By Isidore Friesner, M.D., Adjunct Professor of Otology and Assistant Aural Surgeon, Manhattan Eye, Ear and Throat Hospital and Post-Graduate Medical School New York; and Alfred Braun, M.D., F.A.C.S., Assistant Aural Surgeon Manhattan Eye, Ear and Throat Hospital. Adjunct Professor of Larangology, New York Polyclinic, Adjunct Otologist Mt. Sinai Hospital. With ten full-page plates and sixteen illustrations in text. Published by Paul B. Hoeber, New York, 1916. Price $2.50.

The title of this book sufficiently describes its purpose. The book contains 186 pages. The section on Anatomy and Physiology is extremely well done and consumes 71 pages. The illustrations are new and clear. Chapter III lays emphasis upon the importance of otitic origin of cerebellar abscesses, stating that ninety-eight per cent originate in ear disease.

Chapter IV is a detailed description of the symptoms and diagnostic methods, and Chapter V takes up the treatment and prognosis. Some excellent drawings show the steps of operative treatment. The authors state that the most common cause of death is leptomeningitis, but gave nine other causes. There is a very complete bibliography and the book is well indexed.

The type is large and unusually clear.

A. H. R.

SOCIETIES

American Association of Clinical Research

The eighth annual meeting of the American Association of Clinical Research will be held at Hotel Majestic, 72d St., Central Park West, New York City, on September 28, 29 and 30, with clinics at Flower, Metropolitan and other New York hospitals.

The opening address will be made by the President, Daniel E. S. Coleman, M.D., of New York City. The following program of papers to be read has been prepared:

The Scientific Attitude for Clinical Research
JAMES KRAUSS, M.D.
Boston, Massachusetts.

Rational versus Suggestive Psychotherapeutics.
JOSEPH A. WEITZ, M.D.
Montpelier, Ohio.

The Eighth Nerve and Its Tracts: Lantern Slides.
GEORGE W. MACKENZIE, M.D.
Philadelphia, Pennsylvania.

The Optic Nerve Tract and Connections: A Review.
HERBERT D. SCHENCK, M.D.
Brooklyn, New York.

Cerebral Roentgenology: Lantern Slides.
C. WINFIELD PERKINS, M.D.
New York, New York.

The Latest Results in X-Ray Work.
JEFFERSON D. GIBSON, M.D.
Denver, New York.

Further Observations on Radium, Its Action and Adequate Dosage.
JOHN MARTIN CRAIG, M.D.
Philadelphia, Pennsylvania.

The Use of Radium in Gynæcological Conditions.
MARSHALL WILLIAM McDUFFIE, M.D.
New York, New York.

Appendicitis.
SPENCER CARLETON, M.D.
New York, New York.

Local Anæsthesia in the Treatment of Rectal Diseases.
F. H. WILLIAMS, M.D.
Boston, Massachusetts.

Ayurvedic Medicine and Its History.
SARAT CHANDRA GHOSE, M.D.
Calcutta, India.

The Scientific Study of Medicinal Substances, with Clinic at Flower Hospital.
ROYAL S. COPELAND, M.D.
New York, New York.

The Legislative Aspects of Public Education and Hygiene.
ROGER M. GRISWOLD, M.D.
Kensington, Connecticut.

Food versus Medicine in Relation to the Public Health.
ALFRED W. McCANN, B.A.
New York, New York.

The Food Problem from the Chemical Standpoint.
WILLIAM A. PEARSON, Ph.D.
Philadelphia, Pennsylvania.

Cancer Research: Clinical Observations.
H. W. NOWELL, M.D.
Boston, Massachusetts.

Tobacco and Gymnastics: Personal Observations.
B. F. ROLLER, M.D.
New York, New York.

Differential Diagnosis of Gall Bladder and Duodenal Disease.
J. GUTMAN, M.D.
Brooklyn, New York.

Abdominal Adhesions.
ALONZO J. SHADMAN, M.D.
Boston, Massachusetts.

Accurate Diagnosis of the Urologic Disturbances Encountered in Gynæcologic Practice.
WALTER T. DANNREUTHER, M.D.
New York, New York..

Blood Pressure: Some Clinical Observations.
F. C. ASKENSTEDT, M.D.
Louisville, Kentucky.

The Surgical Kidney: Personal Observations.
LEON T. ASHCRAFT, M.D.
Philadelphia, Pennsylvania.

Sacro-Iliac Disease: A New Method of Treatment.
CURRAN POPE, M.D.
Louisville, Kentucky.

How to Apply Remedies, with Clinic at Metropolitan Hospital.
DANIEL E. S. COLEMAN, M.D.
New York, New York.

Surgical Research, with Clinic at Metroploitan Hospital.
WILLIAM F. HONAN, M.D
New York, New York.

REGARDING HEALTH INSURANCE

Twenty-five out of every 1,000 employees in American industries, according to recent statistics, are constantly incapacitated by sickness, the average worker losing approximately nine days each year on this account. This "non-effective rate" for the great army of industrial workers in the United States barely suggests the total money loss to employers and employees. The lessened efficiency, the effects of reduced earnings in times of sickness, as well as the cost of medical attention, and the economic loss from deaths, swell the cost to industry and to the Nation to almost incalculable figures.

That much of this loss is nothing less than preventable waste and that this waste can be largely reduced by a properly conducted system of governmental health insurance for wage-workers are conclusions set forth in *Public Health Bulletin No. 76*, containing the results of a study of "Health Insurance — Its Relation to the Public Health," just issued by the United States Public Health Service.

The preventive value of health insurance is given especial emphasis in this study. "Any system of health insurance for the United States or any State should at its inception have prevention of sickness as one of its fundamental purposes," says the bulletin. "This country should profit by the

experience of European countries where prevention is being recognized as the central idea necessary to health insurance if health insurance is to attain its greatest success in improving the health and efficiency of the industrial population."

Such a system, it is pointed out in the bulletin, would

1. Provide cash benefits and medical service for all wage-earners in times of sickness at much less cost than is now possible. Adequate medical relief would thus be placed within the reach of even the lowest paid workers who are most subject to ill health.

2. Distribute the cost among employers, employees, and the public as the groups responsible for disease-causing conditions and afford these groups a definite financial incentive for removing these conditions. This can be done by means of small weekly payments from employees, supplemented by proportionate contributions from employers and government at a rate reducible in proportion to the reduction of sickness.

3. Become an effective health measure by linking the coöperative efforts of the three responsible groups with the work of National, State and local health agencies, and by utilizing these agencies in the administration of the health insurance system.

4. Afford a better basis for the cooperation of the medical profession with public health agencies.

5. Eliminate the elements of paternalism and charity-giving by making employees and the public, as well as employers, joint agents in the control of this fund.

"A governmental system of health insurance," concludes the study, "can be adapted to American conditions, and when adapted will prove to be a health measure of extraordinary value."

BRIEF FOR HEALTH INSURANCE

A death rate for American wage-earners twice that of professional men; the prevalency of high sickness rates; the need among workers of better medical care and of a systematic method of meeting the wage loss incident to sickness; and the necessity for more active work in the prevention of disease are the corner-stones of the case for compulsory health insurance presented in the brief just published in New York by the American Association for Labor Legislation. This situation, it is pointed out, cannot be met fully by existing agencies, and can only be properly remedied by a system of health insurance embracing all wage-earners and dividing the cost among employee, employer and the State.

The great amount of sickness in the homes of the poor causes an average loss by each wage-earner of nine days per year, and involves annually a national wage loss of approximately $500,000,000. Notwithstanding the greater prevalency of tuberculosis among wage-earners, their early susceptibility to the degenerative diseases of middle life, and the excessive death rate among the industrial population, workers often are unable to secure the medical attention they require. In Rochester, New York, it was found that 39 per cent of the sickness cases were not under a doctor's supervision; in a city like Boston, Massachusetts, one-fourth of the population, it is estimated, are unable to pay the fees of a private physician.

The lowered vitality and the poverty created by present day conditions it is claimed can only be checked by a system of health insurance, which for a small sum divided among employer, worker and State, will bring medical care to the wage-earner and his family, will assure for a maximum of 26 weeks in a year a weekly payment of two-thirds of wages during the bread-winner's illness, and in addition a small funeral benefit should he die. "Compulsory health insurance," concludes the brief, "is an economical means of providing adequately for the sick wage-earner, and will prove a mighty force for the inauguration of a comprehensive campaign for health conservation.

RAGWEED HAY FEVER VACCINE MULFORD

There are many hay fever sufferers who are sensitive to one particular pollen and a vaccine prepared from that pollen is, of course, the best agent for affording them relief.

For this reason the H. K. Mulford Company of Philadelphia is furnishing, in addition to Hay Fever Vaccine Fall Mulford, a Ragweed pollen extract, properly standardized and known as Hay Fever Vaccine Ragweed Mulford.

Hay Fever Vaccine Fall Mulford contains the protein extract from the pollens of ragweed, goldenrod and maize, dissolved in physiological saline solution, and accurately standardized.

Hay Fever Vaccine Ragweed Mulford contains the protein extract from the *pollens of ragweed only*, dissolved in physiological saline solution and accurately standardized.

The injections at first may be given at about five-day intervals, the intervals being shortened or lengthened, according to indications. Ophthalmic and skin tests are not considered necessary in the control of dosage. It is sufficient to start with a small dose and increase gradually until satisfactory results are obtained.

There are no contraindications to the therapeutic or prophylactic use of Hay Fever Vaccine Mulford so far as known. A small percentage of patients may be hypersensitive to the protein extracts, in which case the dose may be accordingly reduced.

A complete "working bulletin" on Hay Fever Vaccine has been issued by the H. K. Mulford Company of Philadelphia, and contains valuable information regarding the treatment of this troublesome malady. It can be obtained from the company on request.

RESEARCHES INTO THE CAUSES OF ALCOHOLISM AND INEBRIETY

By T. D. Crothers, M.D., Hartford, Conn.

One great fact has been established by accurate laboratory and clinical research, viz., that the physiological action of alcohol on the cell and tissue is that of an anæsthetic and depressant, and not a tonic or stimulant. This has been accepted by the profession generally, and while it revolutionizes the previous theories, explains in some degree why alcohol is so fascinating.

Beyond this, there is a vast range of causes producing alcoholism and inebriety that are practically unknown. All remedial and restorative efforts are based on the theory that alcohol is the special and particular cause of all the degenerations which follow from its use.

Careful studies of individual cases show this to be untrue; also that in many instances alcohol is only a symptom. It may be a complicating drug intensifying unknown conditions that were latent before. It may be a specific poison localizing in certain organs. It is also cumulative, and associated with the most complex neuroses.

The causes that impel men to drink have never been studied scientifically. The literature up to the present is a confusing mass of theories and opinions unverified.

In this unknown region there are innumerable questions like the following: Why are certain periods of life more favorable for the outbreak of the craze for alcohol than others? Why does the desire to drink break out suddenly in diverse conditions, and then subside from causes inadequate to explain the change? What is the explanation of the exact periodicity of these drink excesses that are as certain as the rise and fall of the tide? What are the causes in surroundings and conditions of living that provoke these paroxysms? Why do men drink after injuries, diseases, shocks, losses, disappointments, business reverses and great successes in life? What degenerations are transmitted from the parents to the children that create susceptibility or immunity to the effects of alcohol? Why are some persons able to drink in so-called moderation for years, and why do others quickly become diseased and die? Why do some men drink in early life, then abstain, and

in middle or later life turn to alcohol again and drink until death? Why are some persons susceptible to the contagion of surroundings and companions, while others are immune? What physical and psychical causes produce the drink craze?

These are some of the unknown causes and conditions which have never been studied with scientific exactness. One of the most prominent and widely accepted explanations is the so-called moral cause. Physical conditions are considered results and not causes.

A Research Foundation has recently been organized at Hartford, Conn., for the purpose of making an exact scientific study of these questions. It will be endowed and become a permanent work. Preliminary studies have already begun, and practicing physicians from all parts of the country are appealed to for the records and histories of cases which will be compiled and tabulated for the purpose of determining the laws which control and govern them.

This is the first scientific effort to take up the subjects of alcoholism and inebriety and determine the causes which produce them outside of alcohol. Science has shown that these conditions are governed by exact physical and psychical laws, which if known and understood would indicate the most practical means and measures of relief.

The Foundation will be practically a laboratory or clearing-house, where persons can come for examination, counsel and advice, To a large class of persons who want something more than pledges, appeals or sanatorium treatment, this will open a new field of means and measures for relief that will be most welcome.

Correspondence is earnestly solicited from the profession.

CLEAN HANDS

Disease germs lead a hand to mouth existence. If the human race would learn to keep the unwashed hand away from the mouth many human diseases would be greatly diminished. We handle infectious matter more or less constantly and we continually carry the hands to the mouth. If the hand has recently been in contact with infectious matter the germs of disease may in this way be introduced into the body. Many persons wet their fingers with saliva before counting money, turning the pages of a book, or performing similar acts. In this case the process is reversed, the infection being carried to the object handled, there to await carriage to the mouth of some other careless person. In view of these facts the U. S. Public Health Service has formulated the following simple rules of personal hygiene and recommends their adoption by every person in the United States.

WASH THE HANDS IMMEDIATELY

Before eating,
Before handling, preparing or serving food,
After using the toilet,
After attending the sick, and
After handling anything dirty.

It is a remarkable fact, confirmed by many observations, that many physicians who have devoted considerable labor to the study of a particular disease have themselves died of that disease. One of the most interesting examples is that of John Daniel Major, born August 16, 1634, in Breslau, a physician and naturalist of no mean ability. Bitten early by the wanderlust, he studied at Wittenburg, took courses at many of the schools in Germany, and finally went to Italy, where he received the degree of doctor of medicine at Padua in 1660. Returning to his own country, he resided for a short time in Silesia, and in 1661 married at Wittenburg, Margaret Dorothy, a daughter of the celebrated Sennert. The following year, his young wife was stricken with plague and died after an illness of eight days. Distracted by his loss, Major wandered up and down Europe studying plague wherever he found it in the hope that he might discover a cure for the disease which had bereaved him. Spain, Germany, France and Russia were visited by him. He settled in 1665 in Kiel, where he was made professor of botany and the director of the botanical gardens. He made frequent voyages, however, always in quest

of the remedy for plague. Finally in 1693, he was called to Stockholm to treat the queen of Charles the Eleventh, then ill with plague. But before he could render her any service, he contracted the disease and died on the third of August.

The bubonic plague of to-day is identical with the black death of the Middle Ages. Primarily a disease of rodents caused by a short dumb-bell shaped microscopic vegetable, the pest bacillus, it occurs in man in three forms; the pneumonic, which has a death rate of almost 100%; the septecemic, which is nearly as fatal, and the bubonic, in which even with the most modern methods of treatment the mortality is about 50%. It is a disease of commerce, spreading around the globe in the body of the ship-borne rat. It is estimated that every case of human plague costs the municipality in which it occurs at least $7,500. This does not take into account the enormous loss due to disastrous quarantines and the commercial paralysis which the fear of the disease so frequently produces.

The disease is now treated by a serum discovered through the genius of Yersin. This is used in much the same way as is diphtheria antitoxin.

Plague is transferred from the sick rodent to the well man by fleas. The sick rat has enormous numbers of plague bacilli in its blood. The blood is taken by the flea which, leaving the sick rat, seeks refuge and sustenance on the body of a human being to whom it transfers the infection.

Since plague is a disease of rodents and since it is carried from sick rodents to well men by rodent fleas, safety from the disease lies in the exclusion of rodents, not only exclusion from the habitation of man but also from the ports and cities of the world. Those who dwell in rat-proof surroundings take no plague. Not only should man dwell in rat-proof surroundings, but he should also live in rat-free surroundings. The day is past when the rodent served a useful purpose as the unpaid city scavenger. Rats will not come where there is no food for them. Municipal cleanliness may be regarded as a partial insurance against plague. The prayer that no plague come nigh our dwelling is best answered, however, by rat-proofing the habitations of man. Modern sanitary science has evolved a simple and efficient weapon against the pestilence which walketh in darkness and striketh at noonday, and the U. S. Public Health Service has put this knowledge into practical operation and thus speedily eradicated plague wherever it has appeared in the United States.

PERSONAL AND GENERAL ITEMS

There will be an opportunity for a physician, preferably an internist, to share office accommodations with three other physicians who have taken a suite of rooms in the new Hotel Kenmore, 496 Commonwealth Avenue, opposite Subway Station, Kenmore St. Each physician will have his own private consulting-room, which will be a front room, well lighted, on the ground floor. A clerk will be in daily attendance. The suite will be ready about October 1st. Inquire of the *New England Medical Gazette.*

FOR SALE, a Clapp-Eastman Electric Machine No. 27, Type A. C., indirect current. Property of the late Dr. J. T. Sherman. Price will be made low. For information inquire of the *New England Medical Gazette.*

Dr. Grace G. Savage, class of 1902, B.U.S.M., was married on August 19 to John Bowler of Worcester, Massachusetts, where, after an extended automobile trip to the Pacific coast, by way of the Canadian Rockies, they will make their home.

Dr. Vincent T. Lathbury, class of 1904, B.U.S.M., has removed from Pittsfield, Maine, to 85 Stone St., Augusta, Maine.

Dr. Harold O. Hunt, B.U.S.M., 1909, has removed from 424 Newtonville Ave. to 73 Madison Ave., Newtonville, Mass.

Dr. J. J. Golub, B.U.S.M., 1915, has removed from Boston to 857 Blue Hill Ave., Dorchester, Mass.

Dr. M. Edna Wallace, B.U.S.M., 1915, has returned to her home, Stafford, Kan., after some months of hospital service in Rochester, N. Y.

THE NEW ENGLAND MEDICAL GAZETTE

VOL. LI OCTOBER, 1916 No. 10

Books for review, exchanges and contributions — the latter to be contributed to the GAZETTE only and preferably to be typewritten — personal and news items should be sent to THE NEW ENGLAND MEDICAL GAZETTE, 80 East Concord Street, Boston. Subscriptions and all communications relating to advertising or other business should be sent to the Busines Manager, 80 East Concord Street, Boston, Mass.

THE GAZETTE does not hold itself responsible for the opinions expressed by its contributors. Reprints furnished at cost.

ACUTE ANTERIOR POLIOMYELITIS

At the West Department of the Massachusetts Homœopathic Hospital

At the time this is written, there are sixty-five cases of acute anterior poliomyelitis at the West Department. The epidemic shows no signs of abatement; on the contrary, it is distinctly increasing in numbers of victims. On September 29th alone, seven new cases were admitted, which is the largest number of admissions in one day since the beginning of the epidemic. The hope that the cooler weather during the earlier days of the month might check the progress of the epidemic was not realized; at least, not in Massachusetts.

Several prophylactic measures have been ordered by the municipal authorities of Boston. The postponement of the opening of public schools and the recently decreed debarment of children from motion picture theatres will prevent a certain amount of intermingling of children; but neither the latter measure nor the refusal to permit children to travel from infected premises to other localities guards against the possibility of adult carriers' transferring contagion to other adults, who may then carry it to susceptible children.

The recently issued, and somewhat spectacular, mayoral order to clean up private alleys, although in itself highly commendable, and, no doubt, of great benefit to the inhabitants of

our comparatively filthy New England metropolis, can hardly be expected to influence the course of the epidemic. Perhaps the weightiest argument against a belief that the disease may be alley-bred is its greater relative prevalence in rural, or at least small city, districts.

A great stride forward in the prophylactic control of anterior poliomyelitis would be the discovery of an immunity reaction similar to the Schick test applied to determine immunity to diphtheria. The relatively few and usually widely separated cases of an epidemic would seem to indicate that susceptibility to the disease is exceptional, and that most humans are naturally immune. If it were possible, at the beginning of an epidemic, to identify susceptible individuals by means of an immunity reaction, isolation of these might check the spread of the disease.

The fairly large number of cases at the West Department is being utilized in an attempt to evaluate and compare several methods of treatment. This investigation is being carried out under the auspices of the Evans Memorial Research Laboratories, and ought to be productive of interesting and valuable results.

The death rate at the West Department has been unusually low. Only five of seventy cases have died — a death rate of 7% as compared with 20% or more for the disease in previous epidemics. All of the deaths occurred within a short time after admission. No cases in the preparalytic stage came to the hospital. This is not surprising, because flaccid paralysis is the chief and almost only important diagnostic sign of the disease. Most of the cases admitted, however, still had fever, which, in nearly all, soon subsided.

The fact that the cases did not enter the hospital until they had nearly passed the acute stage of the disease may explain the low death rate. This point can be determined by comparing the rates of the district supplying the West Department and of other districts. The comparison of the deaths among untreated cases (such a control series is being studied at the West Department) and of those among the variously treated ones seems at present of little value, because those who died were practically moribund on admission. It is hoped, however, that a detailed study of the parallel series of cases may show results that are not superficially apparent.

H. U.

EUNUCHOIDISM

As we further our knowledge concerning the function of the ductless glands we get a clearer understanding of those heretofore obscure diseases whose pathology seemed past finding out.

The researches which have been made, and which are still being made into the function of the internal secretions from the sexual glands have already cleared up some of the most vexatious problems in the psychological, physiological, and pathological fields. Since the days of antiquity there has lived side by side the normal man, a being which, while it resembled man in all the outward aspects, yet lacked the psychic element of the virile human. Neither the psychologist nor the alienist seemed able to point out wherein the precise defect lay. Yet its absence was ever apparent. This much at least has now been done by the researchers in this field, they have given this strange being a name, if not a local habitation, — they have named him "eunuchoid."

Tandler says eunuchoids are "individuals who, without being castrated, entirely simulate in their clinical manifestations the true eunuch type, or at least are extraordinarily similar to it. They are either tall, or if complications are absent, are at least not stunted in growth; they show the typical fat distribution of eunuchs, and eventually pronounced obesity; the epiphyseal junctures persist abnormally long, the skeletal dimensions are characterized by an especial length of the extremities, and furthermore the individuals show a psychical habitus. Finally, there is found a more or less pronounced disturbance of development of the genitalia, with faulty development of the secondary sexual characters. It is probable that in such cases we have to do with a developmental disturbance beginning primarily in the sexual glands, and indeed especially the interstitial glands, as functional disturbances of the generative glands alone do not lead to eunuchoidism."

In general appearance the eunuchoid is slender and tall. Even in those subjects which have taken on fat the skeletal structure is slender, especially the tubular bones. Wilhelm Falta says that while all eunuchoids are not tall, he has not been able to find on record a case which was small. The tallness is almost universally due to extreme length of the extremities, there being a disproportion between the lower and the upper length of the body. Most eunuchoids have genu valgum and a hyperextensibility of the joints, especially the phalanges of the fingers. Owing to the larynx remaining cartilaginous, the voice in the more pronounced case remains high and shrill. There seems to be a peculiar distribution of fat upon the body

of the eunuchoid, these being found in pads upon the mons veneris, hypogastric region, breasts, and outer aspects of the thighs. While the hair of the head is abundant, there is little or no hair on the face and body. The skin is delicate, pale, and velvety. The genital organs are quite hypoplastic. The penis, prostate and scrotum are very diminutive, and the testicles scarcely larger than a pea, or they may have failed to descend. But few cases of female eunuchoidism have been found. Both male and female eunuchoids are sterile. Falta reports a case which seems quite typical:

"Genitalia hypoplastic, as far back as patient can remember. Deposits of fat on the mons veneris and hips, which during the last few years have become more strongly developed. Has rarely had libido erections since the eighteenth year, but when such occur the penis becomes only about 3 cm. long. Has never had sexual intercourse. Recently, several pollutions. Patient is 169 cm. tall. Length of lower extremities (from ant. sup. spine of ileum to int. malleolus) 87 cm.; length of upper extremities (from head of humerus to end of third finger) 76 cm. Span width 184 cm., genu valga. Copious deposits of fat on the hips, on the outer sides of the thigh and on mons veneris. Mammæ not very rich in fat. No beard hairs at all. Abundance of hair on head. Hairs in axillæ sparse; pubic hairs present not very luxuriant, bounded above by a horizontal line. No hairs on the linea alba. No hairs on the thighs. Genitalia hypoplastic. Penis small, scarcely $1\frac{1}{2}$ cm. long. Each testicle about size of a bean, soft.

X-ray. — Sella turcica normal, the distal epiphyseal junctures of the radius and ulna, and the proximal of the first metacarpal phalanges are still open.

Leucocytes, 7,600 of which 46 per cent. are neutrophilic polymorphonuclear cells. Voice higher. Prominentia laryngea not palpable. Thyroid gland not distinctly palpable. Test for alimentary glycosuria (100 and 150 gm. dextrose) negative. Character: Silent, not communicative, somewhat shy. Intelligence normal."

The cause of eunuchoidism is apparently some perversion or absence of the function of the sex glands. It is quite possible that such may result from early traumatic or infectious disturbances of these glands. In considering eunuchoidism it is quite necessary that one should keep in mind such condition as infantilism in which the individual simply comes to a standstill in his development no matter at what stage of it may occur, and he therefore retains the psychic, physical, and sexual powers which he possessed at the termination of his developmental career. If this were at the pubic period he would not be an

asexual being; neither must the condition be confused with hypophyseal dystrophy, which is due to overgrowth of the pituitary, and while it manifests itself in obesity and asexualism, yet there is a distinct inhibition of the body growth.

Late eunuchoidism as described by Falta, Larrey, and Gandy presents a still more interesting study as showing that in an already matured organism in which all of the sexual glands have attained their full development there may be in early middle life or even sooner an arrest of development or retrogression of the external genitals and a corresponding retrogression of the sexual characters. Accompanying this change there appears the development of the fat cushions such as is noted in the early eunuchoid.

From the psychological standpoint, if from no other, the disease (as it is now termed) of eunuchoidism is interesting, as it offers some explanation for the existence of a peculiar type of mind sexually, which is so at variance with the commonly accepted type that it has been entirely misunderstood.

D. G. W.

ORIGINAL COMMUNICATIONS

THE DIAGNOSIS OF MYOCARDITIS*

By Wm. A. Geohegan, M.D., Cincinnati, Ohio

The physical diagnosis of valvular diseases of the heart has always been the source of great satisfaction to internists. The discovery of variations in the size and shape of the organ, the recognition of murmurs associated with or replacing the normal sounds, and the determination of the relationship of these murmurs to definite pathological changes about the valves of the heart have ever been regarded as tests of diagnostic ability. This deep interest in easily demonstrable lesions has unfortunately diverted attention from the more subtle but vital changes which are manifested chiefly by functional insufficiency. Ultimately the prognosis and treatment of all diseases of the heart, even those considered as essentially valvular, depends upon the condition of the myocardium. As there are no clinical symptoms and no physical signs constantly associated with myocardial changes, it is not surprising that a correct diagnosis is made in less than one-fourth of all cases, and even then it is a matter of luck rather than of skill. As a rule the only constant evidence of myocarditis is cardiac insufficiency, and this may be so slight that its presence must be inferred rather than demonstrated. Under such circumstances it is obviously impossible to determine the exact pathological condition present n any considerable proportion of cases. For practical purposes the diagnosis of myocarditis seems warranted in cases presenting either positive or presumptive indications of cardiac weakness for which no other adequate explanation can be found. Confirmatory evidence must be diligently sought and its value estimated by clinical observation.

In view of the insidious character of myocardial changes, the paucity of symptoms revealing their presence, and the consequent difficulty of their diagnosis, it is of great importance to discover the earliest evidence of functional impairment even though the morbid process thereby indicated is not invariably progressive or of serious import.

Real progress in cardiac pathology and diagnosis has followed the provisional acceptance of the myogenic theory of the action of the heart. It postulates rhythm as an inherent

---

* Read June 28, 1916, at the Baltimore meeting of the A. I. H.
Published also in the current number of the *Journal of the American Institute of Homœopathy.*

function of cardiac muscular tissue independent of the influences of associated nervous structures. The cardiac wall is considered to be neuro-muscular in character, but the rhythm of the heart may be maintained by its muscular fibres alone, even when they are isolated from the cerebro-spinal nerves or microscopic ganglia. All attempts to clearly differentiate the function of the neurogenic from the myogenic structures have proved futile, and there is no reason to hope for a speedy solution of the problem. Clinical experience, however, seems to warrant the application of the myogenic theory.

Recent researches into the physiology and pathology of the circulation have been made with the aid of complicated, cumbersome and expensive apparatus. It requires much time and especial training to obtain and interpret pulse curves with two of the more important instruments, the polygraph and electro cardiograph, and hence their use in general practice is almost impossible. However, it would be unfortunate if physicians failed to study and apply the more practical deductions of special investigators.

The myocardium bears the brunt of most diseases of the heart whether the morbid process is acute inflammatory, toxæmic, septic or chronic degenerative in type. It is worth while to seek for early evidence of structural changes in modifications of the rhythmic action of the organ. Embedded in and forming an essential part of the myocardial tissue are the evolutionary remains of the primitive or embryonic cardiac tube. One mass of this tissue, the sino-auricular node, is situated in the wall of the right auricle near the orifice of the superior vena cava. It consists of highly specialized muscular tissue, and nerve fibres derived from both the ganglionic and cerebro-spinal systems. Contractions may commence in any part of the heart muscle but this node seems to be the most excitable portion, and normally originates the cardiac impulses and also controls their rhythm. This "pacemaker" as it is termed, is influenced by the inhibitory action of the pneumogastric nerves. The impulses which begin in the node are conveyed by a neuro-muscular tract, the auriculo-ventricular bundle, to both ventricles. When from any cause the function or structures of the sinus node or conducting tract are impaired, the rhythmical sequential contractions of the whole organ are disturbed.

Arrhythmias may result from central nervous disorders transmitted by the vagi, from functional or structural changes in the sino-auricular node, from impaired conductivity of the auriculo-ventricular bundle or from more generalized organic changes in the musculature of the heart. There is great practical significance in the fact that frequent and persistent dis-

turbances of rhythm almost invariably indicate some degree of myocardial degeneration and in many instances antedate all other symptoms. Modern investigations seek to discern the nature, extent and even the exact location of these changes, their etiological relations and their influence on prognosis and treatment. Laboratory experiments have enabled us to understand many associated symptoms and to interpret the mechanism of their production. For this restricted purpose special instruments are not absolutely necessary. However, the sphygmograph, which had been condemned as merely an interesting toy because it did not reveal criteria beyond its inherent capacity, is now proving very useful in the study of disturbances of rhythm.

So-called sinus irregularities are rarely due to structural changes in the node itself, but as a rule they result from alterations of vagal tone. In this form of arrhythmia the contractions of the various parts of the heart are duly coördinated and the pulse beats are of equal strength. The irregularities occur in the diastolic intervals while the systoles remain normal, as can be easily determined by ausculation and the sphygmograph. The change in the rhythm is usually synchronous with respiration. Fever and exercise, by increasing the rapidity of the heart's action, lessen the duration of the diastolic intervals and cause the disappearance of the irregularities. This seems to explain the absence of sinus arrhythmia in acute myocarditis. When this type of irregularity first appears during convalescence from fevers, especially acute rheumatism, it may cause much apprehension. If, however, the pulse rate does not exceed seventy-five or eighty per minute, they are not of unfavorable import. Sinus arrhythmias usually occur in the young instead of older persons, in whom myocardial degenerations are most common.

Premature contractions, the so-called extra systoles, are due to occasional impulses which originate elsewhere in the musculature of the heart than in the sinus node. They occur in less than the usual interval and thus disturb the normal rhythm. The premature beats are deficient in force and are followed by a relatively long diastolic period. With due care they may often be discovered by ausculation or by palpation of the pulse, but sphygmographic tracings reveal many that would otherwise escape attention. Extra systoles indicate either temporary or permanent impairment of cardiac nutrition. They may entirely disappear when they are due to toxæmias, tobacco, coffee or tea, to intestinal putrefactions or focal infections. Sometimes they exist for long periods of time without any obvious ill health. At least four-fifths of all cases discovered are manifestations of

serious myocardial degeneration and are associated with mitral stenosis or diseases of the aorta.

Heart block indicates impaired conductivity of the auriculo-ventricular bundle which causes delay or arrest of some of the impulses that have originated normally in the sinus node. It is first indicated by a lengthened interval between the auricular and ventricular systoles. Later some of the nodal impulses fail to reach the ventricles and the pulse becomes absolutely irregular. This is not uncommon in cases of acute rheumatism. If one-half of the impulses fail to cause ventricular contractions a two-to-one block is said to exist. Other definite ratios may be established. In more advanced cases all sinus impulses may fail to be conducted by the auriculo-ventricular bundle, and the ventricles then originate and maintain an independent rhythm usually not exceeding thirty-five per minute. Cases of extremely slow pulse are generally of this character. Heart block assumes many types and complicates many conditions. When it is associated with attacks of fainting or epileptic form seizures it constitutes the Stokes-Adams syndrome, which almost invariably proves fatal in less than two years. Heart block, when appreciable by ordinary methods of examination, usually indicates serious degenerative changes in the general musculature of the heart, as well as in the conducting bundle.

Pulsus alternans is a result of impaired contractility of the heart as shown by the inequality of the force of its beats. An impulse of normal strength alternates with a weaker one, there being little or no disturbance of the intervals between them. Increased peripheral resistance and high arterial tension are usually factors in its production. The alternation of force is a forerunner of cardiac failure, angina and dropsy.

Auricular fibrillation is due to a total lack of coördination of the muscular fibres of the auricles, thus preventing any effective systolic contraction of their walls. The auricle not only fails to give any aid to the ventricle during its diastole, but the usual nodal contractile impulses are either blocked or pass to the ventricle with such irregularity as to cause the utmost lack of coördination of its action. The resulting arrhythmia well merits the designation delirium cordis. Auricular fibrillation is always evidence of serious myocardial degeneration. The ultimate prognosis is unfavorable. In some cases, however, the removal of still existing etiological factors, prolonged mental and physical rest, careful regulation of the diet, the temporary use of digitalis and kindred cardiac tonics, together with the continued administration of well selected constitutional remedies, may cause marked improvement, and even a fair degree of compensation may be established.

Many other varieties of arrhythmia are recognized. Two or more of the typical forms may be combined in a complex syndrome, the interpretation of which involves too many uncertainties and technicalities to be helpful in the present stage of our knowledge.

Arrhythmia is an important diagnostic indication of structural changes in the myocardium, but it is by no means a pathognomonic one. It is comparatively easy to exclude sinus arrhythmias, which are rarely persistent, usually occur in young persons and are synchronous with respiration. Premature beats due to toxic influences rapidly disappear upon removal of the exciting cause. In still other cases of this type there is probably some organic change, but it seems to be localized and not progressive, and hence it is not inconsistent with fairly good health. The remaining cases of extra systoles and other forms of irregular rhythm may be considered positive indications of more or less myocardial degeneration. Myocarditis does not always produce arrhythmia, and in its absence, a diagnosis if made at all, must be based upon somewhat vague and indefinite general symptoms.

Some degree of degeneration of the muscular fibres of the heart occurs in the course of all acute fevers and intoxications. Of the former, diphtheria, rheumatism, typhoid fever, influenza and acute septic conditions produce the greatest damage. Toxæmias, whatever their origin, cause some degree of myocardial degeneration. While in acute cases clinical recovery may appear complete, it seems almost certain that structural impairment of some fibres persists in every instance. Subsequent attacks of other febrile and toxæmic affections damage still other fibres. Even in acute rheumatism, when endocardial lesions alter the valves and give rise to easily appreciable signs, the musculature of the heart is invariably impaired, usually without clinical evidence. In all of these affections the myocardial lesions persist after all symptoms of the original disease have disappeared.

The diagnosis of myocarditis during acute febrile processes is always difficult and often impossible. Owing to the absence of positive physical signs it is inferential rather than absolute. Subjective symptoms are often obscured by the mental dulness of the patient. Presumptive indications are cardiac weakness out of proportion to the severity of the general symptoms, an increase of the pulse in excess of ten beats for each degree of fever, marked acceleration of the pulse from slight exertion, dilatation of the heart manifested by increased dulness on percussion, restlessness, a sense of oppression or constriction, cyanosis, and a faint systolic murmur. Fatigue on slight exer-

tion may be the only symptom. The pulse pressure as shown by the difference between the systolic and diastolic readings of the sphygmomanometer is abnormally low. Many irregularities of the pulse reported in acute diseases are in reality errors of observation being caused by subsultus tandinum. True arrhythmia is sometimes present. Heart block may be the result of an acute process, but it is more frequently due to an antecedent cardiac degeneration. In the later stages of very serious acute diseases graphic methods may reveal pulsus alternans, which indicates a heart action barely sufficient to sustain life — a poisoned muscle laboring to perform work of which it is scarcely capable.

Chronic progressive degeneration of the myocardium is the dominant factor in the diseases of the heart so common in the latter half of life, especially among the best and most successful men. It is the product of one or of a combination of many morbid processes. Syphilis causes a great variety of cardiac lesions which are too often overlooked. Chronic intestinal intoxications not only affect the heart muscle but aid in producing arterio-sclerosis and heightened blood pressure, thus overtaxing the weakened cardiac mechanism. Abuse of alcohol, tobacco, coffee and tea, by over-stimulation and their toxi-action, may produce the same results. Two toxic agents acting together cause myocarditis in a larger percentage of cases than one alone. Focal infections are a potent factor in the production of myocardial diseases as has been demonstrated by Rosenow and others. To be of practical value the diagnosis of myocarditis must include that of all still existing etiological factors. It may be impossible to cure the heart lesion but every effort must be made to limit its further progress.

The first discoverable evidence of myocarditis is often one or more of the arrhythmias previously described. In the majority of cases, however, an opportunity to study the heart by graphic methods is not afforded until more general manifestations of ill health have attracted the attention of the patient. For this reason general symptoms may furnish more valuable criteria than physical signs; they lead to an examination by technical methods and ultimately supply the basis for estimating functional capacity.

Breathlessness independent of any demonstrable pulmonary lesion is one of the earliest manifestations of myocarditis. It varies in degree from slight discomfort caused by exertion or emotional excitement to air hunger felt night and day. The dyspnœa may be paroxysmal, the exciting cause being problematical. It is at least partially due to mechanical interference with the pulmonary circulation. Acidosis resulting from de-

ficient oxidation of the blood determines the time of the seizure. The presence of Cheyne-Stokes breathing adds to the probability of myocarditis. One form of dyspnœa simulating that due purely to cardiac weakness occurs in young persons in whom there is a slight degree of dilatation, a functional murmur, well marked anæmis and sometimes a sinus arrhythmia. A blood count is essential to the differentiation of these cases. Treatment directed to the anæmia and the general constitutional condition relieves or cures the dyspnœa.

Pain is often a well-defined symptom of myocarditis. In many cases it is merely a discomfort, a sense of weight, heaviness or fullness in the cardiac region. If the pain is invariably induced by exertion and persists for a considerable length of time thereafter, it is indicative of serious myocardial weakness. If it is readily produced at one time while at another much effort is tolerated without discomfort, the danger of heart failure is not so great. True angina is always of serious import.

Faintness is often a symptom of myocardial weakness but it is by no means a characteristic one. A transient giddiness that is almost invariably induced by exertion may be due to heart block and the consequent disturbance of the blood supply to the brain. A more pronounced form of this type of momentary cerebral anæmia may cause temporary unconsciousness or even brief epileptiform convulsions.

Dropsy often results from heart weakness but it occurs in so many other conditions that it is of little diagnostic value. When it is present it is difficult to decide how much of the œdema is the effect of the back pressure from valvular insufficiency or orificial obstruction, and how much is due to deficient propulsive power in consequence of muscular weakness. The extent of the dropsy, the rapidity of its development and its behaviour under treatment are to be considered.

Dilatation of the heart is justly deemed a most important manifestation of myocardial weakness. Dilatation depends ultimately upon the muscular power of the heart and its relationship to the distensibility or rigidity of its diseased tissues. Fibrous degeneration of the muscular tissue and of the attached pericardium may render the walls so unyielding that they do not dilate under the utmost strain to which their impaired strength can subject them. Death may occur in such cases from cardiac failure without any evidences of enlargement.

However, dilatation does occur in the majority of cases of myocarditis whether or not there is any coexisting valvular lesion. Compensatory dilatation depends upon the location of valvular defects or orificial obstructions. The dilatation primarily due to cardiac weakness most frequently involves the right ventricle.

Yielding of the degenerated tissue about the mitral and tricuspid orifices may lead to relative valvular insufficiencies, and in consequence soft systolic murmurs may be heard.

Dilatation of this type often ushers in the terminal stages of chronic arterial hypertension. When the patient first seeks relief for cardiac distress the systolic blood pressure may be high, 180 m.m. or more, but it almost certainly has been much higher. Too often the high tension is considered the principal source of danger and vigorous methods are employed with a view to its reduction. The subjective symptoms of which the patient complains are really the first manifestations of myocardial insufficiency and hence depressing drugs aggravate the trouble. Dropsy soon appears, the resonance of the lungs may be impaired by congestion and œdema, the liver enlarges from passive engorgement, the urine becomes scanty and albuminous. Cardiac stimulants may give temporary relief, but if any lasting benefit is to be obtained the remedy chosen must be one adapted to the constitutional state of which the myocardial changes and consequent circulatory disturbances are manifestations.

In the present state of our knowledge a positive diagnosis of myocarditis is impossible in a large percentage of cases. With the development of newer methods of examination the probability of correct estimation of myocardial changes is constantly increasing. Of the utmost importance is the recognition of the fact that structural alterations of the muscular tissue are the dominant factors in all diseases of the heart and hence must furnish the essential therapeutic indications. Common sense as well as clinical experience dictates the treatment of syphilis, intestinal putrefactions and focal infections when they are present. All other etiological factors are to be eliminated if possible. The whole aspect of the treatment of cardiac diseases is altered by the view that progressive processes are still operative and may nullify all efforts toward amelioration or cure. The establishment of compensation is but a small portion of the problem; its maintenance involves the greatest difficulties.

At this time it is worthy of note that the most potent factors in the production of myocardial changes may exist for a long time without measurable alterations in force, frequency or even the rhythm of the heart. It seems logical to believe that if really curative remedies for these conditions are ever to be found, they too must be such as act deeply upon the structural elements of cardiac muscular tissue rather than the nervous regulatory apparatus. Such remedies are not to be condemned as worthless because they do not at once cause functional disturbances easily demonstrated by the usual pharmacological experiments. Cardiac stimulants and depressants which do

produce such obvious effects have become well nigh universal remedies for all diseases of the heart. Their usefulness at some stage of many cases is beyond question, but their irrational abuse is appalling. Indiscriminate stimulation of degenerated muscular fibres is to be condemned. The myocardial changes so invariably present are not the result of localized processes, but are the manifestations of constitutional states which are fully represented only by the totality of all symptoms of the individual. The true basis of the therapeutics of myocarditis must be the pathogenetic and symptom-similarity of the prescribed remedy. The value of such drugs for diseases of the heart can not be predetermined by their measurable influence upon the force and frequency of its action. When this fact is clearly understood, and not until then, may we expect a greater degree of success in the remedial treatment of cardiac diseases.

THE PRESENT STATUS OF ROENTGENOLOGY

By C. Winfield Perkins, M.D., New York City

The advancement of roentgenology has been so rapid in recent years that it has become recognized as an indispensable aid in the diagnosis and prognosis of many diseased conditions. Its discoveries in the realm of diagnosis have been so startling and even epoch-making that many hospital superintendents and not a few physicians and surgeons have failed to keep pace, the last five years, with its wonderful progress. Superior technical methods have been developed and many new radiological signs have been found. Early diagnosis is the goal which the progressive physician of modern medicine is striving with superhuman efforts to achieve. Earlier diagnosis means and leads to more successful treatment than any other method.

The object of this paper is to bring before the medical profession the necessity that a roentgenologist be a man of the broadest scientific training in medicine. One cannot but feel that he must be trained as a skilled diagnostician, anatomist and pathologist. For what are X-ray shadows other than living pathology and anatomy?

A period of years as a general practitioner in medicine and surgery would seem a necessary prerequisite for the training of a roentgenologist. A broad medical training from every angle is indispensable. I believe and positively claim that there is no broader field or specialty in medicine than radiology. There is hardly a branch of the profession in which at times the roentgenologist's decision is not a great factor of diagnostic value.

A review of our medical journals at any time will convince even the most skeptical of the value of this method of diagnosis as seen in the many articles illustrated with radiographic findings, which show abundant proof of the almost absolute dependence of the general profession on radiological diagnosis and treatment.

Originally, in its embryonic days, roentgenology seemed to have a very limited sphere, extending probably to nothing more than the location of a foreign body or the diagnosis of a fracture, both of which were in not too dense a structure. What at that time seemed marvellous has now sunk into insignificance when measured up to the modern researches of the science. Its discoveries seem to the superstitious to smack positively of the uncanny, while to the scientist it portrays a realm of fascinating possibilities of investigation that I believe cannot be duplicated in any other field of medicine. It is a distinct method of diagnosis that is truly alluring to the temperament of a person other than the absolute material.

The primitive X-ray man was usually a photographer, electrician or resident physician who had acquired some knowledge of the physics and technic of X-ray work. His business was to "take pictures" while the surgeon or the physician diagnosed the plates. Work was done in a careless and unscientific way. Many distorted conditions and poor diagnoses naturally were the resulting factors of crude methods, and not too often was the X-ray lead into disfavor by such technic. Fortunately at present as a result of many patient years of research and coöperation we are in possession now of a fairly perfect technic. A continuous evolution has taken place in roentgenology, so that it is impossible for the ordinary mind to grasp to the full the attainments of modern roentgenology, radiology.

As previously stated, I believe a competent radiologist must not only have an exceptional training in medicine in its various branches but added to that training he must acquire a special training in photography and electricity and with that training associate a special ability in the interpretation of the many types of shadows, their normal and pathological significance as visualized on the fluorescent screen and radiographic plate. It does not require much ability to see that an almost perfect knowledge of anatomy supplemented by physiology and pathology should be an absolute requirement of the radiologist's armentarium. The deductive process necessary to differentiate various normal and pathological shadows is very often a personal quality of mental coördination, and if the student fails in developing such ability, it is impossible for him to become an expert in roentgenological diagnosis.

The association for a time at least with the well known Continental observers as well as the men of prominence in America of necessity gives the student a broader training in the science and also the possibility of entertaining an unbiased viewpoint.

When many of the most serious operations which often involve the question of life and death, frequently rely entirely on the X-ray interpretation and diagnosis, may I ask why employ other than those best skilled in medical and surgical training for determining whether operative or a non-operative measure is necessary?

In many instances, the laity are demanding a complete X-ray examination before operative procedure, and I regret to say the suggestion is often made by the patient to the family physician that Roentgen methods be employed, when the advice to have proper significance should have come primarily direct from the physician himself. The above condition unfortunately exists, I believe, to the detriment of the profession.

The X-ray report should not at any time be considered as an absolute diagnosis but should be viewed simply as contributory evidence toward a diagnosis; this contribution to be carefully collaborated with various other findings, clinical and laboratory. When this view is taken of the roentgenologist's position there will result a more perfect understanding and conjoint action so ably illustrated in the Continental clinics and the Mayo clinic of our own country. Team work will then be an actuality.

An X-ray report is always based on the various changes from the normal size, position, form, outline, functional abnormalities, and the density of the anatomical parts examined. For any hospital or any group of physicians to expect other than a trained mind in all the branches of medicine to make a report or diagnosis would seem to be well nigh criminal.

Would it be fair of the surgeon to give an expert opinion on a case of insanity or to ask an alienist to express an opinion on the advisability of having a Billroth 2d operation performed? Therefore is it fair to the patient or even to the X-ray technician to ask him to give an interpretation of an X-ray plate?

The public should be informed of the expense of maintaining the rapidly improving X-ray apparatus, and proper fees should be accordingly arranged not so much per plate but the skill and the training of the roentgenologist should be considered.

The relation of the radiologist to the hospital and the associate staff is a matter frequently discussed and necessary to be determined. If he is an expert he should be classified as any physician doing special work. Due partly to the rapid

progress of roentgenology, it has been difficult until recently to identify the roentgenologist.

It is only in recent times that any systematized post-graduate work could be obtained in radiology in other than the Continental clinics. Fortunately such a condition no longer exists, for much excellent and practical work can now be obtained in the large medical centers of this country. Courses in medicine abound, but it is only recently that any definite work either in fluoroscopy, or X-ray technic and plate interpretation could be obtained in this country. As so often in the past, much of the scientific investigation has been left to the European observers. This unfortunate war will of necessity swing the pendulum of things scientific toward the New World.

The laboratory report should be written and sent to the ward as part of the case history and should be considered in the nature of a consultation with other members of the staff. Much of the excellent diagnostic work of the Continental clinics in France, Germany, and Austria has been obtained by the close coöperation and the perfect team work of the various members of their respective hospital staffs.

The finished plate should be recognized as the record of the patient's condition and legally belongs to the hospital or to the laboratory of the radiologist. No one should have access to the plate library of the hospital but the man in charge or some of his assistants. If it is necessary for the plate to be sent out to the operating room or to any other parts of the hospital for teaching or demonstration, it should be signed for and a record made of its removal. An accurate record of each plate, its number, place, date and diagnosis should be retained in some type of card system, and when it is necessary for information or research work it should be of easy access.

In reference to the medico-legal aspect of cases I believe the plate should be identified by the roentgenologist himself and not by any other medical man who may know of the case.

One of the reasons for this paper is a plea for the general recognition of the roentgenologist as an expert who has devoted much of his energy and financial resources to acquire a special training in this fascinating branch of medicine. I also believe it is his duty to use his general medical and surgical knowledge with his radiological information, the same as any other specialist either in general medicine or surgery, and that in close coöperation with the clinician and the surgeon.

234 Central Park West.

HOMŒOPATHIC VERIFICATIONS FROM THE LABORATORIES*

By W. H. Watters, M.D., Boston

Dr. Hanks has done me the honor to request me to prepare a symposium upon homœopathy as viewed from the laboratory. This honor is deeply appreciated. In response to the invitation, I have been so fortunate as to secure the coöperation of some of our best laboratory experts. Each has been asked in substance this question: — Has your laboratory work or that of others influenced in any way your belief in homœopathy?

The doctor has further requested me to first answer my own question, despite my assertion that I had already done so at a previous meeting of the Institute. This is my excuse for the otherwise apparent egotism of such a repetition.

Have the results of laboratory investigation during the past sixteen years altered my opinion of homœopathy? Yes, most certainly. How? To explain this requires some personalities. Born the son of a physician who was a graduate of a non-homœopathic college, but who later became a homœopath by conviction, my education was obtained in a university where both by tradition and practice homœopathy was taboo. Later, a course in an homœopathic university with all possible time devoted to laboratory work left me at graduation an honest skeptic concerning remedial medication. During the intervening sixteen years many new discoveries have occurred bearing upon the explanation of the curative action of various agents. These discoveries, and they have been not a few, have changed the sincere doubt or question of years ago into a distinct belief that the phrase *similia similibus curentur* expresses a great truth, one of much wider application than was recognized by its first prominent adherent, Samuel Hahnemann.

This opinion has been reached purely by laboratory and allied study and is entirely independent of the results from clinical practice, a department with which I have practically nothing to do. May I explain my reasons for this opinion by asking you to ascertain with me how far our peculiar homœopathic tenets are capable of absolute laboratory demonstration. As I stated before, these tenets in brief are:

The single remedy
The proving of drugs
The size of the dose
The frequency of repetition
The law of cure.

---

* Read before the Bureau of Homœopathy, A. I. H., at Baltimore, June 27, 1916. Published also in the *Journal of the American Institute of Homœopathy*, October, 1916.

The single remedy. Modern physicians are practically ignorant of the polypharmacy that was so universal in the time of Hahnemann. Ten, fifteen or more drugs were compounded in the most nauseous messes and given for the most fantastic conditions. No one could foresee their effect upon the well, much less upon the sick. Modern laboratory study shows definitely that while we may ascertain the effects of a series of drugs taken singly into the body, no one can foretell what the effect will be when those drugs are mixed. That effect may be a combination of them all in various degrees, or it may be something entirely new and unexpected. It certainly cannot be relied upon or forecast. Adherents of all schools or divisions of medicine are wisely placing emphasis upon the value of the single remedy. And this has undoubtedly been largely brought about by homœopathy.

The proving of drugs. In this department of medicine our school has been a pioneer. Study of the effect of drugs upon the sick has, of course, been universally followed, but beyond reports of occasional poisonings the deliberate observation of drug effects upon the healthy human being has been notable by its absence in non-homœopathic circles. In the eager pursuit of drug proving, it has happened that not a few observers in their over-enthusiasm have recorded results not at all due to drug action with some resultant confusion, but this in no way vitiates the vital principle. At present, the importance of drug study is recognized by all schools and is being more and more followed. I can imagine nothing more strictly scientific than was the monumental proving of belladonna conducted by Dr. Bellows some years ago, with results familiar to you all. Such work commands the respect of all honest truth seekers, however much they may decry or disdain some of our early so-called "provings" made by sincere but idealistic or over-enthusiastic physicians.

The size of the dose. No one of our peculiar tenets has been so universally accepted as has this formerly much ridiculed one. Probably the majority of you have used an average dose of from the second to the sixth decimal dilution. You older members have been repeatedly told by your so-called "regular" friends that a sixth dilution could not contain sufficient medicine to in any way influence one's physical being. Now, these same friends are using these same attenuated doses and not infrequently find even these too great. The introduction of vaccine therapy and Wright's study of the opsonic index have abundantly demonstrated the efficiency of the minute dose beyond any possibility of dispute. Not long ago a very eminent member of the dominant school in Philadelphia took all of us immunologists

to task for using too great doses of tuberculin in tuberculosis. We use as routine amounts representing about the 7x or 8x dilution while he advised not more than the 10x or 11x.

The frequency of repetition. This is no longer a debatable ground, thanks to the work of the past decade. All now agree that the ideal way of aiding nature is not to see how much of a remedial agent she can stand at oft repeated intervals, but to endeavor to ascertain how best to stimulate her recuperative powers by minute amounts administered at infrequent intervals. Once a week is a very common interval between treatments in these days of immunization.

The law of cure. Upon the phrase *similia similibus curentur*, homœopathy is to stand or fall. The other tenets valuable though they may be are merely subsidiary ones. Should likes really be treated by likes and if so, why should they? Fifteen years ago this question could not be definitely answered, but since then much light has been thrown upon it. Without taking too much time with detail, allow me to cite some actual facts capable of abundant demonstration.

Tuberculosis is a disease with which we are all familiar. We say it is caused by the bacillus tuberculosis, but really mean that the symptoms are due to the poisoning of the body by the toxins produced by those bacilli. Let us obtain some of the toxin by laboratory methods, altering it slightly perhaps, and repeatedly introduce it into a healthy animal. Constitutional symptoms will follow, symptoms identical to those due to the continual absorption of the toxin from an actual active focus, and if sufficiently long continued the animal will die of a true toxemia. Now, let us take an actually infected animal or group of animals, and give to them under proper conditions and at appropriate intervals suitable amounts of tuberculin. What is the result? Instead of progressive decadence to fatal results, a gradual improvement to complete convalescence will follow. If this is not an illustration of "*likes cure likes*," I do not know what can be. The same may be said of many other infectious conditions. Let us study these a little more carefully. We find that the degree of resistance in an animal or a person is below normal when thus infected. If the toxemia is too great this deficiency progresses to fatal results. If less severe, nature reacts and the degree of resistance becomes so great as to finally overcome the malady, and we call the individual convalescent. Taking these same toxic substances and applying them to the healthy we can at will increase or decrease the degree of resistance dependent entirely upon the size of the dose. Yes, you say, but the case is not truly analogous to homœopathy. Personally, I believe it to be entirely so. These toxins, what are they but drugs?

We use extracts of the higher members of the vegetable kingdom and call them drugs. Why not others from the lower orders? Truly, they are usually administered hypodermically but this should make no difference, and in fact some of our men use them by mouth. Let us leave these products thus briefly considered and ask if the same phenomena have ever been noted following the use of distinctly homœopathic preparations. The answer again is "Yes." From London, from Ann Arbor, and from Boston have come reports of just such results obtained by laboratory investigation. Phosphorus, echinacea, hepar sulphur, baptisia, mercury and other drugs have been definitely demonstrated to have in certain instances at least definite immunizing forces. Time forbids their detailed mention here. Increased resistance to tuberculosis and to staphylococcus infection has been definitely produced by specific antibody formation while other antibodies have been demonstrated that produce agglutination or hemolysis entirely as a result of drug activity.

How much further this may go on no one can at present foresee. Suffice it to say that in numerous instances the law of similars has been abundantly demonstrated. A still more significant fact will be found when it is noted that during the entire period of new discoveries nothing has been brought forward that disproves or contradicts this same law.

At the present time the efforts of a large part of the medical world are directed toward the production of immunity. The explanation of artificial immunization is entirely included in the law of similars if we read it, *Let likes be treated by likes.* We immunize against typhoid by administering a substance similar to that which in different dosage would produce the disease. The same can be said of anthrax, of staphylococcus infection, of streptococcus lesions and many others.

We similarly mmunize against some particular headache or other series of clinical conditions by administering a substance capable of producing similar conditions. One we call vaccine therapy; the other, homœopathy. Wherein lies the difference? We believe there is none in the essential underlying law. Immunity is the name of the goal striven for; homœopathy the name of the road to that goal.

PHENOL IN THE TREATMENT OF ACUTE POLIOMYELITIS*

By Wm. F. Baker, A.M., M.D., Philadelphia, Pa.

The classification of this disease into the group of infectious diseases is a decided advance in medicine, and it will incidentally reduce the toll of cholera infantum, a generic term used to cover all deaths among children under two years of age, for notwithstanding the hottest summer in 22 years, the percentage of infant mortality from gastro-enteric disturbances received but little attention. This classification will be a boon to children, owing to the fact that more scientific diagnoses will be made and their symptoms more accurately studied.

After a study of the epidemic in the City of New York for a long period of time, four striking facts were apparent:

1. The undoubted value of the quarantine.
2. The value of cleaning up the food supply.
3. High percentage suffering from permanent paralysis.
4. High mortality rate as to life.

I believe the mistake has been made in the time lost awaiting a pathological entity before therapy. This I consider a common error in modern medicine and leading to chaos in therapy and a loss in public opinion, whereas the observations of a clinician are very often set aside when the public service rendered by that clinician has been of undoubted value.

Therapy must be founded on public service, as it is not compulsory. A combination of the two would be ideal therapy.

From a neurological standpoint, four types of the disease have been presented in this epidemic:

1. Abortive, perhaps the most dangerous because it is so liable to be overlooked.
2. Bulbo-spinal type.
3. Cerebral and Meningeal type.
4. Bulbo-Pontine type, characterizing this epidemic with a decided fattening of the face and no other muscular paralysis.

The mortality rate standing as it does at 29 to 30% does not alarm us as much as our inability to treat convalescents, for with a resultant paralysis in 83% of cases, we shall have on our hands from this epidemic perhaps 30,000 cases, and not two per cent of our hospitals able to take care of convalescents, because of lack of physical departments, which must do the greater part of the work on these unfortunates.

As a conservative policy, it is better to permit therapy to remain in the hands of the experienced clinician until a patho-

* Read before the State Homœopathic Medical Society of Pennsylvania, September, 31 1916.

logical entity is discovered in the laboratory, then to be given to the clinician who is broad enough to accept entities in investigation. A brief view of the conditions that have been observed during this recent epidemic will give you a comprehensive knowledge of the condition. Contrary to most ideas, the onset is insidious in the majority of cases, and varies from a slight fever and malaise to severe convulsions. A valuable sign early is the "muscular rigidity which can be classed as a hypertonicity" rather than a "spasticity" associated with irritable reflexes.

Usually within 48 hours or even less — 24 hours — and in one case six hours, a certain *definite paralysis* makes its appearance in the *hypertonic muscle*. The paralysis is not progressive, usually of a monophlegic type or paraplegic.

It is to be regretted that very often the first inclination towards a diagnosis must come from the parent, who notices "that the child cannot use an extremity."

The most common seat of lesion is in lumbar, then thoracic cord, and in severe cases, especially in adults in bulbar nucleii, and in one case reported, evidently in the medulla and pons. At this stage, the reflexes are lost, and this will suffice at times to differentiate cortical brain lesions or basilar meningeal lesions not of the true specific type. In the early history of the present epidemic it was my misfortune to observe an abscess of the middle ear confused with acute poliomyelitis, and death resulting from lack of attention to this detail of examination, or at least the attending physician would have felt relieved had a mastoid operation been performed instead of transmitting the child to the municipal institution.

Early also, we have the *reaction of degeneration* showing itself, and given an increased galvanic reaction with a corresponding diminution in the faradic reaction in any case of suspicious nature, one has gone a long way in the solution of the diagnosis. The electrical reaction plays a most important role in the diagnosis of this condition, and one cannot well prognosticate concerning these conditions without a thorough knowledge of electricity.

The stages, if you please, then are the *electrically* given —

1. Onset (Diminished Faradic) (Increased Galvanic Reactions).

2. Complete first stage: reaction of Degen. Complete, Climax Paralytic.

3. Disarrangement of these reactions either way, Atrophy or Recovery. In my experience the prognosis depends solely on the disarrangement of these reactions, for if the reaction of degeneration be complete and lasts for a period of four weeks,

personally I would hold out little hope of recovery from the atrophy by gradual development changes which are necessarily slow. The rapid disappearance of the galvanic irritability is a favorable sign.

As to *etiology*, I believe that materially different views will be held after this epidemic than now exist, for it has been recognized that infection of the cord may show different forms with and without atrophy, contractures and paralysis.

True it is that many of these cases give a history of colibacillus infection and also history of chilling the body after a period of heat. This has been especially true of the climate here in the Eastern States. The preponderance of a low temperature in the direction of the wind when the diurnal temperature has been over 87%. It is reasonable to assume that such climatic conditions influence the disease.

In 1888 Bacelli read a paper before the Congress of Medicine in Rome setting forth the value of Phenol in tetanus. Prior to this time he had used the drug on 600 cases of neuralgia and noted what appears to be the best unintentional homœopathic proving of the drug to my knowledge, and the librarian at the College of Physicians in Washington is unable to find any literature bearing on the treatment on Infantile Paralysis where this drug has been used.

After some difficulty I was able to have translated several of the lesser writings of this investigator of Phenol, and verified from the translations what seemed to me to be a homœopathic proving of the drug and suggestions for its use in an attenuated form in case of neural irritation, both peripheral and spinal. The results from the study of the cerebral symptoms do not as yet give us much information. It was found that after the administration of the drug for certain painful affections of the nerve and for certain spinal infections, symptoms were observed with such regularity that they at least from the homœopathic standpoint ought to bear inspection. Dr. Clarence Bartlett has given us the best monogram in the English language on the subject of the crude drug in solution. These observations differ somewhat in that the drug is triturated thoroughly with pure glycerine before the diluent distilled water is added. Bacelli's success in the treatment of neuralgias was brilliant for his time, and the first cardinal symptom observed was the property of the drug for diminishing reflex spinal activity. He further declared its value as a sedative to spinal lesions of the irritative variety, and further exploited it as an antiseptic, removing many of the toxines that were responsible for these neuralgic affections. Shortly after its use in large doses (60 gr.) he noticed marked albuminuria, claimed that it coagulated albumin, was slow of

absorption, but was rapidly eliminated and had developed marked symptoms of motor type of spinal irritation associated with albuminuria and gastro-enteric symptoms.

He then concluded to try the drug well diluted with water, and noticed that diluted solutions were incapable of coagulating albumin, were readily absorbed, as readily eliminated and were without cumulative action. Likewise he observed marked antidotal power of the dilute acid on tetanus toxin. This was perhaps the greatest good that his experiments did.

Personally I have used 241 grains of the dilute solution in 24 hours without the slightest trace of albuminuria in a case of tetanus under observation in the wards of the Hahnemann Hospital of Philadelphia. The symptoms resulting from the overdose of the drug during Bacelli's experimentation were markedly spinal and gastric, and the absence of these symptoms in doses as large as 241 grains clearly proves that in an attenuated state the acid is liberated and eliminated rapidly. That the trituration of the crystals favors their tolerance can also be argued.

It was then upon these terse facts that the drug was suggested in its homœopathic use in an attenuated form where "spinal depression" was the cardinal symptom, as it is in infantile diseases. According to symptoms the drug must anticipate the paralysis when "muscular hypertonicity rules" as is found in some cases of infantile paralysis. In some cases the symptoms resemble early tetanus. This homœopathic principle of action would permit us to anticipate a spinal infection and, I believe, save valuable time.

Bacelli also observed a variation in the electrical reactions in patients taking large doses of Phenol.

The marked hypersensitiveness of all nerves of special sense also was observed by Bacelli.

The gastric symptoms were those of nausea, vomiting and marked constipation.

A complete review of the translations of Bacelli's writings will reveal perfect pictures of the cases as we found them early in this epidemic, of course before paralysis had set in.

Bacelli used mostly hypodermic injections, but the paralytic phenomena are being studied after the experiments of Porter, who after the lesions had been localized, injected carbolic acid at or near the point of localization into the spinal canal.

The intravenous injection and the injections above the diseased cord into healthy spinal tissue, also the cerebral injections of brain emulsion directly into the brain substance, offer us further grounds for study that we cannot take up in this short paper, but gathering from all we have a most complete

symptom complex such as has been presented in our recent epidemic, and in lieu of a better drug, — and here I ought to mention Belladonna in 3, — Phenol covers in its totality from an unintentional proving a complete case of acute spinal infection resulting in paralysis.

Of course where the reaction of degeneration is complete and delicate nerve tissue has been replaced with connective tissue, the nerve ceases functionating, the paralysis must be permanent. The symptoms of Phenol call for its early use.

It is fair to assume that Bacelli unintentionally proved Phenol, and gave us valuable data as to its therapy when applied in an attenuated form.

He says there are three indications to be met in spinal infection;

1. To encourage free elimination and thus favor the withdrawal of toxin from the already infected areas.
2. To prevent further infection.
3. To counteract the effect on the cells already infected.

The first indication is met by sweating and diaphoresis which usually is present, and the whole picture of the provings of Phenol so closely resembles the epidemic in its present form that one has a totality of symptoms corresponding to the pathological picture of infantile disease when the toxine acts on the cord and medulla.

Owing to the symptom similarity, more as an experiment, Phenol was tried by mouth with gratifying results in the control of fever and the early muscular tonicity. There was a quick response in the reduction of fever within 24 hours, and in many cases complete cessation of the vomiting.

Within 48 hours many of the cases had lost their virulence, although paralysis began to show, but where at the beginning there was an extensive hypertonicity, indicating an extensive paralysis, perhaps only an extremity would eventually suffer.

At times it was hard to distinguish between this remedy and Belladonna, for Belladonna was the simillimum for many of the cases, and on more than one occasion, the surprise of the Medical inspector of the Health Bureau was evident on his second visit to note the improvement in the case.

That Phenol is a positive aid to elimination when given in an attenuated form cannot be denied, and it is because of its rapid elimination that even children can stand large doses.

During our observation through the greater part of the summer, the results have satisfied me beyond any claims made by the serum.

Method of use:

Preparation: —

Pure crystals of Phenol (Merck's) were weighed off to make the required solution. These were placed in a wedgewood mortar and a large pestle used for triturating. The volume of the diluent was made up of one-third glycerine and two-thirds distilled water in separate containers. The glycerine added a drop at a time, while triturating, and then water, giving a perfectly clear solution equivalent to our centesimal trituration of the drug. Dr. Borneman advises me that this is a trituration and not a dilution.

This is administered to the patient well diluted with distilled water beginning with five drops hourly during the active stage of the disease, increasing the amount daily up until the fifth day, watching carefully the urine twice daily for quantity and albumen.

Continuing the increase until symptoms are controlled, then reducing the dose down to one half of the original high dose and continuing for a period of ten days, the criterion being the fever and gastric symptoms. The solution should be made fresh daily and tested as to its reflection and refraction of light, discarding any specimen that does not remain clear.

In conjunction, the following medical methods were used: Cold affusions of the head by means of compress saturated in water at a temperature 40°, as these children do not take kindly to the ice bag. Sponging of the entire body with water at a temperature of 30° to which has been added alcohol and a few drops of Phenol pure. The sponging is done without exposing the body, for having the bed clothes suspended on barrel hoops, the nurse can readily introduce her hand under and sponge off part of the body at a time. During the first 24 to 36 hours of all cases continuous enteroclysis by the Murphy position and drip in which was used Phenol solution, one drachm of the 1% in two quarts of water at a temperature of 90°. A high enema of glycerine and water was used to clear the bowels before beginning the treatment. This can be used in the presence either of diarrhœa or constipation.

Nursing. — Much good depends upon a good neurological nurse both for patient and family, as also a darkened room with sound and lights excluded, well aired, and the patient clad in light bed clothing. The patients have a tendency to lie on the paralyzed side; the nurse is instructed to change the position of the limb and body, frequently taking the precaution to alter the position of the affected limb, and if necessary to support the limb in the direction of action that those affected

muscles would occupy. Observers have claimed this to lessen atrophy.

Electrical treatment is not begun until the cessation of the fever.

DATURA STRAMONIUM*

By M. M. Fleagle, M.D., Hanover, Pa.

The Datura Stramonium, Thornapple, or "Jimson Weed," belongs to a large and interesting family in which there seems to be no "poor relations."

It is usually found growing in profusion where there is most filth or waste, and there would be little wonder if it were adapted to diseases derived from the same source. It is truly a weed of civilization, and the Indians named it "The White Man's Plant," in allusion to its clinging to waste heaps, near the abodes of civilized man.

It is an old remedy, and was first proven by Hahnemann. Our tincture is made from the powdered seeds. Many cases of poisoning are on record, but goats eat the leaves with impunity. Cows are not much affected by eating the plant, but the milk becomes poisonous to children.

Stramonium, in actual practice, is not used nearly so much as it ought to be, principally because the majority of us do not understand its true nature, and give Belladonna as a routine remedy, when Stramonium would fit the case far better, if we only knew.

My principal object in selecting Stramonium as the subject of this paper, is to bring forth, in this time of need, a remedy which will save many lives, and much affliction, for many children now suffering from that dreaded disease — infantile paralysis. We homœopaths have such rich treasures which have lain untouched for years, that it is time we take such steps as will show the world that we have a system of drug therapy the like of which cannot be excelled by any known methods, scientific or otherwise, up to the present time. Right here I will say that I believe homœopathic remedies can and will conquer infantile paralysis, if properly prescribed, and of all these remedies, Stramonium stands at the head. A careful study will show its almost complete homœopathicity to the clinical symptoms of the disease, as noted by many observers, and by text-books generally. I fully believe that if Stramonium were prescribed instead of the routine Belladonna or Gelsemium, we should save many more lives.

---

*Read before the Pennsylvania State Homœopathic Medical Society, at Reading, Sept. 13, 1916.

The reason for this is that Stramonium is a far deeper acting drug than it is usually thought to be; in fact, it stands almost on a par with Silicea and Sulphur. I want to emphasize this fact, that whenever you prescribe Stramonium correctly, in a case of brain disease, *remember* that you always have a deep seated, serious trouble underlying the symptoms, and such a trouble infantile paralysis has shown itself to be. Let me instance the depth of action of Stramonium along this line: — there is a class of cases coming on from suppressed ear discharges for which the allopathic physicians have no remedy, and they give them up at once. The discharges from the ear cease, a basilar meningitis comes on, and there is awful pain through the base of the skull and in the upper spine; the forehead is wrinkled, the pupils are dilated; the eyes are glassy and staring; there is scarcely any fever and there may be a history of some mastoid trouble, or necrosis of some of the bones about the ear. Now there will be present also one of the chief characteristics of Stramonium (one which no scientist can explain), viz: — "The patient is afraid in the dark, wants a light in the room, yet he cannot stand a bright light" — so this patient insists on having a light in the room, but turns his back toward the light, nor does he want to be alone. *He wants light and company, but cannot stand a bright light.* I think you will all admit that you have quite a serious condition here, but Stramonium has saved lives under just these conditions. I have seen a number of cases also of suppressed ear discharge, brought about by the improper use of Hydrogen Peroxide, in the hands of unskilled or ignorant physicians, cured by Merc. viv. 200, thus averting a serious operation, so it will be well to remember Merc. viv. also in relation to Stramonium in these cases.

There is another characteristic to which I want to call your attention, viz: — "Painlessness with most complaints." It is well to remember, however, that Stramonium is useful in high grade inflammations with suppuration, and is capable of carrying them through like Merc. viv., Hepar, Sil., etc., but in these conditions there is, many times, most excruciating pain. Personally I think the idea of "Painlessness with most complaints" was gotten from the fact that the chief use made of this remedy by most practitioners is in manias and certain nervous conditions, which conditions are not commonly associated with much pain, although in low types of fever we find, for instance, "retention of urine without pain," which reminds me of another condition with which we are frequently confronted, that is, — old men cannot pass urine unless they strain continually. If they stop to take a breath the urine ceases to flow. Try Stramonium.

I do not think that Stramonium has a marked periodicity. Remedies, like diseases, have a certain "gait," as it were, and we are accustomed to think of Belladonna, Hyos., and Stramonium as the chief members of the *solanaceae*, whose "gait" is similar, but as a matter of fact, there is a considerable difference. With Belladonna you get the idea of intensity — diseases coming quickly and going quickly, like a *cyclone;* with Stramonium you also have great violence and intensity, but more like a mighty earthquake, which rocks the very foundation of things, i.e., Stramonium goes deeper into the economy, *and always has a history back of the symptoms.* It may be syphilis, sycosis, or psora, but always a history. Hyoscyamus stands third, with the least fever and the least violence, although I might class it as a sort of "therapeutic tadpole," i.e., mostly head. In this connection I think the observation of Talcott is quite apropos. Commenting on the delirium of Stramonium in comparison with some other remedies, he says: "Now remember this group of facts: Bell. is fierce and brave; Stramonium is wild and cowardly; Hyoscyamus is jolly and companionable; Veratrum alb. is hopeless and despairing, or wildly plaintive, beseeching for his salvation, which is apparently lost."

Another peculiar symptom, quite characteristic, is that the Stramonium patient cannot look at water, a mirror, into the fire, or at anything bright. It brings on convulsions, or a sensation of choking. There is not only fear of water, like Belladonna, Hyos., Canth., and Hydrophobinum, but even hearing water run produces peculiar symptoms. Hydrophobinum has cured "Involuntary discharges of urine and stool when hearing water run." These things would naturally lead us to think of Stramonium in that dreadful disease, hydrophobia.

You will no doubt notice that I do not touch upon the mental symptoms to any extent, principally because I take it for granted that most of you are familiar with them. If not, study them carefully, as they are most important.

"Vomiting — worse when raising the head from the pillow," might also make us think of Bryonia alb., but this vomiting is also worse from a bright light. Another thing that may stand you in good stead sometime is this: — "Convulsions, *with consciousness.*" Now this is rather unusual, at least in my experience, and few remedies have it.

Stramonium has many convulsive, and especially, *spasmodic* symptoms, and probably every asthmatic person in the world has at some time tried smoking Stramonium leaves, either alone or mixed with nitre.

The laying of Stramonium leaves on galls and ulcers, produced by ill-fitting collars, on horses, is an old and well known

remedy among countrymen. It is a very useful remedy to know in the treatment of chorea and stammering (Bovista).

During delirium the Stramonium patient sees mostly dark or black objects, especially black dogs, or bugs, etc., and the hallucinations are much more real than in Hyos. Stramonium is very useful in convulsions produced by fright, especially in fright from fire or from animals, — convulsions in which the most of us would give Belladonna or some other drug.

A peculiar and not very common symptom, found under Stramonium, and to which I wish to call your attention is: — "He feels very large, or as if some part of his body were much larger than the other, *or as if he were double.*" This last symptom occurs many times in the delirium of fevers, and is found also under Baptisia, Petroleum, and Thuja.

Stramonium is, above all, the remedy "Afraid to go home in the dark" — primarily, *because he is afraid of the darkness*, and secondarily because he *cannot walk in the dark*, so you see he is just like a patient suffering from locomotor ataxia, and you will again note its action on the spinal cord. Of its special action along this line I shall speak in a "Monograph on Infantile Paralysis" which I am preparing.

In conclusion, I want to say that Stramonium is adapted to young, plethoric persons, with light hair (similar to Bell.), and while there is no marked periodicity, the patient is generally worse at night and in the morning; also worse after sleep, like Lachesis, Apis, Opium, Spongia, etc.

The patient is afraid in the dark; wants the light, but is aggravated by a bright light, or any bright object, and is worse in the sunlight. *Worse when alone, wants company*, but is worse among strangers.

The patient is predominantly *better* when lying on the *left side*, or on the painful side. The paralysis is generally painless, and on both sides of the body. There is a great choking sensation with aversion to looking at water, yet there is violent thirst.

Stramonium is a great remedy in delirium tremens. Try it. Stramonium is a very useful remedy in ailments arising from fright, bad news, or jealousy.

Relationship: — The dynamic antidotes are Bell., Hyos., and Nux vomica. Stramonium is very useful in the bad effects from Mercury, and Plumbum. Large doses are antidoted by lemon juice, or by vinegar.

Many more things of importance might be said about Stramonium, but time forbids. The most important thing is to learn the nature of every drug, then make your own key-notes

and applications — *get the image* of the remedy. Having done this it will not matter about the individual who tells you these things, since a great or a small man may tell you truth or falsehood.

THE PREVENTION OF FAILURE IN ABDOMINAL SURGERY

By Charles T. Howard, M.D., Boston, Mass.

The Chairman has assigned me a topic so broad in its scope that were I to discuss it in all its features I must necessarily cover the whole field of surgery. The prevention of failure in abdominal surgery means but the presentation of the Don'ts of, Gall Bladder, Stomach, Appendix, Kidney, Intestinal and Pelvic Surgery.

In considering the question I have felt that without much doubt, the most frequent source of failure is incorrect, or partially incorrect diagnosis. If a man comes to the surgeon's hands with a hernia, or a woman with a tumor of the breast, they are considered cured if the hernia does not break out again, or the tumor of the breast does not recur, no matter what the symptoms they may have. Abdominal surgical conditions are, however, always more or less obscure and it is never easy to make positive diagnoses. More than one pathological condition is not infrequently present within the abdomen, and it is the failure to recognize the whole condition that often causes unsatisfactory results.

In the past too much has often been expected of the surgeon. He has been called upon to see a patient, take the history, make a physical examination, and give a diagnosis, all within half an hour. Was it any wonder that he made mistakes and did not get at the bottom of the case? Conditions have changed in this respect somewhat, and I am sure they will change more, until it becomes fully recognized that the surgeon is entitled to any reasonable length of time to consider his obscure cases, and to obtain all possible facts from laboratory and X-ray examinations.

Along the same line is the teaching of a number of men of high standing, "when in doubt play the appendix." For years the appendix has been made the scapegoat of obscure abdominal conditions, and many an innocent appendix has been gathered to its fathers while the patient was left suffering from gall stones or gastric ulcer.

The most prolific source of error in diagnosis, however, is, I believe, our failure to recognize gastro-enteroptosis. In its varied types it can simulate almost any condition within the

abdominal cavity. At times it simulates appendicitis, at times gall stones, at times gastric ulcer, and I am convinced that the persistence of symptoms after an apparently successful abdominal operation is very frequently due to this condition.

Now whether we believe this to be a surgical disease or not we should at least have our eyes open to the condition and not pass it by without endeavoring to do something to relieve it. It is worse than futile to remove an appendix which you must stretch your imagination to call pathological, and leave without any treatment whatever a pronounced case of midline ptosis. Still it is being done somewhere every day.

Another source of error is the improperly small incision. Except in septic cases, where there is danger of dissemination of infective material through the abdomen, the incision ought always to be sufficiently large to admit of the hand passing to every part of the cavity and examining each organ individually. Many times pathological conditions which would otherwise be overlooked will be brought to light.

Acidosis or Pneumonia in Children. Both are diseases which at times simulate appendicitis closely. A right-sided pneumonia in its early stages not infrequently gives the rigid abdomen, with marked tenderness in the right iliac region, nausea and vomiting. Acidosis may simulate an acute abdomen so closely as to mislead even good diagnosticians. Either condition, of course, if the patient be subjected to an operation, may cause a most disastrous result.

So much for failures due to diagnostic errors. What is the remedy? In hospital work the solution is the closer application of the medical, surgical and special departments, so that the patient shall be considered as a whole and not as a medical or surgical case alone, and sufficient time given to each case before operation to have the fullest possible physical examination made, and all laboratory tests applied, that have any bearing at all upon the symptoms. Then, and then only, will we reduce our surgical calamities to a minimum and increase our percentage of real cures, and not mere recoveries, to its highest possible point.

Another source of failure comes from operating where no pathological lesion is found, that is, operating on symptomatology. Is it ever wise for example to do a gastro-enterostomy when no pathological lesion can be demonstrated? Many a patient has had a gastro-enterostomy done on symptoms alone, where no ulcer or cancer was demonstrable. A few have been relieved and many have not, or have even been made worse. It is a question, therefore, that calls for the exercise of the highest grade of surgical judgment to determine when to do a gastro-enterostomy, or in fact any surgical procedure in the absence of

a demonstrable pathological lesion. The results of cases so operated are very apt to be unsatisfactory.

The next important cause of failure is, I believe, intestinal adhesions. Adhesions cannot be present to any great extent without presenting some symptoms, usually obstructive or semi-obstructive, to the fecal current. They have long been the bane of the abdominal surgeon and their prevention has been the object of much thought and experimentation. In cases which are already infected or which become infected, their formation is, of course, inevitable, insomuch as the agglutination of the bowels is but nature's method of localizing an infection and preventing its spread throughout the abdominal cavity.

It is, therefore, with the clean cases that we have to consider ways and means to prevent their formation. In fact many methods have been tried without success; notably the use of Cargile membrane, and the introduction of sterile oil. The introduction of the oil has been one of the most popular methods advanced. In recent articles both experiments are rabbits, however. Walker and Ferguson in the Laboratory of Surgical Pathology, of the Harvard Medical School, and Saxton Pope of San Francisco have shown definitely that this method not only does not prevent adhesive formations, but as a matter of fact makes them much denser.

In reading these two articles referred to, which appeared in the February number of *Annals of Surgery*, I became much interested in the so-called Sodium Citrate solution. This solution was first used by Saxton Pope and its use advocated in an article in the *Annals of Surgery* for January, 1915.

Now, theoretically its use seems so plausible that I deem it wise to discuss to a certain extent its theory and then my own experience with it.

Wherever the delicate peritoneal cells are injured there is an outpouring of serous exudate which in the course of a few hours coagulates with the formation of fibrin, and in its coagulation agglutinates the bowels at that point. These then become organized and the adhesion is formed. That very briefly is the method of their formation and I would call your attention to the fact that is also the process in wound healing. Now the action of sodium citrate is the prevention of the coagulation of the fibrin, an action which is well recognized and made use of in Lewisohn's method of blood transfusion.

Theoretically, therefore, the prevention of the clotting of the fibrin prevents adhesions, and the sodium citrate solution should therefore be an ideal method to employ.

On the first of April I decided that I would try it out for myself and have used it on about one dozen carefully selected

cases. I have used it cautiously for the reason that I felt that the same qualities which make it ideal for the prevention of adhesions, render it dangerous possibly as regards hemorrhage and wound healing.

The solution used was that advised by Walker and Ferguson: a 3% sodium citrate in a 1% sodium chloride, a hypertonic solution. Of these cases in which it has been used there have been two occurrences which make me feel that the use of the solution is unsafe. The first case was that of double hydrosalpinx with firm and extensive pelvic adhesions. Sodium citrate was used only to wet the sponges which were introduced into the abdomen. General oozing from the breaking of the adhesions was present at the conclusion of the operation and a gauze wick was used to control it. Under ordinary conditions all evidence of bleeding should have stopped in from 24 to 48 hours. With this case it persisted for eight or nine days, never enough to be alarming, still she continued to ooze for all these days. The healing of the wound was not interfered with.

The other case I would call attention to was a gastroenterostomy for gastric ulcer. Wound closed without drainage with No. 2 catgut for the peritoneum, No. 4 for the fascia and stay sutures of silk worm gut. The wound apparently healed by first intention, showing no inflammatory reaction whatever and the stay sutures were removed on the tenth day. On the twelfth day the wound opened for about the upper three-quarters of its length and through its entire thickness. Not a single drop of pus could be discovered anywhere; just clean edges that had not healed at all.

As well as I can remember, this is my very first experience of having a clean wound open up like this. Now it could not have been due to premature absorption of the catgut, because stay sutures of silk worm gut had been used. It may have been a coincidence, but I feel that it was due to the sodium citrate and I am watching with trepidation two cases of post-operative hernia operated upon a week ago, which apparently are doing well, and wondering what may happen.

I have gone into these two cases at some length because I felt some of you here might be induced to try the method and felt that my experience might be of value to you.

So far I believe there has been no satisfactory method devised for the prevention of adhesions. Sponges wet with normal saline and the avoidance as far as possible of rough handling of the delicate peritoneum, together with suture or employment of omental grafts for denuded areas, are I believe our best preventive measures.

In closing, I again ask you to realize that I have been able

to touch only the high spots of the subject. The prevention of failure in gastro-enterostomy would of itself have made an unduly long paper, and so on for each of the abdominal organs, to say nothing of prevention of hernias in abdominal wounds. From the very broadness of the subject I felt obliged to select only the most general factors.

AURAL COMPLICATIONS IN CONTAGIOUS DISEASES: A STUDY OF 3600 CASES AT THE WEST DEPARTMENT, MASSACHUSETTS HOMŒOPATHIC HOSPITAL*

By H. L. Babcock, M.D., Asst. Aural Surgeon, Boston, Mass.

At the West Department of the Massachusetts Homœopathic Hospital from January 1, 1910 to June 1, 1916 (five years and five months) there were treated 3,674 cases of contagious disease, of which 2,260 were scarlet fever, 1,096 diphtheria, 287 measles, and 31 pertussis. The following report is a study of the aural complications which occurred in these cases.

SCARLET FEVER

The exanthematous diseases play a most important rôle in the causation of acute suppurative otitis media, consequently this condition is among the chief complications in any large series of such cases. This is especially true in scarlet fever; an infectious disease characterized by a diffuse exanthem and angina; otitis media being one of the most common complications. The infection reaches the ears via one of two routes: (1) direct extension from the throat through the Eustachian tubes, or (2) by indirect extension through the blood as a localization by the exanthem.[1]

Statistics naturally vary in different localities, during different epidemics or in the same locality at different periods. Holt gives an interesting comparison of two epidemics at the New York Infant Asylum.[2] The first was a series of 73 cases, occurring in the spring and summer of 1889, in which there were *no* ear complications. The second was a series of 43 cases occurring in the fall and winter of 1891, in which 20% had otitis. Caiger[3] found 11.05% of aural complications in a series of 4,015 cases. Pugh[4] reports 15% in a series of 11,000 cases. Gordon[5] cites 19.5% in a series of 8,695. Ker[6] had 12% in 4,889 consecutive cases at the City Hospital, Edinburgh, Scotland. Place[7] states that in 5,000 cases treated at the South Department of the Boston City Hospital, there was 18% of ear

---

* Read before the Alethean Club of Boston, Sept. 8, 1916.

involvement, the most frequent organisms found being staphylococcus pyogenes aureus and citreus.

In the 2,260 cases treated at the West Department of the Massachusetts Homœopathic Hospital, there were 185 with aural complications, giving a percentage of 8.19. This is low, and while the series is smaller than any of those cited above, yet it is large enough to give a reliable average. The right ear was involved in 58 cases, the left in 59, and both in 68. The proportion according to sex was 101 males and 84 females. No local preventative measures were taken such as attempted disinfection of the throat and nose by douching or spraying; methods strongly recommended by some writers (Forchheimer). In this series 92.4% of the patients with otitis media were under 15 years of age, the youngest being seven months, and the oldest 34 years.

Assuming that the principal route of infection is by direct extension through the Eustachian tube (which seems to the writer to be the most logical view), this predominance can be accounted for at least in part by a study of the anatomy of the Eustachian tube at different periods of development. In the adult it is about one and one-half inches in length. Its position is oblique, extending from the tympanum forward, downward, and inward, its axis forming an angle of 135 degrees with the horizontal axis of the meatus. It is wider at either extremity than at the junction of the cartilaginous and osseous portions, and is composed of a bony and cartilaginous canal, the average diameter of which is 1-12 inch. The opening of the tube in the naso-pharynx lies on the external wall of the latter, just behind the posterior extremity of the inferior turbinated bone, being rounded in the child but oval in the adult. In children the tube is much wider and shorter, and its direction is more horizontal, hence secretions pass more readily between the throat and ear than in adults. Adenoids are a predisposing factor.

Aural complication is common in septic scarlatina and in cases with local sepsis of the nose and throat. In severe throat cases the percentage of ear involvement has been as high as 75% (Holt).

The otitis usually develops during the subsiding stage of the fever or early convalescence, although it may come at any time.

The following table from Welch and Schamberg,[8] giving the day of scarlet fever illness upon which 18 cases of otitis media developed, is interesting in showing individual variation:

1 case developed on the 6th day
1 case developed on the 8th day
2 cases developed on the 9th day
1 case developed on the 10th day

1 case developed on the 11th day
1 case developed on the 13th day
1 case developed on the 16th day
1 case developed on the 17th day
1 case developed on the 18th day
2 cases developed on the 19th day
1 case developed on the 20th day
1 case developed on the 21st day
1 case developed on the 22nd day
1 case developed on the 23rd day
1 case developed on the 32nd day
1 case developed on the 35th day

The early stage of an otitis is easily overlooked owing to the very variable symptom-complex. There may be intense pain or none at all, high fever or normal temperature. A certain amount of deafness is usually present, but this may be easily overlooked especially in young children. Examination at this time will show a congested tympanic membrane: later, bulging or spontaneous perforation with more or less sloughing. These ears if neglected are very likely to become chronic, with extensive necrosis, granulations and polypi, resulting in severe deafness. In young children many cases of deaf-mutism result from total destruction of the auditory apparatus following scarlatinal otitis. In one series of 4,309 deaf-mutes 10.3% were the result of aural complications from scarlet fever.[9]

From otitis media the following further complications are possible:

1. Mastoiditis
2. Thrombosis of the Lateral Sinus
3. Facial Paralysis
4. Brain Abscess
5. Purulent Meningitis
6. Labyrinthitis

Mastoiditis is not at all uncommon. In the 185 scarlet fever patients at the West Department with otitis media, 22, or 11.9% developed mastoiditis requiring operation. In these cases there was one complicated by an infected lateral sinus, and one which developed purulent meningitis. Both of these cases died, all of the uncomplicated cases recovering. In this group the mastoid involvement came on at varying periods following otitis media. The shortest time was four days, and the longest fifty-one days. The majority did not develop until more than two weeks after the primary aural infection. This is in accordance with the view generally stated that mastoid extension usually appears late. Of the 22 cases, ten were right sided, eight were left sided, and four were double.

The destruction of the labyrinth by indirect infection through the blood by the toxin is rare. None of the other complications occurred in the series under consideration.

The bacteria most commonly present have been staphylococcus pyogenes aureus and citreus, less often streptococci, occasionally a diphtheroid bacilli, and sometimes the diphtheria bacillus itself.

DIPHTHERIA

In this disease one would naturally look for a high percentage of aural complications owing to the fact that the infected area is localized in the region around, or in close proximity to, the pharyngeal end of the Eustachian tube, thus exposing the middle ear to direct and immediate invasion. As a matter of fact, however, the percentage is relatively low, much lower than in scarlet fever or measles. The cases as a rule run a milder course than in the two above-mentioned diseases, and severe deafness is not as likely to result. The diphtheretic membrane can sometimes be seen through a perforated tympanic membrane as a gray lining to the middle ear cavity, and even extending through the broken drumhead to the external auditory canal. Darlington [10] advocates nasal irrigation as a prophylaxis against aural extension and cites as evidence the following two groups of cases: (1) of 152 "croup" cases *not* irrigated 29% developed otitis. (2) of 210 cases (not laryngeal) irrigated, only 12.8% developed otitis. Nasal douching has not been a part of the routine treatment at the West Department. Of the 1,096 cases of diphtheria treated during the five years under consideration, there were only nine that developed otitis media, giving the extremely low rate of .82%. Of these cases four were females and five were males. The youngest was 16 months and the oldest nine years. In two the right ear was affected, in four the left ear, and in three both ears were involved.

Place says: "mastoiditis occurs infrequently and is usually mild." [11] Ker [12] states that he has never seen mastoiditis as a complication of diphtheria.

Two of the above cases developed mastoiditis, one of them however being complicated with scarlet fever. There was no mortality among the patients with ear involvement.

MEASLES

Of the 287 cases of measles treated, 15 or 5.23% suffered from ear complications. In this disease, in which the specific localization is in the upper air passages and skin, the course throughout is of a milder type than in scarlet fever, hence a less severe degree of aural infection is the result. It is sometimes

classified as acute catarrhal or secretive otitis media, rather than suppurative. As a rule the infection appears late, toward the stage of convalescence.

The belief expressed by some men that the horizontal position of the patient favors infection seems to the writer without reasonable grounds, not only as regards measles but any other disease as well. The presence of adenoids or any other diseased condition of the naso-pharynx is on the other hand a most important factor.

Ker [13] found aural complications in 8% of his cases. He says "Children under five years of age suffer in proportion at least twice as frequently as older patients." This proportion did not hold at the West Department, only 13.3% of the patients with ear infection being under five years of age. The oldest patient affected was 38 years and the youngest three years. Five were males and ten were females. In five, the right ear was affected, in four the left, and in six both. The mortality from aural complications was zero.

Welch and Schamberg [14] found that cultures from their cases showed 50% streptococci and 50% staphylococci.

Measles also is a factor in the causation of deaf-mutism, as the following statistics show: [15]

Of 1,140 deaf-mutes in Great Britain, 9.8% were due to measles.

Of 1,673 deaf-mutes in United States, 3.1% were due to measles.

Of 1,989 deaf-mutes in Continental Europe, 4.2% were due to measles.

Mastoiditis has not been considered a frequent or severe complication in measles. In this respect the cases at the West Department differ considerably from the average, showing the surprisingly large percentage of 26.6. with mastoiditis. Two of the cases also were exceptionally severe. As both of these developed late in the course of the disease they were transferred to the main hospital for operation, entered on the service of Dr. F. W. Colburn, and operated by the writer. No. 1, a male, age 26 years, developed a double mastoiditis. The left side was operated first, extensive destruction being found throughout the mastoid process in spite of unusual hardness of the normal bone. The right side was operated ten days later, a similar condition being present with the addition of an exposed but healthy lateral sinus. Cultures from both sides showed streptococci. The aural discharge both before and after operation was extremely profuse. Patient made a good recovery. No. 2, a female, age 18 years, developed an acute suppurative mastoiditis on the right side.

Operation showed very extensive destruction throughout the mastoid process with exposure of the lateral sinus for 12 mm. Culture report was "Streptococci numerous, staphylococci few." Patient made an uneventful but slow recovery.

PERTUSSIS

Otitis media is of such rare occurrence as a complication in whooping-cough that it is not even mentioned by the leading writers on the subject.

At the West Department, 31 cases of this disease were treated during the period under consideration. Of this number 12.9% developed aural disease, 50% of which went on to mastoiditis requiring operation. These two percentages, however, are entirely without value, except in emphasizing the danger of drawing conclusions from a study of a small number of cases. Were this a series of 3,100 instead of 31, the percentages would be entirely different and of value. As a matter of record, nevertheless, it may be stated that all of the patients affected were under four years of age, the youngest being ten months. The majority developed late in the disease and may have resulted from the forced entrance of bacteria into the Eustachian tubes during paroxysms of coughing. There were no deaths.

SUMMARY

Considering the entire series of cases we find aural complications most frequent in scarlet fever, with 8.19%, somewhat less in measles with 5.23%, and very low in diphtheria, — the latter being only .82%.

Of the total number of cases of aural involvement, 13.08% went on to mastoiditis requiring operation. In the suppurating ears complicating diphtheria, a pure culture of the Klebs-Loeffler bacillus can frequently be obtained. It should be emphasized that a patient with such an ear is a "carrier" and therefore a menace to the public health, and should be strictly quarantined until the culture is negative or the suppuration is cured.

In general, with the first appearance of fluid in the middle ear, paracentesis should be performed, thus establishing free drainage and avoiding destruction of the middle ear structures from pressure necrosis. With proper and persistent after-treatment, the writer believes the percentage of deaf-mutism resulting from suppurative otitis media in the exanthemata, would be materially reduced. Of primary importance, however,

are repeated and frequent aural examinations throughout the entire course of the disease.

---

[1] Invasion of the labyrinth by this indirect route is more commonly reported in mumps than in scarlet fever.
[2] Holt. The Diseases of Infancy and Childhood, p. 900.
[3] Caiger. Albutt's System of Medicine. 1897. Vol. III, p. 150.
[4] Pugh. Lancet. 1905. I, p. 233.
[5] Gordon. Practitioner. 1909. LXXXIII, p. 689..
[6] Ker. Infectious Diseases. London. 1909, p. 105.
[7] Place. Modern Medicine, Osler and McCrae. Vol. I, p. 875.
[8] Welch and Schamberg. Acute Contagious Diseases. 1905, p. 399.
[9] Cited by Welch and Schamberg. Loc. cit.
[10] Darlington. Therapeusis of Internal Diseases — Forchheimer 1913, Vol. II, p. 277.
[11] Place. Loc. cit., p. 700.
[12] Ker. Loc. cit., p. 375.
[13] Ker. Loc. cit., p. 38.
[14] Welch and Schamberg. Loc. cit., p. 510.
[15] Cited by Welch and Schamberg. Loc. cit., p. 510.

CLINICAL DEPARTMENT

Case F-10. Postural Neurosis with Vagotonia: The patient is an American woman forty years of age. She was an active, nervous child given to doing daring, exciting things; something of a tomboy. She was headstrong and wilful. Menses at first painful, and always four days too early. She became a school teacher, but was always doing some foolish hysterical thing which necessitated her changing schools frequently. In the twenties she was well nourished but tired very easily, was tense and over enthusiastic about whatever she did. At this time she was apprehensive, would get frightened about things, as driving a fast horse, but was too proud to show it and so would bluff it through and then be "all in." She had phobias, i.e., was afraid of street cars. She had cervical adenitis, and had always had attacks of dyspepsia and constipation.

She was married at the age of 26 and a year later had a child. Though she weighs more now (135 lbs.) she is nervous and capricious. Her real invalidism has been of gradually increasing growth, but took definite form after the birth of a second child five years ago. Three days after the labor she suddenly felt faint and broke out in a profuse sweat; there was no fever, and she rapidly recovered from this and was up in three weeks but had some coccigeal pain. She was not strong, but kept about. A year later she had another similar prostration lasting several days, this time with much dizziness and fatigue from using her eyes, and was in bed several days.

Again a year later a little worry precipitated a similar attack. Now she had a dragging sensation in throat extending under sternum. After three months of this she went to bed for four months (1913–1914 winter), lost weight and had to live on liquids, had much dyspepsia, would sweat profusely all over, especially the hands. Now, too, the attacks of dyspepsia changed character. The pains became more crampy and there was spasm of the pylorus so that the stomach seemed to close, and below it the bowels were in a state of stasis. The pain and weakness from these attacks, which came several times a week, were severe and accompanied by a rapid, thready pulse which led her to fear heart trouble.

In the summer of 1914, weighing only 94 pounds, she went to Clifton Springs, where she met an orthopedist who decided that much of her illness was due to her faulty posture and prescribed exercises and a corset. (A brace was also made but she could not endure the discomfort of it because of her extreme nervousness and intolerance). Under these procedures she rapidly improved. The pyloric-spasm went away and also

the dragging in the neck. She gained fourteen pounds. Things were going nicely until last winter, when she had grippe and all the old trouble reappeared. Now also again the heart began to beat rapidly and weakly, especially on change of position in bed. Mentally she became discouraged and had severe depression and fear. After eight months she is just beginning to get about again and to have a happier frame of mind. She cannot read much yet because of fatigue from the effort to keep the eyes focused on the print (fatigue of the ciliary muscles). She is mentally happier but still capricious and has many conflicting moods. There are occasional lapses when she fears a spasm of the pylorus. At these times the hands sweat profusely, the salivary ducts close spasmodically with backing up of the saliva, and tumefaction, the skin flushes or blanches with slight provocation at a chance word or act of the nurse, the tongue becomes coated and the pulse becomes rapid and thready.

We have found at these times that high frequency over the abdomen used until redness is produced aids much in relieving these attacks. Veronol gr. 2 also helps, but so great is her idosyncrasy for drugs that she is unable to take anything else.

We have been trying varying strengths of Atropin, which is clearly indicated, but so far have had only exascerbations. She is now about trying the 30x. This drug sensitivity is not mental, as she has been given placebos without effect.

Here is a case in which vagotonia is part of the picture of a postural neurosis. Clearly, this woman has always had what might be called an hysterical temperament as a mental reflection of a loosely knit muscular and bony frame. Such a body, I believe, always bespeaks a poorly synthetized mind, with unstable emotions.

The birth of her first child was her first severe strain and left its aftermath in a neurasthenic state. With the second one the vagotonic symptoms definitely appeared, vis., the coccigeal discomfort, sweating, especially of the hands and feet, pylorospasm, spasm of the salivary ducts and ciliary spasm.

VAGOTONIA

A clinical study in vegetative neurology by Dr. Haus Eppinger and Dr. Leo Hess.

Translated by Drs. W. M. Kraus and S. E. Jelliffe.

Introduction.

The most conspicuous points in making a diagnosis of neurosis of the internal organs are the symptomotology, and the impossibility of establishing any anatomical basis for the disease.

In making such a diagnosis we should so far as possible separate definite disease pictures by directing our thoughts along known anatomical and physiological channels.

The Vegetative Nervous System in its Relation to Drugs.

The Animal (sensory motor) nervous system serves the senses and the voluntary muscles. In contrast the Vegetative nervous system serves smooth muscles (intestines, blood vessels, gland ducts, skin and secretion) and is involuntary. Also certain cross-striated muscles such as the heart and the beginning and end of the alimentary tract and muscles of the genital apparatus. The nerves of the sensory-motor system have but one neuron between the nerve centre and the cross-striated muscles. In the vegetative system ganglion cells are interposed and the fibres are non-medulated. These fibres are divided into the preganglionic (between the spinal axis and the ganglion) and the postganglionic (between the ganglionic and the organ).

The uniformity of the anatomic arrangement of the vegetative system foreshadows a uniform pharmacological reaction and it is this which has made possible the separation of the vegetative from the sensory-motor nervous system. Nicotine painted on a vegetative ganglion prevents the conduction of stimuli (electric) to the organ subserved, while the function of a sensory-motor nerve is unaffected by such treatment.

The fibres of the vegetative system arise in part from the brain and medulla, in part from the sacral part of the spinal-cord and do not come into relation with the animal (sympathetic) cord. They may, therefore, be divided into (1) Mid-brains (2) Bulbar (3) Sacral fibres. (1) Pass out through the oculomotor nerve to the eye. (2) Follows the facial and glosso-pharyngeal, supplying fibres to glands and vaso-dilators of head. The vagus from the bulb is the largest branch and supplies the viscera. (3) Is contained in the pelvic nerve and supplies the descending colon sigmoid, anus, bladder and genital apparatus. All nerves arising from the sympathetic cord are called sympathetic nerves, while those arising from the vegatative system are called autonomic (the system of the extended vagus). Stimulation of the fibres of one of these systems abolishes (inhibits) manifestations of stimulation in the other, i.e., they are physiological antagonists.

Adrenelin stimulates solely the sympathetic system. Pilocarpin, physostigmin and muscarius stimulate solely the autonomic system. Atropin acts somewhat on both systems, counteracting many of the effects of the last named drugs. On the sweat glands these effects are reversed. These drugs have selective action upon certain parts of the autonomic system.

Picrotoxine affects the central more than the peripheral part of the autonomic. Drugs which paralyze the sympathetic stimulate the autonomic system and visa versa, i.e., (pilocarpin).

Tonus and definition of vagotonia.

The effect of adrenalin is continuous in the body. It is probable that there is a specific anologue to adrenalin which acts on the autonomic system, but it is not yet known. Substitutes for it are pilocarpin and physostigmin. Many harmones (i.e., petuitrain) probably have a selective action on certain parts of the vegetative system, that is these "autonomics" probably come from the internal glands secretions. The equilibrium of these two antagonistic forces — sympathetic and autonomic — is called "tonic innervation."

Lack of equilibrium may produce great pathologic variations in any or all organs supplied by these two systems. A small unbalance may produce a large effect. It is possible that there exists in the central nervous system a common center of control. Tonus differs from irritability as applied to these antagonistic systems. Thus physostigmin increases irritability of the heart, while strychnia increases tonus though having no stimulating effect.

The conception of vagus tone has been established in physiology and pharmacology. Atropin cuts out already existing vagus impulses in some individuals resulting in tachycardia, dry mouth, fever, mydriasis, paralysis of the ciliary body, hallucinations and sometimes glycosurea. Similar variations occur with pilocarpin, digitalis, morphine, scopolamin and hyoscyamin, producing different effects upon different individuals. These differences are called idiosyncrasies, and the persons who have them, vagotonics.

Under the term vagotonia are included: (1) Increased vagus tonus. (2) Increased autonomic irritability. (3) Increased sensitiveness to pilocarpin (.01 gm. Hypo.) (4) Decreased sensitiveness to adrenalin.

Physiological Observations.

Stimulation of the cerebral autonomic causes contraction of the pupil, spasm of the ciliary body (accommodation spasm) and widening of the palpebral fissure though increased tonus of the levator muscle. Through the chorda tympani it innervates the salivary glands. The lachrymal glands also receive a branch. Pilocarpin, therefore, causes increase in saliva and lachrymal secretion. At the same time the skin of face and head becomes red. The vagus innervates the heart, lungs and intestines. Upon the heart stimulation of the vagus produces (1) Diminution in the rate of beat. (2) Diminution of transmitting power of nodal system (causing heart block).

If the vagus endings in the lungs are stimulated by a deep breath (i.e. sighing) inspiration is inhibited and expiration is made possible.

In the upper digestive tract the vagus influences both the secretion and the motility. Here irritability or increased tonus may result in hyperacidity and vomiting, and stimulation results in spasm of the pyloric sphinctor. Atropin relaxes this spasm. In the intestine this increased vagus tonus has led to abnormally increased tonic peristolsis. Autonomic stimuli cause spasm of the smooth muscles of the gall bladder and pancreatic duct (simulating gallstone colic).

Stimulation of the pelvic (autonomic) nerve evokes spasm of the sphinctor ani, contraction of the detrusor of the bladder and simultaneous opening of the sphinctor vesicæ and erection of the penis.

In the blood adrenalin causes eosinophilia, while atropin and pilocarpin cause this to disappear and the latter can arrest adrenalin glycosuria.

There is no doubt that the autonomic nervous system exerts a profound influence upon the thyroid gland and on metabolism.

To sum up: — every visceral organ is supplied with sympathetic and autonomic nerve fibres which act as contrary forces the equalization of which results in functional equilibrium. Too much activity on the part of one or too little on the part of the other will result either in motor or secretory inhibition or stimulation and may bring about a condition of disease.

The Diagnosis of Vagotonia in Man

The symptoms of vagotonia are those of pilocarpin poisoning, namely (sweating. (2) salivation. (3) hyperacidity. (4) eosinophilia. (5) brachycardia. (6) mild arythmias, particularly respiratory. (7) Sluggish bowels or spastic constipation. (8) Local or general flushing of the skin. (9) pressure in the gastric region. (10) accommodation spasm and dilating or contracting pupil. These may result in troublesome salivation, pylorospasm, discomforts of hyperacidity, bronchial asthma, spastic constipation, gall-stone colic, gastric crisis, etc.

Local Symptoms:

Eye. The tension of the zone of Zinn or stimulation of the ciliary muscles evoked by activity in the autonomic system causes an increase in the sphericity of the lens, and hence visual disturbances, among which are ciliary spasticity, and accommodation spasm.

In many cases of vagatonia an increased tonus of the levator palpartæ muscle results in a widening of the palpebral fissure (v. Grarfe's sign) so that the eyes have a starey appearance

though there is no exopthalmus (latter is due to irritation of the sympathetic fibres).

Salivary Glands. Salivation is the result of a state of autonomic stimulation of the salivary glands. Pilocorpin increases salivation. The typical vagotonic never has a dry mouth.

Skin. Vagotonics in reacting to certain stimuli are subject to sweating, either general or local. Dermographia is another symptom, as is goose flesh.

Heart. That type of brachycardia which changes into tachycardia under the influence of atropine is a typical instance of increased vagus tone. An increase in the auricular beat without similar increase in the ventrical, "nervous heart block," is a vagotonic symptom and may be relieved by atropin. In vagotonics pressure on the eyeballs may cause slowing of the pulse. (Aschner's phenomena.)

Lungs and Respiration. A classical example of vagus stimulation is bronchial asthma. A substantial support of the view is the beneficial effect of atropin and adrenalin.

The recurrent laryngeal nerve is a branch of the vagus, hence laryngospasm is probably vagotonic as are laryngeal crises. Respiratory arrythmias may occur.

Stomach. The influence of the vagus upon the stomach may be considered under three parts. 1. Influence upon tone. 2. Peristalsis. 3. Secretion. (1) The tonus is increased in spite of flabby abdominal walls. (2) Peristalsis is increased. (3) There is hypersecretion and hyperacidity: pyloraicspasm is often a result of the latter. Eosophigospasm and cardiospasm are typical diseases of vagotonics. Vagotonics have an almost entirely anæsthetic pharynx, and this results in a difficulty in the swallowing impulse.

The intestines. Vagotonics are subject to both diarrhœa and constipation. The diarrhœa in vagotonics seems to be due to the same cause as the spastic constipations. The latter stool is hard, dry, marble shaped and scanty. This is due to the fact that there is an increased absorption of chyme. The marbles are often covered with mucus and seem wrapped in fat. Atropin helps these cases. The condition of eosinophilic catarrh of the intestines is probably related to this disease, and perhaps this is similar to bronchial asthma with its sputum rich in eosinophiles. Spastic constipation is often combined with spasm of the sphincter recti as in tabetic rectal crises.

Gall Bladder and Ducts. Spasm of the gall bladder and ducts of autonomic origin may so closely simulate gall stone colic as to seem to call for operation. Atropin relieves this condition.

Kidneys. It is quite possible that a similar condition may

exist in the smooth musculature of the kidneys and urinary passages.

Blood. The characteristic thing here is eosinophilia. Pilocarpin may cause this, and atropin helps it. It appears especially in asthma but may be increased to 5 per cent. in other vagotonic conditions. It is lacking in sympathicotonia.

Thus we find that the authors have been able to separate from the mass of nervous diseases hitherto grouped as neurasthenia, hysteria and nervousness a symptom complex, a disease picture which they call vagotonia. This they regard as a functional "autonomic system disease." As a basis of it there must exist a "vagotonic disposition," i.e., an abnormal irritability of the autonomic nerves which under the influence of adequate stimulus results in vagotonia.

I have been unable in this condensed review to go into the elaboration of the relation of vagotonia to mixed states and special diseases or its very interesting relation to the endocinous glands in which much of its explanation must be looked for. The real etiology of vagotinia must be sought in some of the internal secretions, not only has an insufficiency of the chromoffin system been proved to exist in certain types of endocrinopathic individuals, but it has also been shown that these same individuals have a lymphatic system which is more strongly developed than normally. Therapeutically, atropin is the best antidote against spastic states. I believe that electricity will also be found of great use in these cases.

A. H. R.

REVIEWS

PATHOLOGY

The Causation of Gastric and Duodenal Ulcer by Streptococci. *Rosenow, E. C., Journal of Infectious Diseases, 1916, xix, 333.*

The article is thirty pages long and has a bibliography of 74 titles.

The evidence upon which Rosenow bases his statement regarding the etiologic relationship of streptococci to gastric and duodenal ulcers is chiefly as follows: Epidemics of duodena ulcer in infants have been found to be due to circumscribed streptococcal infection. "The occurrence of acute ulcer of the stomach and exacerbations of the symptoms in chronic ulcer in connection with foci of infection; the improvement in symptoms following removal of foci or infection; and the development of new ulcers after excision of ulcer in patients in whom chronic

suppurating foci have not been removed — all strongly suggest the etiologic relation between remote foci of infection and ulcer. None of these observations, however, proves the etiology of the ulcer. The demonstration of streptococci in foci of infection in patients with ulcer and in the ulcers themselves, and the fact that they localize in the stomach in animals, furnish what seems to be the final proof of the etiology.

"The periodic occurrence of exacerbations in symptoms followed by quiescent intervals in chronic ulcer would seem to be best explained on the basis of infection, the former being due to a lighting up of the dormant infection or to re-infection from a focal source when immunity is low and the latter to quiescence of the infection, the result of heightened local or general immunity.

"The ulcers produced by the injection of streptococci resemble those in man in location, in gross and microscopic appearance, and in that they tend to become chronic, to perforate, and to cause severe or fatal hemorrhage.

"Streptococci having a characteristic affinity, for the stomach and the duodenum, have been repeatedly isolated from various foci of infection in patients with ulcer and from the ulcers themselves. . . . They have been isolated from ulcers in animals and ulcer has again been produced on their re-injection. Filtrates of these cultures show no special tendency to produce ulcer. The necessary requirements have been fulfilled to warrant the conclusion that the usual ulcer of the stomach and of the duodenum in man is primarily due to a localized hematogenous infection of the mucous membrane by streptococci."

S. H. B.

DIAGNOSIS AND THERAPEUTICS

Studies in Blood Pressure with Especial Reference to Diastolic and Pulse Pressure Readings. *Cadbury, W. W. Arch. Int. Med., 1916, XVIII, 317.*

The paper emphasizes especially the valuable data to be obtained from diastolic and pulse pressure readings and is based upon the records of 305 patients who entered the medical service of the Peter Bent Brigham Hospital during 1913, 1914 and 1915. All had at least one reading of systolic pressure of 160 mm. of mercury, or more; 68.5 per cent. were between the ages of 40 and 69 years; the cases were about equally divided as to sex.

Seventy-three per cent. had definite signs of chronic nephritis. Arteriosclerosis was also common.

Albumin is generally found at some time in cases of hypertension. If persistently absent, the cause of the high blood

pressure is generally vascular or cardiac disease, and not renal.

The readings of the phenolsulphonphthalein test vary inversely with the average systolic and diastolic readings, this ratio being especially noticeable in the case of diastolic readings.

Digitalis was used to restore broken heart compensation. Theoretically, digitalis should increase tension, especially in hypotension cases. Clinically, however, it is often found to lower the pressure and is of especial value in failing heart, in which case it may lower tension by increasing the elimination of urine or by decreasing venous stasis. In 69 cases of decompensation in which digitalis was used the effect was rather to increase pulse pressure and systolic pressure and cause a fall in the diastolic pressure.

"Deaths in hypertension patients most frequently occurred between the ages of 40 and 60 years, and the underlying condition was either chronic nephritis or chronic disease of the heart, or a combination of the two. More than half the deaths occurred with symptoms of uremia or apoplexy. Twenty-eight per cent. died with signs of progressive heart failure. The patients in more then half the fatal cases had had a systolic pressure of over 200 mm., and 86 per cent. had had diastolic pressure of over 100 mm."

S. B. H.

Pregnancy in the Tuberculous. *Norris, C. C., Am. Jour. Obstetrics, 1916, LXXIII, 997.*

Norris has reviewed the literature and has studied 68 cases. He concludes that pulmonary tuberculosis exerts little or no influence against conception, but little influence on the course of pregnancy and, except in the advanced stages, rarely does it effect abortion, miscarriage or premature labor.

About 20 per cent. of mild, quiescent pulmonary tuberculosis and 70 per cent. of more advanced cases exhibit exacerbations during pregnancy or the puerperium.

Tuberculous women should not become pregnant unless the disease is in the first stage, and has been quiescent for a minimum period of two years.

About 65 to 70 per cent. of cases, prior to the fifth month, will be definitely improved by emptying the uterus as soon as acute symptoms arise, provided that proper after-treatment is carried out.

After the fifth month it is generally advisable to treat these patients expectantly.

Infants should not nurse tuberculous mothers and should be especially guarded from infection.

S. B. H.

Dermoids of the Mediastinum. *Hertzler, A. E., Amer. Jour. of Med. Sci., Aug., 1916, Vol. 152, p. 165.*

Teratomata (dermoid cysts) occur most frequently in the ovaries, but are, at least relatively, not uncommon in the mediastinum. Hertzler has collected 72 cases with the tumors in the latter location, and adds one of his own. An analysis of these case reports shows that in most of them the tumors are observed in early adult life. Symptoms are due to pressure or irritation. Pressure symptoms comprise cough, dyspnœa, pain, and infrequently dysphagia. Irritation caused inflammatory reaction similar, perhaps, to that noticed in wens.

Dermoid cysts must be differentiated from other tumors, and from aneurysm, tuberculosis, and empyema.

H. U.

The Wassermann Reaction in its Relation to Tuberculosis. *Snow, C. G., and Cooper, A. T., Amer. Jour. of Med. Sci., Aug., 1916, Vol. 152, p. 185.*

The power of serum from non-syphilitic tuberculous individuals to give a positive Wassermann test has been cause for more or less worry to serologists. Snow and Cooper state that they hold attempts at extreme technical refinement responsible for a large portion of positive results. Cholesterinization of antigens, as practised by many serologists, in accordance with Swift's recommendation, is singled out by the authors for particular adverse censure, since in their experiments they have obtained partial to complete complement fixation in 31 per cent. of non-syphilitic tuberculous patients, whereas with cholesterine-free antigens the percentage is practically negligible. In their opinion, "Complete complement-fixation, i.e., a strong + + + Wassermann reaction with non-cholesterinized antigen, in a tuberculous patient is as adequate presumptive evidence of syphilis as it is in a non-tuberculous."

H. U.

The Coincidence of Latent Syhilis and Diabetes. *Warthin, A. S., and Wilson, U. N., Amer. Jour. of Med. Sci., Aug., 1916, Vol. 152, p. 157.*

Since 1907 there were six cases of diabetes autopsied at the University of Michigan pathological department. All of these cases "presented histological changes of syphilis." The findings in the pancreas, practically the same in all cases, included fatty atrophy, patchy fibrosis, mononuclear inflammatory infiltration, diminution in the number of islands of Langerhans, regenerative proliferation of acini, vascular sclerosis, cystic dilatation of ducts.

That pathological changes similar to these occur in the pancreas of a large percentage of diabetics has been known for some time, but that these changes are always, or even often syphilitic, as Warthin and Wilson seem inclined to believe, needs much additional proof.

H. U.

BOOK REVIEWS

Lateral Curvature of the Spine and Round Shoulders. By Robert W. Lovett, M.D., F.A.C.S., Boston. John B. and Buckminster Brown Professor of Orthopedic Surgery, Harvard Medical School; Surgeon to the Children's Hospital, Boston; Surgeon-in-chief to the Massachusetts Hospital School, Canton; Consulting Orthopedic Surgeon to the Boston Dispensary; Member of the American Orthopedic Association; Corresponding Member of the Royal Society of Physicians, Budapest; Korrespondierendes Mitglied Der Deutschen Gesellschaft Fur Orthopadische Chirurgie, Socio Della Societa Italiana Di Ortopedia. Third Edition, Revised and Enlarged. With 180 illustrations. Published by P. Blakiston's Son & Co., 1012 Walnut Street, Philadelphia, 1916.

This book, a volume of two hundred and thirteen pages, represents the most complete and authoritative work on the subject yet published. This edition became necessary because since the last edition a great many methods of treatment, especially involving forcible correction, have been devised, notably that of Abbott of Portland and McKenzie-Forbes of Toronto.

The chapters on Anatomy, the Movements of the Spine, The Mechanism of Scoliosis, Description and Symptoms, Examination and Record, Pathology, Etiology, Occurrence, Relation of Scoliosis to School Life, Diagnosis, and Prognosis have been as extensively and carefully treated as in the previous editions with what revisions or corrections have been made necessary through the medium of X-ray examinations. It has been found by X-ray examination that the human spine with living muscles attached has not acted in exactly the same way that the cadaver specimens suggested.

Dr. Lovett has very fairly and clearly described and criticized the most commonly employed methods of forcible correction, which have been used by other men, as well as describing in detail his own methods.

A chapter has been added in this edition giving the history of scoliosis and is probably the only history of scoliosis in English.

The book is profusely illustrated and contains very complete reference bibliography.

HOWARD MOORE.

The Practical Medicine Series, comprising ten volumes on the year's progress in medicine and surgery, under the general editorial charge of Charles L. Mix, A.M., M.D., Professor of Physical Diagnosis in the Northwestern University Medical School. Volume II. General Surgery, Edited by John B. Murphy, A.M., M.D., LL.D., F.R.C.S. England (Hon.), F.A.C.S. Professor of Surgery in the Northwestern University; Attending Surgeon and Chief of Staff of Mercy Hospital and Columbus Hospital; Consulting Surgeon to Cook County Hospital and Alexian Brothers Hospital, Chicago. Series 1916. The Year Book Publishers, 327 S. La Salle Street, Chicago.

To obtain a comprehensive resumé of the surgical progress of the year, no one volume is so satisfactory as the Surgical Year Book. Would you like to know the trend in anæsthetics for instance, a perusal of these pages shows quite clearly that the pendulum is swinging back to plain pure ether by the drop method. Nitrous oxide spinal anæsthesia and block methods are losing their popularity.

In this volume the reader will note the steady progress that vaccine

treatment is making, especially the autogenous and autosensitized methods. Should the seeker after statistics wish to know concerning the diminution of tetanus following Fourth of July accidents, he has only to consult page 152 and there learn that in 1903 there were 417 deaths from tetanus following the "joyous Fourth," whereas in 1915 there was but one death. Some reward for a campaign of education! Why can't the profession educate in other matters just as effectively?

In this little volume the results of war surgery are compactly set forth. One notes the tendency to a return to immediate operative treatment in all penetrating bullet wounds of the abdomen. It will be rather surprising to the average reader to learn that the mortality from appendicitis in large hospitals has increased enormously in the last four years. In 1911 the mortality was 40 per 100,000 population, whereas in 1915 it was 90 per 100,000 population. Dr. Murphy attributes this increase to three factors: first, failure in diagnosis; second, procrastination in action; and third, a decreased educational campaign concerning the disease, all of which factors should and can be eliminated.

Our only too recently acquired belief that gallstone formation is due to infection receives a severe jolt when Dr. Murphy says, as does Naunyn, that the formation of cholestrin and stone crystallization in the gall-bladder can and does take place independent of infection.

This volume furnishes a very complete review of the opinions, discoveries and methods of the leading surgeons of the various countries.

D. G. W.

Diseases of the Digestive Tract and Their Treatment, by A. Everett Austin, A.M., M.D., Former Professor of Physiological Chemistry at Tufts College, University of Virginia, and University of Texas; Present Assistant Professor of Clinical Medicine, in Charge of Dietetics and Gastrointestina Diseases, Tufts College; Member of American Gastroenterological Association and American Society of Biological Chemists; Physician to Mt. Sinai Hospital and Berkeley Infirmary, and Assistant to Boston Dispensary; Author of "Manual of Clinical Chemistry," etc. With eighty-fivc illustrations, including ten color plates. C. V. Mosby Co., St. Louis, 1916.

In presenting this volume to the medical profession the author seemed to have had in mind a desire to bring forth a book which should take up a study of an old and much discussed subject and give in an original and interesting manner his own interpretation of it. It is sometimes quite refreshing to read a text book that is entirely *original*, one that does not so abound in the quotations of other writers that it becomes a photograph album of who's who in the matter at hand.

Dr. Austin tells the reader what he personally has learned by experience and research in the pathology and treatment of the digestive tract. His experience as a didactic teacher shows to good advantage in the pages of his work. The radiograph illustrations are very helpful to a clear understanding of the text. It is well arranged for ready reference when one desires a few special points concerning disease of the digestive tract.

D. G. W.

Diseases of the Skin, By Richard L. Sutton, M.D., Professor of Diseases of the Skin, University of Kansas School of Medicine; Former Chairman of the Dermatological Section of the American Medical Association; Member American Dermatological Association; Assistant Surgeon, United States, Navy, Retired; Dermatologist to the Christian Church Hospital. With six hundred and ninety-three illustrations, and eight colored plates. Price, $6.50. C. V. Mosby Co., St. Louis, 1916.

To obtain some estimate of the results derived from an intensive study of a certain line of pathology one need but notice the steadily increasing size of the volume descriptive of such pathology. But a few years ago a book on skin diseases would number some two hundred pages or more and be considered quite complete. Later five or six hundred pages were required, and now comes the last work on Diseases of the Skin in which Richard L. Sutton devotes over nine hundred pages to the subject and each one of them full

of meat. To the specialist it becomes a helpful study on those mooted questions which are as yet unsettled, but wherein every contribution furthers the solution. To the student and internist it is a library on the subject at hand, which with the excellent illustrations will go far to help him out of the slough of despond when trying to diagnose some obscure skin affection.

D. G. W.

Skin Cancer. By Henry H. Hazen, A.B., M.D., Professor of Dermatology in the Medical Department of Georgetown University; Professor of Dermatology in the Medical Department of Howard University; Sometime Assistant in Dermatology in the Johns Hopkins Hospital; Member of the American Dermatological Association. With ninety-seven text illustrations and one colored frontispiece. St. Louis, C. V. Mosby Co., 1916.

A growth which is only skin deep is quite apt to be regarded lightly by no small percent of medical advisors. The fact that such growths are quite apparent, that they grow slowly and cause little discomfort are potent factors in engendering indifference to their significance.

Face or skin cancers are probably as old as man, yet it is surprising what little real scientific study has been given them. Dr. Hazen has collected much valuable information concerning epithelial growths, both from his own wide opportunities of study at Johns Hopkins, and from other authorities of recognized ability.

Illuminating as is the text, it is materially enhanced by the profusion of illustrations which are closely akin to presenting the patient in person for actual inspection.

D. G. W.

BILLY SUNDAY AND THE DOCTORS

The place which Dr. Howard A. Kelly occupies in the medical profession is one which necessarily commands attention for him when he speaks. His ability as an operator and his clearness as a writer and teacher have placed him in the class of sane thinkers and common sense "doers." Dr. Kelly has never been accused of anything approaching insincerity, hence his expressed opinion of Billy Sunday as given in the *Sunday School Times* for April 30, 1916, is more than merely interesting to the medical profession. The fact that Billy Sunday is to be in Boston from November 12th to January 15th is sufficient reason for reproducing Dr. Kelly's letter to the *Sunday School Times:*

"A SURGEON'S VIEW OF BILLY SUNDAY, SURGEON"

By Howard A. Kelly, M.D., LL.D., F.R.C.S.

Looked upon as the most eminent of all authorities in his own field, Dr. Howard A. Kelly, of Johns Hopkins University, holds a "place as a worker and teacher in the applied science of his profession" which the Editor of Appleton's Magazine has said is "beyond question the highest in America and Europe." Dr. Kelly's personal testimony as to how he was led out of uncertainty and doubt about the inspiration of the Bible (which was published in Volume 1 of the famous "Fundamentals"), has been referred to by Secretary of the Navy Daniels as one of the most remarkable Christian documents of the century. Unusual interest attaches to the impression made by Billy Sunday upon this eminent citizen of Baltimore, who is more interested in the Book which he says gives him a diagnosis of his spiritual condition than in the medical works that have made his own name famous.

The long-expected has come to pass at last. The huge tabernacle squats like a big turtle on an old base-ball lot, and daily overflows with expectant throngs of sixteen, eighteen thousand, and more. The multitude gathers hours beforehand, and waits eagerly for the messages from God's Word, interpreted in the plain language of the people.

People's opinions change day by day as the great drama of souls being quickened into life, and of others being consecrated to a new life of genuine

service, unfolds in unexpected ways. Thousands who vigorously opposed Mr. Sunday's coming are now his warm friends and defenders. A leading professor, known the world over, said last Saturday night, with face expressive of hearty approval, "Why, he is perfectly honest and thoroughly in earnest; I see nothing to object to." "They are all against him at first, but when they go and hear him he gets them every one," say the officials in a near-by county seat. The violent and often hysterical objections, so common in letters to the papers before his coming, have helped the cause by making warm supporters of the many who now wish to make amends. Gentile and Jew, Christian and infidel, are drawn by a common impulse to hear the Gospel.

The one outstanding characteristic of Mr. Sunday's sermons is that he uses great plainness of speech. It is this refreshing frankness, coupled with the fact that he preaches plain Bible truths, salvation by the blood of Christ from the power of Satan, and hell for those who reject Christ, — in this, I think, lies the force of a message which the power of the Holy Spirit drives into impenitent hearts.

The trouble in Baltimore and Maryland, as everywhere, has been the sleepy indifference of our Christian churches. Our Christian ministers of all denominations have for some time past shown much uneasiness regarding the situation in our city and larger towns. The fact that about 67 percent of the people of Maryland are heathen is alarming, and shows us that we have a badly neglected missionary field right here at home. But no one has seemed to know just what to do, and no leaders have appeared.

In expectation of a revival, preparatory services and prayer-meetings were held faithfully, and we who professed to be Christians have been confessing our own great shortcomings and needs. Then it happened that just when we seemed because of our sins and indifference to be without any more hope, our Father has generously sent us this abundant rain.

Sunday's preaching is progressive in character, and I am sure can not rightly be called abusive at any stage. Mr. Sunday, however, justly and of necessity, unsparingly applied the lash to us more or less nominal Christians at first; we sorely needed it, for nothing short of the most drastic treatment could ever have roused us from our deadly spiritual torpor. Now he is busy winning souls and getting men to come forward and confess Christ openly, illustrating his Gospel themes from a wealth of personal experiences, simple, homely, touching little narratives, always with a point which never fails to enter. We who called ourselves Christians were many of us at first dazed, and then shocked to find that we were expected to go down into the vast audience and to do personal work in winning souls to make a decision, but at last we have taken hold, and I veritably believe that the eyes of many have been opened to the meaning of consecration in a way we had never dreamed of. It was just here that we greatly surprised the splendid Trenton group of business men who came down to see and to help us.

Our city just now is much like a seething cauldron, for we are in the midst of the greatest opportunity ever yet offered to Baltimore. What will we do with it? That is the vital question. The answer depends in a large measure upon us who for years professing to be Christians have yet been crying, "A little more slumber, a little more sleep, a little more folding of the hands." Are we not henceforth to know no man after the flesh, but only the man after the Spirit recreated in Christ Jesus, and sent out to suffer with Him and to serve? I believe we are.

Johns Hopkins University, Baltimore, Md.

UNITED STATES PUBLIC HEALTH SERVICE — HEALTH NEWS

It is so well recognized that certain occupations may involve serious dangers to young growing persons that most States now have their child labor laws. Massachusetts, which has been a leader in legislation of this character, is now engaged in a systematic effort to collect information that may be of value in determining the need of changes in its present laws and regulations governing the employment of minors. At the request of the Massachusetts Board of Labor and Industries, Assistant Surgeon M. Victor Safford of the U. S. Public Health Service was detailed by the Federal Government to coöperate with the State authorities in a study of the effect of employment in various occupations on the health and physical development of children now permitted by law to work therein. A report of this study with respect to the cotton manufacturing industry of Massachusetts has just been published by the Federal Government as Public Health Bulletin No. 78, entitled "Influence of occupation on health during adolescence."

The physical condition of over 600 boys between the ages of fourteen and eighteen employed in this industry in different parts of the State received careful study. It was brought out that in Massachusetts boys between these ages for the most part do not remain long in the cotton mills. This fact and the strict regulations of the State governing the employment of minors may not make some of the conclusions reached in this local investigation equally true elsewhere, but among the facts disclosed the following may be mentioned.

A considerable proportion of the younger boys and also of those over sixteen were undersized and physically undeveloped for their ages, while those between fifteen and sixteen averaged larger than other classes of boys of their age with which comparisons were made. This fact is explained by the accumulation in the mills of strong boys waiting to reach the age of sixteen to go into permanent "full time" occupations. The presence of a noteworthy proportion of undersized boys is not ascribed to the effects of the occupation but to the fact that the cotton mill offers one of the few chances of employment for undersized boys. Evidence of injurious effects of their work or working conditions, even of the temperature and humidity of the mills, on normal boys was seldom found, although further investigation of possible effects of atmospheric conditions is recommended. Probably as a result of the State regulations relative to the issuance of employment certificates comparatively few cases of dangerous diseases were discovered. There was, however, a wide variety of defective conditions disclosed by the investigation, many of them of such a character as to impair seriously the future health and economic usefulness of the individuals concerned if not remedied.

What profiteth a man that he gain the whole world yet lose his health?

Naturalists say that long ago the prehistoric waters were infested with a species of enormous shark which finally became extinct by reason of the workings of its voracious appetite. Thus Nature eliminates the over-fed.

The desire for ease of life and plentiful diet is universal and is the great stimulus of man and animals alike. When man becomes greedy and takes more ease and food and drink than is his share, Nature discards him.

In the race for power and place, for ease of circumstance and relief from the stimulus of hunger, the modern man is apt to forget that unless he is careful of his body he will soon be made to suffer for the infraction of Nature's inexorable physical law. With the loss in body tone comes an equal loss in mental acuity and the brain, which for a time was able to operate despite the complaints of an over-fed, under-exercised, self-poisoned body, stops working.

Statisticians have discovered that the mortality rate of persons in the United States over 45 years of age is increasing. The strenuous life of to-day is not alone responsible for this. Lack of health-giving exercise, superfluity of diet, lack of restoring sleep, over-stimulation, the high pressure of the race for power, wealth and position, plus physical neglect, these bring early decay. The goal is reached, — wealth is amassed, — honor, position and power are just being grasped when the apple of accomplishment turns to the ashes of dissolution. The brilliant mind becomes clouded, the steady hand is no longer accurate, the eye which once gazed fearlessly on the whole world is dimmed,

and it is not long before the final break-up occurs. All of this was entirely preventable.

Other things being equal it is the man who leads the well-balanced feli who lasts the longest, whose work to the end is uniformly the best, he who neither over-works nor over-plays, neither over-eats, over-drinks, nor over-sleeps, he who maintains a standard of simple healthy diet in moderation, who offsets mental work with physical recreation, who is as honest with his own body as he is with his own business. When success comes to such an one his physical and mental condition is such that he can enjoy in peace of mind and contentment of body the fruits of his labors.

The regulations of U. S. Public Health Service state: "It is the duty of officers to maintain their physical as well as their professional fitness. To this end they shall be allowed time for recreation and study whenever their official duties will permit." If the Government regards it as essential that its sanitary experts shall be safeguarded in this way, is it not equally important to every citizen that he similarly maintain a high standard of physical integrity?

INCREASE IN NUMBER OF PHYSICIANS IN UNITED STATES PUBLIC HEALTH SERVICE

Congress has recently made an appropriation for thirty-three additional Assistant Surgeons in the United States Public Health Service. These officers are commissioned by the President, and confirmed by the Senate. The tenure of office is permanent, and successful candidates will immediately receive their commissions.

After four years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon. Passed assistant surgeons after twelve years' service are entitled to examination for promotion to the grade of Surgeon.

Assistant Surgeons receive $2,000, passed assistant surgeons $2,400, surgeons $3,000, senior surgeons $3,500, and assistant surgeon-generals $4,000 a year. When quarters are not provided, commutation at the rate of $30, $40, and $50 a month, according to the grade, is allowed.

All grades receive longevity pay, ten percent in addition to the regular salary for every five years up to forty percent after twenty years' service.

Examinations will be held every month or so in various cities, for the convenience of candidates taking the examination. Further information will be furnished by addressing the Surgeon-General, United States Public Health Service, Washington, D. C.

MEDICAL CARE OF THE NATIVE ALASKAN

The problem of caring for the natives of Alaska is among the most difficult matters which confront the Government in its relations with the aboriginal tribes.

There is no central point in Alaska, Seattle being the trading centre of the Territory.

These people are scattered along a waterfront of more than 5,000 miles. They live in small villages. They are still influenced by the superstitions which have come down to them from the centuries. They hide, rather than seek relief for their ailments, believing that there is some divine retribution in misfortune.

Secretary Lane of the Interior Department, who personally knows every part of Alaska, has given tender consideration to the needs of the native Alaskan, and great improvement has taken place in the care of these people, especially during the past two years.

Syphilis and tuberculosis, here as elsewhere, have wrought sad havoc with the primitive people.

The editor of the *Medical Sentinel*, in a trip just completed in Alaska, was forcibly impressed by the special interest now being shown by the Government in the medical side of care for the natives.

At Juneau, Dr. Douglas Brown, a recent arrival, is in charge of a splendid native hospital just completed by the Interior Department, which looks

after fourteen near-by villages. Dr. Brown serves under the Educational Division of the Interior Department, is a civil service employé and was for some years with Col. Gorgas on the Panama Zone.

At Haines a special hospital is soon to be erected for tubercular cases, and soon a colony with every modern equipment will be in operation.

In other portions of Alaska, seven or eight physicians have been put in charge of the medical Indian service, and three other small native hospitals are already maintained by the Government in the territory.

An attempt is now being made by Secretary Lane to employ teachers in the Educational Division, for stations where no doctors are located, who are also trained nurses. These teachers have some special training for emergency medical work, are given a medical and surgical equipment of simple character, and provided with proper instructions for the service along medical lines. As fast as appropriations can be secured, district zones are being organized comprising a neighborhood of native villages, for which a general hospital and a competent physician is supplied.

The insane native has the benefit of care outside of Alaska, where, in a milder climate, the percentage of recoveries is very large. The tubercular insane live in a separate department, at Portland, Oregon, where they enjoy every qualification for modern treatment.

The Educational Department in these more recent departures seeks, among other things, to educate the natives as to the prevention of tubercular infection. Also as to the dangers of syphilis, its possible cure under appropriate treatment, thereby effecting the lowest possible evil to the living, as well as to the unborn progeny of the native races of Alaska. — *Medical Sentinel.*

PERSONAL AND GENERAL ITEMS

Dr. George B. Rice, Professor of Diseases of the Nose and Throat, Boston University School of Medicine, was married on August 26 to Miss Abbie M. Conley at Dublin, New Hampshire. They will make their home at 28 Littell Road, Brookline.

Dr. Alice H. Bassett (1898 B.U.S.M. and Instructor in Materia Medica in the same) has removed from 520 Beacon St., to 510 Commonwealth Avenue, Boston.

Dr. Vincent T. Lathbury, class of 1904 B.U.S.M., until recently located in Pittsfield, Maine, has removed to Augusta, Maine.

Dr. Sarah Adleman, class of 1910 B.U.S.M., is now located at the Hebrew Infant Asylum, New York City.

WANTED. Homœopathic physician wanted to take my practice from November first to May first, 1917, or will sell. Have static machine, vibrator and leucodescent light. Russell Bingham, M.D., Fitchburg, Mass.

Dr. Sanford B. Hooker, B.U.S.M. 1913, who for the past year has been doing research work in the University of California, returned to Boston the first of September and is again on the staff of the Evans Memorial for Clinical Research and Preventive Medicine.

WANTED. A single man, graduate of Boston University School of Medicine, or the New York Homœopathic Medical as Resident in the Homœopathic Hospital, Melbourne, Australia, for a three yeats engagement; to go out by January 1, 1917. His expenses will be refunded; room and board in the Hospital; pay for first year, £200; for second year, £250; third year, £300. Good chance to enter private practice at close of engagement. References. Address Rev. Seth C. Cary, 43 Moultrie St., Dorchester Center, Boston, Mass.

Dr. Elizabeth G. Bradt, B.U.S.M. 1915, completed in July a year's service at Dr. Lee's private hospital in Rochester, New York, and is now house physician at Talitha Cumi Home, Jamaica Plain, Mass.

During Dr. Frank O. Cass's absence from Provincetown, Mass., for the month of October, Dr. Edwin D. Lee (1914 B.U.S.M.) is caring for his practice.

The medical library of the late Dr. A. Howard Powers of Boston, who died in June of the present year, will be on sale at Boston University School of Medicine, beginning Wednesday, October 18.

THE NEW ENGLAND MEDICAL GAZETTE

VOL. LI NOVEMBER, 1916 No. 11

Books for review, exchanges and contributions — the latter to be contributed to the GAZETTE only and preferably to be typewritten — personal and news items should be sent to THE NEW ENGLAND MEDICAL GAZETTE, 80 East Concord Street, Boston. Subscriptions and all communications relating to advertising or other business should be sent to the Business Manager, 80 East Concord Street, Boston, Mass.

THE GAZETTE does not hold itself responsible for the opinions expressed by its contributors. Reprints furnished at cost.

MAL DE MER

Seasickness is a condition which has destroyed the pleasure of many a long anticipated sea voyage and prevented many a would-be traveler from even embarking.

For years considered a disordered condition of the stomach, it is now known to have its origin in the static labyrinth. McMillan in the *Medical Press* for July 12, 1916, describes the condition as follows: Vertigo is a reflex condition due to some divergence from the normal of the semicircular canals, whereby through the auditory nerve abnormal impulses are carried to the medulla, and thence to the heart by the pneumogastric through its cardiac branches; and so far as the derangement that is common to the good sailor when he is confined below amidst oil smells, galley odors, etc., constitutes that form of the malady associated with vertigo, the main system, that is to say, the sympathetic, is unaffected. But do the waves pass beyond, to the gastric branches of the vagus, then are the original abnormal impulses from the semicircular canals communicated through its gastric branches to the center of the sympathetic system, the solar plexus, and then a second impulse is carried back to the stomach and causes the latter organ to evacuate its contents; and, although the whole may constitute one reflex movement, it is possibly a double one, the second being complete when food, actually placed within the stomach, during the first reflex is

rejected; and then occurs the never-to-be-forgotten feeling of a blow in the stomach. The spinal cord has been said to be concerned in the reflex or reflexes, and there has been mention made of muscular incoördination; but it is an easily solved question that beyond the movement caused by the lurch of the vessel, there is no muscular affection other than the inactivity due to vertigo and the gastric distress. Barany's work has shown, however, that the otolith organs are a more potent factor in the causation of seasickness with its attendant symptoms than are the semicircular canals themselves.

Internal medication aimed at preventing or relieving this condition has been largely unsuccessful because of the physical and mechanical nature of its cause. Inhalations of amyl nitrite, however, are of value in the syncope associated with vertigo.

ORIGINAL COMMUNICATIONS

CONTAGIOUS SKIN DISEASES — THEIR RECOGNITION, RELATION TO PUBLIC HEALTH AND PREVENTION OF SPREAD *

By Ralph Bernstein, M.D., Philadelphia, Pa.

Professor of Skin Diseases, Hahnemann Medical College and Hospital, Philadelphia, etc.

I shall begin my lecture by outlining the salient features which enable us correctly to diagnose those dermatological affections which are of a contagious nature. The conditions which I shall mention are the more or less common ones which one would be apt to have to contend with in the routine of an every-day office practice.

Among those to be mentioned are the contagious form of impetigo, its closely related neighbor ecthyma, dermatitis repens, and seborrhœa; *sycosis vulgaris*, the trichophyton infections, tinea versicolor, erysipelas, scabies, and lastly syphiloderma.

Having pointed out the diagnostic features of the foregoing conditions, I shall then take up the question of their relation to public health and the prevention of their spread.

I shall begin with impetigo contagiosa because of its intensity of transmission. Of the more acute infective dermatoses, impetigo contagiosa is the most infective.

The disease has its beginning as a small, flat, distinct vesicle containing a serous fluid which in the course of twenty-four hours becomes pustular by secondary infection. The eruption is most usually seen upon the face and hands, yet any part of the body is apt to be infected. In this stage of the disease it is rarely recognized as a beginning attack of impetigo contagiosa. It differs in its relationship to chicken-pox, which it closely resembles in this stage, because of the fact that the vesicles contain a fluid which is not decidedly clear as in the vesicle of chicken-pox, but is decidedly cloudy in nature. After twenty-four to forty-eight hours rupture occurs, which is followed by the exudation drying upon the skin as thin, wafer-like scabs which have that characteristic "stuck on" appearance, being honey-yellow in color.

Now then, the important point to be remembered in the diagnosis of this condition is that the crusts seem to be very

* Read before the Homœopathic Medical Society of the State of Pennsylvania, September 13th, 1916, at Reading, Pa.

loosely attached; the edges tend to curl up and drop off, leaving behind a reddish, exuding base.

Another point which is apt to lead us astray is the fact that a patient will very frequently be seen having nothing but these reddish spots, — the scabs having already dropped off or having been removed by the patient. This often leads us astray in a diagnosis of the existing condition. If, however, the patient is permitted to return in twenty-four hours, being directed to keep hands off, the characteristic scabs very quickly again present themselves in their true picture.

This is a highly contagious condition because of the fact that the infection is primarily streptococcic, and secondarily a staphylococcic one; the disease is, therefore, of a highly infectious nature and often spreads with great rapidity among the inmates of orphanages and asylums.

Impetigo has occasionally been seen associated with varicella and grafted upon the individual lesions, causing more or less confusion in a proper diagnosis of the existing condition.

It must not be forgotten that the affection often undergoes spontaneous evolution, occasionally clearing up in about two weeks.

Let us next consider for a few moments the question of ecthyma, that condition which I previously stated was so closely related to impetigo contagiosa because it is considered as a further stage of impetigo, consisting of punched-out ulcers, not very deep, and usually upon the lower limbs; usually in the aged, especially those who are debilitated and poorly nourished. Impetigo contagiosa which has undergone an ulcerative change, especially in one who is debilitated, whether young or old, should be considered as an ecthyma.

Dermatitis repens is beginning to become more common, especially because of the fact that it is beginning to be more readily recognized; the micro-organism, however, which is responsible for this condition having not as yet been isolated. Croker was the first one to mention *dermatitis repens* and give us a clinical picture of its condition. It usually follows an injury upon the hand and presents itself as a small bleb which extends peripherally, denuding the skin as it goes. There is a serum-like discharge constantly going on, and the area of demarcation in its advance is surrounded by a white, turbid ring.

The base of the ulcerated condition is usually deep red in color and highly inflamed. The affection has a tendency to travel. In one case I recall it having traveled up the entire arm on one side and partially down the opposite arm.

Seborrhœic dermatitis is to be recognized by a preponderance of fatty scales, a highly inflammatory condition and the

presence of marked itching; the lesions usually being located upon the chest, in between the shoulder blades, in the arm pits and about the hairy parts.

Papules are occasionally to be seen which are surmounted with fatty scales scattered here and there, often coalescing to assume many different forms and odd gyrations. These patches are clearly defined by fatty, yellow scales and a decidedly crusty border which, upon being removed, leaves a moist surface.

This condition is usually chronic and tends to remain a long time, — attacks often returning where the treatment has not been strenuous enough entirely to annihilate the bacillus which is responsible for the condition.

A seborrhœic condition known as "pityriasis steatoides" usually presents itself upon the scalp, in the eyebrows, the mustache and bearded region, consisting of small, pale, yellow scales, which upon the scalp are usually known as "dandruff," and which are accompanied with local itching and have a tendency to recur rapidly after their removal. As is well known, the micro-bacilli of Sabouraud are intensely active, and are responsible for universal attacks of baldness.

Seborrhœic dermatitis is contagious; therefore the important part played by unsanitary barber-shops and unsanitary utensils used in our own homes in the transmission of baldness is a most important problem which calls for radical measures to prevent our future generations from having bald and shining tops.

Sycosis vulgaris will be our next theme for a few moments. That this is purely a pustular condition there is no doubt, being a staphylococcic infection of the individual hair follicles, the hair shaft standing out prominently, piercing itself through a small pustule. It is a picture which is easily diagnosed, but must not be confounded with a true "Barber's Itch" because it is not a trichophyton infection. Yet little harm would come here because of an improper diagnosis because of the fact that both conditions are treated similarly.

The trichophyton infections now present themselves to us for consideration.

I first of all refer to the true "Barber's Itch," the *sycosis barbæ*, which is an infection by the tricophyton fungus, usually beginning quite superficially upon the face as either a simple ring-worm with its clear center and circinated outline, or as fine vesicular points spreading peripherally. This condition may remain or may go down deep into the follicles, giving the nodular tumefied form of sycosis.

This condition is easily recognizable by its hard, lumpy, tumefied appearance; it is frequently chronic and very resistant to treatment. It is not to be forgotten that we may have upon

the scalp a diffuse *trichophytosis capitis*, and this has very frequently been mistaken for seborrhœa, but is of a much more contagious nature, however, than seborrhœa possibly could be. The microscope here will aid us in a diagnosis, presenting large numbers of fungi, and beneath the scales are to be found reddish points or papules.

We must, moreover, not forget the typical ring-worm of the scalp with goose-flesh appearance, with stumps of broken-off hair, and its defined circinated borders; in direct contrast with alopecia areatæ, which are smooth and lustreless and do not have the goose-flesh appearance, nor do the hairs seem to be broken-off; usually in cases of alopecia the areas are quite devoid of hair, but occasionally a few fine, downy hairs are to be seen.

The patches of the ring-worm are characterized by dry scales which are usually grayish in color. The hair usually breaks off close to the scalp leaving the stumps exposed, which can be easily removed by the fingers, a point which differentiates this form of ring-worm from the other forms.

It is to be remembered that adults do not usually suffer from ring-worm of the scalp, it being practically a condition which is to be seen only on the scalps of children.

That the tricophyton infections are of a highly contagious nature there is no doubt. It frequently spreads through institutions and orphanages with great rapidity and intensity; it is very difficult to eradicate and sometimes lasts for a year or two, epidemics appearing from time to time due to persistence of spores.

That erysipelas is not of a highly contagious nature we now recognize. Erysipelas usually begins at a point, spreading itself peripherally with a well-defined border. The inflammation is deeply seated, involving the subcutaneous tissues, which is quite in contrast to an acute inflammatory erythematous eczema which would come in for differential diagnosis. The sensations in erysipelas are those of fullness and burning and occasionally of decided pain rather than only itching. The character of the discharging fluid is quite different from that of acute eczema, being more serous than watery. There are, as well, constitutional disturbances in erysipelas. The line of demarcation, another differentiating point, is, however, not always prominently defined. There is a tendency to vesiculation in erysipelas; however, the vesicles are usually larger than those in eczema and have a tendency to become bleb-like in character.

I should like to mention at this point that a saturated solution of magnesium sulphate, constantly applied, has always given the best of results in the treatment of this condition, as well as preventing the spread of the condition to adjacent parts.

Scabies or the "Common Itch" is certainly of a contagious nature, — that is to say, contagious when one comes in direct contact with the patient for a greater or lesser extent of time; in other words, direct contact with the patient's body or sleeping in the bedclothes which have been infected by a patient having had scabies. The mere shaking hands with a patient whose hands are infected with scabies has never transmitted the disease to me or those who are associated with me in my dermatologic work in the various skin clinics with which I am connected.

Scabies is at times quite easily diagnosed, and yet again there are cases which are more or less atypical and difficult. I shall consider the lesions in their order as produced upon the hand, wrist, elbow, axillæ and penis. While lesions are to be found upon the abdomen, buttocks, inner surfaces of thighs, legs and between the toes, in these locations they are not quite as characteristic as those to be observed in the before mentioned regions, so I shall limit myself to a discussion of these parts, with the hope of making the matter of recognition of this annoying dermatose somewhat clearer.

The predominant symptom of which the patient complains is the intense itching, always worse at night, due of course to the activity of the itch mite, the *acarus scabiei*, which is a noctambular parasite. The chief characteristic of the eruption is the multiformity, consisting of vesicles, excoriated papules, pustules, scratch marks, and is frequently contaminated with impetigo and eczema. Upon the hands and wrists the condition is decidedly characteristic, appearing especially between the fingers as numerous vesicles and scratch marks. Here are to be found the burrows, especially on the lateral surfaces of the fingers.

A hand magnifying-glass often assists in locating the burrow. Sabouraud offers the ingenious suggestion of applying ink to an infected region, especially in cleanly persons, on whom the parasite is hard to discern. The burrows are filled with ink by capillarity, the excess is wiped off, and the burrows stand out quite prominently.

It is to be remembered that scabies in this region attacks as well the palm of the hands. On the wrists, especially at the folds, on the flexor surfaces, may be seen typical lesions, vesicles, infected and uninfected, burrows running transversely, and numerous scratch marks.

The bend of the elbow usually does not show burrows, but instead first presents numerous scratch marks, followed later by secondary infection and vesiculation. Likewise at the axilla, burrows as a rule are not to be seen; scratch marks here seem

to predominate, usually at the anterior fold on a line with the seams of the undergarments. The penis, both upon the shaft and glans of the organ, is indeed a most favorite seat for the scabies lesions, which appear as red papules occasionally associated with vesicles and burrows.

To recapitulate, the diagnostic features of scabies are the presence of the burrow with its itch mite; intense itching, worse at night; absence of lesions on face and neck; occasional presence of lesions on face of nursing infants; presence of lesions about nipple in the female; presence of lesions upon the shaft and glans of the penis; characteristic lesions to be seen between the fingers and at flexures of wrist.

If there is any one other condition which as a rule is diagnosed as scabies, especially in infants and children, it is the itching dermatose of Bateman. I refer to *lichen urticatus* or papular urticaria, which is usually to be seen during the earlier years of childhood. It differs from scabies, especially when upon the hands and wrists, in the fact that it begins as an urticaria, the lesions being rather small, and frequently decidedly papular in character.

As a rule, when the patient is brought to the physician the disease is usually well developed, making its diagnosis from scabies all the more difficult. In this well developed stage it presents rather pale, red papules with scabbed tops, usually upon the hands and limbs, although the face and body are frequently the seats of the lesions. Minute disseminated vesicles occur here and there with occasionally a pustule, infected by scratching, as the itching is intense. There is a tendency for the papules to become linear, following one another closely, probably along the line of a scratch mark. As old lesions disappear they leave behind a dark spot, and frequently the older papules appear to be quite flat upon their surfaces, and if held at a proper angle with the light they appear to be quite shiny. The duration at times is quite long, usually better in the winter time, only to recur when warm weather sets in again.

The main points of differentiation from scabies are: absence of burrows and the itch mite, absence of lesions on the penis, occasional presence here and there of wheals, with an occasional antecedent history of urticaria; tendency of papules to become flat and shiny, recurrence in summer time, itching usually worse in the day-time, and slow responsiveness to treatment.

We are now ready to take up for a few moments a consideration of the recognition of the cutaneous manifestations of syphilis. It is indeed to be regretted that patients are going about from day to day with undiagnosed syphilitic manifestations because of the inability of the physician to recognize their

nature. Probably the most important fact accounting for the physician's inability to recognize the lesions is that he hesitates to ask his patients the necessary leading questions which would assist him in a diagnosis of the existing condition, because of the fear of offending the patient. This is indeed a crime and is unfair to the patient himself and to the community at large. If a physician hesitates in asking the patient the necessary questions, regardless of the fact of whether the patient feels insulted or not, it should not deter him from doing his duty to the public at large as well as to the patient himself.

The contagiousness of syphilis we do not question for a moment. Whether it be in its earliest manifestations or even in its latest, all forms of syphilis are considered of a highly contagious nature.

One could write a long paper on the question of the recognition of the cutaneous manifestations of syphilis. It is not my intention to go into details on this question at this point, merely to mention a few of the general characteristics.

As to their distribution, we know that an especially diagnostic feature is the presence of the lesions upon the soles of the feet and the palms of the hand; we know the presumed ham or copper color of the lesions; we are well aware of their multiformity and of their configuration; the presence of papules or pustules or macules at one time, which is a most important diagnostic point from smallpox since smallpox develops progressively from one stage to the next.

The question of spread of the various contagious dermatologic conditions is necessarily a most important one. Those conditions which are of a highly contagious nature certainly demand the prevention of spread of the disease to adjacent parts of the individual who is affected, and a prevention of spread to those who are closely associated or related to the patient in question.

When a patient is affected with a contagious skin disease, the best method of prevention of spread is the thorough application of various unguents which are antagonistic to the microorganic life that exists in the condition to be combatted; it is advisable also to use a mild antiseptic solution over the parts adjacent to the areas affected. Mild solutions of bichlorid of mercury sometimes seem to be effective, but it must always be borne in mind that occasionally a patient's skin is decidedly sensitive and tender and reacts very unkindly to bichlorid solution. Solutions of lysol and carbolic acid and some other antiseptic substances likewise very frequently cause cutaneous reactions, so that where the skin is so unusually sensitive and tender as to react to the substances named, the mere use of a

mild alkaline solution seems to be entirely satisfactory in preventing a spread of the existing condition.

It is of the utmost importance that the patient should be directed to use his own towel and soap during the existing condition, and should as well use his own bedclothing, which should be thoroughly scalded after the patient is entirely cured.

Regarding the question of syphilitic patients who have apparent cutaneous manifestations, they should certainly be most thoroughly informed as to their existing condition; they should be told to use their own eating and drinking utensils; they should be cautioned about using public fountains for drinking purposes; they should be cautioned about going into public places to eat or to be shaved, or in public baths, or anywhere at all in which they would come in contact with the public at large.

It is just as important for the public to be cautioned regarding the existence of such conditions; they should be instructed not to drink from public cups which are attached to drinking fountains; those who patronize the cheaper restaurants should be cautioned about drinking from cups or glasses which have cracked edges because of the fact of the danger of disease germs lurking in these crevices which are not properly cleansed or sterilized.

Another factor in the prevention of spread of skin diseases in public places is the use of liquid soap, which is now installed in nearly all modern public places.

Many barber shops which are not modern in their technic are the lurking places of many skin diseases which are transmitted to many an innocent person. A number of these shops are responsible for the transmission of such diseases as syphilis, barber's itch or the true ring-worm, *sycosis vulgaris*, common baldness, furunculosis, *impetigo contagiosa*, etc. Many of the cheaper barber shops have the habit of using hot towels on a patron which are repeated from one patron to another. The barber, by the use of the same comb and brush, disseminates the germs which are responsible for baldness.

The advice, therefore, to the general public should be that those who patronize the barber shop should have their own brush and comb, which should occasionally be sterilized. There are, however, many of the more modern of the barber shops today which have a sterilizing apparatus of their own in which towels, combs, brushes and shaving utensils are sterilized in the presence of the patron, an attendant standing beside the barber handling the sterilized towels, etc., upon a sterilized tray.

A remedy for the existing evils in barber shops should be the passage of laws regulating the fitness of barbers to follow

their trade and laws regulating the sanitary conditions of their emporiums. Such laws, according to my present knowledge, now exist in Wisconsin, Michigan, Kentucky, Missouri, Minnesota, Connecticut and Washington. In New York, New Jersey and California, if I am not misinformed, such laws have not been upheld.

It appears to me that the best solution of the problem would be that the local boards of health should have the responsibility in charge of the sanitation of the barber shops, and should see to it that all barbers have a general understanding of the nature and effects of contagious skin diseases and of the proper laws and rules regarding sterilization and sanitation.

Thirty-seven South Nineteenth Street.

LEUKÆMIA*

By Helmuth Ulrich, M.D., Boston, Mass.

The literal English equivalent of leukæmia is white blood. If the number of leukocytes in the blood is very high, then this fluid actually assumes a more or less whitish, or, rather, grayish-red color. But the term leukæmia has come to mean an increase in leukocytes, and is applied particularly to the two types of that disease in which this increase, correctly designated leukocythæmia, or leukocytosis, may reach its greatest heights.

At the outset, it is imperative to emphasize the difference between the symptom leukæmia and the disease leukæmia. Thus, although the symptom, that is, an increase in the number of leukocytes in the blood, may be and usually is very marked in the disease, yet the disease may exist without the symptom; and, conversely, an increase in leukocytes by no means warrants the diagnosis of leukæmia, the disease. In fact, a host of ailments, most of which are much more common than the disease leukæmia, include an increased leukocyte count in their symptomatology.

The foregoing makes apparent the advisability of designating the symptom with the more appropriate appellation leukocytosis and reserving the term leukæmia for the disease. It is in this sense that these two terms shall be used here.

To avoid confusion, but at the same time at the risk of adding to it, some of the many synonyms applied to the disease may be given.

Synonyms.

Leukocythæmia has already been mentioned. Lymphocythæmia, lymphæmia and lymphatic leukæmia or leukocythæmia are used when the excess of cells is made up of

* Read before the Alethean Club of Boston, November, 1915.

lymphocytes; and, similarly, myelocythæmia, myelæmia and myelogenous, myeloid, splenomedullary, or splenic leukæmia or leukocythæmia, have been applied when cells of the myelocyte series predominate. Leukanæmia has been used alone or modified by one of the above adjectives; chloroleukæmia and chloroma have reference to those cases that show greenish nodules, especially about the head. Pseudo-leukæmia is, perhaps, more frequently but certainly not less incorrectly applied to Hodgkin's disease than to leukæmia. When used in connection with the latter, the cases with only slight leukocytosis or even normal white counts are meant.

As already indicated, leukæmia occurs in two general forms, the lymphatic and the myelogenous. Both of these types may be either acute or chronic, the order of frequency in which they appear being: Acute lymphatic, chronic myelogenous, chronic lymphatic, and acute myelogenous. The last named is rare.

Gulland and Goodall mention mixed forms, but in all probability faulty staining methods, as a result of which some of the earlier forms of the myelocyte series (leukoblasts, lymphoidocytes) were, no doubt, classed wrongly as lymphocytes, must be held responsible for such a conception. In a somewhat different sense, however, I venture to suggest that, perhaps, all cases are mixed cases. That is to say, in all cases there is, probably, simultaneous, but very rarely equal involvement of lympho- and myelo-poietic tissue. Acute cases, especially, are prone, and would be expected to show hæmatological evidence of such general involvement.

Pathology.

The chief anatomical changes are found in the organs of blood formation and blood destruction — the bone marrow, the lymph and hæmolymph nodes, and the spleen.

Yellow marrow is replaced to a great extent by red marrow. It is largely made up of the type of cell that predominates in the blood, that is, lymphocytes and their ancestors in lymphatic leukæmia, and cells of the myelocyte series in the myelogenous form of the disease.

The lymphnodes are usually enlarged, particularly in the lymphatic form. The size of the nodes and the number affected depends in great measure upon the chronicity of the disease. Thus, in chronic lymphatic leukæmia almost every node in the body may show enlargement. Histologically, the enlarged nodes show invasion with the same kind of cells found in the blood. In lymphatic leukæmia, especially, there is so great an engorgement with lymphocytes that the normal differentiation into cortex, with its germ centres, and medulla entirely disappears.

The spleen is enlarged, specially in the chronic cases. In chronic myelogenous leukæmia, the spleen may reach an enormous size, extending below the pubis and beyond the median line to the right (Fig. 1). Microscopically, the chief feature

Fig. 1

is extensive invasion with cells corresponding to those in the blood. Evidence of blood destruction in the form of pigment that gives the Berlin blue reaction for iron is usually present.

Just as in the hæmatopoietic and allied organs just described, so in most other structures the chief pathological change is an infiltration with the predominating white blood cells, usually with some consequent enlargement. Almost any organ in the body may be affected, usually the liver, the gastro-intestinal tract, the muscles including the heart, and the kidneys.

The Blood.

It is practically always easy to diagnose leukæmia from a blood examination, and usually this is the only way it can be diagnosed. An occasional case with a normal leukocyte count may escape detection, but with our present excellent staining methods this ought to be a rare occurrence, because the number of leukocytes is less important than the presence of youthful forms.

The red cells are affected secondarily and usually not to a very great degree. There are always signs of some anæmia, at first very slight, but increasing as the disease progresses, until,

in advanced cases, it may take on a pernicious type. This finds expression in the presence of many unusually large red cells, both nucleated (megaloblasts) and not nucleated (megalocytes), and of many very deeply staining hyperchromic ones. This hypercytochromia has for its cause an abnormally large amount of hæmoglobin in the cell, which is also responsible for the high color index characteristic of pernicious anæmia.

Ordinarily, however, the anæmia is of the simple secondary type, with a low color index (relatively greater diminution of hæmoglobin than of red cells), moderate distortion (poikilocytosis), inequality in size (anisocytosis), pallor (hypocytochromia) and abnormal staining quality (polychromasia) of a portion of the erythrocytes. The severity of the last four phenomena depends largely upon the stage and type of the disease, and any of them may be practically absent. The number of red cells and the percentage of hæmoglobin, too, are variable and range from nearly normal to 1,000,000 or less and 15% or less, respectively. Nucleated red cells may or may not be numerous and in this type of anæmia are usually normoblasts, although later megaloblasts also appear.

The most interesting and important changes, and those that are characteristic of the disease, affect the white cells. It is commonly supposed that a high leukocyte count is essential for a diagnosis of leukæmia. That is an erroneous conception. High counts, to be sure, are the rule, and only exceptionally may an acute case, or possibly a chronic one during a remission, show a normal or only slightly increased count. The myelogenous form shows, on the whole, a larger number of cells than the lymphatic, e.g., an average of 300,000 against one of about 125,000. The acute cases have much lower average and, sometimes, even normal counts.

Examination of stained films practically always settles the diagnosis, even when the total leukocyte count is low. In the presence of an exceedingly large number of white cells, it is often difficult to spread a proper blood smear. The slides to be used must be properly cleansed, and usually considerable dexterity and experience is required to spread the film evenly. The choice of a staining method, too, is of prime importance, and sometimes more than one should be used to bring out various structural details. By far the best method in nearly every way is the one devised by Pappenheim, combining the merits and avoiding most of the defects of Giemsa's stain and May-Grunwald's solution. Wright's modification of Leishman's stain also is good and approaches Pappenheim's method in its results. The widely used Jenner's stain still has a place, perhaps, as a preliminary routine method where an unusually large number of slides are

examined daily; but beyond its exceptional staining of eosinophilic granules it is of little value, being practically useless for differentiating the youthful mononuclear cells of the myelocyte series from lymphocytes, and absolutely so for an attempt at

Fig. 2

classifying the various immature cells. As a result of its use, the following remarkable statement in regard to lymphatic leukæmia appears in a recent and otherwise excellent textbook:

"Several writers regard the large cells of lymphatic leukæmia not as "lymphocytes" but as "promyelocytes." The point is hardly worth discussion. The cells may or may not be "promyelocytes" morphologically, and since they are derived from the bone-marrow in any case, the matter of their nomenclature is of little importance, and their exact nature in physiology is also a matter of unprofitable speculation, since they are met with in a pathological condition."

Further on in the discussion of myelogenous leukæmia, the authors of this book write:

"In most cases large lymphocytes are a striking feature in films. These are often specially large and their protoplasm is deeply basophil, and one is left in little doubt that these cells are really promyelocytes. But when differential counts are made, so many forms are found which appear intermediate between these and typical large lymphocytes that it is impossible to

know where to draw the line of differentiation, or at least to draw it so that the separation would have any meaning to any one but the individual observer."

In leukæmia every variety of white cell may be present, from the youngest lymphoidocyte to the oldest multinuclear neutrophile.

Etiology.

The lymphatic type of leukæmia is much more common in childhood and young adults, and the myelogenous type between the twentieth and fiftieth years; but both forms, especially the latter, may occur at almost any age. Males are more frequently affected than females.

As to the actual exciting cause or causes, there has been much conjecture. It was, and to some extent still is, thought to be a form of, or at least allied to, malignant disease. The very numerous and largely immature leukocytes floating in the blood stream would correspond to tumor formation in the common forms of neoplasm.

At present, however, the trend of medical opinion seems to regard the leukæmic process the result of an infection. Many types of bacteria are reported to have been found in the blood or tissue of leukæmia after death. Streptococci are, perhaps, most frequently present, but tubercle bacilli, corynebacteria, staphylococci, and various mixed forms have been described. Some of them have been thought to have a direct etiological relation to the disease, but probably all of them were terminal infections, such as occur in most cases just before death.

Symptoms: The onset in acute cases is usually sudden, in chronic ones very insidious and not recognized by the patient for some time. The symptoms are, in general, due to three causes: (*a*) Mechanical pressure from enlargement of lymphnodes and spleen, or infiltration of various organs with white blood cells, (*b*) Anæmia, (*c*) Toxæmia. The first may interfere more or less with the function of almost any organ of the body; anæmia causes general malnutrition and fatty degeneration of various organs, especially the heart and blood vessels, with resulting dilatation of the former, and increased fragility of the latter, which, in time, gives rise to hæmorrhages. The toxæmia may be due to the extensive destruction of leukocytes and, to a lesser degree, of erythrocytes, as well as to actual infection with micro-organisms. It may cause high temperature and other signs of intoxication.

Fever in acute cases is usually present and may reach 104°. In uncomplicated chronic cases a little, or considerable, rise in temperature may be encountered at intervals.

Pain may be due to pressure upon nerves by enlarged lymphnodes or by dragging of the enlarged spleen. Often there is some tenderness on pressure or tapping over the long bones. This is especially common in myelocythæmia.

Spontaneous hæmorrhages, especially from the oral or nasal mucosæ, but also from other surfaces, are common and may be the first symptoms noticed by the patient. Often there is a tendency to hæmophilia. This may be very troublesome and may cause death if an enlarged gland should be removed.

The accumulations of lymphoid tissue seem to have a very low degree of resistance to infection, so that sepsis, especially about the mouth, is common. For this reason it is important to look to the care of the teeth. The enlarged lymphnodes in the mouth have been mistaken for abscesses and were incised, with persistent oozing of blood resulting.

Lymphoid or myeloid infiltration may be present in the special sense organs, and may give rise to difficulties of hearing and vision.

Acute cases run a rapid course, lasting from a few days to rarely more than a few months. There are chronic cases, however, that have an acute beginning. The chronic form may run an extremely long course, lasting sometimes for ten years or more, and there may be very little discomfort to the patient during the greater portion of that time.

In the chronic types, and also in the subacute cases, there are remissions. In fact, the chronic cases may have periods of symptomatic well-being. Even the abnormal blood signs and other objective symptoms may, to a large degree, disappear.

Toward the end there is a considerable degree of anæmia.

Death is often due to broncho-pneumonia, either primary or secondary to sepsis elsewhere, especially in the mouth, nose, or ears. Death may result from hæmorrhage in the brain or from heart failure because of fatty degeneration.

Diagnosis: Clinically, leukæmia may resemble any disease presenting splenic or lymphatic enlargement, but blood examination affords a positive means of diagnosis in practically all cases.

Treatment: Unfortunately there is no treatment that has any very pronounced beneficial effect upon the disease.

Arsenic in the form of Fowler's solution, salvarsan, cacodylate of sodium, etc., seems to have helped many cases. This, alternated with Roentgen-ray treatment has, perhaps, the best results to its credit. X-ray should be applied to the long bones, that is, the femur, tibia and humerus. Roentgenization of the spleen is commonly done, but the consequent stimulation of this

organ to greater cell destruction may liberate sufficient toxic materials to cause rather serious symptoms.

More recently, benzene (benzol) has been employed in a very large number of cases, apparently with good results. This drug is supposed to have a restraining influence upon the blood-forming organs, because it was noticed that workers in factories, where the air contained benzene fumes, many times showed an unusually low leukocyte count. Its use in leukæmia, then, is entirely antipathic. It does not affect the cause of the disease, but antagonizes, to some extent, its effect. It is given with equal parts of olive oil in gelatin capsules. The initial dose is 1 to 2 grams a day and this is increased until 5 grams per diem are administered. The individual capsules are made up to contain 0.5 or 1 gram of benzene and are given during or after meals. Gastric disturbances and headache may result from its use. In that event, the drug should at once be stopped. Its use should be controlled by at least weekly blood examinations, and should be discontinued if the white cells drop to below 50,000 or if there is much reduction of red cells, and, especially, a tendency toward pernicious anæmia. Because of its dangers and doubtful value, however, the benzol treatment of leukæmia seems to be doomed to early, and, no doubt, just condemnation.

Blood transfusion has produced temporary improvement in some cases.

Splenectomy has been fatal in most cases, although Dr. Yates of Milwaukee wrote to me about a patient who is still living after his spleen was removed because he was erroneously supposed to be suffering from splenic anæmia, but was afterwards found to have leukæmia.

Case Reports *

Case 1. Acute Lymphatic Leukæmia: Male, 40 years old, had become ill rather suddenly, the chief symptoms being swelling and soreness of inside of mouth, especially in the oro-pharynx, with a little spontaneous hæmorrhage from the oral and nasal mucosæ. There was fever and great weakness. The attending physician suspected pus, but on incising the largest swelling obtained only blood. The bleeding from this incision could not be arrested, and continued until death. The fever was fairly high; there was rapid emaciation, progressive weakness, and rapid failure until death occurred about three weeks after the onset of the disease.

The total blood report is as follows:

---

* These records were included in a research report to the A.I.H. at its recent meeting in Baltimore, and appear as part of that report in the Journal of the A.I.H.

Hæmoglobin	14%
Erythrocytes	1,600,000
Color Index	0.44
Megaloblasts	432
Anisocytosis	
Slight Poikilocytosis	
Slight Polychromasis	

Leukocytes	14,400		
A. Leukocyte series		*B*. Lymphocyte series	
I. Polymorphonuclears		I. Lymphoidocytes	29.5%
1. Neutrophilic	1.85%	II. Lymphoblasts	.6%
2. Eosinophilic	1.5%	III. Lymphocytes	22.5%
3. Basophilic	1.5%	IV. Tuerk's cells	3.5%
Ia. Metamyelocytes	4.5%		
II. Myelocytes			61.5%
1. Neutrophilic	0.5%	*C*. Endothelials	4.5%
2. Eosinophilic	0.5%		
3. Basophilic	2.5%		
4. Mixed	1.5%		
IIa. Pre-myelocytes	.3%		
	34.%		66.%

Autopsy showed a moderately enlarged spleen, red marrow in the shaft of the femur, moderate enlargement of most lymph-nodes, especially the mediastinal, and of hæmolymphatics. Most organs, notably the liver, showed accumulations of leukæmic cells.

Case 2. Chronic Myelogenous Leukæmia: Female, 55, has been failing for about two years. About 14 months ago she was very ill with fever and general prostration. Has had gradual enlargement of spleen, which at the present time is of a very large size. (Figs. 1 and 2) For the last year there has been gradual and fairly marked improvement, so that for about six months the patient has been able to do her own housework. There has been fairly marked increase in weight. Whether the recent improvement is a therapeutic result or only a remission such as occur in chronic leukæmia as well as pernicious anæmia, is impossible to decide, but it seems that it may be a mixture of both. The spleen seems practically as large as it was nine months ago, although the patient herself is sure that it is smaller.
The blood report is as follows:

Hæmoglobin	82%	Leukocytes	250,000
Erythrocytes	4,430,000	Polymorphonuclears	
Color Index	0.93	Neutrophilic	40%
Megaloblasts	2000	Eosinophilic	4%

Normoblasts	1,500	Basophilic	2%
Anisocytosis		Metamyelocytes	
Slight Poikilocytosis		Neutrophilic	17%
Slight Polychromasia		Eosinophilic	1%
		Basophilic	1%
		Myelocytes	
		Neutrophilic	10%
		Eosinophilic	1%
		Basophilic	1%
		Pre-myelocytes	6%
		Leukoblasts	1%
		Lymphoidocytes	6%
		Lymphocytes	4.5%
		Endothelials	0.5%

80 East Concord Street.

NOTICE OF A COMPETITIVE EXAMINATION FOR QUALIFICATION TO THE POSITION OF EPIDEMIOLOGIST IN THE MASSACHUSETTS STATE DEPARTMENT OF HEALTH

Although the law leaves the appointment of the Epidemiologist in the hands of the Commissioner of Health it is the policy of the State Department of Health to hold competitive examinations for such positions and to consider the results of such examinations as the principal basis for selecting appointees.

On Dec. 4, 1916, an examination will be held for qualification to the appointment of Epidemiologist of the Massachusetts State Department of Health.

The written examination will be held on the above date in the examination room of the Civil Service Commission, State House, Boston. The oral and practical examinations will be held on dates and at places announced at time of written examination.

Persons possessing the necessary qualifications desiring to enter the competitive examination for this position are requested to communicate with the State Commissioner of Health, State House, Boston, at once. Upon such written application, a list of rules and regulations governing the appointment and an application blank will be forwarded.

Admission to the examination is governed by the regulations accompanying this notice. Physical fitness is a necessary prerequisite, but no percentage credits are given on physique. The examination comprises written, oral and feasible practical tests.

A relative rating will be established on the basis of:

A. Previous experience in epidemiological work — maximum 20 points.
B. Results of oral examination — maximum 20 points.
C. Results of written examination — maximum 60 points.

A. J. McLAUGHLIN, M.D.
Commissioner of Health.

November 3, 1916.

THE RESTORATION OF THE FUNCTION OF THE MOTOR TRACT BY SYSTEMATIC EXERCISES

By Clarence C. Howard, M.D., New York City

During the past fifteen years I have had under my care at the Metropolitan Hospital on Blackwell's Island several hundred cases of various forms of paralysis, especially of the type of spastic paralysis, hemiplegia, combined sclerosis and antero-poliomyelitis. After prolonged and careful study of these cases I came to the realization that medicinal treatment neither can absorb a clot nor replace scar tissue by normal nerve fibres. Electricity and massage have been and are still used, but without uniform results. The indefinite success met with by these methods soon led me to discard them. My first efforts with the customary procedures absolutely failing, it was not until I had evolved a system of active motions having for their end the rehabilitation of the undestroyed nerve fibres that I achieved any success. The results obtained were most encouraging, even startling. Many patients brought in on a stretcher went out on their feet.

The diseases of the motor tract that have proven amenable to my systematic courses of exercises which I have so far experimented upon, have been hemiplegia, spastic paraplegia, combined sclerosis, disseminating sclerosis and antero-poliomyelitis. I have employed this system upon poliomyelitis of old standing with excellent results. Recently it has come to my knowledge that a series of cases of the disease have been treated by this same method that I have conducted for the past twelve years at Metropolitan Hospital. I am gratified that it has been taken up by the profession. I have felt that the further publication following the epidemic might help to distribute the knowledge of this treatment as the principal factor in the after-care of the disease.

As poliomyelitis is a disease which limits itself to the motor neurones, when one neurone or group of neurones is destroyed there is left a permanent paralysis of the corresponding muscles whose functions they supply. This phenomena is due to the fact that each neurone or group of neurones supplies a single muscle or group of muscles. Great care must be taken in the after treatment not to over-develop healthy neurones, thereby increasing the deformity.

The complete paralysis which is the immediate result of the congestion to surrounding tissue due to inflammatory processes soon passes away, but the affected neurone never regains its function, nor are there any duplicate systems of neurones which can be developed to replace those destroyed, so far as we now know.

On the eleventh of April, 1916, I read a paper on this subject before the Homœopathic Medical Society of the State of New York at its annual meeting held in Rochester, and the following is an excerpt from this treatise.

In hemiplegia due to hæmorrhage there is a destruction of the fibres of the motor tract, but however great the hæmorrhage there are always left some undestroyed nerve fibres. It is due to this fact of the dissemination of fibres remaining that a hemiplegic will improve under systematic exercises which, if properly carried on, will prevent the rapid downward degeneration and the permanent destruction of nerve fibres, and enable the return of motion to the paralyzed part. Hemiplegia of the right side in a right-handed person generally involves the fibres of the left third frontal convolution, producing aphasia. These cases always sustain a loss of mental elaboration, a loss of initiative ability, and, for a time at least, are mentally dull. These exercises promote an ability to reproduce memory pictures.

All the histories of spastic paraplegia which I have studied show a more or less sudden origin. The primary symptom may be a slight or pronounced weakness of the lower extremities, the patient often falling while walking, followed by a period of progressive paralysis. Following this is an arrest of the progress of the disease and a slow improvement, but finally resulting in a permanent spastic paralysis (known as Erb's spastic paralysis).

In a condition of acute, sub-acute or chronic myelitis affecting the cross-pyramidal tracts, so destroying the fibres that they cease to perform their function, the normal fibres will be replaced by cicatricial tissue producing a spinal sclerosis.

In combined sclerosis, the same pathological changes occur, plus involvement of the sensory tract. All cases of sclerosis of the spine, whether slowly progressive or acute, start with inflammatory action, and can be arrested by proper treatment and absolute rest in bed if recognized in the early stages. When it is evidenced that the disease is arrested, these systematic exercises will bring about a complete clinical restoration.

An affected extremity is either completely paralyzed and hangs in a flaccid state, or else in one of tonic contractions without any possible motion. No amount of subjective stimuli would produce a voluntary act.

In nearly all pathological conditions involving the spinal cord there are some undestroyed fibres remaining, and it is through these remaining healthy fibres that the function of the whole is carried on. The hypertonicity that takes place is due to the hypotonicity or paralysis of opposing muscles, thus the contracted muscles must not be exercised.

The mentality is reached by various psychopathic impressions. As motion is the accumulation of perception induced by

an external stimulus adjusted by reason and memory, it can only be re-acquired by awakening the sluggish mind to re-activity. Motion proceeds from the motor cells situated in the cortical substance of the brain, and in ordinary active life is almost automatic, often being an unconscious brain cerebration.

Thus it can be readily understood that to succeed in restoring motion it was essential to develop a system which had for its fundamental principle the conversion of automatic motion into thought induction.

The exercises consist in directing the patient to make a voluntary mental exertion to move the paralyzed part, at the same time the operator carrying out this particular motion for him. As all motion is the result of thought, either conscious or unconscious, the patient must be thoroughly instructed to make the concentrated mental effort to move the part at the same time that the operator carries out the motion. By this system of nerve education I have succeeded in curing approximately two hundred cases, and materially aiding many others.

I will describe the method of procedure in a case of hemiplegia which is applicable to all other cases. The arm is placed upon a table or, if the patient is confined to bed, upon a smooth, narrow board which extends from beneath the pillow under the shoulders and beyond the fingers. The arm should be in as near a state of relaxation as possible, resting in pronation upon the flexor muscles, the extensor muscles being those usually involved in a hemiplegic. The patient is directed to concentrate and fix the attention upon the finger to be moved and then to attempt to raise it. He will claim his inability to do this, but must be persistently urged to make the mental and physical effort, his face being closely watched to ascertain if he is doing so. In unison with the patient's effort the operator raises the finger. This action is repeated several times. In lowering the finger the extensor muscles must attempt to resist the contraction which exists in the opposing muscles, and the operator's finger is placed under the patient's, who is directed to lower the finger slowly, drawing back on the extensor muscles. The next part to be operated upon is treated in the same manner, the wrist, the forearm, the arm, the shoulder and all other paralyzed parts.

When operating upon the wrist, the fingers should be extended. In the same manner when flexing the elbow, the wrist and fingers must be kept extended. In raising the arm at the shoulder the hand should be turned with the little finger towards the face, the hand in pronation and the palm turned away from the body, the arm placed at the side and raised in a horizontal line.

This procedure is repeated daily for a period of about ten minutes for each paralyzed part. More rapid results may be obtained by giving two or more treatments each day. Improvement is not usually evidenced until after two or three weeks, the length of time required depending upon the severity of the attack. Thus far in my experience I have succeeded in bringing about an almost complete restoration of motion, however severe the paralysis.

The effect of massage or electricity upon a paralyzed part is simply a temporary circulatory stimulation of a purely local nature. It cannot and does not affect the motor neurones or motor tract in any way, and as a paralysis is due to injury in these parts, manipulation of the muscles or articulations can in no way improve the condition.

The time to commence the treatment of a hemiplegic is about two weeks after the stroke, or as soon as the clot has organized, and before degeneration takes place downwards in the cord. In other conditions where the method is applicable, such as poliomyelitis, combined sclerosis, etc., the treatments should be started as soon as there has been a positive arrest of development of the disease and evidence of improvement.

In motor aphasia the underlying principle is the same. Speech is composed of laryngeal, lingual and labial sounds, any or all of which parts may be paralyzed. The laryngeal sounds are induced by directing the patient to intone the letters R, A, E, I, O, U, at first each letter separately, and as this is done more proficiently, all these letters are intoned, one immediately following the other, continuously. These sounds are made with the open mouth, the expiration being sustained by the diaphragm.

The lingual sounds are best acquired by placing the tip of the tongue on the hard palate just back of the teeth and intoning the letter L. The labial sounds are made with either the closed, open or rounded lips, the letters M and B being intoned, intoning the latter with a distinct buzzing sound. The letter P, usually one of the most difficult letters for the motor aphasic to pronounce, is a combination of laryngeal, lingual and labial sounds.

As the patient masters these exercises in the intonation of single letters, syllables, words and phrases may be used, followed by sentences containing a distinct alliteration. The patient should also be instructed when talking to speak slowly, separating each syllable and each word as distinctly as possible.

The preceding is but a brief outline of the course of my systematic exercises for the rehabilitation of the motor neurones but the treatment will differ materially in each case according to the nerves involved and the degree of paralysis. In antero-

poliomyelitis where a neurone or group of neurones is completely destroyed, there is no possibility of a restoration of the nerve fibres leading from them, supplying a group of muscles. Great care must be taken not to over-develop healthy fibres which have been temporarily affected by the acute inflammatory products. It is always possible, however, that the neurone has not been completely destroyed.

616 Madison Avenue.

ADDRESS AT THE OPENING OF THE FORTY-FOURTH SESSION OF BOSTON UNIVERSITY SCHOOL OF MEDICINE, OCTOBER 5th, 1916

By JOHN P. SUTHERLAND, M.D., Dean

Ladies and Gentlemen:

Apparently regardless of the crippling and frequently fatal disease now prevalent and filling large and small communities with dread and alarm; temporarily regardless of elections, politics, strikes and politico-economic disturbances which are clamoring for attention; for the moment regardless even of the cruel, unnecessary, devastating and unchristian war still deluging vast areas in Europe with the blood of wounded and slain, we are gathered here this morning officially to begin a new year of medical study and special preparation for a very important and vital vocation; to dedicate ourselves anew to a mission involving the health, the happiness, the very lives of our neighbors; to pledge ourselves to unwearied devotion to the highest interests of those who eventually come to us for help. We are here to begin the fourty-fourth session of Boston University School of Medicine and to take up our various duties as students and teachers. It is my particular function, my privilege and honor as representative of the Faculty of the School to bring to you the hearty and sincere greetings of the Faculty, to extend to you, one and all, a fraternal welcome, and to pledge to you the earnest and devoted efforts of the Faculty to furnish you with the special training and equipment needed in your future warfare against the multiform manifestations of disease. While promising every advantage, assistance and facility in the power of the Faculty to grant, it is only fair to warn you that the Faculty will expect from you, as students, and voluntary members of the student ranks, an intelligent coöperation without which nothing worthy can be accomplished; a willing observance of the few rules needed to secure harmony and efficiency; a patient, constant and prompt attendance and attention at lecture, laboratory and clinic; a loyalty to the traditions and

ambitions of the School, and a faithful devotion to the performance of all duties connected with the work of the School.

As a possible help towards the realization of these expectations and some of our ideals of the medical life, let me direct your attention, for the few minutes which are permitted us at this time, to some incidents in the school history of the past year, to the educational status of the School, and to some conceptions of life and some ideals that may broaden our mental horizon and our possibilities of usefulness.

A brief retrospective glance shows that having complied with all the requirements of the School and having been unanimously recommended by the Faculty to the Trustees of Boston University for promotion to the degree of M.D., six women students, one a "cum laude," and twelve men, a total of eighteen, on June 7, 1916, graduated as Doctors of Medicine, and one other, at the end of an additional year, received a "cum laude." Two men, members of the Junior Class, qualified for and were granted the degree of Bachelor of Surgery, and one the degree of Bachelor of Medicine.

As among the results of the evolution of the many Specialties in Medicine and the marked elevation of standards of medical education during the past quarter of a century, there has been not only a universal lengthening of the medical course to four full years, but a decided increase in the number of subjects included in the medical curriculum, and a corresponding growth in the number of members of the Medical Faculty. Twenty years ago the curriculum of our own School embraced twenty-five subjects and courses in which there were final examinations, — today there are fifty-five, or more than double the number. In 1896 there were forty-eight members of the Faculty, and today the Faculty numbers an active membership of seventy. Subdivision of the labor of teaching and a higher degree of specialization and individualization is rendered possible by so large a faculty. It should be widely realized and more thoroughly appreciated than is the case that the majority of the members of the Faculty are guided by the old Hippocratic idealism, and recognize the force of *noblesse oblige*, and so loyally and generously acknowledge their professional obligations by freely and ungrudgingly giving their services to the School. Otherwise, the limited financial resources of the School would be pitifully insufficient to meet the annual expenses. The fact that in spite of so many of the Faculty being unsalaried the work done by them is of a high order, practical character and is thoroughly efficient, is amply testified to in the annual educational report of the American Medical Association, which shows that the twenty-five graduates of our School, some of whom

graduated prior to 1910, who presented themselves before the nine Examining and Licensing Boards of Illinois, Kansas, Maine, Massachusetts, Minnesota, New York, Ohio, Rhode Island and West Virginia during the year 1915, were more successful in passing the examinations and had a smaller percentage of failures than the graduates of any of the other medical schools of the city of Boston; there being only one, or four per cent, who failed. The additional facts that the School is in Class A of the classification of the Council on Medical Education of the American Medical Association, — and that no exceptions are registered against the School by any of the fifty-one examining and licensing boards of the United States, offer encouraging, gratifying and convincing testimony to the high character of the work done by the School.

. . . . . .

On January 3, 1916, the new Maternity Department, the Robinson Memorial, of the Massachusetts Homœopathic Hospital was formally opened and dedicated to its mission of mercy and helpfulness. The exercises were held in the commodious, simple, but beautiful reception hall of the Maternity, which was crowded to its capacity. A short presentation speech was made by the donor, Mr. Wallace F. Robinson of Boston, who generously added to his original gift an endowment fund sufficient to ensure the perpetual care and preservation of the building. Mr. Edward H. Mason, as President of the Hospital, represented the Trustees, and a notable address was made by Dr. William Francis Honan of the Metropolitan Hospital, New York City. (Vide *New England Medical Gazette*, February, 1916.) The Maternity, which naturally embodies the latest desirable features and facilities of hospital architecture, is the most commodious, convenient, beautiful and perfect institution of its kind in New England. It is mentioned here because under the administration of the new superintendent, Dr. Henry M. Pollock, the Hospital and the Medical School are coöperating with a progressive harmony and with increasing mutual benefit. The unspeakable usefulness of the clinical experience here obtainable makes the Massachusetts Homœopathic Hospital the most valuable asset accessible to the School.

During the last week of October, 1915, a Congress of Surgeons attended by many hundred eminent surgeons from all parts of the country was held in Boston, all the hospitals and medical schools acting as hosts. Special daily clinics were held at the Hospital, where luncheon also was served, and many of the visitors inspected the School. In anticipation of the Congress several hundred specially prepared and attractively mounted

specimens were added to our Museum collection. The resulting impression on the minds of visitors was ample reward for the labor and expense involved.

. . . . . .

There were removed from our midst during the last school year by death one student, Mr. Lewis Maurice Fraga, a member of the Junior Class, who died March 8, and three members of the Faculty: Dr. George H. Wilkins, who for several years was lecturer on Theory and Practice; Dr. Abner H. Powers, a graduate of the School, class 1885, and a member of the Faculty from the year 1887 in the departments of Anatomy and Surgery, an unostentatious, upright, conscientious, unselfish, faithful, God-fearing man; and Dr. Edward P. Colby, Professor of Nervous Diseases, a member of the original faculty at the opening of the School in 1873, who died November 1, 1915, in his seventy-seventh year.

If this were the time and place I should be glad to speak at length of Dr. Colby and his career, but biographical notes and tributes to his life and memory from his professional colleagues are accessible to all in the pages of *The New England Medical Gazette* for December, 1915, and January, 1916. On this occasion, however, I may be permitted to quote as a tribute, in sonnet form, the following, which was written in 1909 by Dr. Katharine French, at that time one of Professor Colby's students. It gives evidence not only of a clever gift and clear perception on the part of the authoress, but it presents an admirable analysis of Professor Colby's physical and mental characteristics.

" Strong, aquiline and keen his clear cut face,
Which age has blanched, and framed in whiter hair.
Bowed his frail form, but no power can impair
His smile's swift beauty, nor his will debase
To idleness, nor can old age efface
His kindly insight. Let those souls beware
Who plan deceit; still like a trumpet's blare
Rings his great voice to spur a laggard pace.
Thoughtful, wise, patient, with creative mind
Eager to penetrate remotest cause, —
To him sick soul and body come to find
Strength, healing, pithy counsel, wise, sane laws.
Among the last of a grand soldier-roll
He still endures, still labors, strong of soul."

No marked changes in curriculum, methods of instruction, policies or management of the School have been made during the year, but the Entrance Requirements have been advanced to the maximum, and hereafter applicants for admission to the School, to become eligible, must have had two years of collegiate work, especially in Biology, Chemistry, Physics and Modern Language. This is in accord with previously made

announcements and with the standards adopted by the Class A medical schools of the country.

. . . . . .

I desire to call attention to the fact that during recent years there has been in American medical and law schools an increasing number of representatives of the different nationalities and races of men. Orient and Occident, Northern and Southern hemispheres and the Islands of the seas are represented in the student body of all the larger institutions of learning, and liberally so in our own University. The reason, which is not far to seek, is a significant one. While unprecedented increase in population, phenomenal material prosperity, the accumulation of colossal individual fortunes, the enormous industrial activities, the unlimited agricultural possibilities, the abounding educational facilities, etc., may be advanced as explanations for this commingling of the nationalities and races, the essential reason is, in the words of the traditional Fourth of July orator, this country "has been and is the refuge of the oppressed of all nations"; that is, a greater degree of liberty in thought, in speech, in politics, and in religion especially, formed, as it were, the banner under which gathered the early settlers and their descendants who moulded the ideals, unfolded the destiny, developed the traditions of the Nation, and made possible the history the Nation thus far has written. Without entering into an academic discussion of the subject, in one word, it was "individualism" that laid the corner-stone and erected the edifice of this country of ours, and the idea of "individualism" must not be lost in the scramble for power and riches and so-called "prosperity." It is legitimate to speak of this at this time, because as assembled we represent a cosmopolitan group, and we possess inherited or acquired ideals characteristic of different peoples. Moreover while we are, for the period of our association, medical students, more or less advanced, we are temporary or permanent citizens of this great Republic, and we are *individual* men and women. The great danger then in such a commingling of nationalities and races is that the ideals of individualism which make the commingling possible may be lost sight of, if other ideals gain, through any combination of circumstances, the ascendency. While such a deplorable state of affairs must be acknowledged as possible, it is not to my mind very probable; at all events it need never happen. For the great crown of individualism is not that it can seek and frequently secure its own selfish ends, but that it can sink itself into the good of the whole; and the universal recognition and adoption of this principle will avert the castrophe. In other

words as found in the *Outlook* (page 1029, August 30, 1916), "If this nation is to be truly self-governing, the individuals who constitute this Nation must be endowed with *capacity* to govern themselves. This *capacity* can come only as they recognize the *supreme authority* of *the moral law* interpreted by the conscience, and yield to it a loyal and willing obedience."

It would be apropos and it might be useful to glance historically at the development of the idea of individual freedom, at the evolution of the idea of liberty and the resultant changes in the conditions of men, but our limited time prevents. Let me, however, suggest your bearing in mind the stimulating and epoch-marking lives and stories of William Tell (legendary, or not), of Kosciusko, Kossuth, Cromwell, O'Connell, Lafayette, of Washington, Lincoln, Garibaldi, heroes, who unquestionably blazed the way and marked the trail indelibly for their compatriots and for succeeding generations. Keep the lessons of their lives close at heart and apply them to the problems of today as they arise in our own lives.

As far as our own country is concerned, it is instructive, and at times amusing, to read, for instance, in President Woodrow Wilson's "History of the American People," that in 1634 Rev. John Cotton, a noted divine, then of Boston, said, "Democracy I do not conceive that God ever did ordain as a fit government either for church or commonwealth. If the people be governors, who shall be governed?" (page 142, Vol. 1). This view, however, was vigorously combatted by an equally eminent divine, Rev. Thomas Hooker of Newtown (now North Cambridge or Newton?) who in 1639 in preaching from the text "Take you wise men, and understanding, and I will make them rulers over you" (Deuteronomy 1, 13), claimed that "the foundation of authority is laid in the free consent of the people." At this time Rev. Mr. Hooker had joined the settlers in the Connecticut valley, who were without a crown charter and were outside the jurisdiction of Massachusetts colonies, but who formulated for themselves a constitution on the principles enunciated by Mr. Hooker, which they called their "Fundamental Orders," under which the freemen, without test of doctrine or church membership, elected "deputies by whom the laws of the colony were to be made in General Court" (page 155, Vol. 1). At an earlier date, however, under the governorship of Sir George Yeardley the South Virginia (Jamestown) colony set up self-government. The charter of their little commonwealth was dated November 13, 1618, and under it, on the 30th of July, 1619, the first Virginia assembly met in the chancel of the church at Jamestown for the transaction of business, — the first representative assembly in America, — the beginning of

liberty and self-government in the English Colonies (page 58, Vol. 1). Sir George Yeardley was sent out from England practically by the liberty-loving and daring Sir Edwin Sandys, who when a member of the House of Commons in 1613, over 300 years ago, "maintained in the face of all present that the origin of every monarchy lay in election; that the people gave its consent to the king's authority upon an express understanding that there were certain reciprocal conditions which neither the king nor the people might violate with impunity; and that a king who pretended to rule by any other title, such as that of conquest, might be dethroned whenever there was force sufficient to overthrow him" (pages 56 and 58, Vol. 1). This doctrine, which is diametrically opposed to the doctrine of ruling "by divine right," naturally was incorporated into the Charter of the South Virginia Colony. The same doctrine, as we have just seen, a few years later showing itself in the New England colonies, still later became expanded into the doctrine of "the government of the people, by the people and for the people." In this connection, look up also the thrilling and significant episode known historically under the name of "Magna Charta"; familiarize yourself with the "compact" signed in the cabin of the "Mayflower"; with the world famous and most important document, the American "Declaration of Independence"; and with the solemn "Emancipation Proclamation" and you will get an illumination of the subject of "liberty" and "individualism" that unquestionably will be of lasting service to you. It is well, however, at the same time to remember (as stated in an editorial on "Manners in a Democracy" in the "Outlook," page 1028, August number) that "Political freedom is only the beginning of freedom, and many intelligent and not unsympathetic foreign students have said that there is less personal freedom in the United States than in any other country of first rank; that the pressure of public opinion here is tyrannical and does not tolerate freedom of individual opinion. Democracy has its dangers quite as much as absolutism, and its tyranny may be quite as oppressive. The ruthless disregard of privacy in this country is one of the forms which this tyranny has taken on, and the invasion of privacy is one of the worst forms of bad manners. Respect and consideration for others is a prime necessity in a crowd, which is always in danger of becoming a mob."

All civic, social and moral virtues, therefore, are not all centered in this Republic of ours, as is very beautifully and sympathetically and emphatically stated by Robert Herrick in his book entitled "The World Decision" (a book by the way which should be thoughtfully read by all intelligent people),

when he is contrasting Italy, Spain and France with England, Germany and America in industrial, economic and commercial matters. Herrick says (page 230), "The Latin has never forgotten the claims of the individual life; democracy to him is more than the right to vote. Therefore, pure art, pure science, pure literature — also the world of ideas — has a larger part in the life of Latin peoples than with us in the eternal struggle with the materialistic forces of life. To the Latin, living is not solely the gratification of the body. He reckons on the intelligence and the spirit of man as well." Further he says (page 231), "To the Latin mind the world is peopled by individuals who cannot and should not be pressed in the same political mould, who must win their individual salvation by an individual struggle and evolution;" an idea that has been grasped by President Pritchet of the Carnegie Foundation for the Advancement of Education, who in his latest Annual Report applies the doctrine to the Classification of Medical Schools.

But to go further, M. Hanotaux, quoted by Herrick (page 228), cried, "We have all sinned, your people as well as mine, the English, the French, the Germans, all, all of us;" and Herrick continues the cry, "The people of our time have sinned through their hot desire for material possession of the earth and its riches, — through commercialism, capitalism, call it what you will. Each great nation has made its selfish race for economic advancement at the expense of other peoples" (page 228), and once more (page 229), "'We have all sinned' in believing the body is more than the spirit, that food and pleasure and power are the primary ends of all living."

Can we, shall we, then, in formulating our ideals of citizenship, of mankind, of individualism, of liberty, be satisfied with even the best traditions and ideals of any single nation? Evidently not, because the traditions and ideals of the Nations have not yet succeeded in bringing peace, harmony, good-will, fraternity into the world, or in preventing the cruelest and most sanguinary conflict humanity has thus far seen. Something better than the known "best" is undeniably needed in order that mankind shall reach even the moderate ideals of individual freedom and justice and square dealing for which some of the nations of the earth avowedly are now giving their best and bravest blood.

To view our subject from the medical or biological standpoint one might say, naturally different races of men will have different viewpoints, different ideals, and different ways of doing things, in fact probably different kinds of work to perform in the great up-building of the human race, in just the same way that the different tissues and glands of the body have different

uses to perform. But in the same harmonious and effective way in which the tissues and glands perform their functions so as to make a healthy, sane and useful man, so the different races and nations of the earth may and must coöperate in a frictionless way to make, as it were, a *greater*, healthy, sane and useful *man* of the great human family. And as in an individual man a certain gland, for instance, may become pathological and require excision, or may, having performed a temporary function, become useless and undergo atrophy, so among the races and nations one may become pathological, harmful to mankind or to the "*Greater Man*," a "festering sore," a cancer, and require excision, or may, following a relatively normal temporary course, atrophy and pass out of organic existence. Herrick (page 244) says, "Until humanity learns the secret of self-discipline it will create diseases that can be eradicated only with the knife." It is this sort of law that accounts for the rise, temporary prosperity and eventual decadence of nations and races. It must be recognized that the laws governing the individual man, physiologically, economically, socially, etc., unmistakably should govern the larger aggregations of men called nations or races.

A definite biological law founded on "parthenogenesis," whether recognized or not, governs the process called "growing old" in the individual. The same law controls the "growing old" of nations and civilizations. The converse is true, that "cross-fertilization" among plants and animals and nations brings into being a more vigorous progeny, more heavily endowed with possibilities of growth and energy. This nation of ours, for example, as the most remarkable instance of national cross-fertilization known, possesses the most remarkable possibilities for steady, continuous, healthy and useful growth, and may become the strongest and most highly developed nation upon the earth, *provided* that egotism, and pride, and lust, and selfishness, and similar undesirable qualities be not allowed to govern that growth, but that law, order, discipline, justice, equality, charity are given the guiding hand, and that the highest moral and spiritual ideals be ever kept in the foreground as objective points and guides. The few simple precepts and guiding rules that have survived through the lives of generations of men — but never yet in historic times honestly and practically adhered to as guiding principles — the "decalogue" and the "law of love" to God and man, if utilized by this nation of ours would make for it a truly phenomenal record of prosperity and growth along the highest physical and mental, moral and spiritual planes of existence.

In these days of trial and storm, when most of the so-called civilized nations are plunged into a devastating war, it is not

only the immediately concerned nations, but the whole of mankind, even to the uttermost parts of the earth, that are being stirred to the deepest depths of their being. Individuals not participating in the actual physical strife going on, but at a safe distance from shot and shell, simply must be ranged on one side or the other, representing the two great ideals being fought for, — Imperialism or Democracy — Materialism or Spiritualism. It is impossible and cowardly to attempt to stand between these ideals. Every person should declare himself unequivocally for the one thing or for the other.

As a help to a decision man must realize that *gifted* though he unquestionably is above all other forms of life he is simply a created thing. He did not make himself. As sung by the Psalmist (Psalm c : 3) "Know ye that the Lord he is God; it is he that hath made us and not we ourselves; we are his people, and the sheep of his pasture." The decision and one's consequent position rest after all upon one's conception of life. What is Life? What is this created thing called man? Is he matter or is he spirit? For a generation or more the materialist has had his answer ready. With the great increase of his knowledge of natural phenomena; his developed powers of criticism and analysis; the multiplication of instruments of precision for measuring things infinitely great and infinitely small; his penetration into the secrets of natural forces and acquaintance with natural laws; with his wonderful ingenuity in devising mechanical, physical and chemical apparatus, he has persuaded himself in his pride that he "knows it all"! And it is materialism and all it stands for that has brought about the present world-wide desolation.

Man must realize that in addition to being a created thing, this created thing is not coarse matter, a merely material thing as we ordinarily conceive of material things, but that the created thing is essentially an inconceivably sublimed form of matter, a spiritual substance which, handicapped by the flesh, as it now is, is a thing beyond our finite appreciation. We are anchored by the flesh, and all it stands for, to this material plane of existence, and our natural senses are unable to more than imagine what a higher or spiritual plane of existence may be like.

It would seem as if the biologist and the modern physician above all other people were especially privileged to make this duality of mankind a matter of everyday knowledge. The modern physician trained in embryology, histology and physiology surely is privileged to know better than most men that man is not the nerves, muscles, bones and blood which compose his body; that there is a life, a force, a "something more," an elu-

sive something different from chemical or electrical, or electro-chemical manifestation, that is the real man.

I am greatly pleased that it was a gifted anatomist, learned in the structure of the human body, who was privileged to differentiate the two planes of life, the material and the spiritual, and to differentiate in verse of uncommon beauty. Let me quote the concluding paragraphs of Oliver Wendell Holmes' inspiring poem on the "Nautilus":

"Year after year beheld the silent toil
That spread his lustrous coil;
Still as the spiral grew,
He left the past year's dwelling for the new,
Stole with soft step its shining archway through,
Built up its idle door,
Stretched in his last-found home, and knew the old no more.

"Thanks for the heavenly message brought by thee,
Child of the wandering sea,
Cast from her lap, forlorn!
From thy dead lips a clearer note is born
Than ever Triton blew from wreathéd horn!
While on mine ear it rings,
Through the deep caves of thought I hear a voice that sings: —

"Build thee more stately mansions, O my soul,
As the swift seasons roll!
Leave thy low-vaulted past!
Let each new temple, nobler than the last,
Shut thee from heaven with a dome more vast,
Till thou at length art free,
Leaving thy outgrown shell by life's unresting sea!"

Unquestionably the gifted author was here insisting on the doctrine that the body is simply the habitation of the soul, and that after all it is the habitant and not the habitation that is the all-important thing. As a matter of education humanity does not yet seem to have grasped this simple, but most vital, idea, — an idea that makes all the difference in one's views of the temporal and the eternal; that would make a vast difference in conclusions when considering "war or peace"; that would probably modify in many respects most, if not all, our relationships in life.

The physician, the diagnostician, the general practitioner, the nerve specialist, the psychologist, the psycho-analyst *et al*, would do well to keep these ideas ever in mind while performing his regular duties, that those with and for whom he is working may obtain the highest possible benefit. Psycho-analysis, the making of a prescription, the performing of an operation, may be very clever, but it is only a part of the duty for which you as medical students are fitting yourselves; and your sphere of usefulness may be vastly extended if you keep in mind that the

material body is but a habitation, a temporary physical support, a reticulum for the more delicate or ethereal substance which is the man himself.

Is all this chimerical, transcendental, unsubstantial, dreamy? There are many who think so, and perhaps with some show of "human reasoning." I would simply claim that it is just this "human reasoning" that has plunged the world into its present depth of woe, and it is quite time that humanity's eyes were opened that men might see!

A very interesting, whimsical, cynical, humorous and clever book fell into my hands during the past summer. It bears the enigmatical title-page, "Flatland: A Romance of Many Dimensions," by A. Square. It is the story of an inhabitant of flatland, the land of two dimensions, where all existence is on a plane and where naturally life is limited by its few dimensions, the life being humorously described. It fell to his lot as a matter of experience to visit Lineland, where all vision is limited to a point and all motion to a straight line. He tells of his great difficulty in comprehending the life of Lineland, and of the still greater difficulty, in fact the impossibility of convincing the Monarch of Lineland, whom he chanced to meet, that there could possibly be a condition of existence in which there could be two dimensions, where life was permitted to transpire on a plane. Himself, a square, and thoroughly familiar with lines, angles, triangles, pentagons, hexagons, and even circles, and proud of his knowledge, he actually failed to convince the Monarch of Lineland that there really existed a land of two dimensions.

Later, a stranger from Spaceland, as happened every thousand years, visited Flatland, and met our hero of two dimensions. It was the stranger's mission to carry to Flatland a knowledge of Spaceland, the land of three dimensions, of cubes, pyramids, spheres, space, time, etc., but he had an almost insuperable task to convince our hero of these facts. Finally, however, as the result of various arguments and experiences, including a journey into Spaceland, our hero is convinced there is another stage of existence than the one he has been bred into and is familiar with, and much to the horror of the Stranger, who is a superior Sphere and considers the idea not merely obnoxious, but inconceivable, our hero is inspired with the idea that there may also be a four dimension state of existence and produces strong arguments in support of his contention, but without effect upon the Sphere.

As a pitiful conclusion, however, he returns, as return he must, to the land of his birth, filled with the burning desire to evangelize his fellow countrymen, to broaden their conceptions

of existence and lift them to a higher plane of thought, only to learn that an edict has gone forth consigning to death or imprisonment any apostle of the gospel of three dimensions; and on giving way to his impulses and proclaiming that there *is* a land of three dimensions, as he knows from personal experience, he is, on account of his rank as a Square, condemned not to death, but to perpetual imprisonment.

Ladies and gentlemen, you are beginning a year of new experiences, of new endeavor. The future lies like a folded screen before you, but filled with possibilities. To that end, be faithful as medical students, free to acquire knowledge; unafraid to acknowledge Hahnemann as an Apostle of medical freedom and institutor of a beneficent and scientific therapeutics, if you become so convinced.

Keep an open mind to the influx of truth in all things, medical, scientific, religious, social, political, in the confidence that as we have been told by the highest and best authority, "Ye shall know the truth and the truth shall make you free." — *St. John 8, 32.*

Hold fast to the best and highest that comes within your comprehension.

Be well grounded in convictions, but not swayed by prejudice.

Lose individuality in whole-souled service to the neighbor.

Be apostles of freedom, of liberty, of individualism, never forgetting that as individuals we are parts of a Greater Man, including all mankind.

Do not live in Flatland, but have ideals and aspirations that will carry you to the heights, for in the words of Browning —

> "To live for common ends is to be common;
> The highest faith makes still the highest man.
> For we grow like the things our souls believe,
> And rise or sink as we aim high or low."

REPORT OF TWO APPARENTLY HOPELESS CASES RECOVERING UNDER THE ADMINISTRATION OF CALCAREA CARBONICA AND AGARICUS

By S. R. Geiser, M.D., Cincinnati, Ohio

In the mind of every thinking homœopathic physician, the question constantly recurs to him, "Can we justify homœopathy by its results in practice?" In other words, has an homœopathic physician a place in the practice of medicine in this day of so-called "scientific medicine"? Have we more to offer for its existence than the harmlessness and the mildness of

dose? Unless we can confidently claim the affirmative to these questions, we might as well relinquish our efforts in competing with our old-school friends.

Our school has long been called the "new school" on account of the novelty of its principles and methods, as compared with the orthodox, and when this system first came to life, its merits were very likely over-estimated. The newness of it attracted many.

Not all of the wonderful results that were claimed for homœopathy in its beginning would be attributed to it in this day of modern medicine. Absurd ideas of its application by some of its exponents have doubtless caused a number of its patrons to return to orthodox medicine. On the other hand, heroic medication and procedures by orthodox medicine, and later medical nihilism have aided in filling the temples of the Christian Scientists.

Novelty and better sanitary measures are doubtless great factors in the development of the numerous fads, fancies, and cults that are clamoring for recognition in the art of healing and practice of medicine, under lower standards than required of physicians.

While we cannot always scientifically demonstrate the results of treatment as cures, many of them are cures, nevertheless, and not results of coincidences.

As the practice of medicine is not an exact science, it is not possible to state definitely that the results following any method of treatment are due to the treatment. Science assures us that we are ever in the presence of an "infinite and eternal energy," from which all things proceed.

Science, as we know, also believes in an ether which serves as an instrument in conveying light. This ether no one has seen or demonstrated, but science accepts it because it seems necessary to account for certain physical phenomena. Science here supposes the existence of something intangible, and since medicine is not an exact science we must sometimes assume what we cannot demonstrate or prove.

The intrinsic value of homœopathy may be illustrated by two clinical cases, which I take the liberty to report. These cases seem to prove that many complicated, chronic cases of sickness are restored to health by drugs applied according to the law of similars.

Before reciting the cases, however, I wish to state that I am in accord with, and employ every available scientific test, physical, microscopic and chemical, in order to establish a diagnosis and outline a plan of treatment, and that the cases are not reported in a spirit of criticism of or antagonism against

modern investigations and treatment, but simply as demonstrations of the usefulness of some of our old-time and well-tried remedies.

The first case was that of a man of about fifty-five years, full habit, weight about two hundred pounds or over, light complexion, sluggish and inclined somewhat to obesity. Mentally he tends to be melancholy and fearful that something dreadful will happen, for which there was no cause other than physical. From slight mental effort the head gets very hot and sweats easily, as do the feet, a condition exceedingly annoying to him. The slightest exertion, as rapid walking, or going up the least ascent, caused dyspnœa. He had much hunger, and a special liking for eggs and indigestible things. He had acid fermentation in stomach, and sour eructations. "Everything turns sour." There was frequent micturition with some burning; urine dark brown with white sediment; no albumen, no sugar, but irritable bladder; urine often of a sour, disagreeable odor. He is more comfortable during dry, cold weather, and his symptoms are all aggravated during damp, cold weather. A decided tendency to perspiration and obesity, with dyspnœa on slight exertion which almost incapacitated him from attending to his duties, the irritable bladder which disturbed his rest at night, and the acid eructations were the *salient symptoms* that led to the selection of the curative drug.

He had been given test meals, and the contents of his stomach had been withdrawn and examined. His blood, and all other available body fluids, secretions and excretions, had been subjected to close scientific scrutiny; he had also been put through a complete X-ray examination. Cardiographic tracings were made, and the blood pressure was taken; in fact, he had been carefully examined and his case variously diagnosed. Some of the best physicians had had him under observation and treatment, which proved futile though faithfully carried out.

As an attempt at a diagnosis had been made with the aid of many approved scientific methods by excellent physicians, I was not so greatly interested in the diagnosis of the case, but was looking for some salient symptoms which might lead to the selection of a curative drug. In other words, it seemed necessary to relegate the diagnosis to a subsidiary place.

In this case the subjective symptoms, and not the physical findings, were the essential and most important elements in determining the proper prescription. I prescribed calcarea carbonica 6x. Parenthetically, I will say that no change in the diet, habits or environment was suggested (differing in this from my predecessors), in order that the efficacy of the drug might be fully tested. Faith had no bearing on this result; for, while

he was a man of intelligence, an attorney-at-law, he had no faith in homœopathy, and came to me at the suggestion of his friends. Nor do I think my air of optimism was greater than that of the physicians who preceded me, so that this could hardly have been a factor in the satisfactory outcome.

The second case was that of a woman of perhaps fifty years, whom I was called to see in February, 1915, with exophthalmic goiter of about three years standing.

The Forchheimer quinine-ergot treatment had been faithfully but ineffectually employed by a very competent old school physician. An operation was suggested, but owing to the weakened condition was deferred, and it was suggested by friends that I visit the patient.

Her condition did not look promising, and it was with much hesitancy that I undertook to treat her, as the Forchheimer prescription had given good results in many cases, as you perhaps well know, though I have had no experience with it.

In hyperthyroidism we usually have three **cardinal symptoms, — acceleration of the pulse, tumor, and exophthalmos,** all of which are usually more or less marked in **all** cases, and hence it is difficult to prescribe homœopathically on these symptoms alone.

The woman presented a pale, sunken face, with bluish appearance around the eyes, nose and mouth. There was irregular tumultuous palpitation of the heart, and tachycardia was a marked feature — ranging from 120 to 150 per minute. She complained of "stitches" in the region of the heart. In addition to the cardinal symptoms, there were decided nervous phenomena of unusual gravity, which were an aid in the selection of the proper remedy, viz: incoördinate, jerky movements of all the limbs, especially the upper extremities, face and eyes. Seemingly she was unable to keep quiet. Even in bed, and when these movements stopped during sleep, she was restless.

When I first saw her she was in almost perpetual motion. Head, trunk, and limbs were jerking and twitching constantly (choreic) in spite of advice to remain quiet and poised. Some one coming into the room or ringing the door bell would greatly aggravate her symptoms. There was a soft systolic murmur, heard best at the apex, and the second aortic sound was accentuated. She also had neuralgic pains, sharp, shooting, often shifting from place to place, worse on motion.

She spent most of her time in bed, but owing to great ambition it was very difficult to keep her there all the time, and complete rest was almost impossible to maintain. However, even under trying and discouraging environments she in reasonable time began to improve by the use of Agaricin 2x and later

Agaricus 6x, which has practically eliminated all unfavorable symptoms. She is again performing the duties of a housewife. She has gained about twenty pounds, the tumor has practically disappeared, and the heart action is even and quiet.

A cure rests first upon the selection of the proper remedy; and, second, courage to adhere to it. We often fail on account of too frequent change of remedies. If we were more persistent and more thorough in the application of our remedies — approaching a case as if it were a mathematical problem — we would often meet with success where we now fail.

In conclusion, I will ask, what is our only hope, and what are our greatest needs as homœopathic physicians? First, and foremost, **unanimity** in standing manfully together for the principles as enunciated by Hahnemann, and **unanimity** in an effort to support in every possible way the endeavors of those connected with our homœopathic institutions. Let us encourage laboratory research in the teaching of our materia medica, as well as didactic and clinical demonstrations.

SEA FOOD IN RELATION TO DISEASE*

By David L. Belding, M.D., Boston, Mass.

One of the most important problems of our progressive civilization is the relation of food to disease. The conditions under which the various foods are produced, prepared and transported to market are now recognized as matters of common concern in safeguarding the public health. Naturally, certain classes of food may more easily become a menace than others, and consequently their regulation should be more definitely and strictly enforced. In this respect more has been accomplished toward assuring the public a safe milk supply, especially in the large cities, than has thus far been possible with sea food. But the time has now come for the recognition and prevention of the dangers connected with the marketing of various species of fish, including shellfish, as oysters, clams and scallops, and such crustacea as lobsters, crabs and shrimps. The possible dangers to health may be grouped in two general classes: (1) The poisons contained in the food. (2) Bacterial infection transmitted.

POISONS

Some persons are naturally sensitive to shellfish proteids and exhibit symptoms of poisoning from eating thoroughly good shellfish. This peculiar sensitiveness may be likened to the

* Evans Memorial, "Public Health Talks," Boston.

anaphylactic hypersensitiveness which some children have for egg albumen. It takes the form of urticaria and gastro-intestinal disorders. These persons are also more readily affected by spoiled shellfish than the ordinary person. The various kinds of sea food decompose more readily than other classes of foods, and the cooking which destroys the bacteria causing decay has no such salutary effect on the ptomaines already formed.

Owing to the rapid decomposition of opened shellfish in hot weather, it is not uncommon to hear of cases of poisoning from eating stale mollusks. The usual symptoms are severe gastro-intestinal disturbances with skin eruptions and fever, and in fatal cases the symptoms are similar to botulism. The treatment in such cases is stimulation with irrigation of stomach and bowels. The preventive treatment is to eat fresh and avoid cheap shellfish.

Mussels have lately come into favor as a food in this country, and are used even in larger quantities abroad. Numerous reports of mussel poisonings have discouraged the public from eating this nutritious food. The mussel contains a mytilotoxin which has a similar action to curare, but this mollusk is only dangerous when decomposed, a condition which under certain circumstances ensues rather rapidly. Most cases of poisoning are probably due to eating mussels from stagnant water of high bacterial count. In the future the mussel will take its place with the clam and oyster as a valued sea food.

The methods of handling fish are of primary importance, as they are usually cleaned and packed at sea, and are sometimes a week old when they arrive in Boston. The length of time fish can be kept on ice without spoiling is variable. Decomposition depends in great measure upon the kind of fish, its capture, and means taken for its preservation. Halibut, cod, and haddock, most commonly taken by the trawl, will keep for one week in fair condition on ice, but such fish as mackerel and flounders do not keep as well and should be marketed within a few days. If the fish are not sufficiently iced, or if they have been kept too long, decomposition inevitably occurs.

Selection of Fresh Fish. — From the standpoint of the consumer, the following means of determining whether or not fish are fresh are worthy of consideration, although none are infallible:

(1) In stale specimens the eyes are usually sunken and lustreless. However, a fresh condition may be simulated by causing the eyes to bulge through the injection of fluid, or by the use of pointed sticks.

(2) Old fish appear somewhat thinner and less firm than fresh ones, and the flesh may pit on pressure, and even separate

readily from the bones. The tail usually droops and the scales rub off easily.

(3) There is a loss of brilliancy of color.

(4) The odor may be more or less marked.

(5) The gills are usually pale, but can be made to resemble those of fresh fish by judicious application of fresh blood or some red coloring material.

MARKETING. — The primitive Japanese method of marketing fish is superior to ours from a hygienic standpoint. The fish are brought alive in water to the consumer, who chooses the one, which is killed and dressed immediately. In this country there is nothing comparable to this model sanitary arrangement except the occasional holding of the fish in the wells of "smacks," and the use of floats for lobsters in Boston where they are received from the Massachusetts fishermen and from Nova Scotia, and are kept alive for local trade.

LOBSTERS. — The lobster contains about one half edible food by weight, and, owing to its scarcity, is a comparatively expensive article. Only about five per cent of the lobsters consumed in Massachusetts come from Massachusetts waters, the rest coming from Maine and Nova Scotia. The danger in lobster meat, if kept too long, is the development of ptomaines, which may occur after twenty-four hours, when the meat is not on ice. In large shipments there are many "crawlers," (weak and dying lobsters) which unfortunately are often sold to retail peddlers who dispose of them in the form of "shucked" lobster meat, or as cooked lobsters. In more than one instance lobsters, the majority of which had died before being steamed, were observed being sold from wagons in the South End of Boston at two for 25 cents.

A simple method of testing the condition of a lobster is by straightening the curved tail. If the lobster was alive when cooked, the muscles will be in good condition, and the tail will spring back; whereas, if dead before cooking, the muscles will be flaccid and the tail will remain straight. Owing to the danger in eating lobsters which have died before cooking, all cooked lobsters sold by itinerary peddlers at a low profit should be avoided. Contamination of the water in which lobsters are kept is of little actual danger, since the method of cooking kills any germs which might be present. Poisoning is said to result sometimes from the failure on the part of the purchaser to remove the intestinal tract of the lobster before eating.

SANITATION. — The sanitary conditions in fish houses vary considerably. At the fish wharf in Boston, the most up-to-date

sanitary arrangements have been provided. The situation at the old T wharf, although passable, is by no means as satisfactory from a hygienic point of view. In some few instances, fish, particularly shellfish disposed of in the poorer markets, are previously kept in all manner of dirt and filth. However, such conditions are fast being eliminated, and the consumer generally has little to fear, particularly if he chooses his retail dealer wisely.

Cold Storage. — Among the later developments in the handling of fish is the cold storage plant. It is found that a temperature of 32 degrees F. checks the growth of bacteria, but does not destroy the enzymes; therefore, fish kept at that temperature might become unpalatable. It has also been found that a temperature of from 25 to 30 degrees F. is all right for fresh fish, and 25 degrees for dried fish. The present method is exposure for 24 hours to a temperature below 12 degrees F., dipping the fish into water until they become coated with ice, and then stacking in tiers. It is important that the fish be fresh when put in. The danger lies in the use of contaminated ice, and in the fact that the fish decomposes more readily when thawed out. Fish from cold storage plants can only be avoided by keeping track of the proper seasons for the different kinds.

Curing. — There are various methods used in salting and pickling, and in curing and drying fish. These are all more or less efficient, but a quick method of smoking fish has been found in the use of pyroligneous acid. The Chinese are experts in the drying of fish, and one of their great delicacies is shark fins, which are, however, nauseating to the sensitive nostrils of the European.

Canning. — Salmon is the most generally canned fish, although the tuna fish is becoming more popular than formerly. The process consists in cleaning and washing the fish, which is cut into steaks for the cans. It is then three-quarters cooked in oil and salt water, and hermetically sealed, after a little alum has been judiciously added to give firmness to the flesh. The quality of the oil, and the tightness of the seal are important in all canned goods. Fermentation or decomposition, the result of incomplete sterilization, is usually apparent by the odor and discoloration of the contents, although some mild cases are difficult to determine, and result in poisoning. In canning goods there is also the possibility of some slight poisoning from the lead and tin. The Massachusetts State Board of Health some years ago examined canned salmon and found that there was in 0.5 to 1 kilogram of weight, 1 milligram of lead, and about one hundred times as much tin.

BACTERIAL INFECTIONS

The spreading of pathogenic bacteria by sea food is practically confined entirely, as far as we know now, to shellfish. Oysters are the agents most under suspicion in this respect, although clams and quahaugs may also be guilty.

The feeding of all the shellfish is carried on in practically the same general way, by means of filamentous, curtain-like gills which hang in folds in the mantle chamber. These gills, lined with hair-like cilia, function like sieves to strain out from the water the microscopic forms, chiefly diatoms, which form the food of the animal. It can be readily seen that any bacteria in the water would be filtered out by the gills and either used for food or collected in concentrated quantities within the oyster. It has been demonstrated experimentally that the colon bacillus will remain for fourteen days in oysters placed in pure water. If the water over the oysters is polluted by sewage, bacteria will be collected inside the shell, and if the typhoid bacillus is present, the oyster, when eaten raw on the half shell, or not completely cooked, will cause the disease in a susceptible host.

If shellfish beds are in districts supplied with contaminated water, naturally the oysters or clams taken from such areas are dangerous. The present laws prohibiting the gathering of shellfish from certain localities protect the public to some extent, but are not entirely effective. The future cultivation of barren flats will soon be necessary to meet the constantly growing demand for shellfish, and to offset the retirement of the contaminated areas.

In the preparation of the shellfish for market, there are various sources of danger. The method of catching offers little chance for contamination, except through the filthy condition of certain oyster boats and clam skiffs, and except for the psychological effect, produces no harm. The main dangers of contamination occur in the period between the time of capture and the final delivery to the consumer, and can be classed under the heading of "Preparation for Market." The oysters are transferred from boats to the shanty or oyster-house. Shelled oysters are handled in two ways, either shipped at once to market, or placed in "floats" near the oyster-house for future use, according to the demands of the market and season of the year.

In the first procedure, the oysters are placed unwashed in bins, where the lower oysters may receive the drippings and foul waters from dirty shells of the top layers, and later are sorted into barrels on the culling board after a more or less thorough washing.

The condition of certain few oyster-houses is far from sanitary. The implements, tubs, containers, etc., are often dirty and never sterilized except in the modern sanitary houses, the number of which is increasing rapidly. Such conditions offer many chances for contamination of the oysters, particularly if the water is impure.

The shelled oysters are shipped in barrels or in bulk for considerable distances, and kept often for a considerable time before they are sold, thus affording opportunity, especially in warm weather, for the deterioration of the flesh and the multiplication of bacteria. Experiments show that shell oysters at 35° F. remained in good condition after five weeks, but at the end of twelve weeks nearly all showed from their physical condition alone that they were unfit for food. The best temperature for cold storage of oysters is said to be between 38° and 40°, although storage more than six weeks at that temperature is unadvisable. The frequent sudden changes in temperature to which the oysters are subjected in their handling is a most important factor in causing their rapid deterioration.

The other method of storing the oysters near the oyster-house for later use rightly deserves the condemnation which it has received, since it offers the greatest opportunity for contamination. The oysters are placed in the water under or near the oyster-house, usually situated on some tributary stream, which not only brings down fresh water, but likewise all the pollution from the private sewers and dumps along its course. This process, in spite of the fact that the shellfish grounds may be absolutely free of pollution, exposes the oysters to contamination.

The more specialized practice of "floating" or freshening the oysters formerly so commonly practiced in certain localities caused nearly all oysters to be exposed to a possible infection for a short period of time. Fortunately, through the activity of the Federal Government, this practice has been practically abolished. This practice was used by oyster-men to take away the salty taste and to render the flesh plump and firm. The oysters were placed in floats of various sizes, usually 20 x 40 feet, with sides about one and one half feet high, formed of slats with narrow crevices for the water to pass through. The floats were anchored near the oyster-house in the brackish water and in them the oysters were kept for several days previous to marketing, until they had "drunk" sufficiently of the fresh water. This method of floating oysters is not a true fattening process, as the bulk is only changed by osmosis and renders the oyster more susceptible to deterioration.

The great danger of this practice is from the questionable

nature of the waters in which the oysters are floated. In one town in Massachusetts where the oyster-beds are beyond the slightest suspicion of pollution, practically all the oysters were "floated" at the mouth of a tributary stream, where, within one quarter of a mile above the floats, five private sewers emptied, The material from these places had to pass over the oysters in the floats, which, in their sheltered location, did not have the full sweep of the ocean tides necessary to purify the waters. If there had been any cases of typhoid in the houses on the stream, the oysters would have been a means of spreading the disease.

The second method of marketing is by opening the oysters. These "shucked" oysters are then placed in tubs or cans for shipment, the usual custom in the State of Virginia, where the oysters are opened by negroes and shipped to northern markets. The importance of clean surroundings during the opening of the oysters is apparent, and it is only in recent years that the more progressive oyster men have instituted model sanitary conditions. After removing the oysters from the shell they are washed with fresh water. There is no danger in this if pure, uncontaminated water is used, as the oysters keep better when the slimy juice is removed. Formerly the oysters were shipped in tubs in direct contact with ice, and when they reached the consumers were "soaked" and also ran the risk of contamination from impure ice. The laws at the present time forbid the shipment of ice in contact with oysters and now the oysters are shipped in cans, surrounded by ice in the manner made famous by the Seal Shipt Oyster Company. The only danger in this method arises from the fact that the oysters may be kept for too long a time before being eaten. Stale oysters undoubtedly produce serious gastro-intestinal difficulties, especially in susceptible persons, since there are always enough bacteria present in oysters to cause spoiling after a certain interval of time.

"Soaking."—With the scallop, the muscle or "eye" is frequently put through the process familiarly known as "soaking" before it is sent to the market, which gives a beautiful, white, plump "eye," instead of a small yellow-colored specimen, to tempt the customer. "Soaking" is a relatively simple affair, the "eyes" being placed in fresh water for several hours until they have absorbed sufficient water to increase their bulk about one third. It has been noticed that whenever salt water products are allowed to soak in fresh water an increase in bulk is found. This is due to a complicated change, the most prominent factor being osmosis, which causes a swelling of the tissues. The "eye" can be increased by this change to a gain of more than one-third the natural size; that is, four and one-

half gallons can be increased to seven by judicious "feeding" with fresh water. Either water is placed in the kegs when shipped or the scallops are allowed to soak over night in shallow wooden sinks, and the milky fluid is drained off before they are shipped to market. "Shucked" clams are soaked in the same way as the scallops, but the sanitary conditions under which this is carried out are less commendable, as frequently the opening is done in small, dirty shanties with unclean tubs and instruments.

Although some scientists oppose the idea that shellfish may be responsible for disease, there is nevertheless considerable evidence in its favor. The great difficulty is the actual proof that particular epidemics, e.g., typhoid, are caused by shellfish. By the time that an epidemic has started and the course traced, the contamination may be removed from the oyster-beds. Also, in but few instances has the typhoid bacillus been obtained from shellfish or from the water of shellfish beds. Stiles in 1912 reported obtaining typhoid bacilli from oysters floated at Norwood, Long Island, in connection with his investigation of the Minisiuk Banquet at Goshen. As a rule, evidence of sewage contamination as indicated by the presence of appreciable numbers of colon bacilli in the water and in the oyster is considered evidence of pollution, as under such conditions the typhoid bacillus may also exist if there is a possible source. The manner in which certain noted epidemics have been traced leaves little doubt that shellfish may be one means of transmission, in spite of the fact that the difficulties in tracing the source of infection has cast doubt upon its authenticity. However, with the regulations now in force, and the enactment of suitable legislation, the dangers from this source will soon become of less consequence.

In conclusion we may say that sea food when not prepared for market under sanitary conditions may be dangerous. This difficulty may be overcome by the enactment of suitable laws capable of enforcement, and by the education of the public to demand fresh fish prepared under sanitary conditions. One of the surest means of having enacted and enforced adequate laws to insure the public a sufficient supply of healthful sea food is through a widespread knowledge of the different sources of dangers, and the necessary steps for their eradication.

CLINICAL DEPARTMENT

Case F-11. Constipation. Mrs. B. *Personal History.* — The patient has had constipation for nearly thirty years, and has taken all sorts of treatment for it, such as agar-agar, cascara, licorice powder, rhubarb, paraffine oil, etc., until now her bowels will not respond much to any kind of laxative. She was treated for constipation at a sanatorium in Brooklyn, N. Y., where her diet was corrected, and she was also given more laxative drugs. She has kept to a laxative diet for a long time, with no result. Enemata return as water, with no fecal matter. She drinks plenty of water.

August 2, 1916. Came to the clinic, Out-Patient medical clinic, Massachusetts Homœopathic Hospital, much upset over her condition. Said her head felt full and dizzy, and she saw stars and specks before her eyes. Bowels gave her no urging or inclination to move. Not much gas in bowels. Appetite ravenous, but eating does not relieve her craving for food. Is hungry again soon after eating. Patient in general is aggravated by heat. Presc. Lycopodium 1m., 2.

August 5, 1916. No movement, other than a little mucous, Presc. Sulphur 1m., 1.

August 9, 1916. Feeling much better in general. Head feels clearer. Is not dizzy, and sees no more "stars" before eyes. Bowels have not moved, but she obtained slightly more result from an enema, and her bowels have several times felt some little inclination to move. This last symptom caused me to change my prescription to Nux Vomica 1m., 1.

August 16, 1916. Bowels have moved every day since here last, except today. She has had one dizzy spell with nausea. Rx. Nux Vom. 1m., 1.

August 23, 1916. Bowels moving every day for first time in thirty years. Face has a few pimples. Complains of a tendency she has had for years to pus infection in fingers around nails. One finger nail slightly inflamed recently. Presc. Sac lac.

August 30, 1916. Bowels moving every day but one since she was here last. Skin of face clearing up. Feels much better in general, and much surprised that her bowels have started to move naturally again. She didn't expect she could ever have a natural movement again. Presc. Sac lac.

November 1, 1916. Bowels continue normal. Feeling very well in general.

REVIEWS

DIAGNOSIS AND THERAPEUTICS

Renal Function in Pernicious Anæmia. *As determined by dietary renal tests. H. A. Christian, Arch. Int. Med., 1916, xviii, 429.*

Christian has studied fourteen cases of pernicious anæmia in both young and old people. These cases exhibited a disturbance of renal function which measured by renal dietary tests is similar to that of patients with advanced chronic nephritis. Arteriosclerotic and renal lesions have been fairly well excluded, and the disturbance in excretion is thought to be the result of the anæmia, either a nutritional or a toxic disturbance in renal cellular activity. The renal disturbance decreases with the subsidence of the severity of the anæmia, unless the anæmia is maintained so long that a permanent disturbance of renal function ensues. It would be well to consider the element of anæmia when drawing conclusions from dietary renal tests applied to patients with nephritis.

Autogenous Defibrinated Blood in the Treatment of Bronchial Asthma. *M. H. Kahn and H. W. Emschein, ibid. 445.*

The author's explanation of the rationale of this treatment is as follows:

1. Asthma is due to a spasm of the smaller bronchi.
2. A spasm of the bronchi in asthma is a manifestation of anaphylaxis.
3. The anaphylactic phenomena may be explained on the basis of protein sensitization.
4. Whatever the way of access of the protein to the body, it is probably absorbed by the blood. If so, it should be found in the blood, especially just prior to, or during, an asthmatic attack.
5. The rational method of active immunization in anaphylaxis consists of repeated injections of small doses of the causal protein; if the previous premises are true in asthma, immunization by repeated parenteral injections of autogenous defibrinated blood, obtained preferably during a paroxysm, should be beneficial.

Six patients with bronchial asthma have been treated by ten weekly subcutaneous injections of from 20 to 30 c.c. of the patients' own fresh defibrinated blood, without any local or immediate general effects following the injections. These patients

have shown definite improvement as indicated by diminution in frequency and severity of attacks, gain in weight, increased ability to work, and improved subjective symptoms.

Influence of Age and Sex on Hemoglobin. A Spectrophotometric Analysis of 919 Cases. *C. S. Williamson, ibid.* 405.

From his very careful study, Williamson concludes that the amount of hemoglobin in the blood of normal persons varies greatly at different ages, and follows a well-defined curve. These age variations are so great that in determining whether a given blood contains more or less hemoglobin than normal, it is imperative to consider the age. These variations are greatest from birth to the 16th year. Between the ages of 16 and 60 there is a difference of about 10% between the two sexes; male blood containing the larger amount of hemoglobin. Whether a given blood contains more or less hemoglobin than the normal can be determined only by a comparison of the absolute value obtained by a hemoglobinometer properly standardized, with the normal value of that age and sex as shown in Table 7 which accompanies the article. S. B. H.

BOOK REVIEWS

" Clinical Experiences." Erastus E. Case, M.D., Hartford, Connecticut.

Dr. Case, for many years an ardent devotee of the homœopathic faith and a most skilful prescriber, has been a frequent contributor to the Materia Medica Bureau of the I. H. A. At the 1915 meeting it was suggested that he embody the results of his years of study in book form.

The result of this effort is found in a volume of " Clinical Experiences." No book in our school gives more clearly and succinctly a true understanding of case teaching in Homœopathy, true object study in the application of the indicated single remedy to the individual patient.

Dr. Case has the rare gift of being able to get at the heart of the matter before him in a most direct manner; his reports are always brief and to the point and for that reason are of especial value to the student and the busy practitioner in helping unravel difficult situations.

The book should become something of a classic.

SOCIETIES

Abstracts of papers presented before the American Proctology Society Eighteenth Annual Meeting held at Detroit, Mich., June 11 and 12, 1916

WHY PROCTOLOGY HAS BEEN MADE A SPECIALTY

By T. C. Hill

In this address Dr. Hill calls particular attention to the inadequate treatment that rectal fistula receives at the hands of the general surgeon. He claims that the general surgeon " has never taken the pains to learn the underlying principles of a fistula operation, nor has he the requisite skill, experience or inclination to carry out the necessary steps in the post-operative treatment of these cases, to bring them to a successful conclusion."

While in London there are two hospitals devoted to the exclusive treatment of disease of the rectum, Hill feels that better results can be obtained by establishing special departments in our large general hospitals. He urges that Proctologists be appointed to all general hospitals. The many advantages of staff association, consultations, etc., in which proctology touches on the work of men in other fields, would prove of mutual benefit.

He believes that in the near future a fifth year will be added to the present four-year medical course. This fifth year will probably be devoted to the medical specialties and proctology should be included among them. The undergraduate certainly should have the chance to acquire reasonable proficiency in the newer methods of examination and treatment of rectal disease.

Photography for Record and Teaching

By C. F. Martin

Martin draws attention to the fact that students may be better interested in a lecture if their attention be fastened by an appropriate picture or illustration. After experimenting with photographs or drawings, passed among his class, and also with charts hung on the wall, he found that he could better interest the students with lantern slides thrown upon a screen. The darkness of the room tends to lessen the distraction and to encourage concentration. By having photographs of actual cases, as well as of the different steps in an operation, it was easy to interest the class and to explain far better than could be done even in a clinical lecture.

The equipment is briefly described and suggestions are given as to proper rendering of color values by the use of light-filters.

Attention is called to the necessity of proper exposure and lighting to give negatives with sufficient detail properly to show pathologic conditions. Such negatives only are useful for illustrations, record or lantern slides.

Many case histories are incomplete without a photograph to clarify the description.

Hints are given for copying, making line drawings, diagrams and classifications to produce lantern slides suitable for teaching.

It is suggested that every hospital have a department devoted to photography. This could easily be operated in conjunction with the X-ray department.

Preliminary Report: Anatomical and Bacteriological Findings of the Anorectal Region

By J. R. Pennington

Today the question of "focal infection" is uppermost in the minds of the medical profession. Much consideration has been given to practically every point in the body from which focal infections may emanate except that of the anorectal region.

Experimental investigations show that not only Crypts of Morgagni, but what appears to be diverticuli are found also in this region. The Medical Research Laboratory of Chicago, to whom specimens were submitted for examination, reports that these diverticuli are lined with stratified squamous epithelium. Also that streptococci, staphylococci, colon bacilli, and other bacteria were found in their tunics and sacs.

We have observed that local and constitutional diseases may be produced by injecting the various bacteria obtained from these diverticuli into animals.

I am investigating the value of these diverticuli as points of focal infection and their role as causative factors in hemorrhoids, fistula, constipation, arthritis, endocarditis and other acute, and chronic, and local and constitutional infections.

The Treatment of Hemorrhoids by a New Method

By E. H. Terrell

The author presents a simple, safe and efficient method of curing selected cases of Hemorrhoids by the injection of quinin and urea solution. During

the past two years 127 patients have been treated by this method with only one recognized failure. Injection of quinin and urea in solutions of from 5% to 20% strength produces starvation and atrophy of the hemorrhoids. The series reported includes only uncomplicated internal hemorrhoids. The results of the treatment of 127 patients justify conclusion that the method is simple, safe and effective in properly selected cases.

Further Observation on Pruritus Ani: Its Etiology and Treatment

(A sixth report based on results of original research.)

Dr. Dwight H. Murray, of Syracuse, N. Y., read the sixth annual report of his original research work on Pruritus Ani and Vulvæ, adding reports of 25 cases to the former series of cases, making 123, the bacteriology of which shows 95% of the cases a streptococcic infection as the etiology for these troublesome conditions. He stated that his claim, that the *streptococcus fecalis* is the etiology of Pruritus Ani, is now confirmed by many leading physicians, throughout the United States, who have been investigating the subject.

He finds from the experience of this past year that far better results are obtained by the use of autogenous vaccines with more than 1,000 million dead germs to 1 c.c.

He states that not one of the cases of Pruritus Ani and Vulvæ, or Pruritus Scroti, in the 123 cases have had diabetes, and, as a result of this, he questions very strongly whether diabetes is ever the cause of these conditions, unless as a complication, and under such condition there would be a general pruritic condition of the skin.

Last year, in his fifth report, he described cases of Pruritus Ani that did not show improvement under the administration of the autogenous, streptococcic vaccine. These cases were later found to have a staphylococcic infection as a complication and when an autogenous staphylococcus vaccine was administered with the autogenous streptococcic vaccine improvement resulted. He has found proof of this same condition during the past year and believes that these cases show a characteristic whitish appearance of the skin in spots, particularly around deep skin fissures.

He also found further proof of one of the conclusions, in a former paper, i.e., where there is a rectal pathology with Pruritus Ani, plus a skin infection, that an operation for relief of these conditions will cure the rectal pathology, but will not cure the Pruritus Ani. If the streptococcic skin infection does not exist the operation will be very sure to cure Pruritus Ani.

During the six years that Dr. Murray has been doing this work he has never had as prompt and satisfactory results from treatment as during the past year. In his report of the present condition of patients treated during the past five years, he shows that practically all of the patients have retained a part of the benefit originally received and a large majority of them consider themselves cured. Time will give the proof of this.

While some of the cases still have a little itching from time to time, they state that it is very easily controlled, by simple methods.

Dr. Murray is more firmly convinced than ever that operations for the cure of Pruritus Ani, such as Balls operation and modifications of it, are absolutely contradicted and should never be performed.

Acute Angulation and Flexure of the Sigmoid a Causative Factor in Epilepsy
Report of Nine New Cases with Four Recoveries

By W. H. Axtell

In December, 1910, I published my first list of thirty-one cases — eight private and twenty-three asylum cases; in August, 1911, a further report on ten private cases with three recoveries — this included three additional asylum and two private cases, making in all thirty-six cases. The three reported cured have remained so for a period now of over four years. One additional case of the original list of ten private cases has had no return of the convulsions since ceasing treating two years ago; treatment seemed at the time to increase the irritation as reported.

Additional Cases:

Since last report I have had nine additional cases with four of them remaining free from seizures for from one year to two and a half years, making in all forty-five cases reported with eight recoveries to date.

Observations:

From my observations I am convinced that those who acquire epilepsy after the fifteenth year are more amenable to successful treatment than when commencing earlier in life. In my judgment surgery can give but little relief except where there is a definite history of inflammatory adhesions holding the angulations and flexures, — in fact the condition of fecal stasis precludes surgery of the colon until the condition is first relieved, which when so relieved a prime factor in the production of the trouble is eliminated. A new and undescribed cause of the intestinal ptosis which is so generally present in these cases is the separation of the recti muscles, which are so essential to a thorough evacuation of the colon and for the support of the abdominal organs.

SOUTHERN HOMŒOPATHIC MEDICAL ASSOCIATION

The Southern Homœopathic Medical Association will hold its 33rd annual session in Louisville, Kentucky, November 15th, 16th and 17th, 1916. Headquarters will be at the Hotel Seelbach.

In addition to the usual scientific program there will be a number of new, novel and interesting features: for instance, — The scientific proof of the homœopathic remedy, an all-important subject under investigation in our schools, will be featured by representatives from two of our largest colleges; Federation of our state societies with the American Institute whereby each State society federating becomes an integral part of the National body; Reorganization of the homœopathic profession; Recapitulation of our resources, Men, Money, Material and Mastery; Congress of Deans; "Our Institutions," a lecture by Willis A. Dewey of Ann Arbor, illustrated by 100 slides showing the wealth of homœopathic institutions in the United States, Canada and foreign countries.

Louisville will hold open house, and our invitation is backed by the Chamber of Commerce, Kentucky State Society, The Falls City Homœopathic Medical Society and the local profession.

Dr. George S. Coon, Chairman of the Local Committee on Arrangements, assisted by Drs. Joseph Wynn and B. F. Underwood, extends a hearty welcome to the members and profession at large, and assures all a royal good time scientifically and socially.

ALL ROADS LEAD TO LOUISVILLE. If you have never attended the Southern meeting you have missed a treat. Make your plans to break away from the monotony of professional duties and meet with us next month.

J. L. Jennings, M.D., *Secretary-Treasurer* Scott Parsons, M.D., *President*

Don't forget the TIME, the PLACE and the EVENT.

Louisville, Ky., November 15, 16, 17

Hotel Seelbach

BOSTON HOMŒOPATHIC MEDICAL SOCIETY

At the October meeting of the Society the following resolution was passed:

Whereas: Certain articles of legislation, vitally affecting the public health, will be presented to the incoming legislature, and

Whereas: We physicians, intrusted as we are with all that pertains to the public health, therefore be it

Resolved: That the members of this society, and all other physicians be requested to ascertain before election, the status of each candidate to the legislature from his Senatorial and Representative district, on the anti-vaccination bill, and the Pang Suey Bill, so-called, and that each physician be requested to use his influence against any candidate favoring said legislation.

A BRIEF REPORT OF THE RECENT CLINICAL CONGRESS OF SURGEONS AT PHILADELPHIA

The Seventh Annual Clinical Congress of Surgeons of North America was held in Philadelphia during the week commencing October 23 and ending October 28, and the Fifth Convocation of the American College of Surgeons occurred in the same city at the Hotel Bellevue-Stratford October 27th.

The Congress was very fully attended by a large number of surgeons from all parts of the United States and Canada and included a goodly number of representative homœopathic surgeons from Massachusetts. The clinics of the various hospitals of Philadelphia were daily attended and afforded extraordinary opportunities for visiting surgeons to observe the mode of surgical operations performed by the skilful and celebrated surgeons of that city, and their treatment of disease.

Philadelphia is noted for its numerous and excellently equipped hospitals, which made great preparations for this event and furnished daily bulletins of the operations at the various hospitals, so that the visiting surgeon could select any that were of particular interest to him.

Hospitals of the different schools entered enthusiastically into the true spirit of the occasion in offering their best talent and material. All the homœopathic Hospitals were well attended and received great credit for their very interesting and skilful operations.

The evenings during the week were devoted to the attendance at meetings of the Congress in the large ballroom of the Bellevue-Stratford and addresses were made and discussed by celebrated surgeons, among whom were Dr. Fred B. Lund, of Boston, the retiring president, Dr. Charles Mayo, of the Mayo Brothers, and others. Dr. J. Whitridge Williams, chief obstetrician at Johns Hopkins, and Dr. E. P. Davis, a noted obstetrician of Philadelphia, delivered most able addresses on Obstetrics and deplored in no uncertain terms the abuse of Cesarean section.

On October 27th at the same place occurred the Fifth Convocation of the American College of Surgeons. At this Convocation nine from the State of Massachusetts were received into the Fellowship, upon whom were conferred the degree of F. A. C. S. Four of these were homœopathists, viz: Drs. George D. Bliss, Charles William Bush, Harry Cleveland Cheney, and James Krauss.

After the Convocation adjourned on Friday evening, a very pleasing social event occurred in which the homœopathists of Philadelphia entertained at the Union League Club as their guests, their homœopathic visitors from Massachusetts, New York, Ohio, Michigan and some other states, with a feast of wit and humor and other good things.

G. D. B.

APPOINTMENTS AT HARVARD MEDICAL SCHOOL

Former Associate Professors Dr. Edward H. Nichols and Dr. Charles A. Porter of Boston have been appointed Clinical Professors of Surgery in Harvard Medical School.

PERTINENT FACTS REGARDING MATTERS OF IMPORTANCE TO THE HOMŒOPATHIC PROFESSION

In accordance with the revised Constitution and By-Laws of the American Institute of Homœopathy and the new plan of reorganization and operation adopted by the American Institute at Baltimore, the Executive Committee — consisting of Joseph P. Cobb, F. M. Dearborn and C. E. Sawyer, to whom the matter of installation of the new plan was assigned, — have secured a suite of eight rooms in the Marshall Field Building, Chicago, in which have been opened the Administrative office of the American Institute of Homœopathy.

The section of publication, directed by Sarah M. Hobson; the accounting and recording section by the newly employed Secretary-Treasurer, T. E. Costain; the supervision section under the direction of the Executive Committee, all find commodious quarters in which to pursue their work.

With a corps of capable assistants for each division in offices with equipment with which to work efficiently and promptly, the business affairs of the American Institute of Homœopathy are now really ready to proceed.

With a definite systemized plan for the conduct and consideration of all matters pertaining to homœopathic interests; with the centralizing of all forces; with a definite fixed purpose; with paid assistants to carry on the work, all that is now required to promote Homœopathy is the hearty co-operation of the profession.

Homœopathy has been at a great disadvantage because it has had no central office in which to operate, no place from which to direct, no specific management, no fixed plan of operation. All of this is now changed, and the work of the American Institute of Homœopathy will be pushed with energy and enthusiasm.

Among the matters to which especial and immediate attention will be given by the Administrative Department is a complete and reliable list of all homœopathic practitioners throughout the United States. We wish to know just who the active homœopaths of the country are and where they are located. We believe that it is better to have a few thousand of real workers who are ready and willing to assist than thousands of nominal members indifferent to homœopathic interests. So it shall be our aim to enlist in the reorganization only those that are ready and in earnest in promoting things homœopathic.

No body of professional men ever had more which is worthy of presentment than the homœopathic profession, none with better prospect of accomplishment. As proof of these assertions let us take an inventory of what we have, then we shall be the better able to conclude whether the required effort is justifiable. From the report of the Council on Medical Education we find that: —

In the United States there are 101 accredited homœopathic hospitals, representing 20,092 beds.

During the past fiscal year there were treated in these hospitals 109,527 hospital patients, with an average mortality rate of 4.1 per cent.

It requires annually 248 internes to properly house-staff these hospitals.

The property value of these strictly homœopathic institutions is $36,819.452.

In the training schools for nurses connected with the purely homœopathic institutions there were enrolled last year 1,849 pupils.

In the Out-Door or Dispensary departments of these institutions there were treated during the last fiscal year 287,887 patients.

In addition to this we have: —

10 National Medical Societies.
31 State Medical Societies.
75 Local Medical Societies.
34 Medical Clubs.
6 Homœopathic Alumni Associations.
29 Homœopathic Dispensaries.
10 Homœopathic Colleges.
18 Homœopathic Journals.

With ten thousand active practitioners throughout the country serving an intellectual people, 35% of which employ homœopaths, it is only reasonable to assume that a business organization is necessary, and only reasonable to presume that a well organized and conducted business administration will elevate medical standards, increase patronage, develop interest and force recognition.

This is all possible by a combined effort which will be brought about by federation and affiliation of all medical societies, colleges, hospitals, training schools, clubs, fraternities and individuals. In union there is strength, and it is the determination of those in charge to bring about a hearty co-operation of the profession. This is only one of many things already on the way to establish Homœopathy in the front rank of medical fraternities.

All can assist in this undertaking, and each will become one of the direct beneficiaries. Are you ready and willing to help? If you are and if you have not already done so, please sign and mail the attached coupon which will not only aid us in getting a corrected list of homœopathic doctors, but it will encourage us in our efforts to put Homœopathy in the high place to which all homœopaths aspire.

The American Institute of Homœopathy, Supervision Division,
829 Marshall Field Bldg., Chicago, Ill.

I do Wish to be enrolled as a Homœopath.
I do not
I do Wish to receive literature pertaining to Homœopathic matters.
I do not
I am Willing to aid in reorganization, Federation, Coöperation and affiliation as recommended by the American Institute of Homœopathy.
I am not
(Indicate your position by marking with a star.)
My address is:

Name.....
City.....
State.....

TENEMENT HOUSES IN COUNTRY DISTRICTS

The October issue of the monthly bulletin of the New York State Department of Health contains a very interesting article entitled "Tenement Houses on Farms in the State of New York," written by the Director of the Division of Public Health Nursing, in which she calls attention to the existence of tenement houses, conducted by immigrants with a view to financial gain at the expense of their own race. She states that conditions in these houses surpass any that exist in cities in the matter of overcrowding, and sanitary conditions are so bad that they are a dangerous menace to the public. "The fly wades in the filth of these places," states the Director, "and two or three hundred feet distant alights on the face of a passing child or other person and deposits the infective material."

From the highway these places look like abandoned farms unless the occupants are visible, the tenants coming from the tenement house districts of cities and remaining only during the summer school vacation season. They are hired for the "the season," one room perhaps for a family, sometimes with and sometimes without "kitchen privileges." Unless there is a neighboring creek or brook or pond, bathing possibilities are practically nil, and not always are there even the simplest sanitary arrangements. Refuse food is thrown out by the roadside.

The Director states that some of these places are not five hundred feet from railway stations accommodating much summer travel, and "nothing but a paid health official with power to enforce a law prohibiting such health menaces to the travelling public will induce these people to cease living as they do. Until such laws and regulations are established," she adds, "typhoid fever, infantile paralysis, diphtheria and tuberculosis will continue to spring

up in rural districts among people who have carefully preserved their distance from all persons who they think may be carriers of infection, and who are entirely unaware of this condition in their neighborhood."

NATIONAL BOARD OF MEDICAL EXAMINERS OF THE UNITED STATES

Supplying a need which has been felt for a standard examining board for the United States and its territories, the National Board of Medical Examiners has been organized. This is a voluntary board, and members are selected from the Medical Corps of the Army, the Navy, the Public Health Service, the Federation of State Examining Boards and other representative organizations, and the medical profession of the United States.

The aim of the Board is stated to be the establishment of a standard of examination and certification of graduates in medicine, through which, by the coöperation of the individual Boards of Medical Examiners, the recipients of the certificates of the National Board of Medical Examiners may be recognized for licensure to practice medicine.

The independent action of the Board is furthered by moral and financial support of the Carnegie Foundation.

The officers of this organization are as follows:

President, Surgeon-General W. C. Braisted, U.S.N., Washington.

Secretary, W. L. Bierring, M.D., Des Moines, Iowa.

Treasurer, Col. Louis A. LaGarde, U.S.A., retired.

Applicants for admission to examination by this Board must present credentials for the completion of (a) a four-years high school course; (b) two years of acceptable college work, including physics, chemistry, biology and a modern language; (c) graduation from a Class A medical school (American Medical Association classification); (d) one year as interne in an acceptable hospital or laboratory.

The Board's headquarters are at Washington, D.C.

DOCTOR WANTED FOR CHUNKING HOSPITAL

An urgent call has been received for a thoroughly qualified physician to go to West China, for the hospital at Chunking. Owing to ill health the physician recently in charge there has been obliged to return to the United States, and the hospital must be closed unless the right man is found for it at once.

Chunking Hospital has a capacity of one hundred beds, with an average of sixty in-patient. In 1915 it treated 14,642 cases. Chunking has a population of a half million.

The man for the place must be a graduate of a first class medical college and one who has had hospital training, not over thirty-three years of age and able to acquire the language and to fit permanently into the work. He needs to be a man of missionary spirit, married, in good health and actively interested in evangelistic work.

For further information address Board of Foreign Missions of the Methodist Episcopal Church, 150 Fifth Avenue, New York City.

ANTITOXIN FOR THE ALLIES

Apropos of Dr. Allen Greenwood's statement at the meeting of the Massachusetts Homœopathic Medical Society regarding the extremely low death rate from tetanus in the French war hospitals in which he has served, it is interesting to note that up to a very recent date the City of New York Health Department has sold to the Allies something like $106,000 worth of antitoxin, chiefly for tetanus.

AT LAST WE HAVE THE CAUSE!

The following anonymous communication was sent to the Superintendent "Massachusetts Homœopathic Hospital, Dr. H. M. Pollock.
Messrs.

Can it be possible that aluminum cooking dishes are responsible for much of Infantile Paralysis. I have noticed when cooking in a white dish and stiring with an aluminum spoon that the dish would be much marked inside as if by a led pencil and I have used an aluminum dish with a common spoon and the dish would be marked as if the metal was removed. Knowing that led would cause paralysis I could not rid my mind of the possibility.

I beg pardon."

A WORD TO GAZETTE READERS

The New England Medical Gazette contemplates the compilation of a complete annual index of homœopathic periodical literature. Do *you* think this worth while?.....

What department of the *Gazette* is most interesting and valuable to you, and why?.....

What improvements or additional features would you suggest?.....

.....

Name.....

Address.....

RED CROSS UNIT FOR PALESTINE

The Zionist Committee of New York City is sending a medical unit of ten doctors and five nurses to Palestine, to care for typhus fever and cholera patients in Palestine, where these diseases are raging.

WHAT NEW ENGLAND HAS GIVEN TO WAR RELIEF FUNDS

Published figures show that New England has given and is giving generously to the relief of sufferers from the European War. The total amount contributed to all funds up to Saturday of the last week of October was $773,267.65.

PERSONAL AND GENERAL ITEMS

Dr. Kadzuo Horibe, of Tokyo, a graduate of the Medical Department of the Imperial University of Tokyo, has been appointed to internship in the Massachusetts Homœopathic Hospital. Dr. Horibe expects to spend two or three years in this country before returning to Japan.

Dr. William L. Patterson, class of 1909 B.U.S.M., is Assistant Physician in Minnesota State Hospital, Fergus Falls. Dr. David O. N. Lindberg, class of 1914, has recently received appointment in the same hospital as Pharmacist.

Dr. Cora Smith King (B.U.S.M. 1892) has removed her office and residence from The Olympia to King Cottage, 3015 Fourteenth St., Washington, D.C.

Dr. Edwin M. Kent (B.U.S.M. 1909) has removed from Remsen, New York, to 22 William St., Saranac Lake, New York.

Dr. Frederick A. Webster (B.U.S.M. 1903) has removed his office from 514 Commonwealth Avenue to The Kenmore, 496 Commonwealth Avenue, where he will continue the practice of his specialty, Roentgen diagnosis. Telephone: Back Bay 8774.

Dr. Anna R. Manitoff (B.U.S.M. 1915) has opened an office at 100 Waumbeck St., Roxbury District, Boston.

Dr. Eleanor M. Anderson, class of 1916 B.U.S.M., will remain in Los Angeles, California during the early winter, returning East to begin service in Metropolitan Hospital on January 1st, 1917.

The practice of the late Dr. Anna C. Varner of Wilkinsburg, Pennsylvania, has been taken by Dr. Mary E. Coffin, who has removed from 3837 California Avenue to 736 Wallace Avenue.

Physician's office to be let.—Desirable office location for a physician in Hotel Kenmore. Inquire of Dr. Frederick A. Webster, 496 Commonwealth Avenue, Boston.

Dr. Francis H. MacCarthy has removed from 19 Joy St. to 1109 Boylston St., Boston. Dr. MacCarthy is Clinical Instructor in Diseases of Children at Boston University School of Medicine and a graduate of the class of 1900.

Dr. Gladys H. Brownell, of the class of 1912 Boston University School of Medicine, was married on November first to Dr. Mark S. Bringman of Norwich, Connecticut.

At the recent meeting of the American College of Surgeons in Philadelphia, Drs. George D. Bliss and Charles W. Bush of Boston were elected to fellowship.

After four months spent in the army medical service in Texas, on the Mexican border, Dr. Conrad Wesselhoeft, 2nd, returned to Boston on November 6.

A New England Tuberculosis Conference was held in New Haven, Connecticut, on October 12 and 13, with a good attendance of general practitioners and hospital and sanatoria representatives from all over New England.

RECENT DEATHS

Dr. Stockbridge P. Graves of Saco, Maine, a graduate of the New York Homœopathic Medical College, class of 1866, died on October 12 at the age of ninety years.

Dr. Russell Bingham of Fitchburg, Massachusetts, died suddenly on October 23.

The *Gazette* has just learned of the death of Dr. J. Lester Keep of Brooklyn, N. Y., one of its oldest and most valued subscribers.

THE NEW ENGLAND MEDICAL GAZETTE

VOL. LI DECEMBER, 1916 No. 12

Books for review, exchanges and contributions — the latter to be contributed to the GAZETTE only and preferably to be typewritten — personal and news items should be sent to THE NEW ENGLAND MEDICAL GAZETTE, 80 East Concord Street, Boston. Subscriptions and all communications relating to advertising or other business should be sent to the Business Manager, 80 East Concord Street, Boston, Mass.

THE GAZETTE does not hold itself responsible for the opinions expressed by its contributors. Reprints furnished at cost.

A RETROSPECT AND AN APPEAL

Ten years have passed since the present business management of the *Gazette*, doubtfully and with self-distrust, undertook to assume the responsibilities and to continue the work so ably and devotedly carried on by the man to whom the *Gazette* owes so much: — Dr. William K. Knowles, whose death occurred January 7, 1907.

Today we ask ourselves, has it been worth while, and have we "made good"? Have the results justified the sacrifice of time and strength which the task has involved? Has the cause of Homœopathy really benefited by our labors? Have the long hours of proofreading at night; bookkeeping; the everlasting and wearisome necessity for nagging somebody for something, — the printer to be hurried, delinquent subscribers to be dunned for overdue accounts: has all this been really worth while? *Chi sa?* Sometimes when assailed by discouragement and depression we are ready to answer our own question in the negative, but calm reflection assures us that the work needs to be done and, willing or unwilling, it is ours to do.

But in order to continue the work we must meet and overcome a new difficulty which recent conditions have brought about, — that is, the greatly increased cost of production. The paper situation, as most of us know, grows constantly more serious, and the scarcity and high cost increase at an alarming

rate. The *Gazette* management now finds it absolutely necessary to increase the subscription price to meet partially the advance in cost, which at present is almost an even fifty percent. over that of one year ago. With the hearty coöperation and support of our subscribers we can continue publication; without it, we must suspend. The amount of financial and moral backing given us now, at this critical time in our history, will determine the future of the journal.

So, dear friend and reader, be prepared to find your subscription bill for 1917 made out for three dollars instead of the old, familiar charge of two dollars, and stand by us cheerfully in this crisis. Certainly the record of fifty-one years of honorable service to the cause of Homœopathy entitles the *Gazette* to the support of every loyal homœopath, especially in New England. It is the only homœopathic journal published in New England.

One word more. If you have not paid your subscription bill for 1916, will you not do so NOW? "Mony a mickle mak a muckle," and although the individual items are small, the sum of unpaid subscription bills is a very considerable one, and their payment a much needed help.

DO IT NOW, and with the check send us your encouragement and assurance of coöperation.

L. G. K.

THE "LAWS" OF COLLES AND PROFETA

These "laws" may be stated as follows:

1. If a woman who has been delivered of a syphilitic child remains herself unaffected, she can suckle her nursling without danger of contaminating herself.

2. If a child born of a syphilitic mother manifests no trace of infection at birth it may be suckled by its mother without danger.

The apparently healthy mother's safety from infection by her definitely syphilitic child was assumed to depend upon immunity acquired while carrying the child. Similarly an apparently healthy child's protection against infection from a known syphilitic mother was thought to be due to immunization of the fetus *in utero*.

In other words, it was accepted as fact that a healthy woman might carry a syphilitic child to completion of pregnancy without herself becoming syphilitic, and conversely it was believed that a syphilitic mother could give birth to a healthy child.

The Wassermann reaction and especially its routine use in

maternity hospitals seems to have shown, however, that such a conception is no longer tenable. We seem to be justified in considering an apparently healthy mother syphilitic if her newly born child has syphilis, and conversely an apparently healthy child is undoubtedly afflicted if its mother shows signs of disease.

The failure to recognize latent syphilis in mother or child, due, of course, to the lack of suitable diagnostic measures such as we now possess, was responsible for framing these two formulæ of Colles and Profeta.

As already pointed out, it was believed that immune bodies of the blood were able to pass through the placenta either from mother to child or from child to mother. It was known, of course, that the virus itself could be transmitted from one to the other, but in those cases in which only one of the two showed signs of the disease this was not supposed to have taken place.

Even before the Wassermann reaction proved the dual infection in such apparently one-sided cases, some doubt had been expressed as to the actual freedom of the apparently healthy unit from contamination. An observation by Lewis was particularly operative in raising such doubts. He reported that an apparently normal woman had given birth to a syphilitic child, and that some years later she was inpregnated by a non-syphilitic man, yet this child, too, was syphilitic. This could be explained only by assuming that the mother had become infected during or before her first pregnancy, even though she exhibited no outward signs of the disease.

The safety from superimposed infection (not primary infection) of either mother or child does not depend, therefore, upon transferred immunity but upon a previously or simultaneously acquired syphilitic infection. The observation that led to the formulation of the "laws" was correct, that is, it is safe for syphilitic mothers to nurse their children, and for syphilitic children to be nursed by their mothers; but the assumed explanation of these phenomena was erroneous.

H. U.

MALE AND FEMALE STERILITY

It is not so long ago that the absence of children in a home was conclusive evidence that the wife was sterile. So far in the opposite direction has the pendulum now swung that one excellent authority, Dr. E. Gustav Zinke, says that probably more than half of the cases of sterility in a given collection of matings should be charged to the husband. An intensive study of the causative factors operating in the products of sterility

makes it possible to place the responsibility rather more definitely than has heretofore been the case.

Dr. Edward Reynolds, in giving the chairman's address before the section of Obstetrics, Gynecology, and Abdominal Surgery of the American Medical Association in Detroit, brings out some interesting observations which he has made in a study of the human spermatozoon.

He says the long cherished belief that the presence of a few motile spermatozoa in a given specimen is sufficient evidence of fertility, is misleading. Beginning with the deposit of semen in the vaginal pool, there is normally an uncountable number of spermatozoa to be seen in a single field under the microscope, but the minute this little army of crusaders begins its journey ovum-ward, there is a rapid and material dropping off of recruits. By the time the army has reached the first fort, the cervix, so many weary soldiers have given up the attack that but twenty or thirty spermatozoa are seen in a single field. After passing the cervix then comes the march up the San Joan Hill of the uterine cavity. This passage would appear to be the burying-ground of many a valiant young spermatozoon, for by the time the fundus is reached only an officer or two and a thin sprinkling of the most stalwart privates are left. But even here the journey is not ended; there are the long, torturous tubes yet to be travelled; and it requires diligent search with the miscroscope to find in the tubes a single officer or soldier of the vast uncountable army which started so valiantly from the recruiting ground of the vaginal pool.

The battle is only to the strong, and now begins the real test of strength, when the single spermatozoon meets the ovum and must, ere it wins a victory, penetrate the wall of the ovum. It is the diminution of the ranks of the spermatozoa during the march ovum-ward which our later researchers have disclosed, and which enables us to judge something of the real vitality and healthfulness of the male germ. When one considers all the obstacles and discouragements which this little army must encounter, even when normal conditions are present, it would seem surprising that impregnation ever occurs.

Dr. Reynolds' study induces him to believe that there are three distinct motions which a spermatozoon displays during its journey ovum-ward, and the energy and persistency which a given cell displays is the index of its fecundating power. He says, it is not alone the numerical frequency of the spermatozoa, which is, of course, essential, nor the mere presence of motility, but rather more important is the *quality* of the motility.

The three varieties of consecutive motions which he describes are these:

First: Initial motion such as is seen in fresh semen under favorable conditions, the lashing of the after part of the tail from side to side. This produces rapid forward motion in a straight line, likened to the "double quick change" of the company.

Second: is a slower motion, with the head swaying from side to side, and an uncertainty of direction, often going up to an object, then retreating. In this the remnant of the army is reconnoitering to locate the enemy.

Third: is the "stationary bunting" motion. This consists of a pushing motion on the part of the spermatozoon, or a burrowing action, when the cell comes in contact with any material like the ovum or a bunch of cells.

What seems to lend force to the division of these three motions, and the consequent estimation of the vitality of the cells, is the fact that comparatively few of the spermatozoa ever reach the third form of motion. Many individual cells fail to attain it. Only the most vigorous ever do so, and this third degree motion has been observed only in such spermatozoa as reach the female genital tract. It has not been seen in artificial mediums. It is logical to assume, therefore, that only those spermatozoa whose vitality has permitted them to reach the third stage are capable of bombarding the shell of the ovum and eventually penetrating it.

Now for the practical deductions obtainable from these studies. It is possible to determine the vitality of the spermatozoa in a given specimen of semen by observing the number of hours during which motility persists in the unmixed semen (without any form of medium). Second, the number of hours which motility persists in the natural mediums, (secretion from the female genital tract); and, third, in various artificial media. Comparison of the results has seemed to give an accurate estimate of the fecundating power of the male cells.

It is quite reasonable to assume that sterility existing in a given mating may be due to slight defects in both husband and wife. Given a husband whose spermatozoa shows a low but not particularly abnormal degree of vitality and whose wife has a hyper-acid secretion from vagina or uterus, there might result a sterility due to mutual defects, the over acid secretion destroying what under more favorable conditions might be virile spermatozoa. The sterile marriage of Napoleon Bonaparte and Josephine, and others of the same type, might have been due to some such conditions; but when each married another mate, both were fruitful.

In considering sterility due to deficient ovulations, we have a much more difficult problem to solve. Perhaps the solution will become easier as we gain a better understanding of the

anatomic characteristics of the sterile ovary. Clinically it has been oberved that ovaries which have a number of thin-walled, projecting follicular cysts, lobulated in outline and which give a tense resistant feel over the whole or greater part of the organ, are sterile ovaries; that such thin-walled follicles rarely come to normal maturity.

But sterility in the female does not depend solely upon the ovaries. Both ovaries may be capable of producing normal virile ova, but the passage from the vaginal pool to meet the journeying ovum may be full of pitfalls for the oncoming spermatozoon. There may be the abnormal secretion in vagina, cervix, or uterus, which so nullifies the enthusiasm of the male cell that it gets no further than the cervical canal. There may be the displaced cervix which places the os out of reach of the vaginal pool. There may be a stenosed cervical canal due to uterine flexions, or, what more frequently occurs, there may be a stenosed, angulated or sealed tube which prohibits the successful journey of either ovum or spermatozoa.

If the exercise of birth control is ever to be allowed, it behooves the peoples of all nations to set at work their experts, to the end that they may find the means of preventing and overcoming sterility, both in the male and female, else marriage becomes a failure in its barrenness.

D. G. W.

ORIGINAL COMMUNICATIONS

ANTERIOR POLIOMYELITIS:

A Possible Etiological Factor *

By John P. Sutherland, M.D., Boston, Mass.

Certainly no excuse need be offered for calling attention to a disease which within the last few months has been so prominently and continuously before the minds of all; which has prevailed over so large an area of our country; which has caused such widespread terror, panic and alarm throughout whole communities; which in Massachusetts, New Hampshire, Connecticut, New Jersey and New York (City and State) has attacked up to Oct. 26th, 19,286 children and adults; which has caused the death of approximately 25 per cent of the number attacked; which has produced lasting deformity and insurmountable physical inefficiency in thousands of instances; which has brought an immeasurable amount of sorrow and suffering in its train.

Councils of men considered wise and learned in things medical have been held to consider the cause, prevention and treatment of the dreaded disease with the only results that the cause is still quite unrecognized; no germ or means of distribution has been definitely discovered; therefore, no adequate or specific preventive treatment has been instituted; and as to treatment it must remain simply symptomatic during the early stages and mechano-physical during its later periods.

The medical profession, not able to point with pride to its successes in preventing or combatting the disease, seems to have met one of its many Waterloos.

Boards of Health, local and State, have deliberated, investigated and proclaimed, with confusing and not very helpful results.

School Boards and managers of educational institutions have cautiously deferred the opening of schools, and finally timidly opened them to considerably reduced numbers, as a rule.

Foundations for research have offered prizes to the discoverer of the cause of poliomyelitis, and investigations into the cause have been given fresh impetus.

The verdict of all conferences, investigations and judgments is an acknowledgment of ignorance concerning the cause of and

* Read before the Massachusetts Homœopathic Medical Society, November 1, 1916

inability to prevent or cure the disease. This simply means that we must work more assiduously, more vigorously, more scientifically in order to remove the stigma which now rests upon the profession in connection with the disease.

The following argument concerning the possible relationship of an unbalanced ration to poliomyelitis is modestly presented for your earnest consideration and discussion. I understand that theories are not facts; that a theoretical explanation of an occurrence in itself is not convincing and should not be; but I likewise understand that a theory may act as a starting-point in investigations which eventually lead to useful and explanatory observations and facts.

Let me then call your attention to the accompanying parallel column chart prepared by Winfred Overholser, M.D., Evans Memorial, Massachusetts Homœopathic Hospital, showing certain characteristics of three peculiar, serious, organic and fatal diseases of the nervous system, pellagra, beri-beri and anterior poliomyelitis, and to some arguments and suggestions based thereon. Let me emphasize the points of agreement found between these diseases, especially between beri-beri and infantile paralysis; the disagreements are not very significant in this connection; first, there is unmistakable evidence of the presence of organic disease of the cerebro-spinal system leading to degenerative changes; second, there are marked sensory disturbances; third, there are similar changes in the electrical reactions and in the reflexes; fourth, there are marked motor disturbances ending in paralysis; fifth, muscular contractions, trophic disturbances and gait are not only startlingly alike, but bear testimony to the existing cerebro-spinal trouble; sixth, the post-mortem findings support the clinical.

Can any one fail to see the close relationship existing in this group of diseases, a relationship close enough to form the basis of a nosological classification?

Now then as to the etiology of these diseases: —

Beri-beri existed for hundreds, possibly thousands, of years, slaying its thousands annually, without having its cause recognized. It is only within a dozen years or so that the cause has been definitely established to be the too free eating of polished or demineralized rice.

Clinical and experimental evidence supports the statement.

How about pellagra? It is to the credit of our own United States Public Health Service that ignorance concerning the cause of pellagra was removed, and I would here claim that said Public Health Service has not received one thousandth part of the credit it deserves for solving a problem which has involved the lives of thousands of our Southern fellow citizens

annually. After eight months of careful experimentation during the year 1915, with healthy human beings, after Hahnemann's method of studying drug pathogenesy, it was demonstrated without the slightest reasonable doubt by Surgeon Joseph Goldberger and Assistant Surgeon G. A. Wheeler that pellagra is caused by eating a diet too largely or almost exclusively carbohydrate, — that is, *demineralized*. (See Report of United States Public Health Service issued November 12, 1915.)

As to poliomyelitis? If there be an unmistakable similarity clinically and pathologically between these three diseases, beriberi, pellagra and poliomyelitis, and two of them are now known to be caused by an unbalanced, demineralized ration, why is it not rational, on the basis of analogy, at least tentatively to claim that an unbalanced, demineralized, irrational ration is the real, the fundamental cause of poliomyelitis; hot weather or other factor simply being the exciting cause acting upon a well-prepared soil?

Is it irrational to claim that as polished (demineralized) rice, the staple diet in the Orient, is to beri-beri, so demineralized wheat or white flour, the staple article of food in the high civilized Occident, is to poliomyelitis?

I do not intend here to argue the case. Is argument needed to support so self-evident an hypothesis?

If I may be allowed to go a step further, let me suggest that in this connection we should link up refined cane sugar to white flour. Two great dietetic evils are deplorably common in this century, civilization and country of ours; one is the use of demineralized wheat, and the other the equally indiscriminate, irrational and injurious use of concentrated, refined (demineralized) cane sugar. An additional evil is the demineralizing of our vegetables while cooking them.

But I hear some one say with assurance, "but children and babies, who are the chief victims of poliomyelitis, have not eaten white flour products or cane sugar or vegetables." Very true, but whether for good or evil, for better or for worse, back of every modern babe stands a modern mother! And the babe still gets its initial cells and nourishment from its mother! And no stream can rise higher than its source.

With an insufficient array of facts at hand, I am not unwise enough definitely to claim that the use or over-use of any one kind of food is responsible for the poliomyelitic sorrow that has swept over our land. But let me give you an incomplete list of things which are eaten by potential and prospective mothers and others, not one of which is a "natural" food, and all of which represent more or less interference with Nature by man's art, chiefly in the line of demineralization. All white flour

	BERI-BERI	PELLAGRA
Occurrence	Endemic, epidemic, mostly among men.	Endemic.
Causes	Too much shelled rice, unbalanced diet.	Unbalanced diet.
Onset, Course	Acute or chronic. Anemia, edema, effusion into serous cavities, dyspnea, vomiting.	Malaise, insomnia, cerebro-spinal pain, diarrhea, erythema. Course chronic.
Pain	Precordial pain.	Intense in *head* and *along spine.*
Convulsions		
Paralysis	*Peripheral, flaccid.*	*Spastic of legs.*
Tactile sense	Anesthesiæ, paresthesiæ.	Paresthesiæ.
Pain sense		
Temp. sense		
Electrical reaction	*Decreased excitability or reaction of degeneration*	
Superficial reflexes	*Lost*	Normal
Deep reflexes	*Lost*	Increased
Sphincters		
Consciousness		
Intellection		Depression, irritability, dementia
Contractures		*Present*
Trophic changes	*Atrophy*	*Atrophy*, cachexia. Desquamation.
Vasomotor changes		Erythema, especially on uncovered parts.
Gait	*Tottering*	
Temperature	In Acute form *increased*	
Miscellaneous	Cardiac involvement	
Prognosis	Death from emboli or cardiac failure, *recovery very slow.*	Duration 10 *years* or so. Fatal *10%.*

ANTERIOR POLIOMYELITIS

Acute in infants and children. Often epidemic. Chronic in middle age.	
Unknown.	
Very rapid. Fever or chill, headache, vomiting. 6 weeks, acute stage. Gradual partial recovery.	
Head, back and joints. In chronic cases precedes paralysis.	
Occasionally.	
Always flaccid, abrupt, usually limited.	
Hyperesthesia frequent in early stages.	
Often permanent hyperalgesia.	
Lack of vasomotor response.	
Early loss of faradic excitability in acute form. *Reaction of Degeneration in paralyzed muscles.*	
Rapidly lost in affected parts.	
Abolished in affected parts.	
Bladder affected for short time occasionally.	
Coma occasionally for few days at beginning.	
Restlessness and delirium at beginning.	
None. *Deformities present.* Kyphosis, talipes, hyperextension, etc.	
Marked atrophy, rapid. Growth of limb impaired.	
Limbs cold and blue.	
Dragging, wobbling.	
Often *high fever* at onset, before paralysis.	
Recovery slow, almost never complete.	

WINFRED OVERHOLSER, M.D.
EVANS MEMORIAL, M. H. H.

products: — white bread (much of it "bakers' bread," worse luck) gems, rolls, muffins, toast, buns, cookies, doughnuts, cakes of un-numbered variety and assortment, as also pies, tarts and puddings; thickenings of soups, gravies, etc.; polished rice; pearled barley; hominy; cream of wheat, cornflakes and similar products; hulled corn; farina, tapioca, sago; macaroni and spaghetti; pared potato (boiled, mashed, fried, etc.), candies and confectioneries, ice creams, jellies, jams and preserves; ice-cream sodas, college ices and such frothy frivolities; —cream and butter also may come under the general condemnation of demineralized and unbalanced or partial foods. My point for the moment is that the articles enumerated furnish the bulk of the diet of the average American mother, — and once more behind the babe one sees the mother.

I am enough of a farmer to know that the soil is an all-important thing in considering a crop.

What suggestions have I to make?

The search for germs is always expensive, usually interesting and sometimes useful. At all events only the few can conduct this work. We can all, however, investigate our cases of poliomyelitis from the dietetic standpoint and by keeping full and comprehensive records collect data that can be analyzed with doubtless useful results. In addition to the most searching inquiry into the diet of the patient (and this cannot be made too complete a search in order to establish or demolish my thesis) we must include a similar inquiry into the mother's dietetic habits.

My contention simply is that the modern carbohydrate (starch and sugar) diet so characteristic of the existing civilization is responsible for many of the ills characteristic of the same civilization.

Nineteen thousand nine hundred and thirty public school children were cared for as patients at the Forsyth Dental Infirmary for Children during the year 1915. Why such an enormous number of school children with defective teeth? Nature cannot, and never will be able to, make the lime salts needed for good teeth out of starch and sugar, or any of the varieties and combinations which a fond mother and ingenious cook can devise which form the bulk of the average school children's diet.

Possibly I hear some one object, saying parents and children eat at the same table and yet only one member of the family may have defective teeth or suffer from infantile paralysis. Let me reply that in most families some, for example, are very fond of sweets, while others dislike them; some sugar everything, others do not; some like milk and others will not touch

it; some eat vegetables freely, while others do not; some eat only the starch of baked potatoes, others prefer the skins, and so on with an almost inconceivable variation in habits. Therefore, once more I say in investigating a patient's diet go into details thoroughly.

By way of conclusion: —

We are probably all agreed that rickets is a dietetic disease and, therefore, preventable.

Infantile scorbutus is a dietetic disorder and, therefore, need not occur.

Defective teeth, a misfortune in itself and a cause of other troubles, is a condition due to the use of an excess of carbohydrates (*vide* lunch boxes of school children) and therefore is easily preventable.

Pellagra is now known to be due to an unbalanced or an insufficiently mineralized diet and is also known to be preventable.

Beri-beri is unquestionably due to eating demineralized rice and is, therefore, quite preventable.

Anterior poliomyelitis (infantile paralysis), reasoning by analogy, is not improbably due fundamentally to an irrational diet; if so, by analogy again and following the accepted rule, it is preventable.

The great duty and one of the grandest privileges of the medical profession is to teach the laity *how to live* so that disease may be annihilated; — but the profession must *know* before it can teach.

The medical profession, in common with the rest of humanity, or because being human it partakes of humanity's frailties, still has much to learn. Here suggested, as I look at it, is a task worthy its greatest astuteness.

CLINIC FOR RECOVERED POLIOMYELITIS CASES

The Massachusetts State Department of Health purposes to open a clinic, in conjunction with the Harvard Infantile Paralysis Commission, for the after-care of recovered cases of poliomyelitis. The State of Massachusetts has allowed a contingent fund of $5,000 with which to inaugurate this work.

The Commission consists of Roger Pierce, Drs. F. W. Peabody, R. W. Lovett and J. M. Rosenau, and the Boston clinic will be held, it is expected, at the Children's Hospital.

"A PLEA FOR THE EARLY DIAGNOSIS OF URINARY TUBERCULOSIS" *

By E. Russell Sprague, M.D., Rochester, N. Y.

Genito-Urinary Surgeon, Hahnemann Hospital, Chief in the G.U. Department, Hahnemann Hospital Dispensary, Consulting Genito-Urinary Surgeon, Syracuse Homeopathic Hospital, and other Institutions.

Regardless of the time-worn and literature-flooded subject of urinary tuberculosis, I beg a moment of your time while I again present it for your consideration, in a plea for the early diagnosis of this dreaded disease, as it is essential to make an early diagnosis to assure the patient a more favorable outcome.

In no department of urology do we find errors in diagnosis more frequently made than in ill-defined and obscure abnormalities in the urinary secretion, and it is because of these errors that we should avail ourselves of all means for a thorough and systematic examination of these suspected cases.

As a watchword: — An acid pyuria without pyogenic bacteria should suggest urinary tuberculosis. Every effort, therefore, should be made either to verify or exclude all possibility of this infection. The appearance of pyogenic bacteria should not preclude our search for tubercle bacilli, as they may be found associated in the same urine with pyogenic bacteria. With our present-day laboratory methods, failure to find the cause of the pyuria is wilful neglect, and we should guard against such a stigma.

In urinary tuberculosis — I here confine myself to the involvement of the upper urinary tract, — the process seldom occurs as a primary manifestation in the body, but secondary to an infection in the lungs or bones, and transmitted hæmatogenously. Walker asserts that the kidneys were affected, first in the urinary tract in 134 cases, from his series of 279 under observation. He states that of the lower tract in the male the epididymis was involved next in 80 cases, prostate in 6, seminal vesicles in 2, and the balance not reported. Hugh Cabot and Barney, Boston, in a report of their findings[1] say, that the epididymis is involved first in the lower tract, or the genital organs, of the male, thus verifying Walker in his contentions.

Again, we have to consider an ascending infection from the bladder after its infection, but nothing of a positive nature has been given us, so clinically is not worthy of any consideration.

Recall, etiologically, if you please, that the general causes leading to an infection with the tubercle bacillus in the body are a predisposing constitutional factor, either acquired or hereditary, and a low reactionary power. Considering these pre-

* Read before the American Institute of Homœopathy at Baltimore, June, 1916. Appears also in the December issue of the Journal of the American Institute of Homœopathy.

[1] Journal of the American Medical Association Dec. 6, 1914.

dominating factors, accompanied by a lung involvement and associated with a renal insufficiency from congestion, trauma, irritating products in the urine, renal stasis or calculus, and an underlying low grade inflammation or undue motility of the kidney, — is it strange that we get an early involvement of the kidney in the apparently healthy? We find, further, that the process is unilateral in from 50 per cent. to 80 per cent., authoritatively given; the right more frequently involved than the left; the female slightly more susceptible than the male, and lastly, the average age seems to be 27 years.

Pathologically, we seem to have a variance of opinion. Wildbolz[1] is authority for the statement that the process begins in the medulla, — not in the cortex, as the usual blood transmission would indicate, — later to break into the pelvis of the kidney, rather than burrow towards the cortex. He further says that such a kidney appears normal, but on section, around the papillary openings one finds yellowish indurated spots, which are surrounded by small necrotic areas, which extend some distance about the openings. If we see this kidney early, in place of the necrotic areas we find a puffiness, with a glassy, bluish discoloration and an occasional cyst.

Guiteras gives a very concise classification, namely: — (*a*) Miliary, (*b*) Caseous. In the former (miliary), we find a general tuberculosis with miliary tubercles throughout the kidney but more abundant in the cortex, and often beneath the capsule. In the latter (caseous), we find a somewhat different condition in that there are grayish or yellowish areas of softening scattered throughout the substance of the kidney, which is usually enlarged and slightly nodular. These areas are necrotic tissue encapsulated by interstitial fibrous bands and, unless pyogenic bacteria invade, either suppurate and discharge into the pelvis of the kidney and flood the lower urinary tract with tuberculously infected urine or remain encapsulated eventually to destroy the kidney, or break through the capsule, to flood the perirenal fat with tubercle bacilli with the resultant perinephritic abscess.

On the other hand, we meet a type wherein the primary kidney involvement begins in the pelvis and substance of the kidney simultaneously. Such a condition, though not common, has been seen in the personal experience of the writer.

When the kidney is involved the ureter is usually also effected in the process, and if extensively enough as to cause stricture formation, or if the ureter becomes obstructed by debris producing intermittent obstruction, hydronephrosis may be developed, and with the already infected urine, serious pathological changes will be produced.

[1] American Journal of Urology Feb. 1915.

General Symptoms

In some cases the disease may progress for a long time without causing any marked symptoms of a systemic or general nature. The history usually shows ill health, nervousness, irritability, probably some sense of warmth in the afternoon or early evening, some impairment of appetite, restlessness and sleeplessness at night. The temperature (afternoon) may reach 101 degrees to 103 degrees, but seldom higher. If both kidneys are affected, prostration and uremic symptoms are present.

Local Symptoms

These are shown by bladder irritability, which may be severe, yet be only a slight frequency of urination and that, reflex, from the presence of the disease in the kidney. Kelly tells us that 90 per cent. of these cases show the bladder irritability alone or in common with other of the symptoms, and that 70 per cent. of them show it as the initial symptom. The nearer the involvement of the terminal end of the ureter the more frequent will be the urination.

Pyuria varies with the location of the involvement in the kidney and the ability of the suppurating focus to discharge into the pelvis of the kidney. In the early stages, little or no pus will appear, sometimes showing only on microscopical examination. It is this small amount of pus in the urine of these irritable bladders that leads us to the diagnosis of simple cystitis, and it is here that our failure to fathom the depths for the cause of the pus is wilful negligence. In the absence of the commoner causes of cystitis, namely, — gonorrhœa, prostatic hypertrophy, and strictured urethra, or with the colon bacillus, staphylococcus, and in the more acute inflammations, the streptococcus, we should not hesitate, in the presence of an acid pyuria, to make a provisional diagnosis of urinary tuberculosis and verify by laboratory methods. With the pyuria we are apt to get kidney tenderness, with more or less rigidity of the lumbar muscles, and in obstructed cases, a lumbar tumor.

Polyuria is usually marked, and with the frequency of urination is at times very distressing.

Hæmaturia is slight and not characteristic of renal tuberculosis. On the other hand, large hemorrhages may cause alarm. They vary, of course, with the extent of destroyed kidney substance. Blood may appear as a clot, followed by slightly tinged urine for a few days. While the clot is passing through the inflamed ureter, the patient may experience the pain of renal colic, because of the sudden increase of the intracapsular tension in the kidney. With blood as well as pus, an alternating absence and

presence is at times very confusing. I am convinced that many cases of so-called "essential" hæmaturia are early tuberculosis of the kidney.

Pain in the loin is seldom severe in the early stages. Occasionally it is the first and only symptom to attract the patient to the beginning involvement. It is usually a dull ache or dragging in the kidney region, but if a mixed infection should occur, with abscess formation, pain will be conspicuous and severe. Pain may be referred, in a confusing manner, to the healthy side, and especially so if a sudden stress has been placed on the healthy side. As to the presence of pain in the kidney region, Guiteras gives us data from his series of cases, as follows: —

Pain in the loin more or less steady,	43 per cent.
Pain increasing gradually,	4 " "
Pain and muscular rigidity,	18 " "
Pain in both kidneys,	4 " "
Pain on exercise,	7 " "
Pain in the form of renal colic,	7 " "

Tumor. The kidney is always more or less enlarged, but not usually palpable. Again, it may be large enough to form a lump in the loin. In case of an obstructed ureter from stricture or debris, this enlargement may be due to fluid or pus.

Diagnosis

One of the most significant things of early urinary tuberculosis is the frequent absence of symptoms referable to the kidney. Fully 80 or 90 per cent. of the cases complain of only slight vesical irritation, with the night and day frequency so characteristic of the early bladder involvement. This irritation may be relieved by bladder treatments, but usually returns with more severity, and is invariably made worse by the customary silver nitrate wash. To the average observer, the acid pyuria without pyogenic bacteria means simple cystitis, and is usually so treated; but to the more experienced clinician it is a symptom worthy of a thorough investigation.

The history of these cases of urinary tuberculosis shows the ill health, loss of flesh, afternoon temperature, etc., before mentioned. A careful physical examination, repeated if necessary, will soon show, in the majority, lung or bone involvement as the primary source of infection in the body. A prostatic examination reveals nothing characteristic beyond a slight sensitiveness. In the female, a vaginal examination may or may not show an antidisplaced uterus, ovarian or perivascular inflammation. In the passage through the ureter of a clot of

blood, as in a case of the writer's, renal colic may be diagnosed and the patient treated for a possible recurrence.

The pain, pyuria, or hæmaturia are not increased by exercise, as in renal calculus. The hæmaturia has not the characteristics of spontaneously appearing and disappearing as in vesical tumor.

The diagnosis, therefore, rests upon (*a*) presence of disease in the kidney; (*b*) whether it is confined to one or both kidneys; (*c*) the extent of the bladder involvement; (*d*) whether any other part of the urinary tract is involved, or evidence of a tuberculous process elsewhere in the body; (*e*) deficient function of the diseased kidney, which appears early as well as late in the disease.

The cystoscopic appearance of a tuberculous bladder, especially about the ureteral orifice, is characteristic and therefore, familiar to an experienced cystoscopist. A ureterally catheterized specimen of urine, tested by a competent pathologist for pus and tubercle bacilli will, in most cases, confirm the diagnosis. As to the appearance of tubercle bacilli in the urine, there seems to be a diversity of opinion. Many authorities (Kuster, Wagner and Gerster) claim that they are found in only 10 to 30 per cent. of the cases of urinary tuberculosis, while others (White, Wildbolz, Richardson) claim faulty technic, and that they are found in 80 per cent. of the cases. In my own experience it has been very hard to find them. The smegma bacillus and tubercle bacillus stain similarly, and many times are extremely hard to differentiate.

It is essential to get in every case a catheterized specimen before we can consider as reliable any test made, especially for guinea-pig inoculation, as the reliability of this latter test requires clean urine. The only disadvantage of this method is the delay, but its reliability far overshadows the delay, so we must be content unless we prefer the Bloch technic, which seems to save some time. As to the respective virtue of the two methods of animal test, I am not at present prepared to judge.

The tuberculin tests will prove positive in many cases. The use of the X-ray for a pyelogram will yield much.

In question of doubt as to the extent of destruction of the kidney and inflammation of its pelvis, or the extent of ureteral inflammation, a properly injected pelvis and ureter, with intelligent exposure and interpretation of the pyelogram, will help a great deal toward a diagnosis of kidney tuberculosis. At present — for this adjuvant of diagnosis is still developing — the exposure shows a dilatation of the renal pelvis, cortical necrotic areas if opening into the pelvis, and a strictured ureter. In the first (renal pelvic dilatation), the results of the inflam-

mation and stricture with subsequent dilatations are shown. The changes within the pelvis and the calices are similar to pyelonephrosis, namely: — a moth-eaten or irregular appearance of the apices and even the pelvic wall if the latter is extensively involved. If the lesion is cortical, and the process has gone on to necrosis with openings into the renal pelvis, the injected fluid will show these areas and the narrowing of the lumen of the pelvis, the result of the discharging pus from these cortical areas.

Treatment

Having confirmed the diagnosis, early nephrectomy is the ideal treatment. The earlier in the course of the disease that the kidney is removed, the lower is the mortality and the higher is the percentage of cures. If there is a tuberculous involvement of the genital organs, excision of the diseased areas should be done if the condition of the patient will permit. Before a kidney is removed, we must assure ourselves of the presence of another kidney and its functional capability by repeated tests. With deficient function the operation should be deferred until by hygienic, dietetic and medicinal measures, the kidney has been brought to near its normal function. In an acute involvement, or when the lungs, bones or joints, or even the peritoneum are affected seriously, the operation is contraindicated, even though there is danger of a bilateral complication if delayed.

From medicinal measures we can gain little. Theoretically, a tuberculous focus in the kidney should heal under treatment, but in real life and in necropsies, the finding of a healed lesion is so rare that any possibility of a cure by this means is not worthy of serious consideration, or of subjecting the patient to needless and unreliable delay.

Climatic changes with proper hygiene will help to build up the body resistance and thus combat the advance of the disease. The usual tuberculosis diet should be strictly adhered to.

As to the treatment by injections of old tuberculin, I cannot give you any satisfactory data. In view of the possibility — may I add probability — of failure to cure by other means than surgical, my last word to you is to nephrectomize your patient as soon as you can confirm the diagnosis of urinary tuberculosis.

98 Clinton Ave., South.

THE TEACHING OF CLINICAL SURGERY

By Charles E. Kahlke, M.D., Chicago, Ill.

In order to give a student body the maximum return for its time investment, a curriculum must be practical and within the capacity of the average student. We must recognize in the beginning that it is impossible to make experts in college, and we should therefore eliminate all unnecessary and elaborate details.

Two objects should be kept in view: first, to give the student a good working knowledge of practical surgery; and, second, to develop a spirit of research and a desire for knowledge that will lead him to practice medicine and surgery as a profession rather than as a trade.

As even a graduate in medicine should not operate before he is qualified by experience, instruction in detailed technic is a waste of time and energy and serves only to confuse a mind already overburdened with the multiplicity of studies. So, too, the teaching of theories, as interesting as they may be, may prove an idle waste.

I am a firm believer in the study of principles, of basic facts. I believe we should grind these into the student mind so thoroughly that he will not forget them. As the principles of surgery are based upon facts in anatomy and physiology, I believe that the study of clinical surgery begins with the study of anatomy and physiology. For this reason I believe that these last two subjects should be taught in such a way that the ultimate clinical object is kept constantly in view.

It doubtless appears that I am wandering from my topic, but I am convinced that anatomy studied only in the abstract is dry and soon forgotten, whereas studied as regional and applied anatomy is not only very practical, but it is intensely interesting, because it always carries with it the clinical idea. Hand in hand with the study of the cadaver should go the study of the surface outlines of deep anatomy on the living, and the recognition of deep palpable viscera by their surface contour.

Fine works, like Pagenstecher's "Clinical Diagnosis of Abdominal Tumors," are really painstaking studies of regional anatomy and physiology.

The teaching of surgery should be almost entirely objective. Lectures should be illustrated, by means of charts, museum specimens, and clinical demonstrations on patients.

The general, or amphitheatre, clinic has a distinct, but limited, field of usefulness. As a diagnostic clinic, and as a means of presenting results in post-operative cases, etc., it is

very practical. The greatest advantage to the student, however, accrues from the sub-clinical work at the bedside or in the out-patient department. A student must be actually in touch with the patient. Only in this way can he be taught real diagnosis. The supply of hospital patients should be ample.

Two or three senior students should be assigned to a case and, regardless of the hospital record, they should take the complete history themselves, make their own examinations and diagnoses, and carry out the clinical laboratory tests themselves. They should then demonstrate the case in full to the rest of a sub-class of eight or ten students, outlining treatment and prognosis, all under the supervision of some competent diagnostician. The rest of the class should act as consultants, and should frankly discuss, as well as examine, the case.

Above all, the student should learn to carry out a routine general examination in every case regardless of the present complaint. He should become so familiar with some systematic routine questioning of the case that he will not overlook anything. He should write down the history as he takes it on some convenient card that he may file away, indexed as to diagnosis.

Personally, I prefer to have the history of the present complaint dealt with first, and I always insist upon the symptoms being taken in their chronological orders, especial emphasis being laid upon the initial history and upon any special aggravations of symptoms or attacks. While we never undervalue the laboratory reports, we try to develop the ability to make a clinical diagnosis.

I try especially to drill them on the cardinal features of catastrophies, on those things in which the first and immediate attention determines the fate of the case.

We are still devoting too much time to detail and side lines, not enough to thorough grilling on principles.

The operative clinics, always before only sub-classes, should have for their purpose the demonstration of surgical anatomy, surgical technic and the existing pathology. The diagnostic details are supposed to have been dealt with in the sub-class. Any pathological material removed should be demonstrated first in the gross at the time of removal, and then a few minutes later the frozen section should be examined under the microscope, thus making the students familiar with the pathology, both gross and microscopic. In special cases museum specimens and charts should also be exhibited in order that the student may carry away with him a good mental picture of the case, and of the comparative pathology.

X-ray pictures, laboratory reports, etc., taken prior to

operation, with relation to the diagnosis of the present complaint, should be exhibited afterward for the purpose of rating their value. Especial emphasis should be laid upon comparison of the post-operative findings with the pre-operative diagnosis.

After the operation, or other treatment, those students to whom the case was assigned for diagnosis, should be required to follow the case up with daily visits, watching the dressings, noting the treatment, and the after-results, all of which should be recorded in their histories. The student should then send follow-up letters for a year afterward.

If a very unusual or especially interesting case is available it should be examined by all the sub-classes in turn, in order that no special opportunities be missed.

THE SUCCESSFUL TREATMENT OF HAY FEVER*

By George Frederick Laidlaw, M. D., New York

Under the name, *hay-fever*, I include rose-cold and the so-called hyperæsthetic catarrhs, all characterized by intense itching of the eyes, nose and throat, free discharge, the attacks being precipitated by strong odors, dust or pollen. I do not intend to read you a book on the subject, but to tell you of three methods of treatment, little known or not at all known to the general profession, by any or all of which you will be able to give some degree of relief to every case of hay-fever or rose-cold and cure permanently some of them. These methods are *an internal remedy*, *a local application* and the use of *faradic electricity*.

The internal remedy is the fluid extract of a plant unknown to modern practice. It appears in no text-book on materia medica or therapeutics, ancient or modern. The *United States Pharmacopœia*, the *British Pharmacopœia*, the *French Codex* and the *Prussian Pharmacopœia* know it not. On the American prairies, the children gather its gummy juice for chewing gum, and the burning of this resin contributes to the black smoke of an American prairie fire. This plant is the rosin-weed, *silphium lacianatum*, the compass-plant or pilot-weed, that grows on the American prairie land from Ohio south and west to Texas. It is called the compass-plant because the large lower leaves point north and south; and rosin-weed because of the resinous juice that exudes from the stem. Only in the dispensatories, those useful but unofficial books that glean the stray wheat-stalks from odd corners, will you find the name. In the *American Eclectic Dispensatory* of 1854 is a short note on the plant,

* Read before the American Institute of Homœopathy, June, 1916.
Appears also in the December issue of the Journal of the American Institute of Homœopathy.

stating that it is said to have cured intermittent fever, dry, obstinate coughs, and heaves in horses. A later edition (1872) adds asthma and pulmonary catarrh. The *National Standard Dispensatory*, 1909, dismisses the plant briefly as possibly of use as a local application to scrofulous swellings. In the *United States Dispensatory*, rosin-weed appears first in 1884. It is stated merely that the plant yields an oleo-resin, said to be used by children as chewing-gum. This dispensatory refers to an article in the *American Journal of Pharmacy*, 1881, p. 487, which proves to be an Inaugural Essay of one Lemuel Morris Ph.G., giving a thorough botanical study of the plant but throwing no light on its usefulness except as the chewing-gum aforesaid and that the powdered leaves are used in cattle-powders as a diuretic. The only authoritative recommendation of its use in human medicine that I find is an extract from a Mss. entitled *New Remedies*, by Dr. Q. J. M. Goss, of Marietta, Georgia, published in the *Nashville Journal of Medicine and Surgery*, 1887, xx, 60. Dr. Goss relates several cases of chronic asthma which he cured with equal parts of tincture of the root of rosin-weed and tincture of ptelea trifoliata, a teaspoonful three times daily for two months.

For many years, the fluid extract of rosin-weed has been known in my family as a remedy for rose-cold and hay-fever. This use of it was discovered by my father, Dr. Alexander H. Laidlaw, back in the epizootic days of 1872, when horses were dying of influenza by thousands all over the United States and Canada. Though he knew it first as a horse medicine, its use seems to be forgotten in veterinary practice, for I find no mention of it in the veterinary books, old or new. In my father's practice this medicine acquired considerable local fame, and I still receive a letter or two every summer from distant points inquiring about this miraculous drug. For many years, it was his intention to present this remedy to the profession in proper form, supported by competent testimony; but, in a busy life, with many projects unfulfilled, this was never done.

Estimating roughly, about three-fourths of all cases of rose-cold and hay-fever will be relieved of their symptoms by taking five, ten, twenty or thirty drops of the fluid extract of rosin-weed four times daily, in a little water, after meals and on retiring. It is better to begin ten days or two weeks before the expected attack; for, in hay-fever, as in all periodical diseases, prevention is better than cure, and more certain. However, few patients are wise enough to anticipate trouble. Most patients come under treatment when the disease literally is in full blast, and most of my observations have been made on the latter class.

Rosin-weed is a harmless herb. It has no effect on the appetite, bowels, skin or nervous system. I have never noted the tonic, diaphoretic or diuretic effects attributed to it in botanic medicine. The only unpleasant effect that I have ever known is nausea after large doses, sixty drops or more, and this in very few patients. Vomiting is rare, is never serious, and ceases spontaneously when the stomach is empty of the drug. In regard to permanence of the cure, most patients require it for several seasons. Some need it every season for many years. A few are permanently cured in one season.

The local application is based on a discovery of my own. In hay-fever, the symptoms of the eyes, nose and throat are controlled from a sensitive point in the naso-pharynx. Local applications to this point will relieve almost instantly not only the itching of the throat but also of the eyes and nose and all symptoms of the disease. In some cases, such relief, carried out for several seasons, makes permanent cures.

About the age of sixteen, I developed a rose-cold that began in June and extended into September. A few years later, it began in April and lasted until October. By one of those ironical tricks that fate plays on the wise ones of the earth, the family remedy that cured everybody else gave me only partial relief. It is unnecessary to follow in detail the various experiments made. This was long before the days of Dunbar's pollantin, Holbrook Curtis' ambrosia, the modern vaccines, and adrenalin. I did not think cocain a safe drug and never used it, preferring the hay-fever to the cocain habit. In those days, ichthyol was coming into use for all catarrhal mucous membranes, and I found that ichthyol, used in a certain manner, relieved the symptoms promptly. On swabbing the naso-pharynx with pure ichthyol, there was a severe burning sensation for a minute or so, but when the burning subsided there was great relief not only of the itching throat but also of the itching of the eyes and nose. That is, in the customary swabbing of the naso-pharynx, we touch a point that controls the whole group of symptoms of the eyes, nose and throat. In those days, the laryngeal and the pharyngeal tonsils were very much to the fore in medical discussions, and at first I thought that this point was probably the pharyngeal tonsil of Luschka. However, judging from the location of the most severe burning, the controlling point is rather on the upper surface of the soft palate. The exact location of this point is not of practical importance. If you swab each side of the pharynx with plenty of ichthyol, the contraction of the pharynx will spread the ichthyol over the right territory.

Several years after this, our fellow-member, Dr. F. K.

Hollister, came in one day to ask me what I knew about hay-fever. He had the August form. On learning my experiences with ichthyol, he tried it with success not only on himself but also on various patients.

Recent modification of the ichthyol treatment. The ichthyol treatment is effective, but it burns severely for a few minutes and, for this reason, some patients will not endure it. With children, it is impossible. Another disadvantage is that it requires the patient to come to the doctor every day or several times a day for the application, though Dr. Hollister tells me of one patient who learned to apply the ichthyol to her own naso-pharynx and, what is more wonderful still, kept up the treatment long enough to get well. In recent years, I have found a treatment that is more comfortable than ichthyol, suitable for mild cases of the disease, that can be carried out by the patient himself, as it requires no handling of nasal swabs, an important matter with nervous patients and children. I find that the ordinary spray solution of menthol, eucalyptol and thymol in liquid albolene will relieve many mild cases if applied to a certain area a certain number of times a day. Every doctor uses these oily menthol solutions for the relief of catarrhs and hay-fever. The reason why every doctor has not discovered for himself the full virtues of this solution is that he did not use it often enough and he did not teach the patient to put it on the right spot. Notice that I did not say that simply spraying the nose and throat with the solution will cure hay-fever. I said that there are two conditions essential for success, the solution must be used often enough and it must be applied to the right spot.

Frequency of application. Once or twice a day is insignificant. It must be used every hour or oftener when the symptoms are acute. Here I borrow an idea from the dermatologists who learned long ago from Unna that an eczema that resists treatment with an ointment rubbed on twice a day will get well if the same ointment is kept on the skin constantly, day and night. The nose and throat of the hay-fever patient require the same constant application of the cure, and we come as near as possible to constant application by applying the solution every hour or two.

Method of application. Such frequent applications are impracticable as office treatments but must be carried on by the patient or some member of the family. Here is the need of a simple and accurate technic by which an untrained hand can get the oil on the right spot. An adroit patient may learn to spray the naso-pharynx but even an adroit patient will make mistakes and spray the front of the uvula instead of the pos-

terior nares. I teach patients the following simple technic that avoids mistakes and insures getting the oil on the right spot.

Taking an ordinary atomizer full of the oil, the patient lies on the back with the head low or on one flat pillow. *He must be able to breathe freely through the nostril to be treated.* Usually one side of the nose is free and he begins with that side, inhaling the oily spray freely. By remaining lying on the back with the head low, the oil runs backward into the naso-pharynx, especially on the upper surface of the soft palate, where it burns a little but not nearly as much as ichthyol. After two minutes or so, the other side must be treated but *it must first be opened up so that the patient can breathe freely through it.* This is done by turning the head so that the stuffy side is uppermost. In a few minutes, this side will open up and the spray can be inhaled through it freely back to the throat. To be thorough, the patient treats each side several times. For the first few days, the treatment should be carried out every hour so so. After a few days or a week, mild cases get perfect relief and even severe cases can usually drop to four treatments daily. Such a method is far safer than cocain, which should never be put in the hands of the patient for any purpose whatever.

For obstinate cases, ichthyol remains the most effective of the local applications. With those adults who can learn to spray the naso-pharynx, and who are heroic enough to bear the sharp burning for a few minutes for the sake of ultimate relief, I mix ichthyol with the albolene spray solution, about one-tenth ichthyol. Ichthyol leaves the throat raw and uncomfortable for five minutes or so. For this reason, it should not be used as frequently as the menthol-albolene solution. Three or four applications daily are usually sufficient. As the ichthyol precipitates quickly, the mixture must be stirred and well-shaken before using.

It may be objected that my newly discovered point in the naso-pharynx is merely the posterior end of the inferior turbinate, as described by Sajous and others long ago, and that the spraying of the nasal passages simply benumbs the sensitive areas, anterior, middle and posterior, which are well-known to rhinologists. This may be so. At any rate, the method just described makes possible a treatment of these areas in every case. The treatment by light cautery will always remain a treatment of the skilled specialist in selected cases. Even if my sensitive spot in the naso-pharynx is nothing new, this method will at least place in the hands of the thousands of hay-fever sufferers a simple method of relief, whereas the cautery treatment will always be confined to the few.

The third method, **the faradic current,** has been very effective with some of my patients. Place one electrode on the back of the neck or the dorsal spine and pass the other electrode, a wet sponge or cotton, over the eyes, nose and neck or throat for ten minutes. If the symptoms are severe, treat twice daily until relieved; then daily or every three days. In the asthmatic form, faradic electricity is especially valuable. With one electrode on the dorsal spine, exercise all the respiratory muscles, the cervical, dorsal, pectoral and abdominal, for ten minutes daily. The faradic treatment takes time and trouble but permanent cures are made more often than with any other treatment.

The nature of hay-fever. As an experienced sneezer, let me say a word on what I believe to be a serious error in our conception of the pathology of hay-fever. In our textbooks the disease is described as a catarrhal inflammation, perhaps naturally enough; for, the superficial resemblance to catarrhal inflammation is perfect. When you see a patient with eyes red and swollen, overflowing with tears and mucus, burning and sensitive to light, you say at once catarrhal conjunctivitis. In the nose, the obstructive swelling, the sneezing, the discharge, suggest at once, catarrhal rhinitis. But, stop a moment. Did you ever cure a catarrhal conjunctivitis or a catarrhal rhinitis in three minutes by moving the patient from one room to another? You can do that with hay-fever. Remove the patient from the irritating atmosphere, the swelling and redness will subside rapidly, the discharge ceases and in five or ten minutes you would scarcely know by examining the patient that there was anything the matter with his eyes or nose. By returning him to the irritating atmosphere, the symptoms may return instantly. By removing him again they will rapidly subside. Did you ever see a catarrhal conjunctivitis that acted that way, or a cold in the head in which the patient could be cured and catch a fresh cold twenty times a day? I think you never did. A true inflammation requires time, a few hours, for its development, and, when an inflamatory exudate oozes into the meshes of the tissue, it requires some days or at least some hours to be absorbed. This one point of rapid appearance and disappearance would forbid our calling hay-fever a catarrhal inflammation. Now associate that rapid appearance and disappearance with the chief symptom of hay-fever, the itching, the intolerable itching of the eyes, nose and throat, itching that ceases at once on the removal of the irritating atmosphere and returns instantly when the irritating is reapplied. Turn to the skin, the external mucous membrane. What is the disorder of the skin that appears abruptly, presents redness, swelling and

intense itching and ceases abruptly after a few minutes or a few hours, according to your ability to get rid of the irritating cause; that can be reproduced any number of times by exposure to the same cause? Why, hives, of course, urticaria, angeio-neurotic œdema. And hives, or urticaria, or angeio-neurotic œdema, is not inflammation. It is a vascular spasm, a spasm of the minute vessels that drain small areas of skin, causing local turgescence or exudate, the hive. Just as suddenly as it began, the spasm of the vessels may relax, the swollen area is drained rapidly and the hive disappears, leaving a faint redness. This is exactly the case with hay-fever. It is an angeio-neurotic œdema, a vascular spasm. The sudden onset in response to a specific irritant and the sudden disappearance, this is not a catarrhal inflammation. It is an angeio-neurotic œdema. Those cases of hives that appear quickly after chilling of the skin are perfect analogs of hay-fever appearing in response to the local irritation of odors and dust. There are cases of hay-fever that resemble ordinary hives in being aggravated by certain foods, especially strawberries, acid foods and malt liquors. This has a practical bearing on treatment; for, in such cases, simply excluding these foods from the diet and the administration of an alkali gives relief.

Let me add a word on the distinction between palliation and cure of hay-fever. I am well aware that a real cure would so change the constitution of the patient that he would no longer be sensitive to the specific irritant, that this is sometimes accomplished by careful prescribing of the similar remedy and that the methods of treatment recommended in this paper are mere palliatives. I would point out, however, that, in many cases, symptomatic prescribing has failed to relieve and that hay-fever is one of those peculiar neuroses in which palliation or prevention of the attack for a few times may be equivalent to cure. A sea-voyage or a few summers in the mountains have cured many cases, and I find that a similar palliation or prevention of the attack at home, by rosin-weed or ichthyol or faradism, may break up the periodical return of the attacks and effect just as permanent a cure at home.

DISCUSSION

Dr. John P. Sutherland: It seems to me we have just had presented to us beautiful illustrations of two very different ways of doing things, and these ways are as different as day and night. We have this afternoon listened to a very scholarly and philosophical study of the principles and evolution of homœopathy, — a study with which we should all do well to familiarize ourselves. Dr. Krauss laid down for us principles of action and contended convincingly for the doctrine of "symptom-similarity." On the other hand, we have just listened to an enthusiastic and very interesting recommendation of "rosin-weed" as a cure for hay-fever. Dr. Laidlaw, in his attractive and convincing way, has made a good presentation of the case, and yet he tells us very honestly that "rosin-weed" is so simple and harmless

that it cannot produce any effects on the healthy human organism; that is, it is without a pathogenetic record. Therefore, some of us are inclined to ask upon what basis can a prescription of "rosin-weed" in hay fever be made. Certainly not on the principle of similars. It has, then, only experience to back up its claims, and as we all know, empiricism has not advanced the cause of medicine very much during the past 2,500 years.

Dr. Laidlaw: The criticism of Dr. Sutherland is just. As a homœopath, I myself have wondered wherein lay the curative power of so innocuous a drug. I would like to be able to tell you that rosin-weed, given to the healthy, produced symptoms similar to those of hay-fever, but regard for the truth compels me to say that I have never been able to detect any symptoms, though I have given it to people of all ages, including children. It may be that, like silica and calcarea, it would develop symptoms when potentized; but this I have never tried.

SOCIAL HYGIENE*

By Anna Johnston, M.D., Pittsburgh, Pa.

Prof. Bigelow says, "Social Hygiene in its complete sense means the greatest general movement for the improvement in the conditions of life in all lines in which there is social ill health."

This movement is the great problem for the twentieth century to solve if it is going to make any improvement on this old world for the generations yet unborn.

Dr. David Starr Jordan, in an address to young men, gave them an ideal which it would be well if all our young people could hear and make theirs. The words were as follows: "So live that your after self — the man that you ought to be — may in his time be actual and possible. Far away in the 20's and 30's of the 20th century he is waiting his turn. His body, his brain, his soul are in your boyish hands, he cannot help himself, what will you leave for him? Will it be a brain unspoiled by lust or dissipation, a mind trained to think and act, a nervous system true as a dial, in its response to the truth about you? Will you, boy of the twentieth century, let him come as a man among men in his time or will your throw away his inheritance before he has the chance to touch it?"

When we take up this great subject to present the facts as we can get them, to realize the enormity of the social evil, and all that pertains thereto, the hideous diseases that are the result of this evil upon the human race, the work that is being done to eradicate them, and our part in this stupendous movement, we feel that, unpleasant as it is, we need not apologize for our place upon this program, nor the words that we may utter, but be glad that the opportunity has presented itself whereby we may be among the chosen ones to help down the wrong and lift the right.

---

* Bureau of Sanitary Science and Social Hygiene, A. I. H., 1916.

It is now only about ten years since the campaign against venereal diseases began. From 1910 to 1915, tabulation of scientific social data and pioneer experiments in organization took place.

This has been a period of education and formation of public opinion. Some of the statistics compiled are appalling. In New York, we are told, there were 200,000 cases of syphilis, and probably four times that many cases of gonorrhea; that the direct or indirect cause of one-eighth of the hospital practice in New York City, and of the deaths from disease of the female productive organs, ninety per cent. are due to gonorrhea alone.

Tabulated statistics report that fifty per cent of our young men of the United States are infected with some form of venereal disease before they are thirty. In 1900, there were in the United States 7,833,492 boys between twenty and thirty years of age. If fifty per cent of these young men have been infected, fifty per cent of the remainder will be by the year 1920. From fifteen per cent to twenty per cent are infected before their twenty-first year; fifty per cent to sixty per cent before their twenty-fifth year, and seventy-five per cent before their thirtieth year.

Against these figures there were 7,802,931 girls from twenty to thirty years old. How many of these are doomed to infection by the 7,000,000 young men?

At the Panama Exposition the Social Hygiene Association had a splendid exhibit covering every phase of their work. In the Public Service Exhibit was a conspicuous model showing the economic burden of syphilis incurred by the nation.

The bill was itemized as follows: Number of cases, 2,000,000; deaths reported, 9,132,235; average at death, 30 years; present value of lives lost, $18,081,500; potential value of lives lost, $69,208,500; loss of wages, 1913, prior to death, $1,771,024; medicine, nursing, etc., $1,683,450; lost by those sick but not dying, if each case lost one month's time, $94,660,000; total, $185,404,474.

Michigan State Hospital reports that one-eighth of the cases of insanity admitted for treatment are directly caused by syphilis. From these statistics let us look at these diseases themselves, how they are acquired and through what agencies.

The first agent and by far the most overwhelming is alcohol. The one indispensable protection of men and women is their own self-respect and self-control; the first effect of alcohol is to weaken this defense. It is an established fact that a sufficient amount of alcohol renders the control of sexual impulses difficult or impossible.

Prof. Forel, when visiting America, was surprised at the in-

difference of university men to the anti-alcoholic movement. He said that they seemed afraid of compromising their scientific position by siding with the promoters of the movement, meaning the Woman's Christian Temperance Union, that this fear of compromising one's scientific position is unscientific; it is disgraceful human weakness. Another time, Prof. Forel says, "Alcohol is the indispensable vehicle of prostitution; it would not be maintained without it." And again, "Whosoever has the cause of humanity at heart, and takes the trouble to reflect upon the ravages caused by alcohol in human society, should have the courage to renounce all drink."

The vice promoters are perfectly aware of the effect of alcohol on the victim, consequently it is an essential factor in securing their customers. Out of curiosity many of the boys enter a resort to see what it is like; once in, wine or beer is offered; our boy does not like the idea of not being a "sport," consequently partakes; the rest is easy. No sooner does the prostitute see the signs of intoxication than she exerts her wiles, and the boy is started down the way to immorality and disease.

Kneeland of New York, reporting on commercialized prostitution and the liquor traffic, says, "The proprietors of a certain type of restaurants encourage professional prostitutes to frequent their establishments for the avowed purpose of attracting customers for food and drink. These resorts are also breeding places for prostitutes. Young working girls, who live at home or in unfurnished rooms, frequent such restaurants and gradually drift into professional prostitution."

The dance halls in the rear of saloons are the most dangerous. The chief object is the sale of liquor. These dances are attended by the lowest class of prostitutes and very often by young girls in search of adventure.

The Juvenile Protective Association of Chicago reported on conditions attending two hundred and seventy-eight dances; they reported that the public dance halls of Chicago are largely controlled by the saloon and vice interests.

The recreation of thousands of young people have been commercialized, and as a result hundreds of young girls are annually started on the road to ruin.

Authoritative writers sum up the subject as follows: Alcohol, which by paralyzing the judgment and will, as well as moral inhibitory sentiments, excites the sexual appetite and renders it grossly repulsive.

The depraving effects of alcohol on the sexual appetite is unlimited. Among these effects are the following:

First: Irreflective sexual unions, resulting from the exaltation of the sexual appetite and temporary paralysis of the

sentiments which inhibit such unions in persons who are not under the influence of alcohol. These also include: first, the seduction of girls; second, orgies with prostitutes in brothels, and third, increase of venereal diseases. Seventy-five per cent of venereal disease is contracted by men while under the influence of alcohol.

According to Dr. Edwin F. Bowers, one of the conclusions of eight hundred medical and professional men in Germany was that alcohol brings degeneracy, poverty, sickness, vice, crime and madness.

Another product of alcoholism and syphilis is feeble-mindedness.

At the National Conference of Charities and Correction, meeting June 5th in Indianapolis, the number of feeble-minded in the United States was given at 275,000. The three causes of feeble-mindedness are alcoholism, syphilis and heredity. As to the mentality of prostitutes, the most accurate studies thus far show that about one-half are mentally deficient.

I have reviewed sufficiently existing conditions and the causes thereof that make up our social hygienic problems. I shall endeavor as briefly as possible to state what is being done to solve them, and some of the conclusions reached.

Thirty cities in the United States have been conducting vice investigations. The committees under which these investigations have been held are unanimous in recommending the repression of commercialized prostitution, advocating as the first step the abolition of the segregated or red light districts, such action to be followed by steady repression of disorderly houses, street walking, and other forms of commercialized vice.

The Committee of Fourteen in New York City has accomplished wonders in closing dens of iniquity that to the general public seemed impossible. The vice commission of Chicago, after thoroughly investigating, declared absolutely for suppression. It was after eleven months in this work that they gave this verdict, "Not segregation, not regulation, but constant repression of the social evil," as their immediate method; absolute annihilation as their ideal.

The white slave trade has been legislated upon in fifteen of the countries in Europe, in Brazil and in the United States.

Our Bureau of Immigration has been very careful to reject prostitutes and other immoral women. In 1914, three hundred and eighty were rejected and deported.

In 1915, five States passed, or had bil's on various forms of the social evil in their legislatures.

Europe has declared against segregation.

Social hygiene societies and other agencies are helping to

improve environment, and the public is slowly coming to realize the important bearing of such factors as alcoholism, feeble-mindedness, lack of self-control, toleration of extra-marital alliances, illegitimacy, desertion and divorce.

The future seems full of promise, but in our struggle against vice, Dr. Flexner says: "We can repress it, cut away its commercialized aspect, but until we abolish alcoholism, poverty, ignorance and industrial inequalities, we shall not be able to utterly exhaust it."

We are making rapid strides in abolishing King Alcohol. Today over sixty million of our people are living in dry territory, nineteen States have closed the bar, not to speak of Russia's complete annihilation of alcoholic beverages, and its curtailment by the other nations at war.

Sex education is absolutely necessary to attain our ideal both morally and hygienically. This education should begin with the child and continue to maturity. Advanced sex instruction has been a factor in many harmonious and happy marriages.

In closing, let me again quote Mr. Bigelow on this subject: "Of course, sex education at its best can do no more than give the individual a basis for intelligent choice between good and evil; but here, as in all other upward strides of human life, the decision depends upon a clear and positive recognition of the advantages of the good as contrasted with the evil. Hence, the one essential task of sex education in its largest outlook is to guide natural human beings to recognition and choice of the good in the sexual sphere of life. And in so far as individuals are thus guided, the problems of social hygiene are being pragmatically solved in that the social aggregate of human life is becoming better, nobler, truer and more in harmony with the highest ideals of life."

SCIENTIFIC ACCURACY FUNDAMENTAL TO RELIABLE CLINICAL RESEARCH*

By Eldridge C. Price, M.D., Baltimore, Md.

In advancing a belief it is sometimes difficult to decide whether to couch one's views in definite statements, or in the form of interrogation. So little of our knowledge of medicine is positively demonstrable that when we enter this great field we feel much like children groping for a light, and often we have "no language but a cry." We may know what we want, but we do not know how to get it.

In this comparatively new field of clinical research, we

---

* Read before the Amer. Institute of Homœopathy, June, 1916.

need accurate information and accurate methods of work. As I understand it, the desired result is, a demonstration of the truth of homœopathy by actual experimentation at the bedside, which experiments must by force of their correctness carry conviction to the whole world of medicine, regardless of school. The intent of this effort is not to teach how to practice homœopathy, but to so fully establish its truth that all medical men will be compelled as a necessary result of such convincing knowledge, to qualify themselves for its practice.

To be in position to compel such results we must possess certain fundamentally accurate information, and such essential information is correct knowledge of anatomy, physiology, pathology, medical chemistry, bacteriology, and drug pathogenesy.

In addition to a liberal medical education we must also have at our command a number of factors for the solution of our problem, upon which we can depend for accuracy, and these are, briefly, the patient, the drug to be tested as to its curative effects, and not less than two trained observers to insure accurate conclusions from the experiment, to say nothing of a skilful prescriber of the drug to be tested.

Before beginning this experimental work, it becomes necessary that we secure drugs which have been tested in accordance with all the modern methods of science, that we may fully understand not only the subjective effects of the drug, and its objective symptomatology, but also whatever pathological tendency it may show. This, however, is not easy to accomplish, as all who have undertaken to prove drugs may testify; but it is necessary if we wish reliable results.

Granted, however, that we have secured the patients, the properly proven drugs, the skilful prescriber, the experimenters for conjoined observation, and the institution willing to coöperate in the work; there is then no reason why this significant experiment should not begin. We must, however, have *all* the factors to which attention has been called.

Have we all these factors?

That we have enough thorough knowledge of drug effects upon the approximately healthy, to constitute information sufficiently reliable upon which to base a method of work for the purpose of scientific research, has been questioned. That we have drug pathogenetic material qualified to form a basis for our prescriptions is a very different matter, because in the average patient we are dealing with a complex organism capable of being affected by a variety of influences which we bring to bear at the same time the drug is given, e.g., suggestion, food, habits of life, etc.; whereas, in the experiments proposed to establish the scientific status of homœopathy, we are endeavoring

to bring about results solely through the agency of some one definite influence, unmodified by any other curative means.

Lest we may not grasp the full significance of the work preliminary to beginning scientific clinical research, let us consider some of the preparatory details, and as the curative agents to be used are of prime importance in the problem, we will call attention to the material offered by our many works on alleged pathogenetic drug effects.

Laying all schools of medicine under contribution, beginning even back in the days of Albert Haller, and pushing our search through the intervening time up to the present day, we are doubtful if there is one drug whose reliable and exhaustive effects upon the healthy render it a candidate for the proposed work. Even that masterpiece of Dr. H. P. Bellows, brought forth through much mental travail, we are told by Dr. Krauss, lacks a well-balanced subjectivity. And further, we are told that the old pathogeneses are just as unreliable because of the lack of objective symptomatology, and that our modern laboratory workers have produced no symmetrical drug pathogenetic work (resulting from both human and lower animal experimentation), in which pathological tendency and the double semeiology are in correct proportion. Not that what we have of drug pathogenesy is without value to the practitioner, but for such absolute, scientific experimentation as is proposed the existing drug pathogenetic material is not satisfactory.

Nothing before nor since has shown more conclusively the unreliability of much of our drug pathogenetic symptomatology, than the seven years of hard work of the Medical Investigation Club of Baltimore, which concluded with the publication of forty-seven drug records in a book issued in 1895. In revealing the great paucity of our symptomatology in dependable symptoms, the need for a careful re-proving of even our well-known drugs became obvious; but so difficult was the task generally considered that no one has yet had the temerity to undertake the work, excepting in the case of Dr. Bellows, who has given us a stupendous monument to persistency and thoroughness in his well-known Belladonna.

The useful therapeutic knowledge of the average, earnest practitioner of homœopathy is not only based upon pathogenesy, but it is also inferential, and in many instances the result of his own personal experiences. This kind of information, however, while it may be all-sufficient for the individual practitioner, yet is of no value to the investigator in this field of research.

The greatest obstacle, therefore, to reliable clinical research is lack of satisfactory drug pathogenetic material; and for the benefit of those who may not be familiar with the necessities of

accurate drug pathogenetic work, it will not be amiss to outline the requirements for drug proving in accord with modern scientific methods.

The requirements of such work, are, first, a pharmaceutically pure specimen of the drug to be proved; second, properly trained special observers, e.g., adepts in a knowledge of the normal physiology and the deviations from the line of health of all organs and tissues of the body; and third, an approximately healthy human subject upon whom the drug is to be tested. These factors having been secured, it is then necessary to become familiar with the normal manifestations of the health of the prover, which requires a period of about two weeks, during which time he is daily examined for symptomatic details; a placebo should then be administered for a period of from one to two weeks, for the purpose of eliminating the imaginings of the experimenter due to his belief that the placebo is the drug; and finally, the agent to be tested should then be given, care being exercised to have it prepared to resemble as closely as possible the appearance of the placebo, that the prover may be ignorant of any change in the agent he is taking.

Having taken the foregoing precautions to secure accurate results, the test should reward the experiments with a scientifically accurate and reliable record of the sick-making effects of the drug, which record should include both objective and subjective symptomatology and pathological tendency.

When such accurate drug pathogenetic information is secured there is no reason why it should not be utilized for any legitimate purpose, whether for every day therapeusis or for clinical research; but until such material is secured clinical research work will lack the accuracy which is its scientific necessity.

I trust no one will for one moment think I am opposed to the opening of this great field of investigation. I am simply calling attention to some of the difficulties which will confront the pioneers in this work. Having become familiar with the obstacles to be met, and recognizing the questionable scientific character of the work in which one of the important factors is so unreliable, there is no reason why systematic clinical research should not be instituted, but solely for the purpose of training the operators in critical observation.

Should the work, however, despite the fact of our unpreparedness for its prosecution, be initiated in its broadest significance, there is a possibility which should be understood, and that is the resulting effect upon the belief of the outside world in the truth of homœopathy, should the homœopathic prescriber in the conjoined-method test fail to select the drug homœopathic

to the case under observation. Surely such a possibility should be considered, and if the contemplated research is to have any serious significance, then indeed, should we hesitate to give the plan official countenance.

It should be further remembered, whether our factors in the problem are flawless or not, that the "personal equation" must always be taken into consideration, this wonderful personal equation which individualizes both physician and patient, operator and subject; and we must further recognize that whether drugs be given for experimental or for curative purposes, they will always furnish results which will be an element of doubt for the doubter, and of faith for the believer.

In the great field of bedside work investigation is something that falls to the lot of all conscientious medical practitioners, but with the dearth of reliable drug pathogenesy the proposition to formally put our claim to pre-visional knowledge of the homœopathic relationship to the test, should cause us to gravely consider the situation, for imperfect knowledge always gives imperfect results.

In the future, even though all obstacles to accurate experimentation may be removed, we shall find it necessary to decide whether or not such experimentation would be of advantage beyond training the observer? Would it in any manner strengthen the belief of those who are already believers, or would it convince those who do not believe?

If the many illustrations of the truth of similia have produced no marked effect upon the unbelievers in the past, would such experiments do more than cause a possible temporary stir in the general medical world?

The adoption of great truths is rarely caused by any startling occurrence, or by revolutionary events, but they come to be accepted through a long process of percolation down to the intelligence of the masses in the world which is concerned.

If the history of the past shows that the adoption of great truths requires the slow grinding of the years, as it does, and if all believers are satisfied that homœopathy is one of the eternal verities, then, would it not be wiser to teach this truth in a way that would convince the doubters, through painstaking education, rather than endeavor to show by additional demonstration that which has many times before been demonstrated without effect upon these doubters?

Experience should teach us that it is useless to attempt the education of those who think themselves educated; our colleges therefore normally offer the most promising field for such an effort.

Like charity covering a multitude of sins, so therapeutics

covers a multitude of methods for healing the sick. Every medical practitioner encounters daily some of these various methods, and this encounter will continue through the time to come. The medical novitiate should therefore be taught what he is to expect when he enters the arena of private practice. Not only should he be taught this, but he should also have these prevalent methods explained to him, and if there is virtue in any of them he should be shown how and when; and all this should be taught him in the light of the superior virtue of homœopathy.

Might not such a liberal method of instruction generate doubters? In unessentials it might; in essentials it would not.

Instead of such a method of preparation for the practice of medicine either making converts to other than homœopathic methods, or deterring students from attending colleges in which such curricula exist, the opposite result would obtain, and our colleges would annually graduate more than they do now. Medical practitioners thus educated would be prepared not only to compete with the practitioners of all other therapeutic methods, but they would be able to give such good reason for the faith that is in them, that because of their intelligent grasp of the general subject of therapeutics these very doubters with whom the enlightened are thrown into contact, would be led to investigate and doubtless in many instances would become honest converts to homœopathy, from intelligent conviction. Furthermore, such scientifically educated physicians could and would do much to enlighten the laity, and through this enlightenment of the masses many young men would be impelled to enter the institutions in which such truth is taught.

If in addition to such under-graduate training it is also deemed wise to prosecute the work of clinical research, then the first step should be to see that all the factors through which results are to be secured are reliable; for it is obvious that reliable work in this field of research can only be done when *all* the factors satisfy the scientific requirement of accuracy. While it may be possible to secure satisfactory cases for observation, well-trained diagnosticians and therapeutists, and the coöperation of hospitals, we are unfortunately not yet able to secure accurate drug pathogenesy. Materia medica is the factor which lacks accuracy; consequently, if reliable clinical research is to be instituted in an endeavor to develop trained observers, then reliable drug pathogenetic effects must be secured, and the logical necessity is, the critical proving of all drugs that are to be used in this work, and for tests of such character organization offers a promise of the best results, which

organization would mean a realization of the dream of the late Dr. J. P. Dake, — a college of provers.

In conclusion, therefore, a college of provers may be regarded as the factor in the problem of clinical research which is lacking, and as the result of its work would doubtless be scientifically accurate. A college of provers becomes the fundamental necessity of reliable clinical research.

CLINICAL DEPARTMENT

Case F.-12 Asthma, Alcoholism and Arteriosclerosis. The patient is a man of fifty-eight years, born in Boston of Puritan stock. Mother died at eighty-seven of broken hip; father at seventy-eight of cancer of throat. There is tuberculosis in his family. One sister is living, a chronic, complaining invalid. No history of nervous or mental disease in the family.

The patient is of the thin, wiry, tough type, and, having enough to live upon, has never done any work. He has always used alcoholic liquors, often to excess, and has been treated for this in several institutions. Otherwise, he was well up to twelve years ago, when he began to have attacks of asthma in the fall, lasting two or three weeks. These attacks have gradually increased in frequency and severity until now they are most distressing, and at their height he actually appears to be unable to get his breath at all.

Physical examination reveals a spare, tawny-skinned man 5 feet 10 inches high, weighing 165 pounds; poorly nourished. Chest, barrel-shaped and emphysematous. There are rales of all kinds all over the chest, and breathing is labored.

The nose is normal; mouth is foul with sordes on the teeth, which are neglected; tongue protrudes straight but has marked coarse tremor.

The heart is enlarged to the 6th intercostal space and is outside nipple line; the sounds are feeble and distant. Blood pressure: systolic, 145 m. Hg.; diastolic, 90 m. Hg.

The outstretched fingers have marked coarse tremor. Knee jerks are present but no Achilles nor Babinski. No tics nor contractures, no ankle clonus. There is much muscular weakness, with a shambling, stagger gate and some Rhomburg. Patient has difficulty in rising from chair. There is no anasthesia nor hyperasthesia and no tenderness along nerve trunks.

Mentally, the patient is poorly oriented, with much confusion of thought. This varies at different times. Sometimes he knows persons, place, and time; at others, does not, espe-

cially at night, when he becomes actively hallucinated; thinks he hears shots and sees persons outside going to shoot him. Memory is poor for both past and recent events. Speech is slow and thick, and, at times, incoherent. He is apprehensive, but there are no delusions. He is very restless at night, gets up and barricades his door with furniture. Evidently there is here a state of acute halluconis.

The interesting thing about this case is that about a year ago he met a doctor who gave him adrenalin for his asthma. This doctor got him a hyperdermic syringe and told him that he could always stop his attacks by injecting fifteen minims and that it was harmless, and he could therefore use all he wanted of it. Now it is well known that the prolonged use of suprarenal extract will produce arthroma. The patient having no judgment in the matter had used it very freely, taking at times of attacks several injections a day.

Just before we saw him he had been on a yachting cruise of two weeks, indulging in much liquor. Shortly after, the asthmatic attack appeared and he took the injections freely. Suddenly after two days, the psychosis appeared. What part did the alcohol play, and how much had the adrenalin to do with it? In spite of the fact that this man had a well-marked arteriosclerosis with hard radials and tortuous temporal arteries, his systolic pressure was only 145 m. hg. and pulse pressure only 50. Evidently the heart was much enfeebled. The kidneys, too, were probably fibrous, as the urine was profuse and watery and had a specific gravity of only 1.008. Was there an urinic element?

We have heard of another man in whom a psychosis seemed to be precipitated by over doses of adrenalin.

The treatment of this case was simply the withdrawal of the drug. Morphine $\frac{1}{8}$ grain was given twice for the asthmatic paroxysm, and he was given hyoscine 1-100 one tablet in a half glass of water, one teaspoonful every hour. Tub baths containing two quarts of rock salt at a temperature of 97 degrees F. for one hour were given twice a day. This quieted and strengthened the heart. At the end of four weeks he was lucid and rapidly regained his strength.

REVIEWS

DIAGNOSIS AND THERAPEUTICS

Poisoning by Mercuric Chlorid and Its Treatment. *S. W. Lambert and H. S. Patterson, Archives of Internal Medicine, 1915, xvi, 865.*

The treatment in the detail now used at St. Luke's Hospital as a routine has been elaborated through the help of the method of Vogel, by which mercury is readily detected in stomach contents, urine and stools. By this procedure, one can determine not only the diagnosis and the necessity of beginning treatment, but also, in some cases, the length of time treatment should be continued.

Vogel's method consists of separating the mercury from its albuminous combinations in the organic material to be examined, and then subliming it in a sealed tube to form an amalgam on a small piece of dentist's gold.

In the treatment, the first indication is to give the patient the whites of several eggs, then to wash out the stomach thoroughly. This is usually done before the patients are admitted to the hospital. On admission, the stomach contents are expressed and examined for mercury. The stomach is thoroughly washed, and a pint of milk introduced. If the first lavage does not allay the nausea and vomiting, it is repeated after an hour, and the following routine is begun as soon as the stomach will permit it.

1. The patient is given, every other hour, 8 ounces of the following mixture:

Potassium bitartrate,	1 gm.
Sugar,	1 gm.
Lactose,	½ oz.
Lemon juice,	1 oz.
Boiled water,	16 oz.

Eight ounces of milk are administered every alternate hour.

2. The drop method of rectal irrigation with a solution of potassium acetate, a dram to the pint, is given continuously.

3. The stomach is washed out twice daily.

4. The colon is irrigated twice daily in order to wash out whatever poison has been eliminated in that way.

5. The patient is given a daily sweat in a hot pack.

Ten cases treated successfully by this method are reported.

[Fantus (*vide infra*) recommends this eliminant treatment, excepting that sodium acetate might be preferred to the potassium bitartrate given by the stomach, because of its superior antidotal value.]

S. B. H.

Antidotes in Mercuric Chlorid Poisoning — An Experimental Study.

B. Fantus, Journal of Laboratory and Clinical Medicine, 1916, I, 879.

As a result of extensive studies upon rabbits, and a review of the literature on different methods of treating mercuric chlorid poisoning, Fantus comes to the following conclusions:

1. Egg albumin is of little value as an antidote to mercuric chlorid unless it is given immediately after the poison is swallowed. Milk and serum albumin are worthless.

2. Hall's solution (potassium iodid quinin) is useless as an antidote.

3. Sodium bicarbonate and sodium acetate possibly have a moderate antidotal value. Sodium carbonate is of no value.

4. Potassium bitartrate and sodium sulphate have no antidotal value.

5. Stannous chloride has little antidotal value.

6. Calcium sulphite is probably too toxic to be of use as an antidote.

7. Sodium phosphite alone has no antidotal value, but mixed in a certain proportion with sodium acetate (Carter's antidote) it is of remarkable antidotal efficiency.

8. Sodium hypophosphite mixed with a certain proportion of sodium acetate or hydrogen peroxid is also highly efficacious as an antidote.

Treatment recommended: immediate administration of either Carter's antidote — a mixture composed of

Sodium phosphate,	0.36 gm.
Sodium acetate,	0.24 gm.

— or the following,

Sodium hypophosphite,	1 gm.
Water,	10 cc.
Hydrogen peroxid,	5 cc.

If the amount of poison taken is known, ten times as much of the hypophosphite should be given as poison was taken. As this might require a large and possibly harmful amount of hypophosphite, it should be immediately followed by copious lavage, with a very dilute solution of the antidote. This may be followed by a safe dose of the antidote; this to be retained, and it might be repeated every 8 hours for several days.

In experimental work with Carter's antidote, the average survival of the animal when the antidote was given with the poison was 61.4 days; the average survival when given following the poison was 42.4 days.

The average lethal period when sodium hypophosphite and hydrogen peroxid were administered immediately after the poison was 43.4 days.

S. B. H.

Status Lymphaticus. A Report of Two Cases. *W. L. Culbert, N. Y. Medical Journal, 1916, civ, 739.*

In addition to the report of the two cases, Culbert gives a quotation from Warthin's article on this condition.

"It is of course evident that the condition of thymic death is that classed by many writers as the chief feature of status lymphaticus. It is, however, a question whether the latter represents a definite primary pathological entity; it is much more probable that the clinical and pathological features usually regarded as characteristic of lymphatism constitute a cachectic complex, secondary, perhaps, to a number of primary morbid processes, such as syphilis, rhachitis, somelatent infection, autointoxication, etc., that are characterized by an excessive demand upon the lymphoid and myeloid tissues of the body. At a certain stage in the process, the lymph nodes may be enlarged, and it is to this stage that the term status lymphaticus is usually applied.

"The thymic enlargement is most probably to be regarded as a purely compensatory condition, secondary to some primary lymphotoxic or myelotoxic process. The sudden death in status lymphaticus is dependent primarily and wholly upon the thymic enlargement, and the latter condition becomes, therefore, the most important feature clinically. Moreover, thymic enlargement, leading to thymic death, may exist without any of the other clinical features ascribed to status lymphaticus. Nevertheless, the latter term serves a good purpose in designating the cachectic complex of thymic enlargement associated with adenoids, enlarged tonsils, enlargement of the superficial lymph glands, rhachitis, etc."

Culbert draws attention to the importance of a thorough physical examination of all children who present themselves for operation, especially those for removal of adenoids and tonsils; more particularly, when they show any deviation from the normal, should we look all over the body for enlarged glands, bone deformities characteristic of rhachitis, and areas of sternal dulness.

If any stigmata are present to make us suspect an enlarged thymus, operations should be refused, or, at least, deferred until a full laboratory investigation can be made, including, of course, skiagraphs.

S. B. H.

PATHOLOGY

A New Classification of Neoplasms and Its Clinical Value. *MacCarty, W. C., Am. Jour. Med. Sci., 1916, vol. 151, p. 799.*

MacCarty considers classifications of neoplasms, based upon the site of tumor origin, as entirely inadequate, and suggests a classification based upon the idea that "During the process of the production of cells which produce tissues, certain cells remain in a stage of reserve (regenerative cells) for the purpose of producing specific tissues when the specific tissues are destroyed."

Should this reproduction of tissue cells exceed the requirements, and especially if non-specific cells are produced in great profusion, then tumor formation is the result. The type of the resulting tumor depends upon the behavior of the newly formed cells. Simple hyperplasia of regenerative cells (primary cytoplasia) causes benign tumors, hyperplasia plus migration of these "cells into the stroma, lymphatics, neighboring and distant organs," constitute malignancy (tertiary or migratory cytoplasia). Secondary cytoplasia is a transitional stage.

In this classification a benign lipoma becomes a primary (restauro-) lipo-cytoplasia, a squamous cell carcinoma would be called tertiary (migro-) epithelio-cytoplasia, and a doubtful glandular tumor is classed as secondary (expando-) adeno-cytoplasia.

H. U.

Non-Teratomatous Bone Formation in the Human Ovary. *Outerbridge, G. W., Am. Jour. Med. Sci., 1916, Vol. 151, p. 868.*

Seven cases of bone formation in the ovary are recorded to show that this finding is relatively much more frequent than a study of previous literature and the statements of other authors would seem to indicate. The bone formation "occurs chiefly in corpora fibrosa or fibrous portions of the stroma, and particularly in ovaries from cases of pelvic inflammation." This would be an argument for the metaplastic nature and against the teratomatous character of the ossification.

H. U.

SEROLOGY

The Wassermann Reaction in Pregnancy. *Judd, A. M., Am. Jour. Med. Sci., 1916, Vol. 151, p. 836.*

Seventy-one out of eight hundred and ninety-two (7.9 per cent) of the tests were positive, although a "majority of positive patients . . . had no visible lesions, and would have been overlooked but for the routine Wassermann." Judd gives salvarsan even in late pregnancy.

Most of the positive cases had had one or more miscarriages previously, some were primigravidæ, and others had had living children and no miscarriages.

H. U.

SOCIETIES

BOSTON HOMŒOPATHIC MEDICAL SOCIETY

The first meeting of the Boston District of the Massachusetts Homœopathic Medical Society after the summer vacation was held in the auditorium of the Evans Memorial, East Concord St., on Thursday evening, October 5, in conjunction with the Suffolk District Medical Society, which had been invited to meet with the Boston Society. Many of the members of the Suffolk Society availed themselves of the invitation.

Dr. Allan J. McLaughlin, Massachusetts State Commissioner of Health, presented a very interesting paper on "Anterior Poliomyelitis," discussed by Drs. Edwin H. Place of the Boston City Hospital, South Department, and Frank C. Richardson, of the Evans Memorial staff.

Dr. George B. Rice offered a resolution expressing the sentiment of the Society as opposed to the Anti-Vaccination Bill before the Legislature and the so-called Pang Suey Bill, and urging every member of the Society to ascertain the status of the Legislature candidates on these matters before the next election. The resolution was unanimously adopted, and it was voted to send a copy to each member of the Society.

The meeting adjourned at 10.30 P.M.

Benjamin T. Loring, M.D., *President.*
H. E. Diehl, M.D., *Secretary.*

MASSACHUSETTS HOMŒOPATHIC MEDICAL SOCIETY

The Massachusetts Homœopathic Medical Society held its seventy-sixth semi-annual meeting at the Massachusetts Homœopathic Hospital, Boston, on Wednesday, November 1, 1916.

The morning was devoted to surgical clinics, and at noon luncheon was served at Boston University School of Medicine. The afternoon session, held in the auditorium of the Evans Memorial building, was exceptionally well attended. This session opened with a short business meeting, followed by the reading and discussion of two interesting and timely papers, — "Anterior Poliomyelitis as studied at the West Department of the Massachusetts Homœopathic Hospital," by Dr. Samuel A. Clement, Resident Physician at the West Department, and "Anterior Poliomyelitis: a Possible Etiological Factor," by Dr. John P. Sutherland, Dean of the Boston University School of Medicine. Dr. Allen Greenwood, who for the last two summers has been engaged in field hospital work in France, gave an extremely interesting and informing account, illustrated with slides, of "Surgical Experience in France." Dr. Wesley T. Lee delivered the oration, entitled "Necessitas Non Habet Legem." Following the discussion of the papers, the meeting adjourned.

MASSACHUSETTS SURGICAL AND GYNECOLOGICAL SOCIETY

The eighty-seventh session of the Massachusetts Surgical and Gynecological Society was held at Hotel Georgian, Park Square, Boston, on Wednesday, November 15, 1916. This was the Society's annual meeting, and the following officers were elected for the ensuing year:

President: George H. Earl, M.D., Boston.
Vice-presidents: Grace A. Jordan, M.D.; E. P. Ruggles, M.D.
Secretary: Harry J. Lee, M.D., Boston.
Associate Secretary: W. K. S. Thomas, M.D.
Treasurer: George L. Van Deursen, M.D.
Auditor: Conrade Smith M.D.

The scientific program was under the charge of Dr. Orville R. Chadwell, and the following papers were presented: Vulo-Vaginitis in Children, by Ralph C. Wiggin, M.D., The Surgical Aspects of Cervical Adenitis in Children, by Thomas E. Chandler, M.D., Hirschprung's Disease, by Frank R. Sedgley, M.D.

One hundred members and guests sat down to dinner at the Georgian, and after the dinner Mr. William A. Nightingale gave an illustrated talk on "The United States Navy."

MASSACHUSETTS SOCIETY FOR MENTAL HYGIENE

A three days' conference by the Massachusetts Society for Menta, Hygiene will be held in Ford Hall, Boston, on December 13, 14, and 151 afternoon and evening sessions, beginning with the evening of December 13.

Prof. William H. Burnham, of Clark University, is President of the Society. Papers will be read by Dr. E. E. Southard, Director of the Boston Psychopathic Hospital; Dr. Walter E. Fernald, Superintendent of the School for Feeble-Minded, at Waverly; Dr. Frankwood E. Williams, executive secretary of the Society and chairman of the Massachusetts Advisory Prison Board, and many other noted psychiatrists and social workers.

It is hoped that from the conference will develop plans for dealing with the problem of feeble-mindedness in Massachusetts.

ROCHESTER MEETING OF THE AMERICAN INSTITUTE

President Van Baun and the Executive Committee, in conference with the local committee of Rochester, have decided upon holding the 1917 meeting of the Institute, June 17 to 23. The place of meeting is to be the Powers Hotel of Rochester.

VERMONT HOMŒOPATHIC MEDICAL SOCIETY

The sixty-sixth annual meeting of the Vermont Homœopathic Medical Society (postponed from May 24th to Oct. 11th), was held on the latter date, in the parlors of the Pavilion Hotel, Montpelier.

The report of the Secretary showed neither loss nor gain in membership during the present year.

The report of the Treasurer showed the finances of the Society to be in a satisfactory condition.

The following officers were elected:

President, E. B. Clift, M.D., Fairhaven; *Vice-president*, W. G. Hodsdon, M.D., Rutland; *Secretary*, Geo. I. Forbes, M.D., Burlington; *Treasurer*, F. E. Steele, M.D., Montpelier.

Censors: Drs. E. B. Whittaker, F. E. Steele, Edward Kirkland.

Auditors: W. R. Noyes, F. H. Everett, C. E. Libby.

Legislative Committee: W. E. Locke, W. B. Mayo, E. B. Whittaker, Geo. I. Forbes, C. A. Gale, Sam Sparhawk.

As Dr. Whittaker's term as member of the board of Medical Registration expires January first, it was necessary to nominate two men, of whom the Governor could appoint one to fill the vacancy. Dr. E. B. Whittaker and Dr. Edward Kirkland were appointed candidates.

Two new men, Dr. Frank Wheeler and Dr. W. O. Hodgdon, both of Plainfield, were elected to membership.

The Constitution was amended so that hereafter the annual meeting will be held the fourth Wednesday in May, at such place as the Society shall designate at the preceding meeting.

It was voted to hold the next annual meeting in Rutland.

The Constitution was further amended by dropping the provision for the semi-annual meeting, so that hereafter there will be only one meeting a year, except as the officers may call them as provided in the Constitution.

Following the business session, the Society listened to the address of the retiring President, Dr. G. G. Hall of South Woodbury, and to a paper on Indigestion by Dr. Morgan of Burlington.

The Society considered itself extremely fortunate in having as guest Dr. F. W. Patch, of Framingham, Mass., who gave an instructive and interesting address on "Some Pitfalls in Diagnosis."

In the evening Dr. Patch entertained the Society with a talk illustrated with lantern slides, dealing particularly with the educational advantages of Boston University School of Medicine.

WESTBOROUGH STATE HOSPITAL'S THIRTIETH ANNIVERSARY

On Thursday, December 7th, Westborough State Hospital celebrates the thirtieth anniversary of its opening, with an interesting program. The morning exercises begin at 11 and the afternoon at 2 o'clock. Dr. N. Emmons Paine, of the Board of Trustees, will preside and will give an historical retrospect as a former superintendent of the Hospital.

WORCESTER DISTRICT OF THE MASSACHUSTETS HOMŒOPATHIC MEDICAL SOCIETY

The semi-centennial anniversary meeting of the Worcester District of the Massachusetts Homœopathic Medical Society was held on Wednesday, November 8, 1916, afternoon and evening, at the Worcester Automobile Club.

The scientific program was devoted to the subject, "Poliomyelitis." Dr. S. A. Clement, resident physician in the West Department of the Massachusetts Homœopathic Hospital, read a report on the diagnosis and treatment of cases in that institution. Dr. Helmuth Ulrich followed with a paper on Serum Treatment, and Dr. Alonzo G. Howard on Orthopædic Treatment.

Dr. J. P. Sutherland read a paper on "Pernicious Influence of the Diet of the Civilized Man."

In the evening, following the society dinner, Dr. George R. Southwick, of Boston, gave a talk, illustrated by stereopticon, on "The Growth of Homœopathy in New England." Dr. J. K. Warren, of Worcester, contributed personal reminiscences on "Our Society," and Dr. J. P. Rand, of Worcester, read an original poem entitled "Our Fiftieth Anniversary."

The following named officers were elected for 1917:

President, F. P. Glazier, M.D., Hudson.

First Vice-president, Emma Hooker Fay, M.D., Westborough State Hospital.

Second Vice-president, George W. Butterfield, M.D., Hopkinton.

Secretary and Treasurer, Leslie P. Leland, M.D., 238 Lincoln St., Worcester.

Chairman of the Board of Censors, John E. Willis, M.D., Worcester.

Dr. Adah Louise Brown-Eccleston, of Southbridge, and Dr. Ransom A. Race, of Paxton, were elected to membership in the Society.

NATIONAL BOARD OF MEDICAL EXAMINERS

The National Board of Medical Examiners held its first examination from October 16 to 21, in Washington, D. C.

There were thirty-two applicants from seventeen States, representing twenty-four medical schools, and of these, sixteen were accepted as having the necessary preliminary and medical qualifications, ten of whom took the examination.

The following men passed:

Dr. Harry Sidney Newcomer, Johns Hopkins University.
Dr. William White Southard, Johns Hopkins University.
Dr. Orlow Chapin Snyder, University of Michigan.
Dr. Thomas Arthur Johnson, Rush Medical School.
Dr. Hjorleifur T. Kristjanson, Rush Medical School.

The second examination will be held in Washington, D. C., June, 1917, Further information may be had by applying to Dr. J. S. Rodman, Secretary, 2106 Walnut St., Philadelphia, Pa.

DOCTOR: THIS IS OF IMPORTANCE TO YOU

For a number of years it has been the opinion of those familiar with Homœopathic interests, that a new plan of administration and operation of the American Institute of Homœopathy should be instituted.

To that end the constitution and by-laws of the American Institute of Homœopathy were revised at the Baltimore meeting and a new plan of operation and organization was adopted.

The object of this new plan is to bring about a more efficient way of promoting all Homœopathic interests.

To carry it out effectively, it was necessary to open a central office, where all things pertaining to the Administrative work could be centralized.

Under an Executive Committee, consisting of C. E. Sawyer, J. P. Cobb and F. M. Dearborn, appointed by the Board of Trustees with full power to act, a suite of offices consisting of 8 rooms on the Washington St. side of the 8th floor of the Marshall Field Building, Chicago, were secured.

These offices have been equipped with proper furniture and fixtures, which make of them convenient, pleasant, well arranged offices for the reception of callers, the editing of the Journal, the accounting of the Secretary-Treasurer and the general supervision of the Executive Committee.

With an active, energetic, efficient force, consisting of T. E. Costain, Secretary-Treasurer, Sarah M. Hobson, Editor, the Executive Committee, and several able stenographers, arrangements are completed to carry on the work of the Institute in a real business manner.

THE MATTERS TO WHICH THIS FORCE ARE NOW BENDING THEIR ENERGIES ARE

1. A certified and corrected list of all Homœopaths.
2. A modern system of accounting and recording.
3. A correct listing and invoicing of all properties.
4. The federation of all Homœopathic Societies.
5. A tabulated list of all Hospitals and Training Schools.
6. The federation of all local and state societies.
7. A co-operative plan of State meetings.
8. A fixed plan for State and National exhibits.
9. Increase of American Institute of Homœopathy membership, subscribers to Journal and advertisers.
10. Coordination of all Homœopathic forces and numerous other things of a great import to the Homœopathic Fraternity.

Under the direction of the Executive Committee an effort is being made to bring together in one working body the entire Homœopathic Fraternity of the United States.

To that end the Committee are seeking verification of the addresses of all Homœopathic physicians and surgeons. The present plan of reorganization contemplates much of interest and importance to all members of the Homœopathic school.

A prompt reply to the interrogation on the slip attached will be greatly appreciated. Address: Executive Committee, American Institute of Homœopathy, 829 Marshall Field Building, Chicago, Illinois.

AMERICAN INSTITUTE OF HOMŒOPATHY

829 Marshall Field Building, Chicago, Illinois

I wish to be enrolled as a Homœopath.
I shall be pleased to receive literature regarding Homœopathy.
I will aid in Federation and Reorganization.

Name.....

City.....

State.....

Dear Doctor : Please detach this coupon and mail today.

BOSTON UNIVERSITY SCHOOL OF MEDICINE BENEFIT CONCERTS

Following the custom established three years ago of giving an entertainment during the winter months, the Finance Committee of Boston University School of Medicine offers a concert course.

Three concerts are to be given at Jacob Sleeper Hall, on Wednesday evenings, Dec. 6, Jan. 10, Feb. 14, at 8 o'clock.

The first concert presents Irma Seydel, violinist, and Jeska Swartz-Morse, contralto. Miss Seydel has been soloist with many symphony orchestras and has received enthusiastic praise from the critics in all the cities in which she has played.

Mme. Jeska Swartz-Morse was for five years prima-donna contralto of the Boston Opera Company, after which she was engaged for the Covent Garden, in London.

The second concert will be given by Henrich Gebhard, pianist, and Josel Malkin, cellist. Henrich Gebhard needs no introduction to Boston audiences, nor does Josel Malkin, who now holds the position of first cellist of the Boston Symphony Orchestra. There is no city nor country of importance where Mr. Malkin has not appeared with tremendous success.

At the third concert, Miss Myrna Sharlow, soprano, will be assisted by Francesco Savasta, tenor. Miss Sharlow succeeded Mme. Melba with the Boston Opera Company, and has held the position of principal soprano with the Royal Opera, Berlin, Covent Garden, London, and the Paris Opera Company.

Mr. Savasta has a splendid voice and will present a large repertoire of operatic arias, Neapolitan and English songs.

The noted artists appearing in these concerts ensure a program which can not fail to entertain the audiences, advertise the Medical School and net a handsome profit toward the Endowment Fund.

Tickets are on sale by Dr. J. Emmons Briggs, 477 Beacon Street, Boston, at three dollars each for course tickets. They can also be obtained of Mrs. Knowles at the Medical School office.

COOPERATION BY STATE BOARDS OF REGISTRATION IN MEDICINE IN NEW ENGLAND

The State Boards of Registration in Medicine of New England have formed an association for the promotion of mutual interests. Four of the States, we are informed, are holding their examinations on the same dates. Dr. Nathaniel R. Perkins of the Massachusetts State Board has made an interesting and practical suggestion that a uniform examination be conducted and a uniform rating be made by the registration boards of the New England federation. If adopted, this may lead to interesting developments in New England and in time bring forth results that will be far-reaching on medical licensure. It will also faciliate reciprocity procedures from its being based on uniform standards.

MISSIONARY HOSPITAL WORK IN INDIA

Wanted, — a qualified medical man who is in sympathy with religious work. Passage paid and small monthly allowance made. Three years' agreement. Apply, with recommendations, to

Commander Eva Booth, Field Dept., Salvation Army Headquarters,
122 West 14th St., New York City.

OBITUARY

Frank D. Maine, M.D.

Dr. Frank D. Maine, of Springfield, Mass., died in that city on October 29 of the present year. Dr. Maine was a graduate of New York Homœopathic Medical School, class of 1872, and before settling in Springfield in 1892 had practiced medicine in Middletown, Conn., and Windsor Locks, Conn.

Dr. Maine was born in 1839 and served throughout the Civil War as a volunteer in the Fourteenth Connecticut Infantry. He is survived by his widow.

UNITED STATES CIVIL SERVICE EXAMINATION
PHYSICIAN (MALE)

December 13, 1916

The United States Civil Service Commission announces an open competitive examination for physician, for men only, on December 13, 1916, at the places mentioned in the list printed hereon. From the register of eligibles resulting from this examination certification will be made to fill vacancies in this position in the Indian and Panama Canal Services, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

The entrance salaries in the Indian Service range from $1,000 to $1,200 a year, and in the Panama Canal Service are $1,800 a year.

As the supply of eligibles resulting from recent examinations has not been equal to the demand, qualified persons are urged to enter this examination.

Competitors will be examined in the following subjects, which will have the relative weights indicated:

Subjects	*Weights*
1. Anatomy and physiology (regional and minute anatomy, general physiology, the physiologic functions, and relations of organs)	10
2. Surgery and surgical pathology (general and special surgery, surgical diagnosis, pathology, treatment, and technic)	20
3. Chemistry, materia medica, and therapeutics (elementary questions in inorganic and organic chemistry, the physiologic action and therapeutic uses and doses of drugs)	10
4. Bacteriology and hygiene (the technic of bacteriologic laboratory methods and the practical application of the principles of bacteriology and hygiene to prophylaxis and treatment)	15
5. General pathology and theory and practice of medicine (the etiology, pathology, symptomatology, and treatment of diseases)	20
6. Obstetrics and gynecology (the general practice of obstetrics, diseases of women, their etiology, pathology, diagnosis, symptoms, and treatment, medical and surgical)	10
7. Training and experience	15
Total	100

Applicants must be graduates of or senior students in recognized medical schools. The names of such senior students will not, however, be entered on the eligible register in the event they pass the examination until they have furnished proof of actual graduation.

Statements as to training and experience are accepted subject to verification.

Applicants must have reached their twenty-first but not their fortieth birthday on the date of the examination.

Applicants must be in good health and must attach to their applications a statement showing the number in their family dependent upon them that will require accommodations at the Indian school or agency in case they receive appointment.

No sample questions of this examination will be furnished.

Applicants must submit to the examiner on the day of the examination their photographs, taken within two years, securely pasted in the space provided on the admission cards sent them after their applications are filed. Tintypes or proofs will not be accepted.

This examination is open to all men who are citizens of the United States and who meet the requirements.

Persons who meet the requirements and desire this examination should at once apply for Form 1312, stating the title of the examination desired, to the United States Civil Service Commission, Washington, D.C.

PERSONAL AND GENERAL ITEMS

Dr. Edwin D. Stevens of Francestown, New Hampshire, was elected on November 7 to the House of Representatives of his State.

Dr. Hugh Heaton has resigned from service at the Massachusetts Homœopathic Hospital and has opened an office in the Fensdale, 25 Audubon Road, Boston.

Dr. Luther A. Brown (B.U.S.M., 1901) has removed from 690 Congress St. to 13 Deering St., Portland, Maine.

At the last meeting of the Massachusetts Surgical and Gynecological Society, Dr. George H. Earl of Boston was elected president.

Dr. Nathan R. Sylvester, Jr., (class of 1912, B.U.S.M.) has removed from 1121 Broadway to 11 Westminster St., West Somerville, Mass.

Dr. H. A. Whitmarsh of Providence, R.I., has removed his office to 167 Angell Street, where he is associated in practice with Dr. R. O. Whitmarsh.

Dr. Benjamin T. Church of Winchester, Massachusetts, celebrated his seventy-seventh birthday on November tenth. The *Gazette* wishes him many happy successors to this anniversary.

Dr. Nathan H. Garrick is associated in practice with Dr. J. Arnold Rockwell of Cambridge, Mass. Dr. Rockwell is Lecturer on Diseases of the Stomach and Intestinal Tract in Boston University School of Medicine, of which both men are graduates, — Dr. Rockwell 1899 and Dr. Garrick 1915.

Dr. Gardner H. Osgood (B.U.S.M., 1909) announces the removal of his Roentgen laboratory from 636 Beacon St. to 510 Commonwealth Avenue, Boston.

Dr. Henry F. Dauphin (B.U.S.M., 1915) is caring for the practice of Dr. William J. Brown (B.U.S.M., 1901) of Reading, Massachusetts, during the latter's illness. After completing in June last a year's interneship in Newton Hospital, he substituted for the summer for Dr. Chas. S. Cummings of Middleboro, Massachusetts.

Dr. Helen G. F. Mack-Grueby (class of 1895, B.U.S.M.) is to be found at 70 West Rutland Square, Boston.

Dr. Flora S. Russell is located at 468 Massachusetts Avenue, Boston.

Dr. Louis R. Daniels (B.U.S.M., 1914) has removed from Pawtucket, Rhode Island, to 152 Winsor Avenue, Watertown, Mass.

Dr. George N. Lapham (B.U.S.M., 1900), of Rutland, Mass., has withdrawn from the business management of Maple Lodge Sanatorium in Rutland and is now to devote himself entirely to the medical supervision of the Sanatorium and the medical care of patients. Maple Lodge has been thoroughly renovated and the business conduct and proprietorship are now in the hands of Charles E. Carroll, for seventeen years steward of Rutland State Sanatorium.

Dr. Bertha Cameron Guild (class of 1911, B.U.S.M.) has been appointed to interneship in the Massachusetts Homœopathic Hospital, service from December first.

Dr. J. Lewis Mahoney, of Boston (class of 1898, B.U.S.M.) and Dr. Walter A. Jillson, of Westborough State Hospital (class of 1905 B.U.S.M.), have passed examinations and received appointments as First Lieutenants in the United States Army Medical Reserve Corps.

Dr. H. L. Babcock, aurist, of Boston (B.U.S.M., 1908), has just returned from Philadelphia, where he has been taking a special course in Neuro-otological Localization in the University of Pennsylvania Graduate Medical School.

Dr. Martha I. Boger (B.U.S.M., 1915), of Portsmouth, N. H., lectured on November 9 and 10 before the Mothers' Club of that city on "How to Keep the Kiddies Well," and is to give a series of lectures during the winter before the Woman's Club, on "Infantile Paralysis, "The Adolescent Period" and one other subject as yet undecided.

Dr. Samuel Norman (class of 1916, B.U.S.M.), has finished his service at the Massachusetts Homœopathic Hospital and has located at 152 Humboldt Ave., Roxbury. He also has an office at 312 Harrison Ave., Boston.

Dr. Luther A. Brown (class of 1901, B.U.S.M.) has removed from 690 Congress St., Portland, Me., to 13 Deering St., same city.

Dr. John A. Hayward (class of 1906, B.U.S.M.), has removed from Camden to 612 Congress St., Portland, Me.

A course of four lectures on "Health Insurance" has been given weekly, beginning Tuesday, November 14, at the Evans Memorial, Massachusetts Homœopathic Hospital. The first lecture was given by Prof. Irving Fisher of Yale University, on "The Need for Health Insurance." The second lecture, November 20, was entitled "The Progress of Health Insurance in Europe," by Miles M. Dawson, Consulting Actuary, New York City.

Dr. E. B. Whittaker, one of the oldest homœopathic practitioners in Vermont, and member of the Board of Medical Registration, is very seriously ill at his home in Barre, Vt.

Dr. A. S. Morris (class of 1914, B.U.S.M.), has received appointment as interne in the Massachusetts Homœopathic Hospital, Boston.

Dr. Charles A. Eastman, the full-blooded Sioux Indian graduate of University School of Medicine of the class of 1890, has written an autobiography entitled "From the Deep Woods to Civilization," which is to be issued this fall. Dr. Eastman is married to Elaine Goodale, the New England poetess, and for some years they have made their home in Amherst, Mass.

Dr. Alberta S. B. Guibord (class of 1899, B.U.S.M.) has removed to 138 Marlboro St., Boston, where she specializes in mental and nervous diseases, psychoanalysis and mental tests.

Dr. Clause L. Payzant (class of 1910, B.U.S.M.) has removed to 77 Boston Avenue, Medford, Mass.

Dr. Edwin R. Lewis has accepted the superintendency of Hahnemann Hospital of Rochester, New York, and is to enter upon his new duties January 1, 1917. For some years Dr. Lewis has been Assistant Superintendent of the Massachusetts Homœopathic Hospital, and is a graduate of Boston University School of Medicine. On June 15 last he was married to Miss Margaret D. Cummins, a 1916 graduate of the School and a daughter of the late Dr. Cummins of Warwick, New York.

Dr. Arthur A. Struthers has received appointment to Melbourne Homœopathic Hospital, Australia, and expects to sail from San Francisco on December 19th. Dr. Struthers has been house physician at Trull Hospital, Biddeford, Maine, since his graduation from Boston University School of Medicine in June, 1915, and is to succeed Dr. Eben C. Gould (B.U.S.M., 1905) in Melbourne hospital work.