

THE
CALCUTTA JOURNAL
OF
MEDICINE:

A MONTHLY RECORD OF THE MEDICAL AND AUXILIARY SCIENCES.

That alone is the right medicine which can remove disease :
He alone is the true physician who can restore health.

Charaka Sanhita.



EDITED BY

MAHENDRA LA'L SIRCA'R, M.D., C.I.E.

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১নং নেবুতলায়, ৫১নং শাখাৰিটোলায় অথবা মুখৰ্জিকোম্পানিৰ
ওষধালয়ে তত্ত্ব কৰিলে পাওৱা যাইবে ।



THE
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DRUG ATTENUATION.

V.

(Continued from Vol. xxi, No. 12, p. 497).

The reader will remember that Dr. Dunham considered all dilutions above the 3rd centesimal as "higher potencies," because they were "potencies above the grade of that of which the action admits a mechanical explanation." His favorite dilution in the last years of his practice was the 200th. To our modern high potency men the 30th dilution is but a low potency, and the 200th the lowest rung in the ladder of high potencies. They revel in the 1000ths and the millionths, and they are loath to set bounds to their potencies. We have seen what value to attach to the so-called high potencies produced by the uncertain, unscientific methods of fluxions and infections or simple contacts. So long as the high potencies are not produced by strict Hahnemannian methods we must refuse to put our faith in them as genuine, and cases of cure reported as having been effected by them we must look upon with suspicion.

Dr. Dunham prepared his own dilutions in the legitimate way and we have absolute respect for reports of his cases. And when

Accepted the reports of cases of others treated by high potencies, he must have done so, we are sure, under the conviction that these potencies were genuine, for he had no sympathy with those of Hahnemann's followers who found it easy "to erect on a figurative illustration used by him in the *Organon* a 'cloud-clapped' theory of the transplantation of the medicinal force from the substance of the drug to the substance of the vehicle used for dilution, and upon the basis of this airy hypothesis to explain all manner of supposed action and reaction of drug spirit upon diseased force."

In support of the superior efficacy of his moderate high potency, the 30th decimal, Dr. Dunham has cited the comparisons instituted by Dr. Martin Eidherr of the cases of pneumonia treated in the Leopoldstadt Hospital, in Vienna, during the ten years from 1850 to 1859 inclusive, for the first three years with the 30th, for the second period of three years with the sixth, and for the remaining four years with the fifteenth, decimal dilution.

It is notorious that conclusions drawn from statistics are not always reliable especially with reference to disease which is such a variable entity, varying by reason of difference of constitution in different individuals, by reason of age, sex, and previous disease, and by reason of difference of seasons and other climatic conditions. Dr. Eidherr endeavoured to avoid the fallacy from the last mentioned circumstance. A careful comparison of the meteorological records of the three epochs led him to the conclusion "that during the *first* epoch the atmospheric conditions were most favourable to the prevalence and severity of pneumonia, and therefore the *least* favorable for the treatment; during the *second* epoch the *least* favorable for the spread and severity of pneumonia, and therefore the *most* favorable for the treatment." The fallacies attendant upon the other circumstances do not appear to have been minded.

In the records of the cases the following points were carefully noted: 1. The seat of infiltration; 2. its duration, reckoned from the time at which it was first perceived to the time when it began to be resolved; 3. the time at which resolution of infiltration began; 4. the time at which resolution was completed; 5. the time at which all physical signs disappeared; 6. duration of convalescence.

The results of the comparison of these points in the three groups were as follows :

The average duration of the infiltration was :

For Group 1, 3.0 days.

" 2, 4.1 "

" 3, 3.0 "

Resolution began :

For Group 1, on the 3d day.

" 2, " 3.5 "

" 3, " 3.2 "

Resolution was complete :

For Group 1, on the 4.9 day.

" 2, " 6.9 "

" 3, " 6.3 "

The physical signs of the infiltration vanished :

For Group 1, on the 7.1 day.

" 2, " 9.3 "

" 3, " 10.3 "

The physical signs of the exudation vanished :

For group 1, on the 12.3 day.

" 2, " 20.5 "

" 3, " 18.1 "

The following is the statement of the average number of days during which each group of cases stayed in hospital :

Group 1, treated with the thirtieth decimal dilution ; fifty-five cases were treated ; their aggregate residence in the hospital amounted to 680 days ; or an average of 11.3 days each.

Group 2, under the sixth decimal dilution ; thirty-one cases, 606 days ; an average of 19.5 days for each case.

Group 3, treated with the fifteenth decimal dilution ; fifty-four cases, and 795 days ; an average of 14.6 days for each case.

It must be admitted, as Dr. Eidherr claims, that this was the most extensive experiment that has ever been made, bearing on the question of the dose, and the conclusion drawn by Dr. Eidherr from the statistics of the cases as given above may be allowed to be legitimate, namely, " that in every point of view the action of the thirtieth dilution, in so acute and dangerous a disease as pneumonia, is more certain and more rapid than that of the fifteenth or the sixth dilution, and that the fifteenth is preferable to the sixth dilution." But was Dr. Dunham therefore right in inferring " that up to the present time, experience has established these facts : that the continued diminution of the

material quantity of a drug through the process of potentization does positively increase the curative power of a drug when homoeopathically used; that this increase of power is progressive, as far at least as the fifteenth centesimal dilution?" He may say so with reference to a particular disease occurring in a particular period of time, but the facts do not justify the generalization for all diseases, and even for all cases of any particular disease.

"There is a natural desire," says Dr. Dunham, "to find the limit of potentization. The Vienna experiment gives us no reason to suppose that this limit has been attained in the fifteenth potency." The technically termed "high potencies" are not the 15th or even the 30th centesimals; they are the 60th to the 200th and even higher. Dr. Dunham's experience was limited to the 200ths. Writing in 1863 he says: "For the last five years I have used the high potencies (two hundredths of my own manufacture and of Lehrmann's indiscriminately) in all forms of disease that occur in a general practice. I am very sure that my practice has grown more successful every year. While I trust that an increasing knowledge of the *Materia Medica* may have contributed greatly to this result, I cannot be mistaken in the belief that much is also due to my more and more frequent use of the high potencies." In illustration he gives the following cases:

A gentleman who had suffered many years from necrosis of the femur was subject to acute attacks of periostitis. The twelfth potency of *Asafœtida* was found to relieve his suffering, and repeated doses of it generally effected a cure within three or four days. After treating several attacks in this way, I gave him, at the commencement of a fresh attack, a dose of *Asafœtida* 200. The cure was effected in the space of six hours. A difference so remarkable was very obvious to the patient, who, learning from me the difference between this and my former prescriptions, requested to be treated always thereafter with the two hundredth. Here, whatever cavils may be raised about the diagnosis or other points, the fact remains incontestable, that attacks which required for their cure several days and repeated doses of *Asafœtida* 12, were cured in six hours by a single dose of the two hundredth. Could it be that repeated treatment of these attacks had modified their severity, and that the amelioration chanced to coincide, in point of time, with the change of potency? To satisfy myself on this point, I once reversed the experiment, and without my patient's knowledge gave the twelfth instead of the two hundredth potency. The attack came on with its ancient severity and persistence,

much to my patient's disgust, who was abundantly satisfied with the high potency, but much ashamed of my want of confidence.

Even after I had become quite satisfied of the superiority of high potencies in most acute diseases, I yet hesitated to employ them in a malady so fearful and so rapid as croup. In this I still adhered to the low (the third) dilutions of Aconite, or Spongia, or Hepar, as the case might require, or to the watery (first centesimal) dilution of Bromium or Iodine, if these remedies were indicated. Notwithstanding I had actually witnessed most surprising success in Dr. von Benninghausen's practice with the two hundredth potencies in severe croup, I hesitated to use them. I argued to myself: "These low potencies have served me well. The majority use them. I do not know that the high are better, even if they be as good. The success with them may be exceptional. I dare not risk the loss of time which would accrue from an unsuccessful experiment with them."

Thus it turned out that I never used the high potencies until three years ago, in the most severe case of membranous croup I ever saw, the low potencies in which I had always trusted failed me utterly, and I knew not what else to do. A resort to the use of the two hundredth potencies of Aconite, Hepar sulphuris and Spongia saved my patient from this extremity of danger, and satisfied me that a trial of the high potencies in the outset of an attack of croup, instead of involving a risk of wasting time, does in truth obviate such a risk from the employment of the lower potencies. From this time on, in the treatment of croup, I have uniformly begun with the two hundredth potency of whatever remedy was indicated. My success has been more uniform and much more rapidly attained than ever before.

My first use of a high potency of Bromine was accidental. Called to prescribe for a severe case of croup, in which that remedy was indicated, I found that the crude substance or a low dilution was not to be obtained. I had the two hundredth potency in my pocket-case. I gave it with a result equally happy, and much more speedy than I had ever before witnessed. This was altogether contrary to my preconceived notions concerning Bromine, and it summarily upset a very pretty chemical theory I had formed.

Dr. Dunham, with that love of truth which, in addition to his profound knowledge of the materia medica, was his great and noble characteristic, admitted having met with facts of a contrary significance. "No body's practice," says he, "can be free from painful failures. In such cases, wherever I have been tolerably sure that my choice of the remedy was correct, I have repeated the same remedy in a higher or lower potency as the case might be." He cites the following instance as affording an illustration of a high potency acting but insufficiently and a lower giving prompt and complete relief. "In a case of

chronic asthma, of great severity, I have recently found Glonoine of the greatest service. I first prescribed the sixth potency, having no other at hand. When the action of this dose was exhausted I gave the two hundredth. The result was by no means satisfactory. The sixth again produced happy results as before. Repeated experiments of this kind convinced me that in this instance the high potency did *not* act so favorably or so efficiently as the low. Whether this peculiarity should be accounted for by assuming an idiosyncrasy on the part of the patient, or a peculiarity of Glonoine which renders it incapable of high potentization, or whether the action of Glonoine in this case will prove to have been only palliative, and therefore temporary, is a question which can only be solved by a wider experience than I possess in the use of the various potencies of this new but valuable remedy." In a note he adds: "The subsequent history of this case confirms the suspicion that the great relief afforded by Glonoine was palliative. After a few months the disease recurred with its original severity, and no form of Glonoine (nor of any other remedy that I tried) availed to give relief." Most probably, in our opinion, the patient must have had some vice, some irregularity of life, which required to be corrected before any medicine could afford permanent relief. Because Glonoine failed to give relief in the relapse that took place months after, it does not follow that the relief it had given before was palliative only, especially when other remedies failed also. It must be in the experience of the thoughtful practitioner that the same remedy does not always succeed in subsequent attacks or relapses of the same disease in the same individual, but this cannot warrant us in saying that in such cases the previous action of the remedy was palliative only.

It is therefore with true scientific spirit that Dr. Dunham admits that "this fact that a low potency succeeded where a higher had failed, together with similar facts reported by other practitioners, must have a bearing upon general conclusions." Though in the majority of cases of both acute and chronic diseases he would give the preference to the higher over the lower potencies, yet in some cases the converse having been observed, no explanation of this difference having been discovered, he would not hesitate to use the lower where the higher had

failed. And he would leave the question, whether the higher potencies are more generally successful than the lower, and in what proportion, to be determined by statistics drawn from methodical experiment. Whether there is or can be a law for the *a priori* selection of the potency for a concrete case has yet to be discovered.

(To be continued.)

WHAT ABOUT LACHESIS—ARE WE STILL DEPENDING UPON HERING'S ORIGINAL SUPPLY?

This is a question in which all homœopathic physicians throughout the world ought to be deeply interested. The venom of the *Trigonocephalus Lachesis* is the first serpent venom which has been used on homœopathic, that is, on true scientific principles in the treatment of disease. In our country indigenous quacks use serpent-venom in certain diseases, or rather in the last stages of certain diseases, but whether this use is purely empirical, or based upon a sort of rude *similia similibus*, it is difficult to say. It is in the stages of disease, chiefly of fever and cholera, in which pulselessness and collapse have set in, in which the patient has become unconscious and comatose, and is given up by the regular physician, that the help of the quack who deals in snake venom is sought. Strange to say, he succeeds in many cases. The only venom that is used is that of a particular variety of Cobra, called the *Keute* or *Kal-kut*, that of the other variety, *Gokhura*, being deemed too virulent for medicinal use, though so far as we have been able to ascertain from our own experiments the two venoms are equally virulent. The venom is not used alone but mixed with other poisons mineral and vegetable, chiefly Arsenic and Aconite! So that it is difficult to say what part the serpent venom itself plays in the cure if a cure is effected.

Of the serpent venoms in use in our school, there has been no complaint as to their supply except in the case of Lachesis. The Cobra, or as it is also called *Naja tripudians*, may be had in abundance from India. The *Vipera torva* and *Redi* being common snakes in Europe, there can be no deficiency in their supply. There is also no fear of a fall in the supply of the genuine *Crotalus horridus*, as will be seen from the number for May 1894 of this

Journal. Of *Elaps corallinus* we have not heard much, being perhaps so little used. But of *Lachesis* the complaint is that we are still dependent upon Hering's original supply. Now Dr. Hering issued the following circular in 1878 to celebrate the Jubilee of *Lachesis*, but unfortunately for our school he did not live to publish his intended monograph :

" To All Friends of *Lachesis*.

" Be it known that next 28th of July it will be fifty years since the first trituration and first dilution in alcohol of the snake poison *Trigonocephalus Lachesis* was made.

" We intend to celebrate that day by closing a collection of reports, consisting of provings, toxicological effects, cures, characteristics, corroborations, etc., etc. Quotations from books or journals where *Lachesis* has been mentioned are solicited, since it is possible that some may have escaped the author's notice.

" In the life of the author the order of the *Parcæ* or Fates has been reversed. *Atropos*, the inevitable, who cuts the thread, came to him first when a little boy in the form of a caterpillar on his father's grapevine and gave the incentive to the study of natural history.

" Then came *Lachesis*, the disposer of destinies; and *Clotho* comes last and holds the distaff while the author spins the fabric of symptoms.

The son and daughter of *Lachesis*, by name *Psorium* and *Eysenium*, heretofore called *Hydrophobinum*, are receiving a careful revision and will be printed before long. The several brothers and sisters of *Lachesis* are waiting to be acknowledged, particularly the *Naja* of East India, and the Lance viper of *Martinique*. We do not even have a complete collection of the effects of the bite of any of these snakes.

" The *Lachesis Jubilee* could not be better celebrated than by sending contributions to such a collection; also cured cases, provings, etc., etc., all of which will be acknowledged by the author and embodied in the monograph.

" Constantine Hering."

From the above circular it will be seen that the account given by Prof. W. E. Leonard, an old pupil of Dr. Hering, in the *Minneapolis Homœopathic Magazine* for June 1895, which we quoted from the *Homœopathic World*, in the *Cal. Journ. Med.* for Aug. 1895, was not correct as to the actual date when the *Lachesis* poison was extracted and attenuated by Hahnemann's methods of trituration and succussion. That date must have

been the 28th July 1828, and not 1835 as Dr. Leonhard has put it. So that it is now exactly seventy-four years and six months that the poison was obtained and prepared as medicine for homœopathic purposes. Dr. Hering has not told us the exact quantity of the venom that he succeeded in squeezing out of the venom-bag of the serpent that was brought to him by his native assistants. The Snake was a big vigorous one, and supposing that at the outside this quantity was ten drops,—it could not have been more, it might have been less,—then the first centesimal trituration gave him 1000 grains or say in round numbers 2 ounces. If he had triturated the whole of this for the second trituration then he would have got 200 ounces or 12½ pounds. Or if, as is more probable, he had kept 1 ounce of the 1st trituration as a reserve for future triturations, he would have got 100 ounces or 6½ lbs. of the second centesimal trituration. If he had used only 1 lb. of this for the 3rd, keeping the remaining 5½ lbs. as a reserve still he would have got 100 lbs. of the 3rd centesimal.

Now the question is whether the triturations of *Lachesis* from the 1st to the 3rd have been exhausted in the course of three quarters of a century? In all probability the 1st trituration is gone. It would be highly interesting to know if there is any remnant of it still. If there is, has it kept well? The venom and the sugar of milk being both organic substances, has an intimate mixture of them, in the proportion of 1 of the former to 100 of the latter, not become decomposed in the course of so long a time? As regards the 2nd trituration, the quantity, being 200 ounces, the stock is also likely to have been exhausted, it having been used to prepare the 3rd trituration. The stock of the last probably exists as we do still get, though with difficulty, supply of it in ounces. Some ten years or more ago, through the kind instrumentality of a patient of ours, we got, with a copy of Hering's work, *Wirkungen des Schlangengiftes*, an ounce of the 6th decimal, that is, the 3rd centesimal trituration from America, said to have been obtained from Dr. Hering's son-in-law himself. This could not but be genuine, and shows that there is still available the 3rd centesimal trituration of the drug. But how long would it be further available? If the stock still exists it is because both for

provings and medicinal use no dilution lower than the 6th centesimal has been used. It is for respectable homœopathic chemists to say what quantities of the 3rd trituration each of them has, and if they have made any efforts to obtain the fresh poison.

This is a vital question for our school. True, hitherto no lower than the 6th centesimal dilution has been used, but that is because we have had no supply of the lower. We have no means of ascertaining whether in some cases lower dilutions would act better. From our experience with *Crotalus* and *Cobra*, we are inclined to think they would. In a case of gangrene we succeeded with *Crotalus* 4x where we had failed with the same drug 6x and higher. Why might it not be so with *Lachesis*? This is felt by all homœopathic physicians unbiased by the high dilution craze. Thus Dr. Hughes says in his *Pharmacodynamics* at the end of his lecture on the Serpent Venoms: "The observations of the curative action of *Lachesis* at least, if worth anything at all, prove the validity, not only of our therapeutic rule, but also of the infinitesimal dose. The results gained with it are all due to the sixth or higher attenuations, for we have never had lower ones in our hands. Dr. Hayward, whose energy has recently provided us with a fresh supply of rattlesnake and cobra poison, is endeavouring also to replenish our stock of that of the lance-headed viper. It will be interesting to ascertain if *Lachesis* will do more in the lower than it has done in the higher potencies." This was written in 1880, for no allusion is made here to Dr. Hayward's splendid monograph on the *Crotalus*; and no alteration was made in the edition of 1893. We have not been able to know if Dr. Hayward has actually been able to replenish our stock of *Lachesis*. We should be glad to hear from him direct on the subject.

If, as we think, the supply of *Lachesis* is still Hering's of 1828 then we ought to lose no time, indeed, we ought not to rest, till we have got a fresh supply. Though we may depend upon the original supply for dilutions higher than the 6th centesimal, we ought to have lower dilutions from the fresh poison. We ought not to remain satisfied with the provings already made with the 30th dilution. We ought to institute provings with the lower also, and this is only possible from the fresh poison. We ought to institute experiments on the lower animals with a

view to discover pathological lesions produced by it, and for this purpose we must have a pretty abundant supply.

There will be no difficulty in identifying the reptile. Its native name is known—Churukuku or Surukuku. The head of the Serpent which Hering used was deposited by him in the Academy of Sciences of Philadelphia. It was in all probability accompanied with a description of the serpent. Both the head and the description if there was any may be found still there. We happened to get some years ago, about 1875, a drawing of the head by Dr. Hering from the late Mr. Henry Turner, homœopathic chemist, of London and Manchester, enclosed in Hering's little work on *The Twelve Tissue Remedies* of Schüssler. We give below a facsimile of the drawing. We are sure a search for the serpent in Brazil would be successful. The patient of ours, alluded to above, who was a German merchant and had concern in the United States and Brazil, had promised to get a live *Lachesis* for us, but unfortunately the revolution broke out in Brazil at the time, and the poor man himself died before it was over.

THE HEAD OF TRIGONOCEPHALUS LACHESIS

From the original specimen now deposited in the
ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.



1. Tooth Carrying the poison.
2. Shows the aperture where the poison enters the duct.
3. Shows the opening near the point from whence the poison enters the wound.

HOMŒOPATHY IN THE NEW EDITION OF THE ENCYCLOPÆDIA BRITANNICA.

The Compilers, Editors, or Proprietors as the case may be, of Encyclopædias have a grave responsibility which they owe to their generation. An Encyclopædia is looked upon as an embodiment of the fullest and the latest knowledge of all the subjects which have come within the domain of the human intellect. And therefore it is incumbent upon the compiler, editor, or proprietor of an Encyclopædia that he should entrust the treatment of each subject or article to one or more authors who have not only a theoretical or book knowledge of the subject, but where possible a practical acquaintance with its details. The fact must be recognized that owing to the finite nature and consequent imperfections of the human mind, only those subjects have attained to the positive stage which admit of direct observation, experimentation and verification. These may be said to have passed the controversial stage and thus have become emancipated from the darkening and retarding influence of the passions which exercise such a control over human progress.

But there are many subjects still on which opinions may legitimately differ, and about which fierce controversy may rage, owing to one view or another of each subject affecting the conceit or interest of the parties concerned. These subjects belong pre-eminently to religion and almost in the same degree to medicine. How are writers to be selected on these subjects for an Encyclopædia? This will depend upon the views entertained by the editor or proprietor himself on these subjects. If he selects writers of his own views his Encyclopædia will lose its truly encyclopædic character. It will fail to present to the reader the fullest and latest knowledge of many subjects. It will be of a onesided character which, unless avowedly so, no encyclopædia ought to be. To be fair to all parties he ought to have such subjects treated by their representative men. Selection of contributors on this principle would produce an ideal Encyclopædia.

With reference to subjects about which difference of opinion prevails, but which have a practical side and admits of practical demonstration, the principle of selection would be easy of application. The editor would be perfectly justified in selecting only

those who have a practical acquaintance with the subjects. He would be wrong and guilty of unfairness if he were to act otherwise, if he were to select men whose opposition to particular views proceeds from prejudice or pre-conceived ideas and not from actual knowledge of the subjects.

If what we have advanced regarding the principle of selection of his contributors by an editor of an Encyclopædia be correct, then it will be seen how far the editors of the 8th and 9th editions of the Encyclopædia Britannica were right in having the articles on Homœopathy written by determined opponents of the system who had never tried it at the bed side. In these articles we had caricatures and not true representations of the system.

The article on Homœopathy in the 8th edition (1856) by Dr. Gairdner was the most extraordinary piece of misrepresentation that could be imagined. He must have thought that he had given a death blow to Homœopathy when he confidently wrote: "It must be apparent to any intelligent reader, that the system is that of a fanatic, not of a severe inquirer into nature; that it begins and ends in assumptions, of which it is difficult to say whether the first or the last be the most extravagant." "To the mind which regards all systems as subject to the rigid criticisms of facts homœopathy must ever appear one of the most unfounded and monstrous of delusions." Now the unbiased reader of Hahnemann's works could not but be impressed by his earnest appeal to facts and his warning against his own explanations and theories. To disregard his facts and pick up his theories for ridicule is not criticism but a gross perversion of it.

The competency of Dr. Gairdner for sound reasoning may be judged from the following specimen in which he ridicules and exposes the impracticability of the homœopathic formula. "In saying that 'like cures like' Hahnemann uses a form of expression which (especially in Latin) bears a very respectable resemblance to the enunciation of a great natural law. But examine that expression, and, still better, try it by instances. What is 'like;' and what unlike? Polonius thought that Hamlet's cloud was like a camel, a weasel, and a whale, in turn; it was probably as like the one as the other. One man sees a likeness between certain members of a family; another cannot see it; a third sees

it at one time, and fails at another. In one sense all men are more or less alike; in another infinitely varied and dissimilar. In the region of ideas, the poet and the wit equally see resemblances which duller minds fail to appreciate. The naturalist discovers likeness in those objects which to the ordinary sense are the most dissimilar; while flowers and minerals, birds and fishes—so like that the common eye cannot distinguish them from each other, or can distinguish them only with effort and by dint of instruction—are found to be placed far apart among the genera and species of the careful and analytic observer. In short, no feature of objects is more liable to be differently appreciated from different points of view, and by different minds, than precisely this one of external resemblance.”

This exquisite piece of reasoning is incoherent and self-condemning. Pursued to its legitimate consequences it ought to lead to the conclusion, that there can be no science; for science is built up by a due arrangement and systematization of resemblances and differences between objects and phenomena. And why? simply because of the difficulty of appreciating or interpreting them! Polonius did not himself think Hamlet's cloud was like a camel, a weasel, and a whale, in turn, but a consummate and born courtier that he was he gave ditto to the prince's suggestions simply to please him. Immortal Shakespeare, how hast thou been mangled by this son of Aesculapius to serve his miserable purpose of maligning the most beneficent truth that has ever been discovered! The whole article is of a piece with the specimen above given, and we need take no more notice of it.

Twenty-five years later, in the ninth edition (1891) of the same Encyclopædia, Homœopathy was again consigned to the tender mercies of an opponent of the system. It is true that Dr. Glover's article is a shade better in point of spirit and violence of language, but as regards the appreciation of the system it is no less one-sided and unfair. He makes capital of Hahnemann's looking upon diseases as “spiritual dynamic derangements of our spiritual vital principle,” and of his belief that because “the greatest number of diseases are of dynamic (spiritual) origin and of dynamic (spiritual) nature, their cause is therefore not perceptible to our senses,” and triumphantly

says that "Hahnemann's fine but fundamental theories about the spiritual and dynamic origin of diseases are all exploded by the revelations of modern pathology, and their demolition only completes that of his therapeutical theories which rested on them." And yet Dr. Glover tells us that "it would be unjust to him (Hahnemann) not to bear in mind that he claimed to base his views and practice on experience and sound experiment." If so, why dwell upon his theories, and not examine his experience and experiments by the light of further experience and experiments?

If "it may be admitted," as Dr. Glover was forced to say, "that homœopathy has done some service in directing more special attention to various powerful drugs, such as aconite, nuxvomica, belladonna, and to the advantage of giving them in simpler forms than were common before the days of Hahnemann," was it not incumbent upon those who made the admission to inquire on what principle were these powerful drugs recommended as remedial agents in disease, and if on that principle they really act as such, was it not their duty to adopt the principle in their practice instead of endeavouring to stifle it by specious reasonings? Instead of this, all that Dr. Glover could see in Hahnemann and his work was "that he had the great merit of disturbing and discrediting indefensible modes of practice." But what sort of a disturbance was it? Did it not create quite a revolution in the practice of the old school, compelling it to abandon methods and procedures and drugs as worse than useless, whereas formerly they were looked upon as constituting the only rational practice?

It is refreshing to see that in the new, the tenth, or Supplementary edition of the Encyclopædia, under the auspices of the widest circulated and most influential newspaper of the world, "The Times," of London, the writer selected for Homœopathy was one practically acquainted with the system, no less a person than the late Dr. William Tod Helmuth, the greatest surgeon of our school, and one of the greatest of the world. We have no fault to find with the selection on the score of ability and competency to deal with the subject, but we cannot help remarking that an equally good if not a better selection could have been made in England. There could not be a better authority to

write on Homœopathy than Dr. R. E. Dudgeon, of London; who has done more than any body else in diffusing a knowledge of the system throughout the English-speaking countries of the world; and who is respected by the dominant branch of the profession for his profound scholarship and high general attainments in literature and science. We would certainly have got a more scholarly, comprehensive, and convincing article from the pen of Dr. Dudgeon than we have from that of Dr. Helmuth.

Dr. Helmuth's article, while generally accurate, must be said to be very meagre as regards the statement and exposition of the principles of the system. Perhaps he was hampered by an assigned space-limit for both the exposition and the history of Homœopathy. While more than six and a half columns of small type have been devoted to the history, there are given only two and a half columns of larger type for the exposition. The history, extending to all countries where the system is recognized and practised, must occupy a larger space than an exposition of the principles, but still we think two and a half columns too small a space for the latter.

Dr. Helmuth defines Homœopathy as a system of therapeutics based upon the LAW *similia similibus curentur*. He then refers to the interesting controversy that has been carried on between members of the homœopathic school as to the proper construction of the Lat'n motto which constitutes its acknowledged basis. "For many years," says he, "the verb at the conclusion of the sentence was used in the indicative mood, thus making the sentence a positive one. After extended research it has been discovered that Hahnemann himself never employed *curantur* as descriptive of his law of cure, but always wrote *curentur*, which greatly modifies the meaning of the phrase. If the subjunctive mood be used, the motto reads, 'Let similars be treated by similars,' or 'similars should be treated by similars.'" It has been shown that the verb *curentur* makes the motto a rule of practice, and cannot cause it to signify a law of nature. We have shown that though Hahnemann originally used in the full sentence the verb in the subjunctive mood, *curentur*, he acquiesced in the sentence which contains the verb *curantur* and makes it indicative or positive and truly declarative of the law of nature on which his doctrine is based. If it had not been for this basis

on a law of nature, which he himself perpetually speaks of, his rule of practice could not have been justified. We have dwelt at this length on the point only to show that Dr. Helmuth was not quite correct in his definition of Homœopathy. It matters little whether the reading *similia similibus curentur* was officially adopted by the American Institute of Homœopathy, and so inscribed on the monument at Washington, and on the tomb at Père-la-Chaise at Paris. Such official adoption cannot convert a rule of practice into a law of nature.

With reference to Hahnemann's theory of chronic diseases, as derived either directly or indirectly from psora (the itch), syphilis (venereal disease), or sycosis (fig wort disease), Dr. Helmuth says, "in the light of advancing science such theories are entirely untenable, and it was unfortunate for the system which he founded that Hahnemann should have promulgated such a hypothesis." If we are not mistaken advancing science has not only not exploded Hahnemann's theory of chronic diseases, but shows the necessity of its further development. It demands that the psora should have a wider meaning than the itch. If any thing is established firmly as regards the etiology of disease it is the truly chronic nature of many diseases, their evolution from previous diseases either in the patient himself or in his ancestors, and who knows for how many generations? Certainly more than three or four. It is a tendency with many modern theorists to deny the heredity of even such diseases as tuberculosis and leprosy. There may be and often are counteracting circumstances which prevent the appearance of these as hereditary diseases, but the law of heredity remains all the same. Without the law of heredity living nature would cease to continue.

Dr. Helmuth then refers to the posology or theory of dose as another peculiar feature of homœopathy. He justly says: "The dose is the corollary, not the principle. Yet in the minds of many, infinitesimal doses of medicine stand for homœopathy itself, the real law of cure being completely put in the back ground. The question of dose," he goes on, "has also divided the members of the homœopathic school into bitter factions, and is therefore a matter for careful consideration." Dr. Helmuth should not have contented himself with this bare statement. He should have shown the way for careful consideration.

He next refers approvingly to the resolution of the American Institute of Homœopathy, ordered to be published conspicuously in each number of its *Transactions*, according to which, "A homœopathic physician is one who adds to his knowledge of medicine a special knowledge of homœopathic therapeutics. All that pertains to the great field of medicine is his by tradition, by inheritance, by right." • •

Among the salutary effects produced both upon the laity and the general profession of medicine by the introduction of Homœopathy, Dr. Helmuth instances the diminution of the quantity of medicine that was formerly considered necessary for the eradication of disease and the consequent revelation of the sufficiency of the *vis medicalrix nature* in many cases, and the gradually increasing adoption of the serum therapeutics by the old school. How far this last, which is nothing but a rough imitation of homœopathy untempered by its posology, is salutary, is a disputable point. Indeed, the trend of opinion seems to be that it is rather a dangerous method of treatment, and not unoften leads to disastrous consequences, as in the recent case in the Panjab with Haffkine's Serum.

Dr. Helmuth concludes with the following broad, catholic view of Homœopathy and of Medicine in general: "Homœopathy as it exists to-day can, in the opinion of its adherents, stand by itself, and its steady progress for a century in face of prolonged and determined opposition appears to its upholders to be evidence of its truth. There are still, indeed, in both schools of medical thought, men who stand by their old principles. There are homœopathists who can see nothing but evil in the practice of their brothers of the orthodox school, as there are allopathists who still regard homœopathy as a humbug and a sham. There are, however, liberal-minded men in both schools, who look upon the adoption of any safe and efficient method of curing disease as the birthright of the true physician, and who allow every man to prescribe for his patients as his conscience may dictate, and, provided he be educated in all the collateral branches of medical science, are ready to exchange views for the good of suffering humanity."

We earnestly believe and fervently hope that such views, liberal and truly scientific, will gain ground and prevail, and then the two schools of medicine starting with the same object in view—the restoration of disordered health,—but proceeding in what appears to be opposite directions in quest of the means for such restoration will, like voyagers starting from the same point but sailing in opposite directions, meet and embrace each other if they will only keep their eyes steadfastly on the polestar of truth, and not allow themselves to be tossed about by billows of prejudice, conceit and bigotry.

EDITOR'S NOTES.

A Coal Tar Disinfectant.

Dr. E. Klein, F.R.S. has recently proved from a series of experiments made with a coal tar disinfectant, called "Jeyes' Special Fluid," that the virulent tubercle bacilli deposited and dried on wood became completely disinfected by solutions of this fluid up to 1 in 800, the time of exposure being 24 hours.—*Brit. Med. Journ.*, 10th January 1903.

The Plague in India.

Whilst the Governing authorities of this country are busy with balls, festivities, *tamashas*, and *darbars*, the *British Medical Journal* are publishing figures, which show that plague cases are "again increasing in India, in almost every district." "The ratio of deaths to seizures" in such cases is alleged to be "about 70 per cent, the percentage being highest in Madras and the United Provinces, and the lowest in the Punjab."

Measles on the Arctic Coast.

Measles is said to be causing great havoc on Herschel Island and along the Arctic Coast. Captain Newth, of the whaling steamer *Jeanette*, which recently arrived at New York, is reported to have stated that at least 25 per cent, of the natives along the Arctic Coast have died of measles. He added: "They are dying off rapidly. Two years ago the devastation began, and it has increased since. When the natives began to wear civilized men's clothing and drink whisky, then began their decline. Diseases attacked them, and not knowing how to cure themselves, the people died rapidly. Pneumonia, rheumatism, grip, and other maladies made their appearance and spread along the coast with appalling results."—*Brit. Med. Journ.* Dec. 20, 1902.

Twin Pregnancy: Uterus Bicornis: Incarcerated Placenta.

Rudl (*Wien. klin. Woch.*, No. 11, 1902) diagnosed twin pregnancy in a primipara, aged 36. They were from separate ova, with distinct amniotic cavities and placentae. The lesser fetus presented by the vertex, right occipito-anterior position and was delivered with forceps; then the membranes were ruptured and the larger fetus extracted; it was a footling presentation and the placenta was expelled spontaneously. The placenta of the first fetus was retained, and flooding

set in. The cord seemed remarkably short; on search it was found to run through an orifice admitting three fingers. Beyond was the cavity containing the placenta, which was detached manually. After labour was completed the form of a typical uterus bicornis could be easily defined by palpation. One cornu had contracted on the placenta which it contained. The children were both males, and it appears were reared.—*Brit. Med. Journ.* Dec. 20, 1902.

Hygienic Milk Supply Exhibition at Hamburg.

We learn from the *British Medical Journal* (3rd January 1903) that in May next the Government of Germany is going to hold a Hygienic milk supply exhibition at Hamburg, to be divided into eight different departments. Of these departments the first will comprise "every thing relating to milk production including the exhibit of a limited number of cows of known pedigree; the carrying out of milk tests; the management of cows in stable and pasture; the clothing, health and supervision of persons having charge of them, etc. The second department will be devoted to the veterinary control of the condition of cows and of its relation to the purity of milk, to the laws governing sanitary management, the control of outbreaks of contagious diseases, the ordinary and special diseases to which cows are subject, to unwholesome plant foods and drinking water, and the excretion of medicinal stuffs through the milk. It will also include every thing relating to the means and apparatus which have been tried or perfected for disinfecting stalls." In this country the supply of pure milk is a desideratum of prime importance. Every effort should therefore be made to hold similar exhibitions here, at least for the proper nourishment of infants, if not for anything else.

Beware of the Kiss Microbe.

When we learn of the perils that beset our uninstructed ancestors, we wonder that so many reached the age of maturity. When we reflect on their meager knowledge of hygiene and sanitation we are amazed that any lived to be three score and ten.

It is only when one heeds the warnings of scientists and attempts to guard against bacteria that trouble begins. It was bad enough to guard against these pestiferous microbes in the ordinary walks of life. The man raised a feeble protest when informed that it was dangerous to read his paper at the breakfast table, for by so doing he might swallow the recently isolated newspaper bacillus. Or when he was warned against the telephone by a Louisville physician, who told him

of the danger of receiving a disease germ from the non-sterile transmitter.

But what will be said now, when the lover's prerogatives are assailed? It would seem that here, at least, one could put aside practical thoughts and devote oneself to forgetful pleasure. But not even here is one safe. For now a Western State Medical Society has passed a resolution condemning as dangerous the practice of kissing. The æsthetic bliss of osculation must hereafter be modified by the thought of possible pathogenic contamination. It will seriously detract from the felicitous enjoyment of the two contracting parties to be compelled to remember that in addition to their dual pleasure they are affording the medium for a blithesome picnic to a host of microbes.

The society is most heartless. It takes away a custom sanctioned by countless generations and proposes nothing in its place. Why not begin by suggesting some precautions? For instance: Scrub the lips thoroughly with green soap and cleanse with bichlorid solution before kissing; or, soak the head in boiling water for five minutes preceding the osculation. If some such well-known bactericidal measures as these were followed, the dangers from germ infection might be eliminated. And we are still wondering whether the resolution in the State society was introduced by some woman-hating old bachelor or by a disappointed, uncertain aged spinster.—*North American Journal of Homœopathy*, December, 1902.

Evils of Alcoholism.

We have often and often pointed out the great evils which the use of alcohol is calculated to produce. These opinions have been more than corroborated by the international medical manifesto on alcoholism which has been recently agreed upon by the Councils of the British and the American Medical Temperance Associations, by the Society of German speaking medical abstainers, and by the representative medical abstainers in France. This manifesto makes known to all that;—(1) "Experiments have demonstrated that even a small quantity of alcoholic liquor, either immediately, or after a short time prevents perfect mental action, and interferes with the functions of the cells and tissues of the body, impairing self-control by producing progressive paralysis of the judgment and of the will; and having other markedly injurious effects. Hence alcohol must be regarded as a poison, and ought not to be classed among foods. (2) Observation establishes the fact that a moderate use of alcoholic liquors, continued over a number of years, produces a gradual deterioration of

the tissues of the body, and hastens the changes which old age brings, thus increasing the average liability to disease (especially infectious diseases), and shortening the duration of life. (3) Total abstainers, other conditions being similar, can perform more work, possess greater power of endurance, have on the average less sickness, and recover more quickly than abstainers, especially from infectious diseases, whilst they altogether escape diseases specially caused by alcohol. (4) All the bodily functions of man, as of every other animal are best performed, in the absence of alcohol, and any supposed experience to the contrary is founded on delusion, a result of the action of alcohol on the nerve centres. (5) Alcohol tends to produce in the offspring of drinkers an unstable nervous system, lowering them mentally, morally and physically"

The document from which the above is an extract, and which has been reproduced in the *British Medical Journal* of 10th January 1903, is said to have been signed by a large number of medical practitioners (all total abstainers), including some 300 British doctors, 8 Americans, 100 Germans, 40 Russians, 36 Swiss, 17 Austrians and Hungarians, 15 Swedes, 13 Danes, 2 Dutchmen and 1 Frenchman.

Artificial Feeding of Infants.

S. Weissbein (*Deut. med. Wöch.*, July 24th, 1902) discusses the means of feeding infants, and takes as the basis of his arguments Heubner's analysis of mother's and cow's milk. In 1,000 grams of the former there are from 10 to 12 grams of albumen, 35 grams of fats, and 65 grams of sugars, and the whole represents between 613 and 621 calories. In the same quantity of cow's milk there are 34.1 grams of albumen, 36.5 grams of fats, and 48.1 grams of sugars. Many milk preparations have been introduced which are supposed to be able to replace mother's milk, but these are all very dear, and they contain so much fat that when they are sterilized the fats run together in the form of oil drops, and thus make the preparations indigestible. Apart from this, they contain much more albumen than mother's milk. Some physicians use diluted milk to which various starch additions have been made, while others use only starches which have been changed into sugars as additions. Soxhlet's nutrient sugar (*Nachrzucker*) is prepared partly by changing maltose and partly dextrin into sugars. He further adds a small quantity of acid calcium salts to render the rennet action more easily performed, and also 2 per cent. of common salt, which he believes renders the preparation more digestible. To prepare a good substitute for mother's

milk one must take one part of cow's milk and two parts of a solution containing 90 grams of *Nachrzucker* to the litre. In 1,000 grams there are about 11.4 grams of albumen, 12.2 grams of fats, and 106 grams of carbohydrates. Weissbein has tried this feeding on 26 children, with good results. In one case which he quotes he considers that this preparation had been the cause of an increase of weight of about 2lb. a day, which was the average for sixty-five in a child aged 11 weeks. In another case a 5 months old girl had been fed on milk and oatmeal, and showed signs of rickets, and weighed 10lb. At the age of 7 months she weighed 14lb., and, he continues, "the eczema was healed. The child looked blooming, and began to talk. Shortly after it easily recovered from an attack of pneumonia." In constipation he uses two parts of *Nachrzucker* and one part of sugar of milk, which he finds answers very well.—*Brit. Med. Journ.*, Dec. 27, 1902.

The Structure of the Retina.

During the past ten years our ideas regarding the structure of many organs of the body have been changed or considerably modified, but no change of ideas of so revolutionary a character has occurred as that which must take place regarding the structure of the retina, if the conclusions to which Mr. H. M. Bernard has been led by the investigations which he has carried out during the last few years are confirmed. In the summary of his results Mr. Bernard denies the cellular nature of the retina, which seemed not only to be so well established by the researches of the earlier observers, but also to have been confirmed by the utilization of Golgi's method of impregnating cells with metals. If Mr. Bernard's opinions are correct, the cellular structures so often described and so carefully classified are artifacts due to the methods of preparation and staining which have been adopted, for he asserts that the retina is a cytoplasmic reticulum in which the nuclei are suspended and through which the majority of the nuclei move outwards, some to form the nuclei of rods and others for unknown purposes. Moreover, the rods themselves are vesicular dilatations, projected outwards against the pigment layer, whence they absorb pigment granules which they transform into refractive matter. The outer segments of the rods consist principally of this refractive substance which has been modified from the pigment granules, and the function of the rods is not only to transform the pigment, but to transfer it inwards into the substance of the retina, through which it streams until some of it eventually passes into the vitreous.

Mr. Bernard is not content merely with denying the correctness of our conception of the nature of the nervous portions of the retina, but he also attempts to overthrow our belief in the sustentacular nature of the fibres of Muller, upon which so much stress has been laid in association with the formation and growth of retinal gliomata, for he claims that the so-called fibres are merely streams of altered pigment matter which has been absorbed by the rods, and which is passing inwards to enter the vitreous.—*Brit. Med. Journ.* Dec. 13, 1902.

Experiments to note the Effects of Pure and Adulterated Foods.

Professor Wiley, chief chemist of the United States Department of Agriculture, is carrying on a very interesting and important series of experiments with foods, the subjects of the experiments being 12 young men selected from the staff of the department. The young men will not eat any "poisoned" or adulterated food for about two weeks or until Professor Wiley finds out all about their physical peculiarities and determines just how much wholesome food it takes to keep each one at a certain weight. They were weighed and then had a breakfast prepared by the department's cook. Every ounce of food put before them had been carefully weighed and measured and every drop of water given them to drink had been filtered and rendered germ free. Every morning they will be weighed, their pulse taken, and the results noted on a big chart, and in the course of two weeks Professor Wiley expects to be able to tell to a fraction just how much wholesome, substantial food is necessary to keep each of them at the exact figure at which he weighed on the first day. When this has been accomplished the 12 men will be divided into two squads and will take their meals at separate tables, at one of which pure food will be served and at the other food which has been "poisoned" or adulterated by means of preservatives and colouring matter which are in general use in all classes of foods sold on the American market. The squad will be kept on their adulterated diet long enough to enable Professor Wiley to observe whatever effect it may have upon them. They will then have a rest of 15 days, during which time they will again eat nothing but pure food, while the other squad will take its place at the "poison" table. By alternating the two squads and comparing the results of the observations made while the members of the experiment table are on a pure food diet, with the observations of their respective physical conditions when eating food mixed

with supposedly poisonous substances, it is expected that it will be possible to determine just how deleterious to the human system the various adulterants, preservatives, and colouring matters are.—*Lancet*, Jan. 3, 1903.

Pancreatic Secretion.

New light has been shed upon the physiology and pathology of pancreatic secretion by the recent researches of Bayliss and Starling, which are set forth in the *Journ. of Phys.* (September 1902). Pawlow showed that the entry of the chyme into the duodenum produced a secretion of pancreatic juice, and regarded this as due to reflex nervous action. Popielski, and Wertheimer and Lepage, obtained the same effect when the duodenum and pancreas were isolated from the central nervous system, and concluded therefore that the reflex was peripheral. In investigating this question Starling and Bayliss confirmed the observation that a flow of pancreatic juice is rapidly produced by the introduction of acid into the duodenum, and further established that this is brought about, not by a nervous mechanism, but by the elaboration in the epithelium of the small intestine, through the action of the acid, of a substance which they have named secretin. The secretin is then carried by the blood to the pancreas, and at once causes a flow of juice. It can be obtained in solution by making an extract of the epithelium of the duodenum or jejunum with 0.4 per cent. HCL. (or various other acids). Such solutions have been made from the dog, cat, rabbit, ox, frog, monkey, and man, and produce a flow of pancreatic juice when injected into a vein of the dog. There is also some increase in the secretion of bile. Secretin is not yielded by any other tissue of the body. It is not a ferment, for it withstands boiling. The pancreatic juice produced is identical in its action with that obtained in Pawlow's laboratory from a permanent fistula. It acts little or not at all on proteid until a few drops of succus entericus (containing the ferment enterokinas) have been mixed with it, when it becomes very strongly active. Hence the inflow of acid from the stomach to the duodenum is, by means of a local chemical process, the normal exciting cause of the pancreatic secretion. To explain why dogs from which the stomach has been removed remain apparently normal the observation of Carvallo and Pachon is quoted that the extirpation of the stomach in dogs cannot, for anatomical reasons, be complete, and that cats, in which the viscus can be wholly excised, do not remain long in health after this operation. From the facts detailed in this paper it is clear that in the

many diseased states in which the gastric juice is no longer produced, or is secreted in diminished quantity, not only is gastric digestion in abeyance, but also the primary factor in the mechanism of the evacuation of the digestive juice of the small intestine is wanting. The administration of acids in these conditions also acquires a fresh significance. *Brit. Med. Journ.* Dec. 27, 1902.

Transposition of the Caecum : Appendicitis with Preponderance of Symptoms on the Right Side.

N. Damianos (*Wien. klin. Woch.*, August 21st, 1902) reports a case in which a previously healthy youth, aged 18, was on November 1st, suddenly seized with abdominal pain, which was followed by eructations, vomiting, and complete intestinal obstruction. On November 3rd he entered hospital. The temperature was 100 F., the pulse rapid but well sustained. The abdomen was slightly distended and generally tender. Extreme tenderness and reflex contraction of the abdominal muscles were present only in the right iliac region, and, on rectal examination, to the right of the recto-vesical fossa. Inflammation of a normally situated appendix was diagnosed, and immediate operation advised. Consent being at first refused, treatment was limited to an icebag and an enema, the latter bringing away both flatus and a copious stool. On November 4th the general condition was satisfactory, the pulse ranging between 108 and 124, the temperature being 99.3° F. and 100.8° F. On November 5th the temperature was normal, but the condition was otherwise unchanged. Von Mosetig-Moorhoff made an incision, about 6 in. in length, in the right linea semilunaris. Diffusely reddened, moderately distended, and adherent coils of small intestine presented. There was no trace of caecum or ascending colon in the normal position, which was covered with an uninterrupted layer of peritoneum. When the small intestine was pushed aside, pus escaped from the left side of the abdomen. The wound was, therefore, closed, and a corresponding one made on the left. There was a normal descending colon and sigmoid flexure, immediately to the right of which were the caecum and vermiform appendix, the latter surrounded with pus. The abscess was irrigated with normal saline solution, and the appendix ligatured and removed. A gauze drain was conducted out of the wound, which was closed round it. Death occurred on November 7th from vomiting and collapse. *Post mortem* the liver and stomach were found in their normal positions. The abscess was situated to the right of the caecum, between it and the coils of the small intestine. The greater

part of the ascending and the whole of the transverse colon were situated immediately below the greater curvature of the stomach, where they formed a complicated convolution, several coils of which were bound together by delicate peritoneal folds. The caecum and small intestine had a common mesentery; the former was fairly movable and was largely covered posteriorly with peritoneum. The remaining portion of the large intestine was fixed by a short mesentery to the posterior wall of the left hypogastric region. There was general fibrinous peritonitis. This malformation was due to failure of the lower coil of the embryonic intestine to rotate in a direction opposed to that of the hands of a clock from below and from the left upwards and to the right. The diagnosis of such a malposition is probably impossible, unless in appendicitis the typical tumour can be felt on the left side. The writer quotes cases which show that, just as in this case, the most prominent symptoms were on the right side, though the caecum was on the left, with a normally-situated caecum the greatest tenderness and pain may be in the left iliac fossa. This is most likely to occur either when the appendix runs obliquely to the left—for instance, under the root of the mesentery of the small intestine, and is surrounded at its extreme apex by a circumscribed abscess, or when it descends into the pelvis. In this case a pelvic abscess may form, ascend, and finally present in the left iliac region. But occasionally in inflammation of a normally-situated appendix the symptoms of circumscribed peritonitis may be almost limited to the left side.—*Brit. Med. Journ.*, Dec. 20, 1902.

CLINICAL RECORD.

Indian.

A CASE OF DIARRHŒA CURED BY *GUMMI GUTTI*.

By DR. MAHENDRA LAL SIRCAR.

A cook maid, T . . . , began to have purging and vomiting on the 14th July, 1902. The stools and vomiting were of such a character as to threaten to develop into cholera, and consequently Tincture of Camphor, a few drops in water, was administered. The threatened cholera was averted but the diarrhœa with occasional vomiting continued more or less, and by the 11th August became troublesome. The stools were liquid, frequent; flatulence was a marked symptom, giving rise to rumbling and tympanitic distension partially relieved by stool. These symptoms and the fact that her occupation necessitated frequent exposure to heat from the oven, induced me to give her *Carbo Veg.* 30, which she took for 3 days till the 13th, after which she felt somewhat better and I did not hear of her case till the 17th December next, when I learnt that she had fever on the 2nd, since when her diarrhœa had become worse. The symptoms now were: stools frequent watery and undigested, coming out with a gush, and preceded by pinching in abdomen, chiefly in epigastrium and hypogastrium, the urging being sudden after the pinching; gurgling as of fluid in the intestines; vomiting; great debility. *Gummi Gutti* 6x, a few doses (globules), in three days effected a complete recovery.

Foreign.

CASES OF HERPES CIRCINNATUS CURED BY *SEPIA*.

By DR. SCHWENCKE (Coethen).

1. A widow from the village P . . . z, in Anhalt, fifty-six years of age, of vigorous constitution, fair hair and evidently very sanguine temperament, was suffering from herpes circinnatus on the right side of the face. This had already extended over the nose, cheek and upper lip. The patient seems to have taken the matter easy for some time, but as the herpes continued to spread she was obliged to call in medical aid. She stated that she never had any visible cutaneous eruption, nor could she make any statement as to any ailment in the past.

I gave her six powders, with *Sepia* 15. These were to be dissolved in water, one a day, and a dose of the solution to be taken morn, noon and night. No change was seen at first, so that the remedy had to be repeated twice. But after that a change appeared and the

herpes gradually diminished, and at last totally disappeared and has not appeared again, a year having elapsed since the cure.

II. G. V., a mason's apprentice, seventeen years of age, also from this neighborhood, of very phlegmatic temperament, and particularly inert and awkward in his mental make-up, had had a herpes circinnatus for nine months, when he came to me. The herpes was on the right cheek and the itching was very troublesome. He could not state anything else about his health. During two months he received twice six powders of *Sepid 6*, one to be dissolved a day and taken at three periods of the day. The patient was cured of his ailment and remains in good health.

A CASE OF "SWAMP FEVER," CURED BY
URTICA URENS.

By DR. PETRIE HOYLE.

August 27, 1899. The same boy came to me to-day and asked me to go to see a friend of his, R. T., Co. F., 1st Colorado Volunteers, who was so ill when he landed that his parents were telegraphed for, to come at once before he died. They came, and signing some release I believe, took him out of the Presidio Hospital and hired a flat within three blocks of the Presidio gates. He had been ill with "Swamp fever" for six months. His color was like dark saffron. His spleen and liver fought for the median line about the umbilicus. He could not move unaided, he was so weak. Nothing but skin and bone. Temperature, $104\frac{1}{2}^{\circ}$ F. Vomiting, burning in stomach and abdomen. Burning mucoid passages. Great burning agony in intestines. Agony caused sweat to pour off. R. *Arsenicum alb.* 3x. Next day, August 28th, 7 A. M., no better. Pain in liver and spleen more pronounced; agonising. Vomit almost black and ropy. R. *Chelidonium* 1x ʒi in half glass of water, alternated with *Urtica urens* 5m. in tablespoonful of warm water. Sig—Alternately every half hour.

August 28th. 7 P. M. Second call to day; much better.

August 29th. Better. Continued the *Urtica* alone (the late Dr. J. Compton Burnett, that prince of pathologists, claimed that *Urtica urens* was the greatest splenic). This cured the case, and the boy's father asked me for the name of the medicine that had worked such a change. This I gave him, and he was ordered to give it on and off for a month or two. His son was taken away fairly well in two and a half weeks. Allopathy has nothing like this, and it is a very serious thing that our science is refused the soldier boys, who are more than

any other body of men subject to violent forms of disease from enforced exposure to climatic influences. Let the A Σ men band together in the demand for recognition in army and navy. I hope you will keep "telling" statistics before us from time to time. Fraternaly yours, Petrie Hoyle, M. D., in *Alpha Sigma*.—*Homœopathic Recorder*, October 15, 1902.

A CASE OF DIPHTHERIA.

By C. E. FISHER, M. D., Chicago.

Mr. Eugene B., a young man of twenty-four, was graduated last summer from the engineering department of the University of Wisconsin and employed as assistant engineer by the American Bridge Company in the construction of the State and Randolph Street bridges in Chicago, applied at my office for treatment for a sore throat on the afternoon of Saturday, September 20th. I have been particular about the individuality of the subject that whatever of query may arise in the mind of a doubting Thomas about the authenticity of the report of a case of malignant diphtheria cured homœopathically may be dispelled in the beginning.

Inspection revealed the fauces completely covered with a dark gray membrane. As far down the throat as could be seen this thick gray membrane was to be seen, while both tonsils were completely covered and the uvula and post-nasal cavity were already invaded, in these localities the membrane not yet having been completely formed. The patient was weak, his pulse was depressed, almost thread-like, his breath was intolerable, his general aspect one of a very sick young man. The soreness of the throat had been preceded by a general malaise of four days, and the throat had been sore for a like length of time. The character of the disease was undoubted. I called Dr. J. E. Sawyer into the office to see the case, and three days later Dr. H. C. Allen also saw the throat and pronounced it the worst case of diphtheritic membrane he had seen in many a long day.

The larynx was invaded to that degree that the patient was hoarse and could speak with difficulty. Swallowing was almost impossible, and the subject was already weak from lack of food and from the systemic poisoning he was undergoing. The heart-action was feeble and irregular, the skin swarthy, the sclerotic glassy and bluish, breathing was labored, his legs would hardly carry him; in fact he was a very sick young man. Not knowing that he had diphtheria he had made an office call instead of sending for a physician to see him.

The invasion had begun on the left side and had extended to the right and upward. The debility, heart weakness and sense of exhaustion, led me to prescribe Lachesis, which was given in the one-thousandth potency (Bœrjcke & Tafel), a small powder every three hours containing a few tiny granules of the remedy.

I saw the patient two days later and found his throat greatly improved. The left tonsil was clearing up, the right less thickly covered, but the upward invasion was pronounced. The uvula was swollen to twice its normal size and was completely covered with a gray membrane, which extended upward into the naso-pharynx and also out upon the hard palate a distance of a quarter of an inch or more. Only here and there was there to be seen a speck of mucous membrane through the leather-like deposit covering it. The prostration remained profound, the pulse was still very weak and now very slow, the patient showed an anxiousness that I did not like, and was restless. He could not be still, but desired to move and be about his room.

The Lachesis had started the case favorably but was now discontinued, the symptoms having changed, and Arsenicum album, also in the one-thousandth potency, tiny pellets in sugar of milk powder was given every three hours for a day, this being followed by saccharum lactis only. Within twenty-four hours under Arsenicum the patient had felt so much better that he wished to resume his work. His voice cleared up, the membrane simply faded away from the tonsils as if by magic, and at the end of thirty-six hours the uvula had also almost completely cleared off. Not in my thirty years of practice have I ever seen, under Mercurious cyanuret, Kali bichromicum, Phytolacca, Kali permanganum or even under polluted horse-serum such a magical dissolving of diphtheritic membrane and such a positive and complete restoration of physical energy and bodily health in diphtheria as under that one prescription of Lachesis and the one of Arsenicum. No other medicines were given, no spraying with peroxide, no carbolic washes, no iodine, no nothing but the two prescriptions. No untoward symptoms of any kind have followed. The case was typical, the result ideal.

Mr. B's. work took him among black mud and excavations along the banks of the Chicago river. It is difficult to imagine a more favorable opportunity for profound systemic infection. It is also more and more difficult for me, as I go along and watch the results under different systems of treatment, and under different combinations from different systems, to understand why the homœopath should hunt after other methods than those left by Hahnemann and verified by his followers. Every new case that comes under my observation like that of the young man just reported but makes me stronger in my confidence in a correct homœopathy.—*Homœopathic Journal of Pediatrics*, November 1902.

Glennings from Contemporary Literature.

THE RELATIONSHIP BETWEEN "THE SCIENCE OF THERAPEUTICS" AND OTHER SCIENCES.*

W. J. HAWKES, M. D.

LOS ANGELES

More than twenty years ago I made a prediction to the students of Hahnemann Medical College, of Chicago, that many of their number would live to see the day when science, not contemplating homœopathy, would demonstrate not only the truth of the "science of therapeutics," but also of its chief corollary—the potency of infinitesimal dose.

I made the prediction because I knew that both propositions were true; and that Time, the great friend of Truth and enemy of falsehood, would surely so demonstrate. And so it has.

I use the title "Science of Therapeutics" as synonymous with "Homœopathy." Carroll Dunham has so defined it. Nor was he, nor are we, presumptuous in so calling it, for it is the science of therapeutics, and there is none other.

Like other inductive natural sciences, it possesses the necessary two series of independent phenomena connected by the formula of their general relation: symptoms of the sick—therapeutic law—symptoms of the drug.

It possesses also the two essentials of such a science:

First. The capability of infinite progress in each of its elements, without such progress involving the destruction or denial of what has been previously constructed or received.

Second. It furnishes means of prevision; it provides for the prediction of future events within its own domain.

The astronomer, for instance, by means of the science under his law, predicts the hour of appearance of a comet which returns but once in many years, and locates new stars, as in the discovery of the planet Neptune.

The science of therapeutics, to be such, must be able to do likewise, that is to say: given certain phenomena (symptoms of the drug) it must be able to predict certain results with respect to certain other phenomena (symptoms of the sick) from the action of drugs administered under its direction. This it does.

Hahnemann himself furnished the most notable example of this prevision in connection with the first epidemic of Asiatic cholera in Europe in 1831-1834. Before the dreaded disease had reached Germany, and while yet neither he nor any of his disciples had seen a single case, he predicted that certain remedies, at certain stages, would be indicated and curative.

Dudgeon, in his lectures on homœopathy, says:

"Hahnemann, guided by the unerring therapeutic rule he had dis-

* Paper read before the Section in Materia Medica of the American Institute of Homœopathy at its annual meeting, held in June 1902.

covered, at once fixed upon the remedies which should prove specific for it, and caused directions to be printed and distributed over the country by thousands; so that on its actual invasion the homœopaths and those who had received Hahnemann's directions were fully prepared for its treatment and prophylaxis; and thus there is no doubt many lives were saved and many victims rescued from the pestilence. On all sides statements were published testifying to the immense comparative success that had attended the employment of the means recommended by Hahnemann, before he had seen or treated a single case. This one fact speaks more for homœopathy, and the truth of the law of nature on which the system is founded, than almost any other I could offer, *viz*: that Hahnemann, from merely reading a description of one of the most appallingly rapid and fatal diseases, could confidently and dogmatically say, such-and-such a medicine will do good in this stage of the disease, such-and-such other medicines in that; and that the united testimony of hundreds of practitioners in all parts of Europe should bear practical testimony to the accuracy of Hahnemann's conclusions."

The well-known "Chapman case" is a good illustration of the fact that the science of therapeutics is truly a science. In this instance identical letters were sent to ten representative physicians of both schools in as many of the large cities of the United States requesting a prescription for an ailment characterized by certain described symptoms, and asking that the name of the remedy be given with each prescription.

I was the homœopath, and Dr. Parks, since deceased, was the allopath, selected from Chicago.

The result was that all of the ten homœopaths prescribed the same remedy—*Lycopodium*—and all of the ten allopaths prescribed different remedies, and two of them prescribed proprietary drugs.

It would be difficult to conceive of a more striking contrast between the results of scientific accuracy and blind guess-work. It is at least improbable that ten physicians in as many widely separated cities, and all unaware that others were connected with the case, could have guessed the same conclusion. The only fair inference is that a scientific rule guided them to the unanimous conclusion; moreover, a similar test can be applied at any time with the same result.

It was a strange explanation of the unanimity on the one hand and diversity on the other that was offered by one unacquainted with and opposed to the science of therapeutics, when he said the result showed that the homœopaths were limited to one remedy for dyspepsia, while the allopaths had at least ten! With the poet, we are constrained to say:

"Judgment thou hast fled to brutish beasts,
And men have lost their reason."

In so far as scientific investigation and discovery of new truths, under whatever law, have affected the science of therapeutics, the result has been in every instance to uphold it. In no instance have they tended to overthrow the truths of homœopathy, nor weaken its claims as a guide to the healing of the sick.

Where such has seemed to have been the case, it was when the science of therapeutics was confounded with some other science, as Hygiene. It is a common mistake to confuse hygienic measures, methods and causes with those of therapeutics.

The science of therapeutics has to do only with the administration of medicines for the cure of the sick. Note well the distinction. All other measures resorted to by the physicians for the relief of the suffering properly fall under some other head.

The microbic cause of disease, whether universally true or not, has no bearing whatever upon homœopathy. What it teaches relative to sickness is a lesson in hygienic cleanliness—no more, no less. Yet we hear asserted often by weak-kneed homœopaths, with fear and trembling, that the truth of the microbe theory of disease is the death-knell of homœopathy. The assertion and the fear are absolutely without foundation.

The best preventive against disease, whether or not the cause be a microbe, is *perfect health* of the individual. Microbes have about as much chance of damaging a healthy body as bird-shot a battleship. It is only the sick body, the defective constitution, that the microbe effectively attacks.

But the function of medicine is to bring the body to as nearly as possible a perfectly healthy condition. And the science of therapeutics teaches how to apply medicines so as, in the best manner, to accomplish this chief end. Hence, the truth or falsity of the microbe theory of disease bears not at all at any point on homœopathy; as was said before, it is a hygienic question, pure and simple.

The sciences of hygiene and therapeutics are the twin hand-maidens of the up-to-date physician in his work of preventing disease and curing the sick; and are in no sense antagonistic. The sphere of the former is in preventing disease by perfect cleanliness and proper living. The function of the latter is the curing of the sick where a non-observance of hygienic laws has allowed disease to establish itself. They must go hand in hand. The physician who fails to apply the one and enforce observance of the other to the best of his ability falls proportionately short of having done his full duty. Yet how many are lax to a lamentable degree in the matter of enforcing observance of the laws of hygiene!

The discovery of new coal-tar hypnotics, and the like, has no bearing on the question; yet I have heard the charge of illiberality made against homœopaths because they decried the value and use of such.

Serum-therapy has been held up as a bug-bear to homœopaths, without good reason. If there is truth in serum-therapy it would seem to be along homœopathic lines. It is surely much like *vaccination*—inducing one diseased condition to cure or prevent another. *Antitoxin*, as a cure for *diphtheria*, is the most common form of serum-therapy. In regard to its efficacy for good, I can, from personal experience, say nothing. Those advocating its use quote volumes of statistics to show that since its introduction into medical practice the percentage of deaths from *diphtheria* has been reduced at least one-half, and are loud in its praises.

The sound of their praises had scarcely died away in the distance when up steps a company, serene and confident, who assert that there is no good in it. And they quote as formidable an array of statistics showing that the count was padded; that, since antitoxin came into action, the proportion of cases in a given locality diagnosed as diphtheria had increased more than a hundred per cent! and claiming that the remarkable increase was a result of inaccurate diagnosis *a la* microscope.

A witty one was asked who were the three greatest liars of record. His reply was "Annauais, Tom Ochiltree, and statistics!"

Within a month I was in consultation with a homœopathic physician over a case of diphtheria in a child. He said he invariably used antitoxin in treating this class of cases. There were two children in this family down with the disease. The doctor had already injected what he considered a full quantity into both patients. One seemed to be doing well; the other was getting worse under the treatment. This, he informed me, had been his experience ever since he began its use, i.e., some case it would seem to help promptly, while in others, regardless of severity, it would seem to have no effect whatever. He instanced one family where five members—all children—had diphtheria, all had antitoxin from the start, and all five had died! the antitoxin having apparently no effect, whatever in arresting the disease.

This physician confessed, while discussing the question of padded diphtheritic statistics, that he had in at least two cases diagnosed diphtheria "when he didn't think it really was!" and excused it by saying he "wanted to give the patient the benefit of the doubt!"

The unexpressed query in my mind was: how much benefit did the patients derive from the doubt?

The experience of a well-known professor in a Western college may serve to further illustrate the way the remarkable proportionate increase in the number of cases of diphtheria came to happen: Professor T. had living doubts both as to the accuracy of something in connection with these statistics, and the science and efficacy of the antitoxin treatment in diphtheria. He is also regarded as authority on all diseases of children. A servant in his house had sore-throat. He did not regard it as diphtheria, but was uncertain. He carried a sample of the exudate and the saliiva to the health office of the city for microscopic examination to ascertain whether or not it was diphtheritic. The health officer's report was that it was undoubtedly a case of that disease. The girl recovered promptly, and the doctor was and, I believe, still is of the fixed opinion that it was not. He next took a sample of what he could find in the mouth and throat of an apparently perfectly healthy member of his household to the same health officer, and received a similar report, viz: that the subject from which was taken this second sample had diphtheria. He then took a specimen from the mouth and throat of a large and perfectly healthy dog to the same health officer, and received a report similar to the other two!

The doctor was and, I believe, still is of the opinion that there is consi-

derable humbuggery about the diagnosticating of diphtheria in health boards by means of the microscope !

The lesson to be learned from this physician's experience, as well as from what antisticians tell us, and what they do not tell us, is that, even though it be conceded that the antitoxin treatment cured some cases, yet the fact that it fails in any case shows that it is not a cure-all in this disease, and that thus far there is no means of knowing the distinguishing features of the case it can cure from those of the one it cannot cure ; hence it is a matter of no higher scientific value than common, every-day guess-work, upon the possibilities of which there is injected into the life-blood of innocent children an unknown, unclean substance, the principal ingredient of which is pus from a diseased horse ! And all in the name of science ! And in this day and generation of ultra aseptic and antiseptic surgery, when everything in the operating room except the doctor and the patient and the doctor's whiskers and the microbe-laden air of the room is boiled and bi-chlorided to an absurd degree lest, perchance a microbe or two might be lurking there !

If antitoxin is to be used at all, the only scientific course to adopt in order to determine when it shall be used is to prove it ! Hahnemann's now as ever, is the only right way to ascertain the curative sphere of any substance which is brought forward as a curative agent. How many, think ye, of the doctors who so freely inject the dirty stuff into the blood of the innocent would be willing to act as provers and take the substance in the same manner as they give it to their patients ?

It seems to me that a careful review of the facts will show to the unbiased that the charge against consistent homœopaths—that they are unscientific and guilty of illiberality because they repudiate serumtherapy in its present pseudo-scientific state—will not hold, and that, on the contrary, the illiberality and lack of science is on the other side.

Perfect health being the best prophylactic, and the science of therapeutics being the best-known means of restoring perfect health, the homœopathic physician who is consistent and knows his business is convinced that he has a surer, safer and more scientific means of curing those ill of this most dreadful disease than any other now known.

Yes, I am free to say that I for one would gladly welcome and use antitoxin or any other agent that would enable me to cure every case of diphtheria. For I acknowledge my inability to do this by any agents of which I, at present, have knowledge.

Hygiene is the only science which is at all closely related to the science of therapeutics in the cure of the sick and the prevention of disease. It may be a disputable question as to which is of the greater importance. Hygiene (and by hygiene is meant cleanliness and proper living in their broadest meaning) is certainly the more important agent in the prevention of disease, and I am of the opinion it is of at least equal use in the cure of the sick. A rigid compliance with the laws of hygiene, moral as well as

physical, would in time eradicate disease entirely from the human family. To be sure many generations would doubtless be required for its accomplishment. A much shorter period would be required were the science of therapeutics and hygiene to go ever hand in hand, as they should.

All the pathological facts developed during the past decade with respect to disease causation, and especially the relationship of the microbe thereto, encourage me to proclaim that which I believe to be true, *vis*: that *all disease, recent and remote, has been caused directly or indirectly by filth.* The term is used in its broadest sense.

Disease-producing microbes are filth or its product.

Geologists tell us that at one period in its existence the earth was altogether inorganic; that there was no life on it. *This we believe—yes, know—to be true.* Hence life, disease, microbes, must have come to, or have been developed upon its surface.

In the light of evolution it is not conceivable that a destroyer of life should appear before life itself. Hence we must conclude that life came before disease or its cause. It would outrage all reasonable conception of the purposes of nature to suppose that she could create with the purpose of growth and perfection of the creature and then create also its destroyer.

Life, under law, came first. Disease and the microbe (which first) came next, as a result of a breach of nature's law.

It is not my purpose to enter into a discussion as to whether or not the microbe is more an *effect* than a *cause* of disease, but it does seem to me as though at least in the beginning the preponderance of evidence is in favor of the view that it was a result rather than a cause.

Take a number of healthy monkeys, rabbits and guinea pigs, fresh from their natural haunts and free from all disease-producing germs, into the mountain tops, where the air is pure, and also free from microbes; confine them in more or less close and imperfectly ventilated pens.

How long will it be until they sicken with tuberculosis? And how long will it be before the microscope will find the so-called disease-producing microbes? And whence will they have come? Will they have caused the disease, or will the disease have caused them?

To such as have not considered the question the claim that all disease originated from uncleanness in some of its many forms may seem unwarranted by the facts. But I can think of not one disease that cannot be traced to some form of uncleanness. We must use the term in its widest meaning. Over-eating, and generally unhygienic eating, causes disease by producing a variety of unclean conditions of the body. The diseases do not come, however, until after the unclean conditions obtain.

Civilization in its present state of advancement practices and almost necessitates modes of living which inevitably promote uncleanness and cause disease. It is unclean to breathe into one's lungs, one's own exhalations and excretions. Much more so to inhale those of others. But the houses and the schools and the public vehicles and the habits of civilization

make this form of uncleanness unavoidable. And it helps cause disease.

The experience recently of the health department here in Cleveland argues strongly in favor of the opinion that small-pox is a disease having its origin in filth. There would seem to be no room for question that its twin brother, viz., syphilis, is a disease with no other origin than filth. Typhoid, typhus and yellow-fever surely are, as are also cholera, the plague, etc.

With the diseases mentioned, the connection between the cause and the result is immediate and apparent. With such diseases as tuberculosis, chronic rheumatism, cancer, scrofula, etc., the connection between the cause and the disease is not so direct and apparent, but it exists nevertheless. As I said before, I can think of no disease, not surgical, the origin of which recent or remote, cannot be traced to some kind of uncleanness, some breach of the laws of hygiene.

Therefore, I say that the hygienic law is the only one which is at all closely related to the science of therapeutics, and that an understanding and application thereof by the physician is of at least equal importance with an understanding and application of the science of therapeutics itself.

Further, I can conscientiously say that, from the highest stand-point of the physician as a preventer of disease and healer of the sick, had I to choose between the two and could have but one, I would choose the science of right living.

Scientific progress in late years in a remarkable degree sustains the proposition of the potency of infinitesimals. The infinitesimal dose has ever been the object of ridicule on the part of the opposition, and the greatest obstacle in the way of fair practical test. It was claimed that it was impossible for any part of the original drug to be in, say, the 30th potency, and that, therefore, the claim that it possessed curative power was absurd, and the breadth and depth of the ocean was called in to prove it.

Those who thus argued and ridiculed, yet failed to apply the only satisfactory test, experiment, proved themselves illogical. The eye unaided detects the drug in the 3rd potency; with the aid of the microscope it can trace the drug in the 9th potency; with the aid of the spectroscope it is still discernible in the 12th, but can we logically claim that, because the finest instruments science and art can furnish us in aid of our natural senses, fail to detect the material beyond the 12th, that, therefore, it does not exist? Surely not.

The "new chemistry" as taught in Harvard College, in whose halls once lectured homœopathy's dearest and most effective foe—Oliver Wendell Holmes—demonstrates the existence of the 23rd decimal potency. And it surely cannot be claimed that old Harvard is trying to uphold the medical heresy of homœopathy.

Professor Cooke shows that there are one hundred thousand million, million, million molecules in a cubic inch of gas, and that each of these

• smallest points of matter possesses all the attributes of its mass. These figures represent the 23rd power of ten, and correspond with our 23rd decimal potency. And even then the countless multitude do not fill the space of the cubic inch, but have room to "fly back and forth with inconceivable rapidity," and do so fly.

There has recently been discovered a new substance, called radium, a new element, which possesses light, intrinsically, to an extent ninety times greater than any substance previously known.

Professor Thompson has shown, and his conclusions have been confirmed by others, that it gives off luminous particles which are less than one thousandth part as large as the molecules of hydrogen, which have hitherto been regarded as the smallest of all known substances. So small are these particles that the ceiling of a room twenty feet square would, according to Professor Becquerel, "give off only one two hundredth of a grain of radium in one thousand years. Supposing the amount required, to cover such a ceiling to be one hundred thousand grains, the supply of light, would not cease or diminish in less than one hundred million years."

Recent scientific discoveries show that light itself possesses considerable mechanical propulsive force. That matter can be so *finely and infinitely sub-divided* that the propulsive force of light overcomes the force of gravitation, so that, acting upon this infinitely sub-divided matter, the propulsive power of the sun's own light overcomes its force of gravitation, and drives it into space."

I have heard intelligent homoeopathic physicians in discussing the question of the potency of the infinitesimal dose, urge against the possibility of their believing in such potency that they could not conceive of any of the original drug being present in, say, the 30th dilution; that it was impossible of scientific demonstration; therefore they could not believe in its existence.

A much more marvellous yet universally acknowledged scientific fact is the ether which permeates everywhere and every substance, even the hardest steel. This mysterious, invisible, colorless, odorless, inconceivably rarefied something occupies every point of illimitable space. Its vibrations are electricity and light. When it vibrates 400 billions of waves a second we see red; when it vibrates 800 billions of waves a second we see violet.

Marconi, when he conceived the idea of trans-oceanic wireless telegraphy could not demonstrate to the skeptic, or the doubting (and they comprised all the world) the existence of material and tangible connection between the shore and the ship more than two thousand miles away, tossing on the bosom of the deep. Even such electrical wizards as Tesla and Edison were skeptical, and no wonder. To believe that man could, without material connection, talk with rain over two thousand miles away connectedly and intelligently so that skeptical bystanders could hear and understand would be to strain credulity to the breaking point, and would be a much greater tax on the imagination than to believe in the curative results of a potentized drug.

In an article published in the 1884 volume of *The Clinique*, I asserted, while upholding and accounting for the potency of the minimum dose, that nerve action was electrical; whether or not the experiments and their results of Profs. Loeb and Matthews prove the possibility of parthenogenesis, their conclusions point not only to the fact that nerve action is electrical, but that electricity is the basis of life for itself, and that the medium of its transmission is probably the aforementioned omnipresent ether.

Their experiments were especially interesting to me, because of the remarkable effects of a solution of common salt—chloride of sodium—upon the action of the heart, and their explanations thereof. *Natrium muriaticum* is the medicine which taught me to truth of the claim that the 30th potency is actively curative, even when the crude substance is being used by the patient at the same time and is medicinally inert.

We must look alive or others will steal our thunder by first demonstrating to and convincing the world of the truth that infinitesimal, imponderable and—in their essence—unknowable influences are the most potent in nature.

Professors Loeb and Matthews arrived at the conclusion that it was the electrical condition of the molecules of the salt solution which caused its ability to affect the action of the heart muscles.

It has been known to the science of therapeutics for a hundred years that chloride of sodium, when its particles were *sub-divided to an incalculably minute state*, possessed remarkable properties which were not exhibited in its crude state. The science of physiology is demonstrating the truth of these truths and is discovering others.

Whether or not Professor Loeb has discovered a process of creating life, he has certainly earned the gratitude of the scientific world.

And why should the claim that he had done so be regarded with incredulity and ridicule?

Life on the earth must have had a beginning *somewhere and somehow*. At one time, as we are told by geologists, the earth and everything on its surface were inorganic. At one time there was absolutely no life of any nature on this round world of ours. Hence life must have had a beginning. In accordance with the theory of evolution it must have begun with the lowest imaginable forms.

The spare-rib story about Adam and Eve will not answer; "The Testimony of Rocks" demolishes that. To unbiased reason it would seem that the only conclusion as to the origin of life on the earth is that it originated as a result of the action of chemical or electrical forces inherent in its substance. This would seem to be in line with the results of the experiments and conclusions of Professors Loeb and Matthews.

Homœopathy stands to-day with respect to fundamentals precisely where it stood one hundred years ago. It has been traduced and misrepresented all through these years by those who did not know the truth, or, knowing, failed to respect it.

As a striking example of one or both, it is only necessary to quote from an editorial of Dr. Geo. F. Shrady within the last decade in the *Medical Record*, the leading journal of the old school in this country, in which he defines Homœopathy as "the theory that the more a drug is diluted, the greater becomes its power." Whether such an inexcusably false statement from such high educational authority be from ignorance or from a more reprehensible cause, the effect is the same—truth is for the time buried, and falsehood is spread broadcast in its name. But the Truth will not remain long buried. On the contrary, we find in all recent books on practice in the old school unmistakable evidence in abundance that they are fast learning that the true and only scientific way of learning the curative sphere of drugs is by testing their effects upon healthy human beings—not on animals.

The same is true of the saying of prominent essayists at national and international congresses of medical associations during the last few years. This is especially true of papers read at the Tubercular Congress. Pages could be quoted, did space permit, from such sources, in which Hahnemann's idea may, almost his words—are freely expressed, but in no instance giving any indication that the authors had ever heard of Hahnemann or read his writing.

In conclusion I make another prediction, viz., that many of the younger among us to-day will live to see the time when the principles of homœopathy, "the science of therapeutics," will be acknowledged and the art practiced by educated physicians the world over.

DISCUSSION :

J. P. Rand, M.D. : The relation between the "Science of Therapeutics and Science in General" is akin to the relation between a living stomach and a dead crucible. The chemist puts certain ingredients in his retort, and, given a definite mixture and a known temperature, he will get uniformly the same result. But when you put drugs into a human stomach, you have a receptacle that is both active and passive, and until you know more than it is possible for any one but the Creator to know, you can't be sure of the result.

There is such a thing as a science of chemistry. Formulas may change and theories may be discarded, but the combination of the various minerals and salts will remain the same. But the human body is subject to endless variations. No two persons are exactly alike, and you cannot be sure that they will respond exactly the same to the action of drugs. Even the same person at different times will not, as proved by the evidence of many observers.

I think that the Doctor has begged the whole question in his assumption that there is any such thing as a science of therapeutics. Science implies actual knowledge. Does the Doctor, or anybody else, know absolutely how any drug will affect the human body in a given case? Can he or anyone else explain why *rhus tox.* is highly poisonous to some and not at all to others? Therapeutics is an art, closely bordering upon what is understood

as a *science*, but never quite attaining it, and, as the Doctor affirms, is capable of unlimited development. Homœopathy, with its system of drug-proving, its exhibition of the single remedy, and its application to the totality of the symptoms, has touched the high-water mark in medical therapeutics. Serum-therapy perhaps comes next. But the multiform mixtures of the dominant school, and, for that matter, the compound triturate as employed by many homœopaths, are as far from representing any "science" in therapeutics as boarding-house-hash is from representing any science in cookery.

Then too, the action of the mind upon these sensate bodies of ours has a tremendous influence upon the effect of drugs which we administer to our patients. We do not pose as Christian scientists or mental healers; we may even deny the existence of any such thing as mental therapeutics, and ascribe all our results to the wonderful effect of "the indicated remedy." But we all practice them just the same. The patient's belief in his physician, and the physician's belief in his ability to cure, are as truly factors in bringing about a successful result as the drug prescribed—perhaps more so—and no one can measure these forces exactly, or determine their influence in any individual case.

We are mental healers, whether we acknowledge it or not. When we tell a patient, "You are feeling better to-day," we have re-enforced our prescription by mental therapeutics. The man does not live who could actually believe he had taken a deadly poison without being affected by it! In like manner, every patient who takes a "placebo" is affected. The faith of the patient is as truly an active therapeutic agent when it is pinned upon a drug as when it is fastened upon persistent prayer of an amulet!

Until you can comprehend what we understand by the vital force; until you can reduce this wonderful mechanism of the human body to the dead-level of a chemical retort,—you can really have no science of therapeutics, and if there is no science of therapeutics there can be no relation between it and anything else.

But, after all our definitions, the facts remain the same. It really makes no difference whether therapeutics is a science or an art, and the Doctor has surely given us a most excellent paper from the popular professional standpoint. It is well to set our mark high even if we never reach it. We all wish medicine was a science—an exact science. Some day it surely will be more exact than it is now. We need have no fears for the future of homœopathy or for any other fact in medicine. Truth will remain! Facts never contradict! Whatever in our system of therapeutics is false will pass away, and we ought to be glad of it. Whatever is true will remain, and every genuine discovery in the future will confirm and sustain.

THE EFFECT OF THE USE OF TOBACCO ON THE SYSTEM OF THE DEVELOPING YOUTH.*

CH. GATCHELL, M. D.
CHICAGO.

Some years ago an eminent countryman of ours made the statement that "tobacco is a necessity."

I am of the opinion that the late Mr. Blaine was a higher authority on the subject of the tariff than upon that of the tobacco-habit. That tobacco is a comfort and solace to those who use it, I do not deny. That it is a necessity, I seriously question. If it is a necessity for mankind, then why not for womankind? It seems to me that this question reduces the problem to its lowest terms.

If tobacco really is so great a solace to man as its *habitués* claim, then I would propose that its use be limited to unmarried men. No man who is married should use tobacco unless his wife is to enjoy a like privilege. Chocolate caramels are no adequate substitute.

But this is beside our subject.

Whatever may be said of the effects of tobacco on the mature organism, the consensus of opinion on the part of the best authorities is that it is highly deleterious to the system of the growing youth. It is charged with obtunding the mental faculties, blunting the moral sense, retarding physical development, shattering the nervous system, and seriously impairing the special senses.

Let us see what it is at whose door this indictment is laid, and let us see how well the charge may be maintained.

The weed itself calls for no description. The present inquiry is concerned only with its properties, and with the effect of the smoke of burning tobacco when inhaled. Moreover, reference will be made more especially to that form of smoking which consists in the use of the cigarette, for the reason that, in the young, it is the favorite form of indulgence. Cigarette-smoking, also, is more harmful than other forms of smoking because there is greater inclination to inhale the smoke, and greater quantities of it are drawn into the lungs and made to come into contact with the surfaces of the mucous membranes of the upper air-passages.

Tobacco-smoke contains nicotine and a series of empyreumatic products chief of which is pyridine. In addition to this it contains creasote, hydrogen-cyanide and sulphur gases, and of carbon-dioxide, 9.3 per cent. It was formerly taught by Vohl and Eulenberg that tobacco-smoke contains no nicotine, but this is an error. Kissling has recovered a large percentage of nicotine from tobacco-smoke.

Tobacco-smoke, therefore, owes its toxic properties to the presence of the contained nicotine, of pyridine, of the various other empyreumatic substances, as well as the carbon-dioxide.

When the smoke of tobacco is inhaled it comes into contact with the mucous membranes of the air-passages, the contained toxic agents are absorbed, they are taken into the circulation, and acting upon the nuclei of the various cells, they there exert their specific effects.

In order to apply our knowledge we must first consider the specific effect of tobacco upon the organism, and, for present purposes, more particularly upon the organism of the developing youth. That its effects are more serious in the young is not disputed. The reason for this greater susceptibility is that the cell-life of all the tissues in the young more nearly approaches the embryonic than in the adult.

* Paper read before the Section, in Sanitary Science and Public Health of the American Institute of Homœopathy at its last annual meeting, held in June 1902.

The effect of tobacco upon the various tissues and organs is primarily through the medium of the nervous system. It affects both the cerebral and the spinal nerves, and also the nerves of the cerebral cortex. Its effects upon the motor nerves are seen in the resulting muscular tremor.

Its effects upon the nerves of the cortex are revealed in a dulling of the senses and blunting of the mental processes, which occur more especially in the young. For this reason it hinders the development of the nervous centers. Of the nerves of special sense, it has specific action upon the optic-nerve trunk and its distribution in the retina, where it produces a post-bulbar sub-acute or chronic neuritis, giving rise to tobacco amblyopia and amanosis. This condition, if progressive, leads to impairment of sight and practical blindness.

But it is upon the heart that tobacco expends the action that is most disastrous. Its effect upon the heart is primarily through the medium of the vagus, which first is stimulated and later suffers from paresis both at its center and in its distribution. But the effect is not confined to the cardiac nerves, for Allbutt is undoubtedly right in his claim that eventually the muscular structure of the heart suffers from fatty degeneration.

The condition known as "tobacco-heart" presents itself in many forms, accompanied by a great variety of symptoms. Primarily the effect upon the heart is to slow it in its action, but secondarily there may be greatly accelerated action. The characteristic condition is one of palpitation, with great irregularity of action, which may amount to *delirium cordis*. Pain, in greater or less degree, is usually present. This may amount but to a feeling of oppression, or it may be so severe as to create a condition of *angina-pectoris*. The over-action of the heart may lead to hypertrophy, to secondary dilatation, and to relative valvular lesions.

As another effect of tobacco the nutritive processes are much impaired. This may be due to the disturbances of digestion produced by the direct action of tobacco on the stomach, or it may be due to its action on the trophic centers. The result is defective growth, often found in "stunting" in the young.

What has here been stated would have but little meaning if accurate observation did not confirm the claims set forth. This is easy to do. There are now numerous instances recorded demonstrating the harmful effects of tobacco on the organism of the developing youth.

In January last physicians acting as School-Inspectors in Chicago examined one hundred young men in eleven different High-Schools for admission to the various athletic teams, in the sports of which unusual exertion is required. Out of one hundred aspirants the examining physicians rejected twenty-one. *Every one of the candidates rejected was a tobacco user.* Of the twenty-one, eighteen suffered from some form of tobacco-heart. The verdict of the examining physician in each of these cases was that the condition of the heart was such as to unfit the candidate to indulge in the exercise required by the sport. The form of tobacco used was, in fourteen instances, the cigarette. Of the rejected candidates, one admitted that he smoked from twenty to thirty cigarettes daily; another that he smoked from forty to fifty.

Of the seventy-nine successful candidates, as to the use of tobacco almost all were total abstainers, and a few used the weed only moderately.

Now, here is the other side. At the same time these examinations were made a large number of girls in the same High-Schools were examined for positions on basket-ball teams, and for other sports requiring unusual exertion. *Not one girl failed to pass!* Among the girls, in not a single instance was a heart resembling tobacco-heart found.

But observation further shows that the evil effects of tobacco in the young result not only in physical defects, as indicated in the instance of the boys of the Chicago High-School, but they are also responsible for mental degeneracy in various degrees and forms.

Prof. Herbert F. Fiske, Principal of the Northwestern University Preparatory School, at Evanston, Illinois, observed that among three hundred boys under his care, of those who failed in their examinations or were otherwise deficient in their studies, almost all were "cigarette fiends." His observations and statistics cover a period of several years. The result of his investigations may be expressed in this wise: Of boys in the highest grade of scholarship, only two per cent. were smokers, while ninety-eight per cent. were total abstainers; of the boys in the lowest grade in class scholarship, fifty-seven per cent. were smokers. As Prof. Fiske expresses it, "*The proportion of tobacco-users increases in inverse ratio to the scholarship.*"

Further evidence of a like nature comes from the superintendent of schools, of Kokomo, Indiana. One thousand boys, from the first grade to High-School, were submitted to critical observation and examination by the entire corps of teachers. Over one-third of the boys were found to be smokers of tobacco, for the most part in the form of cigarettes. *In the same-school-grade the tobacco-users averaged one year older than the abstainers.* The teachers made critical observation of all pupils with reference to their mental aptitude and powers of control. Opposite the names of the tobacco-users were many such entries as these: "Self-control poor;" "inattentive;" "not trustworthy;" "bad memory;" "no power of concentration"—and many other such comments.

Probably the most exact and systematic investigation of the effects of the excessive use of tobacco on the physical condition of the young was made by Seaver, of Yale. One hundred and sixty-nine young men were subjected to observation. Of these, seventy-seven were non-users of tobacco; twenty-two were occasional users, and seventy were habitual users. In one year's time the non-users increased in weight 10.4 per cent. more than the regular users, 6.6 per cent. more than the occasional users. In height the non-users increased 24 per cent. more than the regular users, and 14 per cent. more than the occasional users. In chest-girth, the non-users had an advantage over the regular users of 26.7 per cent., and over the occasional users of 22 per cent. In lung capacity the growth was in favor of the non-user 77.5, when compared with the regular user, and 49.5 per cent. compared with the occasional user.

In view of facts here stated the conclusion is inevitable that the use of tobacco, whatever may be said in the case of the adult, in the young during the period of development is absolutely pernicious. It may with safety be said that its excessive use dulls the intellect, alters the moral nature, impairs nutrition, stunts the growth, causes functional and organic heart-disease, seriously affects the eyes, and in other ways contributes to physical and mental degeneracy.

With this before us the question is here submitted to this representative body of physicians, the American Institute of Homœopathy,—Is it not the duty of the individual members of the medical profession, as well as of its organized bodies, to do all in their power, by every possible means, to limit and to eradicate this great and threatening evil?

This question I submit for your consideration.

DISCUSSION.

G. W. BOWEN, M. D.: For twenty years I have observed the effects of tobacco on young men who use it. They do not remember well, they are not reliable, you cannot always depend upon what they say. I have treated certain families for three generations, and watched results, and

know of several intellects that have thus been blighted. Tobacco blunts the intellect ; it stunts the body ; it diminishes and lessens a man's morals ; like opium, it almost makes the young man a prevaricator.

Acknowledgments.

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PRACTICAL NOTES ON SOME OF THE HOMŒO-
PATHIC REMEDIES IN THE TREATMENT
OF PLAGUE IN CALCUTTA.

BY DR. AKSAY KUMAR DATTA, L.M.S.

[We have great pleasure in giving a prominent place to the following Notes inasmuch as they form the first and a most valuable contribution to the treatment of plague on homœopathic principles by an Indian physician. The Notes reveal their author as an acute, observant clinical expert. It is a great satisfaction to us to see how some of our suggestions based on the law of similars have been verified by Dr. Datta's clinical experience. His differentiation of the serpent venoms (*Cobra*, *Lachesis* and *Crotalus*), is practical and in some points supplements our own. His experience with *Pyrogen* has brought out a neglected drug into prominence as a remedial agent of remarkable efficacy in septic fevers, and we are particularly glad of this inasmuch as it has corrected the not very favorable opinion we had formed about it upon *à priori* grounds. His observations on some other remedies, as *Cumpher*, *Carbolic acid*, *Ignatia*, *Badiaga*, and *Kali chloricum*, are also very valuable. Dr. Datta's experience

with *Camphor* and *Kali chloricum* seems to us to be unique and original, and is deserving of commendation for having brought out these unthought-of drugs as valuable remedial agents in some stages and conditions of plague. The homœopathic materia medica, imperfect as it is, is a rich store house, and we are confident that a diligent search into it and a patient study of its contents cannot fail to be rewarded with precious discoveries which will be of immense benefit to the practitioner at the bed side. We hope our other colleagues will follow the good example of Dr. Datta and give the public the benefit of their experience.—
EDITOR, *Cal. Journ. Med.*]

SELDOM, if ever, does it fall to the lot of a private practitioner of Homœopathy in this country, to treat a sufficient number of genuine and typical cases of plague, to enable him to acquire a definite and reliable experience for his future guidance in the treatment of this dreadful disease. This is partly due to the poverty and ignorance of the class of the people from among whom plague counts its large number of victims, and partly due to the prejudicial influence exercised by the members of the dominant school of medicine. Nevertheless this deficiency was unfortunately made good by the prolonged stay of the epidemic amongst us and opportunity was thus offered for accurate observation and clinical experience. Even with the experience thus obtained, I can venture to assure both the profession and the public that the resources of Homœopathy in combating this disease are much more ample and effective than those of any other system of medicine known to us, and that we can safely rely upon it in the treatment of plague with as much confidence as in that of Asiatic Cholera and various other types of low adynamic fevers of this country. For the sake of convenience I shall here arrange, according to their importance into four groups some of the plague remedies that have proved highly efficacious in my hands. Thus, Group first includes:—

Cobra (*Naja Tripudians*), *Crotalus*, *Lachesis*, *Pyrogenium*, *Veratrum alb*, *Veratrum viride*, *Aconitum*, *Camphor*, *Carbolic acid*, and *Arsenicum alb*. These are the medicaments that have given

me signal service in treating some of the fulminating types of the disease.

An individual goes out of home at the usual business hour apparently in the enjoyment of health, comes back, either from school, college, office, market or any other place of business, with slight headache, feeling of heat, soreness of the limbs, lassitude of body and mind, depressed spirits, with smarting pains in one of the inguinal or axillary glands, and says he is much tired and fatigued having very little inclination to food but badly wants rest. Accordingly he goes to bed, falls asleep and after a couple of hours or so, his relatives find his body hot and covered with perspiration, eyes red, snoring breathing, almost drowsy, and answering questions rather listlessly, talking at random, with a sort of muttering delirium, and could be roused with difficulty. From this state the patient may pass on to deep comatose condition with dyspnoea, rattling of the throat and trachea, high temperature, tumultuous action of the heart, thin wiry quick pulse which can scarcely be counted, followed by death in the course of from twenty-four to forty-eight hours or a little longer.

I have used *Cobra* in the 6th and in the 30th dilutions in such a state of the patient when coma is not profound and difficulty of deglutition not so great as to prevent entrance of any liquid into the throat, with admirable effect. In fact, the profounder is the affection of the higher nervous centres with impending asphyxia and threatened dissolution of the entire organism, the greater is the indication for *cobra* pronounced. With the above picture of the attack, if there be petechial marks on the shoulder, arms and chest, eyes red and suffused, and general or diffused swelling of any part of the body accompanied by glandular hardness and pains and an extreme soreness of the body, *Crotalus* is much better indicated than any other medicine. I have used it both in the 6th and the 30th dilutions with wonderful results. If again with the above conditions, swelling of the face and neck with red painful enlarged glands, of the submaxillary, parotid and tonsillar regions, exist, with extreme difficulty of deglutition, fetid breath and a putrid condition of the mouth, *Lachesis* is better indicated than the two above. Besides, when the whole condition described above continues for few days in a

more or less subdued form, when blisters, erysipelas, boils, carbuncles and local gangrene gain time to develop (these being much rare in cases seen in Calcutta) then of course the indications of Lachesis are more fully pronounced (Ars. alb.). In the hæmorrhagic complications; with or without jaundice, both *Crotalus* and *Lachesis* have given me excellent results.

But nothing seems to me so highly efficacious in combating the fever of plague, which is undoubtedly of a septic nature, as *Pyrogenium*.

Pyrogen, *Pyrexin*, *Sepsin*, is a liquid chemical product, non-living, that is without bacteria or bacilli in it, like the serpent poison, and does not act in the system by multiplication but seems to act directly on the blood. It is obtained as "a product of the decomposition of chopped lean beef in water, allowed to stand in the sun for two or three weeks. Dilutions should be made, according to Burnett, direct and without glycerine." (Clarke). Dr. John Drysdale was the first to suggest its introduction into Homœopathic practice ("On Pyrexin or Pyrogen as a Therapeutic agent.") He got the hint from Dr. Burdon Sanderson who, in the *British Medical Journal* of 13th Feb. 1875 remarked: "Let me draw your attention to the remarkable fact that no therapeutical agent, no synthetical product of the laboratory, no poison, or drug, is known which possesses the property of producing fever. The only liquids which have this endowment are liquids which either contain bacteria or have a marked proneness to their production." Such a product may be obtained from pus or blood or tissue protoplasm elaborated by living bacteria. Dr. Burdon Sanderson originally experimented with such a liquid product upon dogs, in whom, after injecting $\frac{1}{2}$ a grain of the solid extract (which is the ordinary non-lethal dose for an adult dog) he produced a rise of temperature from 2° to 3° Centigrade with shivering, restlessness, thirst, muscular debility, vomiting, mucous diarrhœa, etc. In fatal cases death took place from failure of the heart's action with well-marked gastro-intestinal (enteric) symptoms. The symptoms and pathological effects were substantially the same in man, and post-mortem examinations revealed facts of an analogous nature, between the symptoms and morbid appearance, and state of blood in septicæmia after wounds and experimental poisoning

- with *Sepsin*. Upon these facts Dr. Drysdale wrote his paper and Dr. Compton Burnett actually prepared dilutions of the same product and put it to clinical test. He said that the 6th dilution is quite safe for even a child ("Fevers and Blood-poisoning and their treatment with special reference to the use of *Pyrogenium*."

Since then partial Proving's and Clinical tests have been made with this substance in America and other places. (*Vide Clarke's Dictionary of Materia Medica.*)

Dr. Allen in his new edition of "Therapeutics of fever" has given a full description of its clinical provings and uses, with special indications. The same article is also introduced in the second edition of his "Key-notes."

I generally use the drug in its 30th potency in plague for fear of aggravation, and am always satisfied with the results obtained. When the individual recovers from the first shock of the attack, when the fever continues high with slight exacerbation and remissions with typhoid symptoms, lung complications and gastro-enteric complaints, extreme prostration and low delirium, and when above all, some of the well-selected medicines, in ordinary use, fail to cut short the course of the fever, *Pyrogen* should be used, and from the results obtained I can venture to say that it almost acts as a specific in many cases, but it requires a little time to act, the favorable changes may not be apparent after a single dose or in a single day in every case.

Camphor has given me a good deal of satisfaction in some cases of plague and my object in mentioning it here is to remind my colleagues that it should not be lost sight of altogether in the treatment of plague. Even in some desperate cases where ordinary well indicated medicines seem to fail, *Camphor* comes to the rescue. Threatened collapse with cold clammy perspiration, anxiety, restlessness or extreme lethargy, from which one can be scarcely roused, passing on to delirium or profound unconsciousness and with thready scarcely perceptible pulse, calls for *Camphor*. I always, in such conditions, use the strong tincture in globules, pilules or sugar of milk.

Carbolic acid, I must confess, is a great remedy in plague, when complicated with gastro-intestinal troubles along with

brain and lung complications, when the state of erythism has passed on to a low condition of the system with fetid odour from the body, mouth and alvine evacuations, dark scanty urine, and copious perspiration with or without high body temperature.

Veratrum alb., *Aconitum*, *Veratrum viride*, and *Arsenicum alb.* do not call for any special observation here, for when rightly selected they seldom fail to bring on good results in plague cases.

The second group of my plague medicines include :—

Opium, *Belladonna*, *Arnica*, *Baptisia*, *Hyoscyamus*, *Stramonium*, *Gelsemium*, *Ignatia*, *Ailanthus glandulosa*, *Rhus tox.*, *Glonoinc*, *Nus moschata*, *Chloral*, *Apium virus*, *Tarantula*, and *Cannabis Indica*.

It is impossible for me here, to do justice to each individual drug of this group within the short space at my command ; suffice it to remark that each one of these has proved highly efficacious in my hand in the treatment of plague when rightly selected. It requires a vast amount of labor, patience, study and thought in the application of these valuable and important remedies in the treatment of plague, when the higher nervous centres are more or less affected, resulting in from simple delirium to profound coma with all the intervening conditions, of hysteric, tetanic epileptic, convulsive, cataleptic and apoplectic varieties of nerve-storms. For one who has carefully studied these clinical features of the disease must bear me out when I observe that the nervous manifestations of plague are of *Protean* type, mimicking in their gradual evolution, all types of delirium, mild, ecstatic, ~~furious~~, violent, melancholic, taciturn, loquacious, &c., &c., &c., which a low adynamic type of fever is capable of. So it is far from being an easy task to deal with these complications.

Ignatia has a great influence, I have observed, in calming the panic-stricken mind when a slight pain in any gland, with or without fever, general lassitude, loss of appetite, &c., frightens the individual out of all proportion. It is also a great remedy even in certain graver types of the disease according to its indications.

Tarantula, *Stramonium*, *Cannabis Indica*, *Hyoscyamus*, are specially valuable in meeting many forms of delirium observed in this

disease. *Opium*, *Arnica*, *Ailanthus*, *Glonoine*, *Nux-moschata* and *Chloral* have proved very useful in the apoplectic types.

The third group includes :—

Merc. corrosivus, *Merc. cyanatus*, *Kali cyanatus*, *Merc. iodide (Red)*, *Kali iodide*, *Phosphorus*, *Acid phosphoric*, *Kali chloricum*, *Kali phosph.*, *Iodium*, *Kali. ars.*, *Badiaga*, *Carbo animalis*, *Carbo vegetabilis*, *Hepar sulph.*, and *Kali bichromicum*. Of this group I shall only make a few remarks on *Badiaga* as a remedy in this disease, originally suggested by Hering. I have given a free trial to this remedy both in the lower and higher attenuations as far as the 30th. I have found it a valuable medicine in the milder types only, with hard enlarged and extremely painful inguinal or axillary glands, high fever, restlessness, fear and headache. It is also highly valuable in the later stages of plague when the acute symptoms have subsided.

Merc cor. has proved to be a precious remedy in some cases of plague. When well selected according to its indications it seldom fails to prove its efficacy even in some very bad cases of the disease.

Kali chloricum is also a valuable remedy when some of the acute symptoms have subsided to a certain degree, and an extremely low condition and a pitiable sight are presented to the physician, with feeble pulse, meagre look, sunken appearance, aphthous mouth, foetid breath, rattling in the chest, failing heart, retention of urine, extreme emaciation, abnormally foetid dysenteric diarrhoea, and an impending dissolution.

The fourth group includes :—

Sulphur, *Nux vomica*, *Pulsatilla*, *Lycopodium*, *Bryonia*, *Spongia*, *Magnes-carb.*, *Eupatorium*, *Magnes. phosph.*, *Silicea*, *Calc. carb.*, *Acid nitric*, *Acid muriatic*, *Acid picric*, *Calc. phosph.*, *Calc. iod.*, *Baryta carb.* and *Petroleum*. Of this last group of medicines I expected much from *Picric Acid*, as it causes a profound alteration of the blood, even disintegration of the corpuscles, degeneration of the spinal cord, paralysis, &c. &c. But unfortunately I have had up to this time very little opportunity to practically test its value in the treatment of plague.

There is one peculiar feature in the clinical history of this disease to which I wish to draw the attention of the profession,

namely, its tendency to relapse in the midst of apparent improvement. This may take place either, when the urgent symptoms seem to have abated considerably for a few days and signs of progressive improvement justify hopes of recovery, or when the patient becomes convalescent and seems to be doing admirably well. The physician should not, therefore, altogether lose sight of his patient even after some days of improvement, for in many such cases he will have to meet with sore disappointment.

As regards the efficacy of inoculation in plague, I must freely admit that up to this time I am a thorough sceptic about it. Neither the old, nor the recent authorities could have come to a definite agreement about this question. Thucydides, the chronicler of the great plague at Athens, affirms that the infection could only once be taken. But it is considered from his description that the plague was a kind of malignant typhus and not the true Oriental or Bubonic plague. Murchison asserts that Typhus fever positively gives immunity form a second attack. Dr. Russel states that at Aleppo he met with twenty-eight cases of re-infection or 1 in 187. Clot-Bey and Millroy, two great plague authorities of Cairo, affirm that they and their colleagues saw many individuals perish of plague in 1834-35 who had formerly survived an attack of the disease. Though the trend of recent researches goes a long way to assert its inoculability and immunity from a second attack, I have met with a few typical cases both from Bombay and Calcutta where individuals, who had survived a first attack, succumbed to a second. I have also observed, apart from individual or family susceptibility to this disease, that one attack has a tendency to predisposition to a second attack if not in the same season or year at least at a second year's epidemic, as in the relapsing fever of Bengal. But my observation with reference to this important question is so limited that I would not like to draw any definite conclusion from it. I simply beg to draw attention of the unprejudiced observer to this point.

Thus it will be observed here that the treatment of plague in its various aspects is an extremely difficult task for a homoeopathist. The cardinal doctrine to be followed is not to find out or administer any medicine as a specific, but to study a particular

- medicine with reference to its *similimum* to a particular condition of the disease which seems, for the time being, the most prominent and important, and demands immediate attention owing to its urgency. Hence the work of differentiation and right selection can alone ensure success.

I here give

A CASE ILLUSTRATING THE ACTION OF PYROGEN AND OF BADIAGA.

In April 1902 I was hurriedly sent for to see an up-country Hindu lady of the Khettrya caste at Harrison Road on the Burra Bazar side (*Sinduria Putty*). She was a well-built, fine-looking young lady, mother of three children. Found her with very high temperature, semi-comatose, lying on her left side with entire flexion of the body and limbs, a peculiar posture, I have often observed, almost characteristic with typical plague patients; she had also hurried respiration with quick and feeble pulse, dry and pungent skin. On taking her history, I learned that she was ailing with high fever, head-ache, delirium, painful enlarged hard inguinal and axillary glands of the left side for the last five days and what was still painful, was, that she was pregnant for seven months. She was being treated by allopathic physicians for four or five days without the least benefit. The patient was getting worse day by day, when at last her attending doctors pronounced the case to be almost hopeless. On examining her carefully I found, she was actually pregnant, had bronchitis of both the lungs but nothing like pneumonic consolidation anywhere, as was asserted by her attending physicians. Her temperature was 104.6 F., had nausea, extreme anorexia, tongue dry, covered with a thick white coating, excessive thirst for large quantities of cold water, bowels obstinately constipated, inguinal and axillary glands hard, red, swollen and very painful to the touch, respiration hurried, pulse quick, feeble, drowsy, red eyes with lachrymation, hard of hearing, dull, listless, apathetic, ~~genium~~ ^{genium} low and muttering, incoherent talk at times, could hardly recognise people, unconscious micturition and slight difficulty of swallowing. There were tumultuous action of the heart and movements of the fetus in the womb. The patient was at first restless but not now. *Belladonna*, *Aconitum* and *Rhus tox.* were administered in material doses with allopathic mixtures. I prescribed *Nux vomica* 30, one dose to be given at once and another to be repeated after four hours. It was 10 A.M. in the morning when I first saw her. I called over in the evening at 6 P.M. Amongst the changes noticed there was one stool, with difficulty, of hard lumps, and a slight rise of temperature, (105). Other conditions almost the same. I gave her

Bryonia alb. to be repeated after four hours. I saw her again on the next morning; she had two doses of Bry. in the night and one very early in the morning. Temperature had come down to 103 F, had another stool of hard lumps, cough less frequent and respiration less embarrassed, pulse almost the same. At 2 P.M., the temperature rose to 105.4 F., with restlessness, agony and thirst and increased delirium. I saw her in the evening at 5-30 P.M., without waiting for a call. I prescribed *Pyrogenium* 30 at once and left instruction not to repeat it unless even slight improvement was noticed. At 10 P.M., they noticed slight perspiration for the first time, temperature 105.2 F, thirst little less, restlessness and delirium much less, so without waiting for my instruction they had given her another dose of the same medicine. I saw her at 11 P.M. in the night. There was copious perspiration, pulse 120, temperature 103 F, took some milk with ease, and she was quiet and inclined to sleep. I left her, with instruction not to repeat the medicine till next morning. When at 9 A.M., next morning I saw the patient, the skin seemed to be hot and dry, temperature 103.4 F, other conditions little improved. I gave her another dose of the *Pyrogen* 30. In the evening I asked my excellent colleague Dr. W. Younan to see the case with me in consultation. It was 5-30 P.M., when we both saw the patient. Her condition was wonderfully better all round and from the report of the attendants the improvement was so well marked after *Pyrogen* 30 that my friend Dr. Younan did not feel justified in altering the medicine but requested me to watch this interesting case carefully. In the night she had another dose, next morning the fever came down with perspiration to 101 F, all her symptoms improved with returning appetite and full consciousness. But the slight fever and painful glands continued to trouble her without yielding to *Pyrogenium*. So I was obliged to change it for *Badiaga* 6 three times a day. The patient wonderfully recovered under its influence in the course of a few days more and soon became convalescent. I am happy to report that since then she has given birth to a healthy female child, and both mother and child are now in the enjoyment of good health and spirits.

Other cases will follow.

DR. ROBERSON DAY ON THE ADVANCEMENT OF HOMŒOPATHY IN ENGLAND.

The Presidential Address delivered before the British Homœopathic society at the first meeting of the session, 1902-3, deserves to be more widely studied, especially in this country. In previous years, it had been the general practice for the President to take up some purely medical subject, and deal with it from a professional point of view. On the present occasion, the new President has rather gone out of the beaten track. Instead of confining himself to a special professional subject, particularly interesting to him, he has "sought a matter which we all have at heart, the advancement of Homœopathy." In the United States of America, where thought is allowed free action in all departments, and where the allopathic physicians are apparently ashamed to show that extreme spirit of antipathy for which their brethren in England are so famous, Homœopathy has made wonderful progress, and there are Homœopathic medical colleges, societies and journals throughout the length and breadth of the land. But such is not the case in England, although the foundation of Homœopathy was laid in it so early as 1837, by Dr. Quin, who having "graduated at Edinburgh, studied on the continent, and learnt the German language in order that he might find out all he could about Homœopathy from those who practised it." How that eminent and energetic physician introduced Homœopathy into England, how he established the British Homœopathic Society in 1844, and how that Society in its turn assisted in the foundation of the London Homœopathic Hospital are matters which need not be dwelt upon in this place. We find however that this hospital, though quite inadequate to meet the demands of London, is making steady progress, as will be found from the statistics furnished by Dr. Roberson Day. We gather from these statistics, that whereas in 1897, there were 16,000 out-patients in this hospital, in 1901 no less than 21,800 out-patients received treatment in it.

Speaking of the progress of Homœopathy in England, the late Dr. Compton Burnett said in the first Hahnemannian Lecture, more than twenty years ago, that now was the time for sowing, and he encouraged his audience to patiently sow the seed, and wait for the harvest in due time. Dr. Roberson Day justly adds:—

“Our fathers have most diligently sown the seed, by their practice, and the cures they accomplished, by their dispensaries and the founding of hospitals, by their writings and in the early days by lecturing on Homœopathy; and the result to-day is that throughout the length and breadth of the land, Homœopathy is known to the laity, and there is rarely a household which has not some member who has not experienced the benefits thereof. To-day the harvest is well nigh ripe, and ready for reaping.”

“But, alas!” continues Dr. Day, “although the harvest is plenteous, the labourers are few;” and so he proceeds to point out some of the causes which prevent the extension of Homœopathy, and the practical steps which may be taken to remove them. The points to which Dr. Day invites special attention are (1) the paucity of Homœopathic hospitals and dispensaries, and the want of special departments at such hospitals; (2) the paucity of well qualified Homœopathic doctors, and the want of a proper organization and of sufficient energy and activity among them; (3) the paucity of Homœopathic chemists; (4) the paucity of Homœopathic nurses, and the want of a proper organization among them; (5) the attitude of the laity and the want of a sufficient Homœopathic literature; (6) the attitude of allopathic doctors towards Homœopathy.

To us, the first and foremost want of the Homœopaths in England, seems to be a well-equipped medical college with a good hospital, and the necessary laboratories attached to it. This point has not been touched upon by Dr. Day, apparently for the reason that means for the establishment of such an institution cannot at present be obtained. The want of a Homœopathic college may to a certain extent be supplied by Homœopathic hospitals. The subject of the latter has therefore been treated at length, and must now demand our first attention. So far as we have been able to ascertain, there are only ten Homœopathic hospitals in England, besides several dispensaries. Of these hospitals the Devon and Cornwall Homœopathic hospital seems to have been initiated about the year 1850 “in an exceedingly small way.” It has now twenty beds, and an annual role of 13,000 out-patients, and a record of 600 accidents per annum received and treated. This institution is doing much for the extension of Homœopathy

in the counties of Devon and Cornwall. But as we have stated already Homœopathy owes most to the British Homœopathic Society, which has a branch established at Liverpool. The parent society exercises supervision over the London Homœopathic hospital, and the Branch Society has got the Liverpool Hahnemann hospital to look after. Having been connected with the London Hospital for more than sixteen years, Dr. Day is not only well conversant with the extent of its usefulness, but is also thoroughly acquainted with its shortcomings. His proposals for increasing its usefulness, and extending its operations will carry great weight.

The number of patients attending the London Homœopathic hospital is increasing year after year, so much so that its out-patient department has become "a source of revenue to the institution, although the modest registration fee of one shilling entitles the patient to one month's treatment, and this amount is often omitted in the case of the very poor." The present hospital accommodation is however quite inadequate to meet the demands of the vast metropolis with its population of 5,000,000 inhabitants. Accordingly Dr. Day has suggested the establishment of additional out-patient departments in suitable districts. These distinct departments should be affiliated with the parent Hospital, each having a separate staff of its own, and a local and influential committee to manage all the details; but they should be placed under the general control of the Board of Management of the Hospital. The medical officers to be attached to the out-patient departments should bear the title of assistant physician or assistant surgeon as the case may be; so that by virtue of the posts to be held by them, they "would gain in status" and be "in closer touch with the central hospital." As Dr. Day puts it, "these posts should prove very attractive to our members, for there is nothing like a hospital appointment for keeping one up to one's work; it is an opportunity for study and observation, that can be met with no where else; it is an education, for we learn something fresh every day."

With regard to the establishment of *special departments* at the London and Liverpool hospitals, Dr. Day states that they have done much to further the progress of Homœopathy. "The amount of work, that is being done in all special departments of know-

ledge, is so enormous, and the literature so prodigious, that it is quite impossible for any one man to keep himself *au courant* with all—hence the need for specialists, and the public recognise the reasonableness of this division of labour.”

Dr. Day then goes on to state that it is not only necessary to improve and strengthen the existing hospitals, we must have new centres for homœopaths to practice in. Endeavours should be made to place homœopathic doctors in all the districts and large towns, as has been done at Bournemouth where a large number of our members have now settled, and all doing well. At present as soon as our young member completes his term of office at one of the homœopathic hospitals, he probably acts for a short time in the capacity of *locum tenens*, and then he is thrown on his own resources. He generally gets much valuable advice from some of our senior members, but sometimes such advices are found to be “of a varied and bewildering character.” To enable these young members to get substantial practical assistance in the beginning of their career (for when they have once crossed the Rubicon and become a homœopath, there is no going back and no hope whatever of any help from the allopaths), Dr. Day suggests :

“That a certain number of our members qualified to give advice by their years and knowledge of the needs of Homœopathy, should be elected by us to constitute an ‘Advisory Committee,’ that they should make it their especial duty to ascertain the state of Homœopathy in this country, and where would be the most favourable centres for opening fresh ground. By enquiries, an estimate could be arrived at as to the number of converts to Homœopathy already settled in a district and perhaps through some of these a promise of assistance could be obtained. Further than this, we should in certain cases approved by this committee, offer temporary financial assistance to enable the new settler to stand the siege of the first few years.”

The funds that will be required for this purpose might be raised either by subscription, or by a limited liability company to be formed by those who have the welfare of Homœopathy at heart.

Dr. Day next dwells upon the paucity of well-qualified Homœopaths. He disposes of the non-qualified medical men—"the parasites of Homœopathy," as he calls them—in the following sentences :

"We have suffered too much in the past from the man who, with some smattering of medicine and a bogus M. D. degree, has set up in practice as a Homœopath, and advertised his homœopathic dispensary by 'sandwich men' parading the streets ! The general public who are so easily imposed upon, guilelessly fall into the snare, and after bitter experience find out their mistake, or perhaps come to look upon Homœopathy, as the special vocation for unqualified, or only half-qualified medical men, who are unable to sign a death certificate, and who are believed not to vaccinate or perform a surgical operation."

On the other hand, he exhorts the young homœopathic doctors not only to follow in the footsteps of Hahnemann and Dr. Quin, but "to be well abreast with the times," and to think of the advances that have been made since the time of the father of homœopathy, for instance, "the germ theory of disease, bacteriology, antiseptics and antitoxin serums, to say nothing of the microscope and of the many other scientific instruments for examining the human body." Every true Homœopath should always bear in mind "that every drug from A. to Z. has a dual action—toxic on the healthy, and in smaller doses homœopathic on the diseased body:" and that a homœopathic physician is "one who adds to his knowledge of medicine, a special knowledge of homœopathic therapeutics, and that all that pertains to the great field of medical learning is his."

With reference to the complaint sometimes made that modern homœopaths are not true to their master, Dr. Day states that Hahnemann was a genius and "far in advance of his times;" and though he had made himself master of all that was known in his time, he "was not infallible or omniscient." We must not slavishly follow him on every point. Dr. Day adds however :

"That it is our duty to emulate the *spirit* of Hahnemann, who was not behind his time, but a long way ahead. The same deductive methods of reasoning which he employed when he predicted the remedies for cholera are capable of application to-day, and we have had the gratification of seeing one of our members—

Lieut-Colonel Deane employing this method in the case of bubonic plague. By inference he was led to employ the snake poisons in the treatment of this disease, because Constantine Hering has shewn us that when taken by healthy persons they produced a train of symptoms similar to bubonic plague. *This is the genius of Homœopathy, and this will ever make the name of Hahnemann immortal.*"

Before quitting the present subject about the need of well-qualified medical men, we must refer to another point of great practical importance. In consequence of the unfavourable opinion on homœopathy disseminated by allopaths, homœopathic doctors are obliged to live in a state of great isolation, to use the words of Dr. Day, "they have, like lambs, to lay down beside the wolves," so that foreigners who go to England, and visitors from distant parts of the land, have no means of finding out homœopathic doctors when in need of their services. Dr. Day appeals to the British Homœopathic Society to take steps for the removal of this evil, and to do its best "to provide for our patients the treatment they have learned to value"; and he himself suggests the preparation from time to time of a Directory "which shall contain the names and addresses of all qualified homœopathic practitioners together with their qualifications and any other details of use to our patients."

In regard to homœopathic chemists, Dr. Day states that they are capable of doing much "to further the interests of homœopathy in ways which are precluded to us;" but he adds that they are too few to answer our purposes.

The nursing question has also been handled in the Presidential Address. There is a Nursing Institute attached to the London Homœopathic Hospital under the management of an efficient lady superintendent. The nurses belonging to this Institute have "the valuable and unique training of a homœopathic hospital." "They understand *our* ways, can conscientiously carry out *our* directions, and give uniform satisfaction wherever they go." But the difficulty is to find them after they have quitted their alma mater. Dr. Day adds, "What we need is a nursing hostel under a competent matron, and distinct from the hospital. It should be on the co-operative system, and made sufficiently attractive for our nurses to join when they have finished their term at the hospital." Here is a splendid opportunity for another Florence Nightingale. If this suggestion is carried out the public will not only know where to find *our* nurses, but they will always be sure to get them whenever their services will be required.

EDITOR'S NOTES.

Quick Lunches.

Proposals have recently appeared in the daily press in favour of the inauguration of a system of quick lunches by which the busy man may have a substantial midday meal served expeditiously, the partaking of which shall occupy but a few minutes. We do not hesitate to ask that all our readers will impress upon their patients that the adoption of this proposal would be a wicked physiological step. The repair of the body is not a process to be trifled with in this way; eating should not be done in a hurry. The demands of business may be pressing, but the demands of the body are in reality more serious. Just as by stoking a steam engine to crumming point the fuel burns badly and the intensity of the fire is lowered, so by bolting his food the vital processes within a man's body are hindered rather than helped. Necessarily food eaten rapidly escapes in a great measure the preparatory processes of digestion and sooner or later a breakdown in the maltreated human machine supervenes. In a word, hurrying over eating is fatal to the healthy sustenance of the body.—*Lancet*, Feb. 7, 1903.

Chorea Electrica.

Chorea electrica, a rare nervous disease of children, was first described by Dubini in 1849. Most of our knowledge of it, however, dates from the observations made by Henoeh 20 years ago. In the *Berliner Klinische Wochenschrift* of Dec. 22nd, 1902, Dr. Ludwig Bruns of Hanover gives an account of the main varieties of this disease based on a study of 30 cases. The disease is found to occur exclusively in children of both sexes, the ages varying from 9 to 15 years. The characteristic attacks consist of sudden muscular ~~shocks~~ or contractions limited to the neck and shoulder muscles—viz, the sterno-mastoid, levator anguli scapulae, pectorales major and minor, and the trapezius. The muscular contractions are sharp and sudden "as though induced by an electric shock"—hence the name chorea electrica. The disease, adds Dr. Bruns, is not related to Sydenham's chorea. He recognises three varieties of chorea electrica—viz, chorea electrica proper, a hysterical variety, of this affection is readily cured by the therapeutics ordinarily employed for hysteria. He records a case of this as exemplified in a girl, aged nine years, the child of a highly neurotic mother. Separation from the mother with firm and judicious management soon cured her of the trouble. The epileptic

variety is very refractory to treatment, as the condition is due to a gravelesion of the cerebral hemispheres. Hydrotherapy, an open-air life, and a diet that is digestible and free from irritating or highly stimulating ingredients are among the general methods of treatment for the epileptic form and the same remarks apply to chorea electrica proper, which is rather more amenable to such treatment.—*Lancet*, Feb. 7, 1903.

Ectopic Gestation Advancing to Term.

T. Smith and H. Williamson (*Journ. of Obst. and Gyn. of the British Empire*, January, 1903) report a case of ectopic gestation advancing to full term without rupture. Patient was examined after labour pains had set in, when the abdomen presented the appearances of a full-term pregnancy; the fetal heart could be heard and movements felt, but the position of the fetus was not made out. The cervix was long and firm, and the external os small. The pains were slight and continued so, and by the end of the week fetal movements could no longer be felt nor the heart heard. A brown watery discharge began, and the size of the abdomen diminished. Unsuccessful attempts were made to dilate the os. After a week's rest the patient felt well except for occasional pain. Three months afterwards an operation was performed, and on opening the abdomen a tumour 22½ in. long was found lying to the left of the middle line between the layers of the broad ligament, the base of the broad ligament forming the only connexion between the uterus and the tumour. An imperforate cord-like structure, either one horn of a bicornute uterus or the proximal end of the Fallopian tube, was inserted into the tumour. The distal end of the tube emerged from the opposite pole of the tumour, its abdominal ostium gaping widely. The ovarian ligament and a fibrous cord, apparently representing the round ligament, were also inserted into the tumour. After its removal from the abdomen an incision was made into the wall of the tumour, which was about ¼ in. thick, and resembled in appearance uterine wall; microscopically, it consisted chiefly of fibrous tissue with some muscle tissue. The placenta was ¼ in. thick, shrivelled, and easily detachable from the tumour. Within the tumour a well-developed child was found. The pregnancy was regarded as cornual rather than tubal on the following grounds: (1) The attachment of the round and ovarian ligaments directly into the tumour; (2) the patency of the abdominal ostium of the tube; (3) high degree of development of the sac wall, and the fact that no rupture had occurred.—*Brit. Med. Journ.*, Feb. 7, 1903.

Ambra Grisea.

I have thought that this remedy benefited the sleeplessness that is so often complained of by women. They worry during the day and cannot get to sleep at night. One or two doses of ambra grisea permits them to fall asleep. At least that is the way it has happened in my experience. The ambra patient can seldom tell why sleep is prevented. They tell us that there seems to be no reason why they cannot fall asleep, which is equivalent to saying that the cause is generally in the nervous system. Sometimes coldness and a nervous twitching may be present, which would further confirm us in our opinion that it is a nervous wakefulness rather than an insomnia produced by physical ailments. And, indeed, the ambra is a great remedy when this "nervousness" is at the bottom of the physical complaints of the patient,—when a woman gets nervous, or says she gets nervous, and has to eructate great quantities of gas; when she gets in the same state of mind and has a great accumulation of gas in the intestines, which distends the abdominal walls; or when, from some influence upon the nervous system, she has a constant spasmodic cough, which is aggravated in the presence of company or whenever she attempts to talk or to entertain. Again, such patients are apt to have palpitation, during which they feel so nervous that the heart beats are perceptible all over the body. And so we might mention many things that ambra relieves, when at the bottom of all the trouble, is this state of nervous tension which women call "nervousness." The ambra grisea patient is vivacious, excitable, hurried in her movements, lacking repose in the presence of company or friends and so, after the ordeal has passed, she feels like a nervous wreck and suffers from any or all of these conditions. This is a very commonplace way of presenting the matter, but we think that this thread can be traced all through the ambra fabric.—*Hahnemannian Monthly*, December, 1902.

The Therapeutics of the X Ray.

In the *Medical Record* for November, E. H. Grubbe writes at length on the subject of the X ray as a therapeutic agent. His position is an eminently judicial one and his large experience in the work renders his conclusions especially worthy of attention. After an extended discussion of theories and methods he reports several cases and sums up as follows:

1. The X ray is the most remarkable therapeutic agent of the last decade.

2. In properly selected cases of so-called "incurable conditions" the X-ray has brought about remarkable results.

3. Relief from pain is one of the most prominent features of the treatment.

4. Retrogressive changes are noticed in all primary cancer or tuberculous growths.

5. The X ray has a pronounced effect upon internal cancers.

6. The greatest value of the X ray is obtained in treating post-operative cases to prevent recurrences.

7. The proportion of clinical cures by this treatment is greater than that obtainable by any other method of treatment.

8. We are positively justified in assuming an idiosyncrasy to X rays.

9. The peculiarities of each case must be studied in order to get the best results, i. e., no strict rules for treatment can be laid down.

10. Dermatitis, if properly produced, is within certain limits a desirable feature of X ray treatment.

11. Since the vacuum of an ordinary X ray tube changes constantly, such tubes are useless for radio-therapeutic work, and only tubes which allow of perfect control of vacuum should be used.

12. The X ray has a selective influence upon cells of the body; abnormal cells being effected more readily than the normal.

13. Hemorrhages and discharges are decidedly lessened and, ultimately cease in the majority of cases.

14. Even in the hopeless, inoperable cases the X ray prolongs life, makes the patient comfortable, and the last hours free from pain.

The use of the X ray is, without doubt, a very valuable addition to the therapeutics of malignant diseases, and cannot demand too much attention from the progressive physician.

Whatever may be the real action of the X ray in these diseases, the results obtained certainly have been astonishing, and while it would be premature to claim that malignant diseases can positively be cured, it is to be hoped that further investigations may surpass our expectations.—*Clinique*, January 15th, 1903.*

Triumphs of Sanitation.

At a meeting of the Yorkshire Branch of the Sanitary Inspectors' Association held at Cleckheaton on Jan. 17th an interesting address on the Triumphs of Sanitation was delivered by Dr. C. H. Dyer, medical officer of health of Cleckheaton. The examples which he selected as illustrative were drawn from the history of plague, typhus

fever, cholera, malaria, and tuberculosis. Of the first-named he said that there was perhaps no disease which in its history more strongly emphasised the contrast between ancient helplessness and modern resourcefulness. In 1665 it was prevalent in London and is supposed to have caused 68,000 deaths among a population of 460,000. In 1900 it again visited the British islands but London escaped altogether. In Glasgow 27 persons were attacked, with five deaths, in September of that year and many months afterwards four cases, in all of which the patients recovered, occurred in a large hotel adjacent to a building in process of demolition from which rats were displaced. The difference in the experience of the years 1665 and 1900 was due mainly to the fact that in the latter year the four following precautions were observed: (1) vigilant control was exercised over shipping which arrived in the various ports; (2) patients and persons who had been in contact with them were isolated; (3) disinfectants were used in infected districts; and (4) rats were destroyed in great numbers. With respect to tuberculosis, Dr. Dyer quoted the late Sir Richard Thorne's statement that during the previous 50 years the mortality from phthisis had been reduced by 45 per cent. amongst adults, although unfortunately it had increased by 27 per cent. amongst infants. He then touched upon the benefits derivable from sanatorium treatment and passed on to the question of notification, stating that the Local Government Board had recently informed the Willesden district council that district councils already have power to make arrangements for voluntary notification of tuberculosis, to pay fees for such notification, and under the Public Health Act, 1875, to provide hospital accommodation for persons suffering from pulmonary tuberculosis.—*Lancet*, Jan. 31, 1903.

The Mental state of the Consumptive.

The psychology of the consumptive patient has a special interest to the general physician and to the psychologist. A symposium on this subject is published in the *Archives de Neurologie* for January. Dr. Felix Regnault in introducing the discussion of the subject said that the most salient psychological manifestations of early pulmonary tuberculosis are nervous hyper-excitability, optimism, egoism, and sentimentality. Though the victim of a grave malady the patient experiences no pain or suffering in the early stages of the disease. On the contrary he feels well and even buoyant, and when made aware of his malady he is not demoralised or downcast, because the feeling of organic well-being which is continually present within him

deludes him into optimism. Moreover, the appetite for food is often excellent, and if the patient, yielding to the advice of friends, agrees to pass his time in a sanatorium the absence of worry or business anxiety also conduces to his happiness. Sexual hyper-excitability is, adds Dr. Regnault, characteristic of many tuberculous patients; these are not febrile or wasting cases but subfebrile cases marked by a very slight elevation of temperature not exceeding 1° F. When pulmonary tuberculosis develops in a person already suffering from another disease, such as myxœdema, the apathy and slowness characteristic of myxœdema are replaced by liveliness and excitability; the patient seems to exhibit a more intelligent interest in things than he did previously. Professor Jules Voisin, in continuing the discussion, stated that in his wards at the Salpêtrière he could discriminate patients with pulmonary tuberculosis from those with gastro-intestinal tuberculosis, as the former were generally bright and lively while the latter were not so. M. Berillon pointed out that it was in the prodromal and early stages of pulmonary tuberculosis that the signs of nervous hyper-excitability and of egotism were met with. At this stage patients were easily led by others, as the strength of will was deficient. The patient's mind was restless and vacillated from one project to another with great facility, but the power of application was lacking and success was seldom attained. This he would designate the stage of "hyper-suggestibility." A stage of egotism followed and in some instances this took an extreme and morbid form, so that the patient made a will bequeathing his fortune solely to the least reputable of his relatives or otherwise exacting conditions which could only be attributed to the testator's vanity. M. Lepinay stated that before the appearance of clinical symptom of pulmonary tuberculosis mental symptoms of a special kind could be detected which had a diagnostic value tending to the suspicion of impending tubercle. Phenomena of the same order—nervous and sexual hyper-excitability—had also been observed in certain animals. Thus in cows incipient tuberculosis was attended with morbid sexual excitement and depraved appetite the animal acting like one in heat and also eating dirt and bits of wood. On killing the animal incipient tubercles could be found in the lungs. He had also noticed in dogs developing tuberculosis that from being gentle and affectionate they became snappish and irritable and showed abnormal sexual excitement. He regarded the process in animals as one of toxæmia affecting the brain and nervous system.—*Lancet*, Jan. 31, 1903.

The Removal of the Vermiform Appendix when the Abdomen is opened for Disease of other Organs.

In the *Journal of the American Medical Association* of Oct. 25th, 1902, Dr. Howard Kelly has discussed the important question, Should the vermiform appendix be removed when the abdomen is opened for disease of other organs? The relation of the vermiform appendix to pelvic surgery was suddenly brought before his attention in 1894 by the case of a patient under his care for general pelvic discomfort and dysmenorrhœa. He performed laparotomy and found a retroflexed uterus, adherent ovaries, and a relaxed vaginal outlet. He suspended the uterus, ligatured the varicose ovarian veins, and repaired the vaginal outlet, but the patient was little, if at all, improved. Some months later she had an attack of appendicitis and was operated on by another surgeon with complete relief of all her symptoms. Evidently the source of her troubles was the appendix. Since this experience Dr. Kelly has never opened the abdomen without examining the appendix whenever it was possible to do so without enlarging the incision or running the risk of conveying infection to healthy parts. Out of a series of 115 cases he has found the appendix adherent to the right tube or ovary in 10 cases, involved in adhesions in 37, congested in three, and obliterated at the base in one case. Only 64 appendices were normal. Dr. Kelly has sent a circular to the principal American surgeons requesting an answer to the question, "Is it advisable to remove the apparently normal appendix whenever the abdomen is opened for other reasons; or whenever an incision is made in the right lower quadrant?" The majority replied that they do not remove the normal appendix during an operation performed for other reasons, but always remove it if it is even slightly adherent to other organs or if though free it is abnormally long—a practice which Dr. Kelly indorses. He does not remove the normal appendix for the following reasons: 1. The operations would slightly increase the risk of danger; shock might occur at any moment and the additional five minutes consumed in the removal might have serious consequences. 2. There are no statistics to show that the existence of a normal appendix involves a definite risk per mille either of death or serious disease. 3. The appendix may have some function. As Dr. Robert Abbe asserts that the normal appendix never contains fecal concretions, Dr. Kelly advises that if such can be felt the appendix should be removed, even though it appears healthy. He considers, further, the question whether the appendix ought not always to be removed when operations are performed near the cæcum which might

give rise to adhesions. In men the risk is slight but in operations on the uterus or right ovary the appendix may become adherent to the recent wound. Dr. Kelly has observed five such cases, in which the appendix was subsequently removed. In four the appendix adhered to the stump of the right ovary and in one to a wound in the uterus from myomectomy. Dr. Kelly advises that whenever the right ovary is removed the raw stump should be protected by covering it with peritonium and burying it out of sight. In all right-sided pelvic operations he also removes long free appendices, because an appendix which hangs free from the cæcum and is long enough to reach the field of an adjacent operation may become adherent and thus render the patient liable to an attack of appendicitis.—*Lancet*, Jan. 24, 1903.

Human Ruminants.

Authenticated cases of rumination in the human subject are of sufficient rarity to be interesting and worthy of note. Dr. L. R. Müller of Erlangen, in the *Münchener Medicinische Wochenschrift* of August 5th, 1902, records three cases occurring in one family in the persons of a father and his two sons with a necropsy in the case of the former. In this case the act first began at the age of six years and persisted till the death of the patient in his fiftieth year. He had always been a rapid feeder, swallowing his food incompletely masticated, while about 15 to 20 minutes after the end of the meal the act of rumination commenced and lasted for from half an hour to one hour. The food substances were returned to the mouth at intervals of from three to four minutes, were masticated and re-swallowed; they possessed their natural taste, and only during and after this process did the patient derive any sense of enjoyment from his food. If the act were voluntarily prevented a disagreeable sensation in the stomach supervened. No other gastric symptoms occurred till about six months before the death of the patient, when pain with persistent vomiting and rapid cachexia led to a diagnosis of malignant disease of the stomach. This was confirmed at the necropsy when an "hour-glass" condition of the stomach was found, the septum being the site of the cancerous growth, and the œsophagus and cardiac orifice of the stomach were dilated to such a degree as to admit three fingers. From the appearance presented by the stomach Dr. Müller concluded that the hour-glass condition was not the result of the growth. Two sons of the patient, the younger of whom was 22 years old, had also regurgitated and re-masticated their food, although the

father was not aware of this. Another case is recorded by Dr. Ferrannini in the *Riforma Medica* of Oct. 11th, 1902, in a young man of neuropathic tendencies in whom both solids and liquids returned; as in the former case the regurgitated materials had their natural taste; they were alkaline in reaction. The motor, digestive and absorbent properties of the stomach were otherwise natural. Cases of rumination or *merycism* in the human subject have been known since the time of Fabricius in 1618 and considerably more than 100 cases have now been recorded. The first case above recorded is typical of the condition except that an hour-glass form of stomach is very rarely found. The process is usually though not invariably permanent. Various explanations have been suggested. Dr. Muller regards the condition as atavistic in origin, while Dr. Ferrannini explains his case as a gastric neurosis. Dr. Alt supposed that the condition was an attempt to correct defective primary mastication of the food which is very frequently observed in these cases. Others have suggested mimicry as the explanation of the family associations of this condition, but in Dr. Muller's cases, no one of the three was aware of the condition in his relatives.—*Lancet*, Jan. 24.

CLINICAL RECORD.

Foreign.

CASES OF CONSTIPATION.

By ERASTUS E. CASE, M.D., HONTFORD, CONN.

Case 1. Cured by *Sepia*.

An Irish widow, aged 60, robust, always good health; bowels have never moved without cathartics since youth; stools dry; a mass of round balls; urine deposits a red stain; eyelids swollen; yellow saddle across the nose; abdomen pendulous; will acknowledge no other ailment.

Feb. 8, 1901. One powder of *Sepia* cm. (F) in four tablespoonfuls of water, one tablespoonful morning and night until it is gone, and ordered to take no other medicine.

April 12. Has had a daily stool since Feb. 9th.

May 1. During the last few days bowels reluctant to move; yellow saddle has disappeared from the face; one powder *Sepia* 3 cm. (F) dry on the tongue; that finished the cure of a life-long constipation.

Case 2. Cured by *Magnes. Mur.*

Dark, tall, gray-eyed woman, aged 40, has four children; constipation for several years, torpor of rectum; stools dry, crumbling, like

sheep's ; facial acne precedes menses ; feet swell, joints sore, worse at night, painful in bed ; vertigo on rising in the morning, with lurching towards the right ; worse before the menses ; numb sensation in the forehead, better from pressure on the vertex, or upon the closed eyes. Correspondent gave no other symptoms.

July 6. One powder Magnesium muriaticum cm., (F) dry on the tongue. Cured.—*Medical Advance*, January, 1903.

CLINICAL CASES.

BY LAWRENCE M. STANTON, M. D., New York.

CASE I. The patient had been a great sufferer from neuralgia for many years, and under old school treatment, had received much medicine but no relief. The neuralgic attacks appeared in almost any part of the body but were most frequent and severe about the head, face and teeth. The pain was of the sharp, shooting kind, coming and going very suddenly. There was aggravation on walking in the open air, and slight amelioration from hot applications. Dampness was pretty sure to precipitate an attack.

Belladonna, which, of course, suggested itself, failing to relieve, I gave the case more careful study, and on account of aggravation from dampness and from walking in the open air, selected *Spigelia* 200. Improvement began at once, the patient was cured in a few weeks, and there has been no recurrence for more than a year.

This aggravation from walking in the open air seemed very curious, for it occurred not only when walking against the wind or in cold or damp air, but just as surely on the finest of spring days, and not when walking about the house. Hering gives under the headache of *Spigelia* ; "aggravation from motion, especially *walking in the open air*, when every step is attended by a violent jerk in the head."

CASE II. A lady of the high strong nervous type, who a little while ago had suffered a miscarriage, brought about by some trivial street fright, sent for me to prescribe for a severe nervous headache, giving the following picture : Pain, unbearable ; great anguish and tossing about the bed in her anguish ; cries out to be relieved yet fears nothing will give her relief ; whining, peevish, pouting mood. She was at once calmed by a dose of *Coffea* 10m., soon falling asleep, and waking quite well.

CASE III. A woman, 60 years old, spare in habit, of dark complexion. She has had her share of care and sorrow and now suffering from great mental gloom, bordering upon hypochondria. She awakens at half past four in the morning and is then overwhelmed by

- her mental depression, which is much worse at this hour than at any other of the twenty-four.

She is constipated, the movements are globular, scanty and in the early morning only. She is troubled with itching of the thighs, worse in the evening, and itching of the arms, worse in the evening; there is no sign of an eruption.

All these things—the mental state, the constipation, the itching, the spare habit, the dark complexion, point to Alumina, and under the 3m. potency, the case made a most satisfactory recovery. Great itching, especially when warm in bed, is characteristic of Alumina, but it also has a good deal of itching during the evening, not so bad at night nor made worse by the warmth of the bed.

CASE IV. A dry, spasmodic, teasing, wheezing cough; starting with tickling in epigastrium and accompanied by redness of face with perspiration, was cured by Sanguinaria 200. The patient had a similar cough earlier in the winter and was helped by Belladonna, though not in the same unequivocal way in which the later cough was cured by Sanguinaria.

Here was a case apparently equally covered by the two remedies and yet, as the cure proved, Sang. and not Bell. was the remedy; perhaps more careful analysis would have revealed differences.

Both remedies have dry, spasmodic cough, caused by tickling in epigastrium, accompanied by redness of face with perspiration. The following comparison has proved helpful in a number of cases.

Belladonna: Spasmodic cough, causing flushed face with perspiration; tickling in epigastrium. The flushed face of Belladonna is worse on bending head forward.

Sanguinaria: Spasmodic cough, causing flushed face with perspiration; tickling in epigastrium. The red face of Sanguinaria is worse lying down.

Lachesis: Cough causing red face with perspiration; tickling in epigastrium; but the cough is characteristically worse at night, waking frequently from sleep.

Cuprum: Spasmodic cough, causing red face with perspiration; as soon as he takes a long breath it begins all over again. It lacks the tickling in epigastrium of the other remedies.

“A Hair perhaps divides the false and true—
And upon what, prithee, may life depend?”

CASE V. A patient, in spite of several remedies prescribed by herself, has had a bad coryza for six or more weeks.

The discharge is thin, watery, and the sense of smell is lost. She complains that her forehead feels cold, as if cold air were blowing on it, and that the forehead is sensitive to cold air; this is particularly the case at night when she must cover the forehead. The eyes water profusely in the open air. The two latter are old symptoms, but both are much aggravated by the present cold. Silicea 10m., very quickly cured.

CASE VI. An old lady of 77 years with pneumo-typhoid—not a typhoid with pneumonia added, but a case where the lung had received the brunt of the disease—the abdominal symptoms being not well marked at first. There was no abdominal tenderness, slight tympanitis, some gurgling in right iliac fossa, no diarrhoea. The difference between the morning and evening temperature, and the gradual rise of temperature from day to day, were characteristic of typhoid. The right lung was the one affected by the disease. The case, in spite of several remedies, did not improve; the lack of symptoms upon which to base a prescription was annoying. I now learned that the temperature reached its highest elevation every afternoon at 5 p. m., and that a little later in the evening it was decidedly down. This was at least a clue and pointed to a small group of remedies, Phosphorus among them. The right lung being the one affected was also significant of Phosphorus. What I now read in “Nash’s Leaders in Typhoid” persuaded me that Phosphorus was the remedy. After a few doses of the 10m., potency there was a decided change for the better; the temperature fell, the lung improved, a slight diarrhoea ensued, and the case made a quick recovery.—*Medical Advance*, January, 1903.

CASES I HAVE COME ACROSS.

BY FREDERICK KOPP, GREENWICH, N.S.W.

Nux Vomica in Dyspepsia.

A YOUNG married lady, of sedentary habits, complained of the following somewhat unpleasant symptoms, from which she had been suffering for some time: A sense of fullness of the stomach after every meal, accompanied with pain and tenderness. After each meal she felt sleepy, indolent, and little inclined for any exertion. She suffered also from acidity, heartburn, and flatulence. She had a sour, sometimes bitter, taste, and there was frequent vomiting of bile and food. On rising in the morning her head ached and felt confused. The bowels were very irregular in their action, ineffectual urging being a prominent symptom. She had a sallow, yellowish, complexion, and felt completely “out of sorts.” I recognised the symptoms at once as indicative of *Nux vomica*, and therefore ordered the following prescription to be taken every four hours in tablespoonful doses:—

R. *Tinct. Nux vomica* ℥ss.

Ad Aqua Dest. ℥vj ℥

Under this treatment the unpleasant symptoms complained of soon disappeared, and, after having taken the above remedy for about a week, she stated that she “felt like a new person.” She continued taking the medicine for a fortnight longer—a dose night and morning—and the cure proved to be a permanent one. *Nux vomica* is undoubtedly the remedy *par excellence* for dyspeptic patients of sedentary habits, who are of a bilious temperament, and who eat largely, but indulge in too little open-air exercise. In such cases *Nux vomica* acts with greater rapidity than any other known remedy in our *materia medica* in removing the dyspeptic symptoms.

Dulcamara IN A COUGH RESULTING FROM DAMP.

A young man (aged 32) came to me suffering from a short, hacking cough, accompanied with a difficult expulsion of phlegm. The cough caused him a considerable amount of annoyance, and the various "cough mixtures" he had taken had not the slightest effect, even in ameliorating it. He was afraid that, if this state were to continue much longer, he would be going off into consumption, and this caused him not a little anxiety. On questioning him I learnt that he had caught a cold some time back, through getting a thorough wetting on a rainy day on his way to business. He kept the wet clothing on him all day, with the usual result. I was glad for the information given me as to the cause of his complaint, as it enabled me to at once select the proper remedy for the removal of his affection. I told him to take *Dulcamara* 1x tincture, 3m every two hours in a tablespoonful of water. I saw him a week afterwards, when he stated that his cough was much better and affected him only occasionally. I advised him to keep on with the medicine, but to take a dose three times a day only. This he did, and when I saw him again a little while afterwards, there was no trace left of his complaint, thanks to the curative action, under Providence, of *Dulcamara*, which, homeopathically used, proved itself far superior to all the "cough mixtures" of the old school, in succeeding where they ignominiously failed.

Ferrum Iodidum IN AN ULCER IN THE MOUTH.

This was the case of a middle-aged man who had a very painful and angry-looking ulcer in the mouth, between the underlip and the lower gum, towards the left side. He stated that he habitually had these ulcers in his mouth every year, and they usually became so bad that he had to get them burned out with *lunar caustic*. Being intimately acquainted with the good effects of *Ferrum iodidum* in stomatitis, I administered to him one 3-minim dose of *Syr. Ferrum iodidum*. The next day the ulcer was not quite so painful; on the day following it had almost disappeared; and on the third day there was no longer any trace of it. A marked feature of this case was that the ulcer was cured with *one dose only* of the medicine, the action of which was allowed to expend itself, the result being that the 3 minims administered cured the ulcer. I may also state that the patient had been suffering for nearly a week previous to taking the medicine, the ulcer at that time being in a very bad condition, and daily enlarging. No external treatment in the way of a lotion or a glycerole, was applied to the ulcerous surface, the one dose of *Syr. Ferrum iodidum* being the only medicine given. The patient afterwards stated that he preferred this mode of homeopathic treatment to the one he had been used to, namely, of burning the ulcer out with *lunar caustic*. At such times very often one application of the *caustic* proved insufficient, and it had to be applied a second, and even a third time.—*Homeopathic World*, Jan. 1, 1903.

Excerpts from Contemporary Literature.**HOMŒOPATHY: ITS RATIONAL PLACE IN DRUG THERAPEUTICS.**

BY ALFRED WANSTALL, M.D., BALTIMORE, MD.

[BEING part of the opening discussion in answer to the question (submitted by Eldridge C. Price, M.D., Chairman of the Bureau of *Materia Medica*): "Assuming all knowledge of drug effects to be obliterated, how should we proceed to acquire reliable, practical knowledge of how to use drugs in disease?"]

The chairman of this bureau informed me that his purpose in submitting this question is to open a discussion which might bring out some views as to what better method might be adopted than the one now in practical operation. The question itself, and its purpose, would seem to infer that there are other untrod methods, theoretical or actual, which might be utilized to study how to use drugs in disease, and naturally gives rise to the counter-question: What are they? Besides pure empiricism, which is probably always based on some pre-existing pathogenic or therapeutic knowledge, and the study of the physiologic action of drugs on human and other animals, there only remain the effects of poisonings and provings by drugs on man, which are directly utilizable only by virtue of the principles of similars and contraries, and indirectly or remotely by empiricism, so far as I know; and inasmuch as the question and its purpose, owing to their purely theoretical character, are not further discussable, there remain for me to consider only the conditions which give rise to them.

That the results of the present method do not satisfy the profession is evinced by this question, and the reason why they do not, is not difficult to find. They fail to satisfy both the theoretical and practical requirements of the theory upon which the method is based. As there seems to be little reason to assume that the results of the present method of proving drugs are not in keeping with the natural difficulties inherent in that part of the subject itself, may not the trouble lie, not in the method and its results, but in an interpretation of the theory not warranted by facts? and is it not probable that a rational interpretation of the theory, in the light of present-day knowledge, will show that the method and its results are all that we have any legitimate right to expect them to be? It is this aspect of the question that I propose to discuss as fully as possible in the very little, and wholly inadequate, time at my disposal. If what I have to say strikes you as being elementary, I can only answer, the greatest need of the profession to-day, not alone in our own school, but in the other as well, is a common-sense comprehension of the elementary facts of homœopathy.

At the very outset it is necessary to have well-defined ideas in regard to the interpretation of the so-called homœopathic law, and the relations existing between the manifestations of drugs and the manifestations of disease; and, because these two ideas are so intimately associated, your interpretation of the former will depend entirely upon your comprehension of the latter; and no matter what may be said concerning the so-called homœopathic law, it cannot be more or less than is the demonstrable individual relation of similarity existing between the manifestations of drugs and the manifestations of diseases. It is at once apparent how important it is to have a rational comprehension of just what this relation embodies. It is the pivot about which everything in homœopathic medicine revolves; and chaotic, indeed, is the condition of mind of him or her who practices it without knowing well its bearing.

What is the theory?

"In the living organism a weaker dynamic affection is permanently extinguished by a stronger one, if the latter (deviating in kind) is very similar in its manifestations to the former."—*Organon*, No. 26.

Let us take a concrete example,—malarial fever; a disease characterized by the occurrence of chill, fever, and sweat, in more or less completeness occurring at more or less definite intervals, caused by the inception, growth, maturity and sporulation of a definite organism inhabiting an indefinite number of the red blood-corpuscles of man, and acquired from the bite of an infected diptera.

In what sense is the word "dynamic" used in the above quotation?

Obviously, in the sense of being spiritual, *i.e.*, immaterial.

Is malarial fever a dynamic affection?

Are the effects of drugs dynamic affections?

Can malarial fever be regarded, in any sense, as a weaker (dynamic) affection than are the so-called (dynamic) affections of drugs?

Assuming all knowledge of drug effects to be obliterated, our knowledge of malarial fever remaining as it is to-day, are there reasons to assume that the proving of drugs on healthy human beings, or in any other way, according to modern methods, would develop manifestations any more similar to those of malarial fever than those we now know? or that would even be more similar in their manifestations than are the manifestations of some other diseases to those of malarial fever—say pyæmia, septicæmia, or gall-stone disease?

Hahnemann says what is essentially true when he says:

"Extraneous, noxious agencies possess a subordinate, and often extremely conditional power; but drug potencies possess an absolute, unconditional power, far superior to the former in its ability to produce ill-health, (morbid discordancy of the human body)."—*Organon*, No. 33.

What did he mean?

All things being equal, the size of the dose to the body-weight, a given dose of quinine will always produce tinnitis; in contrast to the fact, all things being equal (the amount of an infection, or the duration of an exposure, to the body-weight, or its equivalent, *i.e.*, individuals living under the same conditions), a given exposure to an infection by malaria will not always produce that disease. In other words, some individuals are immune to disease, and immunity to disease is both natural and acquired; and while natural idiosyncrasy in regard to drug-action exists in man, natural immunity is unknown, and when it is acquired it is never absolute. Furthermore, the effects of drugs are always relatively immediate, while the effects of an infection may be absolutely remote (malaria, rabies, tuberculosis).

I want to lay special stress on the necessity of keeping well in mind a fact as well known to you as to me, and fully recognized by Hahnemann, as is evinced by the foregoing quotation: however similar (superficially) many of the manifestations (symptoms) of drugs are to the manifestations (symptoms) of diseases, the drug and the disease affections, *i.e.*, the diseases themselves, if we can speak of a drug disease, are fundamentally different, unlike. Because, with this fact kept well in mind, it is a comparatively simple matter to grasp what the relations are that exist between the manifestations of drugs and the manifestations of diseases, and why the provings of drugs on healthy human beings, or in any other way, however complete and scientific, in themselves cannot furnish reliable and positive knowledge of how to use drugs in disease (I use the word "positive" instead of "practical," because practical has a relative meaning, and because I consider the present method as practical, but not positive), and why empiricism must also play its part to stamp them as relatively reliable, and positive, or the reverse.

The law itself expressly states that it is not the affection themselves that are similar, but their manifestations, *i.e.*, their symptoms; the drug and disease affections themselves are not only spoken of as being, in relation to each other, stronger and weaker, but they are referred to as deviating in kind, although Hahnemann elsewhere speaks of the totality of the symptoms constituting the disease, and, as a matter of fact, it does for all practical purposes in making a homœopathic prescription; but we should not allow this to obscure our minds in regard to their true relations.

How is the subordinate and often extremely conditional power of extraneous noxious agencies to be explained?

By the existence of an understood something which is known, when present, as immunity, and when absent as predisposition, idiosyncrasy, diathesis or dyscrasia, for want of a better term.

Theoretically, how is malarial fever to be cured by drugs?

Obviously, in either of two ways. First, directly, by destroying the causative organism in the blood by a drug (poison) that is absolutely harmful to it, and only relatively harmful to the blood itself or the human body in general; and, second, by the removal, or cure, by means of a drug, of the personal predisposition, idiosyncrasy, diathesis, or dyscrasia, or whatever it is, that permits the primary acquirement of the disease and its continued existence. It is obvious that there can be no guide according to which the symptoms produced by drugs on healthy human beings can be used to select a drug which will cure the disease in the first way, *i.e.*, by the direct destruction of the organism by some substance inimical in its life; pure empiricism or experimental medicine is necessary here. And, inasmuch as almost nothing is known, symptomatically or pathologically, about predisposition, idiosyncrasy, diathesis, or dyscrasia, there can be no reliable, positive guide according to which the pure pathogenesis of drugs can be used to select a drug which will bring about a cure in the second way, *i.e.*, by the removal of the predisposition, diathesis, or dyscrasia; something else is wanted here too, namely, experience; although this is the conventional way disease is said to be cured homœopathically,—by treating the patient, not the disease; and it is here homœopathy has achieved some of its greatest triumphs; and it is here the methods of the dominant school are the weakest; and it is here, undoubtedly, that some of the most important results in drug therapeutics are achieved.

Predisposition, idiosyncrasy, diathesis or dyscrasia may be assumed to be due to nutritional faults or defects, congenital or acquired, and not to dynamic causes in a homœopathic sense; and I have elsewhere ventured the assertion that drug action is not to be explained by the assumption of a dynamic or spiritlike force, but by the chemistry of the drug developing electric conditions, perhaps, but dependent primarily on chemical composition. The practical application of the idea needs no elucidation.

Furthermore, drugs are proved on healthy human beings, although the unhealthy are alike susceptible to their action. While, on the contrary, as has just been shown, the healthy human being, in a somewhat restricted sense, but more especially so from a homœopathic standpoint, is not supposed to be susceptible to disease, some predisposition, idiosyncrasy, diathesis or dyscrasia being assumed to be necessary besides the exciting cause. In practice it is seldom possible to separate these elements, *i.e.*, the predisposing and the exciting cause, the disease and the dyscrasia or diathesis, although Hahnemann took cognizance of them by means of his so-called anti-psorics, and whatever success he may have had in this line could not have come from deductions from the pure pathogenesis of drugs, but only from experience.

How have the results already accomplished been obtained? and how will relatively reliable, practical results be attained in the future?

While these questions are very pertinent to the subject, their answer involves so much that they can scarcely be touched here. Suffice it to say, the proving of drugs is the essential means to a desired end, but the symptoms constitute general rather than special guides, and it remains for experience to furnish the special guides, or to establish a curative relationship between drugs and diseases (witness the enormous accumulation of clinical symptoms in the *materia medica*); and for this reason, however pure a pathogenesis is in the beginning, every subsequent writer will illuminate or mutilate it with his clinical experience, and by forcing it into comparisons and contrasts with other similarly handled pathogeneses; therefore, the paths trod in the past will be the paths trod in the future, or so long as the homœopathic school has an individual existence.

The pathology, if I can use the term, and the symptomatology of drugs are one thing, and the pathology and symptomatology of disease, with their predisposing, contributing and exciting causes, are another thing quite apart, and very much more complex; and between which there exists no natural relation, but certain accidental ones, now manifested in an apparent similarity in their manifestations, again in an apparent contrariety, and both of which accidental relationships are utilized as guides or suggestions for experimentation in order to determine their value, and neither of which are, *a priori*, evidence of fact. These two principles are not naturally antagonistic, but probably in a sense complementary; the antagonism we have come to feel between them is the artificial creation of man, largely owing, perhaps, to the manner in which homœopathy was launched upon the medical world. The principles of similars and contraries may be regarded in the light of methods of systematized empiricism, in contrast to pure empiricism, and for which the proving of drugs on human beings, or a knowledge of their effects as poisons, furnishes the material necessary for their systematic development. This, in my judgment, is the rational place of homœopathy in drug therapeutics; the only place in which it will ever receive general recognition, and the only place which harmonizes with its actual, rational application at the bedside as it is now carried out by the majority of its followers.

In treating malarial fever we do not do so directly by destroying the malarial organism, nor indirectly by removing the predisposition, idiosyncrasy, diathesis or dyscrasia permitting the primary infection and continued existence of the disease, for we do not know how to separate the symptoms produced by the disease from the symptoms produced by the predisposing causes. We treat neither the patient nor the disease; we treat the patient's symptoms, all his symptoms, regardless of whether they are caused by idiosyncrasy or by disease.

What is the cause of the symptoms in malarial fever?

The pathognomonic symptoms are caused, undoubtedly, by the inception, growth, maturity and sporulation of the malarial organism, the interval of the intermission and the character of the paroxysm; by whether the infection is tertian, quartan, æstivo-autumnal, or true quotidian; or by whether it is mixed, giving a complex but pathognomonic symptomatology. But the pathognomonic symptoms, theoretically, are subordinate homœopathically. It is the peculiar, irregular and unusual symptoms that are supposed to predominate for the purpose of a homœopathic prescription; as an unusual time of occurrence, unusual immediate cause, things or conditions aggravating or ameliorating, predominance or absence of peculiar symptoms before, during or after, etc., for chill, heat and sweat, as well as the symptoms of the prodrome and apyrexia.

This is called individualization, treating the patient, not the disease.

But is it?

Is it not rather treating both the patient and the disease? or simply

treating the patient's symptoms, pathognomonic and individual, with their mutual modifications.

By what is the protean array of the symptoms of the disease met ?

By means of the similarity of the symptoms of drugs produced on healthy human beings. It is a "far cry" from the comparatively simple origin of the symptoms of drugs to the complex and protean origin of the symptoms of disease. Yet the simple results of the provings of drugs on healthy human beings when similar to the pathognomonic symptoms of disease, modified, masked, intensified, or otherwise changed by an obscure and inscrutable something variously known as predisposition, idiosyncrasy, dyscrasia or diathesis, are said to be an infallible guide for the cure of natural disease according to a law of nature, which explains the cure by the assumption of the substitution of a similar but stronger dynamic drug disease for the weaker (dynamic) natural disease on the one hand, or by the removal of the predisposition, idiosyncrasy, dyscrasia or diathesis, and the natural death of the natural disease for the want of a proper soil or fuel on the other hand ; and all of which is characterized as individualization, or treating the patient, not the disease. It is obvious that there are certain irreconcilable, theoretical difficulties here ; especially as the idea of dyscrasia, which is a theoretical abstraction rather than a concrete fact, takes the place, in the minds of many, of the so-called pathologic action of the drug : or is confused with something else. For instance, Dr. George Royal, at the last meeting of the American Institute of Homœopathy, in a paper on "The Relation of the Dyscrasias to the Prescription," describes syphilis, scrofulosis and rachitis (which are now pathologic entities) as dyscrasias, probably as an effort to give body and form to Hahnemann's psoric and sycotic dyscrasias.

This is why I say the proving of drugs on healthy human beings, or on any other beings in or out of health, will not give reliable, positive knowledge of how to use drugs in disease ; the conditions inherent in the complex origin of the symptoms of disease forbid it, if it were not already forbidden by conditions and difficulties inherent in the proving of drugs, growing out of idiosyncrasies, individualities, variations in the age, sex and social conditions of provers, as well as the personal equation of those who interpret them, not to dwell on the unsettleable question of dose.

It requires no great stretch of the imagination to realize that accurate provings, knowledge of prover's previous health record, examination of his functions, special organs, secretions and excretions, before, during and after proving, while of the highest importance for the completeness and accuracy of the proving itself, are comparatively valueless in bridging the gap existing between drug affections and diseases, yet they may serve to make more apparent that which is only bridged with more or less incompleteness by empiricism. While the symptoms of a disease and the symptoms of a drug may be very similar in many respects, the drug affection and what we know as the disease may be wholly unlike ; witness malarial fever and the pathogeneses of suxtry drugs ; yet empiricism using the similarity systematically may establish a curative relationship between some of them and the disease. You may think that I have taken an extreme example in malarial fever, but I have not, for as a disease it is well understood, is of wide prevalence, little inclined to spontaneous recovery or to terminate by death, and is singularly susceptible to drug treatment.

All this is why I have said that when the new provings are made they will satisfy the requirements of the theory no better than the old ones have done. The strenuous endeavor to reduce the symptoms of many provers of a single drug to a fixed and common denominator, even with the aid of clinical symptoms and clinical deductions, has not accomplished in the past the ideal precision and certainty in prescribing, and there seems little

reason to anticipate that any present or future provings will be better adapted to the purpose; more especially as the homœopathic theory not only does not contemplate, but, in a negative sense, actually forbids a like reduction in the symptoms of individual diseases, even if it were possible to practice; but something like which frequently, unconsciously, actually comes to pass; as is exemplified in much routine homœopathic prescribing, or what Dr. Goodno would probably call "specific (homœopathic) treatments."—*Hahnemannian Monthly*, Dec. 1902.

VITAL FORCE AND ITS ANTAGONISMS.

BY C. E. SANFORD, M.D.,

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I shall take the liberty of presenting to you a definition of "vital force" as somewhat distinct from *vital principle*; although they are used synonymously by most writers. Vital principle has been properly defined "as the principle which, in association with matter as in organized bodies, controls its manifestations and properties, and distinguishes organized matter from inorganic." *Vital force* I would define as that unknown quantity that belongs to every organized being, which represents the standard of health of the individual, or the resisting force of the system to disease-producing influences. The former belongs to every organized form of matter as a principle of life. The latter represents the ratio of force or strength it may possess to carry on the functions that belong to the body as a living organization.

Our bodies may be likened to a citadel that has to resist attacking forces that are antagonistic to its strength. The more perfect the citadel in formation and structure in all its parts, the less danger of being destroyed; and it falls only when the attacking forces are sufficiently strong to overcome its inherent strength, or sympathetic forces from within assist in so weakening the structure as to make its condition alarming.

It cannot, we think, be denied that every individual represents a definite ratio of vital force. You may not know, may not be able to tell definitely, what this is, although it may be approximated in a given case, especially if you are well acquainted with your subjects; but there are frequently conditions that cannot be thoroughly comprehended, circumstances that cannot be definitely ascertained or understood, which make it to a degree at least, an unknown quantity. There is, as is well known in some families, a "Tenacity of Life," that, as Oliver Wendell Holmes said, "Will persist in keeping the patients alive when according to every known law of therapeutics, they should long since have been dead and buried."

Standard of Perfect Health.—We will suppose the standard of perfect health is represented by one hundred. This we do not assume is ever attained; although we believe it may be very nearly approximated. In some rare cases it may be represented by 100—5 or—10; from this point it may be decreased until some weak, devitalized specimens may represent only 20 or 30 per cent. of standard health.

Disease-producing forces act as destroying or antagonistic agencies to the life force, and also represent a destructive power, of almost any degree of intensity.

In order to show more clearly our position, let us suppose fifty people are attacked with an acute disease in a given epidemic; we will suppose that their environments are very similar. It may be that the disease-producing forces represent a destructive power of so much violence and intensity that no system attacked has sufficient strength to overcome its

devitalizing influence (although this may be reasonably questioned). But more frequently in 50 given cases in any ordinary epidemic of acute disease representing, we will say a destructive force of 60 per cent., what will be the result? The persons represented by the lower ratio of health will either break down and succumb to its devitalizing force, or by the best care and treatment possibly some may be saved. While others who possess a much larger ratio of health, although their systems may be susceptible to that peculiar form of disease-producing force, will not be dangerously sick, some but slightly ill, requiring little or no attention from physician or nurse. The reason all do not become affected by this epidemic influence is, no doubt, because there is in the system, either hereditary or acquired, a lack of the predisposing sensitiveness to the specific "poison" or germ, if you please, that that particular irritating cause represents. As is well known, the peculiar form of disease that visited this country first as an epidemic in the winter of 1889 and 1890 known as "la grippe," affected a large number of people in almost every town and city of our northern, middle and western states. Why? Because in so many people it produced its effects upon membranes already weakened and irritated by semi-diseased conditions of a catarrhal and bronchial nature. Never in my remembrance were we visited by an epidemic in which so many felt its influence. Yellow fever and cholera and diseases of that type produce their effect by the intense violence of the disease-producing power, affecting a large proportion of those who come under its immediate influence, but fortunately giving often sufficient warning of each approach so that most may flee from its presence.

It is also true that many patients die who are not so sick as others who recover. To some minds this may appear impossible; but we are sure every intelligent member of the profession, who has had a large experience, will confirm our statement.

These conditions being admitted, the question arises "How can we increase our health ratio?" "How can our vital force be increased?" And by this means decrease the power of disease-producing influences upon the system.

I think no one will question the fact that we start in life's struggle at varying relative odds, that we are born with our own individual standard of hereditary vitality.

Various circumstances affect this, even before we are old enough to know how to take care of ourselves, which unfortunately may never be. We may more properly say, before we come to the age of reasonable maturity.

Some of the causes that tend to weaken vital forces in infancy and early life are: improper food; ignorance and neglect of mothers and nurses; too little sunshine and fresh air; too much medication; unhealthy houses, from location or neglect of sanitary conditions; uncleanliness; unwise modes of dress.

Some one or more of these causes may have produced such results in the system that at the age of 10 to 15, those who survive, say, out of one thousand born in a given place, may have changed places in a marked degree in their relative positions, in the primary or hereditary schedule. After this age, in early man- and woman-hood, other and more serious causes, which may not, in their deleterious influences have begun to show to any great extent on the surface, are often producing effects, which, in a few years later, tend very much to lower the standard of health. Some of these are improper and vicious habits of various kinds, as the use of alcoholic stimulants, excessive use of tobacco, over-eating and unhealthy food, sexual excesses, too little sleep. These habits may have been formed

whose roots may gradually sap the foundations of the citadel or destroy or greatly weaken the health-producing forces of the system.

What then is needed upon which to build a superstructure of comparatively perfect health, which shall grow stronger and more perfect as the years go by, producing results upon the individual the most beneficent, and also upon those who may become the offspring?

The primary need of each individual is a foundation of healthy protoplasm; upon these rest in a great measure the whole superstructure of physical and nervous vigor. We will suppose we have received these, the greatest inheritance possible for parents to bequeath their children; we will take it for granted that infancy and childhood have been safely passed. Now, what general laws may be laid down to govern those who earnestly desire to attain the highest standard of health possible? To these persons we offer the following suggestions:—

Positively, a perfect lung capacity should be attained by using the lungs freely, forming a habit of breathing deeply, asleep or awake. Inhaling to the full capacity of the lungs (minus the residual air) at stated periods; and at all times displacing in our respirations as large a quantity of air in the lungs as can be easily accomplished, remembering that the oxygen from the air, mingling chemically with the carbon of the blood, is not only the great purifier of the blood, but by its presence in the circulation, is the natural stimulant, as it flows through every portion of the system, to vital assimilation, prompting every tissue in the body to absorb from the blood the food it needs to give it life and strength. Very few people realize the immense advantage a large lung capacity gives to those who possess it.

Food.—Wholesome, properly cooked food taken at proper intervals, and in proper quantities, not too frequently, and very sparingly when not hungry. This will be the natural and proper mode of furnishing the vital forces to the system, the amount of strength needed to carry on the work of the system and keep waste places properly replenished.

Pure Water.—The great assistant to digestion, forming a large percentage of the weight of the entire body. Small quantities of pure soft water taken with the meals, I believe, is a great help to digestion. I am confirmed in this position by the fact that a thoroughly scientific investigation has been made by which it was found that pure water was the only liquid known that increased and shortened the action of the digestive fluids.

To these positive principles may be added a wise use of the muscular system to promote growth and strength, especially open air exercise in sunshine, and the free, pure air of mountain and ocean beach; sufficient sleep and rest. The free use of water, both for cleanliness and for comfort. Warm and hot baths for cleanliness, and for the stiff or bruised feeling that comes from over-strain and unusual exercise. The cool and cold bath for a tonic effect upon the nervous system, giving a feeling of vigor and strength to the whole being. The former are better taken at night, the latter in the early morning with a vigorous rub that will produce proper reaction. Many people do not know the comfort and sense of rest that comes from bathing the feet at night, which I am confident often promotes restfulness and tends to produce sleep.

Few laymen or physicians seem to know how important a factor hot water may become in a great many conditions of pain and suffering. In all forms of external pain and soreness, in many forms of internal distress and inflammation, hot water, without and within, is all important, and the most valuable therapeutic agent we possess. In bilious colic, cholera morbus, appendicitis, peritonitis, in passage of hardened secretions through the various outlets of the body, as the kidneys and gall ducts, hot water is invaluable.

By following these simple rules you will, I believe, be enabled to enjoy the most perfect health your own individual organization is capable of attaining. If, then, our position is correct, if our premises are sound, based upon reason and experience, what should be the line of effort that would govern the physicians when disease-producing forces have found entrance to the citadel, and are threatening the very life of the patient.

In the first place, so far as possible, the strength of the patient should be maintained. In order to accomplish this, every influence known to scientific therapeutics, hygiene, dietetic, prophylactic, that may in any way help build up and strengthen the system, should be employed. To this end pure air should be admitted to the sick room in generous quantities. In many cases, sunshine is a necessity; thorough ventilation should be insisted upon. Easily digestible food, especially adapted to the diseased condition, should be carefully prepared and wisely and daintily administered, care being taken not to over-crowd the weakened digestive organs, whose normal functions must of necessity be depressed. Cleanliness of the body of the patient by judicious and not unfrequent bathing must be insisted upon, and the whole mental and moral atmosphere must be surcharged with hope and cheerfulness. There can be no question in regard to the effect of these upon the physical condition of the patients. Disease is usually depressing. Clouds and deep shadows of the twilight dwell in every portion of the weakened and perhaps irritated cerebrum. Fear, the most general and all-pervading of the sensations, has often a prominent position, and these conditions must be wisely and judiciously combated. Blessed is the man who from the evolution of his own psychical and physical forces can carry into the sick room an atmosphere of sunshine and hope.

Medication.—In regard to medication, much will depend upon the individual practitioner; but I think all will agree that it is wiser to give too little, than too much, medicine. Science teaches us that the micro-organisms that many believe to be the exciting cause of diseased conditions are minute almost beyond the power of our conception. We should also remember that medicine as a “drug force,” is always a foreign element, producing often in the system effects that are detrimental to the “*Vis medicatrix nature*” of our organization, in a word adding to the already abnormal effects of diseased forces a new series of drug forces that only help to destroy more effectually the natural rhythm and harmony of the delicate functions of the organs of the whole system.

The wise physician will be careful so to use drugs that the utmost good may be accomplished with the least possible danger to the patient, always remembering that it is the *curative effect* he wishes to produce and not the specific drug action, for as no one face perfectly resembles the face of another, so no one organization harmonizes perfectly with another. Idiosyncrasies of matter and mind, of nerve and spirit, all tend to produce individual peculiarities that need to be studied and wisely considered in the prescription of the practitioner of medicine. I state it boldly and without hesitation, from the vantage ground of fifty year's experience and observation in the practice of medicine, that if the public had the most remote idea of the number who die yearly from the unwise and careless use of drugs, sometimes even when prescribed by physicians, they would be appalled, and that, too, not unfrequently when the directions of the physicians are properly carried out.

Let us remember, also, that disease is a positive condition, and not a simple physiological derangement of the functions of an organ. A pathological condition must be the result or product of some cause different from and opposed to the physiological integrity of the organism. Thus a “Celebrated Writer” makes frequent allusions “to the existence of morbid causes, which he terms the natural causes of disease, but whose

influence is not perceived by the organism so long as the standard of health is kept at a high ratio by proper health-giving influences," but he says: "If these conditions cease to operate as defenses to the organism, the morbid causes which surround us on all sides, and are continually seeking to subvert the physiological integrity, are manifestly perceived in the tissues. Their manifestations of morbid action in the organism take place under a variety of circumstances, such as a draught of air, retrocession of the perspiration, fatigue, exposure to dampness, the use of bad food, insufficient ventilation, impure air etc."

These irritating causes act upon a system that has a predisposition to some special form of disease by a hereditary or acquired weakness producing an abnormal susceptibility of some portion of the system. Consequently, a diseased condition has been produced that makes some specific medication or assistance necessary in order that the system may be more quickly restored to its normal function. Hence, it may be seen that the actual development of disease depends not upon exposure to the exciting causes, but upon the condition of the system itself.

Disease then may be defined as the action of some specific morbid force upon the system, already prepared by its unhealthy condition to receive and propagate it.

It seems to me it would be impossible to picture more vividly the position of the germ theorist of to-day than was done by the writer quoted, many decades ago in an essay in a German magazine entitled "The Spirit of Homœopathic Doctrine" by Samuel Hahnemann, and it shows his wonderful power of grasping scientific conclusions, although ignorant of the specific exciting causes of which he was writing, but the effect of which was evident in varied conditions of disease.

Let us make clear Dr. Hahnemann's position. He said: "The actual development of disease does not depend upon exposure to the exciting cause. But upon the condition of the system itself," a position that scientific investigators of to-day generally believe true.

Again he says: "If these conditions cease to operate as defenses of the organism, the morbid causes which surround us on all sides and are continually seeking to subvert our physiological integrity, are manifestly perceived by the tissues, and disease results." To-day we may realize how thoroughly the writer's observation was based upon an unknown scientific condition, "and that the morbid causes that surround us on all sides" have been largely eliminated from their surroundings and stand forth as distinct and specific micro-organisms, that often swarm in the air we breathe, dwell in and taint the water we drink, are sometimes in portions of the food we eat and render carriers of disease the articles we handle, and in a thousand forms and ways pollute all forms of health and life promoting influences.

I am well aware that Hahnemann wrote these words to enforce and sustain his "Psora Theory," and if we do not subscribe to that in its entirety, we are at the same time not mindful of the fact, that the large mass of humanity are to-day suffering in every fiber, tissue and cell of their organization from some form of hereditary or acquired blood dyscrasia, oftentimes I believe nameless, and may be without specifically defined individuality, because it has been changed and modified by the commingling of various forms of pollution through ancestral inbreeding. Eradicate tuberculosis and syphilis and their effects upon the human race, and I believe you would cut off streams of suffering and death that would leave very little to be dreaded.

Let us bear in mind the radical difference between hygiene and drug agents. The former acts upon the system as a natural stimulant, building up and increasing the vital forces, revivifying the system from foundation

to piastre. Pure air, pure water, proper food, judiciously administered, invigorate and vitalize the entire system. They increase and stimulate the healthy action of the various organs and tissues and tend to increase the resisting force of the organism to the action of morbid influences. Under their benign influence, we enjoy a sense of refreshment, a feeling of invigoration permeates the whole man. He feels new life and power and shows in every look and act that the life-giving fountains have been replenished anew. How different the action of drugs! They in no way supply the vital forces with new life. They do not afford nourishment. Feed your patient with the most powerful tonic or stimulant. What will be the result? After the first feverish, exciting effect has passed away, the system will relapse into a state of depression, corresponding to the extent of the previous stimulation. The secretions will become vitiated, the vitality weakened, and a drug disease produced that will either destroy life or endanger the integrity of the system. Natural hygienic conditions alone increase healthy vital force; drugs only meet specific diseased forces, or conditions produced by them upon the system.

• What the world needs to-day is men and women of pure lives, free from the intense nervous strain of the almost uninterrupted functions of fashionable society, living above the intoxicating air that is breathed in the realm of the worshippers of the "God of this world," pure in soul, clean in mind and body. Strong of heart and hands, with aspirations that teach towards the best, the highest, the noblest work that man can do for his fellow man. Not too proud to serve, not too weak to command; loving God as the supreme end; loving man as the only way he may learn to love the Creator.—*North American Journal*, January, 1903.

A REMINISCENCE OF HAHNEMANN.

BY MR. JOHN B. YOUNG, Clinton, Iowa.

While so many have written about the immortal Hahnemann, who were highly qualified for the work in hand, and whose writings have been read by admiring multitudes, it may seem presumptuous in an uneducated and unknown person, seeking to interest you in such a theme as a Reminiscence of Hahnemann.

The paper which I read today is the result of several requests from professors in your college, and this is my only plea in appearing before this intellectual audience.

It is worth much to have books at one's command, whereby we can study the life and work of a great man, and to a great extent familiarize ourselves with the great thoughts that came from his fertile brain. My experiences, impressions, and what I have known of the man, are not from books, but from a living presence, whose life currents flowed so gently and grandly in my presence for three-fourths of a year.

It is worth more than tongue can express to see and touch the living man, and feel the magnetic thrill from his lustrous eyes. To have his hand in yours and feel the warm impress from a living soul thrilling your own. To watch the angelic smile sweeping o'er his beautiful face as he discerns that the disease in one of his patients will soon give place to rosy health, is an inspiration and a benediction that never can be effaced. It is in the presence of disease and where the life-blood is oozing slowly away, that you catch a gleam of the healer and perceive the intense hunger of soul to bring relief to the suffering one.

It was impossible to be in his presence frequently without seeing and feeling that he was preeminently a man first and then a physician. He was in dead earnest, and his love for diseased humanity was paramount

and dominated his life and made his practice of medicine a necessity. To be great one must be humble, and to be helpful one must be unselfish.

Hahnemann was never satisfied with mere service or travelling in the foot-steps of others. He was a lover of the truth, and became a Homeopathist because he found laws as a rock on which he could stand and face the severe criticism of the old school. Had he not been a true man he would not have troubled himself about the new principles of cure that through investigation came to him, but would have remained an orthodox practitioner till the end of life.

His greatness comes more into view at this period of his life, when he made the decision to follow the light, and if need be die for what he believed to be a revelation of eternal truth.

Heterodoxy in medicine had no power to chain him to a dead system; persecution at home did not for a moment intimidate this man of principle; from bigotry and effetism he fled as from a plague, and found in the city of Paris a place for the developing of the grandest system of cure the world has ever seen. His was a kindly nature—full of sympathy, gentle and loving as a child,—unselfish and helpful, ever eager to succour the afflicted and bear other's burdens. But though generous and abounding in simplicity, he yet had the heart of a lion, and the courage of his convictions.

A person who has a mind of such magnitude as to project a new system of healing that is to bless the nations of the earth, has an *influence* and a *personality* commensurate with his discovery, and those whose feet have stood in that august presence are thrilled with the glory of a new dispensation and dazzled with the brightness of a new star in the horizon, that shall shine till time is no more.

The dullest plodder in life's history may know little of method, be indifferent to principle, and may be blind to far reaching results, but if privileged to stand where a great presence lives and moves, his being will be swept and dominated by a power that may be felt but cannot be expressed. Such is the experience that has pervaded my life for over sixty years. Out of that presence I shall never find myself, for it is part of my life and I love to be enveloped in it. To think of him is to be thrilled and inspired, and in a measure to be a partaker of his God-like nature.

I have tried to convey some of my thoughts of the great healer, by what I knew of him through personal contact and personal treatment, and yet I realize that my impressions, though deep and overmastering, cannot be grasped by my mind and made plain to others. I only know that I was once under his majestic spell, and that time nor place has not diminished his individuality or in the slightest dimmed that luminous presence.

Besides these personal impressions, there was that about the doctor which irresistably drew him to you, and compelled your admiration and love. His was an unselfish soul,—his longings were intense to save and heal, and his success phenomenal.

I once said to H. C. Allen, Dean of Hering College, that he was the most divine looking man I ever saw. At this period he was over four-score years, yet his "eye was not dim, nor his natural force abated."

The youth loved to dwell in his presence as plants turn to the light. The aged and mature felt new life under his touch, and would fain linger under the inspiring spell of his voice.

From many nations far and near, came a great host of invalids, whom the allopathic doctors had pronounced incurable,—many of them so far gone that they had to be carried to this wonderful physician, whose warm heart and cheering sympathy was itself a source of healing.

You who know him as a physician and have read of his marvellous system of cure, and the law by which he was guided in administering to the

sick, will readily admit that no other man ever lived who had such marvellous success, and none ever comprehended, as he did, the mystery of physical life.

He had a heart to feel, a brain to plan, a magnetism pure and penetrating, and an individuality far reaching. The many colleges that have sprung up in this and other lands, filled with able professors, and teeming with a multitude of students, who are giving and receiving the Hahnemann system, are so many rays of light flung out from the great center of healing that has made Paris great and Hahnemann immortal.

HIS OWN CASE.

A recital of my own case may prove of interest, and so I will briefly state the facts that you may judge for yourselves. I was born in Paisley, Scotland, December 4th, 1823. My father was a weaver, of what is known as Paisleyshawls, and at eight years of age I became a weaver's draw-boy.

Between ten and eleven years of age I took a very severe cold which finally settled upon my lungs, bringing with it the usual night sweats and cough. For over a year I was confined to bed, growing weaker and weaker and occasionally was visited by the local doctor, who pronounced my case hopeless.

About this time, a Miss Sterling, a lady of wealth, came to see my father about some church business, and during her stay the sick boy was discovered, and from the very first she showed great interest and sympathy. The day following this providential visit, this kind lady returned with her family doctor, who attended me constantly for many months, and on the first day made an examination of my lungs and pronounced the disease fatal.

This devoted friend of mine, shortly after left for a year's visit to Paris, and while there kept up a correspondence with her doctor, and from him received regular reports of my condition.

After several months' stay in Paris, my friend became acquainted with the immortal Hahnemann, and shortly after became one of his most enthusiastic converts. Like all new converts, her faith was strong and active, and her loving heart must seek out those who were in the valley and shadow of death, and bring them to the great physician she had found.

Miss Sterling at once wrote home to her doctor, and made earnest inquiries as to my strength and ability to travel to Paris. His answer was emphatic, had no uncertain sound. "The lad's strength is nearly gone, and he would probably die before reaching the city." Such a decision would have chilled almost any heart, but her love grew stronger, and another letter came with this request, "Call in other doctors and let there be an exhaustive consultation, and decide if the trip could be made in safety by the boy resting frequently on the way."

During the period between the first and second letter, I had rallied some and the consultation was favorable to my immediate trip to Paris. Such a journey in those days was tedious and to an invalid tiresome, and but for love inspired by hope, it never could have been undertaken. In those days travel was confined to stage-coaches and steam-boats, for as yet the iron horse was an unknown factor in the land. After resting a few days in Edinburgh I was taken by a steamer to London, where I rested for two weeks at the palatial home of Sir Andrew Clark, who after became the Queen's doctor. While staying with Sir Andrew Clark, I was several times examined by him, and at the conclusion of the last, heard him say in a whispered conversation with his lady, "There is not the slightest hope of recovery, he will never return alive, and it is too bad to drag him so far from home."

After a weary journey and painful in the extreme, I at last arrived in Paris, and on the second day Dr. Hahnemann drove in his carriage to pay

me a visit, and find my true condition. I was requested to strip and go to bed, so that he could the better have command of my person, and find to what extent the dreaded disease had developed. His examination of my lungs was similar to that of Sir Andrew Clark and others, with the exception that Dr. Hahnemann was longer and more exhaustive. I think that I was in his hands from first to last about one and a half hours.

He would pound me on the front of my chest and then on the back, and have me count figures from one and upwards, then put the stethoscope to my lungs for quite a long time, and listen intently. The whole operation was painful, and I fretted a good deal while it was going on. The darkest hour of the night is just before the light floods mountain and valley, and so it was with me when the ordeal was ended, and the grand old man turned around to speak to my friend, who was anxiously awaiting the result of his examination.

He spoke to the lady in French, but I saw from the luminous glow on his face that it spoke of life and hope. He had been down in the depths of my being, and now knew just what the damage was, and that the craft would yet float free of the breakers, and sail o'er many a sea. You who have been in the storm blast and drifting among the breakers, know something of the joy of the heart, when a ray of light and hope sweeps over the drooping soul. Such was my happy experience when the doctor's face, gleaming with a satisfied joy, brought rest and peace to my lonely heart.

And I was not disappointed, for just as soon as he stopped speaking, my dear friend joyously said to me, "The doctor says, 'I am glad that the lad has come to me in time, I will cure him, but it will take a little while.'"

Dear friends, it took a long time to travel from Paisley to Paris, and to me there was nothing but gloom and death as I journeyed. Besides, I had left home and friends, and was among a people whose language I knew not. Under these conditions I hear words of life and cheer from the great healer, and a glad song fills my soul. I am to live, I shall see my loved ones again, and Scotland shall be dearer than ever to my heart. Howe, sweet home, will have a deeper and more sacred meaning as I shall hear the welcome as I return from a foreign shore, to the hills of my native land, and her bouny blooming heather. The sunshine of that glad hour still fills my life, and like a spiritual gulf stream will continue to flow through my sentient being until the spirit shall speed away to a brighter clime, where disease and death are forever unknown.

Such a healer as Hahnemann, was to humanity the brightest star of all the centuries, a star increasing in power and brilliancy as he is studied by the intellectual minds of this glorious age in which we live. How can I be otherwise than grateful to the man who saved me? How can I ever be indifferent to the goodness of heart, who having restored health, and treated me like a prince for nine months, yet refused to accept the slightest recompense for his invaluable service? All hail to our hero! All hail to the man! Though dead he liveth for evermore.--*Medical Advance*, December, 1902.

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DR. ROBERSON DAY ON THE ADVANCEMENT
OF HOMŒOPATHY IN ENGLAND.

(Concluded from last Number, p. 60.)

We pass on now to take some notice of Dr. Day's opinions on the relations subsisting between Allopaths and Homœopaths, and the cruel persecutions with which the former treated the latter. When Hahnemann took his stand against the barbarous practices of the old school of medicine that were in vogue in his time, a great hue and cry was raised against him and he was subjected to a terrible persecution, the sting of which was sorely felt by himself as well as his followers for a long time. This persecution had soured his temper, and "constantly involved him in bitter disputes which marred much of his writings," without appreciably advancing his cause. If Hahnemann and his followers, who had sufficient grounds to be irritated, had kept themselves under control, and been less virulent in their attacks on their opponents, the breach between the two schools might have been less wide. "There is no doubt less active persecution to-day than formerly, but it still exists and bursts out now and again," and in its place, we now find more of abuse and ridicule. Dr. Day adds:—

“We are still treated as outcasts, our contributions are refused publication in the medical journals, we are not allowed to join any of the medical societies, even the Medical Defence Union refuse us membership and the College of Physicians so tyrannises over its members that even those who would meet us in consultation dare not do so.”

And this in spite of the noble dictum of Dr. Gairdner enunciated in one of his essays, that “the true physician derives his chief claim to that character from his perfect intellectual and moral freedom.”

Dr. Day here points out how the late Dr. Pereira, Professor of *Materia Medica* at the London Hospital, used to devote one of his lectures each Session to Homœopathy, when he showed himself to be a master of vituperation, and when his audience were convulsed “with laughter by the ridicule he made of it;” and yet how one member at least, if not more, of that class “in after years became convinced of the truth of Homœopathy.”

Speaking of the barbarous practices of the old school during the days of Hahnemann, Dr. Day rightly states that it is these practices chiefly which led the public to welcome “a method of treatment that was gentle in its action, safe in its application, and successful in its results..... But since those days, thanks to the lessons of Homœopathy—and even the allopaths will acknowledge this much—a great change has come over the old school of medicine, who aided by enterprising chemists, copy our tablets and pilules as well as pillage our medicines.” Such being the case, Dr. Day advises Homœopaths to leave all unreasonable hostility between themselves and the allopaths “severely alone, and never to miss an opportunity of courtesy, and at all times to stand firmly on our rights as equally qualified to treat the sick—nay better qualified, since we have added a knowledge of Homœopathy to our previous studies.” His most particular advice to our members is that whenever they find a person of an intelligent and enquiring mind, he should be taken first to the hospital, where “can be seen the *practical* application of Homœopathy;” and then to the Homœopathic Society, “where there is freedom of speech and opportunities for discussion; where the eyes are opened to see that there are men of distinction who believe in Homœopathy; and the ears are charmed with the words of wit

and wisdom which fall from the lips of the members." There can be no doubt that if these advices be strictly followed every where by our party at least, the wounds received in the former frays will soon cease to smart, and a spirit of amity will prevail between the two parties in no long time, a consummation most devoutly to be wished in the interest of the healing art.

In reference to the fact that the old school is gradually encroaching upon the new, Dr. Day warns his hearers against the notion entertained by some outsiders that there is "little difference between the two schools of medicine." In reality, he adds, that there are essential differences between them, and that it is of the utmost importance that these differences should be carefully set forth. One of the most conspicuous of the differences, says he, is "the *disbelief* of the allopath, and the *belief* of the homœopath in the power of medicine," and he illustrates the former by a quotation from Dr. James F. Goodhart, an allopath, in which the latter says, drugs "are sometimes given to hide our ignorance, I fear, or to mark time while we watch and wait," sometimes "an enhanced reputation is the windfall that it is hoped to secure," and often "as an experiment in the hope that they may do good." As to the drugs themselves, their popularity sometimes becomes "enormous, (as in the case of antipyretics, for instance), "far in excess of their merits, and by and by they sink into the cold shade of neglect." But the booms of antipyretics "are now buried by later booms, such as animal extracts, and antitoxin, and many of these will be buried too." In reference to the belief of the homœopaths, Dr. Day expresses himself as follows :

"How different is our case! We are never at a loss to prescribe something, and we know the more closely we match the pathogenesis of the drug, with the disease in question, in other words, the more accurately we cover the totality of the symptoms of the medicine, the more certain we are of a cure."

As to the attitude of the laity towards homœopathy and our literature, Dr. Day states it is a relief to go to them from the majority of the profession. The laity of to-day are better educated than before, and many of them are well informed on medical subjects, and read with avidity the popular works written by the profession for their benefit. They are to a great extent free from

the prejudices that warp the judgment of medical men, and are more open to conviction. It is to the laity, therefore, says Dr. Day,—“the intelligent and reading public—who come to the subject with an unbiassed mind, that we must look and appeal for justice.” The great majority of the non-professional class “have no idea of the persecution homœopaths still suffer at the hands of the majority of the profession, and some up-to-date statement of what homœopathy is, and the unreasonable attitude of the allopaths would be of the greatest value, some short pamphlet that we could put into the hands of our patients would do much to clear away misrepresentations and help on the cause.” But the writers of these pamphlets must come to their subject with a calm, unruffled and unbiassed mind, and must always have for their aim not victory but the ascertainment of truth, the whole truth and nothing but the truth. Besides the pamphlets of this kind, the whole range of homœopathic literature, the serious, systematic treatises on the different branches of the medical science, require to be constantly revised or rewritten so as to bring them up to date. “Old facts require putting in a new light and new facts must be added.” This portion of our work is undeniably the most difficult and hard to be done well. It is here that master-minds are absolutely necessary, and in proportion as it is well executed will the cause of homœopathy prosper and disseminate, and less attention paid to prescription by empiricism than to that “by a guiding rule.”

In conclusion, we entreat all the qualified homœopaths practising here amongst us to peruse Dr. Day's Address, and turn their attention to the suggestions and advices given there. In this country homœopathy is yet in the most backward state, and has to contend not only with allopathy, but with the Hindu and *Hakimi* systems of medicine. Of the latter three systems, the first and last are exotic and have not stuck root into the soil. The Hindu system is indigenous and much in favour with the Indians, but it has not kept pace with the progress that sciences have made in the most advanced countries. Then again there is no proper medical school for teaching homœopathy, no hospital to treat patients under our system. Homœopathic practitioners must be recruited from the graduates of allopathic colleges, or we must go to America to learn. There is no organization

among our members, no serious attempts to work together to advance the cause of homœopathy. There are no homœopathic nurses properly so called, and the chemists too few to be of much use. Dr. Day complains of the mischief which non-qualified medical men have been doing to the cause of homœopathy in the British Isles. But if unqualified medical men—"the parasites of homœopathy"—be numerous in those isles, their number is legion here; and there is little hope in the present state of things of rescuing our country from their evil influences. We appeal to our qualified medical men to combine together, follow in the footsteps of the British Homœopathic Association and do what is possible for the advancement of homœopathy.

SOME NOTEWORTHY FACTS ABOUT VACCINATION.

As the English Vaccination Act of 1898 will expire towards the end of the current year and as the Government have notified its intention of having the present Act extended to another year, it is apparent that sufficient facts are yet wanting to enable that body to come to a final decision as to what should be done with vaccination. The *Lancet*, the *British Medical Journal*, the Imperial Vaccination League, and the Association of Public Vaccinators of England and Wales are moving heaven and earth along with other bodies and periodicals to have compulsory vaccination and re-vaccination. The antivaccinators have not ceased to raise their feeble voice against this movement, but that voice seems to stand the chance of being drowned by the determined opposition of their adversaries. In the United States of America—the land of free thought and fair play—the pros and cons of the present question are being discussed and treated with greater freedom. We have had occasions to return to the subject from time to time, and have furnished facts and given out our opinions on the vexed question, in order to give the governing authorities of this country opportunities to look at it from a broader point of view; and we intend at present to place before our readers some further facts and figures collated from our contemporaries of the New World.

Dr. A. M. Davis states (*Medical Advance*, February 1903) that "it is a universally observed fact that where there is most

vaccination there you will find most small-pox." In the State of Massachusetts, for instance, "every one is supposed to have been vaccinated; but it has had no apparent effect in checking the scourge." On the other hand, in Leicester sanitary measures have been resorted to "unceasingly for twenty years and there has been no occasion to go back to the practice of vaccination." Dr. Davis's statements about Cleveland, a town in the State of Ohio, is more significant. For some time this town had not, it seems, a clean bill of health. During the summer and autumn of 1901, Dr. Fredericks gave it "a much needed cleaning up." "A vigorous opposition was at once brought to bear by health officers of neighbouring cities, from Buffalo on the east to Chicago on the west, and Dr. Fredericks was forced to abandon his sanitary efforts," and resume vaccination in Cleveland. And what was the result? "For seven months following the period of sanitation, which was completed on the 9th November, 1901," there were thirty-one cases of small-pox, and six deaths; but during the succeeding four months, when the effect of the resumption of vaccination began to be felt the number of cases rose to 1059, and the deaths to 171; and this in spite of health boards, vaccination and summer heat (for in the United States small pox is said to be less active during warm weather). Well may the *Medical Advance* put this pertinent question—has not the terrible increase in death from small pox been brought about by vaccination?

Let us now turn to the outbreak of small pox among the students of Northwestern College at Naperville, a place in the State of Illinois. (See *Journal of Homœopathics*, January, 1903.) It was in the month of February 1902, that the disease made its appearance, and before any one suspected its presence, the majority of four hundred students were exposed to the malady, and a general vaccination was ordered by the Board of Health. "It was my privilege" adds Dr. G. E. Dienst, M.D., "to vaccinate about three hundred and fifty persons of different ages and conditions. Having seen in my own family the deleterious effects of vaccination while in Japan in 1891, I concluded to experiment with internal remedies and note results." The remedies used were *Malandrinum*, 36 x, *Vaccinum* 200 x, Mulford's vaccinia points and *Variolinum*. "In

the great rush that followed the peremptory orders of the Board of Health it was impossible to note distinctly the number of those who took *Malandrinum* and those who took *Vaccinum*," but an attempt at equal distribution of the two remedies was made. Among the students however some were strong provocationists, and refused to take any medicine at all; and there were some others who positively refused to be vaccinated, "and preferred quarantine instead."

Among the persons—nearly two hundred—who received either *Malandrinum* or *Vaccinum*, there was not an individual, who had a very sore arm, and in a vast majority of those persons the vaccination *did not take*. Dr. Dienst adds: "Some returned for re-vaccination, but I refused. None of these persons had any symptoms of small-pox whatever," and in one instance where a young man was a room-mate to the first case of small pox, there was not the slightest symptom of the disease. Both these young men, the one who took sick and his room-mate were from beyond the Mississippi River, neither one acclimated, both studied in the same room, and slept in the same bed—the one took small-pox without apparent cause, and the other, vaccinated and given *Malandrinum*, *after exposure*, showed no symptoms of small-pox at all, neither did his arm become sore in the slightest degree, nor did any one of those thus treated have either varioloid (so-called) or small-pox."

"There were about twenty persons to whom I gave no medicine whatever in order to see what difference there might be, and to do this I used the same kind of vaccine points on the one that I did on the other, and selected individuals of the same general health and environments, so that my mind would not be prejudiced in the least. Of these twenty persons, about all (I know of three upon whom the vaccination did not take) had sore arms, and in four persons the arms became so very sore, so badly swollen, that they required treatment and nursing for nearly six weeks. Of the three upon whom vaccination did not take *all* had small-pox, two very slight, there being scattered pustules over the face and entire body, and on one, who seemed to be the healthiest of the three there developed a most beautiful type of small pox, which at one time threatened to become confluent. From the very soles of his feet to the very crown of his

head there was one mass of pustules, and on the face, arms, back and limbs they were so thick that you could not touch him with the head of a pin without coming in contact with pustules, and yet there is not a scar left on this young man's face to mark the disease.... These three young men have enjoyed as good if not a better state of health since their attack of small-pox than those who were so severely afflicted from the vaccination."

Dr. Dienst then took notice of two cases in which the patients under the old school treatment apparently suffered much worse than these, and one was badly pocked, and the marks which have been left behind will probably be carried to the grave; and he very pertinently asks, "Where were the prophylactic virtues of vaccination, when persons like the three young men mentioned by him took the disease after vaccination?" Neither can the theory that vaccination modifies the disease can have much weight in the face of the two cases under the old school treatment.

In reference to the persons (about fifteen in number) who were equally exposed to the epidemic as the others, and who for various reasons refused to be vaccinated, Dr. Dienst makes the following statement:—

"Some one told them that I gave preventive medicine, and they came to see me. After obtaining their confidence and promise that nothing would be said until the whole matter had quieted down, and there were no more cases in town, I gave each one some medicine. To several young ladies I gave three powders of *Malandrinum*, one powder to be taken each evening on retiring, and three powders of *Vaccinum* to be taken in the same manner one week after taking the *Malandrinum*. To two professors of the college, and three students, I gave three powders of *Variolinum*, c. m. potency, with the instruction that they report in three weeks any of all symptoms that might arise. At the end of three weeks they reported. Four seemed to notice no symptoms whatever. One of the professors noticed considerable pain in the back and limbs in about ten days after taking the powder, after which one lone pustule developed on the left side of the face near the mouth. None of those who took the medicine showed any symptoms of small-pox, though equally exposed with the others, and were not for one moment inconvenienced in their work or studies."

Dr. Dienst made similar experiments in his own family also, with the same result:—

“I used the same prophylactic measures in my family and in about seven days after taking two doses of *Variolinum*, I had every symptom of small-pox for two days except fever. These symptoms soon passed away and I felt as well as usual.”

But, the most startling figures are furnished by Dr. C. F. Nichols, M.D. Boston (*vide* his pamphlet on Vaccination, 2nd edition, reviewed in the *Medical Advance*, Feby. 1903.):—

“Vaccination was made compulsory in England in 1853, again in 1867, and more rigid in 1871. Since 1853, we have had three small-pox epidemics:

1st. 1857-59	deaths from small-pox	14,244.
2nd. 1863-65	“ “ “	20,059.
3rd. 1870-72	“ “ “	44,840.

Increase of population from 1st to 2nd epidemic, 7 per cent.

Increase of small-pox in same period nearly 50 per cent.

Increase of population from 2nd to 3rd epidemic, 10 per cent.

Increase of small-pox during same period 120 per cent.

Small-pox deaths first ten years of enforced vaccination (1854 to 1863), 33,515.

Small-pox deaths the second ten years, 70,458.”

The facts and figures given above do not seem to prove that vaccination is so efficacious as its uncompromising advocates assert. If they warrant any conclusion to be drawn, it appears to go in the contrary direction, and this is the conclusion which has been drawn by some of the most eminent thinkers and philosophers and scientists of the age, by men like Herbert Spencer and Alfred Russell Wallace. Herbert Spencer, without giving any direct opinion either for or against vaccination, has put the matter in the following form, namely that the assumption of Jenner and his disciples, that “vaccination changes the constitution in relation to small-pox, and does not otherwise change it, is a sheer folly.” (*Facts and Comments*, p. 192). Mr. Wallace, who has devoted full one hundred pages (one-fourth) of his work *The Wonderful Century* to vaccination, has summed up as follows:—“Whether we examine the long-continued records of London mortality, or those of modern registra-

tion for England, Scotland, and Ireland; whether we consider the 'control experiment' or crucial test afforded by unvaccinated Leicester, or the still more rigid test in the other direction, of the absolutely revaccinated Army and Navy, the conclusion is in every case the same—that vaccination is a gigantic delusion; that it has never saved a single life; but that it has been the cause of so much disease, so many deaths, such a vast amount of utterly needless and altogether undeserved suffering, that it will be classed by the coming generation among the greatest errors of an ignorant and prejudiced age and its penal enforcement the foulest blot on the generally beneficent course of legislation during our century." In the preface to his work he has said:

"The (vaccine) operation is, admittedly, the cause of many deaths, and of a large but unknown amount of permanent injury; the only really trustworthy statistics on a large scale prove it to be wholly without effect as a preventive of small-pox; many hundreds of persons are annually punished for refusing to have their children vaccinated; and it will undoubtedly rank as the greatest and most pernicious failure of the century. I claim, that the evidence set forth in this *book*, with the diagrams which illustrate it, demonstrate this conclusion. It is no longer a question of opinion, but of science: and I have the most complete confidence that the result I have arrived at is a statistical, and therefore a mathematical certainty."

It would be well therefore if the executive authorities in England would make more extended enquiries in an unbiassed spirit before coming to a final decision in reference to vaccination; and that if they find it necessary to appoint another commission or committee of enquiry, it should have some trained statisticians for its members. It is a matter of great regret that medical men who pretend to have received a well-grounded scientific education, should handle questions of vital importance in the spirit of biased, one-sided advocates.

CHOLERA.

(I)

Of all diseases which assume the epidemic form Cholera is the swiftest and the most widespread in its destructive energies. There is hardly a part of the habitable globe which it has not visited and devastated. If there are still regions which have escaped its invasion it is because of the accident of their isolation from the centres of infection.* With increased facilities of intercommunication, the isolation and with it the immunity will cease. However and wherever it might have originated in the remote past, India, Bengal in particular, is now its chosen endemic home. It is a disease, therefore, which it behoves Indian physicians to study with particular care.

DEFINITION.

CHOLERA is a disease in which primarily there are profuse, tempestuous downward and upward watery evacuations from the bowels and the stomach, and secondarily there are other symptoms which accompany or follow as a necessary consequence of these evacuations. These symptoms are numerous, and may not all be present in every case. The following are the most important and are pretty nearly in the order of their development,—extreme prostration, sunken eyes and pinched countenance, huskiness of voice, cramps or tonic spasms, skin cold and covered with clammy perspiration, extremely feeble and thready pulse or its disappearance at the wrist or even at the arm, thirst, restlessness, diminution and final suppression of urine, coma, collapse with hurried respiration and final extinction of life.

* In the case of isolated countries the absence of active and frequent intercourse with the outer world favors immunity, even during approximately pandemic extensions. Thus, though near the home of cholera, the Andaman Islands have never been visited by the disease. Similarly, Australia and New Zealand hitherto have enjoyed practical exemption. The same can be advanced of the Pacific Islands, the Cape of Good Hope, the West Coast of Africa, Orkney and Shetland, Iceland, the Faroe Islands, and many of the islands of the Atlantic.—PATRICK MANSON: *Tropical Diseases*.)

• THE PHYSICAL, CHEMICAL, AND MICROSCOPIC CHARACTERS
OF THE EVACUATIONS.

• The first discharges are seldom seen by the physician, and are hardly noticed with care even by the patient. In the case of discharges from the bowels they are fæcal, and in the case of discharges from the stomach they consist chiefly of the food that had been taken, partly or wholly undigested. In both cases they are mixed with bile. It is when they become tempestuous that they lose their bilious character and become perfectly abilious, and free from the natural contents of the bowels and of the stomach. They are watery, having the color of rice-water or water in which rice has been boiled, sometimes of water in which boiled rice has been soaked for a couple of days or so, in which case they are whitish with a faint tinge of blue. They contain whitish flakes or shreds and granular matter which subsides into a whitish mealy sediment. Very rarely they may be pinkish or even reddish in color from admixture of blood.

The discharges are alkaline or neutral in reaction. They contain only a very small amount of albumen, showing that they do not represent the serum but only the watery portion of the blood. They contain a notable amount of urea, the discharge from the stomach containing more of this salt than the alvine discharge. The flakes or flocculi are the shreds and patches of actual mucous membrane, and the granular sediment are the debris of this membrane and of its epithelial lining, mixed with white corpuscles and bacteria. Formerly the white granular deposit was looked upon as consisting of leucocytes, but now their true nature has been discovered. The total amount of solids in the discharges does not exceed 2 per cent, and consists chiefly of "crystals of the triple phosphate of ammonium and magnesium and chloride of sodium in greatest abundance, but the proportion of ammonium and potassium salts is small."

VARIETIES OF THE DISEASE.

The VARIETIES of the disease are constituted by the preponderance of some particular symptom. Thus with purging as a predominant symptom, we have *cholera diarrhœica*; with vomiting, *cholera gastrica*; with both purging and vomiting, *cholera gastro-enterica*; with cramps, *cholera spasmodica*. Authors

also make other varieties, as—*Cholera sicca*, when purging and vomiting are altogether absent, but there is a sudden prostration of the vital energies, indicated by coldness and lividity of the whole surface, failure of the pulse, and huskiness of voice, added to which there is suppression of the urine. *Cholera acuta*, in which the patient feels as if he were stunned, or has a sensation of weight in the head, or vertigo, oppression of the chest; numbness of the arms and legs. Afterwards there are rumblings in the intestines; heat of the body, pulse rapid and feeble; nausea, retching, or vomiting; bilious or watery diarrhoea; suppression of urine, &c. *Cholera inflammatoria*, in which, in addition to the fulness and frequency of the pulse, there is great heat of the body, redness of the eyes, &c. The last two varieties do not seem to be of much importance; and it is questionable if the very last is really a variety of true cholera.

ETIOLOGY.

In the treatment of all diseases, a knowledge of their cause is of the utmost importance, both with a view to their prevention and their cure. This is specially the case with cholera which overwhelms the powers of life with such violence and rapidity and which has the faculty of embracing, under favorable conditions, the whole world in its destructive embrace.

If we attentively watch cases of cholera we cannot fail to notice that whatever the cause, it acts primarily upon the alimentary canal. The power of absorption of the mucous membrane lining the canal is held in abeyance, either totally abolished or reduced almost to nil. The epithelium is shed not to be replaced; the capillaries pour out the watery portion of the blood in alarming abundance. Exosmosis is predominant, endosmosis at a stand still. All the other symptoms that follow, referrible to the general nervous system or particular organs such as the kidneys, the heart, the lungs, are explicable by the drain of water from the blood through the gastro-intestinal canal. Hence the cause of cholera must be one which acts upon the nutrition and innervation of this canal.*

What is this cause? Is it one or manifold? Is it a mere influence, atmospheric or telluric or both, thermal or electric or both? Is it some actually material substance—inorganic

(gaseous, liquid or solid), or organic (actual living vegetable or animal), or some product of the life of either)?

It must be evident that a mere contemplation of the phenomena of the disease will not help in the solution of these questions. We must acquaint ourselves with the mode or modes of its origin and with the condition or conditions of its propagation before we can expect to determine the nature of its cause.

In the first place, as the disease occurs in all periods of life from infancy to old age, a particular period or stage of life cannot be its sole determining factor.

* In the second place, though particular seasons, particular climates, particular localities may be more favorable to its development, yet as it has been found to occur in all seasons, all climates, all localities, neither season, nor climate, nor locality, can be held responsible as being its cause.

We are therefore driven to the conclusion that the environment of an individual as such, acting upon him through thermal, electric or other influence, cannot produce the disease in him. As the disease is primarily and essentially a disorder of the digestive organs and their functions, the cause must be either in his food or in his drink. It may be the food itself or the drink itself, or it must be something which enters the stomach with either or both of these. We know that there are kinds of food and drink which can so morbidly affect and pervert the digestive functions as to give rise to purging and vomiting of the nature of cholera. Not to speak of actually poisonous articles of diet as ergoted rye, mushrooms, putrid meat and fish and vegetables, we have certain fruits such as the jack, various kinds of gourds and melons, some kinds of cereals and pulses, which taken in excess or in an ill cooked condition can give rise to upward and downward evacuations and other symptoms simulating those of cholera. May not the disease thus originate? But even if it does, its communicability from person to person, from place to place near and far, cannot be thus accounted for. A few cases may be traced to over indulgence in food otherwise salutary, or to incautious use of unsalutary food, but the vast majority of cases cannot be so traced.

Thus while the study of single cases fails to give us any clue to the discovery of its cause, the fact of its communicability puts us on its track, by drawing attention to the modes of that communicability. This is one of many instances in which side vision is of more importance than direct vision, in scientific research. It is by the happy use of this lateral vision that Faraday made the discovery of induced electricity and that Sir William Crookes discovered the principle of the radiometer and the remarkable properties of high vacuum tubes.

The study of the history of the epidemics of cholera has established the fact on a firm basis that except in its endemic area, cholera has never been found to occur *de novo*, but is always an *imported disease*.

The outbreak of the disease in a place where it is not endemic is always traceable either to a case or cases, or to the fomites of such case or cases, imported directly or indirectly from its endemic home; and then the spread of the disease in the locality has been traced to the contamination of the food or the drink, especially the latter, with the dejecta of patients already affected.

This discovery was made so early as 1854, and how it was arrived at is thus given by Dr. Patrick Manson in his *Tropical Diseases*: "In August, 1854, cholera was epidemic in parts of London, notably in the neighbourhood of St. Anne's, Golden Square. A child at 40, Broad Street, after an illness of three or four days died of the disease on the 2nd of September. The discharges from the patient was thrown into a leaky cesspool which, as was subsequently discovered, drained into a well only three feet away. This well supplied the neighbourhood with drinking-water. On the night of the 31st August cholera broke out among those who used the water of this particular well, very few escaping an attack. On the 2nd of September a lady died of cholera at Hampstead. Attention was called to this lady's case, as hitherto the disease had not been seen in that district. On inquiry it was found that she had been habitually supplied with drinking water from the Broad Street well referred to, as she had formerly resided in Broad Street and had a liking for the water from this particular well. She drank some of the water which had been procured on the 31st August, both on that day and again on the 1st of September. On the latter day she was

seized with cholera. A niece, on a visit to this lady, also drank some of the same water; she too was attacked by cholera and died. A servant also drank the water; although she suffered to some extent, she recovered. So far as could be ascertained by careful inquiry, these people had no connection whatever with the cholera district except through the water fetched from this particular Broad Street well. Cholera, as mentioned above, was not epidemic at Hampstead at the time." As Dr. Manson truly observes, "The inference that the germ had been conveyed in the polluted water is difficult to avoid."

Some years ago, about thirty, the writer had to pay professional visits to a family residing in the northern part of Calcutta, which had already lost some members from cholera, and still had others suffering from the disease. The instance of so many cases of cholera occurring in a single house one after another led him to make careful inquiries about the sanitary condition of the house. A well was discovered closely adjoining the privy having no brick built platform around it. It was here that the soiled clothes of the patients were being washed, and with the water of this well the members of the house were washing their mouths and bodies. The dejecta of the first cholera patient must have in the first instance contaminated the water of the well by percolation through the porous soil, and thus the second case occurred. Subsequent contamination was easier and stronger, and the occurrence of subsequent cases was easily accounted. No case occurred after the use of the well water was interdicted.

These are but two out of innumerable instances in which the occurrence of cholera has been thus traced. They satisfactorily establish three facts, namely, 1. That the cholera dejecta, the discharges from the stomach and the bowels of cholera patients, contain something which when swallowed can give rise to the disease, 2. that this something may be carried with water, and 3. that the water thus contaminated may percolate through porous soil, and contaminate sub-soil water which may in its turn be the cause of cholera.

(To be continued.)

EDITOR'S NOTES.

Suprarenal Capsules.

The active agent of the suprarenal capsules appears to have been at length isolated by J. Takamine in the form of a crystalline substance of constant composition possessing an extraordinarily energetic vaso-motor power. It has a bitter taste and a feebly alkaline reaction.—*Lancet*, Dec. 27, 1902.

The Roentgen Rays in the Teaching of Anatomy.

For some years a lantern has been used to illustrate lectures in the Anatomical Department of the University of Aberdeen, and recently a complete x-ray equipment has been introduced to familiarize students with the normal appearances presented by different parts of the body as shown by this method of observation. Besides this, Professor Reid foresees a further field of usefulness for the apparatus in anatomical research. He is to be congratulated on having taken this step, considering the importance of skiagraphy in medical and surgical work.—*Brit. Med. Journ.*, Feb. 21, 1903.

The Number of Red Corpuscles in the Blood in High Altitudes.

The rapid augmentation in the number of the red corpuscles of the blood resulting from residence in high altitudes and exposure to rarefied air, which has been accepted by some physiologists, has been rendered more than doubtful by the results of the observations of M. Armand Delille and M. Andre Mayer, who find that in the case of guineapigs the hyperglobulism is very rapid, occurring in the course of a few hours, and is neither constant nor proportional to the height attained, and further that it is partial, being noticeable only in the vessels of the extremities and not in those of the head, and similar results were obtained by Dr. E. Abderhalden who experimented on rabbits and rats and who not only counted the corpuscles but determined the amount of hæmoglobin. An increase in the number of leucocytes in the blood has been observed after massage.—*Lancet*, Dec. 27, 1902.

Cocainisation of the Spinal Cord.

Cocainisation of the spinal cord will probably never be employed to any great extent, for though some French surgeons have used the method frequently it is by no means free from danger. There may,

however, be cases in which its employment is useful and Dr. Robert H. Ritchie has recorded an amputation of the thigh in which this method was employed. The patient was 78 years of age and moist gangrene of the right leg occurred up to the knee. He had a mitral systolic murmur and the cardiac apex was displaced downwards and to the left; his arteries were atheromatous and he had dyspnoea. In these circumstances general anaesthesia was thought to be impossible, so cocainisation of the spinal cord was employed, a small quantity of a 2 per cent. sterilised solution of eucaine being used. Although sensation was not completely abolished analgesia was present and the operation was successfully performed, the wound healing by first intention.—*Lancet*, Dec. 27, 1902.

Studies on the Brain.

The cerebellum has been the subject of study by several physiologists. O. Kohnstamm, chiefly basing his conclusions on anatomical grounds, maintains that the cerebellum is adapted to enable sensations of all kinds, except those of the higher senses, to exert an influence on the motor apparatus of the organism; such sensations are those conveyed by centripetal paths from tendons, joints, and muscles, tactile sensations of the skin inducing movements and supplying the sense of position, the pain proceeding from abrasions of the skin and from exhausted muscles. In other words, it is an organ which can transfer sensory impressions to motor paths—hence the asthenia and ataxia in cerebellar lesions.

P. Pegano's experiments also point to the intimate relations of the cerebellum to the nervo-muscular apparatus. Pegano found that remarkable and strictly localised irritant effects on certain groups of muscles were produced by the injection of solutions of 1 per cent. of curara into particular regions of the cerebellum. Curious psychical effects occurred in some instances characterised by fear, anger, and pugnacity, whilst in one case ulceration of the cornea was observed a few hours after the lesion.

The weight of the brain inclosed in the dura mater has been carefully taken by F. Marchand in 1235 bodies of men and women in Saxony, with the results that the average weight of the brain in males between 15 and 50 years of age was 1400 grammes, and that of adult women 1275 grammes. Its final growth is completed in man at the age of 19 or 20 years and in woman between 16 and 18 years of age. Senile atrophy occurs in the eighth decade in man and in the seventh in woman with much individual variations.—*Lancet*, Dec. 27, 1902.

An Epidemic of Infantile Paralysis.

Only in recent years has the occurrence of infantile paralysis in epidemics been recognised. In the *Boston Medical and Surgical Journal* of Dec. 11th, 1902, Dr. Charles F. Painter has described an epidemic which occurred in 1900 in Gloucester, a seaport of Massachusetts with a population of 25,000. He gives notes of 31 cases which he examined in the months of June, July, and August, but some other cases also were observed by the local practitioners. Only one death occurred. There was paralysis of the leg. Three days later cerebral symptoms ensued and the child died in 36 hours from what seemed to be cerebro-spinal meningitis. Unfortunately, a necropsy could not be obtained. No definite cases for the epidemic could be traced, but the majority of the cases occurred at, or more frequently from 24 to 36 hours after, period of extreme heat. Sometimes the symptoms followed bathing in the sea. The following statistics of the epidemic are of interest. There was 23 males to nine females. The youngest patient was of the age of 13 months and the oldest of 10 years: 21 patients were of the age of three years or younger, eight were of the age of two years or younger, and seven were of the age of four years or older. Dr. P. Marie cites foreign epidemics of infantile paralysis as proof of the infectious nature of the disease. The following are the principal epidemics reported. In the *American Journal of the Medical Science* in 1843 Celmer has described an "epidemic of teething paralysis." From eight to 10 cases occurred within a radius of three miles in three months. In 1881 Bergenholtz observed 13 cases in Umea, Sweden, in a period of six weeks. Onhohm, in Mendal, Norway, reported about the same time nine cases which occurred in six weeks in a small community. In 1885 Cordier reported 13 cases near Lyons which occurred in June and July. Calverly reported the greatest epidemic on record in the valley of the otter river—126 cases with a mortality of 18. But some neurologists doubt the nature of the epidemic as the mortality was so high and there were symptoms suggestive of epidemic cerebro-spinal meningitis.—*Lancet*, Feb. 21, 1903.

• Puericulture.

Professor Pinard, who like every other thoughtful Frenchman, is seriously concerned about the threatened depopulation of France, sees one of the chief causes of it in the terrible mortality among newborn children. A partial remedy for it is, he holds, to be found

in "puericulture." It is not enough, he says, to bring up a child in good hygienic and moral conditions; it must have healthy progenitors and must itself be surrounded with every care during the fateful months which it spends in its mother's womb. The care of the teeming mother therefore is a duty which society owes to itself. How many women, compelled by dire necessity to work throughout the time of gestation bring prematurely into the world weak and sickly children? Overwork in Professor Pinard's picturesque phrase, is the gust of wind which makes the sound but unripe fruit fall untimely from the tree. He maintains that every woman earning her living has a right to rest during the three months preceding her confinement. His teaching has already been carried into effect to a certain extent; private charity has created in the Avenue du Maine, Paris, a refuge for women awaiting delivery, and the city of Paris has built some homes for the same purpose. But M. Pinard maintains that it is the duty of the State to provide a solution of this pressing social problem. Vast sums are spent in building sanatoria for sufferers from tuberculosis; would not the money be more profitably spent in promoting the birth of healthy children with constitutions sufficiently robust to withstand the attacks of the bacillus? M. Pinard, who has preached this doctrine from his professorial chair for twenty years, has now undertaken a mission of evangelization in *partibus infidelium*. He lectures to boarding-school girls on their duties as the mothers of the next generation of Frenchmen. These lectures, to which all the qualified female teachers of Paris can bring their pupils, received what may be called their official consecration on February 9th, when the Rector of the Academy and the Director of Primary Instruction were present and expressed their approval of Professor Pinard's philanthropic efforts.—*Brit. Med. Journ.* Feb. 14, 1903.

Ante-Natal Rigor Mortis.

An interesting query has been addressed to us by one of our correspondents. Does rigor mortis occur in healthy, full term, still-born children? Our readers will not be surprised to learn that this interesting question of antenatal pathology has been very fully discussed by Dr. J. W. Ballantyne. He has collected and analysed some 25 cases of ante-natal rigor mortis. Although Casper in his text-book on Forensic Medicine stated that he had never seen an instance of cadaveric stiffening in the premature fetus, yet the occurrence of such a condition is beyond dispute at the present day and in the more recent text-books of forensic medicine it is admitted to occur.

According to Dr. Ballantyne the first case of ante-natal rigor mortis is probably that of Chowne, which was originally recorded in the *Lancet*. Since this, cases have been published in our columns by Dr. R. Boxall and by Dr. B. Jones. There is, indeed, nothing in the surroundings of the fœtus in utero incompatible with the occurrence of this condition, and the presence of the liquor amnii only produces a state of things analogous to that met with in the case of a person found drowned, and, indeed, ante-natal rigor mortis has been conclusively demonstrated by J. Tissot to take place in fœtal kittens. It has further been pointed out by Dr. Ballantyne and others that there are no essential differences between the cadaveric rigidity of the still-born infant and that occurring at other ages. It might naturally be expected that differences would be found in the degree of severity of the stiffening due to the varying time of the occurrence of the death of the fœtus and to its cause which must of necessity vary very largely in different cases. That the condition has not been more frequently observed is, no doubt, due to the fact that it has not been looked for, and to the further fact that it may have occurred and passed off in utero. In the case of patients dying gradually rigor mortis comes on very early and passes off very quickly and this may well be so in some instances of fœtal death. That rigor mortis does occur in utero has been proved by its presence in cases treated by Cæsarean section. The case recorded by Dr. Boxall is one of great clinical interest, because the course of the labor was apparently prejudicially influenced by the undue rigidity of the fœtus interfering with the normal mechanism of delivery. The subject is one of great interest and further observations upon it cannot fail to prove of value both from a clinical and medico legal point of view since, as Dr. Ballantyne truly points out, the occurrence of rigor mortis alone does not suffice to show that the infant was born alive in the legal sense of the term.—*Lancet*, Feb. 14, 1903.

Uræmic Ulceration of the Duodenum.

Uræmic ulceration of the duodenum was first described by Wilks and Moxon in their "Lectures on Pathological Anatomy," published in 1875. They pointed out the frequency with which ulcers of the stomach and duodenum were found in Bright's disease. In the *Guy's Hospital Reports* for 1893 Dr. E. C. Perry and L. E. Shaw published an important paper on diseases of the duodenum in which they described a number of cases of ulcer in Bright's disease. But the literature of the subject is still very scanty. At the meeting of the

Societe Medecale des Hopitaux of Paris on Jan. 16th M. Ernest Barie and M. Paul Delaunay related the following case. A man, aged 52 years, who was addicted to alcohol, was admitted to hospital on August 29th, 1902. 15 years before he contracted syphilis. For two months he had suffered from breathlessness which at times culminated in attacks of dyspnoea. Digestion was painful and he often vomited his food. There were symptoms of pulmonary emphysema and moist rales. The urine contained albumin and the legs were oedematous. On sept. 15th pericardial friction was heard; on the 19th it had disappeared. On the 22nd diarrhoea began and on the 23rd there was abundant enterorrhagia the mattress being soaked with blood. On the next day he became comatose and died. The necropsy showed in the brain the remains of an old hæmorrhage and atheromatous arteries. The lungs were emphysematous and oedematous. On the visceral pericardium was recent fibrin; the left ventricle was hypertrophied. The whole colon was full of blackish-brown blood, but its mucous membrane showed no ulceration. The second half of the small intestine was almost empty; the first half contained bile and a little blood; the whole mucous membrane was congested and covered by the viscid adherent mucus which has been described by Treitz in intestinal uræmia. In the duodenum, two centimetres from the pylorus, was an oval ulcer one and a half centimetres in diameter. At its base the circular muscular fibres of the intestine were seen. Two centimetres below this ulcer was a smaller one half a centimetre in diameter, and three centimetres further down in the intestine, opposite the ampulla of Vater, were two still smaller contiguous ulcers. The kidneys were granular. Uræmic ulceration of the duodenum generally takes the form of a single ulcer in the first part of the duodenum, but there may be two or more ulcers. Sometimes the remaining part of the duodenum has been found intact and sometimes inflamed. The remaining part of the alimentary canal also may be inflamed or present similar ulcers and the glairy adherent mucus mentioned above. The symptoms are inconstant. Sometimes a subject of renal disease in apparent health is seized with symptoms of perforative peritonitis. Sometimes the symptoms occur during uræmia: there may be epigastric pain two or three hours after a meal, vomiting, diarrhoea, mælena, and, much more rarely, hæmatemesis. Duodenal ulceration occurs in the most diverse renal disease—acute and chronic parenchymatous nephritis, interstitial nephritis, ascending nephritis, peri-renal phlegmon in renal lithiasis, and renal tuberculosis. As to the pathogenesis of the duodenal ulceration several explanations have been advanced: The most reasonable seems

to be that defective renal secretion leads to vicarious excretion by the alimentary canal. Hence the stomatitis, dyspepsia, gastralgia, vomiting, and diarrhoea of uræmia. Why the duodenum should be specially affected seems difficult to explain. But Stassano has attempted to show that the duodenum plays a special part in the excretion of poison. He found that mercury was excreted by leucocytes into the alimentary canal—slightly into the stomach, more into the intestine, and most into the duodenum.—*Lancet*, Feb. 14, 1903.

Fright and Chloroform Deaths.

The letters which are constantly appearing in current medical Journals indicate very plainly the views which are held in this country on the vexed subject of chloroform *versus* ether as an anaesthetic, but less is generally known of the opinions of the profession in America on this matter. It might perhaps be hastily assumed that in the United States, the home of anaesthesia, by ether, no other drug, and least of all chloroform, would be habitually used. To those who are of this opinion the statements made by Dr. J. A. Bodine, Adjunct Professor of Surgery at the New York Polyclinic, will come as a surprise. In a recent lecture he admits freely that chloroform possesses many advantages over ether, but points out that the administration of the former has been followed by a considerably larger proportion of deaths from the anaesthetic than when the latter was employed. He thinks, however, that this unfortunate fatality might be offset to some extent by the deaths which take place sometime afterwards, from kidney irritation and lung involvement after ether.

He contends that most chloroform deaths are due to vasomotor paralysis, and that deaths from fright occur just in the same way. Two instructive and suggestive cases are cited. In the first, the patient, a very nervous individual, became so frightened before the operation that the rhythm of his breathing was seriously disturbed; the anaesthetist, in consequence of this, gave him some preliminary training in deep breathing before the administration of the chloroform; the cone was placed over his face, and he was told to breathe deeply; after a few gasps he ceased to breathe and could not be resuscitated. Not a single drop of chloroform had been administered. In the second case, the patient, who was also a very nervous man and very fearful of the result of the operation (for haemorrhoids), was given an enema before any anaesthetic was administered; he thought

this was the first step of the operation, ceased breathing, and died. In both these cases the necropsy revealed no morbid state except the tense abdominal veins in which nearly all the blood of the body had collected as a result of the vasomotor paralysis consequent upon the fright. Dr. Bodine, therefore, concludes that fright may be an element in the production of deaths in cases in which chloroform is used. He states that seven out of every ten deaths reported from chloroform anaesthesia occur during the preliminary stage when only a few drops up to a drachm have been given. There is negative evidence also in the fact that in obstetric practice chloroform is the anaesthetic of choice; this is due to almost complete absence of a chloroform mortality during labor. As an explanation of this freedom from danger we have the circumstance that women are not fearful about the anaesthetic in their confinements, but ask freely for it. Children, also, are not frightened as adults are, and consequently suffer little from chloroform as an anaesthetic. Dr. Bodine refers, in addition, to the interesting fact that the negro of the Southern States stands chloroform very well; he has a childlike faith in his physician and does not fear any of the measures that he may adopt. Yet the negro may die from fright, as a graphic story of a student trick told by the writer proves. The conclusion is therefore reached that we must for the safe administration of chloroform eliminate fright. Dr. Bodine tells his patient to put his hands tightly together, the fingers interlacing, and to grip them firmly; he asks him to fix his mind upon that action, to listen to the voice of the anaesthetist and to do what he tells him, and to breathe deeply and quietly and not to mind the sensations which come over him. General conversation in the neighbourhood of the patient should not be allowed. The writer, in conclusion, thinks that if deaths from fright could be eliminated, chloroform would be a much safer anaesthetic than ether, and says: "If I had to choose an anaesthetic for myself to-morrow, I should take chloroform, but I should want it administered by a careful expert anaesthetist."—*Brit. Med. Journ.*, Feb. 21, 1903.

CLINICAL RECORD.

Foreign.

CASE OF RUPTURED URINARY BLADDER :
OPERATION AND RECOVERY.By HUGH LAWRIE, M.B., C.M.,
Ramsbottom, Lancashire.

THE following case is of interest and some rarity :

History.—B. C., aged 29, a cotton factory operative, and unmarried, came under my care on March 30th, 1902, suffering from what appeared to be rupture of the urinary bladder. She had been out late on the previous night with some friends, and to reach her home had to proceed along a narrow, badly-lighted road for about half a mile alone. About halfway in this walk she was attacked by two men and knocked down. Her cries for help speedily brought several persons to the rescue, who found her in a dishevelled condition and covered with mud, supporting herself against the wall on one side of the road. She was alone, and two of these persons assisted her to walk home. She complained of pain in the lower part of the abdomen ; and did not get any sleep that night. Sitting in a chair was the most comfortable position, any attempt to lie down being accompanied by increase of pain.

State on Examination.—When I was called to see her I found her sitting up in a chair. She complained of pain in the abdomen and inability to micturate. She had not passed water since the assault, although she wanted to do badly before it. There was a bruise on the left side of the face, the skin over it being rubbed off by some rough surface, probably the ground. She refused to be examined further, declaring that she had not been outraged—which was quite true—and I left her, contenting myself with advising sitz baths to promote urination. Later in the day I drew off from the bladder with a gum elastic catheter 8 oz. of bloodstained urine. There were no marks whatever of external violence on her body except the mark on the face and a very small bruise on the left knee. In the evening I passed the catheter again, and withdrew about 2 oz. or 3 oz. of urine. This urine was clear, but under the microscope it was seen to contain red blood corpuscles. Her temperature and pulse were normal. Percussion over the abdomen showed an ill-defined area of relative dullness immediately above the pubes. Palpation was painful.

Progress.—On the morning of March 31st her condition was about the same. I had to attend the police-court on this day, and did not see her again until the evening, when the pulse had risen to 100. On April 1st her temperature had slightly risen and the pulse was 120.

First Operation.—She was conveyed to the Aitken Memorial and Jubilee Cottage Hospital, Ramsbottom; and at 4 p. m. (on April 1st), after her depositions had been taken before a magistrate, I made an incision in the middle line above the pubes about 3 in. in length. The deeper tissues of the abdominal wall were infiltrated with urine, and when the transversalis fascia was reached it was seen to be dark-grey in colour. This was easily torn, and then there welled out of the wound two to three pints, roughly speaking, of dark-coloured fluid smelling of urine. With the left index finger I explored the wound and found behind the pubes on the right anterior surface of the bladder a hole which would admit three fingers. This rent was extraperitoneal, and no further injury to the bladder could be detected. Considerable separation of the transversalis fascia from the outer peritoneal layer had taken place as a result of the escape of urine from the bladder, between these membranes extending on either side almost as far as the superior anterior spines of the ilia and upwards towards the umbilicus. The whole region was irrigated with gallons of warm boric acid lotion, and it was agreed by all present that to further prolong anaesthesia would be decidedly dangerous. The pulse before the operation was 150, and it was now almost imperceptible, so drainage tubes were hurriedly inserted, one passing from the abdominal wound right through the bladder and out at the meatus. Two deep stitches were inserted in the upper part of the abdominal wound and iodoform gauze was packed into the lower part over which were placed thick pads of cotton wool. A woollen body bandage with elastic fastenings secured the lot. She was given hypodermically $\frac{1}{3}$ gr. of morphine sulphate and $\frac{1}{15}$ gr. of strychnine nitrate and put to bed with hot bottles placed round her in convenient positions. At 10 p. m. she was sleeping quietly; temperature 100° , pulse 140.

After progress.—April 2nd. She had a fairly good night's sleep, temperature 100° , pulse 144. Wound irrigated with boric lotion. At 4 p. m. the bowels moved naturally. During the first week, despite the frequent irrigations (three times a day) with boric lotion and mercury perchloride solution 1 in 5,000, the wound became very septic, and large sloughs of transversalis fascia, dark in colour and very fetid, came away with considerable quantities of pus. A counter-

opening was made near the left superior anterior spine of the ilium, and drainage through this opening was promoted through a drainage tube by tilting the patient towards that side. About the end of the second week the condition of things was much improved, healthy granulations were appearing in all directions, so it was decided to suture the bladder.

Second Operation.—On the afternoon of April 16th she was anaesthetised with chloroform, the condition being continued with ether, and I made a transverse incision on the right side, beginning in the abdominal wound an inch above the pubes, and carrying it outwards to Poupart's ligament through the right rectus and abdominal muscles. This enabled us to pull a triangular flap downwards, and thus expose the rupture in the bladder. It was found to be larger than at first anticipated, extending from the middle line close to the peritoneal reflexion downwards, and slightly to the right behind the pubic bones for a distance of about 2 in. Five strong silk sutures were inserted in the more accessible region, including muscular and submucous coats only. Traction was exerted upon these, and with the greatest difficulty two more were inserted at the lower part of the rent, taking in as much of the bladder wall as possible, without respect to the different layers. Considerable haemorrhage took place with the insertion of these last two stitches, on account of the needle having to pass through a plexus of veins near the neck of the bladder. The stitches were tied in the usual fashion from the middle towards either end, and then 4oz. of boric lotion were introduced into the bladder without any leakage taking place. The abdominal wound was packed loosely with iodoform gauze, and a few stitches were inserted to hold the edges of the wound apposed to one another, but these were removed in a few days as they were useless. A large rubber catheter was fixed in the bladder by strapping it to the thigh. Two hours were occupied in this operation, and the patient was very collapsed when she was put to bed. Pulse 144, small, and thin. Hot-water bottles were placed all round her, and she was given 1/15 gr. strychnine nitrate hypodermically. During the night following she vomited slightly several times.

Further Progress.—April 27th 9-30 a. m. About half a pint of urine had collected in the vessel in bed, and there was no urine in the dressings. The abdominal wound was thoroughly irrigated with 1-6,000 perchloride solution, and strips of iodoform gauze were packed into it. The bladder was also irrigated with boric lotion. Her condition was favourable; temperature 98.4°, pulse 108. She complained

of thirst. On April 24th a small fistula appeared between the two outer stitches at the left end of the rupture, and a condition of cystitis was also present. She was put upon urotropin and the bladder, in addition to the daily irrigation, had 4 oz. of a 4 gr. to the ounce solution of silver nitrate injected and held in for a minute or two. Two further sutures were easily inserted to close the fistula, and no further trouble from leakage took place. Some pus was still found to come from small pouches underlying the muscular walls of the abdomen, no doubt due to the agency of the decayed transversalis fascia, and these had to be kept clean and packed with iodoform or cyanide gauze until they healed from the bottom outwards. As these pouches were healing up the bladder wound also healed, and all the stitches that had been inserted in the bladder were removed. Granulations had formed rapidly, and considerable contraction of the abdominal wound had taken place. Micturition was re-established, the urine was clear, contained no albumen, and was faintly acid. Her appetite was good, and she was regaining flesh. Urotropin was not considered necessary.

Third Operation.—On May 25th I essayed to close the abdominal wound, and for this purpose she was anaesthetised, and several stitches were introduced after paring the edges. Two of these sutures of stout silk were passed through the whole thickness of the cut rectus ends, and fastened through the eyes of two buttons of solder prepared for the purpose. The buttons were each $1\frac{1}{2}$ in. long, $\frac{3}{4}$ in. broad, with $\frac{1}{2}$ in. between the eyes, and strong enough not to bend. Sickness and vomiting for twenty-four hours followed this attempt, and the result, which one might have expected, was vitiated by the vomiting, for it tore the rectus ends apart. The wound became septic again, and all the sutures were removed in a week. The urine became cloudy and alkaline, chiefly from phosphates and mucus, but contained no albumen. Salol in 10 gr. doses was administered every three hours until the urine was dark-coloured. On June 2nd the temperature shot up to 104.2° . On June 4th large quantities of albumen appeared in the urine, as well as proliferating epithelium from the bladder, ureter, and probably also from the pelvis of the kidney, but no tube casts were found. Urotropin was substituted for salol on June 6th, of which she took in two days 1 oz. Her usual quantity was 1 oz. in four days. The urine had a decided smell of formalin. On June 13th the urine contained albumen, but only a faint cloud: there was more on June 14th, and on the 15th there was a considerable quantity with tenderness all along the right ureter to

the kidney, but no tenderness on the left side. These symptoms gradually subsided under the influence of urotropin, until at the end of the month there was only a faint cloud given with nitric acid (contact method). On June 29th I scraped the abdominal wound, pared the skin thoroughly off the edges, washed with oil of turpentine, and carbolic lotion and then inserted two strong steel skewers paral-
lled to one another, one in the lower, the other in the upper lip of the wound $\frac{3}{4}$ in. from the edge and deep in the tissues (the original vertical incision was practically closed). With sutures I brought the edges of the wound into apposition, then bound the skewers together at their extremities firmly in order to secure a good broad union. There was no sickness afterwards, and the temperature and pulse in the evening were respectively 98° F. and 84, just as they had been for several days previously. Union took place rapidly and in a week I removed the skewers. The result is excellent, and so far as one can make out by palpation, the body wall is quite intact, there being at present no thinning of the tissue over the scar and no bulging. She went for a prolonged holiday on leaving the hospital, and when she returned she looked as well as ever she did in her life. I examined the urine on November 18th, and there was not a trace of albumen or anything to indicate that the urinary organs were not in perfect condition.

It is to be regretted that the rent in the bladder was not closed at the first operation, as this would in all probability have prevented the subsequent septic condition of the urinary tract. Still, it is difficult to see how this could have been done with the patient in such a collapsed state, for it would have entailed a prolonged anaesthesia, which she was too weak to undergo. The operation might have been done earlier, but this was a criminal case, and it took a long time to get through with the necessary legal proceedings, as well as to procure the consent of the patient and her parents to any operative interference. It is also to be regretted that the administration of urotropin was stopped when it was, for if it had been continued some time after it was thought to be unnecessary, it is just possible that the second incidence of sepsis of the urinary tract might not have occurred, and the first operation for closure of the abdominal wound might have been successful. However, it is fortunate that the patient could stand the urotropin in large doses so well; she took altogether of this substance 24 oz., and at no time was there any irritation caused by it. If haematuria had resulted upon taking urotropin, it would have been next to impossible to find another drug which would have had

such a potent influence for good upon the septic condition of this system.

In conclusion, I would like to express my thanks to Drs. B. and C. Crawshaw—Dr. C. Crawshaw was the anaesthetist on each occasion—and to Drs. William and H. Deans, who by their counsel and assistance rendered every aid in what was a most trying and wearying case; and in addition I would tender my thanks to Miss Horsfield (matron of the hospital), whose vigilance and unremitting care so materially added to the success of the case.—*Brit. Med. Journ.*, February 28, 1903.

A CASE OF EPILEPSY CURED BY STRAMONIUM.

BY A. RAMSEYER, SALT LAKE CITY, UTAH.

A few years ago while I was attending a religious meeting in this city the services were disturbed by a young man taking an epileptic fit. Some fifteen minutes later when I left the meeting-house I noticed that the moon, then nearly full had risen from behind the eastern range of mountains just about the time the young man was seized with the epileptic fit. Was this a mere coincident, or had the moon's rays any real influence in this case?

The young man received one single dose of *Stramonium* 30, which so far cured him that up to the time of his death, some eighteen months later, he never had another attack of epilepsy; he was carried off by typhoid fever, but was not then under my care. Before receiving *Stramonium* he had often been seized with epileptic fits. What made me give *Stramonium*? To my mind there was no well-defined symptom present, except that of the time of the attack, viz., about 7-45 P. M. At that time I was still under the impressions received by the perusal of a little work of Dr. Chapiel, of Paris, "Des rapports de l'homœopathe avec la doctrine des signatures" (As the Relations Between Homœopathy and the Doctrine of Signatures), in which he expressed the idea that plants which open their flowers during the night are useful against diseases, the paroxysms of which show a well-marked nocturnal periodicity, diseases such as asthma, epilepsy, somnambulism, etc.; as an example he cites *Cactus grandiflorus*, the flowers of which open between 9 and 10 P. M., and close at 2 or 3 A. M., and which he claims corresponds to nocturnal affections of the heart, lungs, etc.

Datura stramonium being another one of those flowers which open at night, I was induced by these considerations to try it in this case, especially by the fact that it opens its flowers between 7 and 8 P. M.

and closes them between 2 and 3 A. M. The success was all I could wish for. Those that are interested in this notion can see the floral clock of Linnæus enlarged, and improved in the Natural History of Plants, by Anton Kerner von Marilaun, the Austrian professor of botany. Consult also Blanchet's Nature Garden, New work, 1900.—*Homœopathic Recorder*, February 15, 1903.

CUPRUM IN SKIN DISEASES.

BY A. RAMSEYER, SALT LAKE CITY, UTAH.

Cuprum is seldom used in cutaneous diseases; some claim that the use of copper cents or pennies as money in the hands of the millions of the common people is an efficacious preventive of the itch. Be that as it may, this metal proved an excellent remedy in my hands. It was a very obstinate skin eruption on the hands and wrists of two ladies, both quite fleshy, one fair and the other dark haired; one single dose of *Cuprum* 30 (whether metallieum or acetieum I forget now) sufficed in each case. I tried the same remedy in a similar case, but this time without full success, for the eruption would return after awhile. This patient was a hod-carrier by profession, and the eruption was probably caused by the lime used in mixing the mortar. I don't know but what the same remedy would prove successful had this man patience enough to stick to it. And I am myself no believer in frequently repeated doses.

I was led to use this remedy by some remarks of Rademacher in his "Rechtfertigung der . . . Erfahrungschillehre der alten Scheidekünstigeir Grheimärtze," Berlin, 1848 (Justification of the Empirical Medical Practice of the Ancient Alchemists, Vol. II., page 451), where he cites the case of a young man, formerly working in a distillery, and who now had to stay at home on account of a moist herpes which covered mostly the arms, but also the trunk and the legs; the wrists were so much affected that they were nearly stiff; the patient was without strength, had lost much flesh, his sleep was disturbed, his limbs itched and were painful when he moved them, he felt languid and lazy, and was totally unfit for any kind of work; the eruption itched intensely. Rademacher gave him some *Tincture of acetate of copper*; after using it for three days the first effect was to lessen the fearful itching, which disappeared gradually; then the herpes lost its redness and dried up, the scales fell off, and in three weeks the skin cleared off entirely.—*Homœopathic Recorder*, February 15, 1903.

A CASE OF VISCERAL NEURALGIA CURED BY IRON IN PHYSIOLOGICAL DOSES.

BY DUNCAN MACDOUGALL M.D., HAVERHILL, MASS.

Miss C., school teacher, aged about forty years, for five years had suffered with pain in the abdomen. The pain appeared here and there about the abdominal region, sometimes as low as the ovarian region, either side, sometimes in the region of the appendix, ascending, transverse, and descending colon, sometimes in the gall bladder region, very often in the umbilical region and around it, which latter region it mostly favored. She was not a tea or coffee drinker (I have seen such symptoms from coffee), it mattered not how she dieted, it made no difference in the pain. She had no flatulence, she was not constipated, and the pain had no relation to times of eating or fasting. It sometimes made her sleepless. She had been doctored for five years in all sorts of ways. Had been treated for her liver, and for her stomach. Had been physicked and dieted in every way imaginable. She was free from pelvic diseases of any kind, and apart from this pain considered herself well.

She began with me at a time, when, owing to my training, my conscience, and my inexperience, I was cock sure, so to speak, that the similitum was the all of therapy in her case. One after another I tried the various similia, that I had patiently dug out and as often failed, until I began to feel as I imagine General Buller must have felt before the Boers at Colenso. She had continued with me for weeks, and I had done her no good.

Miss C.'s case was an enteralgia pure and simple. Next time she came, in spite of her apparent good color, I listened and got the venous hum in the neck, the murmurs at the base of the heart, and I looked and saw a pale ashy buccal mucosa, in spite of good facial color. I gave her iron, and the enteralgia that had resisted five years of attack with all manner of weapons, my patiently selected similia to boot, disappeared before iron in about two weeks never to appear again after a three months' course of the remedy. I kept track of that case, and I know whereof I speak.—*New England Medical Gazette*, February 1903.

Gleanings from Contemporary Literature.

HIPPOCRATES.

THERE is often a tendency in individuals, who have attained to a higher position in life than they originally occupied, to keep out of sight the steps by which they have climbed—to kick aside the stool by which they have risen. So it is also to some extent in the case of knowledge. We forget the amount of information laboriously acquired by our predecessors, and the humble beginnings, without which our advance in science would have been impossible, and attribute to our own generation, or our immediate forerunners, all that has been brought to light from amongst the secrets of Nature. It is useful, then, to pause at times in our search for new facts, and to look back on the work of those who have gone before us, giving them as far as possible the credit due to them for their labours, and forcing ourselves to recognise that there was a good deal of knowledge extant in the world many centuries before the so-called scientific era of the century which has just ended.

In the case of medicine, we are fortunate in having available writings which go far back towards the foundations of our European system. In the works of Hippocrates we have a picture of the state of the healing art and its professors four centuries before the Christian era. Even the "Father of Medicine" does not profess to have himself formulated all the rules which he inculcates. He acknowledges, directly or indirectly, his indebtedness to earlier investigators, and recognises that it was only by a gradual progress that his art was elaborated. Yet he lived and wrote far enough back for our present purpose—that of endeavouring to realise the ideas working in the mind of a skilled physician in that remote past, and the state of the science of medicine as it then existed.

The writings attributed to Hippocrates are probably not all by his hand, nor even of the same date; but the majority of them are probably authentic. It is curious in reading them to recognise the mixture of exact observation and almost inexplicable error which is contained in them. Thus, in the domain of anatomy, we find a very clear account of the external parts of the body. This was indeed natural in a community in which athletic contests were a main feature of social life, and the naked bodies of wrestlers and boxers were everyday objects of observation. Muscles and joints are well described, and the skeleton generally is thoroughly understood. Yet even here curious errors creep in. The sutures of the skull are apparently filled in from the imagination of the writer, although it might have been expected that, in the continual wars between the Greek states, skulls would have been plentiful, and well known to anatomists. The internal parts are in many instances correctly described. The lobes of the lungs were known, though all five lobes were regarded as belonging to one organ—a matter rather of description than of observation. The kidneys and ureters, the bladder and its ligaments, the spleen, the liver, and the

intestines are all well understood. The distinction between nerves and tendons was however, not yet made; at which we can hardly wonder, when we consider that it is not unknown for the incautious student at the present time to fall into a trap by mistaking the tendon of the popliteus muscle for a nerve. The veins and arteries were distinguished from one another, but the functions of each were not known, since only the faintest idea of the circulation of the blood can be traced in the writings of Hippocrates. It is in the description of the veins that the most extraordinary errors are to be found. When we read that two veins run along the tendons of the neck, over the vertebræ to the kidneys and testicles, we wonder what possible mistake of observation can have given rise to such a description.

In the realm of Physiology there is a similar mixture of truth and error. Hippocrates recognises that the brain is the seat of sensation and intelligence, and explains that the ear merely transmits sounds, while the brain interprets them. Yet elsewhere the brain is described as a gland, which pumps blood to different parts of the body. It is clear that these writings are by different hands. The physicians of that day were familiar with the fact that trephining on one side of the brain is followed by convulsions on the opposite side of the body. The connection between the spinal cord and the brain was also already understood, and the error of looking on it as marrow, like that of the bones—a mistake perpetuated in the use of the word “medulla,” which has survived to our own time. The stages in the development of the chick could hardly fail to claim attention; but the recognition of the analogy presented by these with the evolution of the human foetus shows the beginnings of a science of embryology. The nutrition of the embryo by means of the umbilical cord was also understood.

Hippocrates propounds a theory of the development of sex, which has received some modern support, namely, that the male is produced as the result of impregnation just before the menstrual flow, the female during its continuance. In another passage—probably by another hand—the view is put forward that difference of food may exert an influence on the sex of the offspring—a dry diet on the part of the mother resulting in the birth of sons, a wet one giving rise to daughters. We may, in fact, say that the Father of Medicine knew just as much as we do of the origin of sex, no more and no less.

The doctrine of “pangensis” formulated by Darwin, who held that all parts of the body contributed their quota to the reproductive elements, is anticipated by Hippocrates, who states that the seed is derived from all the moist portions of the body; but he seems to have thought that the spinal cord was specially concerned in the elaboration of the product. Another point which has given rise to much controversy in modern times, the question of the inheritance of acquired characters, is apparently held by Hippocrates to be placed beyond dispute by the facts which he adduces. The instance which he brings forward is that of Asiatic races who have become dolichocephalic in consequence of their habit of compressing the

heads of their offspring to produce the long-shaped variety of cranium, which was admired in the east. The truth of this explanation of the phenomenon is obviously open to doubt.

The possibility of the evolution of mankind from lower animals was not recognised by Hippocrates, though it was mooted by some of the acute thinkers of antiquity. He realises, however, that a gradual advance has taken place in the social condition of our race, and he recognises that a struggle for existence must have taken place in the process, leading to the survival of the fittest. He tells us that originally men ate coarse food, and among it all sorts of unwholesome materials. On this diet the weak died out and only the strong survived. Experience gradually brought about an improvement in the *menu*.

To say that Hippocrates really originated the doctrine of the survival of the fittest is, of course, erroneous. Although the attempt to discover, in the writings of the great men of the past, germs of the ideas and discoveries which have illuminated later ages is always fascinating, the spirit which tries to detract from the merits of the real discoverers, by casting up against them such anticipations, is foolish as well as ungenerous. A discovery which falls to the ground is valueless, and has to be remade and finally established by another. In the old Greek philosophic writings many a flash of inspiration occurs, which might have led to great scientific discoveries, had the times been ripe for them; but until circumstances admit of proof as well as conjecture, great thoughts are as seed which falls on stony ground: no fruit results from them. In the writings of the poet Lucretius the atomic theory is set forth with extraordinary accuracy; and the experiments only recently made with Radium and allied substances point to the truth of the views therein maintained, as to the existence of a constant stream of particles given off from all material things. Yet this theory, highly elaborated as it was, led to no practical results, and was soon forgotten.

In the field of Medicine, with which we are most concerned, we find much in the Hippocratic writings that is of great interest. Among the ancients there was naturally a tendency to ascribe all diseases to the direct action of the gods, and therefore to except them from ordinary scientific laws. Perhaps we can hardly say that this view is extinct even at the present time. Hippocrates sets himself steadily against this doctrine. All diseases, he writes, are equally natural phenomena: even epilepsy, which many centuries later was still regarded as demoniac possession, is in the same category as the others. By thus applying ordinary canons of reasoning to pathology Hippocrates does a great service to medical science. His actual ideas of the nature of diseases are not, it is true, satisfactory. He regards them as definite things, which get inside the body, and are there digested. In this respect, perhaps, we cannot cast many stones at him. How many of us realise that a disease is only a perverted state of a living body, and that we should not treat the disease, but the patient? If however, we transfer Hippocrates' idea from the disease to the cause of it, we

have, in the case of the process by which the infective diseases are got rid of, a curiously close analogy to the process of digestion. The process of bacteriolysis, in which the invading organisms are broken up by ferments existing in the blood, is very closely allied to the process of digestion by the secretions of, for instance, the stomach; while the action of the leucocytes in swallowing intruders is actually a digestive process.

The acuteness of Hippocrates' clinical observation and the clearness of his descriptions are exemplified in the well-known picture of the dying man. To this day the "Facies Hippocratica" is a household word in medicine. The succussion-splash in hydrothorax, also, still bears the name of its discoverer, or, at least, its first recorder. The tongue, as an index of the state of the alimentary canal, was known to Hippocrates, but probably not the value of the pulse. It is true that he speaks of a pulsation of the "veins"—arteries and veins not being clearly distinguished—but he makes no reference to its connection with any disease. It was known that some cases of convulsions are associated with the presence of fluid within the skull, these being, no doubt, cases of hydrocephalus or tubercular meningitis; and the existence of rare cases in which epistaxis takes the place of menstruation is also recorded.

Some glimmering of the importance of the subjects which we now classify under the heading of "Public Health" may perhaps be traced in the reference made in one of the books of Hippocrates to the effect of different waters in causing disease, and in the advice to boil water coming from low-lying places.

He also associates the formation of urinary calculi with life along the banks of rivers. The influence of climate on character, an idea afterwards elaborated by Buckle in his well-known work, is to some extent recognised by the older writer.

As therapeutic measures, hot bottles were known to the Greek physicians, while in some cases bags of hot grain were used instead of them. Inhalations and baths were also among the recognised methods of treatment. But Hippocrates was too good a physician to have recourse to vigorous measures in all cases, and he recommends a masterly inactivity as being in some instances the best possible treatment. "Sometimes it is a good remedy to withhold all treatment." This may be compared with his equally memorable saying that the first rule of treatment is to do no harm—a rule as applicable in our own time as 400 years B.C.

In the domain of Surgery a very high degree of skill seems to have been attained. Fractures and dislocations were necessarily common accidents in any community in ancient times, and splints and other apparatus were devised to deal with them. The use of pulleys to reduce dislocations was common, and extension was employed to aid in the setting of broken limbs. Hippocrates advises that the teeth should be bound together in cases of fracture of the jaw. The time taken in the process of repair of different bones was calculated out, and Hippocrates gives 10 days for the nose, 20 for the jaw, clavicle, and ribs, 30 for the bones of the fore-arm, 40 for the

arm or leg, and 50 for the thigh. He also recognised that the marrow takes a part in the repair of bone. Wounds were to be kept dry, and at rest. Major operations were probably not common, though amputation must have been practised; yet Hippocrates speaks of nephrotomy for the evacuation of pus, and trephining was a recognised method of treatment. In the field of Gynæcology embryotomy was practised; and the advice is given to cover up the face of the woman, in order to avoid frightening her.

It is, however, in the advice which he gives as to professional conduct and deportment that we see most clearly the high ideals set before themselves by the old Greek physicians, and the advanced state of medical ethics at this time. The oath of Hippocrates is too well known to be again set forth here. Elsewhere we find directions as to attending the poor gratis; as to calling in others in consultation over difficult cases; and as to refraining from advertising. Frequent visits are advised, and careful examination. The physician should proceed calmly, so as to encourage the patient; but he must be firm in his directions and maintain his authority over him. No details are too small to be considered in the writings of Hippocrates. Thus the surgeon is enjoined to keep his nails short for the sake of cleanliness, and to learn to use both hands for operating. As it is stated in another place that women are never ambidextrous, it might be inferred that Hippocrates did not approve of lady surgeons. The inference would probably be a safe one, were it not for the fact that the very idea of such a development could scarcely have entered his mind.

Quacks were then as now, to the fore. Hippocrates laments that many men were to be found who "are ignorant and make gain by their ignorance, for they persuade those around them;" and elsewhere he writes that "he who deceives most, is most admired." But apart from the quacks, there were also separate schools of genuine practitioners, and no great love was apparently lost between them. Hippocrates attacks the Cnidian school for their too great attention to details, to the neglect of broad issues, and for their scanty use of drugs. It would seem that the tendency of the present time to be sceptical of drugs is by no means new: neither is it an unknown thing even in the twentieth century for it to be found that "what one brings forward as the best possible treatment, is thought by another extremely bad."

Finally, though every one knows the beginning of the celebrated aphorism that "Life is short, and Art is long," the continuation of it is not often quoted, but is none the less true. The whole passage runs:—"Life is short, and the art is long. Opportunity is fleeting; experience is treacherous, and judgment is difficult"—the words of a skilled physician, who recognised not only the need, for the constant study of his art, but also the difficulties and the limitations of knowledge imposed on practitioners of medicine by the nature of the subject-matter of their science.—*Fractitioner*, February, 1902.

TIMOTHY FIELD ALLEN, A.M., M.D., LL.D.

By the death of Dr. T. F. Allen, there has gone from us the last of the greatest trio which Homœopathy has produced.

Hahnemann, Hering and Allen, are three great names which will always stand out in bold relief, among the names of all the others. Noble, earnest, and great workers for our school.

Dr. Allen was born at Winchester, Vermont, April 24, 1837, and was the son of Dr. David Allen, a well-known physician of the old school. He received his early education in the schools of his native town and at East Windsor, entered Amherst in 1854, and was graduated from that institution in 1858, receiving his degree of A.M. in 1861. And in 1865 the degree of LL.D. was added in recognition of his achievements in medicine and botany. After leaving Amherst he entered the Medical Department of the University of N. Y., whence he was graduated in 1861.

He began practice in Brooklyn, but early in the Civil War entered the U. S. Army, and saw active service at Point Lookout. When he returned to New York he entered into partnership with Dr. Dunham. From that time his success was assured.

He had become a convert to homœopathy during his residence in Brooklyn, and was led to investigate it through the success of Dr. P. P. Wells in the treatment of cholera, which was then prevalent. He had lived in Dr. Well's family during the time he was attending medical college. Like all converts he was an enthusiast from the start, and his faith and confidence in homœopathy never left him.

In 1866 he was appointed to the Chair of Anatomy in the N. Y. Homœopathic Medical College—he was the best teacher of anatomy I ever listened to—and in 1871 to the Chair of *Materia Medica*, which position he filled until his health failed him two years ago. In 1882 he was elected Dean of the College, and held the position for twelve years. He occupied the Chair of Chemistry in the N. Y. Homœopathic Medical College for Women prior to his occupancy of the Chair of Anatomy in the N. Y. Homœopathic Medical College.

He was for many years Surgeon to the N. Y. Ophthalmic Hospital, and was instrumental in securing an endowment for the institution which placed it upon a sound and lasting basis, and was President of its Board of Trustees at the time of his death. He was also President of the Board of Trustees of the N. Y. Homœopathic College and Hospital until a short time since, when failing health compelled him to resign.

It is a matter of record that Dr. Allen's personal influence in the interest of homœopathy brought about the organization, maintenance, and homœopathic control of the leading homœopathic hospitals in Manhattan. The N. Y. Ophthalmic, the Laura Franklin Free Hospital for Children, and Flower Hospital all owe their beginnings and much of their subsequent success to his untiring devotion to our cause.

It is not my purpose to write of Dr. Allen's various attainments and achievements. As author, writer, botanist, and all around scientist, all these are too well known to need any elucidation from me. I shall touch here only on some of his personal characteristics, observed through long years of intimate association and daily intercourse.

I was a member of his household for eight years consecutively, and I had abundant opportunity for observing his character and knowing his innermost nature, his thoughts, his impulses, his hopes, his fears, his ambitions, his joys and his sorrows; for I was not only his companion but his confidant in everything. So close were our relation and friendship, that during all those years, no unkind word passed between us, no unfriendly thought.

He was, indeed, so kind, so gentle in his disposition, that during my long association I never saw him angry. He was often provoked when things went wrong, but he never gave way to anger or to undignified expression.

He was brusque at times (and perhaps to those who knew him least this was his most notable characteristic); he was impulsive and outspoken; but he never was dogmatic nor overbearing, and never disputatious.

He had the reputation of being unapproachable and unsympathetic, and his manner of which he was wholly unconscious, at times was such as to create that impression with one who did not know him well. But, as a matter of fact, he was one of the most approachable and most sympathetic of men. His preoccupied manner (and he was always preoccupied) sometimes gave the impression of inattention or indifference; but he was never indifferent nor inattentive, and could re-word all that had been said to him.

He possessed to a remarkable degree the faculty of doing two things at the same time—and doing them well, too; but this very accomplishment often got him into trouble and subjected him to very unpleasant and unkind criticism. For instance, the son of one of his best patients and closest friend consulted him one day at his office, and when he returned home was bitter in his reproaches of Dr. Allen for not giving him the attention he felt his case deserved; charged him with treating him curtly, going to his cabinet, taking out a few powders at haphazard, and hurrying him out of his office without carefully examining into his condition. His story impressed his family, and another physician was summoned, who found the boy very ill with what subsequently proved to be typhoid fever.

To show how false was the young man's impression, I came in soon after he had gone, and found Dr. Allen sitting at his desk with a troubled expression, and inquired what had happened to give him such evident anxiety? He started at my question, looked at me a moment, and said: "I am greatly distressed about young . . . He was in here a few moments ago, and I am sure he is coming down with typhoid fever; and if he is, he will have it badly, for he is a very sick boy now. Of course I

could not tell him what I fear, but I must call this evening, when his father is at home, and tell him of my fears, and at the same time see the boy again."

He was unable to call that evening, and next morning learned that the boy was very ill and that another physician had been summoned. But he did not learn until some weeks later—after the boy's death—why he had been superseded; and I have never seen more poignant distress than he manifested then.

He was the most industrious person I ever knew—the most prodigious worker. He was never idle. He always felt that waste of time was an unpardonable sin. Often he would discourse to me upon the subject, and as often abruptly end the conversation with the remark: "And here I am wasting my time on you! Go to work! Go to work!"

If he was ever beguiled from his work by an occasional caller, the dropping-in of a friend or an acquaintance,—and no man ever valued or enjoyed such attention and the chats that ensued more than he,—he would apparently drop everything for the moment and give himself up wholly to his friend, chatting pleasantly and jovially, and to all appearances oblivious of everything but the subject in hand. But any one who knew him well could see that the never-ceasing current of thought of his work was running in his mind all the time; and when he was at liberty he would impetuously return to it, as if he must make up for lost time.

He was not only a worker, but he worked with strong purpose. Like his speech, his work was consecutive, logical, and, so far as was in his power, conclusive. He accomplished more than most men equally zealous, and perhaps equally industrious. This was in a great measure due to system; but still more was it due to economy of time and the ability to take up his work where he left off, and without a moment's reflection recall the train of thought that had been interrupted. For instance, I have known him to be interrupted while preparing a paper for some journal or society. He would put it aside immediately, without comment, and perhaps would not have an opportunity to return to it for several days. When he resumed it, without stopping to consider what he had already written, he would immediately complete the sentence left unfinished: and thence would go on with his article as easily as if he had never left it.

This faculty of commencing where he had left off, without effort, enabled him, without loss of time, to accomplish a great deal that under other conditions must have been left undone. It shows a remarkable mental equipment which few men possess.

During the period of writing the "Cyclopædia," when he was at the zenith of his practice—a practice that would have filled the time of any ordinary man to the exclusion of any other work—he not only attended to its every detail, punctiliously keeping every appointment, but carried on the work on the "Cyclopædia" as well: supervising all the work of his helpers, dictating translations to his stenographer, revising the translations of

others, adding notes and comments, correcting errors in spelling and grammatical construction, personally examining and completing, in short, every detail of the work. There is not a line or a symptom in all those ten volumes that was not read by him, or read to him, before it went to press. No one who was not on the spot can form any idea of the magnitude of the labor or the immensity of detail involved in the development and preparation of such a work.

Nor was the "Cyclopedia" the only demand upon his time. There were his lectures at the college three times each week—and such lectures! Lectures such as Allen only could give—thoughtful, logical, forceful, entirely devoid of fancy or speculation, direct and to the point; a clear statement of facts which had been established by observation and experience.

He was never satisfied with his lectures, and was always careful to avoid any statement he could not defend. He never went into the lecture-room unprepared, and I have known him to spend hours in preparation.

Then there were the duties of the Deanship, which he conducted without assistance: carrying on the correspondence, directing the affairs of the college, formulating its policy, managing its finances, settling disputes, preparing his reports, in fact giving personal attention to every detail incident to the affairs of such an office.

His botanical studies also came in for a share of his time; and another share was taken in the preparation of his frequent articles for medical and botanical publications. Along with all this work he was a voluminous reader of professional journals. Not a medical or scientific journal came to his office, and the number that came was legion, that was not thoroughly scanned, and every article of interest recorded in his *index rerum* for future reference.

"The mind, the purpose, and the endurance that were responsible for these stupendous accomplishments are among the rarest of human attributes."

Dr. Allen would have excelled in anything he had undertaken, but perhaps his most brilliant achievement would have been in music—had he adopted it as his profession—for he possessed a real musical genius. What he accomplished in his profession and in other branches of science, and particularly in botany, was through the most patient industry and his love of work; but he would have been a *great* musician because he could not have helped it. He constantly suppressed his talent, and kept it in the background, that it might not interfere with his other work. Yet it often would come to the front, and demand attention so insistently that he would drop everything and spend a half hour or so at his organ—always improvising vehemently at first, but gradually becoming more and more moderate and subdued, and finally ending with the softest, sweetest and most peaceful strains. It is to be regretted that most of these impromptu productions could not have been recorded. They were the outpourings of a nature rare in this world. It always impressed me that some theme would take

possession of him so strongly that, resist it as he might, it would take precedence of everything in his mind and could only be dispelled by his giving it expression—and when the storm had passed he could quietly return to his work again.

He was most generous in everything. I never knew him to be guilty of a selfish act or to give utterance to a selfish thought. He would give away his last dollar, and his charities were manifold, but his giving was never ostentatious.

It was not only in charitable giving that his unselfishness was conspicuous, but in his treatment of those about him. Many a young practitioner in New York, placed by him in positions which his energy and his influence had provided, can testify to his unflinchingly generous goodness.

In all the great institutions which he gave to the homœopaths in New York—the Laura Franklin, the Ophthalmic, the Flower, Medical and Surgical—he was not more than the least of those who held positions therein. They were never *Allen's* institutions! and he carefully avoided any act which could by any possibility be so construed. He was always genial with his associates, and none of them stood in awe of him. They all recognized his ability and strength, but none of them feared him, nor hesitated to oppose him in any matter of policy.

In his family he was most gentle, kind and indulgent; always cheerful and often mirthful, particularly at table, where he often introduced conversation of a lively character, and entered into it with the keenest enjoyment and relish.

He was of a gay disposition and a great lover of fun and jokes—even of a practical kind which he sometimes indulged in with the keenest enjoyment.

He had the merriest laugh I ever heard, and when anything particularly funny was brought to his notice his laughter was immoderate.

To those who did not know well he gave the impression of austerity. But he was never austere, and could not have been if he had tried. Austerity was as foreign to his nature as dishonesty, and a more honest and upright man never lived.

Apart from the seriousness with which he regarded the duties of his life, he was the most light-hearted man and the simplest man I ever knew—the most gullible and the most open to imposition. Simplicity and greatness are often combined; and he, assuredly, possessed simplicity to a superlative degree.

He was a most generous critic. I never heard him speak harshly of others until his health began to break and he was no longer himself. Nor did he like to hear unfriendly criticism. It always hurt him beyond expression to hear unfriendly criticisms of himself, and he never could understand why they had been uttered. He would canvass and analyze his words and acts to see what he had said or done to justify them. He was so honest in his intentions and in all that he said and did that it was a grief to him when his motives or words were misconstrued.

He was fearless and outspoken towards those whose motives he distrusted, and he sometimes was premature in his conclusions ; but he was quick to make amends when he was at fault. Like many prominent men, he had enemies ; but he could never understand why. Often he talked with me about it. "Such and such a man hates me," he would say, "and I wish I knew why. I never harmed him in any way ; I never have offended him that I know of ; still, he says ugly things about me." I would reply : "Doubtless he is asking himself the same questions about you. Why don't you go to him and have an understanding ? It is not right that two good men like yourselves should go on hating each other all your lives when a word could make you friends. Doubtless his ears are filled with gossip about you, as yours are with gossip about him ; and, being more irascible, he gives utterance to his feelings." In one instance, at least, to my knowledge, this advice was taken, with the result I had predicted.

As a physician, he was devoted, conscientious and solicitous. He had an intuitive mind, and nothing about his patient escaped him. He was most painstaking in examining carefully into every little detail, and most accurate in his diagnosis and judgment. He was equally as painstaking in the selection of his remedy, and seldom made a haphazard prescription. The sufferings of his patients distressed him, and he spared no labor nor pains to assure their speedy relief—and he always sought it in the homœopathic provings. He seldom resorted to palliatives, because his knowledge of homœopathic materia medica was so extensive and so accurate that it was very, very seldom that he failed to give quick relief. It was always a source of great satisfaction to him to succeed where others had failed ; but it was never a selfish satisfaction. His delight was in the triumph of homœopathy. No little child with a new toy could experience more pleasure or delight than I have seen him exhibit over a successful prescription.

I have indicated here a few only of Dr. Allen's more salient characteristics. I shall not even attempt more, though I could go on indefinitely. He was a man of the broadest mind, and he was phenomenally broad in the range of his activities ; and all that he did was done well, because, into everything that he did went his whole energy and his whole heart. Each piece of work for the time that he was engaged upon it was the only piece of work in all the world. That force of concentration, with the power to pick up anew his work where he had dropped it, was the simple secret of his life of great accomplishment. What we owe to him—and think how much we owe to him !—he was able to give us because he pressed each single purpose of his life singly to its successful conclusion with all the strength of his soul.

It has been said in the world more than once that no man is indispensable ; that always another may be found to fill a place made vacant. Of Dr. Allen this is conspicuously untrue. No one will or can be found to do the work that he accomplished. With what infinite skill and patience he wrought none but those who can appreciate his genius will ever know.

ST. CLAIR SMITH M.D.—*Hahnemannian Monthly*, Feb. 1903.

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ERRATA.

- In p. 143, line 17 from top, for "Concluded" read "Continued."
" p. 148, line 5 from bottom for "cansal" read "causal."
" " line 7 " " for "arrived by" read "arrived at by"
" " line 8 " " for "discrepancis" read "discrepancies."

[We have great pleasure in reporting to the *British Homœopathic Society*, for April, 1902, the following Paper on "Alcohol in Therapeutics," giving in a brief compass a summary of recent facts and opinions on a most important subject, important alike to physician and patient. The author says at the end "there are opinions of other authorities and other phases of the subject which would profitably form another and complementary study to the above sketch." We await with interest this complementary study which we shall be glad to present to our readers when published.—*Editor*]

During the last decade or two a very remarkable change in opinion as to the therapeutic value of alcohol has occurred.

To go no further back than the eighties, many of us can remember the large quantities of brandy given as a matter of routine in acute diseases, such as pneumonia and enteric fever; while nowadays in the same hospitals the routine practice is to do without alcohol, or only to prescribe it in very limited quantities and for some definite reason.

* Presented to the Liverpool Branch of the *British Homœopathic Society*, January 8, 1903.

Since those days of official therapeutic alcoholism, if I may so term it, so much has been said and written, both temperately and intemperately, about the use and abuse of alcohol, that I cannot claim to present anything really new about so polemical a subject.

The *Practitioner*, for November, 1902, was one of that useful journal's special numbers dealing with a given subject from the points of several of the leaders of our profession. This number dealt with alcohol, and I think it may serve a useful purpose if I refer to its contents here.

Sir Samuel Wilks begins by observing that in those days of the free administration of alcohol there could be "no doubt that in very many cases the remedy was doing great harm, and a temperance hospital might then have served as a good object lesson; but at the present time such an institution has no special use, since patients coming into any of the London hospitals with fever, pneumonia, rheumatism or other diseases, are put on simple diet, and remain upon it until any special conditions demand the use of the so-called stimulant. There is no difference in treatment between those in a temperance hospital and elsewhere. Although this is the case, I believe there are still many medical men who are rather indiscriminate in the use of alcohol, believing that weakness and the state of the pulse are indications for its employment." He regards it as a vulgar error that a person having a weak pulse requires alcohol.

It has probably fallen to the lot of each of us to be called in to a case giving anxiety to the friends on account of great cerebral excitement or delirium. A careful examination of the patient coupled with judicious questioning has revealed the fact that in addition to the disease from which our patient was suffering, they were unmistakably drunk from the ill-advised exhibition of alcohol by the friends.

Many years ago, I remember being sent for to attend a confinement in the place of a friend who was not at hand when required. I was alarmed to find a high degree of excitement that did not appear justified by the labour, which seemed to me to be pursuing a normal course. Visions of impending eclampsia crossed my mind, until I saw a brandy bottle three parts emptied, and observed the patient being pressed to take more, the which

she was in no wise loath to do. The diagnosis was then simply, "drunk and disorderly." Quite recently I was telephoned for to go to a lady, the members of whose family are all highly neurotic. The entire family were around the sick bed. There were cries and lamentations from those around, while the patient, who was of the unromantic age of 48, was flushed, weeping and clinging to anyone she could get hold of. Champagne was the cause of the exacerbation of symptoms natural to a disordered digestion and weak heart. Recovery was soon initiated by a stoppage of all alcohol and attention to a suitable diet.

It is common for temperance reformers to libel the medical profession by saying that habitual drunkenness frequently owes its origin to a doctor ordering "stimulant" to the sick. The doctor also orders drugs at the same time, but does not expect to have to instruct the patient to discontinue either the stimulant or the medicine after recovery has taken place. The loss of moral tone in alcoholic subjects is so well known, that we need feel no surprise that they put forward any excuse for their depraved habit, and so the doctor is often unjustifiably blamed.

The value of a "night-cap" of spirits, in cases where a man is unable to sleep owing to business worries, &c., is well known. Here alcohol acts as a true sedative and not as a stimulant at all. But it is easy for such persons to fall into the error of a routine practice of taking their night-cap when not required. It is the special need that is right, and the routine practice of taking alcohol as a mere habit that is wrong, whether taken at night or at meal times. We ought to object to the habit of invariably taking alcohol at stated times, and insist that our patients should leave off the prescribed dose occasionally, in fact whenever they feel that it is not required.

Sir Samuel Wilks thinks that not one patient in a thousand ever ask their doctor what they should drink; they decide for themselves and drink what they like best. But when the doctor is consulted, "it seems to be a rule in the profession always to stop a patient's beer. . . . and too often to recommend them some whiskey instead."

Sir Henry Thompson gives some graphic personal recollections, from which the moral may be deduced that during one's whole life it is better to refrain taking alcohol as a beverage.

Sir William Broadbent says that when we prescribe alcohol in the treatment of disease it should be regarded as a medicine, and prescribed with the same care and in the same definite way as the most powerful remedies. He hopes "that the idea, so firmly fixed in the mind of the public, that stimulants give strength, is no longer entertained by any member of the medical profession. It is true that a certain proportion of the alcohol taken undergoes oxidation, and this will liberate energy in one form or other. It is definitely established, however, that there is no increase of muscular force, and, while alcohol exercises a subtle influence on the nervous system, this is not in virtue of any evolution of nervous energy by its oxidation. . . . The action of alcohol which we call stimulant is, therefore, indirect, and the most conspicuous evidence is dilatation of the arterioles and capillaries; which allows of freer supply of blood to all the organs. There is a concomitant increased action of the heart, due partly, if not mainly, to the diminished resistance in the peripheral circulation." He considers that alcohol has no place in the treatment of weakness in children; and that in anæmia and chlorosis of adolescence it is of very doubtful advantage. If stimulants taken on medical advice are ever responsible for the establishment of the alcohol habit, he thinks it is when they are prescribed to combat a feeling of mental depression. The presence of renal or hepatic disease should be regarded as a bar to stimulants.

Dr. A. Ransome thinks they are capable of rendering decided service in tuberculous diseases.

In convalescence generally, alcohol, when prescribed, should be always taken with food. The test whether good is being done by it is whether the appetite is improved and digestion facilitated.

Sir W. Broadbent cites a severe case of enteric fever, the patient being almost pulseless, scarcely conscious, and vomiting everything taken, when he was called to see her. He found that brandy had been given freely. He felt sure the brandy was the cause of her serious condition, and therefore stopped it, with the result that in twelve hours the patient was out of danger. In febrile diseases he orders alcohol when the pulse is frequent with low tension and dirotism. If the stimulant is

doing good the pulse will be less frequent and less dicrotic. Another indication is the state of the tongue; when this is dry, and especially when there are sordes about the month, alcohol does good. Again, when stimulants promote sleep and diminish restlessness, they are of great service. Converse effects and evidence of gastric irritation would constitute contra-indications. The odour of the breath is a good test; when alcohol is doing good in disease the spirituous smell disappears with rapidity, but when it lingers, or especially if the foul after-odour of the spirit drinker is recognised, the stimulant should be withdrawn.

Dr. Sims Woodhead deals with the pathology of alcoholism.

Virchow's dictum is quoted that "the history of a diseased cell can only be written when its normal physiological or biological history can be traced." It is therefore "evident that a complete study of the action of alcohol on healthy protoplasm must be undertaken if any adequate picture of the changes wrought is to be obtained."

The gross lesions caused by excessive use of alcohol have long been known, such as cirrhosis of the liver and kidney, the virulent form of pneumonia that attacks drunkards, the fatty degeneration of various organs, and certain lesions of the nervous system, but the minor changes of function and structure were formerly entirely overlooked.

It may be accepted that any substance that exerts a deleterious influence on protoplasm in its simpler forms is equally or more poisonous to more highly developed or specialised cells. Of course alcohol is the substance here referred to, and it is noted that like phosphorus it has an extraordinary affinity for oxygen, so that the oxidation of the fat and carbo-hydrates of the body is interfered with, the respiratory oxygen being seized upon by the alcohol and it enters into combination with that substance, with the result that there is imperfect metabolism, the result of imperfect oxidation. This results in two abnormal conditions: (1) "there may be an excessive accumulation of fat, not only in the subcutaneous tissues, but also in the interstices between the heart muscles, especially near the pericardial surface, in the liver cells, especially in the peripheral zone of the lobule, and in the omental tissues, the cells in these positions becoming enormously loaded with

fat; (2) abnormal metabolic processes are set up which end in the destruction of protoplasm, in increased elimination of nitrogen, and in the accumulation of fatty degenerative products in the protoplasm of the cells." That this is not due to want of food in alcoholic subjects is shown by the fact that in "stout patients fatty degeneration in a most advanced form may occur along with extremely well-marked fatty infiltration of the connective tissue and liver cells. . . . This co-existence of infiltration and degeneration is one of the almost characteristic features of alcoholic poisoning, or of poisoning by substances similar to alcohol."

Two other notable pathological changes nearly always appear in the very footsteps of this fatty degeneration; they are (1) calcification, and (2) fibrosis." Impairment of vitality is a natural consequence in those tissues subject to fatty degeneration. In aged people there is usually a great tendency to the deposition of calcareous matter in tissues of low vitality, as is especially well seen in the muscular walls of blood-vessels. This calcification is common not only in drunkards, but in those who have been moderate drinkers most of their lives. A minute examination shows that the calcareous particles form casts having the outline of the muscular fibres, though somewhat enlarged. These fatty and calcareous changes are associated with an increased formation of fibrous tissue in certain active tissues and organs. In some cases this fibrous tissue appears to be formed almost independently of the above-described changes, and in certain cases of cirrhosis of the liver the alcohol taken into the portal vein appears to act first directly upon the fibrous tissue immediately surrounding the veins, where, by a process of irritation, it causes poliferation of the connective tissue cells in the portal spaces. . . . which may extend . . . until a large portion of the liver substance is destroyed, the fibrous tissue contracting and giving rise to the well-known "gin-drinker's liver." This was considered to be the typical alcoholic liver; but nowadays the more typical condition is thought to be that when the liver is fatty and in which the liver cells of the peripheral zone of the lobules are infiltrated, and accompanied by degeneration of the cells in the centre of the lobules. Excessive use of spirits usually produces the shrunken fibrous liver,

while excessive beer-drinking results in at times an enormous increase in the size of the liver in which fatty changes are more marked than the fibrous.

Although alcohol becomes so quickly oxidised when taken into the body, Dr. Woodhead insists that it acts as a "cumulative" poison, both as regards itself and also in connection with other poisons, as arsenic, phosphorous, antimony, &c., and with the products of disease-producing organisms, and also with the ordinary metabolic waste-products of the body.

Alcohol appears to accentuate the action of these waste-products in two distinct ways:—(1) by its cumulative action it increases the effects produced by the noxious waste-products, the two poisons together doing more damage than either one alone is capable of doing, by interfering with the normal metabolic processes; (2) as a result of this interfering action, we have the removal of the various waste-products obstructed.

With due deference to the author of the views above expressed, I do not think the epithet "cumulative" properly describes this action of alcohol, though I agree that the effects mentioned do occur. I suggest that this deleterious action of alcohol is more properly one of irritation and paralysis. Cumulative poisons are properly those which are stored up in the body and not readily oxidised and excreted, such as the metallic poisons, traces of which may be found in various organs long after they have ceased to be ingested. Alcohol acts as irritant in producing the fibrous and calcification degenerations considered above, and acts as a paralysing agent in preventing complete metabolism.

Dr. Woodhead now points out that alcohol intensifies disease processes. Even moderate drinkers are more susceptible to the action of the specific organisms and their toxins of cholera, diphtheria, rabies, tuberculosis, enteric fever, pneumonia, and suppuration. That the above statement is in the main correct is proved, I think by the fact that the chief insurance societies, which are not philanthropic but business associations, find it pays them to grant a bonus of 10 per cent. on premiums to total abstainers from alcohol. Their statistics prove conclusively that abstainers have a greater expectancy of life which results from their greater power of resisting disease.

As might be expected, Dr. Edmunds, of the London Temperance Hospital, does not discuss the use and abuse of alcohol in health and disease. He dogmatizes that all use of alcohol is abuse when taken into the body. There is much reason for his extreme views, or rather there was in the seventies, when the Temperance Hospital was founded; but now, as pointed out by Sir Samuel Wilks, the revulsion of medical opinion against the free and routine use of alcohol in disease has brought about such a change of treatment in this particular that there is but small difference in either the treatment or the results obtained in a temperance hospital on the one hand, or in a general hospital on the other.

Mr. Pearce Gould emphasises the important part alcohol plays in surgical practice. He says it is a chief cause of surgical accidents and injuries of all kinds. "Alcoholic excess is one of the great causes of the exaggeration or complication of injuries: a drunken man will try to walk on a broken leg, and so convert a simple into a compound fracture or greatly increase the displacement of the fragments, the laceration of muscles and and the extravasation of blood. The loss of mental vigour and control may cause delay in seeking proper advice after an injury, the careless fouling of a wound, the renewing of hæmorrhage that has been temporarily arrested, or the exposure to cold and wet such as occurs when an injured man lies for hours in a drunken sleep in a wet ditch. . . . The frequency with which retention of urine is immediately caused by an alcoholic debauch is well known; so is the part that alcoholism plays in the causation of a rupture of the bladder, first of all by causing a rapid excretion from the kidneys, next by the blunting of the sensorium which permits of the bladder becoming overfull, and lastly by the liability to a fall, or a kick or blow in a drunken brawl, that is the immediate cause of the rupture. Delirium tremens is one of the most serious complications of fractures and other injuries, not only because the delirium introduces grave difficulties in the treatment of the injury itself, but also from the high mortality directly attending it. . . . Alcoholism also adds to the difficulty and dangers attending the administration of anæsthetics."

For many years he has dispensed almost entirely with alcohol as an aid to surgical treatment. In septic cases where it used to be always given, he finds that patients are really better without it.

But in cases of shock and collapse, he thinks alcohol will help to tide us over an acute emergency, but it should not be continued after reaction has commenced. In advanced cases of cancer, he thinks it increases the activity of the disease and the patient's pain.

In the treatment of alcoholism by hypnotic suggestion, most practitioners have had successes by this method and many failures.

Drs. C. Lloyd Tuckey and J. Milne Bramwell are the best known London hypnotists. I also in former years have had satisfactory cases.

The drawback to this means of cure is the length of time required, and the consequent expense of time to the physician and money to the patient. But in dealing with such a very unsatisfactory form of disease, we should be thankful for any and every means of curing it.

Treatment by "suggestion" means nothing more than substituting the physician's healthy suggestion that alcohol is bad, for the dipsomaniac's unhealthy auto-suggestion that he must have alcohol. As this auto-suggestion is so terribly strong, it is not to be wondered at that the physician's suggestion is sometimes unable to overcome it.

Alcoholism in children, is noticed in the *Practitioner* for December 1902, p. 172-3. Nieloux found experimentally that alcohol administered to animals could be traced to the genital organs, and that it diminished the motility of the spermatozoa. It is thus probable that definite effects would be produced on the offspring of those who indulged too freely in the drug. According to Roubinovitch, "children of alcoholic parents are delicate, liable to wasting, to tuberculosis, meningitis, and gastro-enteritis. A great part of the alarming mortality among infants in large towns, generally ascribed to insanitary conditions, may be really due to this factor. Spirit drinking is more harmful in this connection than the consumption of wine, giving rise in the offspring to mental defects such as hysteria, chorea, imbecility, &c. An actual hereditary dipsomania is, according to this writer, sometimes found, the infant screaming for alcoholic drinks whenever they are brought near him, but concerning this some scepticism is permissible. . . . In sucklings ill effects may be produced owing to the appearance

of alcohol in the milk of the mother. The drug may be given intentionally to quiet the child; older children are given portions of their parents' drink. A very striking arrest of growth occurs in older children, so that they are stunted."

Among the most pernicious forms of giving alcoholic drinks, I believe, are the various mixtures of coca and meat extract with wines. They are rather pleasing to uncultured palates, and often lead to a continuance of their use when the need, if ever it really arose, has long gone by. If the coca or meat extract be required, give them alone, or if wine be needed, give it, but no physician should prescribe these mixtures of inferior wines with which the market is flooded.

It is remarkable how many so-called "cures" for alcoholism appears from time to time. They all have many successes at first, and then after a time we have nothing more of them. In the Report for 1901 of the Inspector under the Inebriates Acts, Dr. Branthwaite strongly urges the desirability of *all* houses for the treatment of inebriates being licensed, as is the case under the Lunacy Acts. These unfortunate patients would then have some guarantee that their best interests would be properly looked after. As it is, in many of these unlicensed houses, the patients are under the complete control of quite unqualified persons, whose sole idea appears to be to make money. My impression is that all these systems of "cure" really act by "suggestion" and not much if anything by the actual drugs employed hypodermically or otherwise. While the suggestion is fresh it acts energetically, but when staled by custom it soon becomes inoperative. The same remark applies to all forms of "faith-healing," as at Lourdes, Holywell, &c. Those who have read but little of the literature of this subject and have seen nothing of its practice, are often afraid that the practice of hypnotism lessens the patient's volition.

If the patient's will power were destroyed or even weakened by hypnotism then it should never be practised, but the opposite is true, for hypnotism can easily be made to increase the patient's own will power to resist unhealthy cravings.

The chief part of the foregoing extracts shows us when not to give alcohol during the treatment of disease and injury. The few occasions when it is beneficial seem to be:—

(1) With meals when it is found to stimulate the appetite so that more food may be taken than would be without it.

(2) To promote restful sleep as a sedative, not as a "stimulant."

(3) To help the patient over some short period of collapse or shock in the course of serious illness or injury.

A subject so large as the value of alcohol, and upon which medical opinion is so varied, and even contradictory, cannot be dealt with in one short paper. There are opinions of other authorities, and other phases of the subject which would profitably form another and complementary study to the above sketch.

The useful little book on the "Uses of Wines in Health and Disease," by Dr. Anstie (published by Macmillan, 1877), may be studied with advantage.

CHOLERA.

Continued · II

(Concluded from last Number, p. 104.)

ETIOLOGY CONTINUED.

It may be said that in the instances we have cited the water of the contaminated well was used only for washing purposes and not for drinking. True. But the water, that is, taken into the mouth for rinsing it with, cannot be entirely ejected, a portion of it perforce being swallowed by the involuntary acts of deglutition that are constantly going on. Besides, a good quantity of the contaminating matter remains adherent to the mucous membrane of the mouth, some of which must go down the pharynx and œsophagus into the stomach. In the cholera season in Calcutta, when the river (Hughli) is contaminated with the cholera dejecta, we have seen cases of the disease occurring: not at the usual hour after midnight, but in the morning, forenoon, or afternoon, in bathers in the river, a few hours after their bath. Now bathers are in the habit of washing their mouth preliminary to the bath, and it is easy to understand how the morbid matter in the contaminated water may thus find its entrance into the stomach and produce havoc there. We may say, therefore, with truth, with Drs. Macnamara and MacLeod (*Quain's Dictionary of Medicine*),

that "the evidence in favor of the communicability of cholera by means of water or food contaminated with cholera-dejecta is overwhelming."

The importance of this fact in the prevention of the disease need hardly be pointed out. The sanitary precaution, that must be taken to avoid cholera, is clear and practicable. We have only to see that the cholera-dejecta are properly dealt with, so as not in any way to gain access into the stomach either with food or water that we use for drinking or even for washing purposes. Can the morbid matter enter the system through the lungs or other channels? We do not think. It is true that the dry matter in the fomites of cholera patients conveyed through the air has given rise to the disease. But this is explicable by the fact of its coming in contact with the mucous membrane of the mouth and pharynx before entering the lungs, and therefore has better chance of being swallowed and affecting the stomach rather than the respiratory organs.

We have advanced then so far in the etiology of cholera that the fact has been established, that the evacuations of patients suffering from it furnish the most potent toxic material capable of giving rise to the disease when swallowed by healthy individuals. But this is not enough. We ought to know what is it in these dejecta which is pathogenic. We have seen that these dejecta consist of a fluid holding in suspension solid particles and masses; that the liquid is alkaline, and contains in solution a trifling quantity of albumen, urea, some phosphates, &c., and that the solids contain chiefly masses of the epithelial lining of the intestines, and the debris of the same epithelium, and bacteria. We do not think the chemistry of the albuminous liquid has been fully worked out so far as research has gone. No substance actually toxic or of the nature of a ferment or fermentiscible body has been discovered capable of causing such violent action upon the stomach and the intestines as we have in cholera. Attention has therefore been directed to the solids in these dejecta, and more specially to the bacteria that abound in them. And this leads us to a consideration of the

Bacteriology of Cholera.

Bacteriology may be said to date as far back as when Leewenhoek, upwards of two hundred years ago, detected with his rude

microscope minute living organisms in the saliva and putrid water. The foundation of the bacteriology, or germ-theory, of disease was laid when, after the discovery by Fuchs in 1848 of bacteria in animals dead of septicæmia, and by Rayer and others in 1850 of bacteria in animals that had died of anthrax, Davaine succeeded in inducing the latter disease in healthy animals by inoculation with a small quantity of the suspected organism. Ever since pathologists are on the look-out for the discovery of specific micro-organisms as the cause of disease, and the etiology of disease, especially of contagious and infectious diseases, has been receiving mighty developments.

But in order that the causal relationship of a certain micro-organism with a certain disease may be established with certainty, certain conditions must be fulfilled which, having been first formulated by Dr. Robert Koch, of Berlin, are known as Koch's postulates. These are—(1) That the organism must be demonstrated in the circulation, or tissues fluid or solid, or both, of the diseased animal; (2) the organism so demonstrated, must be capable of artificial cultivation in suitable media outside the body of the animal, and successive generations of *pure cultivation* obtained; (3) such pure cultivation must, when introduced into the body of a healthy and susceptible animal, produce the given disease; (4) the organism must again be found in the circulation or tissues of the inoculated animal.

It is by the application of these tests that pathogenic micro-organisms are being distinguished from non-pathogenic ones, and the specific micro-organisms or germs of infectious diseases are being discovered. It requires considerable practical acquaintance with bacteriology to recognize the difficulty of applying these tests. There are so many fallacies which may attend these investigations, that it is absolutely necessary to exercise the greatest caution in order to avoid them, and to raise the probability into the certainty of a particular organism being the cause of a particular disease.

Dr. R. Koch, the highest authority on bacteriology, a year after his discovery of the tubercle bacillus in 1882, made the discovery, while in Egypt, of what from its shape he called the comma bacillus of cholera. In the following year (1884) he

came to India on a special mission, and in Calcutta confirmed his discovery of this bacillus. He found it in all the cases of the disease that he examined, in the contents of the intestines of forty-two fatal cases and in the stool of thirty other patients. He could not find it in other diseases, nor in the discharges of healthy men. From its constant and invariable association with cholera he locked upon it as the cause of the disease; but he failed to demonstrate its causal relation by applying the test of his own postulates to the lower animals. In none of those experimented on was true cholera or anything like it developed, except in the case of guinea-pigs by most round-about methods not free from fallacy. Thus believing that it was the acid gastric juice that kills the bacillus, he neutralized it by sodium carbonate, but even this did not succeed, and he had to paralyse the muscular fibres of the intestines by the intra-peritoneal injection of tincture of opium before anything like the symptoms of cholera could be developed! Under these circumstances it cannot be asserted that the symptoms developed were by these comma bacilli alone, especially as similar results were obtained with other bacilli aided by such violent procedure as intra-peritoneal injection of opium.

It is true that cases of occurrence of the disease in man from accidental infection have been reported. A student of Dr. Koch, while attending his course on cholera, in 1884, got a severe attack from this cause. Metschnikoff has reported a similar case. Dr. Oergel, of Hamburg, is said to have died of the disease after having accidentally infected himself while injecting a guinea-pig. These are solitary instances, and against them there are others which lead to the opposite conclusion. Thus it is well known that Klein and others have several times, for purposes of experiment, swallowed good quantities of cultures of the pure bacilli; "yet, although in a few instances diarrhoea with comma bacilli in the stools has resulted, in perhaps no instance has true cholera, much less fatal cholera, been produced." These cases, we must say, however, neither prove nor disprove the causal relation of the bacilli to the disease.

The most fatal objection to Koch's view is offered by the facts that "the comma bacillus has been observed in the stools of individuals who did not at the time or afterwards suffer from

cholera"; and that a few cases of what from a clinical point of view appears to be true cholera have been observed in which the most careful and most prolonged bacteriological examinations failed to detect the comma bacillus." Against the first fact it has been advanced that there are auxilliary conditions besides the prime condition of the presence of the comma bacillus, which are necessary for the development of the disease, and that these were wanting in the cases under consideration. Against the second has been said that the examinations were defective which, considering the observers concerned, is a very lame and uncharitable assertion and proves, if it proves anything, that in some cases bacteriological diagnosis may be extremely difficult and not to be relied on, as was well illustrated in the Hamburg epidemic.

The variability of the cholera bacillus, as admitted by experts as will be seen from the following quotation from M. Haffkine, is a very strong argument against Koch's view :—

Variability of the Cholera Microbe.—When the cholera bacillus was first discovered, eleven years ago, its properties were described with great precision, which helped in concentrating for a long time all studies on well-defined and carefully-chosen specimens. Little by little, as the field of investigation grew larger, a number of varieties have been found with characteristics differing so largely as to annihilate almost completely the original description. When we open the intestines of deceased cholera patients and investigate the microbes there, the adopted methods will bring to the surface vibrios in which the external form, instead of the characteristic comma or spirillum, will vary between a coccus and a straight thread; the number and disposition of the cilia, the secretion of acids, the form of growth in broth, will vary; instead of giving in gelatine a discrete and well-defined figure of liquefaction, variation will extend from the complete loss of this property to a rapid dissolution of the whole of the medium; there will be varieties which grow luxuriantly in given media, and others which do not grow there at all; some will be phosphorescent in the dark, and others not; some will give the indol reaction, and others will be deprived of this property, and so on. The first thing to be done is carefully to select amongst these the most typical specimens, rejecting the others, and then we try their pathogenic power. We shall find such a divergence in strength that the extreme forms will not be believed to be of the cholera species. There will be commas deprived of any virulence demonstrable on animals, and others which kill

the most resistant species. Some will be fatal to a guinea-pig at a dose of 1:100 of a culture tube, and others harmless in doses 500 times stronger. The average comma dies out when introduced under the skin to an adult animal; others will spread in the system and give a fatal septicæmia. The ordinary comma will be without effect on birds; but several specimens have been isolated, and believed to be typical, which easily killed pigeons by hypodermic or intramuscular injection. I believe to be of great value the method worked out by Pfeiffer for comparing all such varieties with one selected as typical, and which he employed for the preparation of an antitoxic serum. This method will be found of efficient help in distinguishing specimens of the greatest affinity with the average cholera comma. But once such specimens are selected and their particular properties studied, they begin to change from the first day they are introduced into the laboratory, and no calculation based on these studies is possible. In a case quoted by M. Metchnikoff, the proportion of initial power of the microbe, and the strength it showed at a later trial, was of 75 to 1, the microbe having gradually sunk to 1-75th of its initial virulence.

"These remarks," Dr. Manson has justly observed, "by so great a master of the subject, while they indicate a way of reconciling many apparent ^{discrepancies} ~~discrepancies~~ in matters of fact and differences in the conclusions arrived ^{at} by different bacteriologists, and whilst they indicate a key to many of the clinical features of cholera, teach us caution in accepting as proved the ^{causal} ~~causal~~ relationship of the cholera vibrio to the disease with which it is so invariably associated." We shall return to the subject in our next.

(To be continued.)

EDITOR'S NOTES.

Pregnancy Protracted to 339 Days.

KAMANN (*Monats f. Geb. u. Gyn.* January, 1903) exhibited at the Gynaecological Society of Munich last year a male infant 9 days old, which had been born 339 days, or over 48 weeks, after the last menstrual period. The patient, it is stated in the report, where some doubt is implied, was a girl, aged 18, a primipara. The foetal movements were first felt 189 days before delivery. The infant weighed over 11 lb., and measured $22\frac{1}{4}$ in.—*Brit. Med. Journ.*, March 21, 1903.

Chemistry at Intensely low Temperatures.

It is well known from the classic researches of Professor Dewar on low temperatures that under the influence of intense cold the great majority of, and probably all (if the temperature be sufficiently reduced), chemical interactions are entirely suspended. According, however, to a paper recently communicated by M. Moissan to the French Academy of Sciences that highly energetic element fluorine enters readily into affinity with hydrogen even at a temperature as low as 20° absolute (-253° C.). When pure fluorine gas was allowed to come into contact with liquid hydrogen there was a violent explosion. By means of liquid hydrogen fluorine, isolated in the pure state by M. Moissan, has been liquefied and its melting point proves to be about 40° absolute. Fluorine is a remarkable, if not a unique, instance of an element preserving its powerful affinity for another element at excessively low temperatures. As an example of quite the reverse kind sodium will float on liquid air without the slightest sign of combining.—*Lancet*, March 21, 1903.

Upright Penmanship.

A PAMPHLET has been received urging the adoption of Mr. J. Jackson's "System of Upright Penmanship." There can be no doubt that sloped writing necessitates a strained and asymmetrical posture, and has contributed to the production of countless cases of lateral curvature of the spine and of eye-strain, while upright writing is compatible with a natural and healthy posture. This fact alone constitutes a sufficient, and, indeed, urgent, reason for the teaching in all schools of upright in place of the old-fashioned sloped writing. But it seems that some of the advocates of upright writing claim as one of its principal advantages the fact that it can be easily executed with the left hand. They propose to form an association to promote the teaching of upright writing with both hands, believing that the child taught to write equally well with both hands will easily acquire left-handed skill in all other manipulations. This belief is probably well founded, but there are at present no sufficient grounds for the assumption that a child's mental development will be aided by the training of his left equally with his right hand. The balance

of probability seems to be against it. It is further proposed to teach children to write different matters simultaneously with the two hands, a feat which appears to have been accomplished in one or two instances. If this proposal should be carried into practice the results should be of great interest to psychologists, but the process may be prejudicial to the development of strong and sane personalities by the subjects of the experiment.—*Nature*, March 12, 1903.

An Uncommon Case of Extrauterine Gestation.

GALEAZZI (*Gion. dell. R. Accad. di Med. Torino*, January, 1903) records the following case: A woman, aged 39, first menstruated at 15, married at 22, had a child a year later, which she suckled. Menstruation reappeared fourteen months later and continued regular. After this pregnancy she complained of a more or less constant pain in her left hypochondrium. At 31 menstruation ceased for three months, and was accompanied by all the signs of pregnancy. At the end of the three months she was seized with sudden pain (after several hours' washing) in the lower abdomen, lasting for twelve hours, and followed by metrorrhagia for eight days. A certain amount of indefinite pain remained in the suprapubic region, and a year later bladder disturbance set in, consisting of pain, burning, tenesmus, and the passage of pus and mucus in the urine, but no blood. In February, 1901, she had metrorrhagia for fifteen days, and from that day the bladder trouble became much worse, micturition finally becoming necessary every ten or twelve minutes. Some days before admission she had acute retention of urine, due to impaction of a foreign body in the urethra. As this was believed to be a calculus, and another was felt in the bladder, operation was determined upon. A small phosphatic calculus was removed, and on further exploration a fetal bone was detected; suprapubic cystotomy was performed and a considerable number of fetal remains removed from a cavity communicating directly with the bladder. The bones recognized were 2 humeri, 2 tibiae, 1 fibula, 2 clavicles, 1 scapula, several ribs, the lower jaw and several skull bones. The size corresponded with that of a 3 months fetus. This was therefore a (probably) tubal pregnancy which had burst into the bladder ultimately. The after-history of the case was satisfactory and the woman left the hospital in good health. The author has collected 20 similar cases.—*British Medical Journal*, March 21, 1903.

Bovine Tuberculosis in the Human Subject.

Dr. Troje of Brunswick has published in the *Deutsche Medicinische Wochenschrift* a case in which the human skin became infected with perlsucht and the subsequent history of the patient presented features of unusual interest. In an address delivered before the International Conference on Tuberculosis held in Berlin in October, 1902, Professor Robert Koch maintained that butchers and other persons working among tuberculous cattle or their carcasses were not exceptionally liable to phthisis or other internal manifestations

of tuberculosis, although they might suffer from tuberculosis verrucosa cutis a local affection of the skin which healed readily and had no tendency to spread to the lymphatic glands or to other organs. The evidence, however, of Dr. Troje's case seems to be opposed to this view. The patient was a working butcher, aged 19 years who in July, 1900 had occasion to remove the pleura from the carcass of a cow which had been declared, by a veterinary surgeon to be tuberculous, and in doing this the skin of his left forearm was slightly lacerated by a sharp edge of the sternum which was at the time covered with pus from a tuberculous abscess. The wound, which was immediately washed with carbolic lotion, healed very soon under an antiseptic dressing but six weeks afterwards the place became inflamed and two pustules which subsequently ulcerated showed themselves in the cicatrix; the axillary glands at the same time became swollen. Under iodoform dressings the ulcers healed very slowly but lupus appeared in the neighbourhood of the cicatrix, so that on Nov. 22nd the patient was admitted into the Brunswick Hospital to be operated on. The diseased skin was removed together with a gland in proximity to the elbow and the denuded area was covered by transplantation of skin according to Thiersch's method. Microscopical examination of the skin proved that the disease was tuberculosis. The man remained well for a year, but in June, 1902, he again consulted Dr. Troje. He had then some nodules of lupus in the cicatrix and a considerable amount of pus between the muscles of the forearm together with swelling of the axillary glands. The diseased skin was again removed and the abscess after evacuation was filled with iodoform gauze. In September after the operation wound had healed all the axillary and infraclavicular glands were swollen and had to be removed; on microscopical examination they were found to be tuberculous. The case obviously shows that inoculation with perlsucht may lead to lupus and the subcutaneous formation of tuberculous pus. The hypotheses that the man either suffered from latent tuberculosis before his inoculation with perlsucht or that the wound became infected with tubercle bacilli of human origin are untenable, for he belonged to a healthy family free from any trace of tuberculosis and it is stated that he had had no communication whatever with any phthisical patient. Microscopically there was no perceptible difference between the condition of this patient's skin and an ordinary case of lupus.—*Lancet*, April 4, 1903.

A Bacterial Lamp.

It has hitherto seemed that the place of luminous bacteria in Nature was in the main to delight the eyes of voyagers on tropical seas or on summer nights in cooler latitudes. It is true that they are also the cause of the phosphorescence sometimes seen on decomposing organic matter, but the object, so to say, of the luminosity in this connexion has not been explained. A remarkable demonstration of luminous bacteria cultivated in the bacteriological laboratory of the Jenner Institute of Preventive Medicine was given by Dr.

Allan Macfadyen and Mr. J. E. Barnard at the May *conversazione* of the Royal Society a couple of years ago. It was then half jestingly suggested that their luminous properties might be turned to practical account, and we now learn from a Reuter's telegram, dated Vienna, March 15th, that Dr. Hans Molisch, Professor of Botany in the German University of Prague, has described to the Vienna Academy of Sciences a lamp lighted by means of bacteria, which, he claims, will be valuable for work in mines and powder magazines. The lamp is stated to consist of a glass jar, in which a lining of saltpetre and gelatine is placed and inoculated with bacteria. Two days after inoculation the jar becomes illuminated with a bluish-green light, caused by the development of the bacteria. The lamp will give light for from two to three weeks, diminishing in brightness. It renders faces recognizable at a distance of two yards, and large type is easily legible by it. Mr. Barnard and Dr. Macfadyen found that the luminosity of the organisms depended upon an adequate supply of free oxygen, and that the nutritive medium must contain a suitable percentage of soluble chloride. Grown in a fluid culture medium, the luminosity was feeble until the flask was shaken when the increased rapidity of oxidation rendered the light much more brilliant. When the dissolved oxygen had been used up, the luminosity, which is due solely to the vital activity of the organisms, disappears, this was found to take only about fifteen minutes. Further proof that the luminosity was essentially a function of the living cell, dependent for its production on the intact organism of the cell, was afforded by experiments subsequently made by Dr. Macfadyen at the temperature of liquid air. It was found that this very low temperature did not destroy their luminous properties, and that on thawing they rapidly returned. On the other hand, if the organisms were triturated at this low temperature, the luminosity was abolished. Grown on the surface of gelatine, the colonies were steadily phosphorescent. The rays emitted were shown on spectroscopical examination to be purely light rays, the red and yellow ends of the spectrum being absolutely blank. It would seem, therefore, that if the light in Professor Molisch's lamp is sufficient, it will be perfectly safe, as it would give out no heat.—*Brit. Med. Journ.* March 21, 1903.

• The Results of Physical Overstrain in Athletes.

Professor Lydston states that athletes, even while in their best "form," should never undertake feats which are inordinate and for which no system of preparation and training is sufficient. This should especially be the rule for athletes over the age of 30 years. In nearly all cases of persons who had indulged for several years in athletic competitions involving severe physical strain there were present some degree of endarteritis, hypertrophy of the heart, emphysema, and slight renal and hepatic congestion. Endarteritis—a fibroid and inelastic condition of the arteries—is, says Professor Lydston, a frequent and natural result of athletic overstrain, and it is common in athletes of middle age. Hepatic con-

gestion with tenderness of the liver was observed in three cases to follow severe muscular exertion, two cases being those of men training for boxing contests and the third that of a man who was competing in a barge race. In these three cases intractable dyspepsia lasting several weeks was associated with the hepatic condition noted. Renal congestion with slight albuminuria was observed to follow athletic contests in many instances. Exercise involving the lifting of heavy weights, with the lungs distended and respiration temporarily suspended, was frequently responsible for both cardiac dilatation and emphysema. Persons of middle age who are suffering from fibroid arteries as the result of syphilis, alcoholism, or gout are particularly recommended to avoid great muscular exertion or overstrain owing to the risk of developing aneurysm of the aorta or great vessels. In most of the middle-aged athletes examined by Professor Lydston there were observed both dilatation and slight fatty degeneration of the heart—a result which had been noted many years ago by the late Sir Benjamin Ward Richardson who said that there was scarcely a professional or celebrated amateur athlete in England who at the age of 53 years did not present symptoms of heart disease. Alcohol and tobacco, adds Professor Lydston, should be avoided by athletes or used only in the smallest quantities, since the effect of these substances upon the nervous system is to incite the subject to over-exertion, while even the strongest heart and muscular system are likely to undergo degenerative changes under the combined influence of severe athletic training, alcohol, and tobacco. Muscular exercise for purposes of attaining vigour and moderate skill is perfectly safe and natural, but athletic training for great feats with the object of making "records" is, adds Professor Lydston, unwise and injurious to health. The supreme final "spurt," which only a well-trained athlete can put forth and which has often secured victory in a race, has in some cases been observed to result in death or in profound physical prostration attended with acute and even permanent dilatation of the heart. Edward Hanlon, the famous oarsman, expressed the opinion that no man should train for or compete in athletics involving severe strain after the age of 30 years, a view in which Professor Lydston concurs. An athlete as he approaches middle age should, concludes Professor Lydston, cease to take part in difficult contests, since "the average athlete's arteries are older than those of the average healthy man who is not an athlete."—*Lancet*, April 11, 1903.

CLINICAL RECORD.

Foreign.

HOMEOPATHY vs SURGERY.

E. A. P. HARDY, M. D., M. C. P. & S. Toronto.

M B. age 19, English sanguine, lymphatic. Mother a White-chapel gin drinker. Father unknown.

Dec. 1900. Patient was suffering with symptoms of gastric ulcer. She had been during the past two or three years in hospitals under two eminent men of the other school and latterly under a careful homœopathist. For some months was in hospital under strict diet and rectal feeding and prescribing done as carefully as it was possible for me to do. The remedy given stopped the pain, nausea, hemorrhage for a while, but no permanent good was done. Ars., China, Ham., Puls., Sul., Psöf., Tub. had each been given a fair trial. No permanent good resulting from several months' rest and care it was decided to do a gastrotomy, and in August, Dr. Herbert Bruce F. R. C. S. performed the operation through a median incision. After opening the stomach the ulcer was discovered a typical "punched out" round ulcer on posterior wall. A purse string silk suture was inserted about the ulcer and other incisions sutured. Patient rallied well and received nourishment by the mouth on the 5th day. Recovery uneventful and patient discharged apparently cured.

Sept. 1901. Patient had several profuse hemorrhages from the bowels which Ham. 500 promptly relieved and eventually stopped. These were due probably to a rectal ulcer. If a rectal ulcer could be cured by the remedy why not one of gastric origin? Hence the following decision:

Jan. 1st 1902. Over five months after the operation the old symptoms returned: pain, nausea, vomiting and hemorrhage. A second operation was suggested but the idea was opposed.

During January, February, March had several bad attacks of hemorrhage but no remedy seemed to hold the case longer than a few days. The symptoms changed at intervals, and hence the exhibition of remedies so different in sphere and action?

April 3rd. Gathered the following symptoms which had never appeared before exactly the same?

Stomach: Pain eating; pressure; touch; with great restlessness.

Vomits: Dark blood; bile; mucus.

Tongue: Bright red; smooth; dry great thirst.

Pulse: Weak, irregular, small and compressible—Crotalus 500.

Patient reacted to this remedy well and I did not see her during May but June 13th patient complained of having hemorrhage from the mouth; was sure it was not from stomach. Menses had not appeared since April. Placebo.

October, 1902. She came in to say she was very well and to ask me to come to her wedding.

Surgery may remove the result but seldom can it get to the root of the matter and remove the cause; requires the indicated remedy to effect that.

MEDORRHINUM AND ERYSIPELAS

Although this article is chiefly devoted to surgery, yet I trust it will be considered as one of the many cases where the homœopathic remedy will help after the knife has done its best work.

L. R. Age 54. German; understanding so little English that it was with great difficulty any symptom, except that of "pain" could be obtained, hence the delay in exhibiting the proper remedy. History of two attacks, apparently of gall stone colic. Hard drinker.

April 21, 1902. Temp. 101.4 p. 100 r. 22. The symptoms called for Belladonna which was given, and patient removed to Grace Hospital.

Condition became worse in a short time; delirium, sleepiness and great restlessness, with symptoms of pus formation somewhere in region of liver, which was sensitive, enlarged, depressed, the gall bladder being easily palpable and a tumor evident near the right of the umbilicus.

April 25th. Dr. Emory performed a cholecystotomy and found a displaced and greatly distended gall bladder filled with a mucoid substance with no evidence of pus or gall stones, but some inflammation of the mucous membrane of the bladder and ducts (Six members of the other school saw the patient before the operation and expected to find pus present).

May 4th. Condition was fair only till this day when erysipelas developed on right ear and cheek with otorrhœa and great pain and restlessness and thirst for ice water. Temp. 105.6, p. 140, r. 28. Rhus cm. was given with no results and on May 7th Pyrogen cm. was exhibited, again with no good results.

May 11th. Sulphur m. was given and condition improved somewhat until May 27th when a swelling was noticed on vertex and about 6 or 8 ounces of pus evacuated. This abscess healed readily after the scalp was shaved and adhesive straps applied. A pure culture of streptococcus was obtained.

June 5th. A second attack of erysipelas developed rapidly extending over the whole body, even to fingers and toes, excepting only a small area about the artificial fistula. Rhus cm. and Sulphur cm. were given between this date and June 13th, with no apparent result except to make temp. very irregular.

June 16th. Temp. elevated to 103° and another attack supervened and patient showed signs of being close to the border land.

June 27th. A friend of the patient told me he had had three attacks of gonorrhœa during the last three years and so Medorrhinum cm. was given with the result that in 48 hours temp. dropped to 96.6°, and patient improved in every way but wound would not close.

July 11. Wound was curretted for about $1\frac{1}{2}$ inches along the sinus and three stitches applied but of no avail.

July 15th. It was decided to perform a cholestenterostomy, and a Murphy button was applied between the gall bladder and Ilium, the duodenum being fixed. Patient rallied fairly well, but on July 29th, the temp. dropped at 4 a.m. to 97° , rising again to 99° in a few hours.

July 30th. Temp. 96.8 and symptoms of hemorrhage showed; three profuse hemorrhages from the bowel following in close order. China 10x repeated was given along with whisky and saline solution subcutaneously. This hemorrhage was due probably to the loosening of the Murphy button which was expelled on the 30th of July.

After all these experiences patient rapidly improved and was discharged from the hospital. At time of writing, (Oct. 28th.) he has gained weight and is feeling very well; the discharge from the fistula issues through a hole through which a fine probe cannot be passed without causing pain and this will undoubtedly heal up by the beginning of the new year. In my own mind, without the Medorrhinum, the patient would never have ended a second operation—as he would have died, his temp. fluctuating between 103 and 105.8 and pulse about 130 and 140 for many days together.—*Medical Advance*. February, 1903.

TREATMENT OF A FORMIDABLE CASE OF SPRUE BY DIET; THE VALUE OF STRAWBERRIES.

BY EDWARD H. YOUNG, M. D. DURH., L. R. C. P. LOND.,
M. R. C. S. ENG., L. S. A.

A WOMAN, aged 59 years, whose medical history is detailed below, came under my care in 1901. It appeared that she had lived in India for some 21 or 25 years with intervals when she came to England to visit her children. She was never a strong woman, but she had never suffered from any serious disease either in England or in India. "She finally left India ten years before the present illness. For the two years prior to coming under my care she had much anxiety about the health of one of her children. Always a woman of extremely active habits, she ate very little and became anæmic and sallow, over-exertion often producing attacks of migraine and neuralgia. In 1900 the patient had had a prolonged and exhausting period in nursing another of her children through an attack of acute rheumatism. Very early in 1901 she suffered from a very serious attack of influenza, towards the close of which she was attacked with a nocturnal diarrhœa. Her convalescence from the influenza was slow and as its symptoms disappeared, those of sprue became apparent. The diagnosis of sprue was confirmed by Dr. John Anderson, C. I. E., who saw the patient at the time and again a few weeks later. The patient steadily refused to adopt a milk diet though strongly urged to do so by Dr. Anderson, and her diet consisted

chiefly of meat-juice, plasmon, soup, oranges, grapes, and plantains, a little bread-and-milk and milk puddings. From the onset of the symptoms of sprue the patient had steadily wasted and lost strength. I learned that she had been a well set-up and active woman of about $8\frac{1}{2}$ stones' weight and that she looked considerably below her real age. She had been wholly confined to bed and was removed for change a proceeding which was attended with grave risk.

*I first saw the patient, who was lying in bed, on Nov. 2nd, 1901. She complained chiefly of severe cramps in the limbs, more especially on the left side, which came on the previous evening. There were further complaints of chronic diarrhoea, soreness and rawness of the mouth, and progressive weakness and loss of flesh. She was so emaciated that the bones projected under the skin and the wasted muscles were easily traced. The tongue was denuded of epithelium with ulceration at the tip and sides. The abdomen was distended and slightly tender on pressure; its attenuated parietes displayed the coils of distended intestine. The liver and spleen were not definable on account of the abdominal distension. The motions were of the typical sprue character—very large, pultaceous, ochreous, sour-smelling, frothy, and very frequent. The heart sounds were normal and the lungs also were normal. The pulse was 104; it was regular in force and rhythm and of good tension. The temperature was 100.6 F. The urine was normal. The hands, the feet, the arms, and the legs were rigid in the typical position of tetany, causing the patient great agony. A hypodermic injection of morphia was given; it afforded marked relief to the painful spasms and produced some sleep.

During November there was a steady decline in strength, but the patient still insisted on getting out of bed unassisted. With the view of keeping the carbohydrates as low as possible the diet was of a mixed character, consisting of soup, fish, game &c., but small quantities of bread and porridge were allowed, with grapes, plantains, and stewed pears. The actual amount of ingesta was, however, very small, most things being merely tasted or inspected and then put aside. The patient still determinedly declined to adopt a milk diet, though this was repeatedly urged upon her. There were one severe repetition of the attack of tetany and one or two minor ones. On the first of these occasions a spasm of the larynx caused much alarm and necessitated the administration of chloroform. The medical treatment was purely symptomatic. Bromide of potassium and antipyrin had some effect in relieving the minor spasms. Salicylate of bismuth was tried as an intestinal antiseptic but proved practically useless. Opiates in the smallest quantities, combined with other drugs, or otherwise, proved hurtful and the mildest astringents also did manifest harm when once or twice cautiously tried. The gradual and progressive decline in the patient's strength continued in December and the emaciation became extreme. There were two or three attacks of the tetany but none of these were severe. The pulse varied remarkably in character, being sometimes soft and then hard and frequently intermittent, all within a few hours. It

was repeatedly noticed that hardness and intermittency of pulse almost invariably preceded a very large fermented motion. The temperature was generally subnormal in the mornings and about from 99 to 99.5 in the evenings but was easily disturbed. The attacks of tetany usually sent it higher. Towards the end of December the number of motions averaged 6.5 per diem. In size they varied considerably from about 12 ounces of a large, whitish, thick, pultaceous, mass, which moved slowly on the vessel being tilted, to six or seven ounces of a whitish frothy fluid. These latter, if allowed to stand for an hour or two, slowly changed colour to a light brown. The food and treatment were continued on the same lines as during November and really amounted to a series of experiments based on the principle of excluding search as much as possible.

Early in January, 1902, an attempt was made to introduce raw minced meat as the staple and almost exclusive food. For a few days the number of motions diminished but soon rose again: they assumed, however, a less sprue-like character, becoming more watery and more frequent, and this increased the exhaustion of the patient. The temperature still kept irregular, often only just above 97 in the morning and up to 99.6 at night. On the 10th a passing disturbance sent the temperature up to 102.6 and the pulse to 108, but they declined in a few hours. From this date, however, the patient no longer insisted on getting out of bed. Attacks of breathlessness, even when lying still, became now more frequent and perspirations at irregular times, were very troublesome. About the middle of the month the various preparations of plasmon were tried for ten days, but no beneficial result was apparent, the patient steadily losing ground. On the 21st there was a severe attack of tetany lasting for 18 hours and on the 23rd the whole of the body was affected by the spasm. The motions now averaged eight daily. Sleepless nights required occasional doses of trional and brandy was given during periods of great prostration. On the 26th the patient at last consented to go on a *milk diet only*. For the first two days three pints were given each day and then the quantity was increased to three and a half pints. The relief to the purgation was immediate, the number of motions diminishing by one-half during the first week. On Feb. 1st the milk was increased to four pints daily. The number of motions during the first week of this month averaged only three daily, but some of them still maintained the character of sprue. On the 7th the milk was increased to five pints, but it then caused digestive disturbance and had to be diminished. For the succeeding fortnight the amount of milk given was daily regulated, but it was found impossible for the patient to manage more than about four and a quarter pints and on some days even less. The number of motions diminished to an average of two daily during this period and in character they became larger and semi-solid and they lost their fermented appearance. The symptoms of tetany disappeared. It was very clear, however, that *asthenia was steadily increasing*; the patient lost strength and flesh

markedly, becoming as she well expressed it "more skully," and although her mental attitude was still courageous it was found necessary to give stimulants more frequently on account of cardiac and general weakness. It was quite evident that although the disease could be controlled by the milk yet the patient could not digest or absorb sufficient nourishment from it to sustain life. Probably at this period her weight did not exceed 64 pounds, whereas her normal weight in house clothes was 120 pounds. This is a point upon which I shall bring definite evidence presently. On Feb. 21st (after three and a half weeks' pure milk diet) an attempt was made to combat the manifestly increasing asthenia by adding the white of two eggs beaten up with water; two drachms of arrowroot were also added to the daily allowance of milk. This addition was well borne for a week, but on the 28th a severe attack of tympanites, accompanied by frothy, pultaceous motions caused the arrowroot to be stopped. On March 1st six drachms of cream were added to the milk and egg albumin diet. During the next few days an alarm was caused by the great prostration of the patient. Meat juice was added to the above but marked indigestion and an increase of the motions necessitated a return to the milk and egg albumin only. The patient's state was then most precarious. A little bovril was now given occasionally instead of alcohol as a stimulant and with better effect. On the milk and egg albumin diet the motions again became fewer (averaging 1.2 per diem for ten days), semi-solid, and not frothy, but the patient remained in the same utterly prostrate condition, gaining neither flesh nor strength but, on the contrary, losing ground. On the 18th it was decided to try the addition of a small quantity of stale bread well soaked in hot water and then firmly squeezed through muslin. An ounce of this was at first given daily and as there was no untoward effect it was raised to two ounces on the 23rd and to three ounces on the 25th, when an orange was also allowed. An increase of bread on the 28th to four and a half ounces had to be withdrawn on account of a return of the diarrhoea and an endeavour to substitute rusks for bread led to abdominal distension. The notes at the end of this month, however were of a more hopeful character. Since the addition of bread the patient looked brighter and the skin was more elastic and not so muddy in appearance; although one could not definitely say that there was a gain in weight, yet the countenance certainly did not look so shrunken. The patient slept better, did not require a stimulant so often, and there was no return of the tetany. She still felt the exhaustion of being moved in bed and the attacks of both breathlessness and perspiration were present. Subnormal temperatures were not so frequent and the pulse was steadier and less intermittent. The conclusion was that bread gave strength, but that when pushed beyond from two to two and a half ounces daily it caused a return of the characteristic diarrhoea. Early in April the diet consisted of 91 ounces of milk, the white of two or three eggs, from two to two and a half ounces of bread, and an orange. A slight return of diarrhoea on the 5th caused the bread to be stop-

ped for four days, when it was resumed in smaller quantities (one ounce). On the 10th the patient was weighed and found to be 70 pounds. Previously to this weighing was not attempted owing to her weak and prostrate condition. On the 13th six ounces of chicken broth were added to the dietary. By the 14th the bread had been worked up to three ounces and by the 24th to four and a half ounces. On the 30th her weight was 74 lb. The note at the end of the month stated that the patient was decidedly brighter, with more vitality and strength. She could sit up in bed for a few minutes and even slip out of bed unassisted, but, required help to return. Bovril was not now required. She no longer complained of breathlessness and palpitation or of abdominal and thoracic pain. The pulse and temperature were steadily normal. The soreness of the mouth was gone and the epithelium was returning on the tongue. There was no return of tetany and the abdomen was less distended. Diarrhœa was in abeyance, as there had been only 31 motions during the month as compared with 42 in March, 62 in February, and 188 in January. The motions, however, were still heaped, semi-solid, and putty-like masses. A small boiled trout (about three-quarters of an ounce) was allowed on May 1st with no apparent harm. The giving of a small custard pudding on the 4th at once caused trouble in the way of diarrhœa. A small trout was given on the 8th and again on the 9th, but returning diarrhœa led to the prohibition of this diet and the reduction of the bread to two and a half ounces. On the 13th the patient's weight was $75\frac{1}{2}$ pounds. On the 16th an ounce of boiled sole was given but it was followed by five loose motions in the succeeding 24 hours and the patient was put on milk only for two days. Although the motions were not of the character of true sprue, but more of those of an ordinary intestinal catarrh, there was a distinct loss of vitality and strength. The patient did not look so well, was less bright and cheerful, the pulse again tended to intermittency, and there was a slight return of tetany and abdominal distention. Her weight on the 19th was 74 pounds—a loss of one and a half pounds in six days. Altogether there was cause for anxiety.

Fortunately at this period the opportunity occurred to put in practice the suggestion of Dr. Anderson that strawberries should be tried. On May 21st three strawberries only were given and their effect was watched, none being given again until the 25th when 12 were allowed. On the 26th the patient's weight was $74\frac{1}{2}$ pounds. From this date strawberries were given daily and in increasing quantities. Up to the time of the giving of strawberries certain points were prominent—viz., (1) that milk diet alone would control the disease; (2) that the patient when kept on milk alone markedly declined in strength and vitality—so markedly, in fact that anxious as one was to continue it exclusively it was quite clear that such a course was fraught with the utmost danger; (3) that the addition of mashed bread to the milk decidedly added to the strength, but was attended by a return of the motions of the character of sprue when given beyond a small and variable quantity

during the 24 hours ; and (4) that cautious attempts of addition to the dietary by small quantities of fish, custard or arrowroot at once led to trouble. It was at this period of the case when one felt that the disease was only slumbering but by no means cured when the patient's condition evidently required an advance in her dietary and yet the paths of advance were blocked—that the strawberries were started. In June the daily diet for the first week was 84½ ounces of milk, from four and a half to five ounces of bread, two ounces of cream, and a pound of strawberries. From the 11th onward strawberries were allowed *ad lib* and one and a half pounds were daily consumed. The bread was steadily increased, so that by the 21st nine ounces were taken daily and by the 29th 11½ ounces. The strawberries certainly enabled much more bread to be eaten. The milk and cream remained the same throughout the month. From the time of giving the strawberries the motions entirely changed. For the three weeks preceding the giving of the fruit the number of motions was 45, with an estimated aggregate weight of 186½ ounces. For the three weeks following the number was only 21, with an estimated weight of 113 ounces. In character they also altered, became less bulky, more dehydrated, and towards the middle of the month they were entirely formed and natural in appearance. The strawberry colouring matter tinged the urine in which the motions lay. The note at the end of the month stated that the condition of the patient had entirely changed. She no longer looked ill and early in the month she began sewing and reading in bed and towards the end of the month she was able to walk a little without assistance and reclined on a couch on the verandah for a couple of hours daily. There has been a steady gain in weight, at first one and a half pounds weekly, then two and a half pounds, so that now she weighs 83½ pounds. All things were favourable during July. Milk, bread, cream, and one and a half pounds of strawberries were taken daily as in the latter part of June, but porridge, rusks, and butter with the bread were also allowed. The patient's strength was greatly improved and she walked gently about the room with ease. Her weight at the end of the month was 96 pounds. The progress in August was still satisfactory. The patient now moved about the house and did light work, &c. The bowel condition remained normal and there was no trace of sprue although the strawberries failed early in the month and the patient was on a more varied diet, including potatoes. Her weight at the end of the month was 106 pounds. Little need be added to the above. For the next three or four months the patient was just over eight stones in weight, there was no return of any symptom of sprue, although she was practically on a nonrestricted diet. In the autumn she took drives when the weather was favourable.

The above case presents certain features which are of interest. 1. The remarkable change in the condition of the patient after the addition to the diet of strawberries which distinctly appeared to act as a specific in the disease. Directly strawberries were given it was found possible to increase the bread, which previously could

only be given in small quantities and even then with risk, to practically any extent without there being any return of sprue symptoms.

2. The attacks of tetany, so alarming in this case, are not mentioned as a complication in the articles on the disease in Allbutt's System and Quain's Dictionary, but of course one knows that tetany may follow some cases of chronic exhausting diarrhoea. The age of the patient is also, I believe, unusual for tetany.

3. The uniformity with which the pulse became peculiarly hard and always then intermittent before the advent of a large fermented motion was more than a coincidence. So uniform was this that it was always possible to predict the coming event even though things may have been quite quiescent for some time previously.

4. In the same way the temperature conveyed information not to be disregarded. When the tendency to tetany prevailed a rising temperature always put me upon my guard and enabled me to adopt timely precautions. There was one curious point about the temperature. A few days after strawberries were commenced the temperature rose slightly in the mornings, reaching 99, while the evening temperature generally kept lower. This continued for some time after the strawberries were stopped.

5. The direction in the text-books of "milk only" in sprue is not of universal application in advanced cases of the disease. Had it been further continued in the present patient I feel sure that the ending would have been disastrous.

One pathological question suggested itself strongly. What is the source of the large quantity of matter passed from the bowel in these cases? Taking it at a minimum that the motions averaged eight ounces in weight and that there were six of them daily, 48 ounces daily, or 90 pounds per month, of pulvaceous material were expelled by the bowel of a patient certainly under 70 pounds in weight and who was taking a minimal quantity of food. I have failed to satisfy myself of any adequate explanation of the fact.—*Lancet*, March 28, 1903.

Gleanings from Contemporary Literature.**THE RISE OF BLOOD PRESSURE IN LATER LIFE.**

BY T. CLIFFORD ALLBUTT, M. A., M. D., D. Sc., F. R. S.,
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WHEN in the third quarter of the nineteenth century I entered the profession of medicine physicians were much occupied in the dead-house, contemplating the ruins of mortality. Surrounded by the last dilapidations of the human frame they laid bare almost daily in its inward parts some previously unknown wreck, blight, or decay. In the wards, meanwhile, before Darwin's theory had changed the habit of thought, the mind of the physician was coloured by notions of the fixity of kinds; he was apt to attribute a certain fixity even to the species of disease, especially to those kinds which, as the phrase ran, were organic rather than functional. Functional diseases made no appearance in the deadhouse; indeed, many of the acute diseases had proved, in recent experience, to be, if often violent, yet temporary oscillations, tending, if let alone, to recovery: the end of chronic visceral disease, however, seemed to be inevitable death in derision of drugs. Thus it happened that to organic disease, too rigidly conceived as entities, names derived not from original causation or clinical character but from the ultimate forms of destruction became attached; and as a student I well remember how one distinguished teacher and another would display a shrivelled kidney or liver, a distorted heart, or a softened brain, and ask disdainfully of what use medicines could be for such degradations, even in their earlier stages; how organs with such proclivities were to be converted by prescriptions? Not more than fifteen years ago I said to a late physician, one of the ablest of his generation, "I am sick of diseases, I want to know origins and processes." We were walking together and he, stopping turned upon me and exclaimed as if new light were breaking in, "Processes! Ah, processes! Yes, the pathology of processes is the work of the future." I had urged, for example, that bloated or withered kidneys are not engendered of vice in the kidneys themselves but of the prolonged, uniform, symmetrical action upon both of them of some unknown poison or poisons circulating in the blood; an influence, furthermore, by no means confined to these organs but visible in widespread effect elsewhere in the body: that to speak of such cases as cases of kidney disease is therefore misleading; and so on of other post-mortem wreckage. The discovery of such utter mischief after death is matter not for our disgrace; it is not a declaration of the impotence of therapeutics but black evidence of our blindness and negligence in the past history of the individual. If in the pathology of the dead there remains much to be discovered, we have nevertheless made great way in it; the pathology of the living is hardly begun. These arguments may seem to savour of platitude, but I think even to-day that they have not lost their application; that you will not find it hard to carry your minds back so far as to realise the change—the transformation—which is passing over medicine at this time; and that you may find it still less difficult to accept at my hands some attempt to study disease at its sources rather than at the term when its work is done.

To my friendship with the late Dr. Mahomed I owe much of my conviction of the clinical value of the study of arterial pressures, and a few years

later I was encouraged and aided in this study by the late Professor Roy. Thirty years ago physicians were putting the sphygmograph aside as "of no use in diagnosis;" but, as I have said physicians were then too much ruled by the statical conception of the deadhouse. They demanded of the sphygmograph that which it cannot directly indicate—namely, the site, form, or even the very existence of particular local lesions in the heart. Yet Mahomed, Sanderson, Galabin, and others—to speak only of English physicians—testified even then to its capacity of exhibiting within limits, the dynamical conditions of the circulation, the kind and distribution of work done, which, after all, is the chief care of the physician. And how imperfectly we had availed ourselves of this capacity of the instrument we may learn from the remarkable treatise on "The Pulse" published but a few months ago by Dr. James Mackenzie. Unfortunately the sphygmograph, valuable as it is, when handled by those who are well aware of its limits, in the record of modes, forms, and distributions of pressure, cannot measure positive pressures. For many years, therefore, until lately when pressure gauges or sphygmometers of some trustworthiness were put into our hands, I have had to compare arterial pressures as best I could with the practiced and attentive finger and to go without units and records. Thus, unsupported by permanent numerical computations, I found it a difficult task to convince my brethren of the importance even of approximate estimates.

Arterial pressures vary very widely. If I lift a chair from the ground my arterial pressure may rise 20 per cent and fall again as rapidly as I come to rest. During the use of the sphygmometer, if the patient be not cautioned against contracting his muscles—if, for instance, he be seated in a cramped position—the pressure may fluctuate considerably. On a certain occasion I observed a high pressure in a patient in whom a high rate was not anticipated. No fault was found in the parts or arrangements of the instrument, and a second inflation revealed a still exorbitant though a lower rate; a third but a few minutes later registered an ordinary rate of about 120 mm. Hg, and remained steady about this figure. The previous excess I should still have attributed to some experimental fallacy, had not the patient, as I put the instrument aside, said to me that he had feared from it a violent electric shock, such as one which many years before at a fair had put him in an agony which he had never forgotten. As the shock did not occur he was reassured, and the pressure fell. In patients who enter upon a consultation with acute anxiety of mind the pressure at first is often excessive. When close accuracy is of importance it is well then to take two observations; one as the patient undresses, another, after all other physical examination, before he puts on his coat. The large majority of my observations are taken upon the patient seated easily at my table; it is better to keep to a uniform method, and in private practice this position is more convenient than recumbency. Observations on patients in bed run rather lower, but in my practice they have been comparatively few.

With Hill and Barnard's sphygmometer the pressures of adults vary from 95 to 105 mm. Hg, in temperate young men much occupied with athletic exercises, to 250 mm. Hg (the highest figure in the scale) in disease,—as, for example, in Bright's disease. Between these extremes every degree of variation may be found. I often apply the instrument in cases of life insurance, and in healthy men in middle life it should not record more than 120 mm Hg. I have never applied it to a healthy woman nor to a child, but by the finger I have often noted high arterial pressure in children.

In sufferers from arterio-sclerosis—I use the name arterio-sclerosis loosely for present convenience—exorbitant pressures are often but by no means constantly found. Between disease of the arterial tree and blood pressure there is no direct relation; in arterial disease, even in the extreme degree of it, normal or relatively low pressures are commonly observed: but I often notice that in cases of arterial degeneration the reading extends uniformly over a wider range of the scale—say, over 15 or 20 units, in which cases I record the mean figure and the extremes. In denying that elevation of blood pressure depends directly upon arterio-sclerosis I have stood alone for some years, against the high authority of von Basch and many others; but I think that some recent observers now admit the validity of my contradiction, and the matter is one of cardinal importance. So far as intermittent observations are to be trusted, I repeat, that pressure may be, and often is low throughout the course of arterial degeneration; for again, having been high, it may fall; though, of course, in some elderly persons with arterial decay occasional transient attacks of high pressure, such as occur at times in all of us, may be observed. I need not add that a considerable and persistent fall late in a case, a fall not a result of treatment and not coincident with general amelioration, usually signifies heart failure and presages death within a few months; for it is remarkable how long high pressures are maintained, even when the dilated and overwrought heart is labouring towards the end of its day. When the subject of arterio-sclerosis begins to be short of breath he has entered upon the last stage of his pilgrimage.

If then, arterial degeneration be a *vera causa* of elevation of blood pressure, its effects may be and often are so modified by incidental and cooperative conditions as to be negligible. In many cases of arterio-sclerosis in which the blood pressures are not high, to the best of our knowledge they had never been high. Conversely, however, high blood pressures cannot long continue without straining the vessels; and I suggest that in elderly persons, in whom taint of lead, of syphilis, of alcohol or other alien infection is set aside, and kidney disease also included arterio-sclerosis be divided into two kinds; one the result of persistent high blood pressure, the other the result of some more intimate causes, perhaps some unknown poison, or the tooth of time. It is very difficult in arterial diseases to find distinctive histological marks of kind, even in a kind so distinct as the syphilitic; the characters seem to depend more upon the rate than upon the kind of the change. But I think that what I am wont, speaking clinically of the radial and brachial, to call the “leathery” vessel is suggestive of prolonged high pressure, persistent or past. The leathery vessel occurs in two forms—as the narrow and wiry and the voluminous vessel, the former being the more difficult condition to cure. Fullness of an artery is, of course, no indication of high pressure. The quality of the arterial coats is more easily felt in the brachial artery, on semiflexion of the elbow; but the volume of the brachial may be normal or excessive, when the radial is contracted. A certain degree of sclerosis does not render an artery incapable of response to vaso-motor influences.

The leathery artery sometimes becomes calcareous, or is associated with calcified vessel elsewhere, as, for example, in the brain; but when calcification is a prominent and comparatively early feature in the superficial arteries pressures are apt to be moderate or even low. In the so-called “*ipecacuanha radial*” high blood pressure is by no means the rule; and as high pressure is not the rule in these cases so apoplexy is not the common event of them. Old persons with very calcareous and often grotesquely tortuous arteries, but with low pressures, are to be found abundantly in every workhouse or asylum where work is

nominal and diet spare. They live long and die of an atrophy. Thus softening of the brain and gradual or rapid arterial obstructions occur in the group; but cerebral hæmorrhage may be called rare in them. In the wealthier classes these patients are found rather among the women, who are less addicted to high living.

Under conditions of high arterial pressure, on the other hand, of whatsoever causation, apoplexy is frequent; apoplexy, uræmia, and out-worn heart account for the end of most of these patients. Yet it has been a matter of surprise to me to see that very high pressure may be maintained, as it would seem, even for years, without much more apparent deterioration to the arterial tree than time of life might account for. I come here to-night however, to urge an earlier recognition of such rising pressures and the timely use of therapeutical means to prevent the strain and break-up of the circulatory system. Herein, however is an initial difficulty that the subject of high pressure may not soon feel ill; nay a steady maintenance of high pressure in the brain may conduce for a while to a sense of vivacity and endurance. The heart has grown up to the work and let me repeat my opinion, though now necessarily without argument, that the arteries hypertrophy likewise in the muscular coat so that until these compensating growths in heart and artery dwindle or deteriorate, usually after the fibroid form, the patient may believe all to be well with him and may not seek the physician till considerable mischief is done. Not frequently however, such persons come before us in an early stage of rising pressure, by the chance of some intercurrent disorder or on the prompting of some vague discomforts such as fatigue and low spirits.

Let us take such a case, say, in a patient 50 years of age, a professional man, perhaps a merchant or a student who lives a sedentary life but lives well—for mental work and business cares create a desire even for more and richer food than is excited by bodily exercise in the fresh air; though they do far less for excretion. His sleep becomes disturbed, sick headaches are more frequent, he is moody in rising from bed and is fretful and apprehensive until he warns to his day's work; a good luncheon and a glass or two of sherry improve matters and in the evening he dines out cheerfully denying himself nothing of meat or drink. We may tell him that his liver is out of order, we may change his wine to whisky and soda, we may exhibit mercurials and salines, and send him to one of the spas; or we may do worse we may not dwell on the laboured quality of the pulse, we may listen to the cuckoo cry of overwork; his wife will implore us not to lower him urging that he is always better for his wine and that a tonic and some rest are all that are needful; and too often he gets the tonic, and is sent off for six weeks holiday wherein to do as he pleases. In order to gain strength he indulges his appetite; but as he does not dine out, and gets plenty of air and exercise, he comes home better, yet only to repeat the same experiences nine months later and to prescribe a holiday for himself, perhaps without consulting his physician. So things go on, until one day he has a hitch in his speech, a cloud of albumin is found in his scanty and lateritious urine, and a trace of œdema rises upon his shins: his pulse is now tighter than ever, his arteries are stretched like an old glove, and his heart is big and clanging. Partially remediable his state may still be, he may live for a year or two; but he is past cure. At one time I busied myself with deobstruents, rigid diet, and regulated exercise, to turn such a patient back into health; but even in earlier stages than this I was forced to realise that in the corporeal as in the moral sphere repentance may come too late. We may succeed more or less in our immediate purpose; the pulse does come softer under the finger perhaps much softer; the heart comes in a little, the apoplexy or the pulmonary congestion is staved off; but the patient pettishly persists that

he is no better. And he is right; the stroke of death may have been parried, but what of that to a man who is good for nothing? Such a case, perhaps you will say, was a bad one; then I will dwell upon a man not so old, not yet incapable of some hard work, one whose deteriorated cardiovascular state is apparent only to the skilled observer, but whose blood pressure for two or three years has been from 150 to 180 mm. Hg and whose vascular system has thereby become stretched and inelastic; even in him treatment now can be but a compromise. If you bring his blood pressure down to the normal you will make him slack and spiritless; his circulation has become adapted to an abnormal capacity, and you have henceforth to steer him as you can between the listlessness and malaise due to a reduction of pressure below his acquired habit on the one hand and an apoplexy on the other. This is a task of much nicety and vigilance; and it is as likely as not that meanwhile the patient, who cannot enter into your refinements, will desert you for some more thoroughgoing practitioner.

But now let me suppose that the finger, educated by the discipline of the sphygmometer, leads us to suspect an abnormally high blood pressure and that we by the machine verify this in the first stage of the perversion—that is, during the initial disorder of which I spoke. In this period no cases lend themselves more satisfactorily, not only to palliation, not only to temporary amendment, but even to permanent cure. If excessive pressure be recognised in its earliest phases the course is clear, the treatment is not difficult, cure is fairly certain; and with due watchfulness in years to come shipwreck may be wholly averted. I cannot, then, urge too strongly the perils of neglecting these incipient increases of blood pressure and the importance of educating the finger in the early detection of them. Unfortunately, in this incipient stage very few physicians are alert to detect this process, so baneful in its ascendancy, but, if withstood in its first manifestations, so fugitive; for, unless the case be one of Bright's disease, we are too apt to be indifferent to some excess of pressure and early cardiac hypertrophy is not easy to recognise. Nay, I have often heard patient and physician congratulate each other that at any rate the pulse is a good strong one. I am ready to admit that high pressure in the radial is not always unmistakable even to the vigilant touch, although the aortic clang may be altered and the heart's apex a trifle outward. Often even then the pressure gauge is needed to convince us that the heart is thrusting against abnormal resistance. In the small hard pulse the hardness may escape notice in the small size of the vessel, especially if the wrist be fat; moreover, these contracted vessels do not so readily become tortuous; indeed, when the artery is large and laxer and the coat thickened, it is often difficult to be sure of excessive pressure, even when recourse to the pressure gauge, which must always be used in case of doubt, may prove it to be far above the normal. The reason of this latency of excessive pressure to the touch is a little difficult to understand; fortunately, the fallacy is more common in later stages when other features have become obvious. The sense of duration of the wave is often a more definite indication than that of tightness of the vessel.

Let us now return to the physics of the circulation. It is usually said—as, for example, by Sir Lauder Brunton but a few months ago—that “arteries which lose their elasticity in old age offer an increased resistance to the blood stream and as a result the heart hypertrophies,” this eminent observer holding, I presume, the current opinion, which I have already challenged, that arterial disease comes first and rise of blood pressure consequently. Now I have always been ready to admit that the more carefully the principles of physics are studied in respect of living beings the more apparent becomes the difficulty of calculating their validity under the complexities and contingencies which in biological problems overlie

and qualify them ; but we may feel pretty sure that resistance must depend substantially upon, first the calibre of the tubes, and secondly, the viscosity of the blood. Is it, then, certain that defect of elasticity narrows the bed of the blood stream as a whole ? Is it not at least as likely that, on the whole, it may widen it ? If in some areas an obliterative process prevail in others distension may make up for it ; and the mean capacity of the channels at any rate may not be diminished. Clinical observation of the cases of the extreme arterial deterioration without rise of pressure to which I have already referred impresses this opinion upon me. If any chronic arterial disease narrows the bed of the circulating blood surely it is the syphilitic. Now this manifestation of syphilis often occurs in young, active and temperate men ; and in many of these arterial pressure does not rise, as I have had occasion to ascertain in two or three cases observed continuously for many years—in one case for the last 19 years of the patient's life beginning at the age of 31 and ending with death by aneurysm of the aorta at 50. In him cerebral symptoms had been distinct ten years before his death, and were wholly removed ; though every superficial artery was thick. In another case of Jacksonian epilepsy, due to syphilitic arterial disease, the blood pressure was normal during years of occasional observations, and so on of many other such cases.

Omitting, then, the rarer arterial diseases, such as obliterative arteritis, neuritic arteritis, and periarteritis nodosa I suggest three classes of so-called "arterio-sclerosis": 1. The involutory—common in old people, often hereditary, not necessarily or usually associated with rise of arterial pressure ; the nature of which, intrinsic or extrinsic, is unknown, but does not lie in high living. This kind may be vaguely referred to the "faltering rheums of age." 2. The mechanical—the result of long-persisting high blood pressure of whatsoever origin. 3. The toxic—resulting from such causes as lead, alcohol, or syphilis ; usually met with in younger persons in some of whom the pressure rises, in others not.

I must now undertake the formidable task of meeting in the gate those many opponents who will tell me that the cases of rising arterial pressure which I have cited are virtually, if not obviously, cases of granular kidney ; or, at least, to notice for a moment the current phrase "renal inadequacy." This equivocal phrase, introduced by Sir Andrew Clark in—I venture to think—one of the less successful essays of this sagacious physician, suggests notions founded, as yet at any rate, on no positive facts or reasons ; and it lends itself too readily on the one hand to those hollow explanations which are a snare to us, and on the other to the inexorable dictations of the deadhouse. In a recent thesis of considerable merit one of my graduates tried to convince me of the secret influence of granular kidney in arterial disease by collecting the records of a vast number of necropsies of the kind, and declaring the existence of fibroid changes in the kidneys in 94 per cent. of them. A large part of his list consisted of cases of elderly, and even aged, persons in whom no definite diagnosis of Bright's disease had been made, but in whose dead kidneys a greater or less amount of fibroid deterioration had been detected. The list contained also of course, a large number of cases of granular kidney properly so called with which cardiac arterial disease was as usual associated ; with these last we have no further concern.

It is impossible at this hour to enter upon the pathology of the fibroid deteriorations found in the kidneys, no less than in many or most other organs, of old subjects ; but I must briefly indicate my opinion that this process has little or nothing in common with that of granular kidney proper. This fibroid deterioration is a partial atrophy, or a factor of an atrophy, and is consistent and generally associated with a large remnant of normally secreting elements. Granular kidney, on the contrary, is the

result of a protracted submission of the whole kidney to the action of some poison, often unknown, which has primarily a necrosing effect on the secreting, and an irritating effect upon the connective elements. This effect is best seen in the acuter cases, as in the kidney of pregnancy, of typhoid fever, of diphtheria, and the like, where the poison is more virulent, the corrosion more acute, and the results less obscured by irritation and by the attempted processes of repair.

And I must appeal again from the deadhouse to clinical observation: chronic Bright's disease is a malady with features of its own such as headachg, nausea, anæmia, retinitis, and so forth; moreover, its mean incidence falls at a somewhat earlier age than that of the malady I am discussing. Among its features are undoubtedly high arterial pressure and the baneful consequence of cardio-arterial strain; but leaving aside for the moment the quality of the blood, the state of the retina, and other characteristic symptoms a careful supervision of the urine alone will distinguish Bright's disease if, in some obscure cases, not on a single examination, yet certainly after some days' vigilance. I am not concerned to confine myself to well-marked Bright's disease: I am ready to assume that the process, especially in the elderly, may be so chronic as to present its symptoms in a larval shape; yet even in cases so slow, so insidious, a careful study of the urine will tell us if the case turns upon the kidneys. In the kidneys of old persons undergoing some involuational change, there is secreting area enough to clear the system. Dr. Rose Bradford's ablation experiments support our experience herein; and pathological methods rarely exhibit in these cases a deep intrusion of alien tissue. During life albumin, at times abundant, will rarely prove to be absent for many days together. Even in the early stages of disease we may distinguish the high arterial pressure of renal origin from that not of renal origin, as in the latter albumin is absent, but in the former, if not constantly, is frequently present. Granular casts, again, absent in the non-renal cases, in the renal are not infrequent. Such a case as the following is no uncommon one: a man between 50 and 60 years of age presents himself with a big heart, thick and tortuous arteries, a blood pressure of from 230 to 240 mm. Hg, and some œdema of the lungs. Death may be staved off for a while but his condition is perilous. Now, if ever, his urine should present evidences of "renal inadequacy." He passes for us, however, a small quantity, high in colour, of normal or high specific gravity, which thickens as it cools, and may paint the bottom of the pot. There may or may not be a little albumin in it; but, even after spinning, no casts or but a few hyaline casts are discovered. On subsequent observation during alterative treatment a week's urine proves to be up to the normal mean of solid excretion, or the fall in urea corresponds with a restriction of the diet, a condition often forgotten. After death we find the kidneys tough, the capsule a little adherent, the surface a little rough, and presenting some shallow intrusion of fibre into the parenchyma; and we find evidences of fibroid deterioration not only in the heart and arteries but in many other parts also. Now I have watched such cases from beginning to end for many years, and in not a few of them I have witnessed all the phases of the malady in the same individual: the lesson I have learned from them and would impress upon others is that the first deviation from health is not arterial disease but rise of blood pressure, the arterial disease being secondary and due to strain; that although this malady has, in common with Bright's disease the feature of a rise of blood pressure and consequent cardio-arterial strain, it is essentially distinct from the latter and has no tendency to drift into it that on its first appearance this arterial plethora is remediable—nay, on its second or even third appearance it may be driven away; and that even when somewhat advanced, if the tendency may not be eradicated, it may under the regulation of life and medicine be held in check. In a

elderly man, or in one of "gouty" family, a week's high living will produce the state and a few days fasting and blue pill will dispel it.

On "the causes of the process I have described I have little to say worth your hearing. If you call it gouty you will give me little help. Gout is a clinical series, in the type of which inflammation of a joint or joints must be included, and in which rise of arterial pressure is not the rule or, if present, is incidental. I find that in many men badly afflicted by recurrent gout, if free from kidney disease and of temperate habits, rise of arterial pressure does not occur; their vessels remain fairly healthy and they attain to ripeness of years. Persons accused of "suppressed gut" are found in every consulting-room; their only common feature seems to be the absence of the chief characteristic of gout—namely, arthritis; they solicit it, they pray for it—for they believe that it would resolve their disorders; but they prey in vain. On the nature of overt gout he is a bold man who expresses a positive opinion; suppressed gout I believe to be the label of a heterogeneous bundle of maladies, many of which have little or nothing in common; but among them my arterial plethora plays a large part. That this malady has any part in gout, or gout in any part in it, I have no knowledge or surmise; their association in the individual seems to me not to exceed the ratio of mere coincidence, though gout seems to have more than this ratio in the family history of such patients. Arterial plethora is not a common disease in the poor or in persons who live actively and eat and drink sparingly.

And this brings me to the second physical factor of blood pressure—namely, the viscosity of the blood. For nearly ten years past I have endeavoured, but with much mishap, to estimate this factor. Time after time the subject has been agreed upon for a graduation thesis, and as often the research has broken down for one reason or another. My suggestion is that, in the simple cases of rising arterial pressure which I am discussing the blood is above the normal viscosity; viscosity is not the same quality as specific gravity, nor do they necessarily vary together. And I speak of the viscosity of the blood as a whole, not of the plasma. Dr. A. Haig assures me that in gout the blood does stick in the finer vessels, because of admixture of uric acid; and he most kindly sent to me a little instrument by which this lagging is to be demonstrated, an instrument of which as yet I have had insufficient experience. The injection of uric acid into the blood of animals raises the arterial pressure, if at all, very transiently. That we may have to do with some of the purin bodies, lately investigated by Dr. Walker Hall and others, is not unlikely: that uric acid is the offending element I have not satisfied myself. In some persons faulty metabolism, without extrinsic poison, may set up granular kidney: and my contention that under mental distress a fault of this kind is apt to arise and to have this issue, is, I think, now generally admitted to be true; in other persons some such perversion, sparing the kidney, seems primarily and of itself to set up resistance in the periphery of the circulation, and thus to lead to strain of the arterial tree. It may be that the formation of "anti-substances" to protect the system against the toxius of digestion is not equally active in all persons. The disposition to fibrosis, which is found generally, if not universally, in the tissues of such patients may be a direct consequence of the perverted juices, or may be a feature of slow atrophy due to failing blood streams. The vasa vasorum suffer early, and it is yet impossible to say what part, whether as cause or consequence, the channels play in the deterioration of the larger vessels which would nourish. Of these vasa vasorum the coronary arteries are the most important. However, we see to our surprise—as I urged more at length in my paper of 1895 and elsewhere—that the heart can hypertrophy, and in a partial measure of time and degree retain its hypertrophy when

its coronary arteries have both of them been very gradually but completely occluded.

On treatment I can now touch only in the briefest way. If, as I believe, one main cause of rising arterial pressure in middle life is excess of feeding—that is to say of food in excess of work and excretion—the remedy obviously lies in prevention. That alcohol, apart from excess of food, will produce the condition *I am not sure—I think not; on the other hand, I do feel sure that with such excess it is a potent ally; as in its alliance with arsenic, it seems to prepare the way by lowering tissue resistance. We see a few old men who, usually of lean habit and inheriting longevity, are endowed with enormous and persistent energy of mind and body, and who have never denied themselves meat or drink, yet at threescore and ten or fourscore years have good arteries and a moderate blood pressure, but such men are few; in most persons, as life slows down, the powers of expenditure and excretion fall within much narrower limits. The ordinary man must be warned—say, as he passes the age of 40 years—to keep up muscular exercise in the open air, and to control his appetite. Many, I should say most, men eat and drink far more than they need for the day's work; they are supplied with food generously, without hunting for it; and annual blood-letting has gone out of fashion. As soon as high pressure becomes manifest, rigorous diet, deobstruent remedies and exercise such as cautious hill-climbing under the careful regulation of the physician, are necessary, and necessary not only during a Homburg mouth and its "after-cure," but also for the rest of the patient's life. Catch him early and he is quite curable; let him drift and cure may be out of reach.

My purpose to-day is fulfilled if I can impress upon my hearers the importance *obstare principii*. It is in such means as these that we see the value of the Chinese practice of paying the physician only during the days of health, though the method should be supplemented by a provision for the recovery of damages from the patient who disobeys our prescriptions. —*The Lancet*, March 7, 1903.

IS THERE TOO MUCH READINESS TO FAVOUR OPERATIVE RATHER THAN MEDICINAL TREATMENT?

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MR. PRESIDENT AND GENTLEMEN,—Though I may deplore the fact that the Secretary of the Section of Surgery and Gynæcology should have condescended to alight on me as the medium for the introduction of the subject embodied in the title of my paper, I cannot regret that the subject itself is to be discussed. As has been well pointed out by you, sir, the experience which appears to be common to all homœopathic practitioners is that of an increasing faith in drugs; when conscientiously prescribed according to the method we profess, results are obtained which are not dreamed of in the philosophy of other systems, and if we find, as we do, that conditions regarded by other systems of medicine as incurable, are by homœopathic practice proved to be curable, may we not logically ask ourselves, Why should any arbitrary limit be imposed on the curative possibilities of drugs?

If a well proved and carefully selected drug can go, as apparently it can, to a certain side of the body, to a distinct area on that side, and remove a certain symptom, *e. g.*, pain, in that distinct area, does not the dispersal of the clearly defined subjective symptom justify the hypothesis that objective signs may likewise be dispersed by the same mysterious agency. In other words, if a well-defined symptom, which is in all probability dependent upon some pathological lesion, is amenable to drug action,

why should not the lesion itself be hypothetically curable? Is the one more wonderful or more irrational than the other.

There can, I take it, be no question in the mind of any one who has ever honestly enquired into, or tested in practice the homœopathic law, that while at times our results—possibly due to want of thoroughness and other shortcomings on our own part—appear to leave much to be desired there is no getting away from the fact that some of the results are remarkable, some almost magical.

When first I became an enquirer I approached the investigation as a drug sceptic. Previous experience of other systems of treatment taught that they neither cured nor were they in many cases expected to cure; "placebo" was the motto "writ large," and I had been driven to feel that I would in most cases sooner treat ailments without drugs than with them. Then came the introduction to Homœopathy. I was first struck by the increased faith in drugs possessed by all the Homœopathic men with whom I came in touch, and next I was impressed by specific accounts of remedies related by men who, so far as I could judge, were neither dishonest, ignorant, nor hysterical.

The first case cited was that of a patient in the London Homœopathic Hospital, who, in the course of his surgical treatment, suffered from a severe and persistent pain over the left eye; treatment of different kinds had been applied without success, and even morphia, administered by the house surgeon, failed to relieve. It struck the visiting officer in charge of the case that the symptoms appeared to fall in with the provings of cedron; that drug was given, the result was described by the patient as magical, the pain at once completely disappeared. One of the physicians told me in casual conversation, as a proof of drug action, that sulphur 30 invariably produced a rash on his skin, though the drug taken in the crude state had no apparent effect.

These little experiences may appear trifling, but they made, with others of a similar type, a profound impression on me; they seemed to unfold to one possibilities in drug action which had never before been suggested; shortly afterwards one began experiences of one's own.

Among my earliest cases was one of glycosuria, which appeared to me to be a case of undoubted diabetes mellitus; the patient, a man over 60, complained of polyuria, dry mouth, and excessive thirst. Sugar was found persistently in the urine, and the specific gravity was high. Put the patient on nitrate of uranium 3x, three drops thrice daily for one week; at the end of that period the sugar had disappeared; the next week the drug was stopped without the patient's knowledge, and the sugar reappeared. For a period of six weeks I thus tested the case without the patient's knowledge, and I invariably found that when the drug was given the sugar disappeared, when the drug was withheld the sugar reappeared. The test appeared to me to be fair, and the result indisputable.

Since then I have had many cases of diabetes to treat, some of which were apparently unaffected by uranium, some improved by it. I am not here contending that uranium is an unfailing remedy for all diabetic cases, I know it is nothing of the kind. My point is that a drug in minute doses can produce objective as well as subjective curative phenomena.

A patient some years ago told me that she was changed from a sceptic into a believer in Homœopathy by the fact, that spigelia 5 caused her stabbing headaches to disappear when all other remedies had failed.

A solicitor consulted me for brain fag with almost unbearable headache. Nothing touched it except belladonna 1x in one drop doses, and it always gave immediate relief. He produced the prescription once to a chemist when away from home, but the chemist said he neither kept nor believed in homœopathic medicines. My patient said "If you had had my headache cured as mine was you would then believe in them."

I have found a similar specific action following the administration of *Tabacum* in cases where the symptoms were those with which we are familiar in association with atheromatous changes.

In three cases recently of very old people with thickened arterial walls and heaving pulse, the patients suffered from vertigo, pallor, headache, sickness, and palpitation. *Tabacum* appeared to me to be indicated, and the effect was prompt and complete, and remained while the drug was continued.

A few years ago Dr. Lauder Brunton called attention to the action of minute doses of opium in curing constipation. He had observed it he said, but could not account for it. From personal experience I can confirm this trained observation, which is all the more valuable coming as it does from an allopathic source, for in the homœopathic treatment of constipation I have had better results from opium 30 than from any other drug.

Now I put this question: If homœopathic drugs can act thus directly, so as to produce results which may appear incredible to all but those like ourselves, whose common sense has been appealed to by stern facts, why should we seek to limit their powers?

If one drug when introduced into the body in infinitesimal dose can go straight, as it were, to the spot at which it is aimed and remove a pain there, if the administration of another can cause at the will of the administrator an objective change in one of the body excretions, why should the curing of let us say, tumours not be considered within our range?

It has been said to me that you cannot expect drugs to do good where a change of structure has occurred. Let me ask, Why not? Why should we so limit the possibilities of our art?

Papillomata or warts, both of skin and mucous membrane, have been dispersed by internal treatment only; are they not structural? Tumours of breast, clinically indistinguishable from so-called curable tumours, have been made to disappear by the action of such drugs as *phytolacca* or *coniium*. Cases now and again arise where carcinoma has been definitely diagnosed—a case occurred in Ireland not so very long ago—by several competent authorities and cure pronounced impossible, and where, nevertheless, cures have taken place.

Are these cases of mistaken diagnoses, or are they cases of malignant tumours cured? Who will undertake to determine? Corroborative evidence of the curative influence of drugs over swellings, growths and tissue change is found in the action of potassium iodide in gummata, that of *bryonia* in bursal effusions; benzoic acid in ganglia, the dispersal by various drugs of meibomian cysts, of which Swanzy says: "It is a graueloma, and no application can bring about absorption of these tumours, they must be incised and evacuated." The marked reduction, if not dispersal, of bronchocele by drugs, the cure of acne, the remarkable effect of antitoxin in diphtheritic exudations, and the effect of thyroid extract on cases of myxœdema.

Further, we have the witness of men of our own time, who claim to do by drugs that for which others use the knife. One of these writers, in a book published in 1888, states it as his object "to prove beyond the possibility of doubt that tumours can be cured by medicine." He then proceeds to enumerate cases as evidence.

Men bearing honoured names amongst us are quoted as having stated that tumours are curable by drugs. Are these men right or wrong? They may, of course, be wrong; if so, what has misled them, they cannot all have been knaves; have they been deceived? Or is it just possible they were right; that by careful, conscientious, thorough, patient work one may cure what is called the incurable?

Be it as it may, one is struck by the fact that those of our workers who are most painstaking and conscientious in selecting the drug according

to the homœopathic method appear to have most faith in drug action and most success in their results.

Thus imperfectly have I endeavoured to introduce this interesting if delicate subject for discussion; but I trust you will feel, especially after you have made all necessary allowances, that evidence has been afforded that the subject is at least not unworthy of discussion. I, however, am but the pilot engine, and the more important train of ideas will now be signalled.

Dr. GOLDSBROUGH could not discuss the paper fully, as he had no previous idea how the subject would be treated. Another phase of the topic than that treated of had been presenting itself to his mind. Did any subsequent constitutional harm happen to patients from operations otherwise legitimate, and therefore should the consideration of a case be more careful on that account? For example, he had three women under his care who had had their ovaries removed who had developed peculiar forms of cerebral neurasthenia, and he had begun to associate in his mind the production of that form of affection with the fact that the ovaries had been removed. Other members had no doubt seen similar cases. The cases he referred to were women with well-developed minds, whose imagination was now very excited and almost uncontrollable. He thought such a sequel should be carefully considered by gynœcologists before they proceeded to the removal of ovaries. He believed there was a relationship between the mental and the reproductive systems of women which had not yet been brought within scientific generalisation, but which offered a wide field for study. It might be well for gynœcologists to consider that point in relation to the age of the patient, the mental development, and the state, whether married or single, as well as various other factors.

Mr. WYNNE THOMAS thought the question was whether, in many cases, there was not a likelihood that the physician persevered too long with homœopathic medicines in the hope that the case would clear up and keep out of the grasp of the surgeon. With regard to enlarged glands in the neck, he would like to hear how long the physician should go on treating such a case with calcarea, silica, &c., in the hope that the glands would subside. Of course, in acute cases the glands would diminish and become normal again. But in chronic cases, where the enlargement had persisted for months, where should medical treatment cease and the case be handed over to the surgeon for excision? If commenced soon enough, removal of glands was a simple operation, and very little scarring remained. But if one temporised too long, there was a matting together of adjacent tissues, and pus formed and burrowed, causing considerable trouble. Some of the older homœopaths said that even where the glands broke down and suppurated the remedies (drugs) should be persevered with because suppuration was Nature's safety-valve and Nature's way of throwing off a poison. Was that really so? Was it not better to remove them early? A case came under his observation a few years ago which bore very much on the question. A lady, 29 years of age, began, about Christmas, 1895, to have pain and swelling in the left knee. In the following April she was sent to Woodhall Spa, and the knee became somewhat better, but never quite sound. In June, 1896, she underwent the Tallerman treatment, and later in the same year Scott's dressing was applied. The knee, however, gradually got worse, and the lady went to a noted homœopathic physician, who said, "Persevere with the drugs; the knee may get well in time." In the early part of 1897 she began to get hectic, crepitation in the lung, night-sweats and the usual signs of tuberculosis, with commencing enlargement of the glands in the neck. In July, 1897, she went to Margate, and in the following month Mr. Treves amputated the leg, from which time she began to improve, till by the end of the year she had become marvellously better, put on flesh, the lung symptoms sub-

sided, the hectic disappeared, and the night-sweats stopped. In March, 1899, though she was much better, there was still some enlargement in the glands of the neck, but steady improvement dated from the operation.

Dr. NANKIVELL thought Dr. Searson had not grappled with the main question suggested by the title. Dr. Nankivell, as a physician, naturally looked at the subject from a point of greater detachment than a surgeon would do. He thought only one operation of a mutilating character could be done with a light heart, viz., circumcision. He questioned whether one who removed enlarged glands was on the right track. In some cases, as when they suppurated, it was necessary, but in scores of others it was not. He only remembered ever sending one case for operation; with all the others hygiene and medical care had sufficed to cure. In regard to removal of ovaries, they must be removed if they were diseased; but if the woman only suffered from menorrhagia it was quite a different matter. Cutting out a pair of healthy ovaries to produce the menopause seemed truckling to the convenience of the patient in a remarkable way, and she would probably suffer mentally in consequence. In prostatic disease, some time ago the rage was the performance of castration, but melancholia often definitely followed that operation. These things showed that the human frame should not be interfered with more than could be helped; drugs should be tried wherever possible, and great care should be exercised before removing with the knife structures which were intrinsically important, such as the reproductive organs in either sex.

Mr. DUDLEY WRIGHT said all would probably feel that a surgical operation was a necessary evil at the best, but one which must be carried out. For himself he was only pleased when operation could be obviated. To admit so much would greatly clear the ground. He felt also that operation was mostly a matter of expediency, and expediency was largely a personal question. In a case of cancer he felt that his power of bringing about alleviation by means of drugs was very small, and he was in the habit of telling the patient so, and that it should be removed at once. He felt it possible that a drug might do good in the condition, as it had done before, but in 99 out of every 100 cases it was not so. On the question of diseased glands the position he took up was as follows. He now very seldom removed glands, but still he operated upon them. He had not been satisfied at all with removal of glands by a large incision, because, as a rule the resulting scar was large. Moreover, in such case it might be necessary to remove glands which, probably, never would have troubled the patient. He went in for "masterly inactivity" until the glands just suppurated, but he did not allow them to burst of themselves. When pus distinctly declared itself he made a small incision, evacuated the pus, rubbed in cyanide of mercury solution, and sewed up the wound, and in nine out of ten instances the case healed up with a scar which was undetectable. He therefore welcomed suppuration. He did not see how pus could be thrown off while it was being retained in a closed cavity. Into the category of absolutely essential operations should be placed those in which pus was pent up.

Dr. NEATBY thought the discussion had failed to elicit a direct answer to the question propounded by the author of the paper. He wished to advance in answer to it the statement that there is too much readiness to operate in many cases. Speaking for himself he felt the necessity to resist that tendency, and not to allow himself to have his mind biased towards operative treatment on the ground of its ease and promptitude in giving relief. Accurate homœopathic prescribing was a more difficult art than the manipulative part of surgery, and it was successful in proportion to its accuracy. There was a class of cases where, if operation was to be undertaken at all it should be done immediately. Here there could not be too great a readiness to resort to surgery. There was another large class

where drugs deserved a trial first. In this class the skill of the medical man was put to the test in deciding which cases might be safely left, and which, if left, would be likely permanently to damage the health or threaten life. He instanced adenoids, tuberculosis, cervical glands, and uterine myomata as diseases in which such a decision had to be made.

Dr. SEARSON, in reply, said one object he had in view in reading the paper was to strengthen his own and his colleagues' faith in drugs. Some men ridiculed high potencies, but that was not his own leaning. He spoke highly of the action of opium 30. No speaker had made any reference to tumours, which were distinctly brought forward in the paper. The treatment of internal tumours by homœopathic medicines was a very important question. Some men professed to cure tumours by that means; were they right or wrong? No doubt some men were more prepared to go thoroughly into drug action than others.—*Journal of British Homœopathic Society*, Jan., 1903.

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CHOLERA.

III

(Continued from last Number, p. 148.)

Bacteriology of Cholera Concluded.

Before proceeding further it would be well to notice the original description of the typical cholera bacillus, the variability of which, we have seen in our last number, has been admitted by M. Haffkine. These bacilli are curved rod-like organisms, and when we have a name, vibrio, for the curved bacillus, why should Koch have called it comma bacillus is more than we can imagine, unless it be to give it a distinctive name to denote its specificity. These comma bacilli then are vibrios or curved rods, about half the length and twice the thickness of tubercle bacilli, that is, from 0.8 to 2 μ in length and about 0.3 to 0.4 μ in breadth, where μ is the symbol for one micro-millimetre, or one-thousandth of a millimetre, equal to about one twenty-five thousandth of an inch. In fresh cholera stools they are generally found isolated, sometimes united two to two in opposite directions forming an S-shaped figure. In stools that have been kept for a day or two, they are found

several uniting to form spirilli or screw like bodies, like those of relapsing fever, or sometimes they may form long spirilliform threads. They may be demonstrated by Löffler's method to have a terminal flagellum at one end, or rarely flagelli at both ends, on account of which they have a spinning motion in the living state. These flagelli are extremely slender, which renders them difficult of demonstration. They vary in length from one to five times the body of the bacillus. They are not always present.

These comma bacilli are aerobic but may become facultative anaerobic organisms. They liquefy gelatine, and do not grow above 42° nor below 14° C, the upper thermal death-point being 55° according to Kitasato, the lower thermal death-point has not been ascertained, a temperature lower than 14° simply arrests the growth of the bacilli, but does not kill them. According to the researches of Kansansky (1895) the cholera spirillum is not destroyed by such a low temperature as -30° C, and that it even resists repeated freezing and thawing—three or four times (Sternberg). Unlike spore-bearing bacilli the comma bacilli are destroyed by desiccation, but curiously enough they retain their vitality longer when dried on *silk* threads. At no time have they been observed to form spores. Hueppe's assertion that arthrospores are formed at the ends has been negatived by experiment. The best media for artificial cultivation are nutrient gelatine, potato, meat-broth, milk, blood-serum. The first two are the most convenient for purposes of diagnosis. The bacilli will grow even in sterilised distilled water; but they die within about 24 hours, the addition of a small quantity of sodium chloride, however, greatly increases their longevity. In unsterilized potable water their survival is influenced by the presence of salt and of other bacteria, the latter proving generally destructive of their life. In unsterilized sewage water they may live so long as 2 to 4 weeks. In ordinary moist soil they have been found to live from 4 to 8 weeks. In dry soil and in peat they die out in a few days. In cultures their vitality persists for many weeks.

The following summary by Sternberg (*Text Book of Bacteriology*, 1896) gives a good account of the conditions of growth of the

comma bacillus of cholera: "In general this spirillum grows in any liquid containing a small quantity of organic pabulum and having a slightly alkaline reaction. An acid reaction of the culture medium prevents its development, as a rule, but it has the power of gradually accommodating itself to the presence of vegetable acids, and grows upon potatoes—in the incubator only—which have a slightly acid reaction. Abundant development occurs in bouillon which has been diluted with eight or ten parts of water, and the experiments of Wolffhügel and Riedel show that it also multiplies to some extent in sterilized river or well water, and that it preserves its vitality in such water for several months. But in milk or water which contains other bacteria it dies out in a few days. Gruber and Schottelius have shown, however, that in bouillon which is greatly diluted the cholera spirillum may take the precedence of the common saprophytic bacteria, and that they form upon the surface the characteristic wrinkled film. Koch found in his early investigations that rapid multiplication may occur upon the surface of moist linen, and also demonstrated the presence of this spirillum in the foul water of a tank in India which was used by the natives for drinking purposes." According to Karlinsky (1895) the cholera vibrio retained its vitality for from twelve to two hundred and seventeen days in woolen and linen goods, cotton batting and wool which were soaked in cholera discharges and preserved from drying by being wrapped in waxed paper.

A characteristic of the cholera comma bacilli has been discovered by Bujwid and Dunham which has been considered by them as diagnostic. It is the production of a pink or reddish-violet coloration in gelatine or bouillon-peptone cultures on the addition of pure sulphuric acid. This is known as the cholera-red reaction. Salkowski has shown, "the red color is due to the well-known indol reaction which in cultures of the cholera spirillum is exceptionally rapid and intense in its development." This characteristic distinguishes the cholera bacilli from the ordinary bacteria of the intestines and from the Prior-Finkler spirillum, but not from the vibrio Metchnikovi.

Like other pathogenic bacteria the comma bacilli of Koch produce toxins in the culture media, as a result of their metabolism. Brieger has found in pure cultures some well known

toxic ptomaines such as cadaverin, putrescin, cholin, methylguanidin. But besides these he has obtained two others, which seem to be the peculiar products of these bacilli; one of which, a diamin resembling trimethyl-enediamin, inoculated into animals, gives rise to cramps and muscular tremor; the other reduces the heart's action and lowers the temperature, that is symptoms of collapse, and diarrhœa. A distinction has been made between the intracellular poison of a microbe and the poisonous substance or toxin produced as a result of its metabolism or vital activity. The former may be found in pathogenic as well as in non-pathogenic bacteria, the latter only in cultures of pathogenic bacteria, and it is not all pathogenic organisms which have poisons in their cell contents. The comma bacilli, the bacilli of typhoid fever, and several non-pathogenic bacilli, have been proved to have intracellular poison, whereas the sporeless anthrax bacilli, the bacilli of fowl cholera, and the bacilli of diphtheria, all pathogenic bacilli, have been shown to be devoid of it.

It is not alone the variability of the so-called cholera microbe, annihilating, in the language of M. Haffkine himself, "almost completely the original description," that has cast doubt on its causal relationship to the disease. The discovery of the existence of similar microbes in other sources, as in the saliva, stale cheese, stools of cholera nostras, river water, &c., has made that doubt stronger. Thus Dr. Klein tells us: "Soon after Koch's discovery Deneke isolated from stale cheese a spirillum—*spirillum tyrogenum*, which in morphological and cultural respects bore a very great resemblance to Koch's cholera vibrio, in fact, looked at in the light of the present knowledge of different varieties of cholera vibrio, cannot be distinguished from this latter. In size, shape, motility, growth in peptone salt, and cholera red re-action in gelatine, on Agar, on blood serum, in its action on the guinea-pig (administered *per os* after Koch), it is difficult to distinguish it from the cholera vibrio; perhaps it grows a little faster on gelatine in the plate and in the stab, but, as has been stated on a former page, such differences are also observed between the individual varieties of the cholera vibrio."

As regards the comma bacilli or vibrios found by Neisser, Heider, Dunbar, and Sanarelli in the waters of the rivers of Germany and France, Dr. Klein says: "With the exception of the vibrio phosphorescens of Elwers and Dunbar, most of the others differ from the typical vibrio of Koch so little and in so few details—in fact, less so than do the individual varieties of vibrios isolated from noted cases of cholera—that from their morphological and cultural characters, including the cholera red re-action which they all show to a greater or less degree, and from their intra-peritoneal action on the guinea-pig, they cannot be distinguished from the different varieties of the cholera vibrios." The resemblance is so great, indeed, that Sanarelli has contended that these water vibrios are genetically related to the cholera vibrios, all the rivers, from which they were derived, having been at some time or other contaminated with cholera dejecta. Even phosphorescence has been shown to be an unreliable test by Rumpel who has reported "that two undoubted cultures of the cholera spirillum from different sources, having been passed through pigeons and cultivated in artificial media, showed phosphorescence."

Another comma bacillus, that discovered by Finkler and Prior in the decomposing stools of a case of sporadic or English cholera, and wrongly supposed by them pathogenic of the disease, has considerable resemblance to Koch's bacillus, in that it assumes the forms of S and spirilla, liquefies gelatine, and that its cultures act on the guinea-pig exactly as the cholera bacillus. But the distinguishing characters are that it is distinctly larger, being longer and thicker, grows incomparably faster in gelatine at 20° C, and liquefies this incomparably quicker, the liquefied gelatine emitting a putrid smell, which is not the case with the cholera vibrio.

Gamaleia in 1888 obtained, from the intestinal contents of chicken dying of an infectious disease similar to fowl cholera, prevalent in the summer season in certain parts of Russia, a bacillus resembling Koch's comma bacillus in having a curved shape, but thicker, shorter, more decidedly curved, and having a flagellum at one end. Gamaleia has called this bacillus, in honor of Metchnikoff, *vibrio Metchnikovi*. In peptonised

bouillon cultures a red color is produced on the addition of pure sulphuric or hydrochloric acid, a reaction which is similar to, and perhaps even more pronounced than, that produced in similar cultures of Koch's bacillus. Unlike Koch's bacillus, the bacillus Metchnikovi is found not only in the intestines and intestinal contents but also in the blood. Gamaleia believes, "that the vibrio Metchnikovi and the cholera vibrio are mutually protective for the pigeon; that is to say, that a pigeon that has survived disease caused by the injection of a non-fatal dose of one vibrio is protected against a subsequent injection of a fatal dose of the other." Pfeiffer and Klein have established the fact that while the vibrio Metchnikovi is exceedingly virulent for the pigeon the cholera vibrio is not, which last is known to be very virulent for the guinea-pig. Thus the two vibrios are differentiated.

Pfeiffer has discovered a very sensitive test of the cholera bacillus which, he believes, is a sure and almost an infallible one. This is the germicidal action of the "cholera serum" on the cholera bacillus. That is, the blood-serum of an animal highly immunised by repeated intra-peritoneal injections of living cholera vibrios, when mixed in due proportion with what is known as a fatal dose of cholera vibrios, kills these vibrios, as is evidenced by the fact that such a mixture injected into the peritoneum of another animal has no effect on it. This was shown directly by the researches of Bordet which proved "that also in *vitro* cholera serum shows a definite separating action, in as much as when added in definite proportion to a suspension of living cholera vibrios contained in a test-tube, it makes the vibrios become matted together in clumps, settling at the bottom of the test-tube while the suspending fluid becomes clear, and that after some time the motility of the vibrios becomes impaired and ceases."

Pfeiffer says that this germicidal action of cholera serum is exerted only on cholera bacilli and not on others though morphologically similar, such as the comma bacilli of river water, &c. The researches of Dunbar, however, have shown that this test is not so reliable as it is believed to be. Comma bacilli derived from undoubted cases of cholera, as from the epidemic in Massowah, have been found not to respond to this test. Dr. Klein

has found "that of guinea-pigs immunised by repeated intra-peritoneal injections with one variety of living cholera vibrios, derived from an undoubted typical case of Asiatic cholera of one locality in England in 1893, a certain percentage *did not* prove themselves resistant to the peritoneal injection with a fatal dose of cholera vibrios derived from an undoubted and typical fatal case of Asiatic cholera that occurred in another locality in England in 1893."

Dr. Klein has therefore felt justified in declaring that "all these results seem to me to show that the apodictic announcement that such and such a vibrio is not a cholera vibrio because it does not succumb to the 'cholera serum' obtained by immunisation with a particular cholera vibrio is not sufficiently established, although it may be conceded that a vibrio which does answer in positive fashion to Pfeiffer's test is a cholera vibrio." We for our part do not see much value in a test which is so difficult of application, and which from the existence of so many exceptions is liable to so much misinterpretation. Fancy Pfeiffer declaring the vibrio of the Massowah cholera epidemic to be not cholera vibrio at all! Are we to infer from this that this epidemic was not one of cholera?

There are two note-worthy facts in connection with Koch's comma bacilli which must be taken into consideration in order that we may arrive at a conclusion as to their causal relation to cholera. These are: 1. That they are found, it is true, in the intestines of cholera patients, but not always to the exclusion of other bacteria. In some typical cases they occur almost alone, but in other typical cases they are found mixed up with other bacteria, sometimes with a considerable number of these latter. This association with other bacteria occur not only in the *alvine* discharges and in the intestinal contents, but also in sections of the hardened mucous membrane of the ileum and in the mouths and cavities of Lieberkühn's follicles. 2. That there is no definite relation between the number of these bacilli and the severity of the disease. The number may be small in very severe cases, and large in mild cases.

The most prominent facts about the comma bacillus, which we have placed before our readers may be summed up as follows: 1. These organisms are very frequently, though not invariably

associated with cholera, being found in the cholera dejecta, especially those from the bowels, and in the actual contents of the intestines, especially of the lower parts of the ileum and colon, but found also in the jejunum and the stomach. 2. They have been found by Cunningham in health, that is, in the stools of persons who never at the time nor any time afterwards suffered from the disease. 3. They were not found by Cunningham, in Calcutta, and Roy, Brown, and Sherrington, in Spain, in several typical cases of cholera. Lesage and Macaigne could not find them in 45 out of 198 cases they had examined. In these 45 cases the bacterium *commune coli* were found alone in 15; associated with staphylococci, streptococci, or rarely the bacillus *pyocyaneus* in 30. 4. The variability of the bacillus is so great, as, in the opinion of one ardent follower of Koch, to almost completely annihilate his original description. 5. Other comma bacilli have been discovered in so many different sources, such as the ordinary saliva, old cheese, cholera nostras, fowl enteritis, &c., and their resemblances to the cholera comma so great and the differences between them so slight that for practical purposes their differentiation becomes exceedingly difficult, especially as there is so much variability in the cholera bacilli themselves. 6. There is no definite relation between the number of the comma bacilli and the severity of the disease they are supposed to produce. 7. They are often associated with other bacteria.

What is the inference that may be legitimately drawn from these facts? Strange as it may seem, this will depend upon the view we take of cholera itself. Are we to look upon cholera as one and the same disease in every case? There are undoubtedly variations in the symptoms in different cases to justify their classification into varieties. Are all these variations accidental, depending upon differences in the constitutions and environments of the patients, or are some of them specific depending upon differences in the causes which produce them? We are inclined to believe that while some variations are accidental, there are others which are specific, depending for their origin upon different causes. This is countenanced by the analogy of the pathogenetic actions of drugs on the human organism. We have a number of drugs which

act on the alimentary canal producing symptoms similar in a general way to those of cholera, but each has its specific action so as to differ from those of the others, thus analogizing with the specific varieties of the disease. We are aware that even the same drug may produce symptoms which may in some respects be different in different persons, but notwithstanding these differences, there are some constant symptoms which give the impress of specificity upon its action as different from those of others, and here we have the analogy with variations in the symptoms of cholera from the same circumstances.

Viewed in the light of the analogy of drug action the facts that have been disclosed about the comma bacillus of Koch lead to a conclusion which we believe is not far from the truth. It is this, that though it is not responsible for all cases of cholera, it is pathogenic of a large majority of them; it is not the only specific cause of the disease, but it is one of the most important of all the causes, especially when it prevails as an epidemic or pandemic. In undoubted cases where its presence could not be detected by competent observers, we must admit that other causes must have been in operation. These other causes might be some species of bacteria different from the comma, or some organic ferments or toxins developed as a result of bacterial action, or even some inorganic poison. In support of this view we may mention the fact that poisonings with ptomaines, with arsenic, &c., have often been mistaken even by experts for cases of cholera.

If what we have advanced regarding cholera and its causation be true then many facts which were obscure become clear and their significance is easily understood. If cholera is a disease which, in its essential characters, may be produced by a variety of causes, then the variations presented by it in different epidemics and in different cases even in the same epidemic are no longer vagaries of the disease, but clearly traceable to real and intelligible causes, and the discrepancies in the bacteriology of the disease are no longer puzzling and need not give rise to hot controversy. Indeed, from the point of view we have endeavoured to set forth, the bacteriological investigation of the disease has not only not been in vain, but has acquired great importance in suggesting measures for its prevention.

(To be continued.)

**A HOME FOR INDIAN STUDENTS IN EDINBURGH;
AN APPEAL FOR FUNDS BY THE EDINBURGH
INDIAN ASSOCIATION.**

We publish below an appeal for subscription towards the Fund started at Edinburgh for the purpose of securing a habitation for the local Indian Association. The object of this Institution, it will be seen, is to afford personal assistance to the Natives of India proceeding to Edinburgh for education or business, and to promote intellectual and social intercourse among them. It owes its existence to a very small band of Indian students studying in Edinburgh at the time of its foundation, and is already in active operation for two decades. It is however in want of a local habitation, and considering that the number of its members has augmented from six to fifty, and is likely to increase further, the long felt necessity for permanent and suitable quarters is increasing year by year. Under these circumstances some of the leading educationists of Edinburgh and well wishers of this country, have most kindly come forward on behalf of the growing Association, and have succeeded in securing the co-operation and pecuniary aid from several leading men of Scotland.

The addendum to the appeal is signed by four of the principal officers of the University of Edinburgh, the first of whom was lately Principal of the University, had been a resident in this country for more than thirty years as a member of its Civil Service, had filled the office of Lieutenant-Governor of the North Western Provinces, had done his utmost to have a Medical College at Allahabad, and had been the chief instrument in establishing the Central College there and the University of the Provinces over which he presided for five years; and the third officer, Sir Thomas Fraser, who along with the remaining two are distinguished medical men, came out to India not long ago as the President of the late Plague Commission and mixed freely with the medical men of this country. These distinguished men say that "in *their* cosmopolitan University there are already flourishing Institutions where the convenience and requirements of students from Australasia and South Africa are separately provided," and they add very justly that "it is highly desirable that students from India should possess equal advantages."

As stated already, there is no fixed place at present for the Edinburgh Indian Association to hold its meetings, and the places at which these meetings are now convened have scarcely room enough to accommodate its own members. For want of a non-residential centre or habitation for their Association, the Indian students in Edinburgh cannot reap the full benefits of associating even with each other—much less of friendly intercourse with the students from other parts of the world. The advantages to be derived from such a centre have been well pointed out in Professor Sir Thomas Fraser's letter addressed to us. If the projected scheme succeeds, the Indian students of Edinburgh will be able to gain the full educational advantages that are available there from free intercourse with men from all parts of Great Britain and her Colonies. One significant fact connected with the project is that it has the sympathy and active support of a very large number of the Professors and medical men of Scotland, who have come forward to help it with their purse also; and if it should receive financial support from India, especially from her Princes and wealthy men it should soon be realized. We beg to invite the attention of the Indian public to the last para of Dr. Fraser's letter in which it is stated that "the names of all large donors should be associated with the name of the building, or of its more important apartments according to the sums given,"—a good inducement to those who would like to have their names perpetuated in a distant land in connection with a good cause.

To meet the requirements of the projected building it is estimated that about £5,000 will be necessary. This estimate is likely to be exceeded by £50. Roughly about Rs. 80,000 of Indian money will be required for this purpose. Of this sum about £200, or Rs. 3,000, have already been paid or promised by only a few persons of Scotland to whom the appeal was submitted at the very outset. We ought to realize in India at least Rs. 70,000, not a very large sum for a most laudable object which tends to our own benefit. To quote Sir Thomas Fraser, "If India does its duty on the present occasion," Edinburgh will soon have an Institution similar to the Indian Institutes now existing in London and Oxford. It will be seen on reference to the appeal that Professor J. Kirkpatrick, LL.D.,

(at the University of Edinburgh), has been appointed the Honorary Treasurer of the Edinburgh Indian Association Habitation Fund. All donations should therefore be sent or intimated to him. We shall also be very glad to receive Subscriptions on this account, and forward the same to the above-mentioned gentleman.

13, DRUMSHEUGH GARDENS.

Edinburgh, 20th April 1900.

MY DEAR SIR,

The recollection of the pleasant interview which I had with you in Calcutta, induces me to bring under your notice a project which some of us have started for the benefit of Indian students studying in Edinburgh. The enclosed printed paper explains this project, and I much hope that it will gain your valuable sympathy and support.

We feel assured that such a non-residential centre or habitation for the Association of Indian students would greatly conduce to their advantage in many obvious ways, and not least valuably, by increasing friendly intercourse with their fellow students from other parts of the world.

As isolated units the Indian, as well as all others of our foreign students, are apt, in a measure, to be overlooked in the crowd, and to associate only with fellow countrymen, and thus fail to obtain the full educational advantages that are available here from free intercourse with men from all parts of Great Britain and the Colonies.

As you will observe we have obtained influential support in this country although we have submitted the appeal to only a few persons, as we think such a scheme should receive its financial support mainly from India. If India does its duty, the scheme should soon be realized, as, after all, the total sum required is only a small one.

We hope that many subscriptions may be obtained in India, and I should be much obliged if you would kindly use your valuable influence in helping us to obtain them.

We hope also that wealthy men in India and some of the Princes may give their support. It is proposed that the names of large donors should be associated with the name of the building or of its more important apartments according to the sums given.

With kind regards,

Believe me,

Yours Sincerely,

DR. MAHENDRA LAL SIRCAR,

THOMAS R. FRASER.

EDINBURGH INDIAN ASSOCIATION.

DEAR SIR,

In name and by authority of the Edinburgh Indian Association, we respectfully beg to lay before you the following facts for your favourable consideration :—

This Association was founded in 1883, by a small number of Indians then studying in Edinburgh, for the purpose of (1) affording every personal assistance to the natives of India coming over to this country for study or business ; (2) promoting social intercourse among the Indians resident in this country ; and (3) holding debates. It has been carrying on its work during the last twenty years, and the number of members has been steadily increasing. Having started with hardly six, the Association has now on its roll about fifty members.

Owing, however, to want of funds, the Association has hitherto been unable to secure a local habitation. The meetings used to be held at the private lodgings of the members until lately, when it was found practically impossible to accommodate the members in such small rooms. The long felt necessity for more suitable and permanent quarters has thus been increased.

Accordingly, acting on the advice of Professors Sir Thomas R. Fraser and A. R. Simpson, cordially supported by Sir William Muir, until recently Principal of the University, by Sir William Turner, the present Principal, and by other well-wishers, we have resolved to endeavour to raise funds in order to meet our requirements, for which purpose it is estimated that about £5000 will be necessary.

The funds will be held in the name of the Association by the following Trustees :—

- 1.—Professor Sir Thomas R. Fraser, M. D., LL.D., F.R.S.,
Vice-President of the Royal College of Physicians, Edinburgh.
- 2.—Professor A. R. Simpson, M.D., D.Sc.,
Dean of the Faculty of Medicine, University of Edinburgh.
- 3.—Professor Sir Ludovic J. Grant, Bart.,
Secretary of Senatus and Dean of the Faculty of Law.
- 4.—Thomas S. Clouston, Esq., M.D.,
President of the Royal College of Physicians, Edinburgh.
- 5.—Sir J. Halliday Croom, M.P.,
President of the Royal College of Surgeons, Edinburgh.

We may add that, as experience has shown, the possession of habitations by kindred Associations has not discouraged intercourse between their members and the other students, or the citizens in general, but has rather fostered it, and has thus enhanced the great educational advantages derivable from friendly relations between students of different nationalities.

We therefore approach you with this appeal, and trust that you will

give your generous support to this movement, whose aims are to increase the comfort and well-being of the members of the Edinburgh Indian Association during their residence in a distant country, and to promote the cause of education among the Indians.

All donations should be sent or intimated to Professor J. Kirkpatrick, LL.D., (at the University of Edinburgh), the Honorary Treasurer of the Edinburgh Indian Association Habitation Fund.

We beg to remain,

SIR,

Your most obedient Servants,

D. S. RAMA CHANDRA RAO, M.A., *President.*

A. N. J. VIZARAT, *Hon. Secretary, (University Union, Edin.)*

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Addendum to Accompanying Appeal.

The undersigned beg most cordially to support this appeal.

It would be of the greatest advantage to our Indian Students were the Edinburgh Indian Association to be provided with a Habitation. Students on their first arrival in this country would find a centre among their fellow-countrymen, where information of the utmost value to strangers could be obtained; and, throughout their residence in Edinburgh, a much required meeting place would be at their disposal for mutual co-operation and intellectual and social intercourse.

In this cosmopolitan University there are already flourishing Institutions where the convenience and requirements of Students from Australasia and South Africa are separately provided. It is highly desirable that Students from India should possess equal advantages. We feel assured that the projected scheme would so obviously be for their benefit that their fellow-countrymen and all others interested in the intellectual development of India will heartily co-operate in its realisation.

W. MUIR, K.C.S.I., LL.D., D.C.L.,

Lately Principal of the University of Edinburgh.

WILLIAM TURNER, K.C.B., M.B., LL.D., D.C.L., F.R.S.,

Principal of the University of Edinburgh,

President of the General Medical Council.

THOMAS R. FRASER, M.D., LL.D., F.R.S.,

*Professor of Materia Medica and of Clinical Medicine, and
Vice-President of the Royal College of Physicians, Edin.*

A. R. SIMPSON, M.D., D.Sc.,

Professor of Midwifery, Dean of the Faculty of Medicine.

Preliminary List of Subscriptions Received or Intimated.

Dr. A. H. F. Barbour	£25 0 0
Professor A. R. Simpson, M.D., &c.	21 0 0
Sir Robert B. Finlay K.C., M.P., &c.	10 10 0
<i>(Lord Rector of Edinburgh University)</i>	
Sir William Muir, K.C.S.I., LL.D., &c.	10 10 0
<i>(Lately Principal of the University)</i>	
Sir William Turner, K.C.B., M.B., LL.D., &c.	10 0 0
<i>(Principal of the University, Edinburgh)</i>	
Professor Sir Thomas R. Fraser, M.D., LL.D., &c.	10 10 0
Professor Sir Henry D. Littlejohn, M.D., LL.D., &c.	10 10 0
Professor J. Wyllie, M.D.	10 10 0
Dr. J. O. Affleck	5 5 0
Right Hon. A. J. Balfour, M.P., LL.D., &c.	5 0 0
<i>(Chancellor of the University, Edinburgh)</i>	
Professor Bayley Balfour, M.D.	5 5 0
Dr. George Berry.	5 5 0
Dr. Alex. Bruce	5 5 0
Professor Crum Brown, M.D., D.Sc.	5 5 0
Professor J. Chiene, C.B., M.D., LL.D., &c.	5 5 0
T. S. Clouston, Esq., M.D.	5 5 0
<i>(President of the Royal College of Physicians).</i>	
Sir J. Halliday Croom, M.D.,	5 5 0
<i>(President of the Royal College of Surgeons).</i>	
Dr. G. A. Gibson	5 5 0
Dr. A. James	5 5 0
Dr. Argyll Robertson	5 0 0
Professor E. A. Schäfer, LL.D., F.R.S.	5 5 0
Professor Sir L. J. Grant, Bart.	3 3 0
Professor T. Annandale, M.D.	2 2 0
Professor S. H. Butcher, LL.D., &c.	2 2 0
Professor Cossar Ewart, M.D.	2 2 0
Professor J. Geikie, D.C.L., LL.D.	2 2 0
Professor Hunter Stewart, M.D.	2 2 0
Dadabhai Naoroji, Esq.	2 2 0
Professor W. S. Greenfield, M.D.	1 1 0
Professor J. Kirkpatrick, LL.D.	1 1 0
Professor J. M. MacGregor	1 1 0
Professor J. L. Mounsey, W.S.	1 1 0
Rev. Prof. M. C. Taylor, D.D.	1 1 0
J. M. Cotterill, Esq., M.B., C.M., F.R.C.S.E.	1 1 0

REVIEW.

Stepping Stones to Neurology: A Manual for the Student and General Practitioner. By E. R. McIntyer, B.S., M.D., Professor of Neurology in the Dunham Medical College of Chicago. Boericke & Tafel, Philadelphia, 1903.

This book, consisting of only 200 pages, is really a good little book on a most difficult subject, *viz.*, Diseases of the Nervous System, which can only be understood by a thorough knowledge of the most recent researches. The book is based upon the author's lectures on Neurology at the Dunham Medical College of Chicago, is printed at the earnest, oft-repeated and almost unanimous request of his pupils, and supplies a much felt want of students and practitioners of homœopathy.

The book consists of six chapters. The first and second one are introductory. The former gives a rapid but comprehensive view of the anatomy and physiology of the nervous system; the latter treats briefly but clearly of the methods of examination in neurological diagnosis. In the third chapter we have intracranial diseases; in the fourth, diseases of the spinal cord; in the fifth, diseases of the peripheral nerves; in the sixth and last, functional nervous diseases.

As stated in the Preface: "The arrangement is the simplest possible, and at the same time it is such as to be most easily comprehended. The generals are given first in the definition, varieties, when there are more than one, then the etiology. This is followed by the morbid anatomy. If the student has his anatomy and physiology he will, by the morbid anatomy, be enabled to tell the symptoms from that alone before studying the symptomatology in the book. After the symptoms come the diagnosis, prognosis and treatment."

In the matter of treatment, the author has of course "emphasized the homœopathic treatment in all respects," and it is refreshing to see that he has given only those remedies which he has found most frequently indicated. This is a praiseworthy departure from the ordinary practice of giving a long list of remedies in alphabetical order, without any reference to the author's own experience.

The book has for its frontispiece a good wood-engraving of a side-view of the left cerebral hemisphere, in which are indicated the various centres, such as the higher psychical faculties, motor speech, memory of language heard, memory of language seen, taste and smell, hearing, centre for writing, vision, &c., &c. We trust that in future editions there will be more wood cuts, to illustrate various nervous lesions.

EDITOR'S NOTES.

A Dietetic idiosyncrasy in an Infant.

At a recent meeting of the Verein für Innere Medicin of Berlin, Dr. Bendix brought forward the case of an infant, aged 13 months, the subject of an idiosyncrasy towards egg when given as a food, since about six or eight minutes after ingestion of any food containing this substance, either raw or cooked, a typical attack of urticaria developed. This was first noticed by the mother during the fifth month when after giving the child some food in which an egg was beaten up the eyelids became swollen, the conjunctivae injected and urticarial wheals came out on the body. A similar incident occurred in the seventh month, and as the child became older and the diet was increased the mother noticed that whenever egg in any form entered the diet a similar attack developed. No other article of diet had this effect. The child was otherwise healthy except for slight rickets. Dr. Bendix suggested that, although this was probably a very rare occurrence, in the cases of urticaria so frequently seen in infants it was worth while investigating whether the removal of egg from the dietary had any effect. Dr. Albu recorded a case of a child of English parents in whom from the first to the fifth year of life a skin eruption, diagnosed as erythema exudativum bullosum, frequently developed when eggs were included in the diet.—*Lancet*, May 2, 1903.

The Candle and Respiration.

It is a matter of very common knowledge that when a lighted candle is placed in a confined air space the flame is sooner or later extinguished. Whether, however, this extinction is due to the combustion products of the candle—that is to say, chiefly to the carbonic acid gas—or to the removal of oxygen, has not very long been decided with any degree of certainty. The question is of some importance, since it is generally assumed, and probably rightly so for all practical purposes, that where the combustion of a candle is possible—where it continues to burn—there also is human respiration possible. Hence the simple and valuable, but oftentimes unfortunately neglected, expedient of first lowering a lighted candle into a pit or well to see if it continues to burn before human exploration is decided upon. It may be a source of consolation to some people to know when they are in fear of being suffocated in a railway carriage or railway tunnel, that life is possible so long as the

tobacco in a pipe or cigar burns or so long as the smoker is able to keep a match alight. Certain it is that the flame of a candle or of a match goes out when the oxygen is diminished to a point below 17 per cent. It would be impossible to keep a match alight in an atmosphere containing much less oxygen than this. The extinction of the flame, however, is due not to the addition of carbonic acid gas but to the depletion of oxygen. This is easily proved by the fact that a lighted candle will readily burn in a mixture containing 75 per cent. of carbonic acid gas provided that 25 per cent. of oxygen is present at the same time. The candle test, therefore, may not be an absolutely trustworthy one. Still in most cases the fact of the flame being extinguished would show a deficiency or a complete absence of oxygen and therefore should serve as a warning. It may be pointed out that carbonic acid gas when present in excessive quantities is distinctly poisonous, acting directly and not by merely reducing the normal proportion of oxygen in the air. A mixture of 75 per cent. of carbonic acid gas and 25 per cent. of oxygen in nature is, however, not probable.—*Lancet*, April 18, 1903.

Inorganic Ferments.

A remarkable analogy exists between the action of enzymes and of metals in the colloidal state and so much so as to have given rise to the description of the latter as inorganic ferments. If the metals, platinum, gold, silver, cadmium, and iridium are reduced to such a fine state of division that they remain suspended in the water in the form of a solution—that is, of a colloidal solution—they bring about changes when in contact with other substances which closely resemble the changes due to the action of an enzyme. For example, a colloidal solution of platinum accelerates the oxidation of alcohol to acetic acid and finely divided iridium will decompose calcium formate into calcium carbonate, carbon dioxide, and hydrogen in the same way as do certain organisms. Further, finely divided metal will effect the inversion of cane sugar and colloidal solutions in the same way will decompose peroxide of hydrogen after the manner of the enzymes in the blood. Probably the action in both cases is what is known as catalytic. Perhaps, however, the most remarkable thing of all is that this action of metals in colloidal solution is retarded by the presence of strong poisons. In this way the colloidal solutions of the metals behave exactly like the enzymes of the blood. The action of the ordinary enzymes is very readily interfered with by the

presence of certain poisons and, strange as it may appear, it would seem to be possible to poison, so to speak, the finely divided metals in a similar way. Colloidal platinum, for example, readily decomposes peroxide of hydrogen in the same way as does blood, but the action almost ceases when sulphuretted hydrogen is present, iodine, mercurio chloride, or some other well-known poisonous substance. The only explanation of the similarity of action is that finely divided metals in the colloidal state present enormously developed surfaces and that the same condition exists in the enzyme. In a word, the similarity of action is due to intense surface energy and so-called catalytic action is set up. The scientific world is at the present time troubled with "the mystery of radium," but there is an equal amount of mystery in the much longer known phenomenon of catalysis, the eventual elucidation of which is calculated to throw considerable light on the great vital processes.—*Lancet*, April 25, 1903.

The early morning air.

Chemists have long ago told us not only what is the exact composition of the air, but also that this composition is practically constant, whether the air be that near the mountain top or the sea, or from the country, or of the town. So far, then, chemistry would not appear to offer any explanation of the benefit gained from "a change of air." Similarly everyone knows the sweetness and freshness of the early morning air, attractive properties which disappear as the day advances; but so far as analysis goes the composition of early morning air is not different from that of air at any other time. It is well to remember, however, that during the passing of night to day and of day to night several physical changes take place. There is a fall in temperature at sunset and a rise again at dawn and consequently moisture is alternately being thrown out and taken up again, and it is well known that change of state is accompanied by electrical phenomena and certain chemical manifestations also. The formation of dew has probably therefore far more profound effects than merely the moistening of objects with water. Dew is vitalising not entirely because it is water, but because it possesses an invigorating action due partly, at any rate, to the fact that it is saturated with oxygen, and it has been stated that during its formation peroxide of hydrogen and some ozone are developed. It is not improbable that the peculiarly attractive and refreshing quality which marks the early morning air has its origin in this way. Certain it is that the bracing property of the early morning air wears off as the

day advances and it is easy to conceive that this loss of freshness is due to the oxygen, ozone, or peroxide of hydrogen (whichever it may be) being used up. The difficulty of inducing grass to flourish under a tree in full leaf is well known and is generally explained by saying that the tree absorbs the nourishing constituents of the soil or that it keeps the sunlight away from the grass and protects it from rain. It is doubtful whether any of these explanations is true, the real reason most probably being that the vitalising dew cannot form upon the grass under a tree, whereas as a rule both rain and light can reach it. Dew is probably essential to the well-being of both plants and animals to a greater extent than is known, and the beautiful expression in the Prayer Book, "Pour upon them the continual dew of Thy blessing," may be remembered in this connexion.—*Lancet*, April 25, 1903.

Medical Colleges In The United States.

ACCORDING to the *Journal of the American Medical Association* there were in 1902 156 medical colleges in the United States. The number of teachers in those institutions was 6,776; the number of students 27,501, of whom 5,002 graduated in the academic year 1901-2. In 1900-1 there were 156 colleges, with 5,958 teachers and 26,417 students, of whom 5,444 graduated. Twenty years ago there were 89 medical schools, with 14,934 students and 4,115 graduates. The increase in the number of schools and students is far in advance of the increase in the number of graduates. The graduates twenty years ago were 4,115; in 1900, 5,314; in 1901, 5,444; and in 1902, 5,000. The attendance in twenty years has therefore increased nearly 200 per cent., while the graduates has increased less than 25 per cent. The decrease in the number of graduates last year is attributed to the increased length of course of study and more stringent requirements by State Boards. The decrease in graduates is classified thus: There were 4,879 graduates from the regular colleges in 1901; 387 from the homœopathic, 148 from the eclectic, and 30 from the physio-medical and nondescript; total, 5,444. In 1902 4,498 graduated from regular schools; 336 from the homœopathic; 138 from the eclectic; and 27 from the others; a decrease in every class. The increase in students is classified as follows: There were 23,846 students registered at the regular colleges during the year ending July 1st, 1901; 1,683 at the homœopathic; 664 at the eclectic, and 224 at the physio-medical and nondescript; a total of 26,417. During the year ending July 1st, 1902, 24,878 students registered at the

regular colleges : 1,617 at the homœopathic, 765 at the eclectic, and 241 at the physio-medical and nondescript ; total, 27,501. This is an increase among all but the homœopathic schools. During the year the regular schools increased in the number of students enrolled by 1,032, and in the number of graduates by 381. The homœopaths lost in enrolment 66, and in graduates 51 ; the eclectics gained in enrolment 99, and lost 10 in graduates ; all other schools gained 17 in enrolment and lost 3 in graduates.—*Brit. Med. Journ.*, April 18, 1903.

The Anti-Alcohol Congress.

The ninth antialcohol congress was held at Bremen last week and was attended by a large number of delegates from foreign countries as well as many Germans interested in the campaign against alcoholism. The members of the Congress were welcomed by the Imperial Secretary of State for Home Affairs, who observed that the great increase in the number of persons engaged in indoor occupations in towns increased the dangers arising from the abuse of alcohol. While legislative measures were necessary, private effort to reform and elevate popular customs might be expected to achieve more important results, and in this work the educated classes should take the lead. An interesting discussion was raised by an address given by Dr. Legrain, President of the Union Française Antialcolique, who contended that alcoholism produced a tendency towards tuberculosis by diminishing the resisting power. He also maintained that alcoholism delayed if it did not prevent the cure of tuberculosis, and even ventured so far as to say that the eradication of alcoholism would be almost equivalent to the suppression of tuberculosis. Dr. Legrain's views found much support, and statistics were quoted showing the the high mortality from tuberculosis among those concerned in the manufacture and distribution of alcoholic beverages. The figures given by Dr. Tatham for England in the last Decennial Supplement to the Registrar-General's report may be quoted in this connexion ; taking the deaths from phthisis of occupied males as 100, those of inn servants were 257, of brewers 148, and of innkeepers 140. Professor Hueppe, of Prague, defended the moderate use of alcohol under certain conditions. He maintained that it was less dangerous in northern than in southern countries, but held that it was certainly injurious in the tropics, since it tended to inhibit perspiration. The President of the Congress, Dr. Delbruck, of Bremen, combated the idea that beer drinking was not injurious ; of 149 persons treated in a North-German inebriates' home 30 were wine drinkers, 41 spirit

drinkers, and 78—or more than half—beer drinkers. Professor Cramer, of Gottingen, contended that persons admitted to inebriate homes should be deprived of civil rights : that was to say, should be placed under restraint ; to wait, as was now done in Prussia, until alcoholism had produced actual insanity was to wait until the stage when hope of cure had practically passed. The next Congress will meet at Buda-Pesth in 1905.—*Brit. Med. Journ.*, April, 25, 1903.

The Streaming of Protoplasm.

More than a century ago the early microscopists was attracted by the rotary movement of the protoplasm in certain vegetable cells, and from that time forward the phenomenon has been investigated over and over again from various points of view. Dr. Alfred Ewart has communicated to the Royal Society, and subsequently published in a separate form, the results of researches extending over several years, in which recent advances in knowledge in physics, in chemistry, and in electricity have been fully utilized and applied. Whilst it is not possible so to isolate the cells of higher organisms as to observe them without a prior destructive interference with their function, it would seem a fair inference that similar processes do go on in them so that the investigation of these simpler plant forms has a bearing upon all physiological processes. The researches being numerous and complex, it is only possible to notice some of the more significant conclusions arrived at. Dr. Ewart considers it fairly established that the energy consumed in this motion is wholly derived from metabolic changes within the moving protoplasm itself, and that the energy thus consumed is but an insignificant fraction of that afforded by respiratory and other metabolic changes in the plant. This energy may be derived from anaërobic metabolism as well as well as from aerobic, for in some cases movement goes on for many weeks under entire exclusion of oxygen. The velocity appears to be closely related to the viscosity of the protoplasm, and it is by change in the viscosity that temperature mainly influences it, though there are maximal and minimal as well as optimal, temperatures for this phenomenon. After elimination of many causes to which the movement may be, or has been, attributed, he comes to the conclusion that the only mechanism of motion not excluded by objections is change of surface tension, and that this continuous disturbance of surface tension may perhaps be due to electrical currents generated by chemical changes in the protoplasm itself ; it is certainly not controlled by

anything approximating in nature to a nervous system. If these conclusions are to be accepted—and strong grounds exist for so doing—our ideas of the independence and physiological autonomy of the individual cell are extended, but it is, of course a question how far this would apply to the individual cells of more complex organisms. When the cell has become loaded with formed products, and its physiological activity is thus at an end, the streaming movements cease, but in some cases they can be revived by the removal by solution of these formed products, a fact which appears very significant. Whilst even this most elaborate research is not in all respects conclusive, Dr. Ewart may be congratulated upon having thrown great additional light upon an obscure subject.—*Brit. Med. Journ.*, May 2, 1903.

Idiosyncrasies.

THE truth of the homely saying that what is one man's meat is another man's poison is by no class of persons better appreciated than by medical practitioners. There are idiosyncrasies which no foresight can allow for; there are, on the other hand, tolerances which may be acquired or which belong to certain stages of existence or to certain races or classes of constitution which can be predicted, such as that for arsenic or opium, such as that for belladonna by children, such as that for malaria by negroes, the immunity against anthrax by Algerian sheep, and that against various toxins by white rabbits as compared with their brown-coloured fellows. Nothing happens, philosophers say, without a reason why it should happen thus rather than otherwise, and there is doubtless a good reason for each of these so-called peculiarities. The colour of white rabbits, for example, it has been suggested, goes along with a constitutional chemistry which accounts for their physiological peculiarities. But for practical purposes in present every-day life it is perhaps even more important to recognize that such differences do exist than to assign a rational explanation for them. Every practitioner is alive to the importance of being on his guard in prescribing active drugs to individual patients. Some exhibit toxic symptoms after ordinary doses of opium, some get tinnitus after small doses of quinine, some are invariably made wretched by minute doses of mercury. Similarly with regard to food, how often some articles of diet disagree with individuals or the same substance with the various members of a family; to not a few eggs have toxic qualities, shellfish and rhubarb cause an urticarial eruption with great constancy in certain

subjects, while strawberries have been known to produce swelling of the face, repeated attacks of faintness and even death. What applies to food applies no less constantly to drink; tea for some people means acute dyspepsia, palpitation, and sleeplessness, and such can often drink coffee with satisfaction; others find that the post-prandial coffee, if unqualified, produces much depression; in some it produces constipation, and has been credited with aggravating hæmorrhoids. The effect of alcoholic beverages varies enormously in different individuals, and instances of intolerance of some particular classes of wines are common. So with tobacco; in the young it is common knowledge that it almost invariably produces toxic effects, in some adults it readily causes cardiac disturbance, in some amblyopia; in later life, too, it again seems to be the rule that it is more toxic than in middle life. No doubt there are good reasons for all spontaneous variation, but the practical lesson in regard to such is that the public should be frankly instructed in the exceeding worth of the acquired knowledge of the peculiarities of individual patients by the family medical attendant—a knowledge which is indeed above price.—*Brit. Med. Journ.*, May 2, 1903.

Power of speech after removal of the Tongue.

Dr. W. H. A. Jacobson, *Surgeon, Guy's Hospital*, records his experience on the subject in the *Practitioner*, for May, thus: Ample power of speech may be retained after complete as well as after partial removal of the organ. Every operating surgeon is familiar with this fact, and it cannot be too widely known, and the well-founded comfort of it clearly put before patients. I will mention one case of my own, one of many, but as clear in its proof as a case can be. It is that of a former army surgeon, aged 63 I had removed the entire tongue. A median scar in the floor of the mouth was all that represented the operation performed. With his artificial teeth in place (without them he was most indistinct) the patient, some few months after the operation was able to speak so distinctly as to give a most interesting account of one of the most striking episodes of the Indian Mutiny. He had been one of the surgeons in the force with which Sir Colin Campbell, afterwards Lord Clyde, relieved the garrison of Lakhnao (*Anglice* Lucknow). While nearing that place, the English met and surrounded, killing some forty of them, two Sepoy regiments who were known to have murdered their

As the artillery ammunition was too valuable to be wasted,

and as hanging would have taken up too much time, the court-martial assembled decided upon putting the mutineers to death in the following way. They were collected in groups of four, two facing in one direction and two in the other, and then a Minie bullet was fired through the four bodies. It would be impossible to have more convincing and indubitable proof of the ability to talk without a tongue. Not only were the different details of those two fearful hours most clearly given—the narrator, who had seen many terrible sights, said that this was the worst of all—the rapidity with which retribution was meted out; the sandy plain; the soldiers with non-commissioned officers moving about under the blazing sun from group to group of waiting dusky figures; the unshaken calm with which the Sepoys met the inevitable death; but more than this, such words as “Unao,” “Bunni Bridge,” familiar to those who have followed the deeds of 1857 and 1858, were perfectly intelligible.

To give another convincing case, Dr. W. T. Bull, of New York, removed the entire tongue, cutting through the base at the level of the hyoid bone and removing enlarged glands. Three years later the patient again entered the hospital for a broken leg. His speech was sufficiently clear not to attract attention; in fact, he was an in-patient two days before it was discovered that he had no tongue. The vowels were good, but g, h, t, m, ch were imperfect. Examination of cases of my own of extensive removal of the tongue has shown that t, d, th, j, g, and s have been very imperfect, if not impossible of pronunciation, and l, r, s, v, z not much better. In explaining the difference in these cases, the remains of muscles embedded in scar-tissue and still partially functional and under control, such as the hyoglossus and genio-hyoglossus, have to be taken into consideration, together with the mobility of the pillars of the fauces and uvula, the length of the soft palate as well as its mobility, and last, but not least, the condition of the teeth, artificial and otherwise.—*Practitioner*, May, 1903.

CLINICAL RECORD.

Indian.

CASES OF PLAGUE.

BY DR. AKSAY KUMAR DATTA, L. M. S.

Case illustrating the Action of *Pyrogen*.

Amulya Dhan Banerji, a young man of a respectable family, in Sukes's Street, of this Town, in March 1903, felt, for a day or two, rather seedy and out of sorts, with feverishness, slight heaviness of head, aching pain all over body, joints and limbs, slight cold and cough, &c., &c. Took light food and against advice, went to office, which was situated in one of the most crowded quarters of the town. As was anticipated, he came back from office with high fever, head-ache, soreness and smarting about inguinal glands, frequent cough, thirst, nausea, constipation, general uneasiness, &c., &c.

He was at first treated allopathically for three days, which simply aggravated his complaints. The fever ranged high, (105.4 F), with head-ache, delirium, bronchitis, vomiting, constipation, excessive thirst, restlessness, insomnia, tympanites, and hardness of hearing. When I saw the patient, he could scarcely recognise me, there was a peculiar fetid odor emanating from his body, often so characteristic of specific fevers of this country. There was swelling of the left inguinal gland and a painful swelling of an œdematous nature extending right round the upper portion of the thigh up to the left lumbar region.

Aconite, Belladonna, Bryonia, Gelsemium, Ipecacuanha, Rhus Tox. and Phosphorus were tried in vain, in fact none of these could produce any desirable impression upon the fever. Without hesitation, I now, prescribed *Pyrogenium* (30), which was administered three times in course of day and night, on the first day only. On the following day I was surprised to notice improvement of all the symptoms and so I ordered the medicine to be given only twice, morning and evening. Every body who watched the case had simply to admire the efficacy of the drug which was indeed marvellous in this case and in course of another three or four days the patient completely recovered without the necessity of any other medicine.

Case illustrating the Action of *Crotalus*.

In March 1902 a middle aged Mahomedan, of the Khoja Community of Bombay, living in Bara-Bazar quarter of this town, got

very ill suddenly. He took at first some *Unani* (Hakimi) medicines and then was allopathically treated for four days, after which he came under my care. Though strong and well-built, he was much reduced and prostrated, the entire body was pale and yellow, the face bloated and jaundiced in appearance, eyes yellow with oozing of blood from the corners, nose stuffed with dried blood-clots, tongue dry, cracked, yellow, with thick fur and red tip and edges, excessive thirst with vomiting of dark clotted blood, abdomen swollen and tympanic, limbs œdematous with two large suppurating swellings in both the inguinal regions, the right one discolored, greenish-blue, with rupture of the superficial skin and oozing of a sort of thin ichorous matter; there were several ecchymosed patches, varying in size on the back and shoulders, pulse thin, compressible and quick, the heart sounds distinct but feeble, the lungs were congested posteriorly, and anteriorly there was diffuse bronchitis with large moist râles almost approaching to rattling in the larger tubes. There was hæmoptysis with bleeding from the gums. The patient was drowsy from fever and exhaustion, with low muttering delirium, urine almost suppressed or scanty and bloody, had diarrhœa before, which was now replaced by dark-colored clots of putrid odor. Temperature in the axilla was 103.6 F. Could scarcely take any nourishment. Without hesitation but without also any hope of bringing back the patient to a better condition from this miserably hopeless state, I prescribed *Crotalus* (30). He had only three doses, that day. Next day a man came to me reporting, contrary to all expectations, that the patient was little better in every respect. He had taken some quantity of iced milk the night previous, in the morning the temperature has come down, he could answer a few questions sensibly, and taken some milk. So I went to see the patient. Really to my astonishment he seemed to me to be in a much better condition than what I saw him in at first. I ordered the same medicine to be repeated every six hours up to three doses in course of day and night. In the evening the temperature rose to 104 F, the two swellings of the inguinal regions burst and lots of pus, blood (clotted) and greenish sloughs came out. I ordered them to be cleansed with a weak solution of carbolic acid and dressed them up with carbolised oil and lint soaked in it. In spite of the accession of fever in the evening the patient did not become so much unconscious, neither was the delirium so marked. He took some nourishment. Next day the fever left him in the morning leaving him quite exhausted and almost done up. I ordered some soup (chicken) to be given with conjee (Barley water) and ten

drops of Spt. Rect. in half an ounce of distilled water, evc. y 3 hours; no medicine. Dressed the abscesses in the same manner as on previous day. Throughout the day he continued feverless, the urine and stools became normal in color, bleeding from eyes, nose and mouth no longer visible, the breath smelt sweeter, breathing less embarrassed, mind more clear. Late at night the fever came on with less violence, the highest temperature being 101.6 F in the axilla. No more medicine, but milk, soup and a few drops of alcohol diluted with water were continued for another couple of days. Then of course he had to be treated for a couple of weeks before he was convalescent with some other medicines, but he was saved by that one medicine *Crotalus*. The healing of the abscesses being tardy required some medicines such as Silicia, Calc. sulph., and Sulphur; the debility and a slow continuous fever yielded to China 3x, and lastly Nux 6x for a few days completed the recovery

Foreign.

CASES ILLUSTRATING THE VALUE OF HOMŒOPATHIC REMEDIES IN SURGICAL DISEASES.

BY DUDLEY WRIGHT, F.R.C.S.

Surgeon, and Surgeon for Diseases of the Throat and Ear to the London Homœopathic Hospital.

CASE I.—Senile prostate; some loss of control of bladder; residual urine; rapid improvement under remedies.—Mr. T., æt. 47 years, seen January 29th, 1902, complains of some difficulty and increased frequency of micturition coming on slowly the last two years. First noticed he could not pass water very freely, the act taking much longer than usual. On lying down at night it also came away involuntarily. Has to get up two or three times at night to pass water. Sexual power diminished past twelve months, and now has no desire at all. Urine occasionally thick with urates. Bowels regular. General health good. No alcohol taken. No arterio-sclerosis nor arcus senilis; knee jerks normal; no signs of tabs. Gets more easily fatigued than he used to. Has been told that he is gouty, but no joint indications, no reeding of nails, and no other signs.

Prostate per rectum not much enlarged; not tender. Some phimosis and balanitis owing to accumulation of smegma. Small meatus urinarius. *After passing all the urine he was able, 5 oz.*

residual were drawn off. No albumin present in urine. Ordered : causticum 2x, mv ter ante cibos ; acid phosph, 1x mv ter post cibos.

Feb. 4th.—Passes water more freely and not so much incontinence at night, and only gets up once in the night ; only 3 oz residual urine. Continue medicines.

Feb. 13th.—Much better ; 2 oz. *residual.* Continue medicines.

Feb. 27th.—Still improving. Only twice passed a few drops unconsciously. Has gone two nights without being disturbed by having to pass urine after getting into bed, and on the other nights he has only passed his water because he was awake. Slight return of sexual desire. Only $6\frac{1}{2}$ drachms of residual urine drawn off. Continue acid phosph after meals and nux vomica 3x, mv three times before meals.

March 20th.—Progressing well. *Residual urine* 6 drachms.

After this I saw the patient three more times, during which he steadily improved as regards general strength and comfort, but the residual urine never got below 6 drachms. This quantity, however, one could afford to neglect, so that treatment was discontinued at the end of April.

I think this case shows the value of causticum in weakened and paralytic condition of the bladder neck. In this patient it is probable that the sphincter of the bladder was chiefly at fault, though there may have been a corresponding weakness of the detrusor urinae muscle. Be this as it may, weakness of the muscular structures of the bladder should always suggest causticum, and where we have no central nerve lesion to account for the trouble, it is likely to be of service. As regards bladder troubles due to spinal degeneration, the prospect of affording relief by remedies is not very brilliant, but I can recall one case of acute myelitis with paraplegia and bladder paralysis, where conium was followed by immediate and slowly progressing improvement.

Another remedy which might possibly have suggested itself in the above case is picric acid or ferrum picratum. Needless to say this drug is not suited to every case of senile prostate, and from experience I would be inclined to leave it out of consideration when there is an absence of symptoms pointing to congestion and irritation of the organ, and especially if there is loss of sexual power. Indeed, the more the congestion and sexual irritation, the more would picric acid appear to be indicated.

CASE II.—Prostatic congestion mainly produced by injudicious diet, and relieved by attention to this and indicated remedies.—Mr. J. C., 46 years, strong, healthy aspect, complaining of pain in back, and gnawing pain in rectum and across loins, worse on right side.

History.—Two and a half years ago on going to stool had to strain a great deal. This seemed to bring on a urethral discharge. Received treatment for this, taking alkalies ordered by a medical man, but no relief followed. The discharge was increased by drinking port wine. He then saw three genito-urinary specialists in succession, who gave varying opinions and treatment. Finally he went to Carlsbad, after which he lost the discharge, but the grinding

pain in the rectum and across the loins persisted. Sexual desire increased. Is a very free liver; drinks champagne and port for dinner.

He finds riding on horseback relieves the pain a great deal, especially after the first week or so. Just at first it rather increases the pain. Much trouble with flatulence. This is never passed upwards, but always in the downward direction. Pulse, high tension.

Examination: prostate slightly enlarged and markedly tender per rectum; genitalia appear normal; stomach much dilated. Patient very well nourished, but dilated venules in many parts of body and face. Cannot lie on left side, as it brings on palpitation.

Aug. 8th.—Ordered lycopodium 3x, t.d.s., anacardium lx, mv, nocte manequa; put on a diet free from potatoes and bread; toast allowed. Alcohol in strict moderation, likewise tobacco. Testicles to be suspended.

Aug 19th.—Better in every way. No pain in rectum or back, now, and prostate much less tender. Taking the diet easily and digesting his food well, and flatulence much decreased. Continue.

Aug. 28th.—Improvement maintained. To make the history of this case short I may say that I have since seen this patient on an average every four or six months, and that each time he returns because of a relapse owing to some indiscretions in diet. Lycopodium continues to be his sheet anchor with occasional doses of podophyllin 6 and ferrum picratum 3x.

I have always looked upon his case as one of auto-intoxication from the gastro-intestinal tract, the stress of the poison falling upon the genito-urinary apparatus. I think it is to this that we may attribute the improvement in the prostatic condition brought about by horse riding, for it is not usual for patients with congested prostate to find this form of exercise benefits them. It is possible that the riding improved the action of the stomach and liver, and better enabled the latter organ to carry on its toxin-destroying function. The presence of the dilated vessels in his case is also interesting, for I have come to associate this condition with auto-toxis, when not obviously due to excessive alcohol ingestion.

The flatulent distension is to some extent an index of the autotoxis, being due to the fermentation of the food taken; and the products of these fermentations have a paralysing action on the venous coats, and lead eventually to permanent dilatation of the venules. This is shown particularly on the *alae nasi* and at their insertion in the cheeks. In such cases fermentable foods should be avoided, and potatoes, bread, and pastry are the most important articles of diet to forbid.

Of drugs, lycopodium and berberis are the first two I thought of in the above case, and I chose lycopodium because of the marked flatulence, and I had no reason to be dissatisfied with the result of its use. At the same time berberis is a very useful remedy in all cases where there is much pain in the back, and there are liver and rectal symptoms as well as the prostatic.—*Monthly Homoeopathic Review*, May 1903.

gleanings from Contemporary Literature.

WHERE MEMORY SLEEPS.

*Delivered at the Woodford Cottage Hospital to the South Essex Section of
the Metropolitan Counties Branch of the British Medical Association
on April 16th, 1903.*

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Gentlemen,—Memory sleeps in so many ways—bad, good, interestingly, and otherwise—in all conditions of life that it is difficult to make intelligible to other minds how the question is in touch with things that more especially concern us, or rather perhaps what has determined the selection of the few topics out of so many with which a paper of this kind might deal. The passages of thought are strange indeed sometimes !

“ I breathed a song into the air,
It fell to earth I knew not where ;
For who has sight so keen and strong
That it can follow the flight of a song.”

And what is true of song is also true of thought, so let this explain my choice of a subject.

I was wandering during my last holiday in one of the delightful chimes that abound in the neighbourhood of Mentene with this stanza of Newbolt in my head—

“ Ye that have heard the whispering dead
In every wind that creeps,
Or felt the stir that strains the lead
Beneath the mounded heaps,
Tread softly, ah ! more softly tread
Where memory sleeps—
Where memory sleeps”—

when suddenly there rushed into my mind a number of ideas of more prosaic kind, not altogether in harmony with anything that the distinguished poet intended to suggest but which took my fancy. And one of these very prosaic notions which had occupied my thoughts of late was the matter of our mistakes. Memory sleeps over our mistakes ; we are wide-awake over our successes. How the knowledge of medicine would be enhanced if only we could array before the mind in one condensed intelligible picture all the mistakes that are made in the treatment of disease. If only we could keep a clear memory of all the mistakes we have each of us made ourselves. For we all of us do make mistakes.

I am always wishing that our great operating surgeons would each of them do for their operations what was done for ovariectomy in the early days of that operation, that is to say, publish all their cases seriatim. There would be no need perhaps to do exactly that in the present day, but there is need that those of large experience should put on record at least every one of their mistakes. Take the case of appendicitis, for example—a disease that is the talk of every one—I am quite sure that not half the consideration is given to its diagnosis that there should be; it is often jumped at as if there could not possibly be any other, whereas it is certain that the diagnosis of this complaint is often most difficult and indeed sometimes impossible. And there are a number of cases where an operation for it has been undertaken and it has not been present.

Let me record what I know. I can recall the case of a lady who was operated on very much at my instigation for abdominal pains that seemed more like those of appendicitis than of anything else. The appendix was found long and silky and not, in my opinion, showing anything adequate to explain the symptoms. I remember another, for the operation for which also, I was responsible, of a precisely similar character and also another where a long appendix of attenuated calibre was removed and a year later an ovarian tumour was removed from the same side, which I have no doubt was the cause of the whole illness and that the appendix was quite innocent of the crimes laid against it. If we had been a little less easily satisfied at the time of the first operation and had searched about I have no doubt that we should have found the ovarian cyst, still of small dimensions, and so have saved the patient the second operation. I have seen a case that to my mind had all the appearance of a case of gall-stones from the occurrence of repeated attacks of jaundice, yet the surgeon with whom we took counsel, and who had seen more of the case than I had, considered it probably a case of disease of the appendix and that if asked to operate he should explore in that part. He did so and found the peritoneum full of bile and the disease an ulcerated gall-bladder. I know of another case where a lady was seized with symptoms of supposed appendicitis and was promptly operated upon, but within a very few days all her old symptoms returned and before long she passed a renal calculus. I have known several cases of renal calculus or gravel called appendicitis and appendicitis supposed to be gravel. I have known a case of perforating gastric ulcer to simulate appendicitis and only the other day I saw a case that turned out to be probably appendicitis that I was by no means sure was not an intussusception. One can, indeed, hardly reiterate too often that the difficulty is great in coming to any positive opinion as to the exact nature of aches in the abdomen and this even by the most experienced men.

And this matter of mistakes is a vitally important one. The advice we ought to give depends so much upon it. Take prognosis of cases and how much there is still that we want to know and that we might know if memory slept a little less. Take the very instance of appendicitis.

The risk of an operation if performed at the right time in a relapsing case is said to be 1 or 3 per cent.—any how it is something very small. But then an average of this kind rules out all the cases where there has been a mistake in diagnosis and it rules out all exceptional cases, which is neither fair to the patient from one point of view nor to surgery from another. The patient or his adviser wants to know, taking appendicitis as it is now and as it was in former times—that is, when it is operated upon now when it was not—Do more recover now than then or did more recover then than now? We need to know, not only the percentage of deaths in 100 selected cases, but the percentage in all cases bad and good—those rightly interpreted and those mistaken. The average is of no help to me if when acting upon it I advise an operation in a young man and he dies suddenly three or four days afterwards from pulmonary embolism. This has happened within my own knowledge once and I have heard of another case. The patient or his adviser needs to know too, in what number of cases the after-result is one of discomfort, because in these days when one hears so much of the evil effects of adhesions one would suppose that an operation done in mistake upon a healthy appendix might initiate a perpetual discomfort afterwards. And, on the other hand, our want of information is not fair to the progress of surgery. Not many months ago I had to give an opinion upon this case: a boy whom I knew to have had a former attack of appendicitis was taken with another. A surgeon was called in who proposed to operate immediately, as is the method, I believe, now adopted very largely in America. Now this particular case was a mild one, the boy was away from home, and there was a considerable inconvenience attached to an immediate operation of this kind. Therefore I was called in having seen the child before, and I expect because it was hoped that I should have a moderating influence. And, as a fact I was in favour of waiting till the boy could be moved home, as it appeared clear that the acute symptoms were all subsiding. But we want more information for we are in great difficulty in advising on these cases. There are a certain number of fulminating cases where the appendix is gangrenous, and yet in the earliest stages there are or there need be no more serious symptoms than are to be found in a mild case, one likely to do well; and yet, if an operation be not done at once—and at once means even before you have quite time to be sure of your diagnosis—acute septic symptoms come on and nothing can save the patient. There are a still larger number of cases where the symptoms are quite mild and yet the appendix is on the point of discharging itself of foul material into the peritoneal cavity; and these, again, if operated upon at once, would probably show quite a small percentage of risk, while if left a very few hours there would certainly be a very high percentage of deaths. And I must confess, having seen a fair number of this class of cases, that I am strongly inclined to think that immediate operation for all cases is the only way out of the difficulty that they present to us and the line of practice that ought to be adopted if only we could have before

us the complete evidence. But we must first know how often the diagnosis is wrong—that the public, for one reason, may realise that mistakes are inevitable; we must know, too, the risk to life, and those of discomfort, which such a mistake may entail, for there are considerable risks as regards the continuance of pain and instability of bowel at any rate; we ought also to know (if it be possible, but I fear it is not) the respective risks from large comparable series of cases treated by operation and without it.

In the matter of risks, too, and of prognosis after operations it is a question whether we always consider the patient enough. Think how dear life is to *you* and put yourself into his shoes. Take such a case as this that occurred to me not so very long ago: a young man with a young wife and family, with a disease that must eventually be fatal, and yet is removeable now at great risk but with some hope of cure. Surgery with its enthusiasm—progressive surgery is always young—says that it ought to be removed and that now is the only time. The real risks are minimised or forgotten and the patient is half urged through his relatives to undergo the chance. The onlooker sees chiefly the risk and thinks that it would be better for the sufferer to live his few months certain with those who are near and dear to him than to accept what is too often the remotest chance—and I am inclined to think that it is too often the remotest chance, for memory sleeps, in such cases, in a measure, and the disease is considered and the patient is forgotten. The class of cases that I have especially in mind are removals of portions of the intestinal tract for tumours, mostly, of course, of malignant nature. I suspect that in these if we knew the actual facts that the deaths are more than the successes, but the successes all come to the fore and are very striking, the bad results do not appear. And in thus being put out of sight forgotten, or slept over, although it may be conducive to the success of the surgery of the future, I doubt if the individual of the present is treated quite fairly. In this question is involved the frequent complaint of the operator in fatal cases that he had no chance—he was not called in time. But we must not forget that *in time* nevertheless often means for the *individual* that he dies a few weeks or months earlier than he would have done if he had been left alone. It may almost be said, I think, that the physician regards life from a different standpoint to the surgeon. Surgery must be ever pressing toward the mark for the prize of its high calling—the cure of disease and discomfort by operation—and unless its memory of failure or of very partial success were to sleep its onward progress towards its goal might be almost inappreciable. I remember years ago a boy being shown to me as a success in whom an endeavour had been made to obliterate the cavity of a long discharging empyema. But the chief result that was evident to my vision was that whereas there was before, perhaps, one large sinus, now there were six or seven little ones. I cannot think that I could ever have found myself in the position of claiming such a result as a success, but to the surgeon the

few sinuses were but as fleabites compared with the advantage of the falling in of the chest which had been produced by the operation.

But I do not forget that medicine makes its mistakes also. The mistakes of surgery are more obtrusive; those of medicine are less easy to be sure of and to detect. But I do not doubt that the case of "I and my four daughters who died of drinking Cheltenham waters" may be admitted as typifying the not infrequent mistakes of medicine. That many of them are no less difficult to be sure of is sufficiently and lamentably illustrated by the recent case in the criminal courts where a man poisoned three persons by antimony and even the third time was not so very far off escaping detection. Think, too, of the arsenical beer poisoning, in which instance, unless the cases had occurred in numbers, it may be doubted if we should have discovered them as such. They would all have gone down as cases of alcoholic paralysis, which has been so ticketed for years, and now it may even be possible that there is no such disease.

And this brings me to another class of cases of poisoning where memory may be said to sleep, for I suppose that more persons when they are ill are killed by kindness and anxiety on their behalf even than by drugs. A man no sooner becomes dreadfully ill than all the efforts of relatives and medical attendant are devoted to keeping him up. Strong liquid food is poured in, alcohol is poured in, and the ship is gradually but surely sunk. There must be many and many a valuable life thus put out of existence, loaded up with meat extracts and alcohol, till the blood which is the life will support the body no longer. You have any one of you often seen, if you wake your memory, the big man or woman very ill with bronchitis or heart disease thus loaded up with food and brandy, and where, if they had only been resolutely starved on water only, they might have had a fair chance of a longer life. But, alas, so deeply ingrained is this tendency to stuff the sick man lest he should sink that I defy anyone to fight effectually against that mighty trio, the patient, the relative, and your own forgetfulness of the belief, nay knowledge, that is in you. I have often used the illustration before—and I will do so again because it represents one of the most important facts in the treatment of disease—of the pig that became imprisoned in the Dover cliff with absolutely no food save a moist atmosphere for its sustenance. It went in a fat pig of 160 pounds and came out after 160 days alive but a lean pig of 49 pounds. Think of the number of sick people to whom, or for whom, that offers a valuable lesson as to treatment. The bulky fat man or woman with small congested and bronchitic lungs and kidney and liver congested also—I often long to put that patient on a very restricted diet of almost water. But there are very few patients, and fewer still of the friends, who have sufficient faith in a rigorous abstinence of this sort to allow one to carry it out. You can carry out a very restricted diet for aneurysm, in which case the patient is not obviously so seriously ill. You can carry it out under the name of the "Salisbury treatment," when men or women find their size inconvenient, but try severely to restrict food when anyone

is very ill with such conditions as I have mentioned and it is a very different matter.

I spoke a minute ago of our forgetfulness of the knowledge that is in us. Let me say a word more on that head. We forget in a wide sense our own experience. For example, I often see a case that I think needs opium but where that drug has been withheld because of a supposed or actual disease of the kidney. There are few ideas more prevalent amongst us than that it is dangerous to give opium in cases of renal disease. That doctrine once, I suppose, crept out of the mouth, or out of a book, of some teacher of repute and has been handed on and on with increasing volume, till to-day it has become a prevalent belief. I have, I believe, heard it myself out of the mouth of a lecturer and when I have accompanied him to the wards I have found his patients taking, with renal dropsy, five-grain doses of Dover's powder every four hours. His memory slept. Many of you, I doubt not withhold opium where you would otherwise have given it because there is some albumin in the urine and yet if you think back you will remember that you have often been obliged to have recourse to it and when you have, never, so far as you can remember, with any adverse result. I ask myself whether I have ever seen any harm come of the use of the drug in such circumstances and all I have to say is that years ago in a case of granular kidney, where the patient was very seriously ill, I did give a dose of morphia by subcutaneous injection from which he never woke; but I wish my memory had slept over that case, for I am quite convinced that its recollection has often unjustly hindered my recommending the use of morphia when from my heart of hearts I believed that the drug administered in this way was the only one likely to relieve the patient's sufferings. At any rate, there is no doubt that morphia carefully administered by the mouth in these distressing cases of cardiac asthma, in renal disease, is not dangerous; and, indeed, they can often enough only be relieved by the same drug administered subcutaneously. The only cases in which I am afraid to give opium, and in which I feel sure there is a very real danger, are where the blood is dammed back in the lungs in chronic bronchitis or an extensive pleuritic effusion. This does not include an ordinary pneumonia, where, as you well know, opium is often a most valuable drug.

And this sleeping memory is oftentimes very unfortunate for our diagnosis. In thus making us forget what we have seen we too often miss the broad points of a case which, if seized, would point unmistakably to a correct opinion. Thus it is, too, that we are inclined to pin our faith too absolutely to the latest achievement of research and are again very likely to go wrong altogether. I have seen striking examples of this at one time and another. Within the last year, for example, it has twice occurred to me to see cases where the presence of Widal's reaction had made the diagnosis lean in the direction of typhoid fever, where I venture to think that without that test the prominent facts were all in another direction. In each case there was an intra-peritoneal abscess. Diagnosis is never a ques-

tion of one symptom, it is always a balance of probabilities and it needs to be remembered that often enough the balance is exceedingly delicate. Still, I think that mistakes would be fewer were we more to content ourselves with gathering up the salient features of a case instead of allowing ourselves to be diverted by interesting subtleties.

Then memory sleeps to-day—alas too often—over the great facts of heredity and environment. In what single disease, as we know it to-day, can we say that the sway of heredity is undisputed as it once was? Take cancer—and its occurrence is attributed to the Thames—or I suppose some other river—valley, to a particular house or houses, or to some hypothetical germ which we are trying hard to find and shall probably before long succeed in demonstrating. For tubercle we have its germ and its cure—the open air. There was a time when the insurance offices loaded you heavily for a consumptive father, and refused you altogether for a weak-chested mother. They surely must relax their penalties now. Acute rheumatism is due to a germ; other forms of arthritis also; and even gout, by being an arthritis, lies under a suspicion. All these diseases were supposed to be strongly hereditary, but now—oh dear no! that is quite out of date. But a poor fellow comes into my room with bolting eyes, panting breath, and a heart that has run amuck—tachycardia we call it and attempt to treat it as of course we must do—but tachycardia is not his *disease*: it is only a symptom. His *disease* is the degeneracy or weakness of the nervous system with which he started in life, combined with the fact that the great world has used him up in its relentless efforts to add to her gains. This man's brother has a slow creeping paralysis of many years' duration and *he* has Graves's disease. Yes, my friends, bear this in mind, that the world will use you up if you let it do so. And when you die before your time it will say—Ah! poor fellow, it is a pity he worked so hard. And that is all the thanks you will get, and it is a poor sort of bread-and-butter for your wife and children. You had better, everyone of you, take a good holiday every year and enjoy its inspirations—for they are many—while you have the opportunity, and what is more the desire, and keep your health. For the world is moved by forces that it knows not of and as such is instinctively selfish, and it will use you for its own purposes and grind you wonderfully small in its everlasting mills, and that without the smallest ultimate advantage to you.

Here is another case that comes before me as I write of a similar kind and which teaches the same lesson. An officer in the army ascribes all his ailments to overwork in preparing for an examination. At any rate he never afterwards felt well and when summoned to go abroad in the Boer war he was so limp that he could hardly put one foot before the other. Yet when in it he bore himself so that his enemies had a care for him and he seems to have obtained both health and credit. But as soon as he came home, expecting to remain well for the future, he speedily fell back into his old limpness, in which he suffers badly from depression; his bowels became obstinately constipated; he could not think; he could not

remember ; he could not even write his letters sometimes, for his hand seemed to forget its cunning. He attributed all his woes to his constipation and his liver—and there are those, it must be admitted, who would entirely agree with him. Unfortunately, I am not one of them, else haply I might believe that a little medicine might put him all right. But I know otherwise. I know that his father was like him, suffering similarly with depression and like his son of a worrying and anxious temperament. I know, also, that I have to subvert a deeply set characteristic, to cure which it is necessary for him to let the present be as nought, while he sets himself to build him a bridge of hope out of the relics of the well-nigh forgotten past. No one who has gone through the experience will think this an easy treatment, for it discloses to the anxious mind precipices and possibilities on each side of it that may well make even a stout heart quail and these hearts are for the moment not stout. And yet, if the memory does not too soundly sleep, it is clear since, to take the particular case, the man went through an arduous campaign there can be no disease and that there can be nothing that in the future he may not outstrip and disentangle himself of. But memory sleeps, and men make too much of these mental and nervous aberrations ; they think they are important when indeed they mean little, for I take it that they are often no more than the equivalent of the twinge of pain in a peripheral nerve or the more prolonged neuralgia of some one or other of the organs about which one would never think of taking a hopeless or even a gloomy view.

How often people are troubled about their memory when there is in truth little fault to find. I suppose there is no commoner cause than this for seeking the advice of a medical man—"My memory is so bad," and this is supposed to mean that the brain is going. The memory sleeps. It may not be a very convenient recreation but it is not one of ominous import. For in the present day with the multiplicity of detail that attempts to find an entrance the brain of man tends to become somnambulistic. As you well know, the somnambulists, or some of them, although remembering nothing of their somnambulistic actions or observations, will nevertheless sometimes give certain evidence that although they cannot recall them they are yet within the register of the brain. A case of this kind is narrated by the late Dr. William Carpenter in his "Mental Physiology." A man dreamed a dream with certain peculiar conditions of crawling lizards as its subject for the origination of which no explanation was forthcoming, and he was telling it at the breakfast-table when he came downstairs, when it was pointed out to him that it had obviously been conditioned by the clock upon the mantelpiece which he could not remember that he had ever seen. But of course he had taken it in when he had been talking the night before, and there it was in his subliminal consciousness, all unknown to his conscious self. Now this condition is quite a common one nowadays. One's brain being intently occupied in one direction, some fact in quite a different direction is told and apparently intelligently accepted. And yet thereafter there is not the slightest recol-

lection of the fact. The fact is probably there all the same and your mere forgetfulness of it is no matter of consequence. A stronger case than that might be given of the man who, writing many letters in the day and keeping no register of them, may have written a particular letter, even going into a fair number of details, and yet afterwards be quite uncertain whether he has written the letter, or no.

Another case of a sleeping memory that occurs to me is the exceedingly unpleasant one of the sudden cessation of thought that occasionally comes to some in the very middle of making a speech or extempore address. Suddenly in the full flow of thought a blank comes and they know not what of the future, while memory and thought take a nap. How common it is, too, that after sleep memory wakes behind the man and for some seconds he cannot tell where he is and, more, could not speak of any fact of his daily life save only that he exists. Uncanny, indeed, are many of the sudden jolts and stoppages in the even flow of nervous action, and so is the sudden intermission of the heart to some people, but they are momentary and unimportant if one can only believe it. They are well typified by the sudden jolts in your electric circuits which restore themselves almost as soon as they occur.

The brain is subject to the same conditions and laws as other organs ; only its expressions of illness vary and much of what is pain in other parts becomes a disturbed sensation of other sort—disordered thought, disordered sense of this or that order. I saw a lady only this morning who after a bad migraine—it is truly a very bad one—perceives a bad smell, which is clearly a brain smell, not a nose smell—that is, it is generated in the centre and not at the periphery. If we could but in all these mental phases remember this, that brain sickness must express itself in terms of brain function, intellectual, subliminal, of the special sense centres, &c., as the case may be, how much misery would be saved, how much more rational would our advice be, how much more successful would the result in all probability turn out. Why should a man with a dull head or a sensation of worms crawling about inside his head, or with a memory worse than it was of yore, and so on, think that he is losing his reason any more than a man with his foot gone to sleep thinks that his limb is on the point of mortifying ? Why should a man labouring under a cloud of the blues give himself up for lost ? Why should he fail to see that the illnesses in the liver, the heart, and the kidney, any of which he is prone to take very lightly, must imply a series of brain maladies of more or less similar origin and which, equally with those of the subordinate viscera, will certainly have that natural tendency towards recovery that in those leads us to expect it. But memory sleeps and the brain, which keeps all the rest in order, fails in this : that when affected even with a trivial and passing malady it sees nothing but insanity.

Memory sleeps, it does not die, and thus it becomes curiously active at unwonted times. Its nearest approach to death, perhaps, is in old age or disease. It is often said in such circumstances that the memory

for recent events goes while that for distant ones is quite clear. The meaning of this is, I think, quite obvious—viz., that all mental and nervous functions tend to become more or less automatic in the using; thus in early life when the full attention is given to the subject under consideration memory thereafter often *only* sleeps. But in the automatic operations of old age memory perhaps hardly has birth and so it may be said to be dead for recent events. Is good memory more than the power of intense concentration, possibly combined with an endowment of sensitiveness of reaction, on the part of the nerve cell or film?

In relation to memory and its lapses let me next say something about the histories of cases. I have often thought, and still more often have had it said to me, How stupid people are in giving details of the history of their illnesses, and I do not deny that there are some or no histories to be quite *unable* to answer a straight question. That is a mental infirmity that needs to be taken as found and made the best of, but I do not mean that. I am thinking of the case where one has been questioning round some important pre-existing disease, such, for instance, as rheumatic fever, not wishing to ask a leading question, and has been able to elicit nothing. And then perhaps just as the interview is over there stumbles out as it were by accident just the very confirmation that was sought for with an "Oh, I did not think you meant that." Now histories, of this kind are in great measure natural and unavoidable. You cannot recall pain. If you had had a leg amputated you could remember the fact, and that you passed through a bad time, but I do not think that there is any active power to recall any living sense of pain, thank God, for memory sleeps. And what is true of a crucial case of that kind is true also to a greater extent in the lesser pains of illness and the like, for no doubt the remembrance of them is apparently blotted out, and memory sleeps. So that I believe it to be true to say that it is quite impossible in after years to convey any minutely accurate account of a bygone illness.

And as regards the actual recollection of pleasure a like assertion may be made, for no one can call up again the actual sensation of present delight that existed upon any given occasion. But there is this difference, that whereas pain is constantly thrust into the background of our consciousness, and being out of sight is out of mind, and therefore any dread is quickly gone; times of pleasure are kept prominently before one, we long for their recurrence, we hope and strive towards the same end, and thus the memory of the happy past does not sleep altogether though it passes from the actual into a dream of pleasure.

A dream! Ah! Yes. What is a dream? How intensely interesting it is with these apparently insoluble psychical problems to peer into the breaking dawn with each new lens of physical science, for no discovery is as interesting for *itself* as it is for the glimpses which it gives into the just opening future. How instinct some of our latest advances are with the idea that one by one we are occupying the outposts that surround the fortress that contains the mystery of life.

A dream has often been described as a picture, and one seems to see in the present-day perfection of photography a possible support for this suggestion of their nature. I see a storehouse of films taken by instantaneous exposure and on a natural you-press-the-button-and-we-do-the-rest principle (photography in this has learnt from life), exposure and development, good, bad, and indifferent, are done all at once. The storage is also automatic and the arrangement is such that all are under the influence of electric illumination by means of subordinate stations and switches, and these, again, are continually more or less under the control of orderly thought and will. Sleep comes on—in other words, the head man at the central bureau goes off duty—the subliminal consciousness comes into uncontrolled play, the switches go wrong or remain in abeyance or perhaps become less perfectly isolated under the lessened tension of sleep, cross circuits come into play, and all sorts of irregular currents come into existence, and then there arise the extraordinarily vivid fantasies and kaleidoscopic visions that we call dreams. When awake the man directs his thought in accord with the stimulus to eye and ear or other special sense immediately in being, and thus his thought is orderly, or *directed* rather. Each nerve cell would thus be a film or picture which, like the body as a whole, while altering still remains the same. And one may suppose that while some films feebly exposed may disappear, or possibly take on some fresh impression, films once well impressed remained unaltered. Photography may be described as a synthetic production of visual memory, and in that light what a wonderfully interesting instrument is the gramophone: a parallel attempt at an auditory memory, and indeed so good is the counterfeit that one is almost in danger of forgetting that although we have got thus far towards what may possibly be the mechanism of the storage of memories there is still the crowning mystery to be solved of setting the button in motion at will. Do you not believe that ere long we shall be able to transmute electrical into nervous energy? I do. It is indeed said that the two currents are possessed of different properties and therefore are not the same. And this may well be; nevertheless, they have more striking likeness than difference and one may, I think, venture to hope, notwithstanding that electricity is a sadly disappointing agent, that the power of converting the one into the other is so far away. And then what could not one do in the treatment of disease or, perhaps, to put it better, in the *management* of life. I carry my mind forward and fancy I see supply companies, or rather in that day a paternal Government, distributing over the land the various modifications of this fluid energy. No more sluggish livers and blue pill then. Why heaven upon earth would have come. A dear old medical friend of mine would then have a good case who said to his new coachman when engaging him, "Now, accidents I understand; but disease, off you go." The humour of it was irresistible, but it sounds rather like King Khammurabi's law which punished the surgeon for an unsuccessful operation by cutting off his hands. And as regards this relation between these two wonderful forces of nature your mind

cannot fail to have been greatly interested by the late marvellous discoveries concerning wireless telegraphy. Since the first experiments were made now some years ago—I believe by one of our own countrymen (P. Coe)—we have surely approached within a distance of realisation of the conception that there may be some, similar power of communication between *individuals* far apart such as the believers in telepathy have long contended for. Think of M. Marconi's latest achievements in wireless telegraphy. He has, so to speak, brought the impalpable ether to his heel and spanned 5000 miles of ocean by utilising cords which though invisible have been of old ready to be used. An instrument here and another 5000 miles away. The how is almost past conception, but there is the fact, and is it possible to recognise it without feeling that just beyond our present vision there may lie that power of transference of thought from me to you, from you to me, that is at present shuttlecocked between coincidence and orderly effect? We are all of us electrical machines of sorts, and we all no doubt send forth currents into the ether surrounding us. And they fly to earth it is equally certain we know not at present where, but in the future, even though it be dim as yet, perhaps with carefully selected complementary instruments—you being a complement to me—and of which complements we shall in the future know more about and appraise more readily, there is no extreme visionariness in the belief that we may some day go many points better than our present means of communication between distant friends far away and that there may be some real transference of thought from individual to individual irrespective of contact and space. And if it be said that this haphazard concurrence of a human magnetism, or whatever it be, like this between two individuals is a very different thing from the carefully elaborated contrivances of M. Marconi to overcome special obstacles towards a particular end, I should reply that, although this is true, one may well remember that, when we know more, it will probably be found that there is some simple law governing the whole matter of aerial currents, that will as knowledge comes do away with all such elaboration, nature working, as far as we know, on the principle of simplicity.

But then when I think on this wise I remember the experience of anaesthetics. Has anyone of you ever taken an anaesthetic and followed himself on to the very brink of insensibility, and then picked himself up again on the opposite side of regained consciousness, within as it were a moment of time? If you have, you have surely caught yourself wishing that you could but have followed yourself on through that space—your body mute but the spirit untrammelled in the acuteness of its perceptions of that just beyond—for then would you not have known what death was, would you not have got a glimpse into that unknown land where time shall be no longer? It all seemed so disappointingly possible, and yet it was not. Perhaps wireless telegraphy in its suggestion of containing the germ of an explanation of the physical basis of thought transference is as disappointing. Who can tell?

One other aspect of my subject occurs to me of even less practical bearing and yet it is one that I would not leave untouched, for it is perhaps more at one with the spirit of the stanza that has served me for a text. That "tread softly" breaches a reverent attitude of mind; let it so stand towards the experience of which I have spoken. I was once told—and having been a somewhat copious note-taker of such cases as have come before me I heard it with dismay—that I should find my notes of little use to *myself* and that they would be of none at all to those who should come after me. And, alas, I believe that my friend had some reason for his opinion, for many a time I have found a case to be full of interest at the moment of investigation and full of important suggestions on what seemed at the time to be promising lines of inquiry which, when I came back to it after a time, was absolutely lifeless. I could not record the *spirit* of the thing any more than that the painter can depict the *soul* that animates the husk of man. You can record a unique case but you cannot record the points that are special to each one of a common group of cases. And you cannot because: firstly, they will probably strike you if at all, only once and for a moment and no more; and then if you could they would convey little meaning to other minds, for these relationships and affinities between one disease and another, these flashes of thought direct from one thing to perhaps another that has no obvious feature in common, are of the nature of intuitions—inexplicable, perhaps not even true for the general, but instructive and very real for the individual; and sometimes, no doubt, containing a suggestion, if it could be followed up, of possibly some important observation. And I suspect that when one talks of experience this is the essence of its value: a possession that, if time does not fail, may shoot upwards with ever-increasing insight and concentration of vision until the top of it reaches to heaven. But, alas, time does mostly fail, and potential fruition melts away, its promise unfulfilled. Is it not true that each one of the sages of medicine—and I count as such all those who have lived their, say, 60 years of busy and observant life—is filled with nascent knowledge of this kind and that as he passes into the unknown by far the larger part of his knowledge goes with him? And that "tread softly" does but express the intense longing everyone must feel that it were possible to distil the essence and to prevent the waste (is it waste?) of that memory that sleeps. And we may well remember that each one of us possesses an experience that is both individual and unique, and that there is not one of us that has not within him plenty of valuable material which if he could only render it up, might advance materially the general stock of knowledge, and accelerate the progress of medicine in a measure past our dreaming.

Where memory sleeps! Tread softly, tread reverently, tread inquiringly, beside this still mysterious attribute of life, and when, as it must and does, its silent influence stirs within these walls, built and furnished, as I understand, by the generosity of one who happily still lives amongst you,

be sure of this : it blesses him that gave, the sick who are the recipients of skill and comfort they might not otherwise have obtained, and you who work herein.—*Lancet*, May 9, 1903.

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CHOLERA.

IV.

(Continued from last Number, p. 185)

ETIOLOGY CONCLUDED.

Admitting as we have done that the comma bacillus of Koch is one of the principal causes of cholera, the question has yet to be settled, in what way does it produce the disease? This is the question which has to be answered for all diseases of bacterial origin. We have seen that as a general rule all bacteria secrete poisons in the culture medium, or rather the culture media become charged with substances as a result of their vital activity or metabolism, substances which are more or less poisonous. We have seen that some bacteria, not necessarily pathogenic, are poisonous in themselves, having poisons in their protoplasm, that is, within the bacterial cell. This also must be a result of their vital activity, for they draw their nourishment from the culture medium, which itself is harmless or non-poisonous. And therefore it must be that part of this pabulum must be converted by the anabolic or katabolic process into a toxic substance. Now the fact that all pathogenic bacteria have not intracellular poison, shows that the production of disease by

them must be due to the toxins or poisons they produce in the medium they live, and not by their poisonous properties, as they have none. What of the pathogenic bacteria, such as the comma bacillus, which produce both intra- and extra-cellular poisons?

Here is this fact in connection with the comma bacillus, namely, that it is found only in the intestines, rarely in the stomach, and never in the tissues, organs, and blood. Hence the disease must be due either to the poisons or toxins generated in the intestinal contents, or to the poisons in the microbes themselves, or to both these combined. If it is due to the microbes themselves then they must act as local irritants of the mucous membrane of the intestines. If it is due to the toxins then there may be either local irritation by their local action or general intoxication by their absorption into the system, or by both kinds of action. It is not easy to determine which. Koch maintains that the disease is an intoxication due to the absorption into the blood of the extra-cellular poison elaborated by the bacilli within the intestine. The fact that the primary lesion in cholera is confined to the alimentary canal, the other lesions being only its secondary consequences, lends probability to the surmise that the whole action is local. In other words, however violent and rapid its symptoms, cholera is a local and not a septicæmic disease.

The results of the hypodermic injection of the comma bacilli are helpful to some extent in the determination of this question. These results are severe local irritation in the shape of œdema, and even necrosis and ulceration at the seat of the injection, and a smart febrile movement. The former shows that the bacillus and its toxin must be violent irritants, and the latter that the toxin is readily absorbed and produces a toxæmia in the shape of severe fever. Now as fever is a later and not a constant sequela of cholera, when the bacilli have ceased to exist in the intestines, we may legitimately infer that the choleraic process set up by the bacilli is originally and primarily one of peculiar irritation of the mucous membrane of the intestines and their ganglionic governing nerves. The discovery by Brieger of two toxins as peculiar to the comma bacillus, one of which produces cramps and muscular tremors, the other lowers the action of the heart and the temperature, and produces diarrhœa, if confirmed, would seem to negative part of the above inference and to point

to a general toxæmia. But the discovery has not been confirmed, and the toxins are looked upon as artifacts or artificial products resulting from the methods adopted in isolating them.

According to Dr. Manson the fact of the febro-genetic action of the comma bacillus, "together with the rapid and intense prostration which, in some instances of natural cholera, appears to be out of all proportion to the amount of catharsis present, suggests that in a measure the lethal effects of the vibrio are attributable, not alone to the drain of fluid from the blood and tissues, but also to the absorption of a cholera toxin from the intestine." But he immediately corrects himself and remarks: "It is strange, however, if this toxin be anything more than a subsidiary element in the production of the symptoms in most instances of the naturally acquired disease, that catharsis is not one of the effects of the hypodermic introduction of the vibrio, and that fever is not an earlier and more prominent symptom in natural cholera." He arrives, we believe, at very nearly a correct conclusion when he says: "The modern tendency is to regard the clinical phenomena as the result partly of local irritation and partly of a toxæmia; variation in the proportional intensities of the various clinical elements depending on the degree of virulence of the particular strain of microbe introduced; and on the circumstances and idiosyncrasy of the patient."

A question of great importance here arises which should receive a definite answer. Are living bacteria necessary in all cases for the development of the choleraic process in the intestine, or the introduction of their toxins may do as well? Koch himself has said and others have supported him that the comma bacillus does not bear dessication, and this is borne out by the fact of their being non-spore-bearing. This fact, coupled with the fact that dry fomites of cholera patients often spread the disease, leads to the inference that the toxins in the absence of their generating microbes may give rise to the disease unless we suppose that the so-called dry fomites were not absolutely dry but were moist enough to enable the microbes to retain their vitality. This is a far-fetched supposition, and we are inclined to believe that the toxins *can* set up the choleraic process. Whether the disease thus developed is more or less severe than when developed by the bacilli from the beginning, is a question which requires to be determined.

Having disposed of the comma bacillus of Koch as one of the most frequent causes of cholera, we have to see what other causes there are or may be. That there are other causes must be evident from the fact observed by expert bacteriologists that in cases of disease having all its clinical features, the comma bacillus could not be found, whereas other bacteria were found in abundance. Are we to say with Koch that these were not cases of cholera? This would be doing too much violence to clinical diagnosis which is the only most trustworthy and reliable. May not other bacteria under favorable circumstances produce the disease? We do not think this point has been investigated, with the attention and persistence that the comma bacillus has been, but it ought to be.

Though most infectious diseases are of bacterial origin, we do not believe that all are so. Some of them may be due to organic poisons otherwise manufactured than by bacteria. But whether due to bacteria or not, they must have had a beginning at some time or other, however remote the past may be. Now the question is, if they could have had such a beginning without infection from a previous case, could they not have such beginning in the present? Could they not arise *de novo*? We believe this is not only probable, but quite possible, and that under favorable conditions such diseases do arise without previous infection. This view is supported by the fact that in many instances of undoubted infectious diseases, the most searching investigation fails to trace the infecting cause. This is notoriously the case with cholera. The disease, in numbers of instances, cannot be traced to any other than the common cause of faulty food. In such cases the bacteria associated with it may acquire infective virulence from their flourishing, in a virulent medium, the evolutions produced by the disease. This is not a violent supposition, as the fact is well known that bacteria can lose or acquire virulence according to conditions under which they may be grown.

MORBID ANATOMY AND PATHOLOGY.

Morbid anatomy is a description of the alterations in the tissues and organs of the body brought on by disease. Pathology is morbid physiology, and is a description of the alterations in the functions of the altered tissues and organs. Morbid anatomy

deals with facts as actually observed. Pathology has mostly to deal with inferences that are drawn from these facts, and must necessarily be to a certain extent speculative. Morbid anatomy deals with alterations that may be observed with the naked eye as well as those observed with the aid of the microscope. Though regular epidemics of cholera have been prevailing for over a century, the microscopic anatomy of the tissues and organs under the disease, with the exception of the mucous membrane of the intestines, has not been investigated with the care it deserves.

It should be remembered that our knowledge of morbid anatomy is derived from examination of the body after death. Hence post mortem changes are likely to be confounded with actual changes produced by disease during life. And, therefore, it is difficult to get at the true morbid anatomy of a disease unless the body is opened immediately after death, which is not allowable for a variety of reasons, not the least of which is, that we cannot be sure of death until after the lapse of some time after its occurrence. The only corrective for this is repeated observation and a due attention to the possible action of physical and chemical laws on the constituents of the dead organism. With these preliminary observations we proceed to describe the morbid anatomy of cholera.

The morbid anatomy of cholera varies according as death has taken place in the stage of collapse, or after reaction had set in, and in the latter case according to the length of time the reaction had lasted. Though not mentioned in books, we think the morbid anatomy will vary also according to the treatment that had been employed. Powerful drugs are likely to leave their impress upon the tissues and organs. It is not easy, however, to differentiate the lesions produced by drug-action from those produced by the disease.

1. *General Appearance of the Body.*—When death has taken place during collapse, the whole body will present a sunken aspect, the eyes particularly are sunken deeply in their orbits, the temples are sunken and hollow, the nose is sharply pinched and bent, the skin tightly adherent to the bones and in consequence is very much deficient in mobility. The color of the skin is livid or leaden gray. The body resists decomposition for a much longer time than after death from other diseases. This

is most probably due to the desiccation of the tissues from drain of fluids from them.

2. *Temperature*.—Singularly enough even after death during collapse the temperature may rise much higher than what it was while the patient was alive. It has been seen to rise from 94° to 98° and even 100°. In one case that we saw long ago when the thermometer had not come into use, the heat of the surface appeared to be much higher than 100°. The rise of temperature may begin shortly before death and continue for some time after. "In one case," says Dr. C. Macnamara, "in which the body was kept in saw dust its temperature was retained for no less than three days." But this was because the heat was prevented from radiating. We are inclined to suspect that the drugs administered during life have probably some influence in causing this post mortem rise of temperature.

3. *The Muscular System*.—The muscles, owing to wasting away of the soft parts from loss of water, stand out prominently through the skin. They are found to be very firm and dark in color. Some of them have been seen to be actually ruptured, indicating the violence of the cramps or spasms during life. The cadaveric rigidity or rigor mortis due to their contracted state presents a marked and persistent phenomenon. It sets in earlier than in other diseases. The contraction of the muscles may be so prominent and regularly progressive as to simulate living movements. These contractions may vary from slight twitchings or quiverings to marked clonic spasms. Their duration may be from a minute and a half to more than an hour. Barlow has related the following case of a patient who was a strong man and had suffered severely from cramps: "Within two minutes of his ceasing to breathe muscular contractions began, becoming more and more numerous. The lower extremities were first affected. Not only were the sartorius, rectus, vastus, and other muscles thrown into violent spasmodic movements, but the limbs were rotated forcibly and the toes were frequently bent. The motions ceased and returned; they varied also: now one muscle moved, now many. Quite as remarkable were the movements of the arm: the deltoid and biceps muscles were peculiarly influenced; occasionally the forearm was flexed completely

and when I straightened it, which I did several times, its position was recovered instantly. The fingers and thumbs were now and then contracted, and at times the thumbs moved separately. The fibres of the pectoral muscles were often in full action; distinct bundles of them were seen at intervals beneath the skin..... After I had taken leave of the body the nurse was horrified by a movement of the lower jaw, which was followed by others; and I thought for a moment that the man was alive. The facial muscles became generally affected, and at length all was still."

These muscular contractions sometimes give strange attitudes to the body. In one case the body was turned completely to one side. In another case movements began in one leg and the hand was drawn across the chest. In a third the forearms were so flexed and the hands so much approximated as to give to the body the attitude of prayer. In a fourth the eyes were seen to open and move in a downward direction. "These muscular phenomena after death," says Dr. Alfred Stillé from whom we have quoted the above facts, "form an interesting feature in the history of cholera, but they are by no means peculiar to that disease. They have been observed in other diseases, and especially in yellow fever—an affection in which the pathological condition is quite unlike that of cholera. In both diseases they have been manifested in robust persons and when the course of the fatal attack was both rapid and severe." Do not these phenomena show that the life at least of the spinal cord has not become extinct? And do they not give a solemn warning against hasty disposal of the dead, especially by cremation?

4. *The Alimentary System* bears the brunt of the disease, and here, therefore, lesions are expected to be most marked and are actually so found.

Even the upper portions of this system present changes which are worthy of notice. (a) "The epithelium of the *nasal passages and mouth*," says Dr. Maconmara, "will be found almost completely destroyed after death during the collapse of cholera, the cells having been disintegrated in the early stages of the disease...leaving the basement membrane bare and denuded. We know that in cases of cholera the patients speedily lose all power of taste and smell, and this is easily accounted for by the fact of the epithelium being destroyed."

(b). The *Œsophagus*, according to Lebert, is cyanotic in the algidæ stage, and ecchymosed at a later period. Its isolated glands are sometimes markedly swollen. "I have found," says he, "the epithelium detached, and once the lower part was covered with fibrinous diphtheritic membranes." According to Dr. Macnamara "the epithelium of the pharynx and œsophagus is shed in large patches, and near the orifice of the stomach is often entirely destroyed."

(c) The *Stomach*, in cases of death during collapse, is found distended and filled with an almost colorless fluid similar to the vomited matter, is alkaline in reaction, rich in albumen, full of altered epithelial cells and their débris, and sometimes even red blood globules which impart a rosy color to the fluid. If death takes place later the stomach is often empty, or filled with a yellowish-green, sticky, gelatinous, or mucous fluid. In collapse the mucous membrane is hyperæmic, but later patches of ecchymoses are observed, and sometimes it is found covered with thick tough mucus.

(d) The *Small Intestines* present the greatest and the most important changes. The peritoneum during collapse is dry, of a diffuse reddish hue, or of an injected appearance, and covered with a thin layer of sticky fluid. The cavities of the intestines contain, in the early stage, the characteristic rice-water, in rare cases a pale-red fluid. The mucous membrane, if examined immediately after death during collapse, may be found unusually pale and even healthy, but generally congested after reaction had set in. According to Dr. Stillé, "The general paleness of the intestinal mucous membrane in the stage of collapse, and its congestive redness whenever the signs of reaction have existed before death, have a very important bearing upon the pathology of this disease, for they demonstrate conclusively that the gastro-intestinal evacuations in cholera have no relation whatever to inflammation. On the other hand, they render it altogether probable that the serous flux is in the nature of a sweat, an intestinal ephidrosis."

The mucous membrane of the intestines will be found to have been denuded of epithelium in considerable tracts, the basement membrane being left bare, and thus in these parts to have lost its velvety appearance, or rather as Prof. Paëini has more happily said, it "looks like velvet which has lost its pile." The epithelial

coating of the villi is found to be so completely detached in "masses of conical cells moulded to the shape of the villi," and "forming as it were," in the language of Dr. Macnamara, "the finger of the glove, after the hand has been withdrawn." Speaking of these epithelial masses Dr. Beale said, "in very many cases large flakes can be found, consisting of several uninjured epithelial sheaths of the villi." Dr. Beale had observed remarkable changes in the smaller vessels especially in the capillaries and small veins of the villi and submucous tissue. The blood corpuscles appeared to him to have in a great measure been destroyed in the smaller vessels, and in their place clots were seen containing blood-coloring matter, minute granules, and small masses of germinal matter evidently undergoing active multiplication. Some of the arteries were seen contracted and here and there containing small clots destitute of blood-corpuscles. There are ample reasons to show that this shedding of the epithelium of the mucous membrane of the intestines takes place during life, and is not a mere post mortem change. "It is," as Dr. Macnamara has well remarked, "the rapid death and destruction of the intestinal epithelium during life, which is the characteristic feature of the disease, and renders it so deadly."

(e) *The large Intestine or Colon* presents nothing different from what is observed in the small intestines as regards both its epithelial covering and the condition of its vessels. In cases of death after reaction both the small and the large intestines may contain a greenish, instead of the characteristic rice-water fluid, and the large intestine may contain masses of half-solid faeces. "The anatomical characters of secondary colitis, of a diphtheritic, dysenteric nature, are seen comparatively often in some epidemics, while in others they are almost entirely absent" (Lebert).

(f) *The Glands* of the intestines, strangely enough, instead of being shrunken during collapse, are found to be more prominent and swollen. The Brunner's glands peculiar to the duodenum are, according to Lebert, the first to be attacked. "But the affection of the glands in the lower part of the small intestine is the most characteristic. Both the isolated and agminated glands (Peyer's patches) are markedly swollen and prominent. The isolated glands stand out in relief, their size varying from that of a

millet-seed to that of a pea, while the patches of Peyer, which also stand out prominently, are granulated on the surface. The swelling is most pronounced towards the ileo-cæcal valve..... As a rule, however, the swelling rapidly diminishes at the end of the second day and in the course of the third..... In cases of early death in some epidemics, Peyer's patches, towards the end of the small intestine, have been found slightly ulcerated as in typhoid fever. The glands of the large intestine, in cases of early death, are also found swollen, prominent, lens-shaped, or with a reddish opening. They, too, collapse at a later period, and show the same retrograde changes as the glands of the small intestine."

(g) *The Mesenteric Glands*, especially those belonging to the duodenum, will be found congested.

(h) *The Liver*, in death during collapse, is pale and flaccid, weighs less than normal. Its lobular structure, indistinct from contraction, is of a lighter color than in the natural state; its capsule is wrinkled. All this indicates the almost total suspension of blood-supply through the portal veins which, however, are often found loaded with viscid blood. At all stages of the disease the *gall bladder* is usually found distended and full of dark viscid bile during collapse, and more watery and brighter green after reaction has commenced.

It is in the alimentary system that the comma bacillus is found, and even here it is confined to the stomach, the small and the large intestines. In the stomach these bacilli are very rare, and are most abundant in the lower part of the ileum. They are found chiefly on the surface of the mucous membrane. But they have been found between the epithelium and the basement membrane, within the tubular glands, in some instances even in the muscular layers of the intestine, and in a few cases they have been traced as far as the liver and gall-bladder. They are not found in the intestinal contents after reaction had set in, especially when the stools had become fæcal, but could still be found in the tubular glands (Lieberkuhn's crypts). They cannot be found anywhere when death has taken place from some sequela of the disease.

(i) *The Spleen* generally presents nothing abnormal except that it is much lighter than natural, weighing not more than two and

a half to three ounces in the adult, being about a third or half of its normal weight. Lebert says he has several times seen it enlarged in consequence of apoplectic effusions, and also in cases where cholera complicated a typhoid fever. In the latter case it is doubtful if the spleen was not enlarged before cholera. In malarious patients with enlarged spleens an attack of cholera has been found to *reduce* the size of the spleen considerably.

5. *The Respiratory System.*—Lebert's observation, that in all stages the lungs are deeply engorged with blood, especially in their inferior and posterior portions, is not borne out by the observations of others. It is true that according to one authority (Dr. Gull), "in the majority of cases fatal in the algid stage, no other morbid change existed than engorgement of the lower and posterior parts of the lungs," and "in some instances this was so complete as to cause portions of the pulmonary tissue to sink in water," yet "the anterior and superior parts were drier than natural." According to Drs. Sutton and C. Macnamara and our late Dr. Chuckerbutty the lungs in about half the cases were congested." But according to Dr. Parkes "the lungs are always more or less collapsed, shrunk and small, and lying back in the chest, toward the spine," and that far from being engorged or congested, they are (with the exception of a small portion of their posterior part rendered dense by hypostasis) singularly bloodless, dry, and tough. Dr. Sutton found notwithstanding their congested condition, the weight of the two lungs in death from collapse to be only about twenty ounces, whereas after reaction about forty-five ounces; and he describes them as being dry on section, containing very little blood, which is principally collected in the pulmonary arteries.

Lebert says: "The mucous membrane of the *trachea* and *bronchi* is very much engorged with blood in cases of early death and is covered, later when there is moderate hyperæmia, with mucus, with which masses of leucocytes are more or less mingled. In exceptional cases I found the *glands* of the trachea swollen." This requires confirmation by other observers.

6. *The Blood-circulatory System.*—Dr. Chuckerbutty found, in thirteen cases, the right cavities of the heart containing dark blood, fluid or clotted, and in five of these cases, the left cavities also contained similar blood, "therefore, in exactly one half of the

cases, the right cavities were full of blood, and in about a quarter likewise the left cavities." According to Dr. Parkes in twenty-six out of thirty-nine cases, the right auricle and ventricle were flaccid, or distended with large fibrinous clots, or with dark semi-coagulated blood, while the left auricle was partially, and the left ventricle completely and firmly contracted, containing little or no blood, or only a small soft clot." The clots are either soft and dark, or firm and colorless. Lebert once "found a thin fibrinous clot spread out in the form of a membrane over the whole surface of the right ventricle..... Sometimes the clot is continued into the terminal branches of the pulmonary artery and in cases of early death are found also in the larger veins and there is great distension of the smaller venous network." In some cases he could not find any blood in the heart at all, either in its left or right cavities.

The Pericardium presents the same appearance as the peritoneum and the pleura, containing but little or no fluid. When ever there is any fluid it is very scanty, scarcely more than a mere moisture, and is sometimes found to be sticky. Later the secretion may be normal or increased in quantity. Patches of ecchymosis, of the size of a lentil, scattered or in groups, are according to Lebert, constantly found on the epicardium, but rarely on the parietal layer.

7. *The Urinary System.*—According to some the kidneys present no marked changes when death has taken place early in the attack, and are of natural size. But according to Lebert, who devoted special attention to the lesions of these organs, even in cases in which death occurred, in from sixteen to twenty-four hours after the attack, an increase of volume was observed, they being filled with blood in the form of stripes and punctated injections in both the cortical and medullary substances, and on the surface in more star-shaped and marbled spots, with numerous and thick anastomoses." It is certain that there is more blood on the venous side, the arteries being comparatively empty and the veins congested.

The Urinary Bladder, besides being empty and contracted, presents nothing particularly abnormal, unless we look upon the cyanotic condition of its mucous membrane as part of the general cyanosis of the whole surface, as such. Even when

death takes place in five or six days after the attack, the bladder will be found to be quite empty, the suppression of the urinary secretion having been complete. Exceptionally even in collapse a small quantity of urine of an albuminous character may be found in it.

8. *The Nervous System.*—We take the following from Lebert in Ziemssen's *Cyclopadia of Practical Medicine*: "The nervous system shows few alterations, even in cases of late death with typhoid symptoms. In cases of death shortly after the attack the cranial bones and the membranes of the brain are engorged with blood, and a thick coagulum fills the sinuses. Once I found a fresh effusion of blood between the dura mater and the arachnoid. The cerebro-spinal fluid is entirely absent in cases where death occurs at an early period, or is present in only slight quantity, and of almost pasty consistency; but I have often seen it more copious where death has occurred at the end of thirty-six hours; and where death occurs still later, it may even exceed the normal amount in slight degree. The pia mater loses its marked hyperæmia in a more protracted course of the disease and becomes dry, and once I found it icteric. The fluid of the ventricles remains scanty even where death occurs at later periods. It was only exceptionally that I have seen it increased to two or three ounces (in weight); such an increase I once observed where death had occurred as early as at the end of thirty-six hours, though usually it is not increased until after three days and more. There was no connection between this increase and the typhoid state. Echymoses on the external surface of the brain (pia), or on the internal surface (ependyma), are not rare. Only once did I find small capillary effusions in the pons. Usually, where death occurs early, the brain is well supplied with blood; where death occurs later, it is less so, and sometimes it is even slightly œdematous on the surface." The statements of Dr. Thudichum, that "the cylinder axis separates, the nerve marrow curdles, in the algide stage," and "that many brain lesions are due, in this disease, to arrest of the circulation in its capillaries by altered blood and epithelial cells, forming plugs which effectually close the vessels," require confirmation.

Such are the lesions met with in cholera. Are there among them any which may be looked upon as the primary lesion, and the

others as secondary ones? "In looking over the field that has been traversed," says Dr. Stillé, "and searching for some link that will unite in a consistent whole the causes, symptoms, and lesions of cholera, it is evident that only one factor can possibly be so described. That factor is the gastro-intestinal flux. This it is that produces the vomiting and the purging; that prostrates the patient and wastes away in a few hours the fullest and the firmest form; that chills the limbs and afterwards the trunk; that thickens the blood so that the capillary vessels can no longer convey it, and that spreads a cyanotic shadow over the whole surface of the body; that cuts off the supply of blood from the lungs and heart; that paralyses the nervous system, ganglionic as well as cerebro-spinal; that obstructs the kidneys and arrests their secretion; and that, acting through the several links of this pathological chain, becomes the cause of death." This gastro-intestinal flux is due to the destruction and shedding of the epithelium of the gastro-intestinal mucous membrane. This lesion, therefore, must be regarded as the primary lesion of cholera.

DIAGNOSIS.

If all the cases of the disease were equally severe, presenting the rapid development of the symptoms,—the tempestuous profuse colorless discharges, the collapse rapidly supervening indicated by a vanishing pulse, shrunken features, shrivelled fingers and toes, a cold clammy livid skin, cold breath, the most agonizing cramps, and suppression of urine,—the diagnosis would have presented no difficulties. Such cases occur generally at the height of an epidemic when the very prevalence of the disease affords a sure criterion for diagnosis. It is in sporadic cases, especially when mild, that the diagnosis becomes a matter of extreme difficulty.

It should be remembered that though the disease was prevalent in India long before 1817, the term cholera or rather cholera morbus was not applied to it till September of that year when a severe epidemic prevailed in Jessore and in Calcutta and its suburbs. This was done first by a magistrate of Calcutta and was confirmed by the Medical Board under the Government of India, to whom the letter of the magistrate was referred. Singularly enough the Medical Board did not speak of the

epidemic at Jessore as one of cholera, but said "that the disease is the usual epidemic of this period of the year" and "that in certain quarters of Calcutta a similar epidemic prevails." It seems that it was only at the suggestion of the magistrate that they called the disease cholera morbus. Since then the Indian disease has been known by this name, or simply as Cholera. Now, the reasons, which led the Medical Board to adopt this name for the Indian disease as they saw it prevailing, were chiefly no doubt the close resemblance between it and the disease which since Hippocrates has been so designated, and which has been so graphically described by Sydenham, but partly also their want of minute study of the two diseases so as to be able to distinguish between them.

We take the following from Sydenham's description in order to see the resemblances and the differences between the two diseases. According to him the cholera morbus as it prevailed in his time was "partial to a particular part of the year. It sets in at the end of the summer and the beginning of autumn, as truly as the swallow comes in spring, or the cuckoo sings in summer." "Its presence is easily understood. There is vomiting to a great degree; and there are also foul, difficult, and straining motions from the bowels. There is intense pain in the belly, there is wind, and there are distension, heat-burn, and thirst. The pulse is quick and frequent, at times small and unequal. The feeling of sickness is most distressing; and is accompanied with heat and disquiet. The perspiration sometimes amounts to absolute sweating. The legs and arms are cramped, and the extremities cold. To these symptoms, and to others of a like stamp, we may add faintness. The disease terrifies the lookers-on, and sometimes proves fatal within twenty four hours. Besides this, there is dry cholera characterised by flatus from above and below, but without either vomiting or purging." In his epistle to Dr. Brady, dated Feb. 7, 1679, he refers to the cramps as follows: "As the summer came to a close the cholera morbus raged epidemically, and being promoted both by the unusual heat of the weather, it brought with it worst symptoms, in the way of cramps and spasms, than I had ever seen. Not only, as is generally the case, was the abdomen afflicted with horrible cramps, but the arms and legs, indeed the

muscles in general were afflicted also ; so much, that the patient would at times leap out of bed, and try to ease the pain by stretching his body in every direction.”

Writing later Sydenham says the same thing about the disease, but more concisely : “ This is limited to the month of August, or to the first week or two of September.....Violent vomiting, accompanied by the dejection of depraved humors, difficulty in passing them, vehement pain, inflation and distension of the bowels, heart-burn, thirst, quick, frequent, small, and unequal pulse, heat and anxiety, nausea, sweat, cramps of the legs and arms, faintings, and coldness of the extremities, constitute the true cholera—and it kills within twenty-four hours.”

It is not a little singular that there is no mention, in the above description, twice repeated, of the evacuations upwards or downwards being green or bilious, which, according to Sir Thomas Watson and others, are the characteristics of the cholera morbus which distinguish it from the Indian disease. The epithets *foul* in one description and *depraved* in another cannot be construed to mean bilious in any sense or form, yellow, or green, or dark-green so as to appear almost tarry and black. But the evacuations must have had some color, and the omission of its mention was singular on the part of such an acute and observant physician as Sydenham. Or did he think it enough to call the disease cholera, which meant bile-flux, and therefore thought it unnecessary to draw special attention to the bilious character of the evacuations? But what did he mean by “ humors,” and what did he mean by “ depraved ” as applied to them? Bile is one of the humors. Did he include it in the term? He evidently followed or corroborated Hippocrates in his description of “ dry cholera,” in which, according to the Father of Medicine, “ the belly is distended with wind, there is rumbling in the bowels, pain in the sides, *no dejections*, but, on the contrary, the bowels are constipated.” This forbids the interpretation of the term cholera as bile-flux. These are puzzles which we are unable to solve.

(To be continued.)

EDITORS NOTES:

Ureter Opening into Female Urethra.

Fischer (*Rev. de Gynec et de Chir. Abdom.*, March-April, 1903, *Thèse de Zurich*, 1901) made a necropsy on a woman, aged 38, who had died from fibrinous peritonitis; there was apparently no history of urinary trouble. The genito-urinary tract was normal on the left side. On the right there were two ureters. The upper ureter arose from a cystic dilatation in the glandular substance of the kidney; and ended in the urethra $\frac{2}{5}$ in. behind the meatus. The lower right ureter, completely distinct from the upper, arose from the pelvis of the kidney, and after crossing the upper ureter in the pelvic cavity, passed normally into the bladder.—*Brit. Med. Journ.*, May 23, 1903.

A Spanish Lady Doctor.

An interesting feature of the Congress was the presence of Dona Aleixandre y Ballester, who in the Section of Obstetrics and Gynaecology, read an interesting paper on disease of the heart in women in labour. The lady is a doctor of medicine, and the Spanish papers point to her presence as a proof that they are not so backward as they have been represented in regard to the emancipation of women. Female professors have before now adorned chairs of literature and philology in Spain, especially in the reign of Ferdinand and Isabella. At the present time several young ladies are studying pharmacy in Madrid, and several others have obtained degrees in the Faculty of Philosophy and Letters.—*Brit. Med. Journ.*, May 9, 1903.

Interstitial (Tubo-uterine) Gestation.

Steffeck (*Zentralbl. f. Gynak.*, No. 16, 1903) reports a case where, after the period had been missed for six weeks, severe abdominal pains with symptoms of internal hæmorrhage set in. There was no tumour in Douglas's pouch, but a cracking sensation was noted when pressure was made in its direction. The uterus was of the size of the second month, and a soft prominence could be felt on its right side. Abdominal section was performed, and the peritoneal cavity was found to contain much free blood; the intestine adhered firmly to the back of the uterus. On separating the adhesions, free bleeding occurred from the ruptured fundus. The uterus was amputated at the cervix, and the patient made a good recovery. A two-months fetus lay in a cavity in the uterine wall on the right side superiorly; the tube was intact.—*Brit. Med. Journ.*, May 23, 1903.

Double Penis.

VOLPA (*Il Policlin.*, January, 1903) reports the following case owing to the extreme rarity of the deformity from which he suffered. The child was born of healthy parents and was itself normal, except that it had two penis and two scrotà, and its anus was occluded. The left penis, which started from the usual situation, was 3½ cm. long, and the glans was completely covered by the prepuce. The right penis started 3 mm. to the right of the first, was 3 cm. long, and void of prepuce. Each penis had a urethra. In the left scrotum one testis had descended. The right scrotum was well formed and provided with a median raphe. The child died of intestinal obstruction twenty-nine days after birth. During life the urine was emitted exclusively from the left penis. At first faecal matter came from the right penis, but five or six days later faecal material came through the left urethra as well. *Post mortem* the two urethrae communicated with two separate bladders, into which opened two large intestines with ileo-caecal valves. There was only one kidney, one ureter, and one testicle. *Brit. Med. Journ.* May 9, 1903.

Appendicitis in a Newborn Child.

Porak and Durante (*Comptes Rendus de la Soc. d'Obstet., de Gynec. et de Paed. de Paris*, December, 1902) report the case of an infant brought under their care when 12 days old, in a very septic condition. A large abscess had developed in the region of the right scapula, following injection of serum; on the opposite side a similar injection had caused a collection of fluid to develop; this was absorbed whilst the abscess had to be opened. The umbilicus had suppurated. After a gain of weight, with abnormally low temperature (as the authors have noted in previous severe cases), the infant died suddenly when 21 days old. Acute peritonitis, without effusion of fluid, was detected. The serous coat of the small intestine was deeply injected, the caecum being so much involved as to appear of a violet-red colour, whilst the vermiform appendix was sloughy. There was a small hole at one point near the tip, but whether it represented a pathological rupture or a laceration made during the necropsy the authors were disinclined to decide. The infection clearly came from the suppurating cord and urachus, which was also involved, but not connected with the appendix by adhesions. The germs had succeeded in setting up infective processes in the appendix, which has relatively feeble resisting powers.—*Brit. Med. Journ.*, May 23, 1903.

Pregnancy in a Woman aged 51.

M. SCHARLIER (*Journ. of obstet. and Gynec.* April, 1903) reports a case, diagnosed as a degenerating fibroid of the uterus, but proving to be one of pregnancy. The patient, aged 51, had previously borne nine children, the youngest being $4\frac{1}{2}$ years old. Shortly after her last confinement she noticed a swelling the size of an egg on the left side of the abdomen. This grew steadily larger, and after two years she went to the Great Northern Hospital, and was told she had a "bleeding tumour." The tumour continued to grow and was somewhat painful, the menstrual periods were too frequent and the discharge was at the time offensive. The periods stopped three and a half months before admission, being replaced by an offensive discharge. This was accompanied by an increased pain which was always present, and the patient grew thinner. On admission, the abdomen was prominent chiefly below and to the right side of the umbilicus, and a rounded hard tumour, freely movable from side to side, was found reaching to the level of the umbilicus. No certain signs of pregnancy were present and there was no mammary development. On opening the abdomen the uterus was found enlarged to the umbilicus, smooth and somewhat globular, and containing a fetus of about three months growth. There was discoloration of the tissues on the dorsal surface, showing that the fetus had been dead for some time.—*Brit. Med. Journ.* May 16, 1903.

Toilet ammonia.

Comparatively strong solutions of ammonia are commonly sold now for domestic purposes, it may be for the bath or for removing grease stains. We have nothing to say against their employment for either object and certainly the use of a few drops of ammonia in the bath is harmless while it is both invigorating and cleansing. It must be remembered, however, that ammonia gas is after all a poison, strong ammonia vapour being fatal to both animal and vegetable life. In most cases the examples of poisoning by ammonia vapour that appear in toxicological records have been the result of an accident. Thus the ammonia bottle has been injudiciously applied to the nostrils of persons in the throes of an epileptic fit and death has resulted. There is also an instance on record of poisonous effects resulting from the breaking of a bottle of ammonia and the sudden evolution of the powerful gas from the spilt liquid. In the bathroom such an accident might easily happen and the public should be enjoined to use the liquid with great care. A spilt bottle of

ammonia in the bath-room might easily cause serious shock. A warning, it seems to us, should be printed on the labels of all bottles containing ammonia for domestic purposes, that the vapour is poisonous in large quantities and that special care should therefore be exercised to prevent the wholesale escape of the contents.—*Lancet*, June 6, 1903.

Double Pregnancy in a Double Uterus.

J. B. Hellier (*Journ. of Obstet. and Gynec. of the British Empire*, May, 1903) describes a case of double pregnancy in double uterus. The patient, a woman aged 34, had had three previous normal labours and there was no reason to suspect any abnormality of the genital organs. She ceased to menstruate in May, 1902. During pregnancy the uterus was unusually large, and the patient complained of abdominal pain and swollen feet. Labour began on January 28th in the forenoon, and a living female child was born at 5.30 p.m., the head presenting; the placenta followed. The presence of a second child was then recognized, but the uterus showed little tendency to expel it. At 11 p.m. Beetham (the doctor in charge) introduced a hand into the uterus and found it empty. At 12 p.m. the patient was examined by Hellier and Beetham, and a second os uteri was found above, in front, and to the left of the first. A second fetal head was just within touch. It was possible to grasp the septum dividing the uterus between the finger placed on the left and the thumb in the right os. There was no trace of a septum within the vagina. By podalic version a living male child was delivered from the left side of the uterus. There was nothing to suggest that the two pregnancies were not of the same date. At an examination of the patient a month later it was found that the septum uteri was retracted within the os, and might easily escape notice on a simple vaginal examination. The bifid fundus was obvious.—*Brit. Med. Journ.*, May 30, 1903.

Physical and Intellectual Education.

The President of the Royal Society of Canada, Sir James Grant, M.D., K.C.M.G., has favoured us with an advance copy of an address which he was to deliver on May 19th before the Society. The subject selected was Brain Power and How to Preserve It. The great problem of the present day with which educationalists had to deal was how to build the best brains out of the material at their disposal,

and not for men only but for women as well. The occasional advice of school teachers that the sooner children were sent to school the better was injudicious, as premature school attendance was most decidedly injurious. The first seven years of life were for growth. In Canada, fortunately, children rarely attended school before their fifth or seventh year, and every degree of care and prudence was exercised to guard the development of intellectual activity. The chief test of education was the outcome of life at maturity. This constituted the practical examination of life, and the verdict was the outcome at the period of manhood. Gorging the brain in ordinary schools from six to nine hours daily, with only one to three hours each day in the open air, was not likely to bring about desirable results. The intellectual development and physical growth of the young generation would be greatly promoted by four hours of exercise in the open air, with four hours of study, and the final results would be better in every particular than by the system now in operation. The leaders in brain work in England and on the Continent gave three to five hours daily to the desk or laboratory. Such data pointed to the necessity of an equal exercise of mental and physical capacity in order to build up successfully mental and physical power.—*Brit. Med. Journ.*, May 23, 1903.

Thunderstorms and Telephones.

It is well known, of course, that electrical disturbances in the air interrupt the telephonic and telegraphic services and it has been stated that powerful discharges have occurred at the terminals of public electrical apparatus during the passage of lightning overhead. A violent thunderstorm passed over the metropolis last Saturday and it is stated that during the whole time this electrical storm was in progress very alarming electric discharges took place over the two large telephone switch boards at the Southwark headquarters of the Metropolitan Fire Brigade over which news of calls from all parts of London is transmitted. It was reported that no apparent damage was done to the apparatus and it so happened that there were no messages calling for attention during the time the discharges induced by the storm were taking place around the instruments. There can be little doubt, however, that had the telephones been used some discomfort would have been experienced, not to say real injury sustained, by the person who may have employed the instruments at the time. Both telegraphic and telephonic services may, become a source of danger during

great electrical stress in the air and persons should be warned against using the instruments at such a time and certainly when alarming symptoms of a storm manifest themselves in the way just described. The incident suggests unpleasant possibilities in the case of electric wiring in the house, for in this way atmospheric electricity may possibly be an occasional factor in the origin of an outbreak of fire.—*Lancet*, June 6, 1903.

Quacks in Germany.

In the *Standard* of June 1st appears the following message from the special correspondent of that journal at Berlin dated May 31st:—

“The Imperial Home office has addressed a circular to the Federal Governments on the subject of quack medicines and doctors. It proposes that stringent measures shall be taken against what is described as a growing evil, which, it is said, has assumed proportions in Germany which are decidedly dangerous to the public welfare. Amongst the measures proposed is one for the compilation of a register in which all the names of all quack doctors have to be entered. It is also proposed that obvious exaggerations in newspaper advertisements by quacks shall be prohibited. The police, it is suggested, should be authorised to prevent quacks from exercising their calling whenever there is reason to believe that a continuation of their practice would be injurious.”

We wonder when our Imperial Government will take a similar step. A press censorship does not exist in these islands and to the credit of British journalism such a censorship as regards the body of a journal is not needed. But when we look at the advertisement columns the case is different. Journals of the highest standing insert page advertisements of such well-known quackery as the Drouet Institute, while the advertisement columns of the popular monthly magazines are crammed with notifications of all sorts of quack remedies, including those emanating from the scoundrels who trade on the fears of sexual hypochondriacs. The flagrant advertisements from abortionists seem to have received a check owing, we think we may say, in great part at least, to the articles which appeared in our own columns on the matter, but “Dr.” Bell and others of his kidney still advertise their deceptions in newspapers and magazines and distribute lures for dupes broadcast with the connivance of His Majesty's Postmaster-General. Such things should not be and the sooner that our Government takes up the matter the better.—*Lancet*, June 6, 1903.

Hair-Balls in the Stomach.

In the stomachs of many of the lower animals hair-balls are liable to form, and they are especially common in cattle. The hair is licked from the surface of the body, is carried into the stomach and is there subjected to a churning movement by which it is moulded together into a compact mass. This is greatly facilitated by the tendency to "felt" which is possessed in a high degree by the hair of cattle, so that these hair-balls are firm round bodies and shew on section a lamination corresponding to the successive deposits of hair. In the human being hair is but rarely swallowed, though sundry cases are on record in which the practice has existed. In many of the persons in whom hair-swallowing occurs there has been a history of insanity, yet it has been seen in those who had no other sign of mental derangement. A large majority of the patients are women. Human hair has but little tendency to "felt," because its surface is comparatively smooth and therefore we practically never find in the human stomach hair-balls resembling those found in the lower animals. Generally in human beings the hair forms a somewhat loose mass conforming more or less to the shape of the stomach. The quantity of hair present may be very great. Mr. George May published a case in the *Medical Association Journal* of Dec. 28th, 1855, in which the mass of hair weighed 26 ounces. Mr. J. Knowsley Thornton has recorded a case where the weight of the foreign body was two pounds. Dr. Russell published in the *Medical Times and Gazette*, vol. i., 1869, P. 681, a case in which the mass of hair weighed four pounds seven ounces, but larger still was the amount of hair in a case under the care of Mr. Paul Swain for it weighed five pounds three ounces. It is not surprising that masses like these form very obvious swellings in the abdomen and we publish in the present issue of *THE LANCET* an account by Dr. H. Mallins of a case where the abdominal swelling was large and at the necropsy it was found to be due to a mass of hair in the stomach weighing one pound nine ounces. In a few instances the presence of a foreign body has been diagnosed and the mass has been successfully removed by a gastrotomy. This was done in Mr. Thornton's case and in Mr. Swain's case mentioned above. Schonborn has also published a successful case, and a fourth is recorded by Berg of Stockholm. Unfortunately in most cases the accumulation of hair has only been discovered at the post-mortem examination.—*Lancet*, June 6, 1903.

The Cremation Society of England.

The sixteenth annual volume of the *Transactions* of the Cremation Society of England, recently published, is of special interest in connexion with the Cremation Act, which came into force at the beginning of last month. The successful passage of this Act may be considered the crowning of the Society's endeavours, but the success which has greeted its efforts is also shown by other facts. The specific object of the Society is set forth in the declaration which every candidate for membership has to subscribe: "We disapprove of the present custom of burying the dead, and desire to substitute some mode which shall rapidly dissolve the body into its component elements by a process which cannot offend the living and shall render the remains absolutely innocuous. Until some better method is devised, we desire to adopt that usually known as cremation." This is the same declaration as that agreed upon by the twelve persons who met in January, 1875, at the house of Sir Henry Thompson, and forthwith formed themselves into a Society. Among them was Earnest Hart, and, except Sir Henry Thompson himself and the Rev. C. Voysey, none now survive. It was ten years, however, before the Society found itself in a position to put its principles into practice and it is to be noted that the first person to be cremated was a woman. In the seventeen years that have elapsed since then the number of cremations has steadily increased, until now altogether 2,372 bodies have been disposed of at Woking in this way. Besides this, however, there are now eight other crematoria established in England, all due to the influence of the Society, but established, some by municipal authorities and others as commercial speculations. The Society, of course, has always been well supported by members of the medical profession, and in a list of persons of note who have been cremated at Woking we find the names of forty-five medical men of greater or less repute. The table of fees charged at Woking shows that cremation is no more expensive than interment in a London cemetery, and since heavy coffins, etc., are prohibited, the connected expenses should be very much less. This is itself an advantage, and if cremation became popular the expense of all funerals would probably be brought down. How great they are at present is not generally realized, and any one who can obtain access to an undertaker's books will be astonished at the enormous amounts frequently charged. Besides the promotion of cremation, one of the Society's expressed objects is the introduction of the Continental system of death certification, whatever the form of "burial."—*Brit. Med. Journ.*, May 16, 1903.

CLINICAL RECORD.

Indian.

CASE OF PLAGUE.

BY DR. AKSAY KUMAR DATTA, L.M.S.

Case illustrating the Action of *Crotalus*.

In April last, 1903, S. Chakerbutty, a young man, thin and spare in form, a clerk in Government employ, came back from office in the evening and complained of slight headache, feverishness, general languor, a sore feeling all over, thirst with entire loss of appetite. In course of another couple of hours or so, this state was followed by chill, rigor, severe headache, acute pain around the right shoulder with smarting pain and tenderness of one or two swollen axillary glands of both sides, high fever, nausea, thirst for large quantities of cold water, burning of the body, hands and feet, restlessness, fear of death, and lastly a tendency to drowsiness. Night passed away in this state. Next morning a doctor was called in, who after examining the patient ordered a mild purgative and a fever mixture. The opening medicine did not act properly, but next day the fever subsided with some signs of improvement in the morning, but during afternoon fever again came on with violence accompanied by chill and rigor, the temperature rose up to 104° F, followed by copious perspiration with furious delirium. On the day following I was sent for and on my approach, I saw the patient in a semi-unconscious condition, eyes suffused and blood-shot, delirious but could partially recognise me, slow of comprehension and answered questions with an erratic mind and disposition. Noticed petechial eruptions all over the chest and inside of arms, and ecchymosed patches on back and shoulders, which are very painful, with an enlarged and very painful, swollen axillary gland on the right side. The temperature was 103.4, skin hot, pungent and dry, face puffed, of dusky color, tongue dry, red and cracked. The appearance of those eruptions and blood-stained marks, were so sudden and peculiarly symmetrical and prominent, that speculations were rife among friends, as to what might have been the probable cause of these. Without hesitating, I at once prescribed *Crotalus* 30, to be given at an interval of at least four hours. Two doses were given on the first day. The evening aggravation of the fever along with all the other symptoms was not so pronounced as on previous days, the patient consequently passed a better night. Next morning I was surprised to notice improvements in every respect and ordered the same medicine to be continued as before and in course of another couple of days the patient became convalescent. In fact, all those symptoms that threatened with an impending dissolution gradually disappeared under the influence of this single remedy, though he required some other medicines for the subsequent treatment of minor complaints which lurked about him for nearly a week, such as Nux and Sulphur.

Foreign.

. CASES OF MORNING-VOMITING CURED BY

CUPRUM-METALLICUM.

BY DR. BERLIN, GUBEN.

Vomiting is one of the most frequent concomitants of various diseases of the stomach, e. g., of acute and chronic catarrh of the stomach, and in ulcers and cancer of the stomach. It mostly appears after taking food and is generally preceded by a sensation of nausea. But not unfrequently we find patients where the vomiting comes regularly and only early in the morning on an empty stomach (vomitus matutinus). In such cases food is not vomited usually, but only tough masses of mucus. Such vomiting is mostly caused by a chronic catarrh of the stomach, when it usually appears on leaving the bed, or it may be due to a severe catarrh of the fauces, of the faucal-nasal cavity, or of the larynx, or a catarrh of all these organs.

When a patient comes, complaining of vomiting in the morning, everyone will justly first think of a drinking man, i. e., a man who drinks habitually, and this will generally be found correct. There is no need that such persons should get drunk every day, he will usually only drink three to four glasses of beer. Only occasionally is this measure exceeded. Most generally such a use of beer is attended by the injurious use of tobacco.

It is not always easy to decide the cause of this vomiting with habitual drinkers, whether it lies in the stomach or in the throat, or in both together. For with such persons we find at the same time a faucal catarrh as well as a catarrh of the stomach. It is well known that vomiting may also be caused from the throat by touching the root of the tongue or the posterior wall of the fauces. For the same nerve which supplies the stomach (*nervus vagus*) also supplies by one of its branches (*nervus laryngeus superior*) the mucous membrane of the fauces. So if the mucous membrane of the fauces is irritated, this same irritation is transferred to the nerve of the stomach, causing vomiting. But from the mucous membrane of the fauces mucus can never be detached by coughing, as many think, but this always comes from the mucous membrane of the larynx and of the bronchiæ, as I would here incidentally remark. In catarrh of the fauces—where generally the larynx and the nasal-faucal cavity are also inflamed, there is always formed a more or less tough mucus, and when this is hawked up in the morning, and perhaps also mucus is hawked up from the larynx, or hawked down from the nasal faucal cavity, this mucus is a sufficient irritation to cause the inflamed mucous membrane of the fauces to produce retching and vomiting. The morning-vomiting is generally preceded by hawking and cough. I will here adduce two such cases:

1. Merchant B., before he entered on his military service—he has been discharged now for a few weeks,—used to drink consid-

erable beer, and was even at that time afflicted with retching and vomiting in the morning. The youth was not then living with his parents, but was out of a place. As he otherwise felt well, he did not give much thought to it. While a soldier he did not drink beer so regularly, but now and then in larger quantities. The vomiting therefore did not pass away entirely, but became less frequent. When the time of military service was past, and the young man did not find a place at once, he stayed again for a few weeks with his parents, and now began again to drink beer regularly, three to four glasses a day, and the vomiting at once became worse again. When the parents became aware of this retching, the mother at once called me in to examine the son's stomach. On being questioned, he confessed to his drinking beer. The examination showed chronic catarrh of the stomach and fauces. I gave the patient *Cuprum met.* 4 trit., prescribing a dose the size of a bean, morning, noon and night before meals. He was directed to limit himself to one glass of beer a day, but I scarcely believe that he obeyed this direction. After taking *Cuprum* in a few days the retching ceased, and has not returned since, a space of three months.

2. Merchant F., who has a position in a factory, has been married for six years, and when a bachelor he had drunk bountifully. After his marriage he became "solid," but still continued drinking two to four glasses a day and one in the evening. His wife immediately after the wedding was astonished at his every morning's performance of retching and vomiting and she often tried to induce him to be examined by a physician. But the husband would not agree to it. When the family physician came in occasionally the wife would every time mention her husband's ailment, but the doctor, knowing his impotence, would always shrug his shoulders or say that nothing could be done, that it would come right of itself. When the wife had an abdominal trouble and was massaged by me for some time she one day put the case before me and asked if it was really so; that her husband's ailment could not be cured, as it was so dreadful for her to see every morning this retching and vomiting of phlegm. I gave her *Cuprum metall.* 4. trit., directing it to be taken as above. That was in the afternoon and the patient accordingly took it only once that day, in the evening. On the second day after this, I heard that the retching had not taken place. I treated the wife for six weeks more, and during all that time there had been no vomiting, and the wife did not believe that her husband abstained from beer during the day.

I have often had occasion to prescribe *Cuprum metall.* for the *vomitus matutinus* of drinkers, and it has never left me in the lurch. So far as I can remember, I have never read anything in homœopathic literature of this use of *Cuprum metall.* and, therefore, thought it my duty to make it known. This use was discovered by Dr. Sauer, medical councillor in Breslau.—*Homœopathic Recorder*, May 15, 1903.

Gleanings from Contemporary Literature.**EXPERIENCES OF AN OCTOGENARIAN.**

By R. E. DUDGON, M.D.

“The *Medical Century* will have done immense service to the cause of homœopathy if it succeeds in showing us the best potency of medicines for many of the diseases we have to treat. I fear, however, that in spite of your flattering estimate of my ability to assist you in your excellent endeavour to elucidate this subject, I can contribute little or nothing to the solution of the problem. When, near sixty years ago, by the study of some of his works, I became convinced of the truth of Hahnemann's therapeutic rule, and set about making a trial of his method, I procured from the homœopathic chemist a box of globules, all of the 30th dilution, as he recommends in his latest works as the most suitable potency for all medicines and all diseases. I did very well with these medicines, at least the results obtained by them compared favourably with my previous allopathic experience. Of course, I had failures as well as successes, and as I am of a very sceptical turn of mind, I began to doubt whether the medicines of the apothecary were made exactly according to Hahnemann's directions. Moreover, I read in Hahnemann (*Chr. Kr.*, 2nd ed., vol. 5, preface) that ‘the maker of homœopathic medicines should always be the homœopath himself; he should himself forge and sharpen his weapons against disease.’ I read further (*R.A.M.L.*; preface to *Mercurius*): ‘One of the rules of homœopathy, as also of common sense, enjoins that we should attain our aim in the simplest and shortest way—*quod fieri potest per pauca, non debet fieri per plura.*’ Excellent advice, I thought. And then it occurred to me that if medicines could produce their remedial effect in material doses, or in the lower dilutions, which were easily prepared, why should I have all the trouble and uncertainty of diluting them through thirty bottles with two succussion strokes to each dilution, or ten to fifty succussions, as recommended in the above-mentioned volume of the *Chr. Kr.*? I began to inquire what grounds Hahnemann had for fixing on the 30th dilution as the best for all medicines and all diseases. It was evidently impossible that he could have tried all the dilutions, from the mother tincture to the decillionth, in all diseases. So I concluded that his selection of the 30th dilution was purely theoretical, moved, as he tells us elsewhere, by a desire for uniformity of practice: ‘By laying it down as a rule, that all homœopathic remedies diluted and dynamized up to X (*i.e.*, 30th), we have a uniform mode of procedure in the treatment of all homœopaths, and when they describe a cure we can repeat it, as they and we operate with the same tools.’ (Letter to Dr. Schreter, *B. J. of H.*, vol. 5, p. 398.) I have the highest esteem—I may say, veneration—for Hahnemann, who is, beyond any doubt, the greatest physician of all times, by his magnificent Baconian deduction of the general therapeutic rule of *similia similibus curentur* from the recorded effects of medicines as poisons and remedies, and by his colossal industry in creating a *Materia Medica* to enable this rule to be practised. But though surpassing all others in the appreciation and utilization of medical facts, he is not a bit better than the rest when he leaves the solid ground of fact and soars aloft on the Icarian wings of theory. When he declared that a medicine which caused a certain array of symptoms in the healthy would cure a similar array of symptoms in natural disease, he was able to demonstrate the truth of this by innumerable instances, which admitted of no other interpretation. But

when he became theoretical, and enunciated the doctrines of a vital principle as what is primarily deranged in disease, and is alone acted on by medicine in the restoration of health (*Org.*, par 11-12), the dynamization of medicines, the peoric origin of chronic diseases, and the absolute superiority of the 30th dilution, I could not go along with him. Nor is he constant to his adopted standard 30th dilution. In the last edition of the *R.A.M.L.*, while he gives the 30th dilution as the best potency for 23 medicines, he advises the undiluted or mother tincture for 10 medicines, the 2nd centesimal for 4, the third for 7, the 6th for 2, the 9th for 3, the 12th for 5, the 15th for 2, and the 24th for 1. For 4 of these he advises also the 30th, and for one—*Thuja*—he mentions the 60th in addition to the 30th. Though he recommends *Bryonia* and *Pulsatilla* to be given in the 30th dilution, in a foreword to the same volume of the *R. A. M. L.*, in which these medicines appear, he relates two cases, in one of which he gave a full drop of the undiluted juice of *Bryonia*, and in the other half a drop of the 12th dilution of *Pulsatilla*. In a note he says that a globule of the 30th dilution of these medicines, taken or smelt, would have acted equally well, but as both were speedily and perfectly cured by the doses prescribed, it is evident that the 30th dilution could not have done better. At all events, the cure by the undiluted juice of *Bryonia* was a better instance of that simplicity, which Hahnemann said was so essential in homeopathy, than the 30th dilution, which requires a long and tedious pharmaceutical process for its production. It may be objected that the last edition of the *R.A.M.L.*, was published before he had fixed on the 30th dilution as the proper dose for all medicines, which he did in the *Organon* (par. 246, note), and in the *Chr. Kr.* But, even there, he occasionally departed from his standard dose. In the last edition of the latter work he says that 'when a medicine requires to be repeated it should invariably be given in a lower dilution, and he there also says that nitric acid should be given for condylomata in the 6th dilution, *Thuja* in the 30th, 24th, 18th, 12th, and 6th dilutions, *Petroselinum* in drop-doses of the fresh juice. I could give other instances of Hahnemann's practice with other lower dilutions, but the above will suffice. It thus appears that, even in the Master's practice, there was considerable doubt about the best dose, that the attempt to fix upon a universal dose was purely arbitrary, and that it is beyond the power of any man to determine which of all the dilutions, from mother tincture to 30th, is the absolutely best in any disease whatever; for in acute diseases it would be impossible to make a fair trial of more than one or two potencies, and in chronic diseases our natural tendency, when one medicine fails to relieve, is not to conclude that we have given the wrong potency, but to suspect that we have made a wrong selection of the remedy, and to set about a renewed search for the similimum in the *Materia Medica*. I confess that I have occasionally seen marked pathogenic effects of a medicine on the patient, from which I have inferred that the dose given was stronger than needed, and so, when the medicine seemed still indicated, I have given a smaller dose with advantage; but such cases have occurred so rarely in my practice that their recital would not go far to assist you in your laudable effort. I have a perfectly tolerant feeling towards potencies of all sorts; I hold that the medicine is the main thing, and that if we have selected the right medicine it does not matter very much, in most cases, what potency we give it in, provided we avoid giving such a strong dose as will cause the pathogenic instead of the therapeutic action of the drug or excite a considerable exacerbation of the disease symptoms. Hahnemann thought that every remedial dose excited some, though it might be a very small aggravation of the disease symptoms. This idea probably originated from his theory that the medicine, if

homœopathically adapted, must be stronger than the natural disease, and that it displayed this superior strength by causing at the first impact an increase of the morbid symptoms. This theoretical homœopathic aggravation has not been noticed by most homœopathic practitioners, or only as an exceptional and not a desirable occurrence.

"Seeing that Hahnemann's adoption of the 30th dilution as 'the best dose of the properly selected remedy for all diseases, chronic as well as acute' (*Org.*, par. 246, note) was purely arbitrary and not founded on any comparative trial of different potencies—for it is impossible to suppose that he or any man could have made an exhaustive comparative trial of the ten medicines he recommended to be given in the undiluted juice or mother tincture in the last edition of the *R.A.M.L.*, and the 30th dilution of the same medicines recommended in the *Organon*, both works being published in the same year, 1833, and as I know of no authoritative utterance on the subject, founded on experimental research, proceeding from anyone qualified to dictate to the profession, I considered that the potency of the remedial drug was an open question which every practitioner had a right to determine for himself, and that Hahnemann's Procrustean uniformity of dose was not an infallible law for his disciples. I found from trials I made that the process of making the dilutions according to Hahnemann's directions was delicate and difficult, and I began to doubt whether we could always rely on the dilutions obtained from our chemists being what the figures on the bottles represented them to be. I did not doubt the honesty of our tradesmen, but I feared, with the best intentions, they might have failed occasionally to produce the exact dilution required, and then we had no control tests, for the dilutions were beyond chemical analysis. So I thought the best plan was to follow Hahnemann's advice and prepare the tools for combating disease myself. For most of my medicines I got the raw materials, or mother tinctures, and made the dilutions I employed. The Latin maxim I have mentioned before, that Hahnemann quoted approvingly, and which may be freely translated: 'If simply made low dilutions will do, elaborately prepared high dilutions should not be employed,' appeared to me so congruous with the simplicity demanded by homœopathy and common sense, that I proceeded to act up to it; so I gave the medicines in the lowest dilutions I could without the risk of aggravating the disease or causing medicinal symptoms. Thus my practice has gradually settled down to a very limited number of potencies, ranging from the crude substance, or mother tincture, to the 6th dilution. I have occasionally, of course, given higher potencies, even as high as the 30th, but I cannot say that I have seen better effects from these than from the lower potencies I habitually use, and I have never made any comparative trials of the various potencies, so I fear my experience can be of no assistance to you in your quest of the Holy Grail of the absolutely best potency for all medicines and diseases.

"You will observe that I have made no mention of what are called the 'high potencies,' beginning apparently at the 200th and mounting by leaps and bounds to the millionth and beyond. As you know, I have translated all Hahnemann's works on homœopathy—except his chronic diseases—and all his letters I could lay my hands on. My translations have been a pure labour of love, as I have never received a penny for my pains. I have, therefore, too much respect for the Master to regard with complacency the attempt made by the partisans of this heresy to supersede the precise directions of Hahnemann as to the mode of preparation of his dilutions by the bottle-washing methods of these innovators. Even if their figures really represent the degree of dilution they profess, which I doubt, they are in direct opposition to Hahnemann's injunction in the

oft-quoted letter to Dr. Schreter : 'I do not approve of your potentizing the medicines higher, as, for instance, up to the 36 and 60. There must be some limit to the thing ; it cannot go on to infinity.' Mind, I do not mean to say that the users of these preparations cannot show many striking cures effected under their use. There is no method of treatment, however absurd it may appear to us, that cannot show its array of wonderful cures. The reason for this lies in the very nature of diseases. The natural tendency of most acute and of many chronic diseases is to get well without medical treatment, many by mere abstinence from unwholesome food, drink, or habits, or by attending to simple hygienic rules—*morbi sanantur et medicum, res contra medicum*. This fortunate, or, from the doctor's point of view, unfortunate, propensity of diseases places the expert and legally licenced practitioner at a great disadvantage compared with the professors of other callings—with the cobbler, for instance. Our shoes when worn out have no tendency whatever to self-repair, nor can anyone who has not received a special training—taken his degree in cobbling, as it were—do anything to cure their ailments. Says the cobbler in *Julius Cæsar* : 'I am, indeed, sir, a surgeon to old shoes ; when they are in great danger I recover them. But owing to this propensity of disease to self-recovery, everyone thinks that he can prescribe for his friends and neighbours when they are sick—he seldom trusts to his own medical skill when he himself is ailing—and he always shows a tolerable amount of success in those who follow his advice, as many more patients recover than die, under any or no treatment. Hence the apparent and much vaunted and advertised success of all the tribe of patent medicine mongers, faith curers, Christian Scientists, and autitoxin microbomaniacs, and why not also of high-potentizers ? It is simply a misfortune for the medical profession that diseases persist in displaying a self-healing power. If the authorities, who rule this planet according to their own sweet will would only banish or electrocute that pestilent and unlicensed practitioner the *Vis medicatrix, nature*, their attempt to give to a deserving profession a monopoly of disease-curing by means of a four years' course of study in the school and a parchment diploma might be crowned by a certain measure of success. If they could at the same time guarantee that their licensees were really taught disease-curing. As they cannot do this their license only amounts to disease-treating which can never be a monopoly. Of a truth, the physician who has thousands of unlicensed competitors to contend with, and whose material has a provoking habit of self-repair without his aid, has not a happy lot compared with that of the cobbler whose material has no self-repairing faculty, and can only be restored to health by the skilled artificer. *O fortunatos nimium, sua si bona norint, sutores !*

"I feel that what I have written is more of the character of an apologia for my own practice than an answer to your request for my experience of various potencies. But possibly the tale I have told of my own prepossessions for and experiences of the lower dilutions may not be altogether useless in assisting towards the elucidation of the much-vexed question of the best dose. My experience extends over a very considerable number of years. My conversion to homœopathy dates from 1843, the year of the death of the great founder of our therapeutic faith, so I have had ample opportunity of judging of the success or otherwise of my practice. On the whole, I have good reasons to be satisfied, and I think my *clienteles* have little cause to be dissatisfied. Many families, whose confidence I still retain, have been under my care for long periods, some more than fifty years. The certificates of death I have had to give are not remarkably numerous, and a good many show that the victims have not been prematurely cut off in the flower of their age. I find that many of these certi-

states refer to a longevity of upwards of eighty years; several have not 'shuffled off this mortal coil' before their ninetieth year, and 97, 98 and 99 are some of the ages of my oldest deceased patients.

"I have not yet retired from practice, though practice has, to a considerable extent, retired from me, but that is only natural, for new patients do not usually care to send for an 'octogenarian' as I have been called, for their medical adviser, and the old ones, who remain faithful to the end, of course eventually drop off, not being endowed with the gift of immortality. So, though I still feel as fit as ever, I have an ample allowance of enforced leisure, which, and the natural garrulity of old age will account and be my excuse to you for the unconscionable length of this letter." *Monthly Homoeopathic Review*, June 1903.

SOME REFLECTIONS, MAINLY ETHICAL, ON THE PRESENT POSITION OF OPERATIONS IN THE PRACTICE OF SURGERY.

*Being the Annual Oration of the Medical Society of London, delivered
on May 18th, 1903,*

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APOTHEOSIS OF THE EXPLORATORY OPERATION.

The promise of such enormous benefits from operative treatment which could be used with comparatively small risk was followed by an amount of energy and enthusiasm in the direction of this radical form of treatment and in the invention of operations which came at one time perilously near to the limits of reason and there seemed a danger that the operation influence would reach to the dignity of an obsession—a condition of things which hardly tended to the best interests of surgery. The pendulum has in due course commenced its backward swing and a position has now been reached from which the rational bearings of surgical operations generally may be considered in relation to the risks which they entail, the benefits which are derivable from them, and the limits which legitimately control their application.

In what follows it must be understood that I have little desire to influence and still less to teach; that I am merely giving views and describing impressions which are those of one who during an experience which extends from the time just anterior to the commencement of the period of surgical cleanliness has been carefully watching the progress and general trend of surgical affairs and who, I have reason to believe, enjoys a fair share of operative work in London and the present time and so may be allowed to have some knowledge of the failures as well as of the successes which are necessarily associated with a rather large experience. Speaking generally, I am compelled to say that it seems to me that the tendency towards operative measures, although less than it was a few years since, is still, on the whole, too strong, and that operations are yet approached in too light a spirit, not for the reasons to which I have already referred, but because a prolonged familiarity with them has led to an under-estimation of the risks which they entail and to a forgetfulness of the defective results which, more often than is commonly thought follow upon them. I am further bound to feel that the present position of things tends far too much to the reduction of the surgeon to the position of the mere mechanic. Indeed, it is not long ago that a surgeon is reported to have said

that he considered himself nothing much better than a good carpenter—a statement which was, if I may be respectfully allowed to say so, a greater tribute to his modesty than to his sense of appreciation of the realities of his profession.

THE FOUR STAGES OF SURGICAL LIFE.

The working life of every surgeon may, I venture to think, be divided into three principal stages. In the first, or developmental, stage, the fascination and apparent simplicity of the operative treatment, presenting, as it seems to do, the prospect of a ready road to immediate and conclusive results, are apt to obscure wider and often more important issues in the way that a penny piece, if placed sufficiently near the eye, will obscure the sun. Towards the end of this stage those whose sense of infallibility is not too strong begin, I fancy, to realise, the truth of what may be expressed by an ancient classical adage, slightly modified: *Nemo repente fit chirurgus*. At about this time in the evolution of the surgeon the tendency shown rather later to operate less freely and apparently with less energy sometimes leads to the conclusion by those who are yet in the early stage of their development that this is due, either to indifference or to an inability to keep abreast of the times, the real factor in the matter, which is the dictate of increasing experience, being overlooked.

In the second stage the gathering of experience and the lessons of some failures and disappointments lead in the majority of men to maturer judgment and a better understanding of the proper relation of things. It is towards the end of this period that the greater number of surgeons begin to be rather less aggressive in the direction of the purely operative treatment and show indications of approaching it with more consideration than hitherto, an attitude which is the result, as I have already said, of increased experience and a more accurate knowledge of the real value of operations as such. It is at this time that a sober retrospect on the part of those whose sense of proportion is sound will, I am confident, recall to mind more instances than one in which an operation performed in all good faith had better, for the good of the patient and perhaps for the reputation of the operator, have been left alone.

With the third stage comes the inclination for the surgeon to confine himself to certain operations with which he feels himself most at home and thus to some extent his practice becomes eclectic. The increase of experience and a maturer judgment at the same time becoming more prominent characteristics he is enabled to exert a far-reaching influence of the greatest value.

There is a fourth stage, of course, in the surgeon's life when, happy in the contemplation of an honourable career well spent, it is to be hoped that he has much money at the bank—a time when, although operations may be things of the past, there remains that never-failing judgment, the outcome of a vast experience the importance of which it is impossible to over-estimate, although I fear at times it is not altogether appreciated at its full worth by some of us.

OPERATION RISKS IN MORTAL CASES.

I presume that it cannot seriously be contended that any operation can be made absolutely safe, even if it be assumed that the operator is as perfect as an operator can be, for apart from merely accidental risks some account must be taken of the effects of the anæsthetic, the constitutional peculiarities of the patient, the circumstances in which the operation is performed, and the qualities of those who assist in its completion. The risk incurred may be an immediate danger to life, it may be a possibility of leaving a worse condition than existed before the operation, or it may be merely the chance of defective results.

With regard to the danger to life, apart from certain accidental risks which must be connected with all operations, it is clear that in any mortal condition which seems susceptible to relief by operation no risk is too great to run provided that there is a real chance of success, but I do not think that the mere fact that a patient is apparently bound to die unless operated upon is in itself a justification for operation; and operations upon moribund and on semi-pulseless people, save in very exceptional circumstances, seem to me to be mischievous and unscientific, since they cannot, from the nature of things, benefit the patient and they reflect but poorly upon the practice of surgery. The amount of risk which can be justifiably run in these mortal cases depends greatly upon the question as to whether the lesion is due to curable—that is, probably non-malignant—conditions or whether it is caused by malignant disease or by some other incurable state. It is obvious, I suppose, that there is practically no limit, as I have already said, to the risk which may be run in dealing with a curable condition, whilst in a case of malignant disease, for example, in which the operation as a rule may be regarded as palliative, grave consideration should be given to the question of risk before embarking upon a treatment which at the best can probably only lengthen life for a period and may shorten it materially without affording much prospect or possibility of cure. On the other hand, the chance of shortening life by a little time may be legitimately taken when a cure is practically sure if the case turns out to be successful from an operative point of view. In all cases of this type the point of paramount importance is the realisation that the primary object is to save life and not necessarily to perform an ideal operation. I make no doubt that more than one life has been sacrificed by proceeding to the completion of an academic operation which might have been saved by the performance of a less serious proceeding in the first instance. This observation, although it applies generally to a number of cases, such for example, as extensive disease about the neck and throat, the rectum, and other parts, seems to me to possess especial force in connexion with many of the large growths revealed by abdominal exploration, the risk of removal of which is generally altogether out of proportion to the benefit likely to be derived from the treatment, the mortality in such cases being high, whilst not a few really show no lethal tendency if the disease is left *in situ* after free exposure, and in some the disease finally disappears. Having regard to all the circumstances in cases of this type it appears to me that in the vast majority the proceeding to the extirpation of masses of disease which entails, for example, the taking away of large portions of the great blood vessels or other vital parts is rather an academical demonstration of the possibility of removing a growth than a treatment for the benefit of the patient, especially when it is remembered that, even with our present knowledge, it is practically impossible to say whether a growth is malignant or whether it is not by any other test than its clinical behaviour. The three following cases which have occurred in my practice within the past two years are sufficient to emphasise this fact.

CASE 1.—A boy, 14 years of age, was found to have an apparently malignant growth of the right kidney and surrounding tissues. The vena cava was involved in the disease; many outlying nodules distinct from the main mass existed. One of these was removed and proved after examination to present microscopically all the characters of typical sarcoma. No attempt at removal was made. The whole disease disappeared and the boy is now in the navy.

CASE 2.—A young woman, aged 28 years, had abdominal section performed with the view to the removal of a mass on the left side of the abdomen below the umbilicus which seemed to be connected with the

uterus. Upon exposure a large, and so far as could be judged a typical, mass, of malignant growth was seen involving the omentum and the uterus, lapping around the left iliac vein and artery, with which it seemed to be inseparably connected. Secondary nodules in large numbers were scattered in the omentum in the immediate neighbourhood. No attempt at removal was made. The whole disease has apparently disappeared and the patient is in good health.

CASE 3.—An abdominal section was made with a view to the removal of a tumour apparently involving the cæcum in a man, aged 48 years. The mass, which involved the cæcum as was expected, had the appearance of malignant disease; it was fixed and extended inwards by a flattened process to the middle line. In this the vena cava was imbedded. No evidence of obstruction had occurred and as the active growth appeared to be in a direction away from the bowel nothing further was done. It is now three months since the operation; the mass is smaller and is steadily decreasing, while the general health of the patient is continuously improving.

I have no doubt that in each of these cases the removal of the disease was mechanically possible, but it is hardly likely that all the patients would be alive now if the completion of ideal operations had been effected.

I mention these cases not because they indicate that completion of ideal operations should not under proper conditions be effected, but because they show clearly enough that even when operation is in progress the result of a case may depend upon much more than the dictates of mere craftmanship. A more striking instance, perhaps, than any one of these was the case of a nurse who became a patient in St. George's Hospital on account of hæmatemesis in whose abdomen a large mass could be felt which proved, as was believed before laparotomy, to be connected with the stomach. It had upon exposure all the appearances of a large carcinomatous plate involving two-thirds of the anterior and under surface of the organ towards the pyloric end which was involved in the disease and was also adherent to a mass of glands which lay beneath it. The case occurred at about the time when the complete removal of the stomach was under discussion and I should, if the patient's condition had offered any hope of real success, have removed the greater part of the organ. As it was nothing was done; the mass disappeared and the patient resumed her work. I mention this case as it provides an excuse for referring to a remarkable difference existing in the experience of surgeons in malignant, or what seems to be malignant, disease of the pylorus and the parts continuous with it. It happens that my experience of the surgery of the stomach is large, but in all my dealings I have only met with three cases in which I have thought pylorectomy worth performing. The other cases have either been too advanced to justify the treatment or of too doubtful a nature to lead me to think it proper. All these doubtful cases have been treated by gastro-enterostomy, with uniformly good results. In a very striking case, in which several of those present were convinced of the malignancy of the disease and upon which I operated by gastro-enterostomy in 1887, the first case of the kind at St. George's Hospital, the man is alive now and following the occupation of a waiter. Seeing the large number of pylorectomies published by other surgeons in different parts of England it is clear that either my practice differs altogether from theirs or that the cases which come in their sphere of action are of a different kind from those with which I meet. However this may be, I am content with the result of my own experience which emphasises the truth of a dictum for which I have a profound respect and which could be illustrated by endless cases

—namely, that when an equally good result is obtainable by two operations, one being distinctly less dangerous than the other, the best practice is to choose the milder method, although for the moment it may appear less brilliant in itself and perhaps less obvious in its immediate result.

SOME EFFECTS OF FAMILIARITY WITH OPERATIONS UPON THEIR USE.

The effects of familiarity with operations in leading to their adoption in a manner which one cannot help feeling is not always quite discriminating are best seen in connexion with the operative treatments of certain conditions which are dealt with radically, either from the point of view of pure expediency or for preventive purposes—conditions, in fact, in which operation cannot be regarded as actually necessary and in which the proper application of the treatment must therefore depend entirely upon the judgment and experience of the surgeon concerned, the justification for an operation being principally its safety and a certainty, or at all events the strongest possible probability, of the desired result being assured. In many of such cases it cannot, I think, be denied that the operative treatment has with some of us degenerated—I use the word advisedly—into a mere question of routine. And it may be said without reservation that if a treatment becomes a routine method the danger of suppression of individual judgment in connexion with it becomes a reality. For the better understanding of this contention, although many other illustrations could be offered, it is convenient to consider only two conditions which must be more than familiar to all of us—that is to say, disease of the appendix and varix. The removal of the appendix after the occurrence, or recurrence, of certain symptoms may, I presume, without exaggeration be described as a routine practice now with many surgeons. At the same time, it cannot be contended that the removal of the appendix is always called for or that it invariably relieves the symptoms for which the operation has been performed. For the proper application of a treatment which may itself cause death (fatal results do sometimes follow the operation of removal of the appendix even in the quiescent stage), may not relieve the symptoms for which it has been carried out, and is sometimes followed by grave complications such as, for example, extensive thrombosis, must clearly demand an amount of judgment in its application which is altogether incompatible with mere routine. Further, in relation to this matter generally, it seems to me that the habit of frequently operating in any given condition tends automatically to an inclination to over-estimate its gravity. It is, for example, by no means certain that the lethal tendency of recurrent appendicitis is as great as we have come to suppose. Many people live the ordinary span of life without operation who have been the subjects of frequently recurring attacks of appendicitis—a statement which receives considerable interest from the fact that it would be easy to indicate a number of persons in the medical profession who, whilst they are the subjects of recurrent appendicitis, show no great anxiety for operation.

I have said that the removal of the appendix does not always immediately do away with the symptoms for which the operation had been performed. The defective result in these cases depends, it seems, upon the serious implication of the cæcum itself in the disease. It is not so uncommon as is generally supposed for recurrent attacks have followed upon malaria, dysentery, or typhoid fever, the explanation probably being that in such cases the disease is liable to be cæcal in its origin. There have come under my notice cases in which the appendix has been removed for the ordinary symptoms of appendicitis so-called, in which attacks indistinguishable from what is commonly called appendicitis followed after the operation. It is true that after repeated subsequent

attacks the symptoms gradually wore themselves out, but so they might have done in the absence of operation altogether. During the late South African war I had a considerable experience of operations in cases of appendicitis in men invalided on that account and of these, three cases in which symptoms arose after dysentery and malaria showed no immediate improvement at all after the operation. In each of these cases the cæcum was at the time of operation seen to be the main seat of disease, the appendix in each, although it could hardly be called normal, was so slightly involved that no stretch of imagination could have saddled it with the cause of the symptoms, and my impression is that in the light of subsequent events these cases would have been as well without operation as with it. It would therefore seem that it might be worth the expenditure of some pains and some time in endeavouring to arrive at a diagnosis without operation between cases in which the cæcum is the original seat of disease and those in which the appendix is primarily at fault, an observation having a practical bearing to which I shall refer for another purpose a little later.

Illustrations of a less debateable kind of the point I have just now in view may be afforded by cases which in themselves have no lethal tendency at all; such, for example, as uncomplicated varix of the lower limbs, which provides a large number of operations at the present time. I know of few conditions which require the exercise of more judgment in arriving at a proper decision as to the desirability of operation than these cases of varix do. The number in which operation is really beneficial is very small in comparison with the number of cases met with; moreover, the size of the veins bears no relation to the necessity for operation, inasmuch as in many of the cases in which the veins are largest operation is altogether unnecessary, and indeed often unjustifiable, mere abnormality having to be distinguished from disease. Setting aside, therefore, such patients as come up for treatment to satisfy the requirements of the public services, the cases of this class in which operation is really indicated are few, save those in which objective trouble, such as pain or rapid increase in size, is present.

Now, the operation for varix in subjects between the ages of 18 and 45 years may in sound subjects be regarded to be as safe as any operation can be and need not therefore in itself be regarded seriously—a fact which I cannot help feeling leads to the performance of operations in a certain number of cases of this kind which would not be so treated if the risk of the proceeding were sufficient to lead to a careful consideration of the bearings of the matter. That this is so I am compelled to conclude by the fact that cases come under observation in which operations upon varix of the lower limbs have been carried out for the relief of symptoms undoubtedly due to flat-foot which were subsequently relieved by the ordinary treatment for that affection. And cases from time to time come under notice in which pains resulting from nervous disease have been apparently assumed to be due to extensive varix, which has consequently been operated upon with a view to the radical cure—an error of judgment which might have been avoided if the patellar reflex had been tested. Had the treatment here been of a more dangerous kind I have no doubt that a sufficiently thorough examination would have been made to prevent the performance of operations which were more than unnecessary. It would, if time allowed, be easy to give further illustrations of this kind.

THE SAFETY OF OPERATIONS IN RELATION TO THEIR PERFORMANCE IN CERTAIN CASES.

Going a point further I think it clear that the mere safety of an operation tends to obscure the fact that its results may not be invariably

advantageous to the patient, a view which could be supported by fertile examples which would show, in cases in which the condition before operation had given rise to no trouble and in which, in fact, the radical treatment had been carried out for purely expedient or preventive purposes, that the consequences following are sometimes regrettable. The percentage of cases in which unsatisfactory results follow is, of course, impossible to ascertain, but the fact that such results do ensue is clear, because I see in the course of my experience—which I suppose cannot be very different from that of other people—cases in which operations performed by various surgeons are followed by such results. Taking varix again, for example, cases occur in which thrombosis, permanent cold extremity, chronic cedema, and acute neuralgia follow operation in people who previously had suffered no inconvenience at all. As a good example of this sort the last case of the kind which has come under my notice is worthy of mention. The patient was a young girl of a highly sensitive temperament who, being distressed about some slight varix in both lower limbs, contrived to have operative treatment upon the veins, which had previously given no trouble at all, carried out. Thrombosis in both limbs followed the operations and now, months after the treatment, she is only just able to resume her ordinary vocation and remains to be seen whether further trouble will arise. It would, I presume, be foolish to contend that the operation would have been performed if it had been thought that any risk to life attached to its performance. An interesting point arises here in connexion with the difficulty which presents itself to an operator in determining sometimes whether an operation is finally successful or not, because it is quite certain that a large percentage of those patients whose operations prove in the end unsatisfactory do not return for advice to the surgeon who originally operated; and I have reason to know that instances happen in which the original operator has considered, and sometimes, indeed, in good faith has recorded, a case as successful which has been under the care of another surgeon subsequently either for further operation or in consequence of unfavourable results following upon the original treatment. It is only a short time since that I heard, quite by chance, that a patient upon whom I had operated, as I thought successfully, had been treated subsequently by another surgeon for the same condition, presumably because my operation had failed to effect the object desired. And I have lately seen a patient who has already been operated upon the same lesion by two surgeons, each of whom is, I believe, under the belief that the operation performed by him has been successful. Indeed, in this respect there is little doubt that many of us live in something like a fool's paradise, a fact which in the study of statistics, is not to be regarded altogether with complaisance. It is, at all events, quite certain that the true value of a treatment cannot be estimated upon records of successful cases and it is a welcome and healthy sign when a distinguished surgeon, as happened a short time since, thinks it right to publish a series of unsuccessful results following upon operations of which he has had a large experience. In connexion with this question it is, I suppose, superfluous to insist that a successful operation should be held to mean one which achieves the end for which it is performed, whether that be the saving of life, the relief of pain, or any other object. The description of successful operations followed by the death of the patient has been fully satirised by Dickens and others before him and the matter would not be worth mentioning here were it not that apparently serious mention is sometimes made of cases in which successful operations have been performed without the saving of life or attaining some other end which was the real object of their performance. The use of the term "successful" in connexion with operations in such circumstances seems to me to be a juggling with words which is not quite

consistent with the traditions of our profession, and that it should be so used is, I think further evidence of the way in which the overwhelming importance now attached to operations themselves tends to obscure the more vital points at issue and sometimes, it must be admitted, goes dangerously near to leaving in the background the great truth that in all matters of this kind the interests of the patient and not the mere attaining of a mechanical achievement should be the surgeon's first concern.

THE EXPLORATORY OPERATION.

The results of the free employment of the exploratory operation have, on the whole, been greatly to the advantage of the patient and of the surgeon alike, but, as is the case with many other things, an exploratory operation is not always perfect in its results and, moreover, it cannot be regarded as altogether free from risk. It is sometimes said when discussing the propriety of making an exploratory operation that at all events no harm can come of it if no particular advantage is gained. But is this always the case? I find that within a comparatively short time I have been brought in contact with no less than 16 cases in which persistent troubles arising, it has been said, after abdominal exploration—have been complained of. 10 of these came under observation on account of troubles connected apparently with the operation. In the others the fact of an exploration having been performed was only discovered accidentally in the course of conversation or in the course of examinations made in connexion with matters apparently unassociated with it. In five of these cases large ventral herniæ existed; in three cases persistent pain of an acute kind had followed about the region of the wound; in two there were sinuses; four patients had never been the same since the operation; one had continual incontinence of urine; and one had an ankylosed hip which was stated to have followed upon fever which came on after the operation. Fatal cases are also not unheard of. I have already said in another connexion that results like these in no respect negative the propriety of the exploratory operation as such, but only show that it cannot be regarded always as a trivial proceeding and that it should therefore be undertaken only when it is really necessary and not merely as a routine proceeding. Although the instances of defective results which I have mentioned are confined to the abdomen it would be easy to afford other examples, notably in the case of the knee. In one respect, at all events, it is certain that the very free use of the exploratory operation does not make for the good of surgery. It cannot, I think, be denied that, speaking generally, the estimation in which the art of clinical diagnosis—by which I mean bedside diagnosis as distinguished from that of the operating theatre and the clinical laboratory—is held has declined since the free use of the exploratory operation. This must be patent to any acute observer of surgical affairs generally and it must be especially clear to those who are concerned in examining candidates for the various degrees and diplomas, as they have exceptional facilities for judging of the trend of clinical teaching in the various medical schools. In former times, in consequence of the risk generally involved in any but the simplest of operations, and sometimes even in them, it was essential to strain every faculty of observation to endeavour to arrive at a diagnosis before resorting to operation. Now on the contrary, when the exploratory operation, which can, as a rule, be carried out with comparative safety, is an immediate means of clearing up a difficult diagnosis there is a disinclination to spend a great amount of time in arriving at a conclusion independently of operation which it is thought may be much more easily attained by exploration. In some respects, apart from any question of risk to life or other consequences, this condition of things is not advantageous, and especially is this the case from the educational point of view, for although, as I have said, the

exploratory operation may often be a proper resource in the hands of those sufficiently experienced to appreciate its limitations, to the inexperienced and to the ordinary student its too common use is distinctly harmful, as it frequently leads to any careful attempt to make a non-operative diagnosis being regarded as a waste of time; and, moreover, it sadly depreciates in the minds of the same persons, the inestimable value of the education of the eye and hand which is essential for the highly cultured practitioner, and which nothing affords so certain a means of obtaining as the delicate and gentle manipulations which should be inseparably connected with bedside diagnosis. Further, this effect of lowering the standard of bedside diagnosis tends too much, in my opinion, not only to exaggerate the importance of the purely operative aspect of surgery, but to reduce the surgeon to the position of the henchman of the physician, into whose hands the more delicate non-operative diagnosis must, as a matter of course, fall. I am not one of those who think that the present incidence of surgery is to the extermination of the physician—in fact, I believe he will become more and more essential as time goes by. At the same time I am strongly of opinion that it is not the duty of the surgeon to operate at the request of a physician, unless he first assures himself that the conditions said to exist are actually present. To do so; it seems to me, is to lose sight of the respect which is due to surgery in the broadest sense. But it is clear that this ideal surgical position is only possible with those who have cultivated to the utmost the power of non-operative diagnosis. The surgeon is in this respect, in my opinion, a physician and something more. Be this as it may, I feel strongly that the performance of the exploratory operation as a mere routine treatment is to be regarded with apprehension, since it tends to the idea that the most careful attempts at arriving at a diagnosis without operation are unnecessary and so conduces to minimising the value of the cultivation of judgment in surgery—a deplorable thing, since judgment is the enemy of routine and routine is the bane of surgery. The exercise of the highest degree of astuteness in diagnosis is, indeed, often necessary before determining upon an exploratory operation. Operations, for example, on the abdomen when the lesion has been in the thorax are not unknown. It is only a short time since that I was called to a case with a view to operating for ruptured gut after a severe injury, in which it was only possible, upon the most careful examination, to determine without operation that the lesion was thoracic and not abdominal, a conclusion which not only negated the propriety of operating, but probably saved the patient's life, as an abdominal exploration in the degree of collapse which was present must have almost certainly ended in death.

SOME EFFECTS OF OPERATIONS UPON HOSPITAL WORK;
METHODS OF OPERATING; AND THE ATTITUDE OF
THE PUBLIC.

The effect of the tendency to regard operations as the main end of surgery has led to a complete change in the course of the last 20 years or thereabouts in the class of cases admitted into the surgical wards of the large hospitals of London, so much so that I believe that I am right in saying that, with the exception of accidents, the admission of patients in the ordinary way whose diseases do not offer a prospect of cure by operation is comparatively uncommon. All possible credit having been allowed to the extensive applicability of the operative treatment, I think that the exclusion of cases unsuitable for operation inflicts a hardship upon many patients and is bad for medical education generally. It would be interesting to know what becomes now of cases which were formerly admitted as a matter of course into the general hospitals, such as early tuberculous disease of joints, diseases of the spine, and many other conditions in which operation is not

likely to be called for. It is at all events quite certain that there is no very great opportunity for the study in the surgical wards of the majority of our hospitals of cases which are outside the sphere of probable operation; and I am strongly of opinion that in every hospital a definite number of beds should be set aside for the exclusive benefit of patients suffering from conditions which, whilst curable, are not necessarily so by operation only.

An interesting matter in connexion with the details of operations themselves is the ignorance of the majority of us as to the methods used by other surgeons. This is the result of our seeing little or nothing of each other's work. That this should be so cannot be otherwise than unfortunate, although it is difficult to see the remedy in these times of rush and overwork. I am, however, sure that if we could each of us devote a certain time to watching the way in which operations are conducted by others educated in a different school we should all obtain a wider grasp of methods generally, greatly to the gain of surgery and to our own advantage. As it is, each man learns by experience the method by which he can himself most surely achieve in any given case the desired end; the methods of each surgeon, in fact, gradually become stereotyped which in some instances, unless I am deceived in my impression, leads to some intolerance with regard to the practice of others, since there is an inclination sometimes on the part of a surgeon to regard operations performed by any method other than his own as inefficient or unsuitable, failing to realise, by reason of his insulation, that what he can effect by one plan another operator can do as well, or perhaps better by some other, method. The greatest evil, however, of this condition of things is the fostering of routine operations in consequence of the assumption by some people, because they have no means of checking the view, that for a given condition only one operation is really effective, that being, of course, the one they are in the habit of using themselves, a position which rarely if ever bears the test of actual work. In suturing the abdominal wall, for example, there are three main methods, each of which is used exclusively by different surgeons because they have come to think that only one is a perfect plan; yet there have come recently under my notice examples of large ventral herniæ following the use of each of these methods, two examples being in the same patient. Many other instances could, if it were necessary, be quoted.

It is, I believe, safe to say that one of the most remarkable of psychological problems at the present time is the attitude of the public generally towards surgical operations, a problem offering difficulties in its solution second only to those presented by the mystery of radium, for whilst in the majority of instances the dread felt in connexion with the truly necessary operation is so great that it is, I believe, a factor to be reckoned with in deciding upon operations of this kind unless a successful result is practically certain, in cases of expediency and unnecessary operations it is often, unless my experience differs from that of other surgeons, extremely difficult to make people believe that operation is not altogether desirable; it is, in fact, sometimes not a question of advising an operation but of

declining to accede to a request for its performance. The reason for such a curious state of affairs is difficult to explain. Whatever the explanation may be there is no doubt that a heavy responsibility falls upon the surgeon in the matter, which is considerably increased by the fact that it indicates such absolute confidence in the integrity of the medical profession. The truth, I suppose, is that the public have an altogether exalted idea of what can really be effected by operation and have only the vaguest idea of what an operation really means. In respect to this attitude it cannot be too fully understood that no amount of anxiety on the part of the person to undergo an operation can absolve the surgeon of one atom of his responsibility in regard to its result—a point which, I fancy, is not always quite sufficiently considered.

A FORECAST AND CONCLUSION.

Nothing that I have already said must be held to mean that I underestimate the value of operations as such, for no one has a higher appreciation of the immense benefit which is derivable from them and no one can be more ready, or, indeed, more anxious, to employ them in proper circumstances, but I admit that a feeling of apprehension arises in my mind when I regard the infelicitous which undoubtedly exists at present to consider the operative treatment as the alpha and omega of surgery, an attitude which must not only, as has already been said, end in the reduction of the surgeon to the grade of a mere mechanic, from which he is as far removed as highly sentient human machine can be from an automaton, but distinctly, in my judgment, stands in the way of progress to better things. It behoves us and it behoves us well, to bear in mind a fact to which allusion is less frequently made now than formerly—that operations, however perfect in themselves and in their results, are, excepting those rendered necessary by injury and in some cases of deformity and senile change, in truth a reproach to us as a profession, inasmuch as they afford clear evidence of our failure, even at the present time, to obviate the occurrence of the diseases and the conditions which render operation necessary. By allowing the influence of the operative treatment to be too great it seems to me that there is more and more danger of the great importance of preventive measures against disease being lost sight of. In fact, the conception and carrying out of a great operation are liable to conceal the importance of the initial defect which leads to the necessity for its performance. May I give a gross and commonplace example to illustrate clearly what I mean? Cancer of the tongue, setting aside any question as to what may be the factor in the origin of cancer itself, is undoubtedly set alight by one or more of the many irritations, most of them preventable, to which the organ is constantly exposed. But how much time and trouble are taken in preventing these local causes? In other words, how much thought is given to the preventive hygiene of the mouth compared with that which is expended upon the conception of elaborate operative measures for the removal of already existing cancer and upon a consideration of their effective application? The answer will be found

to the question by a reference to the ordinary educational works on surgery. Cancer, tubercle, and the results of venereal disease, of which cancer is of course sometimes one, provide a very large proportion of cases requiring operations. The prevention of tubercle or its treatment in the early stages will before long, there is reason to believe, eliminate the necessity for its treatment by operation, and although we at present grope in the dark with regard to cancer, the discovery of the secret of its origin, which is only a matter of time and may come at any moment, perhaps from a least expected quarter, will assuredly lead to its treatment by other means than operation. With increasing sense in the community at large it is to be hoped that an antidote may be found to the sickly sentimentality which stands in the way of the practical extirpation of venereal disease. Apart from these considerations the means for the treatment of disease which tend to reduce the scope of mere operative measures are increasing. Of these the most potent is afforded by certain of the higher physical forces, which are slowly but surely encroaching upon the domain which has hitherto been subject solely to the rule of the surgeon. A comprehensive view of the matter generally as it stands justifies, I believe, a forecast that ere many decades have passed away the operating surgeon as we know him will be a far less imposing figure in the medical landscape than he now is, and that operations, excepting in the restricted degree which I have mentioned, may be looked upon with as little favour as suppuration is regarded by us now. In the meantime, taking things as they are, it is well that we should beware lest a single predominant factor should be allowed to lead to our regarding through a small tube only a subject the horizon of which is absolutely unlimited. It has been said that the basis of surgery is handicraft, and this, in a sense, is true; but surely it is a truth only half told, for apart from the issues to which I have referred there is lying behind a far greater thing, the knowledge of when to apply that craftsmanship of which everyone who now aspires to the practice of surgery should make himself a master. Nothing that has happened in the improvements connected with the practice of our art justifies, so far as I know, the modification by one iota of the edict of the great surgeon who, before advancing science had robbed operations of most of their horror, said, "The all-important thing is not the skill with which you use the knife but the judgment with which you discern whether its employment is necessary or not." In other words, those who attach too much importance to mere mechanical dexterity not only fail to reach the high-water mark of greatness but entirely lose sight of the grand possibilities of their calling.

Gentlemen, I have done. Rousseau once said that people are happy in proportion first to their virtue and then to their independence. Being but poorly endowed with the former, such happiness as I have enjoyed has been mainly due to the latter. If, therefore, the spirit of indepen-

dance has led me to express views to-wit with which the feelings of any of those present are not in tune I must crave indulgence upon the ground that my intentions have at least been good.—*Lancet*, May 23, 1903.

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CHOLERA.

V.

(Continued from last Number, p. 236)

DIAGNOSIS CONCLUDED.

It is to be noted that Sydenham was not singular in omitting all mention of color in the evacuations of cholera. Even Hippocrates or rather his immediate followers were equally negligent. Thus in Book V. of the *Epidemics*, put under the category of "not genuine" by M. Littré and other critics, we have report of three cases of cholera, but the bilious character of the vomiting only is mentioned in the second, and no color is mentioned of the downward evacuations in any of them. The cases are :

Case 1.—"At Athens a man was seized with cholera. He vomited, and was purged and was in pain, and neither the vomiting nor the purging could be stopped ; and his voice failed him, and he could not be moved from his bed, and his eyes were dark and hollow, and spasms from the stomach held him, and hiccup from the bowels. But the purging was much more than the vomiting. This man drank hellebore with juice of lentils ; and he again drank juice of lentils, as much as he could, and after that he vomited. He was forced again to drink, and the two (vomiting and purging) were stopped : but he became cold. He was washed with plenty of (hot) water down to the genital organs, until the upper parts also grew warm, and he lived ; and next day he took some gruel (meal with water)."

Case 2.—"Eutychides had a choleric affection, which ended in a tetanic seizure of his legs, along with purging. He vomited for three days and nights a quantity of coloured and very red bile, and he became powerless and oppressed with nausea, and he could retain nothing—neither drink nor food; and there was complete retention of urine and there was no passage downwards. By vomiting soft dregs were evacuated, and they also passed downwards."

Case 3.—"It happened to Bias, the pugilist, who was a great feeder, to have a choleric attack from eating flesh. * * In summer reign choleric affection and intermittents."

From the meagre report of the third case it is difficult to say what its actual nature was. From the cause assigned for the origin of the disease, namely, eating of flesh, and from the fact of the summer being the season when choleric affections are said to prevail, we may safely say, it was very likely the disease which Sydenham has described. As regards the second, from the bilious character of the vomiting, at least, we must come to the same conclusion. As regards the first case, it was indeed a very severe disease and had symptoms,—failure of the voice, darkness and hollowness of the eyes, coldness of the surface, and cramps,—which are, indeed, some of the characteristic symptoms of the true cholera, but it is impossible to say whether the evacuations,—the vomitings and the purgings,—were of the nature of the cholera dejecta of the present day. Besides, as in the severe forms of Sydenham's cholera morbus, the symptoms here mentioned as characteristics of the Hippocratic disease, are also present, we are inclined to believe that even this first case was of the same nature.

Hippocrates flourished between 460 and 357 B.C. Physicians after him, whether belonging to his school or not, had written about cholera, very nearly in the same way as he or his immediate disciples did. Thus Aretæus, who flourished about 100 A.D., defines cholera, as we are told by Dr. Adams, to be a retrograde movement of the matters in the body upon the stomach and intestines, consisting of a discharge upwards and downwards of bile, which, if the disease proves fatal, becomes black; and, at the same time, the extremities are cold, with profuse sweats; pulse small and dense, constant straining to vomit, and tenesmus. He also makes mention, among the symptoms, of spasms and contractions of the muscles in the legs and arms, hōrborygmi,

tormina, and syncope. The complaint is occasioned by continued indigestion, and proves fatal by superinducing convulsions, suffocation, and retching.

According to Cælius Aurelianus, who flourished about 200 A.D., cholera is a disease in which there is flow of bile by the mouth and the bowels, and "the bile which is vomited is at first yellow, afterwards green, and at last black." Paulus Æginata, who flourished about 600 A.D., describes cholera as "an immoderate disorder of the belly, with discharges upwards and downwards, arising from continued indigestion," and makes no mention of color of the discharges. The Arabian physicians simply followed the Greek and Latin authorities, and there is nothing new in their writings about the disease.

Modern European authors, evidently deriving their knowledge of our ancient medical writings from men but ill-acquainted with those writings, have thought that the disease described as *Visuchiká* by Charaka and Susruta, and following them by modern writers such as Bábghata and Bhába Misra, corresponds to the cholera of the present day. Charaka has described *Visuchiká* as simply a disorder of indigestion in which "the undigested food passes upwards and downwards." Susruta is fuller and more precise. According to him, "that form of indigestion, in which the wind torments the body as with needles, is called by physicians *Visuchiká*. Those, who are moderate eaters and are versed in the *Shastras* (scriptures), do not get the disease. Those, who are greedy, ignorant, and have no self-control, get it. In this disease occur fainting, purging, vomiting, thirst, colic, vertigo, cramps, yawning, burning, discoloration, shivering, pain in the heart, headache." Here we have an assemblage of symptoms, some of which, indeed, are those of the true cholera, but others, such as shivering, pain in the heart, and headache, are not. Some of the symptoms, such as coldness of the surface, huskiness of the voice, sunken eyes, profuse cold perspiration, &c., which are characteristic of cholera are not at all mentioned under *Visuchiká*. Hence it would require a stretch of the imagination to see in *Visuchiká*, as we have it described in ancient Hindu medical works, any but the remotest resemblance to the modern disease, whereas the merest

comparison will show that the Greek cholera very nearly resembled the genuine cholera in all but its epidemic virulence.

We have been at so much pains to ascertain the nature of the disease which has prevailed sporadically in the world for so many centuries, perhaps not less than twenty-five, under the name of cholera, in order to see if there is any real distinction between this disease and the disease to which the same name has been given, but which has been prevailing with epidemic virulence for only a little over a century. From the survey we have taken we are compelled to say that the two diseases, though allied, are distinct. In the former the rice-water stool and vomiting are the exception, coming on very rarely at the end in only the gravest cases, the stool and the vomiting being green of some shade or other throughout; whereas in the latter the rice-water stool and the vomiting are the rule, coming on at once or after the first evacuation or two, even in the very mildest cases. In the former the evacuations are passed with pain and effort; in the latter they are passed with the greatest ease, and as if with no knowledge of the patient, being simply poured out.

We lay special stress upon the almost sudden and painless discharge of rice-water liquid from the stomach and bowels, devoid of all trace of bile, as pathognomonic and therefore truly diagnostic of the modern disease. The disease should be distinguished from the old classical cholera morbus by some qualifying epithet connotative of one or more of its characteristic phenomena. The name malignant cholera, cholera maligna, which has been given to it by some authorities is not inappropriate. Almost always originating in India, before its epidemic spread to other countries, it has been called Indian Cholera, Cholera Indica. Some, believing that it has other countries of Asia as its endemic home, have called it Cholera Asiatica. So that these are the three names by which it is distinguished from the old and milder disease, which is also called by other names such as Cholera Nostras, Cholera Europea, being thought to be chiefly prevalent in Europe; but it has its prototype in India and other countries of Asia, and therefore these names are not quite appropriate. Indian authorities have called the milder disease cholérine or choleraic diarrhoea. We shall call the graver disease by the simple name of Cholera, and the other disease by the name given to it by Sydenham, that is, Cholera morbus.

Now for the other diagnostic symptoms and signs. Next in importance to the character of the evacuations is the rapid sinking of the vital energies, culminating in collapse, which gives a peculiar cadaverous appearance to the whole body, a livid cyanotic discoloration of the surface, sunken eyes cheeks and temples, remarkable reduction of temperature, even the breath mouth and tongue being icy cold. Simultaneous with the setting in of collapse, and, indeed, as one of its manifestations, there is the suppression of the urine, which is a rare symptom in cholera morbus, coming on later and in only the gravest cases, but a constant symptom in true cholera, and which declares itself almost immediately after the first rice-water evacuation.

The only other disease with which cholera may be confounded is the rare form of malarious fever in which, in the cold stage, choleraic symptoms develop and take away life in a short time. Sometimes the resemblance may be so great as to lead even practitioners of great experience to make the mistake. This occasional resemblance of the two diseases has led some practitioners, overhasty in making generalizations, to look upon cholera itself as indeed a form of malarious fever with the algide stage predominant. But a careful study of the history of the two diseases will remove the illusion. Cholera often occurs in places where there is no malaria; it originates in causes which by no means can be called malarious. But the disease under consideration occurs only in malarious localities, specially in places which have but recently become malarious. The want of suppression of the urine, of cramps, of cyanosis, marks the febrile disease, in contradistinction to cholera in which they form the most essential symptoms. We do not speak of want of collapse and want of high mortality as characteristic of this form of malarious fever, as they are often observed in cases at the beginning of an epidemic of such fevers, death taking place in the cold stage within twelve hours. People, who had, after the day's work, gone to bed apparently well, were found dead in the morning. That these were cases of malarious fever terminating fatally in the algide or cold stage was proved by the fact of their having been associated in the same house with cases of pronounced fever of the malarious type and of the prevalence of the disease in the locality.

There are no other diseases than these, cholera morbus and

pernicious malarious fever at the first outburst of an epidemic, with which the genuine cholera may be mistaken. It may be mistaken, however, with other pathological conditions brought on by irritant poisoning, which may be truly called so many drug-diseases. Among the inorganic poisons we may mention, as the most commonly used for homicidal or suicidal purposes, arsenic. We know of two undoubted cases of arsenical poisoning which occurred some years ago in Calcutta, and which were treated as cholera by some distinguished physicians of the city. Next we have corrosive sublimate, antimonium tartaricum, the mineral acids especially the nitric, the drastic purgatives such as the sulphates of magnesia, of soda, &c. Among the vegetable poisons we have croton oil, castor oil and specially castor seeds, elaterium, tabacum, ergot of rye, poisonous fungi, decomposed vegetables, &c. Among the animal poisons we have those resulting from rotten meat, rotten fish, decomposed milk, mostly by bacterial action. There are some shell-fish which are poisonous by themselves, and produce choleraic symptoms even in the fresh state without undergoing decomposition.

For those who are tolerably versed in toxicology it is not difficult to distinguish between cases of the genuine disease and cases of poisoning. To give the differentiating characters of the pathogenetic actions of individual poisons would be out of place here. We shall have to come to it when we treat of remedies for cholera. The great merit of the homœopathic system, it should be remembered, is that its foundation is laid upon a *materia medica* which consists of a detailed and systematic record of the pathogenetic actions of whatever can disturb and disorganize healthy function and structure, which necessarily include violent poisons as well as less violent and milder substances. As a general rule, however, to enable practitioners to make the distinction, it may be mentioned that, as pointed out by Griesinger and others, the *order* in which the symptoms occur in cholera differs from that in which they occur in cases of poisoning. In cholera, diarrhœa *precedes*, in poisonings, *succeeds*, vomiting. In cholera, the stools very rarely cease to be watery and very seldom becomes dysenteric except after treatment; in poisonings, the watery stools are very soon followed by dysenteric ones, dark, bloody, offensive, indicative of an inflammatory

condition of the intestines. In cholera, the stools are painless, in poisonings, they are attended with gripes and colic and voided with tenesmus and heat. In cholera, the abdomen is sunk, and never tympanitic nor tender to the touch, except after treatment with astringents and opium; in poisonings, tympanites and tenderness of the abdomen are the rule, the exceptions are very rare. In cholera, the suppression of urine is complete almost from the beginning, and the patient has no urging to urinate; in poisonings it comes on gradually, and even when it is complete there are attempts to void the urine and these attempts are attended with vesical tenesmus and strangury. In doubtful cases, the previous history of the patient as regards diet, &c., an unusual taste, marks of corrosion in the mouth and tongue, will clear up the diagnosis which would be rendered certain if any poisonous substance could be detected in the vomited matters or in the stools.

Hitherto we have dwelt upon what may be called the clinical diagnosis of cholera. Modern writers on the disease have relied upon two other methods or means of diagnosis, which have been known as epidemiological and bacteriological. The epidemiological diagnosis is based upon the fact of the prevalence of the disease as an epidemic at a particular locality, affording presumptive evidence of a mild case being one of true cholera and warning the practitioner to be on his guard in the treatment of the case. The practitioner would certainly be wrong in treating all mild cases of diarrhoea as cases of cholera simply because they occur simultaneously with cases of the true disease; but he would do well to watch his cases with more than usual care and attention.

As regards the bacteriological diagnosis of cholera it would appear from what we have presented to our readers about its bacteriology that this method in its negative aspect ought not to weigh against positive clinical evidence. In other words, in cases which present clinical features of the disease we ought not to throw doubts on its true character simply because we fail to detect what we look upon as the pathogenic bacteria. But apart from this serious drawback in bacteriological diagnosis, there is another drawback which is no less serious and which deprives it of practical utility. This drawback consists in the time

taken to arrive at a positive pronouncement. Even experts must work continuously for days before they can decide whether they are dealing with the actual pathogenic comma bacilli, or other similar but nonpathogenic bacilli. Such diagnosis, it must be evident, does not help at all in the treatment of the cases which furnish the materials for bacteriological investigation. If positive results are arrived at, it may establish the character of an epidemic, and that is all. But if negative, it is valueless altogether.

PROGNOSIS.

Prognosis is foreknowledge of the course and termination of a disease. This knowledge is a product of several factors. These are : 1. knowledge of the nature of the disease and the degree of its severity, 2. knowledge of the powers of resistance to, and of struggle against, morbid processes possessed by the patient, 3. knowledge of the method of treatment adopted, and 4. knowledge of the general environment of the patient.

1. As regards the nature and degree of severity of the disease, these can only be ascertained by the symptoms manifested by the patient, including the physical signs of structural lesions.

2. As regards the powers of resistance and opposition, we must say they are not easy of determination, in as much as the measurement of vitality possessed by an individual is in itself a difficult problem and requires the consideration of so many influencing circumstances, such as age, sex, habits, previous ailments, &c.

3. The method of treatment, we need hardly say, exercises a considerable influence on the progress of all cases. It is notorious that all methods are not equally successful, but for the practitioner who adopts a particular method, that method must be in his opinion the best, and his prognosis of a case must be in accordance with the degree of success he has met with by the method in previous cases.

4. Next to the method of treatment, the environment of the patient determines the progress of his disease. With the best of treatment an insanitary surrounding may and often does stand in the way of successful issue of a case which might otherwise have been obtained. We, therefore, look upon atten-

tion to the hygienic condition in which the patient is placed as not less important than the right prescription of remedial agents, and so forms part of the treatment itself.

To apply these general observations to the formation of a correct prognosis of a case of cholera :

The nature and severity of the case will be revealed by the symptoms, and these will tell us at what stage we have undertaken to treat the case. If in the stage of preliminary diarrhoea, a favorable prognosis may be given. If in the stage when the rice water stools and vomiting have just commenced, we must be more guarded in our prognosis ; the more copious and exhausting the evacuations the more serious the case must be looked upon. If after a few trials of remedies, the discharges show signs of abatement we may give a hopeful prognosis ; but if the opposite is the case, if, in spite of our remedies, the evacuations go on, then without giving up hope we must be guarded in our utterances. If, in spite of all that we do, collapse sets in rapidly, the pulse disappears at the wrist, the coldness of the surface and of the breath becomes pronounced, then the prognosis must be very unfavorable, more unfavorable than if we had begun to treat the case in the stage of collapse. But we must not forget that cases do occur which, after running on to the profoundest collapse in spite of previous treatment, do recover under persistent continuance of treatment, so that under these circumstances we must not absolutely give up all hope. A very unfavorable symptom in collapse is embarrassment of the respiration, often amounting to gasping. This is indicative of the arrest of the pulmonary circulation through the formation of clots in the vessels of the lungs beginning at the right heart and the pulmonary arteries. It would seem that there can hardly be any remedy for this condition, but, as we shall see under Treatment, even this condition has been recovered from. Perhaps in cases of recovery the clotting had just commenced and had not become firm enough to be irremediable.

When under treatment reaction sets in, or if we get to treat a case at this stage, the prognosis becomes more hopeful, but we should not be too sanguine so as to be off our guard. This is the stage when the greatest care is necessary in the matter of drugging and dieting of the patient, for the slightest error in either

would bring back a relapse or set agoing the reaction in an abnormal direction, so as to bring on sequelæ which may be very tedious and troublesome and even end in death.

Prognosis should also be based on an estimate of the vitality of the patient at the time of the attack. And in order to arrive at this we must first of all take into consideration the age of the patient. The very young with budding and necessarily very delicate vitality, and the very old with declining and exhausted vitality, can only offer a feeble resistance to the onslaught of the disease especially when of a violent character. In regard to such patients the prognosis must be of a guarded nature. Secondly, the sex of the patient does influence the course of the disease. We believe the female patient, especially if exhausted by numerous childbirths, are more likely to succumb than the adult male. It is a dangerous thing for a female in the family way to be attacked with cholera, as it may and often does lead to abortion and miscarriage and these are serious complications. Thirdly, a knowledge of the previous habits of the patient must influence our prognosis. A man whose constitution has been shattered by a drunken and dissipated life has less chance of recovery than one who has always been sober and temperate. So also a man who has been debilitated by serious and exhausting diseases, such as dyspepsia, chronic diarrhœa, enteric fever, malarious fever, organic diseases of the kidneys and of the liver, &c., runs a great risk when he gets an attack of cholera. Curiously enough, patients with malarious enlargements of the liver and spleen, or with dropsy, get well of their original complaints if they recover from cholera.

The method of treatment adopted in a particular case must greatly influence its prognosis. Notwithstanding its signal and admitted failure in the treatment of this terrible scourge, it is not a little singular that the old school will not look beyond its narrow horizon. "The drugs and compounds which have been administered empirically in cases of cholera," says Dr. Macleod, in Allbutt's *System of Medicine*, "are legion. It is safe to assert that not one of them has established a claim to cure the disease." This is very damaging to the reputation of the dominant school, and under its method of treatment the prognosis must be necessarily on the whole an unfavorable one, except for

very mild cases. Dr. Macleod further admits "the fact that about one-half of those attacked with cholera recover with or without treatment," which shows that the treatment, as pursued by his school, has little or no influence on the disease. No system of treatment, therefore, can have any claim to the gratitude of mankind which cannot show an average mortality of less than 50 per cent. Can homœopathy have such a claim? We sincerely believe it has, so much so that this fell disease has been the pioneer of the system throughout the world.

In giving our prognosis of a case we must take into our calculation the influence of its surroundings. It is generally the poor who are the victims of the disease; and the high mortality among them is greatly due to their insanitary surroundings,—the dark, dingy, damp rooms in which they live and the insanitary condition of the locality in which their huts are situated, full of offensive, poisonous gases resulting from all sorts of decomposition. In some instances where we could remove the patients to better localities or even to better and more airy rooms we were instrumental in saving their lives. In one case it was a most valuable life, and we remember the event with lively gratitude to the Almighty for having permitted us to be so instrumental. This was in the early days of our practice, when we had heard of homœopathy only to denounce it, and the case was that of no other person than the late Babu Keshub Chunder Sen. He got cholera while he was occupying one of the lower apartments of his family house, the windows of which overlooked a dirty bustee. He was under the treatment of the late celebrated Dr. Doorga Churn Banerjea, and we were attending on the patient as a friend. The case was getting worse, and on coma supervening, we whispered into the ears of Dr. Banerjea that in our humble opinion the only chance for the patient was his removal, if that were possible, to an airy room in the third storey of the house. The Doctor, for whom we had the highest respect, looking upon him as father and preceptor, and who loved us as his own son, happily agreed with our views, and without loss of time and with all possible care the removal was accomplished, and almost from the moment the patient began to rally, and lived to be one of the most distinguished Indians of the nineteenth century. In a second case,

that of a Mahometan female patient, the removal had to be done for more than a mile, and in our intense anxiety we had to walk along the palki, keeping our hands on the wrist of the patient. This case happily recovered. In a third case, that of a well-to-do Hindu lady, we had to carry her over six miles from Baranagar to her home in Calcutta. She also recovered. And we are sure, none of these cases would have recovered, had we not taken the risky step of removal, in one instance from the ground floor to the third storey, in another for over a mile through the streets of Calcutta, and in the third for six long miles. We shall never forget the intense anxiety we felt when helping in the removal. We have cited these cases to show the real influence which the environment of a patient exerts over the progress of his or her case, but we dare not advise the imitation of the practice we had adopted in counteracting it when deleterious.

Dr. Macleod has well remarked that "the violence of vomiting and purging are not necessarily indicative of a severe seizure, but their persistence is apt to result in delayed convalescence or fatal exhaustion." The following summaries given by him of signs of good and of evil omen observable at every step in the progress of a case are well worth bearing in mind :

"*Evil Signs*, in the order of the stages are—Sudden seizure, early prostration, early stupor, quick advent of collapse, restlessness and fighting for breath, failing pulse, great depression of temperature, prolonged cold stage, hyperpyrexia, severe abdominal pain, blood in vomit and stools, persistent suppression of bile and urine, permanent muscular contractions, jaundice, lung complications, recurrent purging and vomiting, delayed restoration of body heat, typhoid symptoms and indications of uræmia or cholo-uræmia, insomnia and delirium." To this we will add one symptom which we have almost invariably observed to be one of evil omen. It is a particular attitude of the body, the patient lying in a semi-unconscious state on his back with one leg placed on the opposite knee raised to the full height of the thigh above the bed. We have seldom seen patients presenting this attitude recover. It is difficult to explain why this should be so.

"*Good Signs* are—Maintenance of pulse during collapse, moderate depression of temperature, early and not excessive reaction, return of color in the motions, cessation of cramps, restoration of urinary secretion, resumption of warmth and dryness of the skin and normal color and plumpness of face, quiet breathing, tranquillity, sleep."

(To be continued.)

REVIEW.

Uricacidæmia ; Its Causes, Effects, and Treatment. By Perry Dickie, M.D. Boericke & Tafel, Philadelphia, 1903.

This is a booklet of 148 pages got up in the excellent style of Messrs. Boericke & Tafel. The publishers have done their best to give it an attractive appearance.

Dr. Dickie seems to be a rising author, and he is just passing through the nebular stage. His mind does not appear to have settled into logical coherence as regards the use of language to express his thoughts. It is not always possible to understand what he means, as will be seen from the Dedication and the Preface which we quote entire for the delectation and enlightenment of our readers.

“*Dedication.* To the members of the class of '80, in whose company the author plodded through the tortuous but pleasant paths of medical lore, this little volume is most heartily dedicated.” What he means by members of the class of '80, whether his class-fellows in a college or the class to whom he imparted instruction, it is beyond the powers of any one to make out.

“*Preface.* Knowing full well that the very complete and voluminous work, by Haig, on ‘Uric Acid,’ exists, and to which, by the way, the writer is largely indebted for much general information as to his interesting, ingenious, and valuable theories on this subject, in the preparation of this work, however, believing that something smaller and more compact might be acceptable to the physician, on this assumption he launches forth this little volume upon the sea of chance, hoping that it will meet with some success as to proving of slight value to the medical profession in elucidating the question as to the importance of uric acid as a disease factor.” We are afraid “the sea of chance” will not prove a very smooth one for our author.

The above quotations are not the only instances of strange misuse of language. The whole work abounds with such misuse. Take the very first paragraph of the Introduction. “That the past history of medicine has been the repository of innumerable *fads and fancies* a large proportion of which being of purely ephemeral and fleeting nature while others

of a kind more stable and lasting, have become, after passing through the *ordeal of trial* and experience, valuable factors of intrinsic worth." The italics are ours. What is meant here by "ordeal of trial?" Is not ordeal itself trial? How can fads and fancies ever become factors of intrinsic worth? Whatever could become matters of really intrinsic worth could not have belonged to the category of fads and fancies, and should not have been characterized as such. The fact seems to be that the author means more than he has been able to express.

Let us examine the structure of the next paragraph. "*In the memory* of the modern physician of extended experience and observation will be cognizant of three, what we might term, epochs or periods, in which it would seem that the unanimous mind of the medical profession ran to a certain extent, as far as possible, in one channel, that is, to the certain points in question; which, by the way, as unanimity on any one subject in the medical profession being not a common occurrence, we must therefore consider that when such as this happens it is surely deserving of the dignified title of epoch." We defy any professor of grammar and logic to analyse this long sentence to arrive at an intelligible meaning. We do not say there was no meaning in the mind of the author, but his words unfortunately do not convey it. How can "*in the memory*" be "cognizant?" What are the "certain points in question?" What is the "it" which "is surely deserving of the dignified title of epoch?"

We had at first thought that critics lost in the sea of his unintelligible gibberish will leave him and his work unnoticed and severely alone. This was our own determination at first, but we find that the booklet is being noticed in our periodicals, and we are sorry that it should have been written without the necessary preparation of a moderate mastery of the language in which it is written and of the subject of which it treats.

We wish we could say that his mastery of the subject was better than his mastery of the language. He has very properly begun with a definition of Uricacidemia; but unfortunately it is a definition which gives no definite idea on the subject, beyond the fact that it is essentially a derangement of the process of metabolism, as if it is the only disease which so originates. He then devotes a couple of pages of four paragraphs to the subject of meta-

bolism. Here again the language is not quite clear. "This process of life is resultant of waste material normally carried from the blood, and by means of its several excretory functions, urine, perspiration, etc., *is discharged* from the body." What is discharged? the reader must exercise his imagination to find out. Again: "Those which concern us principally in this connection being confined solely to the nitrogenous, of which uric acid is the main factor, although it is claimed by some that there are other bodies with it in exercising *its* deleterious influences. However for all practical purposes we may assume this to be the one." To what does the italicized "its" refer? Evidently to Uric acid. How can other bodies exercise deleterious influences of uric acid?

Under the heading "Origin of Uric Acid," the author refers to the theories as to its origin in the liver, the kidneys, and the tissues. "To the kidneys has also been attributed the function of the formation of this substance, but there is also a lack of any positive data on this point. *Another* theory which has had many followers, is that uric acid, like other constituents of the urine, is separated from the blood by means of the selective power of the epithelial cells lining the tubuli uriniferi of this organ." Is this theory different from that which attributes to the kidneys the function of the formation of uric acid? Are not the tubuli-uriniferi part—the most essential part—of the kidneys?

We are sorry to say the same confusion of language and of ideas is to be met with throughout. To take only one more instance. Under treatment the author says:

"The following is a classification of the various conditions developing from uric acid as a causative factor, together with their appropriate remedies as indicated for them:

"1. Nervous system: Arsenic alb., Aurum muriat., kali iod., spigelia.

"2. Heart and Circulation: Arsenic alb., aurum muriat., cactus, berberis, chelidonium, china, iris versic., mercur. dulc., nux vom., podophyllum.

"3. Respiratory Tract: Arsenic alb., arsenic iod., grindelia, kali iodide, sulphur.

"4. Urinary Tract and Kidneys: Arsenic alb., aurum muriat., berberis, cantharis, coccus cacti, ferrum phos., kali chlor., lycopodium.

"5. Gout: Colchicin 3."

That is, we are to look upon the nervous system, the heart and circulation, the respiratory tract, the urinary tract and kidneys, as *conditions* developing from uric acid as a causative factor," just as gout is!

The classification above given is followed by indications of the remedies mentioned in it and of a few others. The indica-

tions with one or two exceptions are so meagre that no one with their help can select the remedies for particular conditions. Thus *Urtica Urens* and *Spiritus glandium quercus* are recommended in massive doses not for any "marked indications," but simply because the late Dr. Burnett had used them with success in some cases. For *China 6'x* is claimed the prevention of "the tendency to formation" of gall-stones." The indication of *Colchicine 3x* is "acute attacks of gout." *Lycopodium*, the prince of remedies in uric acid diathesis, after the indications given for it, "pain in back, uric acid sediment, uricacidæmia in men," is dismissed with the following damaging remark: "This drug for this condition is as largely overrated in our school as is lithia by the 'old school.' However, some good results have been obtained from the use of the tincture in these conditions." It is no wonder that he should have failed with this drug when he used only the *tincture*.

This is how the author has reported a case, the only one given in the book. He prefaces the case with the remark: "A typical case in the writer's experience will better demonstrate these principles," and then relates it: "X, 45 years of age, possessing an inherited gouty diathesis; (paternal) from a child had always been an excessive meat eater and drinker of tea, caring little for vegetables and not drinking much water." He then goes on detailing symptoms, the chief of which was headache, after which when the reader anxiously expects to know the medicines that were given, all that he says about the treatment pursued is—"But by following out the ideas promulgated in this book, the patient has for the last three years been almost entirely free from these headaches, only on certain rare occasions appearing to remind him of the past." What was the good in citing this case when the medicines that were prescribed with their indications are left to be conjectured from "the ideas promulgated in the book"?

We are sorry both for the sake of the author and of the publishers for having noticed the work in the way we have done. A sense of duty compelled us to point out the faults with which it abounds. Careless authorship, especially in our school, is to be regretted and should not be encouraged. The author has his prototype in our country, but he is a layman who aspires to be a teacher of the homœopathic branch of the profession without even an apology of medical training in any recognized institution, and whom we may have to notice in a future number.

EDITOR'S NOTES.

Ovarian Cyst in a Girl, aged 8.

DELASSUS (*Journ. des Sci. Med. de Lille*, March 7th, 1903,) operated on a case where the cyst two years before the operation reached as high as the ribs and was in part cystic, in part solid, according to palpation so that cystic sarcoma or dermoid cyst was diagnosed. It proved to be a mixed growth bearing cartilaginous tissue. The tumour in this case weighed $1\frac{3}{4}$ lb.—*British Medical Journal*, June 13, 1903.

Plague in Berlin.

A YOUNG Austrian medical man named Milan Sachs who was studying bacteriology in Berlin has just died as the result of an unusual accident. While injecting a rat with a culture of the bacillus of plague he wounded his hand and contracted plague by inoculation. A hospital attendant, who nursed Dr. Sachs during his illness, has since been unwell but is now believed to show no symptoms of plague. All the persons who came into contact with Dr. Sachs in any way after his illness declared itself are rigidly isolated in the Charité Hospital. It will be remembered that more than four years ago a similar accident occurred in Vienna and unfortunately resulted in several deaths. An account of this occurrence will be found in several numbers of THE LANCET, commencing with the issue of Oct. 22nd, 1898, p. 1080.—*Lancet*, June 13, 1903.

The Presence of Arsenic in the Tissues.

BERTRAND (*Ann. de l'Inst. Pasteur*, January 25th, 1903) has examined by his method for the detection of arsenic the tissues of certain animals, cetacea, birds, and fishes obtained in mid-Atlantic. The object of obtaining the animals from this source was to avoid the possibility of contamination from land sources. All the animals examined from vertebrata to sponges gave positive reactions to the test. The metal is not characteristic of certain groups of animals nor of certain organs. The thyroid gland has been stated to be especially rich in arsenic; other organs, for example, the liver, the muscles, and the tests have been stated to be free of traces of the metal. The method employed by Bertrand demonstrated a certain

quantity in these tissues and in all others examined. Certain important conclusions follow from this; the combination and the condition of the metal in the tissues should be studied; therapeutic indications should follow these studies; the matter has also an important medico-legal bearing.—*Brit. Med. Journ.*, June 20, 1903.

The Value of the Roentgen Rays in Cancer.

A. R. ROBINSON (*Canadian Jour. of Med. and Surg.*, December, 1902), after a careful review of the subject, concludes as follows: "The Roentgen ray is a very valuable addition to our armamentarium for the treatment of cancer. Some cases of advanced epithelioma are incurable except by the rays. Many of the cases cured and regarded as inoperable by other means could have been quickly cured in an early stage of the disease. The majority of the cases so far reported as cured have been cases that could have been cured much more quickly by the knife or caustics, especially by the latter. In cutaneous cancer the scar is sometimes better after the ray treatment than after the use of caustics, but for the majority of cases caustics are preferable, as their action is definite and there is a great saving of time to the patient. In many cases of cutaneous cancer the ray is a valuable agent in combination with other methods, and when the disease is situated around the important blood vessels it is the only proper agent to employ, except in some cases on the extremities, where amputation would be advisable. All cases of carcinoma of the breast, except those seen in a very early stage, should be treated by the rays before resorting to the knife. The rays should also be used in all inoperable cases and in all cases after amputation has taken place. According to our present knowledge, the x-ray treatment is not curative in internal cancer of any part of the body, mouth, larynx, stomach, uterus, etc. To obtain the best results there must be no fault in the technique of the operation, in order to avoid a serious burn and to get the desired action on the cancer tissue."—*British Medical Journal*, June 6, 1903.

The Therapeutic Action of Glycogen.

J. DE NITTIS (*Arch. Gén. de Méd.*, May 19th, 1903) has studied the action of glycogen as a therapeutical agent. It has been shown that it accumulates in the periphery of new growths by Brault, and of tuberculous granulomata by Loeper and Esmonet. In general

terms, it is found in 'excess wherever there is an active cellular proliferation or a defensive cellular increase. On the other hand, the percentage of glycogen in the blood, which is always small, is diminished among the tuberculous, the cancerous, and the cachectic. Acting upon these facts, Nittis has obtained increase of weight and return of vigour by administering glycogen to tuberculous and cachectic subjects. At the time of his first communication in 1902, he regarded the drug as indicated only during the apyretic periods of disease. The cost of the drug has prohibited its use in sufficiently large doses; but during the last year, having manufactured it himself, he has given it in larger doses with notable effect in febrile cases. He has employed it with good results in typhoid fever, influenza, pericarditis, and pneumonia. It is especially indicated in diseased conditions in advanced years. He draws attention to the paradox that a few centigrams of glycogen should exert so evident an influence upon the nutrition, when the organism itself transforms more than $1\frac{1}{2}$ kilogram during the day. He ascribes the reason of this apparent anomaly to the fact that glycogen exists in the blood in infinitesimal quantities, and then only combined with the white corpuscles; everywhere else it appears in the form of glucose. The efficacy of therapeutic doses lies in its passage through the circulation in the free state.—*British Medical Journal*, June 20, 1903.

Intussusception.

BERCHOUX (*Lyon Méd.*, May 17th, 1903) records a case of intussusception cured without surgical operation. A child, 11 months old, suddenly began to cough, and suffered from abdominal pain and vomiting. When first seen he breathed with difficulty, but examination of the chest showed nothing abnormal. The face was anxious, the abdomen hard and very tender, the pulse rapid and very weak. There was almost continuous bilious vomiting. There was obstinate constipation, and the legs were flexed upon the abdomen. Abdominal palpation caused too much pain to give any satisfactory information. Rectal examination did not allow any tumour to be felt, but caused an evacuation of a mixture of blood and faecal matter and mucus. The child was placed in a warm bath and fed with teaspoonfuls of champagne occasionally. Injection of olive oil and tepid water were then given alternately by means of a long tube passed as far up the rectum as possible. Ten hours

later the vomiting had ceased, the colic was abated, and the abdomen was much softer and less tender. The injections of oil were repeated every three hours during the first day, and caused an evacuation of faeces and mucus streaked with blood on each occasion. After the first day tepid water was substituted for the oil, and the injections were only given two or three times in the twenty-four hours. The discharge of blood did not cease for three or four days, nor did the stools become normal until the eighth day, but the child took nourishment well and made a rapid recovery. No massage or gaseous distension was practised. The oil and tepid water were injected very slowly and gently. The good result of this practice in the case recorded is especially gratifying considering the comparative failure of laparotomy as shown by statistics.—*British Medical Journal*, June 20, 1903.

Sexual Precocity.

A DECREE of nullity of marriage was recently sought for before the Divorce Court in which the petitioner was only 13 years of age at the time when her child was born, the father being a boy between 13 and 14 years old. Instances of precocious sexual development and of early menstruation are very numerous and many well-authenticated cases of pregnancy at a much earlier age than the above have been recorded. It is difficult to say what is the earliest period of life at which a girl may become a mother. Many marvellous instances have been related by the older medical writers, but most of them will not bear investigation. Gould in his "Curiosities of medicine" mentions that the earliest case of impregnation that has come to his knowledge is one reported by von Mandelslo of conception at the age of six years. This case, however, lacks confirmation. A large series of cases can be found in which the girl-mother has been only from eight to nine years of age, while cases in which she has been only very little older than this are too numerous to mention. In the *British Medical Journal* (vol. ii., 1885, p. 913) a very similar case to the above is recorded. The girl who became pregnant at 12 years and nine months and who was thought to have dropsy of the abdomen, was delivered of a healthy boy, nine pounds in weight before the arrival of the physician. The father was a boy 14 years of age. The case before the Divorce Court was one of considerable interest because counsel attempted to show that the girl, who was married to the father of her child when about five months pregnant,

did not know the meaning of her marriage contract and was unaware of the significance of a wedding ring. With this view the Judge found himself unable to agree. The duration of the child-bearing age in the female may vary within very wide limits indeed. A good example of its prolongation has been recently recorded in the *Centralblatt für Gynakologie*, No. 23, 1903. It is that of a woman, the mother of 16 children, who became pregnant again when between 55 and 59 years old. In the case of the male the law recognises no age limit in the power to beget children and it is impossible to lay down any rule as to what is the earliest age at which a boy can become a father. The majority of cases of early pregnancy are associated with premature development of the sexual organs and the pelvis, and as a result no doubt of this the labours are often, surprisingly easy and rapid although the size of the child is up to, or even beyond the average. In the eastern countries examples of early pregnancy are common enough and it has been computed that in about 20 per cent. of the marriage in India children are borne by mothers from 12 to 13 years of age. Nor is this to be wondered at when we remember that the age of consent to intercourse has been fixed at the absurdly early limit to ten years.—*Lancet*, June 27, 1903.

The Opium Habit and the Types of Opium-Eaters.

Dr. Smith Ely Jelliffe, neurologist to the City Hospital, New York, contributes to the *American Journal of the Medical Sciences* for May a study of the opium habit and of types of opium-eaters which brings together many facts not generally known and attempts to give some insight into the psychology of the opium habit. The opium habit, like that of alcoholic indulgence, shows different results in its subjects. The drinkers of beer, gin, port, or burgundy, says Dr. Jelliffe, react differently to these liquors correspondingly to a smaller extent. There are three main divisions of opium-eaters—viz., first, those who take the drug in the form of a medicinal preparation such as laudanum, paregoric, and the extract of opium either by the mouth or the rectum; secondly, those who smoke it and inhale the fumes into the lungs; and thirdly, those who take morphia hypodermically. The second class comprises the largest number of victims of the opium habit. Information gathered from prison records, made among opium-eating circles, and a systematic investigation of the returns of sales of the drug by pharmacists in the State of Vermont, have led Dr. Jelliffe to the conclusion that the

“frequent use of opium for purposes of pleasure is enormous and beyond computation and that its habitual use is certainly distributed in New York city among 30,000 individuals.” The sale of opium in the State of Vermont, with its population of 187,000, is estimated at over 3,250,000 doses every month—a quantity equivalent to a daily consumption of one grain by every man and woman above the age of 21 years. This quantity largely surpasses the normal consumption due to the medicinal use of opium. Psychologically opium-takers, like other individuals, comprise persons of various temperaments. Not every *habitué*, adds Dr. Jelliffe, passes through the mental stages portrayed in the glowing descriptions of de Quincey. The average opium-taker desires or craves for exhilaration and mild excitement. The use of the drug can be traced into remote antiquity together with the consumption of other substances, such as coca, *cannabis indica*, and mescal. Dr. Jelliffe points out that priests and leaders of religious sects were particularly given to the use of those drugs to excite religious frenzy and ecstasy. The confirmed opium-eater, like the dipsomaniac, has an almost irresistible craving for “intense” states of consciousness and both lack self-control. Dr. Jelliffe recognises two clinical types of the opium-eater. In one type, which resembles dipsomania, there occur periodical irresistible cravings for the drug. The patient then indulges in a three or four days’ debauch, smoking or consuming opium freely, after which he abstains from the drug for a period of several months or for one or two years. In the other type the habit is indulged in almost daily. The patient attends to his work during the day, but spends two or three hours in the evening in smoking opium. This he does four or five evenings during the week. “For a number of years he continues thus and does not suffer to any great extent but, when sudden intercurrent disease comes the strain tells and pneumonia, typhoid fever, dysentery, and gastritis prove fatal with greater frequency than in the non-habituated.” As regards treatment, Dr. Jelliffe advises a judicious combination of the two following factors—viz., substitution of another class of sedative sensations by drugs such as the bromides and hyoscine, and substitution of a different set of ideas by mental suggestion. These two factors, he adds, have proved effective in the most intractable cases. Among alkaloids heroin is recommended as a substitute for morphine owing to its property of abolishing the craving for the latter, but the drug should be taken only under medical supervision.—*Lancet*, June 20, 1903.

Bogus American Degrees.

You are accustomed to the nuisance of bogus American degrees and I understand the Government of Bengal has had its attention drawn to it with a view of abatement. The existing law, however, do not empower either the Executive Government or the High Court to deal with this new form of charlatanism. Exposure in the press, under the circumstances, is the only means whereby the people can be warned against the danger and the impostors kept under some sort of restraint. In this country the operation of these sham degrees is not confined to the profession of medicine—it is extended to the ministry of religion as will appear from the following case. It may be remarked here that whereas in the latter case the effect of the imposition may be comparatively harmless, in the practice of medicine it is fraught with great danger. Ministers who bedizen themselves with sham degrees are apt to be soon found out, but it is otherwise with people who put themselves forward as qualified doctors. What do the simple uneducated people know of the difference between a medical degree from London or for that matter Calcutta and one from Harriman, Tennessee? They have no one to tell them that the one means years of work and training, and the other the transfer of a few dollars to a soi-disant "Chancellor."

The present case has been brought to light owing to the journal "Christian World" describing the Harriman University in the State of Tennessee as a "fake" institution and its degrees as "bogus, worthless and contemptible." One Mr. Charles Garnett, Minister of the Arundel Square Congregational Church, Barsbury, and a Doctor of Divinity of the above mentioned University, felt himself libelled by the not very complimentary description and sought to repair his injured reputation by bringing an action for damages in the High Court. The evidence disclosed the fact that Mr. Garnett is not the only divine in possession of American degrees of questionable worth. The Congregational Union however refuse to recognise these degrees. Under the fire of cross-examination, the plaintiff had to admit that he was an Englishman and had lived in England all his life, he had never had the pleasure to cast his admiring eye on his alma mater; that he was examined eight hundred miles away from Harriman; that he had a choice between two degrees "D. D." and "S. T. G." and he had elected to be a "D. D." which was a well-known degree in England; and that he paid £16 in all to obtain his degree from over the seas. Some amazing

disclosures were made by Professor Davies of Yale University who was cited as a witness for the defence. The town Harriman has a population of four thousand inhabitants. The description given of the University in the Register of Universities was inaccurate. For instance, the Gymnasium therein mentioned did not exist in fact, and a large hall which was said to be in connection with the University was not connected with it at all. A lady whose name was mentioned as one of the Faculty was house-keeper or caretaker of a house occupied by an oil agent and his wife. She was described as Mr. D. James Crow, Director of the School of Domestic Science. The buildings were dilapidated, and did not look as if there had been any kind of real, healthy occupation. Prof. Davies did not think the students lived there, though he saw a school, at which youths of sixteen to nineteen were the students. Of the twenty-six Professors mentioned in the Register he could trace but five. The Professor of Astronomy was a practising dentist. There was only forty or fifty students, both boys and girls, and not three hundred. He could not discover that there was any course of instruction given. The Jury taking a common-sense view of the case and not intending to unnecessarily take up farther time of the Court, intimated to the Judge before the defence had completed its evidence, that they were prepared to find a verdict which was that the remarks of the "Christian World" were fair comment and not libellous. One wished in the interests of the public that the case went on so that further facts might come to be widely known.—*Reis and Kayyet* (Letter of its London Correspondent), July 11, 1903.

CLINICAL RECORD.

Indian.

A CASE OF BUBONIC PLAGUE.

By DR. HEM CHANDRA RAY CHAUDHURI, L.M.S.

On the 27th March, 1903, I was called to assist Dr. M. L. Jelovitz in a case of convulsions with suspicious symptoms of bubonic plague. Previous to this occurrence two other cases of bubonic plague had happened among the servants in the same house of whom two were known to have died.

The patient was a Parsi girl aged about 2½ years. She was apparently all right till the morning of the 25th March, when she had her usual bath. Since then she felt a kind of lassitude which prevented her from moving about in the house. Her usual habit was to go several times to her grandfather and ask for lozenges. During the day she rather kept quiet and was dull. In the evening she vomited twice and the fever appeared at about 8 p.m. She had a dose of *cham.* 6 during the night. The convulsions came in from the early morning of this day.

The convulsions were terrible and almost unceasing. The application of the ice bag to the head diminished the violence to a slight extent. The fever was very high. It was more than 105° F. Three small inguinal glands could be felt on the left side. *Acco.* 1 and *Bell.* 6 in alternation, every 2 hours, 3 doses each.

It should be noticed that one of her sisters had that kind of frightful convulsion last year which ended her life. She was under the old school treatment of reputed physicians.

At about 10 A.M. the ice sheet packing was resorted to for 20 minutes. It reduced the temperature one degree and the number of the pulse beats, as well as the violence of the convulsions. After an hour the temperature again increased to 105·6° F., but not the convulsions. At about 12 noon, the ice sheet packing was again applied for half an hour. This time the temperature did not sensibly diminish, though the convulsions became less forcible. They ceased from 3 P.M. *Acco.* 1, 3 doses, and *Placebo pills.*

28th. From early morning a bubo on the right inguinal region was perceptible. The three small inguinal glands on the left disappeared. The range of the temperature during the day was from 105·6. *Bell.* 6, 2 doses and afterwards *Bell.* 30, 3 doses.

In the evening she was in the same state. *Gels.* 1, every 2 hours, 4 doses, and *Placebo pills.* From our previous experience we applied hot bags of common salt over the bubo. It was curious that the half-unconscious girl did not feel any unpleasant sensation from the application. She only shrank a little when the bag was very hot.

29th. In the morning the temperature was 103 F. but it soon rose to 105. *Loimine* 30 did not produce any sensible effect. The bubo was more than two inches in length. The application of the hot salt bag was maintained. In the evening *Merc. viv.* 12, 3 doses were administered. It reduced the temperature to 103·6, but later on at night the fever rose to 105.

30th. The temperature came down to 101.6 in the morning. *Ars.* 24, 3 doses were given. At about 10 A. M. the temperature rose to 104. The hot salt bag was applied as before.

In the afternoon *Merc. Viv.* 12, 3 doses were administered. The temperature came down to 101, the bubo seemed to be in the same state.

31st. The morning temperature was 99.6. *Ars.* 24, 2 doses were again given. In the afternoon the fever rose to 105. *Nux.* 30, 2 doses. The bubo was perceptibly smaller. The hot salt bag was applied at long intervals. During the day and night the child was placed under an electric punkha.

1st April. The temperature again rose to 103. Ascribing the rise to the electric punkha it was stopped from that day till her full recovery. *Merc. viv.* 12, 3 doses. Supuration was not at all perceptible in the bubo. *Placebo pills* at night.

2nd April. The temperature ranged during the day between 103 and 104, the right inguinal bubo was more perceptible externally. *Chin* 1, every 3 hours.

3rd. Morning temp. 98.6. In the evening the fever was up to 99.4 for a short time and again reverted to 98.4. *Chin.* 1, every 4 hours, 4 doses. It was the eighth day of the fever; from this day the child was fully conscious, the vacant look disappeared, the bubo was much reduced in size.

4th. The temperature was 98.4 during the day and night. *Chin.* 1, 3 doses.

The bubo did not subside as it was expected though several other medicines were given. It suppurated and was operated by Dr. Jelovitz on the 7th April. Under *Sil.* 12 the wound healed up.

Remarks..

The marked feature in this case was the attack of bubonic plague commencing with terrible convulsions. *Loimine* had no effect whatever. The action of *Merc. viv.* was marked on the fever, but its effect was not durable. *Chin.* was selected owing to our previous experience on account of the sweat on the covered parts. The application of the warm salt bag alone had produced marvellous effect in many cases of bubonic plague where the fever was not high. Last, not least, was the soothing influence of the ice sheet packing which was a relief to the girl during convulsion. It can not be said that the ice bag to the head had not its beneficial influence, the curious fact is that though the ice sheet packing at first reduced the temperature the effect was not lasting. The second application had no influence on the temperature. During the illness of the girl another case of bubonic plague occurred in the house among the servants who died after removal from the house.

The dilutions of the medicines used were all in the decimal scale, except those marked 30, which were in the centesimal scale.

Foreign.

TWO CASES FROM HAHNEMANN'S NOTE BOOK.

CASE I.

Julie M. country girl; 14 years old; not yet menstruated. 12th September, 1842. A month previously she had slept in the sun. Four days after this sleeping in the sun, the frightful idea took possession of her that she saw a wolf, and six days thereafter she felt as if she had received a great blow on the head. She now spoke irrationally; became as if mad; wept much; had sometimes difficulty in breathing; spat white mucus; could not tell any of her sensations.

She got *Belladonna*², weakened dynamisation, in seven tablespoonfuls of water; of this, after it was shaken, a tablespoonful in a glass of water, and after stirring this, one teaspoonful to be taken in the morning.

16th.—Somewhat quieter; she can blow her nose, which she was unable to do during her madness; she still talks as much nonsense, but does not make so many grimaces while talking. She wept much last night. Good motion. Tolerable sleep. She is still very restless, but was more so before the Belladonna. The white of the eye full of red vessels. She seems to have a pain in the nape of the neck.

From the glass in which one tablespoonful was stirred, one teaspoonful is to be taken and stirred in a second glassful of water, and of this from two to four teaspoonfuls (increasing the dose daily by one teaspoonful) are to be taken in the morning.

20th.—Much better; speaks more rationally; works a little; recognises and names me; and wishes to kiss a lady present. She now begins to shew her amorous propensities; is easily put in a passion, and takes things in bad part; sleeps well; weeps very often; becomes angry about a trifle; eats more than usual; when she comes to her senses she likes to play, but only just as a little child would.

Belladonna, a globule of a higher potency: seven tablespoonfuls shaken in two glasses, 6 teaspoonfuls from the second glass, early in the morning³.

28th.—On the 22nd, 23rd and 24th, very much excited day and night; great lasciviousness in her action and words; she pulls up her clothes and seeks to touch the genitals of others; she readily gets into a rage and beats every one.

Hyocyamus X^o, seven tablespoonfuls, &c., one tablespoonful in one tumblerful of water; in the morning a teaspoonful.

1. Communicated by letter, dated 24th April, 1843, to Dr. Von Bönninghausen, and published in the *Neues Archiv*, Vol. i. 1844.

2. [Dr. B. tells us that whenever the dilution is not indicated, it is understood that the 60th dilution was administered.]

3. [The meaning of these directions, which is not very obvious, seems to be that the globule shall be dissolved in seven tablespoonfuls of water, and of this a tablespoonful is to be stirred in a second tumbler of water, and from this second glass a teaspoonful is to be given for six successive mornings.]

5th October. For five days she would eat nothing; complains of belly-ache; for the last few days less malicious and less lascivious; stools rather loose; itching all over the body, especially on her genitals; sleep, good.

Sacch. Lactis for seven days, in seven tablespoonfuls, &c.

10th.—On the 7th, fit of excessive anger; she sought to strike everyone. The next day, the 8th, attack of fright and fear, almost like the commencement of her illness (fear of an imaginary wolf); fear lest she should be burnt. Since then she has become quiet, and talks rationally and nothing indecent for the last two days.

Sacch. Lactis, &c.

14th.—Quite good and sensible.

18th.—The same, but severe headache; inclination to sleep by day; not so cheerful.

New sulphur (new dynamisation of the smallest material portion) one globule in three tumblers; in the morning one teaspoonful.

22nd.—Very well; very little headache.

Sulphur, the next dynamisation in two tumblers.

She went on with the sulphur occasionally until November, at which time she was and still remains a healthy, rational, amiable girl.

CASE II.

O—t, an actor, 33 years old, married. 14th January, 1843. For several years he had been frequently subject to sore throat, as also now for a month past. The previous sore throat had lasted six weeks. On swallowing his saliva, a pricking sensation; feeling of contraction and excoriation.

When he has not the sore throat he suffers from a pressure in the anus, with violent, excoriative pains; the anus is then inflamed, swollen and constricted; it is only with a great effort that he can then pass his feces, when the swollen hemorrhoidal vessels protrude.

On the 15th January, he took, in the morning before breakfast, a teaspoonful of a solution of one globule of *belladonna* X^o, then the lowest dynamisation, dissolved in seven tablespoonfuls of water, of which a tablespoonful was well stirred up in a tumblerful of water.

15th.—In the evening aggravation of the sore throat.

16th.—Sore throat gone, but the affection of the anus returned as above described; an open fissure with excoriative pain, inflammation, swelling, throbbing pain and constriction;—also in the evening a painful motion.

He confessed having had a chancre eight years previously, which had been, as usual, destroyed by caustics, after which all the above affections had appeared.

18th.—*Merc. viv.* one globule of the lowest new dynamisation I, (which contains a vastly smaller amount of matter than the usual kind,) prepared in the same manner, and to be taken in the same way as the *Belladonna* (the bottle being shaken each time), one spoonful in a tumblerful of water well stirred.

20th.—Almost no sore throat. Anus better, but he still feels there excoriation pain after a motion; he has however no more throb-

bing, no swelling of the anus, and no inflammation; anus less contracted.

One globule of *merc. viv.* ($\frac{2}{10}$) the second dynamisation of the same kind; prepared in the same way, and taken in the morning.

25th.—Throat almost quite well; but in the anus, raw pain and severe shootings; great pain in the anus after a motion; still some contraction of it and heat.

30th.—In the afternoon, the last dose (one teaspoonful). On the 28th the anus was better; sore throat returned; pretty severe excoriation pain in the throat.

One globule in milk-sugar for seven days; prepared and taken in the same manner.

7th February.—Severe ulcerative pain in the throat. Belly-ache, but good stools; several in succession, with great thirst. In the anus all is right.

Sulphur ($\frac{2}{10}$) in seven tablespoonfuls, as above.

13th.—Had ulcerative pain in the throat, especially on swallowing his saliva, of which he has now a large quantity, especially copious on the 11th and 12th. Severe contraction of the anus, especially since yesterday.

He now smelt here *merc.*, and got to take as before, *merc. v.* ($\frac{2}{10}$), one globule in seven tablespoonfuls of water, and half a spoonful of brandy.

20th.—Throat better since the 18th; he has suffered much with the anus; the motion causes pain when it is passing; less thirst.

Milk-sugar in seven tablespoonfuls.

3rd March.—No more sore throat. On going to stool a bloodless hæmorrhoidal knot comes down (formerly this was accompanied with burning and raw pain), now with merely itching on the spot.

To smell *acid. nitri.* and then to have milk-sugar in seven.

Almost no more pain after a motion yesterday; some blood along with the motion (an old symptom). Throat well; only a little sensitive when drinking cold water.

Olfaction of *acid. nitri.* (olfaction is performed by opening a small bottle containing an ounce of Alcohol or brandy wherein one globule is dissolved, and smelt for an instant or two).

He remained permanently cured.

CASE OF CONGENITAL SINGLE KIDNEY.

Dr. J. C. Martin, L. R. C. P., Assistant Medical Officer, Donegal District Lunatic Asylum, has reported the following case

in the *British Medical Journal* for July 4, 1903:—A. S., female, aged 50, single, was admitted on June 26th, 1901, suffering from chronic mania. She was very restless and incoherent, with delusions of a religious nature and hallucinations of sight. Her bodily health was good, and, except for an unimportant indisposition at the end of November, 1901, it continued so until shortly before her death. On the night of May 4th, 1903, she was noticed to be very weak, cavernous breathing was heard at the left apex, but, owing to her mental state, a satisfactory examination was impossible. She was removed to hospital, but gradually got worse and died at 6 a.m. on May 6th. She never complained of feeling unwell. A necropsy was made on May 8th, at 4 p.m. Rigor mortis had passed off in the upper extremities but was present in the lower. The brain weighed 49 oz.; the meninges and brain substance appeared healthy. The heart weighed 9 oz., and was normal. The right lung was very emphysematous, but otherwise fairly healthy; the left lung showed great congestion of the base, and the upper lobe was broken down, being practically one large cavity. The liver weighed 42 oz. and the spleen 3 oz.; both were normal. On searching the usual site for the kidneys, they could not be found, *but lying on the vertebrae immediately below the pancreas was one large kidney, fully 9 in. long and horseshoe-shaped. There were two distinct sets of vessels, with separate connections at the aorta and the inferior vena cava respectively; also two ureters, which, after running separately for about 3 in., joined and formed one common duct, which ran down through the left iliac region and entered the bladder. Each set of vessels and a ureter were connected with a separate hilum.* All the other abdominal organs appeared to be healthy.

VARIOUS CASES OF ASTHMA.

Translated for the HOMŒOPATHIC RECORDER from the *Leipziger Pop. Z.f. Hom.*; May, 1903.

Clinical experience in the treatment of asthma serves especially to illustrate, the rule that patients should not be treated by routine according to the name of the disease, but according to the symptoms in question, which point out the true remedy. I have had in the last years a number of very interesting cases which were cured with one simple homœopathic remedy, after the allopathic medicines used had proved ineffective; but almost every case needed for its cure another remedy in agreement with the

varying symptoms. I had cause to observe also in these cases that the diagnosis formed by physicians cannot in all cases be depended on.

I. About two years ago a large, herculean man came to my room and solicited my advice. He was a blacksmith from the large railroad foundry at G., and after having passed through pneumonia he has now for several weeks been suffering from dyspnoea. He looked to be sound and vigorous, but he said he could not lift his hammer any more, for as soon as he did so his breath was caught and stopped; if he did not let his arm sink he would have to suffocate. No physician had been able to help him, and, unless he received help, he would be unable to work, though still in the most vigorous manhood, and thus his family would be impoverished. In a similar case the *Leipziger Pop. Zeitschrift* some time ago had recommended *Lobelia*. So I gave him that remedy in the third potency, three times a day, as much as would lie on the point of a knife. In a few weeks he wrote me that he was at work again, and if I would be so kind as to send him another supply of this powder he hoped soon to be entirely cured of his asthma; and so it proved to be.

II. Prof. O., of L., wrote to me that his mother, a matron of nearly sixty years, was suffering from asthmatic ailments, adding that these distressing attacks, strange to say, only appeared in wet, rainy weather, while during a clear sky she was always free from them. For years she had been trying various remedies, but, sad to say, without any benefit. According to Dr. Grauvogl, *Natrum sulph.* seemed to me to be indicated in this case, and it proved excellent, the professor writing to me, after using up his supply, that the remedy had acted excellently, as it had not only removed the asthmatic trouble, but also the stool troubles, from which his mother had always suffered. I had sent him the sixth potency, directing him to give a few pellets in the morning and in the evening.

III. Quite a similar case was that of a lady, superintendent of a large Children's Asylum, who wrote to me that she was suffering from asthmatic attacks, and requesting my aid, if there was any aid from this trouble; she added that she could not see why her trouble always came on rainy days. I had known the lady for a long time, she is now past fifty; I met her again not long ago, and she told me that since she had used these *Natrum sulph.* pellets she has not had any more attacks.

IV. A woman of F., the wife of a locksmith, over forty years of age, called on me and asked me for help from her asthmatic, convulsive attacks, from which she had now been suffering for seventeen years. She said that these attacks were worst when going to bed and generally by night. Sometimes these attacks were so severe that she had her windows open even in midwinter, in order to get air so she could breathe. At the same time her mouth and throat were so dry that she continually wanted to drink. It was impossible for her to lie in bed, she can only sleep while sitting. Several times her case had been so serious that the physician had declared she could not live. The choice in this case was easy for a homœopath, for *Arsenicum*, even in the 30th potency, soon gives the desired effect. On the use of this remedy the patient soon recovered, and as often as she felt a trace of her former ailment the little pellets so despised by allopaths, were to her of the greatest service.

V. Last summer I received a letter from a lady whom I had not seen for years, requesting me to help her to a homœopathic remedy for her ailment, if such a one could be found. She was already over fifty years old, is unmarried and well-to-do, living in a large provincial town. I knew her formerly as a healthy and well-nourished person, but now she wrote me that she had to cough, ejecting a tough, yellowish mucus, was suffering from constipation, and had always to use artificial means as a remedy. But her worst trouble consisted in her asthmatic attacks, on account of which she had often to sit at the open window for hours at night to get some air. At the same time she was nervous, frightened at every noise, though she, at the same time, was continually getting more corpulent. Up to this time she had followed Kneipp's method, using a partial wrapping up in wet sheets. But neither this use of cold water nor the use of medicines had given her any relief worth mentioning. I sent her, in a letter, homœopathic pellets, namely, *Apis* 6 and *Fluor. calcium* 6, directing her to use the first remedy for one week, taking three pellets three times a day, dry upon the tongue, and if not relieved to take next week the other remedy in the same way. At the end of September she wrote me that her asthma and cough had both disappeared and, indeed, from the use of the *Apis* pellets alone, so she had no need at all to take up the pellets No. 2. By A. M. PRIOR.—*Homœopathic Recorder*, June, 1903.

Gleanings from Contemporary Literature.

MODERN VIEWS ON MATTER: THE REALIZATION
OF A DREAM.*

For nearly a century men who devote themselves to science have been dreaming of atoms, molecules, ultramundane particles, and speculating as to the origin of matter; and now to-day they have got so far as to admit the possibility of resolving the chemical elements into simpler forms of matter, or even of refining them altogether away into ethereal vibrations or electrical energy.

This dream has been essentially a British dream, and we have become speculative and imaginative to an audacious extent, almost belying our character of a purely practical nation. The nation of impenetrable mysteries has been dismissed. A mystery is a thing to be solved—'and man alone can master the impossible!' There has been a vivid new start. Our physicists have remodelled their views as to the constitution of matter and as to the complexity if not the actual decomposibility of the chemical elements. To show how far we have been propelled on the strange new road, how dazzling are the wonders that waylay the researcher, we have but to recall—matter in a fourth state, the genesis of the elements, the dissociation of the chemical elements, the existence of bodies smaller than atoms, the atomic nature of electricity, the perception of electrons, not to mention other dawning marvels far removed from the lines of thought usually associated with English chemistry.

The earliest definite suggestion in the last century of the possible compound nature of the metals occurs in a lecture delivered in 1809 by Sir Humphry Davy at the Royal Institution. In that memorable lecture he speculated on the existence of some substance common to all the elements, and he averred that "If such generalizations should be supported by facts, a new, a simple and a grand philosophy would be the result. From the combination of different quantities of two or three species of ponderable matter we might conceive all the diversity of material substances to owe their constitution."

Again, in 1811, he said: "It will be useless to speculate upon the consequences of such an advancement in chemistry as that of the decomposition and composition of the metals. * * * It is the duty of a chemist to be bold in pursuit. He must not consider things as impracticable merely because they have not yet been effected. He must not regard them as unreasonable because they do not coincide with popular opinion. He must recollect how contrary knowledge sometimes is to what appears to be experience. * * * To inquire whether the metals be capable of being decomposed and composed is a grand object of true philosophy."

* An address delivered before the Congress of Applied Chemistry at Berlin, June 5, 1903, by Sir William Crookes.

Davy first used the term 'radiant matter' about 1809, but chiefly in connection with what is now called radiation. He also used the term in another sense, and the following passage in its clear fore-cast is prophetic of the modern electron: 'If particles of gases were made to move in free space with an almost infinitely great velocity—*i. e.*, to become radiant matter—they might produce the different species of rays, so distinguished by their peculiar effects.'

In his lectures at the Royal Institution, in 1816, 'On the General Properties of Matter,' another prescient chemist, Faraday, used similar terms when he said: "If we conceive a change as far beyond vaporization as that is above fluidity, and then take into account also the proportional increased extent of alteration as the changes rise, we shall, perhaps, if we can form any conception at all, not fall far short of radiant matter; and as in the last conversion many qualities were lost, so here also many more would disappear." Again, in one of his early lectures he strikes a forward note: "At present we begin to feel impatient, and to wish for a new state of chemical elements. To decompose the metals, to reform them, and to realize the once absurd notion of transmutation, are the problems now given to the chemist for solution."

But Faraday was always remarkable for the boldness and originality with which he regarded generally accepted theories. In 1844 he said, "The view that physical chemistry necessarily takes of atoms is now very large and complicated; first many elementary atoms—next compound and complicated atoms. System within system, like the starry heavens, *may be right—but may be all wrong.*"

A year later Faraday startled the world by a discovery to which he gave the title 'On the Magnetization of Light and the Illumination of the Magnetic Lines of Force.' For fifty years this title was misunderstood and was attributed to enthusiasm or confused ideas. But to-day we begin to see the full significance of the Faraday dream.

In 1879, in a lecture I delivered before the British Association it fell to my lot to revive 'Radiant Matter.' I advanced the theory that in the phenomena of the vacuum tube at high exhaustions the particles constituting the cathode stream are not solid, nor liquid, nor gaseous, do not consist of atoms propelled through the tube and causing luminous, mechanic or electric phenomena where they strike 'but that they consist of something much smaller than the atom—fragments of matter, ultra-atomic corpuscles, minute things, very much smaller, very much lighter than atoms—things which appear to be the foundation stones of which atoms are composed.'

I further demonstrated that the physical properties of radiant matter are common to all matter at the low density—'Whether the gas originally under experiment be hydrogen, carbon dioxide or atmospheric air, the phenomena of phosphorescence, shadows, magnetic deflection, etc., are identical.' Here are my words, written nearly a quarter of a century ago: "We have actually touched the borderland where matter and force seem to merge into one another—the shadowy realm between the known

and unknown. I venture to think that the greatest scientific problems of the future will find their solution in this borderland, and even beyond; here it seems to me, lie ultimate realities, subtle, far-reaching, wonderful."

It was not till 1881 that J. J. Thomson established the basis of the electrodynamic theory. In a very remarkable memoir in the *Philosophical Magazine* he explained the phosphorescence of glass under the influence of the cathode stream by the nearly abrupt changes in the magnetic field arising from the sudden stoppage of the cathode particles.

The now generally accepted view that our chemical elements have been formed from one primordial substance was advocated in 1838 by me when president of the Chemical Society,* in connection with a theory of the genesis of the elements. I spoke of 'an infinite number of immeasurably small ultimate—or, rather, ultimatissimate—particles gradually accreting out of the formless mist, and moving with inconceivable velocity in all directions.'

Pondering on some of the properties of the rare elements, I strove to show that the elementary atoms themselves might not be the same now as when first generated—that the primary motions which constitute the existence of the atom might slowly be changing, and even the secondary motions which produce all the effects we can observe—heat, chemic, electric and so forth—might in a slight degree be affected; and I showed the probability that the atoms of the chemical elements were not eternal in existence, but shared with the rest of creation the attributes of decay and death.

The same idea was expanded at a lecture I delivered at the Royal Institution in 1887, when it was suggested that the atomic weights were not invariable quantities.

I might quote Mr. Herbert Spencer, Sir Benjamin Brodie, Professor Graham, Sir George Stokes, Sir William Thomson (now Lord Kelvin), Sir Norman Lockyer, Dr. Gladstone and many other English savans to show that the notion—not necessarily of the decomposibility but at any rate of the complexity of our supposed elements has long been 'in the air' of science, waiting to take more definite development. Our minds are gradually getting accustomed to the idea of the genesis of the elements, and many of us are straining for the first glimpse of the resolution of the chemical atom. We are eager to enter the portal of the mysterious region too readily ticketed 'Unknown and Unknowable.'

Another phase of the dream now demands attention. I come to the earlier glimpses of the electric theory of matter.

Passing over the vague speculations of Faraday and the more positive speculations of Sir William Thomson (now Lord Kelvin), one of the earliest definite statements of this theory is given in an article in the *Fortnightly Review* for June, 1875, by W. K. Clifford—a man who in common with other pioneers shared that 'noblest misfortune of being

* Pres. Address to Chem. Soc., March 28, 1838.

born before his time.' 'There is great reason to believe,' said Clifford, "that every material atom carries upon it a small electric current, *if it does not wholly consist of this current.*'

In 1886 when president of the Chemical Section of the British Association, in a speculation on the origin of matter, I drew a picture of the gradual formation of the chemical elements by the working of three forms of energy—electricity, chemism and temperature—on the 'formless mist' (protyle*), wherein all matter was in the pre-atomic state—potential rather than actual. In this scheme the chemical elements owe their stability to being the outcome of a struggle for existence—a Darwinian development by chemical evolution—a survival of the most stable. Those of lowest atomic weight would first be formed, then those of intermediate weight, and finally the elements having the highest atomic weights, such as thorium and uranium. I spoke of the 'dissociation point' of the elements. "What comes after uranium?" I asked. And I answered back, "The result of the next step will be * * * the formation of * * * compounds the dissociation of which is not beyond the powers of our terrestrial sources of heat." A dream less than twenty years ago, but a dream which daily draws nearer to entire and vivid fulfilment. I will presently show you that radium, the next after uranium, does actually and spontaneously dissociate.

The idea of units or atoms of electricity—an idea hitherto floating intangibly like helium in the sun—can now be brought to earth and submitted to the test of experiment.† Faraday, W. Weber, Laurentz,

*We require a word, analogous to protoplasm, to express the idea of the original primal matter existing before the evolution of the chemical elements. The word I venture to use is composed of $\pi\rho\sigma$ (*earlier than*) and $\upsilon\lambda\eta$ (*the stuff of which things are made*).

†"The equivalent weights of bodies are simply those quantities of them which contain equal quantities of electricity; * * * it being the electricity which determines the equivalent number, *because* it determines the combining force. Or, if we adopt the atomic theory or phraseology, then the atoms of bodies which are equivalents to each other in their ordinary chemical action, have equal quantities of electricity naturally associated with them." Faraday's 'Experimental Researches in Electricity' par. 1869, January, 1804.

"This definite quantity of electricity we shall call the molecular change. If it were known it would be the most natural unit of electricity." Clerk Maxwell's 'Treatise on Electricity and Magnetism,' first edition, Vol. I., 1873, p. 311.

"Nature presents us with a single definite quantity of electricity. * * * For each chemical bond which is ruptured within an electrolyte a certain quantity of electricity traverses the electrolyte, which is the same in all cases." G. Johnstone Stoney, 'On the Physical Units of Nature,' British Association Meeting, Section A, 1874.

"The same definite quantity of either positive or negative electricity moves always with each univalent ion, or with every unit of affinity of a multivalent ion." Helmholtz, Faraday Lecture, 1881.

Gauss, Zöllner, Hertz, Helmholtz, Johnstone Stoney, Sir Oliver Lodge, have all contributed to develop the idea—originally due to Weber—which took concrete form when Stoney showed that Faraday's law of electrolysis involved the existence of a definite charge of electricity associated with the ions of matter. This definite charge he called an electron. It was not till some time after the name had been given that electrons were found to be capable of existing separately.

In 1891, in my inaugural address as president of the Institution of Electrical Engineers, I showed that the stream of cathode rays near the negative pole was always negatively electrified, the other contents of the tube being positively electrified, and I explained that 'the division of the molecule into groups of electro-positive and electro-negative atoms is necessary for a consistent explanation of the genesis of the elements.' In a vacuum tube the negative pole is the entrance and the positive pole the exit for electrons. Falling on a phosphorescent body, yttria, for instance, —a collection of Hertz molecular resonators—the electrons excite vibrations of, say, 550 billion times a second, producing ether waves of the approximate length of 5.75 ten-millionths of a millimeter, and occasioning in the eye the sensation of citron-colored light. If, however, the electrons dash against a heavy metal or other body which will not phosphoresce, they produce ether waves of a far higher frequency than light, and are not continuous vibrations, but, according to Sir George Stokes, simple shocks or solitary impulses; more like discordant shouts as compared with musical notes.

During that address an experiment was shown which went far to prove the dissociation of silver into electrons and positive atoms.* A silver pole was used, and near it in front was a sheet of mica with a hole in its center. The vacuum was very high, and when the poles were connected with the coil, the silver being negative, electrons shot from it in all directions, and passing through the hole in the mica screen, formed a bright phosphorescent patch on the opposite side of the bulb. The action of the coil was continued for some hours, to volatilize a certain portion of the silver. Silver was seen to be deposited on the mica screen only in the immediate neighborhood of the pole; the far end of the bulb, which had been glowing for hours from the impact of electrons, being free from silver deposit. Here, then, are two simultaneous actions. Electrons, or radiant matter shot from the negative pole, caused the glass against which they struck to glow with phosphorescent light. Simultaneously, the heavy positive ions of silver, freed from negative electrons, and under the influence of the electrical stress, likewise flew off and were deposited in the metallic state near the pole. The ions of metal thus deposited in all cases showed positive electrification.

"Every monad atom has associated with it a certain definite quantity of electricity; every dyad has twice this quantity associated with it; every triad three times as much, and so on." O. Lodge, 'On Electrolysis,' *British Association Report*, 1885.

* In describing the experiment, one of fundamental importance, modern terms are employed.

In the year 1893-1895 a sudden impulse was given to electric vacuum work by the publication in German of the remarkable results obtained by Lenard and Röntgen, who showed that the phenomena inside the vacuum tube were surpassed in interest by what took place outside. It is not too much to say that from this date what had been a scientific conjecture became a sober reality.

Faraday, in 1862, long and ardently sought for a visible relation between magnetism and light which in 1845 he had foreshadowed. But his instrumental means were too feeble, and it was not till 1896 that Zeeman showed a spectrum line could be acted on by a magnetic field. A spectrum line is caused by motion of the electron. A magnetic field resolves this motion into other component motions, some slower, others quicker, and thus causes a single line to split into others of greater and less refrangibility than the parent line.

One important advance in theoretic knowledge has been obtained by Dewar, the successor of Faraday in the classic laboratories of the Royal Institution. Soon after Röntgen's discovery Dewar found that the relative opacity to the Röntgen rays was in proportion to the atomic weights of bodies, and he was the first to apply this principle to settling a debated point in connection with argon. Argon is relatively more opaque to the Röntgen rays than either oxygen, nitrogen or sodium, and from this Dewar inferred that the atomic weight of argon was twice its density relatively to hydrogen. In the light of to-day's researches on the constitution of atoms, it is impossible to over-estimate the importance of this discovery.

In 1896 Becquerel, pursuing the masterly work on phosphorescence inaugurated by his illustrious father showed that the salts of uranium constantly emit emanations which have the power of penetrating opaque substances and of affecting a photographic plate in total darkness, and of discharging an electrometer. In some respects these emanations known as Becquerel rays, behave like rays of light, but they also resemble Röntgen rays. Their real character has only recently been ascertained, and even now there is much that is obscure and provisional in the explanation of their constitution and action.

Following closely upon Becquerel's work came the brilliant researches of M. and Mme. Curie, on the radio-activity of bodies accompanying uranium.

Hitherto I have been recounting isolated instances of scientific speculation with apparently little relation to one another. The existence of matter in an ultragaseous state; material particles smaller than atoms; the existence of electrical atoms or electrons; the constitution of Röntgen rays and their passage through opaque bodies; the emanations from uranium; the dissociation of the elements—all these isolated hypotheses are now focused and welded into one harmonious theory by the discovery of radium.

"Often do the spirits
Of great events stride on before the events,
And in to-day already walks to-morrow."

No new discovery is ever made without its influence ramifying in all directions and explaining much that before had been mystifying. Certainly no discovery of modern times has had such wide-embracing consequences, and thrown such a flood of light on broad regions of hitherto inexplicable phenomena, as this discovery of M. and Mme. Curie and M. Bemont, who patiently and laboriously plodded along a road bristling with difficulties almost insuperable to others who, like myself, have toiled in similiar labyrinths of research. The crowning point of these labors is radium.

Let me briefly recount some of the properties of radium, and show how it reduces speculations and dreams, apparently impossible of proof, to a concrete form.

Radium is a metal of the calcium, strontium and barium group. Its atomic weight according to C. Runge and J. Precht is probably about 258. In this case it occupies the third place below barium in my lemniscate spiral scheme of the elements, two unoccupied gaps intervening.

The spectrum of radium has several well-defined lines; these I have photographed and have also measured their wave-lengths. Two especially are strong and characteristic. One at wave-length 3,649.71 and the other at wave-length 3,814.58. These lines enable radium to be detected spectroscopically.

The emanations cause soda-glass to assume a violet color, and they produce many chemical changes. Their physiological action is strong, a few milligrams brought near the skin in a few hours producing a wound difficult to heal.

The most striking property of radium is its power to pour out torrents of emanations bearing a certain resemblance to Röntgen rays, but differing in important points.

The emanations from radium are of three kinds. One set is the same as the cathode stream, now identified with free electrons—atoms of electricity projected into space apart from gross matter—identical with 'matter in the fourth or ultragaseous state,' Kelvin's 'satellites,' Thomson's 'corpuscles' or 'particles'; Lodge's 'disembodied ionic charges, retaining individuality and identity.' These electrons are neither ether-waves nor a form of energy but substances possessing inertia (probably electric). Liberated electrons are exceedingly penetrating. They will discharge an electroscope when the sodium is ten feet or more away, and will affect a photographic plate through five or six millimeters of lead and several inches of wood or aluminium. They are not readily filtered out by cotton-wool; they do not behave as a gas, *i. e.*, they have not properties dependent on intercollisions, mean free path, etc.; they act more like a fog or mist, are mobile and carried about by a current of air to which they give temporary conducting powers, clinging to positively electrified bodies and thereby losing mobility, and diffusing on the walls of the containing vessel if left quiet.

Electrons are deviated in a magnetic field. They are shot from radium with a velocity of about one tenth that of light, but are gradually obstructed by collision with air atoms, so that some became much slowed, and then are what I formerly called loose and erratic particles, which diffuse about in the air, and give it temporary conducting powers. These can turn corners, can be concentrated by mica cones into a bundle and then produce phosphorescence.

Another set of emanations from radium are not affected by an ordinarily powerful magnetic field, and are incapable even of passing through thin

material obstructions. These emanations have about one thousand times the energy of those radiated by the deflectable particles. They render air a conductor and act strongly on a photographic plate. Their mass is enormous in comparison with that of the electrons, and their velocity is probably as great when they leave the radium, but, in consequence of their greater mass, they are less deflected by the magnet, are easily obstructed by obstacles, and are sooner brought to rest by collisions with air atoms. The Hon. R. B. Strutt was the first to affirm that these non-deflectable rays are the positive ions moving in a stream from the radioactive body.

Rutherford has shown that these emanations are slightly affected in a very powerful magnetic field, but in an opposite direction to the negative electrons. They are therefore proved to be positively charged bodies moving with great velocity. For the first time Rutherford has measured their speed and mass, and he shows they are ions of matter moving with a speed of the order of that of light.

There is also a third kind of emanation produced by radium. Besides the highly penetrating rays deflected by a magnet, there are very penetrating rays not at all affected by magnetism. They accompany the previous emanations, and are Röntgen rays—ether vibrations—produced as secondary phenomena by the sudden arrest of velocity of the electrons by solid matter, producing a series of Stokesian ‘pulses’ or explosive ether waves shot into space.

Many lines of argument and research tending towards the same point give trustworthy data by which to calculate the masses and velocities of these different particles. I must deal with big figures, but big and little are relative, and are only of importance in relation to the limitations of our senses. I will take as the standard the atom of hydrogen gas—the smallest material body hitherto recognized. The mass of an electron is 1/1700th of an atom of hydrogen, or 3×10^{26} grm., according to J. J. Thomson, and its velocity is 2×10^9 centimeters per second, or two thirds that of light. The kinetic energy per milligram is 10^{17} ergs, about three and a half million foot-tons. Becquerel has calculated that one square centimeter of radio-active surface would radiate into space one gram of matter in one billion years.

The positively electrified masses or ions are enormously great in comparison with the size of the electron. Sir Oliver Lodge illustrates it thus: If we imagine an ordinary sized church to be an atom of hydrogen, the electrons constituting it will be represented by about 700 grains of sand each the size of an ordinary full-stop (350 positive and 350 negative) dashing in all directions inside, or, according to Lord Kelvin, rotating with inconceivable velocity. Put in another way; the sun’s diameter is about one and a half million kilometers and that of the smallest planetoid about 26 kilometers. If an atom of hydrogen be magnified to the size of the sun, an electron will be about two-thirds the diameter of the planetoid.

The extreme minuteness and sparseness of the electrons in the atom account for their penetration. While the more massive ions are stopped by, intercollisions in passing among atoms, so that they are almost completely arrested by the thinnest sheet of matter, electrons will pass almost unobstructed through ordinary opaque bodies.

The action of these emanations on phosphorescent screens is different. The electrons strongly affect a screen of barium platinocyanide, but only slightly one of Sidot’s zinc sulphide. On the other hand, the heavy, massive, non-deflectable positive ions affect the zinc sulphide screen strongly, and the barium platinocyanide screen in a much less degree.

Both Röntgen rays and electrons act on a photographic plate and produce images of metal and other substances enclosed in wood and leather, and throw shadows of bodies on a barium platinocyanide screen. Electrons are much less penetrating than Röntgen rays, and will not, for instance, show easily the bones of the hand. A photograph of a closed case of instruments is taken by radium emanations in three days, and by Röntgen rays in three minutes. The resemblance between the two pictures is slight, and the difference great.

The power with which radium emanations are endowed of discharging electrified bodies is due to the ionization of the gas through which they pass. This can be effected in many other ways; thus, ionization is communicated to gases faintly by the splashing of water, by flames and red-hot bodies, by ultra-violet light falling on negatively electrified metals, and strongly by the passage of Röntgen rays.

According to Sir Oliver Lodge's electronic theory of matter, a chemical atom or ion has a few extra negative electrons in addition to the ordinary neutral atom, and if these negative electrons are removed it thereby becomes positively charged. The free electron portion of the atom is small in comparison with the main bulk, in the proportion in hydrogen of about 1 to 700. The negative charge consists of superadded or unbalanced electrons—one, two, three, etc., according to the chemical valency of the body—whereas the main bulk of the atom consists of paired groups, equal, positive and negative. As soon as the excess electrons are removed, the rest of the atom, or ion, acts as a massive positively charged body, hanging tightly together. In a high vacuum the induction spark tears the components of a rarefied gas apart; the positively charged ions, having great comparative density are soon slowed down by collisions, while the electrons are driven from the negative pole with an enormous velocity depending on the initial electromotive force and the pressure of gas inside the tube, but approaching, at the highest exhaustions, half that of light.

After leaving the negative pole the electrons meet with a certain resistance, in a slight degree by physical collisions, but principally by reunion with the positive ions.

Since the discovery of radium and the identification of one set of its emanations with the cathode stream or radiant matter of the vacuum tube, speculation and experiment have gone hand in hand, and the two-fluid theory of electricity is gradually replaced by the original one-fluid theory of Franklin. On the two-fluid theory, the electrons constitute free negative electricity, and the rest of the chemical atom is charged positively, although a free positive electron is not known. It seems to me simpler to use the original one-fluid theory of Franklin, and to say that the electron is the atom or unit of electricity. Fleming uses the word 'co-electrons' to express the heavy positive ion after separation from the negative electron: 'We can no more,' he says, 'have anything which can be called electricity apart from corpuscles than we can have momentum apart from moving

matter.' A so-called negatively charged chemical atom is one having a surplus of electrons, the number depending on the valency, whilst a positive ion is one having a deficiency of electrons. Differences of electrical charge may thus be likened to debits and credits in one's banking account, the electrons acting as current coin of the realm. On this view only the electron exists; it is the atom of electricity, and the words positive and negative, signifying excess and defect of electrons, are only used for convenience of old-fashioned nomenclature.

The electron theory fits and luminously explains Ampere's idea that magnetism is due to a rotating current of electricity round each atom of iron; and following these definite views of the existence of free electrons, has arisen the electronic theory of matter. It is recognized that electrons have the one property which has been regarded as inseparable from matter—nay, almost impossible to separate from our conception of matter—I mean inertia. Now, in that remarkable paper of J. J. Thomson's published in 1881, he developed the idea of electric inertia (self-induction) as a reality due to a moving charge. The electron therefore appears only as apparent mass by reason of its electrodynamic properties, and if we consider all forms of matter to be merely congeries of electrons, the inertia of matter would be explained without any material basis. On this view the electron would be the 'protyle' of 1886, whose different groupings cause the genesis of the elements.

There is one more property of the emanations of radium to bring before your notice. I have shown that the electrons produce phosphorescence of a sensitive screen of barium platinoeyanide, and the positive ions of radium produce phosphorescence of a screen of zinc blende.

If a few minute grains of radium salt fall on the zinc sulphide screen the surface is immediately dotted with brilliant specks of green light. In a dark room, under a microscope with a two-third-inch objective, each luminous spot shows a dull center surrounded by a diffused luminous halo. Outside the halo the dark surface of the screen scintillates with sparks of light. No two flashes succeed on the same spot, but are scattered over the surface, coming and going instantaneously, no movement of translation being seen.

If a solid piece of a radium salt is brought near the screen, and the surface examined with a pocket lens magnifying about 20 diameters, scintillating spots are sparsely scattered over the surface. Bringing the radium nearer the screen the scintillations become more numerous and brighter, until when close together the flashes follow so quickly that the surface looks like a turbulent luminous sea. When the scintillating points are few there is no visible residual phosphorescence, and the successive sparks appear 'atoms of intensest light,' like stars on a black sky. What to the naked eye seems like a uniform 'milky way,' under the lens becomes a multitude of stellar points, flashing over the whole surface.

'Polonium' basic nitrate, actinium and radio-active platinum produce a similar effect on the screen, but the scintillations are fewer. In a vacuum

the scintillations are as bright as in air, and being due to inter-atomic motion they are not affected by extremes of low temperature: in liquid hydrogen they are as brilliant as at the ordinary temperature.

A convenient way to show these scintillations is to fit the blende screen at the end of a brass tube with a speck of radium salt in front about a millimeter off, and to have a lens at the other end. I propose to call this little instrument the 'spintbariscope,' from the Greek word *σπινθαρῖς*, a scintillation.

It is difficult to estimate the number of flashes of light per second. With the radium about five centimeters off the screen the flashes are barely detectable, not more than one or two per second. As the distance of the radium diminishes, the flashes become more frequent, until at one or two centimeters, they are too numerous to count, although it is evident this is not of an order of magnitude inconceivably great.

Practically the whole of the luminosity on the blende screen, whether due to radium or 'polonium', is occasioned by emanations which will not penetrate card. These are the emanations which cause the scintillations, and the reason why they are distinct on the blende and feeble on the platinocyanide screen, is that with the latter the sparks are seen on a luminous ground of general phosphorescence which renders the eye less able to see the scintillations.

It is probable that in these phenomena we actually witness the bombardment of the screen by the positive ions hurled off by radium with a velocity of the order of that of light. Each particle is rendered apparent only by the enormous extent of lateral disturbance produced by its impact on the sensitive surface, just as individual drops of rain falling on a still pool are not seen as such, but by reason of the splash they make on impact, and the ripples and waves they produce in ever-widening circles.

Indulging in a 'scientific use of the imagination,' and pushing the hypothesis of the electronic constitution of matter to what I consider its logical limit, we may be, in fact, witnessing a spontaneous dissociation of radium—and we begin to doubt the permanent stability of matter. The chemical atom may be actually suffering a katabolic transformation; but at so slow a rate that supposing a million atoms fly off every second, it would take a century for weight to diminish by one milligram.

It must never be forgotten that theories are only useful so long as they admit of the harmonious correlation of facts into a reasonable system. Directly a fact refuses to be pigeon-holed and will not be explained on the theoretic grounds, the theory must go, or it must be revised to admit the new fact. The nineteenth century saw the birth of new views of atoms, electricity and ether. Our views to-day of the constitution of matter may appear satisfactory to us, but how will it be at the close of the twentieth century? Are we not incessantly learning the lesson that our researches have only a provisional value? A hundred years hence shall we acquiesce in the resolution of the material universe into a swarm of rushing electrons?

This fatal quality of atomic dissociation appears to be universal and operates whenever we brush a piece of glass with silk ; it works in the sunshine and raindrops, and in the lightnings and flame ; it prevails in the waterfall and the stormy sea, and although the whole range of human experience is all too short to afford a parallax whereby the date of the extinction of matter can be calculated, protyle, the 'formless mist,' once again may reign supreme, and the hour hand of eternity will have completed one revolution.—*Science*, June 26, 1903.

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CHOLERA.

VI.

(Continued from last Number, p. 276)

MORTALITY.

The mortality of cholera has been taken as 50 per cent. of all cases, irrespective of the degree of their severity, with a tendency towards a higher than a lower figure. From what we have said under Prognosis the mortality depends upon a variety of circumstances besides their intrinsic severity or mildness: The intrinsic mildness or severity of the disease depends upon the degree of virulence of the generating poison. The circumstances which modify the intrinsic nature of the disease, converting an originally mild into a severe case, and *vice versa*, are what we have considered under Prognosis, namely, age, sex, &c. Now if we take cholera as a whole, the old school estimate of its mortality can only be held to be correct under the treatment of that school. Under a better system of treatment, which Homœopathy undoubtedly is, the mortality must certainly be considerably less. There ought not to be any death in mild cases, not more than fifty per cent. in cases affecting the very young and the very old, and not more than twenty-five cent. in the cases of the young and the adults. An average mortality from all

cases ought not to exceed this last percentage. Under proper hygienic precautions and under judicious homœopathic treatment the disease both in its epidemic and individual manifestations ought to be more under control than it has hitherto been. And considering the admittedly helpless and impotent state of old school therapeutics, all civilized governments ought no longer to continue to be the idle spectators of the ravages of a disease which still continues to be the greatest scourge of mankind, simply because the dominant profession refuses to be guided in its treatment by the unerring therapeutic law which was discovered by one of its own brightest members so long as upwards of a century ago.

As a general rule the mortality at the beginning of an epidemic is much greater than at the end, but this is not always the case. An epidemic may begin with very mild cases and end with fatal ones, and then disappear suddenly. Sometimes the fatal cases occur in the middle of an epidemic, the beginning and the end being characterized by mild cases.

TREATMENT.

GENERAL OBSERVATIONS.

The indispensable requisites in the treatment of cholera, as indeed of every disease, are a knowledge of its pathology, or a right interpretation of its phenomena, in other words, of the symptoms objective and subjective with reference to their seats in the organism; a knowledge of its natural history or of its course when left to itself; and finally a knowledge of the properties of drugs or of their physiological and pathogenetic actions.

In speaking of a knowledge of its pathology as one of the requisites in the treatment of cholera, we are aware that we are not quite in accord with the Founder of Homœopathy and with a large section of his followers even in the present day. Pathology, at the time of Hahnemann, was so crude, was indeed so wide of fact, so full of "empty speculation and hypotheses concerning the internal essential nature of the vital processes and the mode in which diseases originate in the invisible interior of the organism," that it deserved all the condemnation he hurled against it. But it is so no longer. Though a large

portion of the organism is still invisible, a larger portion has been laid bare by the microscope and other modern appliances, and we have got at the primitive elements of living matter, and therefore at the very threshold of life. The interior of the sanctuary has not been reached and may perhaps never be reached it is true, but we are approaching it nearer and nearer. To neglect this knowledge of the structure and functions of the parts, the organs and other constituents, of which the living organism is made, is for the physician to neglect the knowledge which alone can render essential help in the correct interpretation of the symptoms of disease and the symptoms of drugs, without which the treatment of disease must be mainly a groping in the dark.

That a knowledge of the natural history of a disease is a great help in its treatment, must be admitted except by the thoughtless. If we can know how far, unaided nature can restore harmony when disturbed by disease, and by what processes, we shall know to give due credit to nature and to art when cures are brought about, we shall know when to assist nature and when not to thwart her, we shall know to hold our patience and not be alarmed and alarm our patients by unnecessary fears, at the same time that we wait and watch. But this knowledge of the natural history of disease is almost impossible of attainment, except by the purest accident, in civilized life. Very few patients are left without any medical treatment. Even the poorest of the poor are taken care of by their neighbours or by the Government. The physician, if he is not a meddling practitioner, by judicious respite given to the patient, can attain to this knowledge partially at least, and even this will be of benefit to him.

As regards the necessity of a knowledge of drugs or of the weapons with which we have to combat disease, it is so self-evident as to need no argument to urge it. Whatever rule we follow in using them we must know what they are, what they can do, how they act in health and disease, before we can use them with any advantage. Yet singularly enough before the time of Hahnemann, physicians were satisfied with a most imperfect knowledge of them, and even of this imperfect knowledge they did not avail themselves of the whole of it, they would use a drug for one or two of its properties, believing that the rest

of their properties would remain quiescent in the system. This has been found to be a delusion. The drugs obey their own laws and not the ignorant behests of the physician. Hence, in order that we may use them with success we must know all about drugs that may be possibly known.

As we have already said, cholera is but the generic name for a variety of diseases. Its causes are not one, but manifold. Each case should be studied by itself. Each case will be found to have an individuality of its own resulting not only from the peculiarities of the individual, but likewise from the nature of the cause or causes which have given it birth; and therefore, while the physician should never lose sight of the essential general nature of the disease, he should always observantly and anxiously watch the peculiarities of each individual case. The late Dr. J. P. Dake, in his article on Asiatic Cholera, in Arndt's *System of Medicine*, has thus remarked on the medicinal treatment of the disease: "The most successful practitioner will ever be the one who, quickly recognizing the foe, selects and adheres to well-tried remedies, nothing doubting as to good results. He who takes time to search a repertory with a long list of drugs, each of which may have displayed some symptom similar to one characteristic of cholera, will often find his patient fatally collapsed before his individualizing pursuit is satisfactorily ended." The routine here recommended by Dr. Dake has brought disgrace on homœopathy even in the treatment of cholera. It is not always the remedies tried in previous cases that are successful in new cases unless the correspondence is close. We should be doing Hahnemann a wrong, and indeed it would be declaring homœopathy incapable of growth and development, if we were to believe that the few remedies recommended by the Master are all the remedies for cholera. If we were to stick to them, and search for no newer remedies we would court signal failure. Of course it would not do to search for the right remedy at the bed-side of the patient. The practitioner should be fully armed with a knowledge of all possible remedies, and then consultation of the repertory even at the bed-side, in case of a doubt, would prove to be a great gain and not a serious loss of time. It is to afford this knowledge that the present treatise is written.

The homœopathic physician, though equipped with an infinitely better armoury, because filled with instruments of precision, would find it not unprofitable to possess a knowledge of the armoury which his colleagues of the other school are still employing for the same purpose. We therefore here take a glance at the

OLD SCHOOL TREATMENT.

There is a singular "dismal unanimity of all medical authors" of this school who have had cases of cholera to treat, in declaring that "no treatment avails to arrest the fully-developed disease." We have already quoted the opinion of Dr. MacLeod, one of the greatest living Indian authorities on the subject. We shall now present our readers with the opinions of a few others.

The late Sir Thomas Watson said: "Never, certainly, was the artillery of medicine more vigorously plied—never were her troops, regular and volunteer, more meritoriously active. To many patients, no doubt, this busy interference made all the difference between life and death. But if the balance could be fairly struck, and the exact truth ascertained, I question whether we should find that the aggregate mortality was in any way disturbed by our craft."

Lebert says: "Cholera in its well-pronounced, typical, and perfectly developed form slays the half of all persons attacked; indeed even a greater number at the extreme limits of life and under unfavorable conditions;" and that "internal medicines, according to all experience hitherto, have proved useless during the attack."

Dr. Alfred Stillé says: "If regard be had to the various methods and particular medicines which have been used in the treatment of cholera, it will appear that in hardly any other acute disease has a greater number or variety been employed. If, on the other hand, we endeavour to learn what measures have been really and generally curative in cholera, and what are they to which, on the occurrence of an epidemic of the disease, we may turn with confidence in their power to cure, the result of the investigation is disheartening, and adds to the accumulated proofs that the power of medical art is exceedingly restricted." In the case of the disease in question this is not a matter for regret or surprize to Dr. Stillé.

He thinks it must be so, it could not be otherwise. "To this conclusion," says he, "we must assent at whatever cost to a faith which is strong in proportion to the ignorance out of which it grows. Nor, if we consider the matter rationally, ought we to be surprized or humiliated on account of the comparative helplessness of medicine in this disease, since, if we reflect upon it, the case is by no means peculiar or exceptional," because, according to him, "the various fevers are at times utterly uninfluenced by the most rational and judicious treatment. Nor does any one bring a railing accusation against medicine when accident fatally damages a part essential to life." He compares the destruction of the intestinal mucous membrane in cholera to the destruction of the skin in a scald or a burn, and argues that just as in the one the restoration of the skin is impossible, so is the restoration of the mucous membrane in the other, and therefore "it is quite futile to address any treatment to this organ." What becomes of this theoretic comparison when he himself adds shortly after: "And yet there is some encouragement in the fact that recoveries sometimes occur from even the most desperate state of collapse and under the most dissimilar methods of treatment; so that the physician is warranted in not yielding to discouragement and cheering his patients with hope even to the end."

The THERAPEUTICS of cholera, as carried on by the dominant school in the present day, may be brought under the following heads:—

1. Empirical, adopted not for any particular reason that can be shown, or because it has been found beneficial in previous cases. The exhibition of calomel in all cases is illustrative of this mode of treatment of cholera.

2. Rational, because adopted with some reason, or, at least, some show of reason, and is either:—

- (1.)—Etiological.
- (2.)—Pathological.
- (3.)—Etiologico-pathological.

(1.)—The etiologic therapeutics is directed towards the cause, and consequently varies according to the view taken of the cause.

Those, who hold that cholera depends upon the presence in the

system of a material poison which the system endeavours to throw out by the evacuations, advocate the *Eliminative treatment*, by which it is proposed to assist nature in her expulsive or eliminative efforts. Purgatives and emetics are accordingly the remedies employed by these physicians. Blood-letting is the most heroic measure of the eliminative plan. It aims to relieve the system of poisoned blood and the internal organs, especially the lungs, of congestion. Those, who believe that cholera depends upon the action of some living germ upon the mucous membrane of the alimentary canal, advocate the administration of drugs which have a germicidal action, such as sulphuric acid, carbolic acid, corrosive sublimate, &c. And thus we have the *Antiseptic plan of treatment*.

Those, however, who while they believe that cholera is the result of some subtle poisoning of the system, look upon the evacuations as exhaustive discharges caused by the specific deleterious influence of the poison itself upon the digestive tract, adopt the antidotic treatment. This may be either—

- (i.)—Antidotic of the poison itself; or
- (ii.)—Of its effects; or
- (iii.)—Both combined.

The antidotic treatment is essentially *Antiseptic*, and, according to the peculiar ideas of the practitioner, may take on the forms of the *Stimulant* and the *Antispasmodic* plans.

(2.)—Pathological therapeutics has reference only to the condition of the system as an effect, without any reference to its cause, and therefore corresponds to the second head of antidotic treatment, without ostensibly being antidotic. Pathological therapeutics is generally a combination of the *Astringent plan* to check the evacuations, of the *Stimulant plan* to uphold the vital energies, of the *Antispasmodic plan* to relieve the spasms, and of what from want of a better name we may call the *Restorative plan* to restore to the system the water and salts it has lost by the watery evacuations.

(3.)—It is etiologico-pathological alone which takes cognizance of the cause as well as of the effect, and thus corresponds to the third head of antidotic treatment. This has led to a combination of all possible plans; of those previously mentioned, with the addition of the *counter-irritative plan*, consisting of the appli-

cation of sinapisms and other counter-irritants "to remove morbid action from within to the surface where it may be less hurtful and more under control."

Thus there are seven different methods or plans adopted by the old school in the treatment of cholera, *the eliminative, the anti-septic, the stimulant, the antispasmodic, the astringent, the restorative, and the counter-irritative.* To these an eighth might have been added which was reserved for an Italian physician to propose and carry out, and which, had it been in vogue, we might have called the *mechanical plan*, inasmuch as it consisted in plugging the anus to prevent the transudations from the intestines from flowing out! The drugs and measures under each of the seven methods are too numerous for profitable mention. We will consider only a few and the most prominent of them.

For all these plans of treatment success has been claimed, even for blood-letting which no sane man would, it might have been expected, have thought of resorting to, considering the condition and small quantity of blood in the system, as revealed by post mortem examinations. But this was extensively practised during the earlier epidemics, especially in India. According to Dr. Raimann, of St. Petersburg, "blood-letting, with calomel and opium, and external heat and irritation, were amongst the most successful means employed against the disease in Russia." According to M. Vos, who practised in Batavia, blood-letting was of service amongst Europeans only, being injurious to the natives. The following instance, recorded by Sir Ranald Martin, of the effect of venesection, is worth reproducing. "On visiting my hospital in the morning, the European farrier-major was reported to be dying of cholera. I found that during the night he had been drained of all the fluid portion of his blood. His appearance was surprisingly altered; his respiration was oppressed; the countenance sunk and livid; the circulation flagging in the extremities. I opened a vein in each arm; but it was long before I could obtain anything but trickling of dark treacly matter. At length the blood flowed, and by degrees the darkness was exchanged for more of the hue of nature. The farrier was not of robust health, but I bled him largely when he, whom not a moment before I thought a dying man, stood up and exclaimed, 'Sir, you have made a new man of me.' He is still

alive and well." It would be neither fair nor charitable to say that this man recovered *in spite of* the venesection. It behoves us to find out the rationale of the cures in such cases.

The intravenous injection of warm water with or without salts, or of defibrinated blood, was practised in the early days of cholera, and the first effect was marvellous. Sir Thomas Watson has related one case which he had himself witnessed. "The patient was a young man, who was nearly moribund apparently. His pulse had almost, if not quite, disappeared from the wrist; his voice was faint and husky; he was very blue, and his visage was ghastly and cadaverous: in one word he was in an extreme state of collapse. Out of this he was brought in a few minutes by injecting warm water into one of the veins of his arm. The pulse again became distinct and full; and he sat up, and looked once more like one alive, and spoke in a strong voice. But he soon relapsed; and a repetition of the injection again rallied him, but not so thoroughly: and in the end he sank irretrievably. Dr. Babington told me of a patient whom he saw, speechless and all but dead, and whose veins were injected. He then recovered so as to sit up, and talk, and even to joke, with the bystanders: but this amendment did not last either."

Dr. C. N. Macnamara (*Treatise on Asiatic Cholera*) speaking of intravenous injections at the hands of Mr. Little in 1866, with water containing chlorides of sodium and potassium, phosphate and carbonate soda, and a few drops of alcohol, says: "The supply of fluid to the dehydrated blood seems to revive the patient at once; but, unfortunately, the liquid too often drains away through the walls of the intestinal canal, as fast as we pour it into the veins. But in desperate cases the plan merits a far more extensive trial than has yet been afforded it." According to Sir Thomas Watson, "Yet even this temporary recovery might be sometimes of great importance, might allow a dying man to execute a will, for example." He adds: "and some of the persons revived got *ultimately well*. We had for sometime a woman in the Middlesex Hospital acting as a nurse, who had been rescued, when at the verge of death in cholera, by the injection of warm water in the veins." On account of the relapses following the injections, "Cox, of Shanghai, has proposed

continuous injection until reaction has been fully established. But this measure is still on trial."

On each of the plans of treatment Dr. MacLeod has, in his excellent article on Cholera in Allbutt's *System of Medicine*, offered some very judicious observations. Thus under the eliminative plan: "Apart from the well-established fact that purgation is of itself exhausting, especially so in the early stages of cholera, when it ought to be most effective and beneficial, it is questionable whether it is wise to remove materials artificially from the intestinal tube—such, perhaps as leucocytes or their alexins, or innocuous bacteria—which may tend to neutralise or destroy the poison of cholera. As a matter of fact, Sir George Johnson's castor oil treatment has been extensively tried and found wanting."

With regard to the astringent plan he says: "It is possible that the results thus to be prevented or cut short—the tremendous drain of serum, corpuscles and salts from the veins into the intestinal tube, and the abeyance of absorption—may have a salutary purpose, and within limits a curative function; it is doubtful whether the checking of these discharges is, as a dominant principle, a sound basis of action." Our own experience showed us that the exhibition of astringents is worse than useless in cholera. Very seldom they succeed in checking the evacuations, and when they do, they give rise to dangerous and even fatal tympanites, seriously interfering with the respiratory mechanism. They are generally combined with opium, and opium acts as a deadly poison, for while it fails to exert any influence upon the exudation of serum from the alimentary mucous membrane, it aggravates the tympanites, and seldom fails to affect the cerebral organs.

As regards the antiseptic plan he very rightly says that it "may simply result in adding poison to poison; or irritant to irritant; in hindering a process of salutary decomposition; or in destroying the leucocytes or innocuous organisms and their products which may be doing good work. Practically the plan has failed to cure cholera."

Of the stimulant plan which aims at averting death from exhaustion, by the exhibition of alcohol, ammonia, ether by mouth or rectum or hypodermically, he says, "even this plan is

not without its drawbacks: gastro-intestinal irritation may be increased, mischief may arise during the reactive stage, or perhaps undue disturbance of the collapse stage may be hurtful." Dr. Macnamara is stronger in his condemnation of this plan. "I would here enter an earnest protest against the use of brandy, or any alcoholic stimulant, in this stage of cholera. I believe these, both theoretically and practically, to be the cause of unmitigated evil. I simply, therefore, mention brandy, champagne, and the like, in order to condemn their use most emphatically; according to my ideas and experience, it is almost impossible to hit on a more detrimental plan of treatment than that usually known as the 'stimulant' in this form of disease." Stimulants, according to our experience, may do some good, but if the good is not manifest after a few doses, a blind, persistent use of them is sure to be followed by positive mischief, which may be either in the shape of the development or aggravation of the irritability of the stomach, or in that of cerebral congestion.

The antispasmodic plan aims at the removal of spasms not only of the voluntary muscles constituting the well-known cramps of cholera, but also of the involuntary muscles of the intestines causing gripes and colic—the internal cramps, of the bile-ducts preventing the outflow of bile, and of the arterioles systemic and pulmonary preventing the onward flow and oxygenation of blood and thus interfering with the nutrition of the various organs of the body. The remedial agents and measures used are the administration of sedative and antispasmodic drugs, opium and its alkaloids, the ethers, cannabis Indica, nitrite of amyl and nitro-glycerine, inhalation of chloroform, warm baths, intravenous injections, &c. "This treatment," Dr. MacLeod says, "has proved useful in relieving some symptoms." This and the counter-irritative plan "may be useful as auxiliaries." We have seen the counter-irritative treatment sometimes attended with disastrous consequences, especially where calomel has been used. We have seen in blisters to the nape of the neck for the relief of cerebral congestion sloughing of the skin and subcutaneous tissues down to the bone causing death.

After thus taking a survey of the various plans and methods of treatment in vogue in his school, Dr. MacLeod says: "It may be asserted with confidence that in the present state of our

knowledge no single principle or plan of treating cholera has met with much success." He thinks it however "possible to lay down certain rules of action which, as experience has taught us, may aid the patient to undergo the terrible struggle for life which the choleraic process entails." These rules he has formulated under ten heads as follows: 1. Check the preliminary diarrhœa, 2. Maintain physical and physiological rest, 3. Restore a failing circulation, 4. Conserve the body heat, 5. Allay thirst, 6. Relieve distress and pain, 7. Check persistent diarrhœa, 8. Check irritability of stomach, 9. Reduce excessive temperature, 10. Restore the secretion of bile and urine. The first six of these heads have reference to the disease down to collapse; the last four to the stage of reaction. Under each of these heads he gives advice which for his school is sound and judicious.

In order to check the preliminary diarrhœa he cannot go beyond combinations of opium with astringents and antispasmodics. The "cholera pill" consisting of opium, assafœtida and black pepper; Goodeve's acetate of lead and opium mixture; the cholera tincture consisting of laudanum or liquor opii sedativus, with catechu or kino, compound tincture of lavender or cardamoms and chloric ether, are mentioned with approval. The patent medicine "chlorodyne, with or without brandy, is an admirable remedy." He very wisely wishes it to "be clearly understood that the treatment now recommended is applicable to the preliminary and evaculatory stages only. When collapse has fairly set in opium and astringents must be stopped; for absorption being now in abeyance they are useless, and in the stage of reaction, when absorption again sets in, they may do harm.

To maintain physical and physiological rest, "the patient must be kept in bed and the evacuations received in a bed-pan. Fussy changing of clothes and bedding must be avoided. Violent rubbing, rough lifting into baths and other beds, transfer to another room or house, and, above all, a journey are dangerous. Medicines, food and stimulants should not be forced on an irritable stomach; they provoke vomiting, excite irritation, and increase exhaustion. The indication is to refrain from anything that may add to the wearying effect of a most weakening malady." From what we have said under PROGNOSIS it will appear that change of room or house, and even a journey, may

be beneficial if made under the superintendence of a physician well aware of his responsibility. This is, however, a very risky procedure, and it is questionable whether it ought to be imitated unless thoroughly assured that otherwise there is no chance for the patient.

For the restoration of a failing circulation, he says, the less done the better, if the pulse be maintained in collapse; but if the pulse gradually lose volume and power, becoming feeble and thready, mild stimulants, such as iced champagne and soda-water, weak brandy and water, or ammonia or chloric ether, well diluted, may be given in small quantities, to be withheld as soon as the pulse responds. Should however the pulse become imperceptible at the wrist and hardly perceptible in the brachial and femoral arteries, and cyanosis and dyspnoea are at the same time well-marked, hypodermic injections of sulphuric ether, or cautious doses of nitrite of amyl or nitro-glycerine, followed up by champagne or brandy, may restore the pulse; "but nothing effects this so speedily and surely as intravenous injections of warm saline solutions," repetitions of which he recommends against the inevitable relapse; and though he says, in some cases a permanent cure results," he admits that "experience has shown that the proportion of recoveries has not been materially increased" by them.

For the alleviation of thirst large draughts of water, so eagerly sought, are prohibited inasmuch as they excite violent vomiting and lead to exhaustion. "Giving lumps of ice to suck is perhaps the best method of quenching thirst; still small quantities of iced soda water, iced champagne and soda, barley or arrow-root water, milk and soda, or teaspoonfuls of cold jelly or clear soup may be administered at short intervals. The injection of fluids into cavities and tissues tends indirectly to fulfil the same indications." The advice given in the joint article on Asiatic Cholera by the author and Dr. Macnamara, in Quain's *Dictionary of Medicine* (3rd Edition, 1902), is different and sounder. While the patient is allowed to eat and suck ice *ad libitum*, even a pound or two in the course of an hour, he should be prohibited from drinking water or any other fluid beyond that which he gets from the ice." No other fluid, milk or soup, soda water or champagne, will be retained in the stomach. We are opposed even to allowing too much ice. It allays the thirst only while being sucked or eaten, and then the more taken the worse the thirst. When such happens to be the case the ice should be stopped.

For the relief of distress and pain, as in the alleviation of thirst, no medicine internally is recommended, except that "camphor has been recommended internally, externally and hypodermically,"

but we are not told with what result. "Hot applications, the warm bath, gentle frictions with anodyne liniments, or even moderate counter-irritation with chloroform, turpentine, or mustard may be tried; but nothing relieves cramps so well as moderate and intermittent chloroform inhalation." In the early stages of the disease hypodermic injection of moderate doses of liquid extract of opium over the seat of the pain may be had recourse to. But the seats of pain are so numerous that the number of such injections will be too numerous to be safe. Dr. Lauder Brunton's recommendation of the hypodermic injection of atropine, on the assumption of its known antagonism to muscarine which causes symptoms closely resembling cholera, is mentioned only to tell the reader that "sufficient trial has not been made of the drug to warrant its confident recommendation."

* The remaining four rules (7 to 10) have reference to the reaction stage. For the checking of the diarrhœa which may persist, vegetable astringents, or mineral acids internally, and warm rectal injections of tannin with gum-arabic, are recommended. For the checking of gastric irritability "there is no special cure, and must be treated on ordinary principles." For the reduction of excessive temperature which proves so fatal in this stage, sucking of ice and the slow injection of bulky cold enemata are recommended for trial. The practitioner is warned to avoid antipyretics." Tepid baths gradually cooled may be resorted to, "but great caution is necessary in any such adventures." For the restoration of the biliary secretion nothing can be done, and fortunately in most cases nothing need be done. The exhibition of calomel in large or small doses is condemned. For the restoration of the renal secretion, without which no case of cholera can recover, dry cupping and hot fomentations and poultices are recommended; and while water; milk and water, barley water, &c., should be freely given, diuretics should be avoided. No mention is made of tincture of cantharidis as an internal drug, of which ten drops every hour till a drachm has been taken is recommended, in the joint article in Quain's *Dictionary*.

We have thus presented our readers with the salient points of the old school treatment of cholera from the earliest days of the epidemic at the beginning of the nineteenth century to the present day. The treatment has consisted of almost endless variety from blood-letting to the plugging of the anus. More than a century's experience has not succeeded in making a single discovery of a specific remedy for the disease. All that it has succeeded in doing is to make the practitioner more and more wisely timid and cautious in the use of drugs, which is so far good for patients.

(To be continued.)

REVIEW.

A Text-book of Minor Surgery, including Bandaging. By Newman T. B. Nobles, M.D., Professor of Surgery at the Cleveland Homœopathic Medical College; Attending Surgeon to the Cleveland City Hospital, the East End Hospital, and the Children's Hospital. Member of the American Institute of Homœopathy, &c., &c. Boericke & Tafel, Philadelphia, 1903.

HOMŒOPATHY has made large encroachments upon the field of Surgery, and is destined to make more. Inflammations threatening suppuration, which could not be controlled under the old school treatment and suppuration their inevitable consequence which peremptorily demanded the knife, are now, we may confidently say, so much under the control of the new system, that not less than ninety per cent. of these suppurations are averted. Morbid growths, benign or malignant, for which there was no cure except by their removal by surgical operations often more dangerous than the diseases themselves, have proved themselves amenable to our treatment, so that not less than fifty per cent. of such operations are avoided, and the eye of the surgeon has been opened by Homœopathy to the fact that surgery is seldom successful in curing such cases, that very often life is shortened by an operation, and that the treatment of such cases under the guidance of the law of similars not only prolongs life but affords more relief than obtainable from an operation. Diseases, which in their final forms, seem to require the aid of surgery, such as opacities of the lens, dropsies of internal cavities, have been found in numberless instances to yield to homœopathic treatment if adopted from the incipient stages of those complaints. Even in the domain of midwifery where the forceps and the destructive operations on the unborn child and on the mother were deemed inevitable, Homœopathy has spread its benignant influence in dispensing with them in a large majority of cases, saving both mother and child, where they would have been sacrificed to a dead certainty.

It is true Homœopathy has considerably narrowed the field of surgery, but it is not in the nature of things that it will ever be able to narrow it to the vanishing point. Not to speak of accidents which will imperatively demand surgical interference, it will often happen that diseases, which in their incipient stages could be successfully combated, will have advanced so far as to absolutely require such interference, medicinal treatment without it often being worse than useless. Where, for instance, an ovarian tumor has enlarged so much, or where fluid has collected in the peritoneal cavity so enormously, as to seriously interfere with the respiratory function, or where the pleural

cavity has become so filled up with water or pus as to cause the entire shrinkage of the lung and displacement of the heart interfering with its proper action, we must not be the idle spectators of the extinction of the patient's life in the vain hope of doing good by medicine, but we must be prompt in using the knife or the trocar as the case may be in order to give prompt relief, after which our medicines may have better play to exert their beneficial influence. We could cite other instances where without surgical interference death would be inevitable and rapid. But this is unnecessary as, we think, the reader has now understood that surgery cannot be dispensed with.

Such being the case, and the amalgamation of the two schools being for the present impossible, it is necessary for the very existence of the new school that it should have surgeons and text-books of surgery of its own. Fortunately the school has made rapid advances in this direction, and in the late Dr. Tod Helmuth we had a surgeon who was not in any way inferior to any surgeon of the old school. Surgery in the American Homœopathic Colleges is now a recognized speciality, and there are living surgeons in those institutions and in the London Homœopathic Hospital who would do honor to any institution in the world.

While we can boast of good surgeons we cannot make the same boast of good text-books. On general surgery we have a few tolerably good books, but on minor Surgery we have none. The present work supplies the want, and does it, we are glad to say, very creditably and satisfactorily. Barring its homœopathic therapeutics which we must say is very meagre and not quite up to the advances already made, it has treated the main subject in detail and with a fullness of practical knowledge. It has laid too much stress upon antiseptic surgery which is absolutely unnecessary under our treatment, our infinitesimals evoking the antiseptis from within the organism; and which has now very nearly been abandoned by the school in which it originated, a fact which has been admitted by the author himself when he speaks of gangrene and destruction of parts resulting from carbolic acid dressings. The book has been so well executed that we think it to be an indispensable requisite to every practitioner, who adopts surgery as his speciality. The ordinary practitioner, who at any moment may be called upon to perform the minor operations, would do well to study the contents of the book. We trust the defects we have pointed out would be corrected in the next edition which is likely to be soon called for.

EDITOR'S NOTES.

The Action of Arsenic on Bone Marrow.

Stockman and Charteris (*Journ. of Path.*, May, 1903) report researches on the changes in the bone marrow of animals and man under the action of arsenic. Under small doses in rabbits and dogs there occur hyperaemia, atrophy of fat cells, decrease in number or degeneration of giant cells, increase of the leucoblastic cells, and little or no increase of the erythroblastic cells. These changes are essentially similar to those produced under the action of many other foreign or poisonous substances, and constitute a reaction against these substances on the part of the marrow. The counting of blood cells and estimation of haemoglobin also supports the view that arsenic does not cause an increase in the number or quality of the red cells. The changes in human marrow in cases of chronic arsenical poisoning were found to be essentially of the same character, leucoblastic, and not erythroblastic, with diminution in fat cells. The researches show that arsenic has no direct effect in increasing the production of red cells by the marrow; its favourable influence in pernicious anaemia, malaria, lymphadenoma, leukaemia, and some other diseases, probably results from its effect on the parasites which cause these diseases and not from any direct action on blood formation.—*Brit. Med. Journ.*, Aug. 8, 1903.

How to watch The Growth of a Cataract in your own Eye.

In order to see a cataract in one's own eye, a correspondent of *Health* describes what he calls a simple method which enables a patient to follow the progress of the disease probably better than any oculist can observe it for him. All that is required for the purpose is a piece of card—a visiting card will do—and a needle. Pierce a clean, round hole near the middle of the card and hold the card up to the light, close to the eye, looking preferably in the direction of a piece of blue sky. With the card near to the eye the observer will not see the small hole pierced by the needle, but a comparatively large, faintly illuminated field, with his cataract projected upon it. He is, in fact, regarding the shadow cast by his cataract on the retina. With a small puncture in the card the shadow so thrown is comparatively sharp. But with a normal eye an evenly illuminated field or clean disc will be seen. The writer states that there is in this way no difficulty in mapping out the disposition of foreign matter, and so arriving at an opinion as to whether it is advisable to have an opera-

tion or not. As an evidence of his faith in his own prescription, he has made drawings at intervals during the last three years of a cataract which is slowly developing in one of his eyes. He further says that no oculist he has met with is acquainted with this method and there may, consequently, be some advantage in making it public.—*Medical Times*, July, 1903.

Large piece of Glass imbedded in the Orbit for 20 years without causing Symptoms; Removal.

BY J. HOGGAN EWART, M.D.

On July 4th, 1903, a married woman consulted me about a small sinus situated two centimetres above the inner canthus of her left eye. She stated that 20 years ago a clock fell on her head the glass of which broke and made a deep cut across, and to the outer side of, her left eyebrow. This was sewn up and with the exception of a slight pricking about eight years ago which quickly passed off and a puckering of the skin over the inner side of the upper eyelid there were no symptoms until about three weeks ago when the skin broke and there was a slight watery discharge. On examining this small opening (only half a centimetre in diameter) with a probe I found that a large triangular piece of glass was deeply imbedded transversely above the eye, the apex lying on the nasal bones, being easily felt under the skin on the right side of the nose, and the base on the left orbital plate and tarsus. I removed it the next day.

It is remarkable that this large, thick piece of glass—the measurements of which were : length, 3 centimetres ; breadth, 1 centimetre ; thickness, 1.75 millimetres—should have remained in this position for 20 years without causing symptoms or damaging the eyeball, upon which it might easily have encroached, the edges being quite sharp. It was much cracked. I was therefore glad that after a trial with a pair of forceps I removed it digitally or it would most certainly have splintered and caused great trouble. My thanks are due to Mr. M. G. Yunge-Bateman who kindly administered the anæsthetic.—*Lancet*, Aug. 1, 1903.

Arsenical Poisoning.

Ferrannini (*Rif. Med.*, June 3rd, 1903), after discussing the ordinary symptoms of poisoning by arsenic, refers briefly to some of the rarer forms. In addition to paralysis one may get ataxia, which may be associated with other tabetic symptoms—for example, absence of kneejerks. Romberg's sign, lightning pains, anaesthesia, and ocular

disorders (diplopia, amaurosis, absence of pupillary reflex). This ataxic form is due to a polyneuritis, and not a myelitis. Tremor may also be due to arsenical poisoning. In differentiating between alcoholic and arsenical poisoning the following data should be borne in mind. In the first place alcoholic neuritis is rarely due to acute alcohol poisoning, but usually occurs in the chronic drinker, and the delirium which opens the scene is the equivalent of the acute gastro-enteritis of arsenical poisoning. In alcoholic dyspepsia chronic gastritis with morning catarrh and pyrosis are the common type. In arsenicism you get insomnia, in alcoholism terrifying dreams. The sensory disturbances in alcoholic paralysis are usually less severe than in arsenical poisoning. Desquamation is peculiar to arsenical poisoning, whilst psychical disorders prevail in alcoholism. In arsenical poisoning the motor disorders, the atrophy and deformities chiefly affect the fingers and toes; in alcoholic poisoning the forearm and calf are more prominently affected, and it is the wrist and ankle articulations rather than the phalangeal which share in the deformity. The author then relates three cases of arsenical paralysis occurring in the same family (mother and two sons), and presenting identical symptoms, due to eating flour made from lathyris beans (vetch). Chemical analysis showed that it contained a considerable amount of arsenious anhydride. In each case it was the lower extremities that were paralysed. Sensory disturbances (itching, numbness) were present in the palms of the hand and soles of the feet. Some static ataxia was present. The tendon reflexes were abolished. Sensation normal. There was considerable wasting of the forearm and leg.—*British Medical Journal*, July 18, 1903.

Small-pox in the Fœtus.

The following case is one of the two reported by Dr. Allan Warner:—

CASE 1.—The patient, aged 35 years, commenced to be ill on Jan. 8th with shivering, backache, headache, and vomiting. An eruption appeared on the 11th and she was admitted to the small-pox hospital, when she was found to have a characteristic small-pox eruption. The temperature was 103.6 F. The patient had been vaccinated in infancy and four faint marks in area equivalent to five eighths of a square inch were visible. She was four months pregnant. The eruption rapidly developed and threatened to be confluent. Many of the papules, however, desiccated without becoming pustular and those that matured remained of a small size. She progressed so satisfactorily that on the 23rd (the

thirteenth day of the eruption) all the crusts had come off the face and on Feb. 3rd she was entirely free from scabs. On the 12th she was about to be discharged from the hospital when a small superficial abscess was observed in her right breast. This was anaesthetised with ethyl chloride, an incision was made, and pus was evacuated. On the evening of the 14th she complained of praxysmal abdominal pain as though she were about to miscarry. On the morning of the 15th the miscarriage was complete, consisting of two female fetuses, about five months old, and a single placenta. No movements were observed at birth. Each fœtus measured eight and a half inches in length; from their appearance and from the fact that they had not been felt to move for two or three days it seemed probable that they had died in utero a few days previously. Both of the fetuses were covered by a well-marked eruption, distributed chiefly on the back, the head, and the neck, less on the abdomen and the limbs, and there were two spots on the sole of one foot. The eruption consisted of yellow circular patches with a central depression, the size of the majority of the patches being equal to the thirty-second part of a square inch.

It is generally stated that in about 50 per cent. of cases of pregnancy complicated by variola abortion takes place. But it by no means necessarily follows that there are any signs of small-pox in the fetus. Indeed, MacCombie states that "the liability of the fetus to small-pox is not great, but it appears to increase directly with its age. It is, however, exceptional to find that the children born of variolous mothers, even during convalescence, have had small-pox in utero, or that they are suffering from it at the time of birth. There is some reason to believe that they are more or less protected against small-pox by the mother's attack." The above case illustrates the fact that the manifestation of small-pox in the fetus does not always occur at the same time as it does in the mother, for the mother had been convalescent and apparently free from infection for nearly two weeks, whilst from the eruption I should estimate that it was about the twelfth day of the disease in the fœtus.

A point of considerable interest in this case is that had the patient been discharged as free from infection on Feb. 12th her subsequent miscarriage might have been a source of infection to anyone attending her. This would therefore tend to show that special caution should be exercised in discharging pregnant women from a small-pox hospital.—*Lancet*, July 11, 1903.

Pneumothorax from Exploratory Puncture of the Pleura.

Pneumothorax from exploratory puncture of pleura containing no fluid is an exceedingly rare accident though pneumothorax from paracentesis thoracis is well known. In the *Gazette Hebdomadaire des Sciences Médicales de Bordeaux* of June 21st, Professor Mongour has published the following case. A man, aged 46 years, addicted to alcohol, was admitted to hospital on Jan. 24th with symptoms of left pleurisy. Puncture yielded yellowish fluid. On the following day the right chest showed posteriorly slight dulness (*submatité*) and diminished vesicular murmur and vocal fremitus. Some doubts were felt as to the existence of a small effusion on the right side. To remove them exploration was performed with a No. 2 needle of Dieulafoy's aspirator. No fluid was obtained, but scarcely was the needle withdrawn when the patient was seized with an attack of suffocation. In a few minutes he became blue and involuntary micturition took place. Inhalation of oxygen and artificial respiration were unsuccessful. The face became covered with a cold sweat. To relieve him paracentesis was performed on the left side and 400 grammes of fluid were removed, but without apparent benefit. It appeared to Professor Mongour that such a sudden and severe attack of dyspnoea could be due only to embolism or pneumothorax. For the former nothing could be done; he therefore made a supreme effort to relieve the latter. Without taking time to percuss he plunged a large trocar into the spot where he had explored with the needle. On withdrawing the trocar air escaped through the cannula with a whistle. Immediately the patient took long inspirations and in a few seconds he was resuscitated. With Dieulafoy's aspirator more air was removed until the pleural cavity was emptied. On the next day friction sounds were heard at the site of the double puncture. The patient died from pulmonary tuberculosis on May 3rd. At the necropsy numerous cavities were found in both apices. The right pleura contained no fluid and showed no adhesions. The explanation of the accident is rendered the more difficult by the fact that small incision may be made into the pleural cavity without the parietal and visceral pleurae becoming separated. Professor Mongour thinks that the needle must have pushed the lung away from the parietal pleura and that into the cavity so formed air entered during expiration and pneumothorax was produced. Possibly at the point of puncture there were subpleural tubercles which would favour the production of the accident. Professor Mongour does not consider that the entry of air into the pleural cavity was necessarily due to puncture of the lung. The importance

of his paper lies chiefly in the fact that it prepares the practitioner for prompt intervention, which no doubt in this case saved the patient from instant death. Otherwise the practitioner might easily be so embarrassed by the sudden catastrophe as to fail to recognise its nature and so might lose the opportunity of saving life by relieving the pneumothorax.—*Lancet*, July 11, 1903.

The Pathology of "Caisson Sickness."

AFTER working in compressed air men may exhibit a number of symptoms known as "compressed air sickness" or "caisson sickness." Dr. F. R. Wainwright, medical officer of the Baker-street and Waterloo Railway Tunnel Works, very fully described the condition in our columns some time ago. During the period from May 23rd to Oct. 28th, 1900, 47 cases occurred among 120 men employed in constructing the tunnel. The pathology of caisson sickness is disputed. Some experiments performed by Dr. Leonard E. Hill and Dr. J. J. R. Macleod, which are published in the *London Hospital Gazette* for April, appear to settle the question. By taking blood-pressure tracings in pressure chambers with the animal, manometer, and drum shut up together they showed that compressed air had no mechanical effect on the circulation. The pressure is transmitted equally by the fluids of the body to all parts. They also constructed a small chamber with thick glass windows and by the aid of the microscope and arc light observed the circulation in the leg of the frog and the wing of the bat. The circulation proceeded normally even when the air pressure was suddenly raised to ten or more atmospheres. On rapid decompression the air absorbed by the blood is given off in bubbles which produce gas embolism. This is the cause of caisson sickness. On rapidly lowering the pressure in the chamber gas bubbles were seen to appear in the capillaries of the frog's web and by raising the pressure they were made to disappear and the circulation began again. As the air pressure is raised the amount of nitrogen and oxygen dissolved in the blood increases according to Dalton's law of partial pressures. But the blood does not become immediately saturated because the tissues and tissue juices also take up the air dissolved in the blood. The arterial blood becomes saturated in about one and a half hours. This explains why the longer a man works in compressed air the more liable he is to caisson sickness. At a pressure of seven atmospheres the blood contains 11 volumes per cent. of nitrogen instead of the normal 1.5 per cent. On sudden decompression every 100 cubic centimetres of blood will give off about

ten cubic centimetres of nitrogen and the tissues will give off almost as much. It is not, therefore, surprising that animals are instantly killed by sudden decompression. The gas collects in the heart, froths, and stops the circulation. After sudden decompression of animals exposed for hours to compressed air surprising distension of the vessels and tissues with gas bubbles is observed. On the other hand, by slow decompression animals may be successfully brought out of seven atmospheres. Prolonged exposure to a pressure of seven atmospheres lessens the output of carbonic acid and lowers the temperature of the body, for compressed air is a much better conductor of heat than ordinary air. In consequence of oxygen poisoning there is a diminished output of carbonic acid. Acute congestion of the lungs (pneumonia) is produced by prolonged exposure to from seven to ten atmospheres of air and convulsions are quickly produced by exposure to three or four atmospheres of oxygen. Higher pressures of oxygen, such as from six to ten atmospheres, paralyse without convulsing and quickly produce death. Exposure to compressed air greatly diminishes the excretion of water. Ventilation of the chamber removes only a portion of the watery vapour contained in it and the air becomes saturated and a better conductor of heat than an ordinary atmosphere. Thus divers and caisson workers are exposed to cold in their work.—*Lancet*, July 11, 1903.

CLINICAL RECORD.

India.

A CASE OF CEREBRAL ABSCESS.

Reported by SATIS CHANDER BANERJEE,

House Physician, Medical College Hospital, Calcutta.

SARODA, Hindu male, *æt.* 32, a shop-keeper, was admitted into the Medical College Hospital on the 2nd August 1902.

He stated that about five months previous to his admission after a chill and exposure to cold, he had running from nose and severe pain at his right ear, followed shortly by purulent discharge, which continued for two months. Severe headache came on with the stoppage of the discharge. Shortly after he had fever with delirium coming on with rigor, which was cured within a fortnight, but a constant dull aching pain in the head continued. Simultaneously with headache he began to vomit two or three times a day, not necessarily after food, and he had dimness of vision in his right eye. The headache and vomiting, though not so frequent as before, re-

mained persistent. About a fortnight ago he noticed fine tremors of his left thumb and index-finger, which gradually increased up to the time of admission.

There was no history of syphilis or gonorrhœa. His *Complaints* were, constant intense headache, worse in the morning, and purulent discharge from and pain in his right ear. The headache, which was daily increasing in intensity, started from the right temporal region and radiated upwards and backwards. There was intense pain and tenderness a little in front of his right ear near the zygomatic process and over the parietal region about an inch behind and above the right ear; the tenderness being most marked at the latter situation. There was pain and tenderness over the distribution of the fifth nerve of the right side. There were spasms of and tenderness in the right sterno-mastoid and trapezius. The right eye used to water. He could not count fingers with his right eye. On ophthalmoscopic examination, the right disc was found swollen, margins not distinct, veins distended, left eye was normal. He could not hear ticking of watch with his right ear, at a distance of an inch, but could hear tuning fork on the mastoid process. Tympanic membrane was perforated, and there was pus in the middle ear. There were clonic spasms of the right thumb and index-finger, the movement in the thumb being lateral, and in the index-finger anteroposterior. Knee-jerks were exaggerated on both sides. No ankle-clonus, no peculiarity in his gait. Temperature was *normal* all along. Digestive, respiratory and circulatory systems were normal.

He was transferred to Dr. Charles's Ward as a case of cerebral abscess in the temporo-sphenoidal lobe, and on the 8th August was operated on in the following manner:—

The operation area having been made aseptic, the Rolandic region was marked out, and the site for trephining chosen at 1" above the upper margin of and $\frac{3}{4}$ " posterior to the right ear. A horse-shoe-shaped incision was made, periosteum separated, and a circular piece of bone taken out by a trephine $\frac{3}{4}$ " in diameter. The dura mater bulged out showing great intra-cranial tension. This being cut and reflected, softened brain substance protruded. A Paget's knife was introduced downwards and backwards for about an inch, whereupon on passing a director along the knife about 3ii of pus came out, and pulsation of brain was noticed for the first time. The knife was withdrawn, and the director shifted slightly when more pus came out. Total quantity amounted to nearly an ounce. When the brain was first incised, the whole of the left side of the patient was thrown into a state of

spastic rigidity, but this gradually passed off, and when the operation was completed, the clonic spasms of the left thumb and index-finger ceased entirely. A drainage tube of moderate calibre was introduced to the bottom of the abscess cavity. When this was done, clonic spasms of left hand and forearm reappeared, but on withdrawing the tube for a short distance they disappeared again. The dura mater was carefully stitched with silk-worm gut and the scalp sutured, an opening being made for the drainage tube. Antiseptic dressings and a capelline bandage were then applied.

Progress of the case after operation.

8th Aug.—He was restless towards evening. Headache and pain gone. Temperature varied from 102 to 101. He was very thirsty and felt very warm. Slept well under morphia. Had retention of urine which lasted for two days.

10th Aug.—Dressings were changed, wound found aseptic. Pain over the distribution of the fifth nerve entirely disappeared. Pain at the right sterno-mastoid and trapezius gone. Vision of right eye improving.

His temperature became normal on the 19th August, and he had no complaint whatever. The vision was normal, and the patient was in perfect health and spirits,—a marked contrast to his miserable condition on admission. He was kept under observation till 4th September, 1902, when he was discharged. There was no recurrence of any of the symptoms. A silver plate was put over site of the trephine puncture.

Remarks.—One important point to note is the absence of any fever in spite of pus in brain; this agrees with the opinion of Dr. Beevor who says that absence of fever is the rule. A contrary opinion is expressed by Drs. Taylor, Roberts, Osler, and Hare. Dr. Fagge says fever is generally present, but it may be absent. The abscess cavity was situated in the right temporo-sphenoidal lobe. There was œdema around it extending to the motor area, and thus causing spasms of thumb and index-finger of the opposite side. Owing to increased intra-cranial pressure and possibly some œdema at the posterior fossa (right spinal accessory nerve at its exit from the jugular foramen was pressed on the edge of bone, and caused pain and spasm at the right sterno-mastoid and trapezius.—*Indian Medical Gazette*. Sept. 1903.

Foreign.

THREE CONVINCING CURES.

By FRANK A. GUSTAFSON, M.D., Mason City, Ill.

To prepare a report of three cases that shall be of sufficient interest to command attention is in itself no small task, and when it is further considered that the writer has had but three months' practical experience with the workings of a new science the task is even more difficult. This is my apology for the selection here given. These I have cured. I am curing others. These alone might be called "sure-enough" cures.

A SINGLE DOSE BRYONIA CURE.

CASE I.—S. W., female, student, age 28; slim, frail, dark complexion; family history of phthisis; father and two sisters died of consumption. Caught cold last spring; went to an old school physician for relief of resultant cough. Went the rounds, no relief, other than temporary suppression; worse, not better.

This young woman lived in my home and came under my care only because of my invitation to prescribe for the cough. I asked her one evening why she did not do something for that cough. She replied that she had been taking something for it for more than eight months and was about ready to quit. I suggested that she allow me to prescribe. "Your little pills won't do any good" was her answer. However, she consented to try them.

At this time the cough was dry, hacking, worse at night, almost incessant,—pains in the chest, little appetite, flesh failing. I gave Bryonia 6c,—six pellets night and morning, and saw that she got the first dose. She forgot to take them in the morning; had coughed all night as usual. At 6 o'clock of first day after beginning treatment she reported that the cough actually seemed easier. I advised her to take no more medicine unless the cough became worse. The second night she had the first full night's sleep in months. The cough disappeared within three days. Within thirty days we were obliged to leave B for the West and heard nothing further from the case until four months later, when I received a letter in which she stated that she had not coughed since the third day after taking the single dose of Bryonia; had taken no more medicine; had gained twelve pounds of flesh; had not felt so well in years; was a thorough convert of Homoeopathy, and begged to be forgiven for her disparaging remarks concerning "the little pills."

A BACILLINUM RINGWORM CURE.

CASE II.—Ringworm; Donald G., age 5; always a puny child; no family history of tuberculosis. At the age of 2½ years had a double pneumonia and ever since has had an attack of pneumonia or bronchitis monthly each winter, beginning in November and continuing until May. During these months he was in bed more than half of the time. No attempt at treatment of the disposition

other than for the acute attacks, which responded readily to Aconite and Bryonia.

Last September he began to manifest "worm symptoms,"—restless sleep, grinding of teeth during sleep, picking his nose, variable appetite, irritable peevishness. A reddish spot appeared upon the left breast and soon there was marked ringworm.

I put him on Sepia 30 twice daily,—no benefit. Then Bacillinum 200 once in four days. The eruption continued to spread until it covered the whole chest and anterior aspect of both arms, a few spots appearing upon the face. My faith in Bacillinum held good in spite of the apparent aggravation, and a dose of the 200th was given every Monday night. Treatment with Bacillinum began in October, and now, on April 1st, there are no ringworms to be seen either upon the body or the face; the body is strong, healthy, eats well, sleeps all night without restlessness, tossing or grinding of the teeth; he runs out of doors in all kinds of weather and is out all day, moreover has done so all winter, and, most remarkable, has had no colds, no bronchial disturbances, and not one hour's illness the whole winter. Is not this a confirmation of the "doctrine" that ringworm is a symptom of "sub-tuberculosis?" And am I not justified in the belief that this youngster has been cured of a predisposition to tubercular ailments?

AN INTERMITTENT FEVER CASE.

Case III.—Intermittent fever; L. H., aged 36; farmer. Had an attack of intermittent fever last fall; three weeks passed before he succeeded in breaking the fever; has never felt real well since. On March 20th had a severe chill, "shook the bed;" thirst with the chill; "back aches fearfully;" fever, 106°; profuse sweat; during sweat severe frontal headache. R. Bryonia 6th.

March 22. No chill the day before, but this morning very severe chill at 7 or 7-30; same course as on the 20th. R. Eupatorium perfoliatum 3c.

March 23. No chill, feels quite well.

March 24—7 A.M. Creepy, cold sensation; fever, 102; no sweat.

March 26—7 A.M. Slight chilly sensation; no chill, no fever, no sweat, no headache. This was the last of it. Surely this is better treatment,—cure of all symptoms in six days, than mere control of fever in three weeks as in his former illness.

The more I grow into the homœopathic idea and practice the more grateful I am that I have been able to throw off my old school prejudice and training, and with it mere routine treatment of diseases, to the more rational and scientific treatment of specific individuals for specific symptoms according to specific indications. And the more I see of it, and of my own and others' blunderings and successes, the more confirmed I become in the two-line "creed" of my acceptance—

"Similia, Similibus, Curantur."

"Simile, Simplex, Minimum."

—*Medical Advance*, June, 1903,

CASES BY PROF. H. V. HALBERT.

1. *Articular Rheumatism with Mitral Regurgitation.*

The patient, Miss Nellie C., age fifteen, who appears before us this afternoon, has been suffering with acute articular rheumatism. This is evidently a recurrent attack and she complains of acute pain and swelling affecting the larger joints. While this pain has the peculiar migratory tendency, the wrists and ankles seem to give her the most trouble.

The cellular infiltration, the nutritional impairment, the aggravation of symptoms during repose, the relief which comes after a certain amount of exercise, the peculiar tearing and stitching pains which affect the joints and the decided increase of these symptoms during wet and cold weather led us to prescribe rhus. tox., in the third decimal potency, at the first visit she paid the clinic. Since then we have had sufficient relief to encourage us in the belief that our prescription was correct and that this principle of prescribing may be depended upon. She is decidedly relieved of pain and we notice a marked improvement in the appearance of the joints. This should be sufficient evidence for us to believe that rhus. tox. is a valuable remedy in the early treatment of rheumatic fever.

Attending the symptoms of articular rheumatism, we have observed in this case a violent palpitation of the heart and a sensation of cardiac weakness, with a rapid, small and compressible pulse. She has also evinced some precordial pain which has had a tendency to be reflected down the left arm, making it uncomfortable for her to lie on the left side. Our physical examination detected the evidence of an old endocarditis, followed by a pronounced accentuation and prolongation of the first or apex sound. A typical blowing murmur may be heard with the stethoscope.

We have become so accustomed to employ the term rheumatism for so many ill defined pains, that it is quite natural for us to hold to hazy ideas relative to this disease. Much of the blame may be placed upon the laity, who use the expression "rheumatic pain" for every sign of muscular stiffness, and the profession unconsciously accepts the misnomer. Thus it is natural that myalgia, neuritis and even the results of injury, should be included under this appellation, not to mention a host of other complications which may be traced to distinctively different diseases.

When we use the term rheumatism, we should refer to an acute febrile disease of probable infectious origin. Aside from the local manifestations of multiple arthritis we shall invariably find, as the chief complications, endocarditis or pericarditis, and finally a mitral regurgitation.

It must be remembered that this mitral lesion does not reveal the physical findings of a mitral regurgitation with the wavy and tumultuous apex impulse generally found when valvular vegetations or sclerosis have caused a shrinking of the mitral leaflets. This condition may appear later. In the early signs of rheumatic endocarditis we

find by palpation that the apex is displaced slightly downward and there is but little transmission toward the axilla. There is more apparent roughness than may be found in the older cases, and cardiac pain and excitement are more pronounced. In other words, the condition presented here bears evidence of infection and a recent attack. The chambers of the heart seem to have maintained their proper functions with slight irritability, nor are there present the grosser symptoms of a cardiac lesion of longer standing. Muscular hypertrophy is not extreme, and a proper compensation seems to have been easily maintained.

In considering the subject of rheumatism we must renounce the older idea of muscular pain as a sequence of cold, strain or traumatism and accept the doctrine of infection. Just what this infection is cannot be accurately defined at present. The staphylococcus and the streptococcus have both been discovered in the exudate. Still later an organism resembling the anthrax bacillus has been detected in the blood and accompanying this a diplococcus has been found. Thus it is safe to infer that a microorganism or microorganisms are the real causes of articular rheumatism. Later revelations are expected to show distinctively what the true cause is. Other infective lesions have possibly contributed to this disease, as we all know how intimately tonsillitis is related.

The predisposing causes must also be taken into account. Catching cold evidently favors the development of the infection. Climate will always predispose. Occupation naturally may lend favorable conditions. The male sex is always more susceptible. Heredity is a prevalent factor and choreic children show a marked tendency to this complication. The general course of the disease will show wide variations in duration and intensity. There may be cases so mild that a favorable termination occurs in a few days and a typical case may present nonfebrile periods alternating with severe paroxysms. The complications mentioned above invariably follow or attend every case.

The fever of an ordinary case of rheumatism is frequently overlooked. Often the patient attends to the regular daily duties without any knowledge of temperature except a general sense of malaise. The typical case readily displays this symptom when the patient is in bed and the acid sweats confirm it. The urine rarely gives the evidence claimed for it; there may be found, however, the diminished quantity, the high color, the pronounced acidity and a marked density. A slight febrile albuminuria may be in evidence but acute nephritis is a rarity.

The treatment of articular rheumatism outside of the remedy calls for various measures of expediency. Diet is of paramount consideration. During and for some time after the fever liquids or the blandest form of food is a necessity. After defervescence there should be a cautious and gradual return to the mixed diet. Stimulants I believe should be avoided at all times. Salicylates have been the standard prescriptions, and the sodium form is probably the best; these are given in five to fifteen grain doses, gradually increasing from day to

day. Whether these are sufficient or safe individual experience alone can tell. Salol and aspirin are favored by many physicians while the oil of wintergreen has its advocates. Whether any of these expedients favor a cure in the average case cannot be justly recorded. The various complications and peculiar symptoms must always be considered in accordance with indicated symptoms.

Local measures may be instituted only when the patient is in bed. It is probably safe to say that the best of these is the one of cotton protection retained by a roller bandage. Rest and warmth of the affected parts are most essential. The internal use of water in abundance is most mandatory. The patient should never be allowed to take cold. The use of cardiac stimulants—unless there is rapid cardiac failure—should not be considered.

It is quite necessary to make a differentiation between this disease and gonorrhœal arthritis, and also rheumatoid arthritis. In gonorrhœal arthritis the affection is generally monarticular, the local pain and swelling are more pronounced, the history of a recent gonorrhœal infection is obtained and the duration of the symptoms is persistent. In arthritis deformans we find different causes, a different pathology and in a sense different results. "This disease is chronic in its development and it is characterized by progressive changes in the arthritic structures and eventual deformity. The early pathological changes show a cell proliferation in the synovial membranes: the exudate may become organized and sometimes ossification takes place. The capsule and ligaments thicken and cause a restriction of joint movement. These parts may soften and cause joint dislocation. A degenerative process usually starts in the center of the cartilages, often allowing a bony contact in the joint. This with the periarticular formations and the bony nodules may create ankylosis. The deformity gradually increases and in exceptional cases may develop enormous joint enlargements.

The origin of rheumatoid arthritis is evidently of neuropathic character. We find cord diseases, neurasthenia, hysteria and nerve shock directly concerned with its development. Some have claimed a microbic cause but this at present seems untenable. Females are more frequently afflicted. In the symptoms we find (1), a tendency to symmetrical involvement (2), a gradual but persistent enlargement of the joints (3), slight pain except from motion (4), no redness or tenderness (5), signs of joint effusion (6) and periods of improvement alternating with exacerbations of all symptoms. The deformity of the hands is an early sign and it is recognized by the fingers—flexed and extended fingers—which often overlap each other. A form known as morbus coxæ senilis, which affects the hip joint in old people, and another called Heberden's nodes, which appear on the distal finger joints, may both be traced to the same nutritive disturbance.

2. *Mitral Insufficiency with Cardiac Hypertrophy; Lachesis.*

The second case, Mrs. M., aged forty-eight, illustrates a very interesting condition of the heart attending the climacteric. We have here a well defined mitral regurgitation evidently of long stand-

ing but which has been well protected by a compensating hypertrophy. While the murmur is characteristic the sound is not propagated toward the axilla as much as might be expected in a case of such long standing. This shows how perfectly nature cares for an organic heart lesion if she is only helped a little by the patient and by the physician. This lady has given herself the proper attention from the beginning of her trouble with the result that she is within the reach of a cure. She came to us at first not so much for the original trouble as for a bothersome tachycardia which she had not experienced before.

Our first examination was somewhat hurried, and the tachycardia feature received most attention. For this she was given lycopodium tincture, five drops, four times daily. There was some evident relief from this but she did not feel much better in a general way. After a more painstaking examination the true cardiac features were observed and with this many symptoms of a nervous character pertaining to the heart and her general condition. For instance, there was a cramplike pain in the precordial region which preceded the tachycardial excitement; she was also extremely prostrated with these attacks. She complained of a "trembling feeling" about the heart. Suffocation, a sensation of weight and constriction in the cardiac area were very troublesome; she was at times bothered by a tendency to fainting spells. Restlessness, physical and mental exhaustion were persistent symptoms, and these, together with other nervous manifestations, confirmed the suggestion that lachesis was our best remedy.

She was given this remedy, in the sixth decimal potency, four times daily. Since this was prescribed she has shown a marked improvement in every way but particularly relative to the cardiac symptomatology. This shows us the value of this remedy for cardiac conditions when the muscular power of the heart is weakened by age and excited by the numerous nervous symptoms which attend the climacteric. Another point representing the atrophic phase in this case was illustrated by the indolent ulcerations on her limbs. These had existed for some time as an evidence of the weakened function of the heart and the natural debility which exists at her time of life. This we shall find is a prominent indication for lachesis, representing as it does a low state of physical resistance. Tissue degeneration is an ever present possibility when this remedy is called into use. The blood state of typhoid or similar fevers, eruptive tendencies, ecchymosis, hemorrhages and other similar signs of debility are characteristic indications. It is not of necessity allied to the change of life period alone. We see these indications often in younger people but at this time there is a greater liability to find the physical status which favors its symptomatology. It is peculiarly a woman's remedy as many of the typical symptoms pertain to uterine and ovarian disorders. The atheromatous condition of blood vessels is frequently a suggestive indication for its use, and the interparoxysmal period, in cases of angina, may often call for it. All in all it is a remedy too frequently overlooked in our practice.—*Clinique*, June 1903.

Excerpts from Contemporary Literature.**THE ILLNESS AND DEATH OF THE POPE (LEO XIII).**

The following detailed story of the illness and death of the Pope has been sent to us by a thoroughly well-informed correspondent. The complete accuracy of the public bulletin is supported by his statements:—

On Tuesday, June 30th, the Pope complained of slight feelings of dyspepsia and as he was particularly fond of physicking himself he determined to take a dose of castor oil. This acted rather too strongly during the next two days, but he went on with his usual receptions and with his drives in the gardens of the Vatican, which he had begun rather earlier than usual this year. On Friday, July 3rd, during the afternoon drive, he did not feel at all well and returning to his apartments went to bed where he fell into a prolonged fainting fit. Dr. Lapponi, who has been the Pope's private physician for many years, on being summoned, declared that this was due to the excessive action of the castor oil which had brought on some disturbance of the stomach and, in fact, the Pope would not take any nourishment at all, refusing even a glass of claret which was his usual "pick-me-up." Some anxiety was felt during the night which was apparently passed by the Pope in a state of semi-delirium until the dawn, in spite of a dose of sulphonal (his usual soporific), when after taking a little cordial he felt re-invigorated and calmer.

During the next day, Saturday, the loss of appetite continued and in addition the Pope suffered from shortness of breath, so that the daily receptions had to be postponed. There was, however, no fever. Towards evening symptoms of prostration made their appearance, the pulse being very weak and the action of the heart being barely perceptible. A hypodermic injection of caffeine was given which caused a great deal of pain. Caffeine was also given by the mouth, as was also some nourishment, and a little sleep was obtained. Dr. Lapponi slept in the Vatican. A consultation with Professor Mazzoni was determined on and this took place on the next morning, Sunday, July 5th, at 8.30. The bulletin then issued was as follows:—

"Dr. Lapponi being anxious concerning the health of the Holy Father, held this morning a consultation with Professor Mazzoni, who confirmed the diagnosis already made by his colleague of "senile pulmonary hepatitis" and approved of the treatment instituted. The condition of the ailing patient is, considering his age, serious but not for the present alarming."

Professor Mazzoni, it may be remembered, operated on the Pope three years ago for a suppurating cyst in the side with excellent results. He is surgeon to the ancient hospital for women of San Giovanni in Laterano and is a *privat-docent* for gynecology in the university.

I had an interview with Professor Mazzoni in the evening. He stated that the hepatitis affected the upper and middle lobes of the right lung

and that there had been symptoms of considerable cardiac weakness and some difficulty in respiration; there was no fever, cough, or expectoration. At 9 P.M. on Sunday the following bulletin was issued:—

“Since the morning there has been slight increase in the weakness. The objective conditions of the thorax remain unaltered. Respiration somewhat frequent. Pulse weak, but not irregular. Temperature subnormal. Mind most clear.”

Notwithstanding his weakness the Pope remained out of bed for a part of the day, dictating letters and making his final dispositions on temporal and spiritual matters. He also dictated some Latin hexameters (and requested his secretary to send them immediately to be printed, as he wished to see the proofs). The first line of these runs:—

“Sol moritur vesperi cedens sua regna rubenti.”

They are somewhat melancholy and comprise a farewell to all Christians.

Shortly after this consultation the Viaticum, or Last Sacrament, was administered to the Pope sitting up in his bed in the presence of several cardinals and other members of his family and intimates. During the recitation of the Confession when the words “*Mea culpa, mea culpa, mea maxima culpa*” were reached the Pope extended his hands and struck his breast three times in token of deep sorrow for the sins of his life. Then with astonishing mental clearness he requested the cardinals present, numbering 28 or 29 in all, to approach one by one. He recognised them individually and had a parting word for each. The bulletin issued on Monday morning was as follows:

“July 6th, 9-30 A.M. —Although there has been hardly any sleep during the night, still it has been less agitated than the preceding one, the Holy Father deriving benefit from the administration of digitalis and camphor. The condition of the thorax remains stationary. There have been some fits of coughing, with a scanty mucous expectoration. Sufficient nourishment has been taken. The pulse remains weak but not intermittent. Temperature subnormal. It may be said that the condition of the august sufferer, while no better, is certainly no worse.”

It was stated, but not officially, that caffeine was also given by the mouth during the night. The nourishment consisted of strong soup, eggs, and various stimulants. The bulletin in the evening was as follows:—

“8 P.M.—This evening the symptoms of general depression are accentuated. Respiration more frequent and superficial. Pulse small, and sometimes imperceptible. Temperature subnormal. Intellectual faculties unimpaired.”

After the publication of this bulletin Extreme Unction was administered.

On Tuesday, the 7th, the morning bulletin was as follows:—

“10 A.M.—A sleepless and agitated night, but nourishment was better taken. General condition somewhat better. A change noticed in the

objective examination of the right thorax. The middle lobe, which yesterday was impervious, this morning allows some air to enter. On the other hand, the lower part is duller, vocal and tactile fremitus is absent, and the symptom of Baccelli authorises the opinion that there is fluid in the pleura. An exploratory puncture will be made. There is a depression of the cardiac function, which has caused a delayed renal function, and cyanosis in the distal phalanges of the fingers and toes."

The treatment relied upon was the administration of digitalis, camphor, and expectorants by the mouth, and stimulating applications to the skin. Baccelli's symptom consists practically in the old *succussio Hippocratis*, with this exception—that the patient himself causes the splash of the effused fluid by repeating aloud the words "trenta tre," and it is not to be confused with the other symptom of Baccelli which consists in distinguishing between a serous and a purulent effusion into the pleura by means of the differences heard in auscultation of a whisper in these two conditions.

The operation of paracentesis was performed a little before 1 P.M. After a preliminary cocainisation an exploratory puncture was made in the seventh interspace and the presence of a sero-sanguinolent effusion was ascertained. The needle of the Pravaz syringe was withdrawn and that of a Potain's aspirator was inserted and between 700 and 800 grammes of fluid were withdrawn in 20 minutes. A collodion dressing was then applied. The Pope was much pleased at the painlessness of the operation and complimented Professor Mazzoni, saying that he felt much relieved by it. At 2 P.M. the following bulletin was issued:—

"The exploratory puncture gave sero-sanguineous liquid. Thoracentesis was next performed, withdrawing about 800 grammes of liquid. After the withdrawal a rapid examination revealed mucous râles in the region of the lung first affected. His Holiness supported the operation very well, his *morale* has been improved by it, and the general condition seems better. He is now reposing."

On the same evening at 8.30 the following bulletin was issued:—

"The condition continues to be fairly satisfactory, as mentioned in the last bulletin. The functions of the heart and of respiration continue to improve slowly but gradually."

On Wednesday, the 8th, the following bulletin was issued at 10 A.M. after a consultation lasting one and a half hours:—

The night was passed fairly tranquilly though without refreshing sleep. The pulse is frequent but regular, the respiration not so free as yesterday. The condition of the Holy Father does not permit of a long examination but permits of the statement that the pulmonary process is tending to resolution and that the pleural effusion is not being again poured out. The condition of the august patient, however, is not a tranquil one on account of the state of depression, which is increasing. During the night there seems to have been some difficulty in passing the urine, which depressed the Pope very much.

At 7-30 P.M. the following bulletin was issued :—

“The day has been passed tranquilly without attacks of weakness. Pulse less frequent, regular, and a little more sustained. Respiration easy. The general condition is better.”

Nourishment was taken several times during the day and consisted of meat grated in soup and some spoonfuls of claret, but hardly enough was taken.

On Thursday, the 9th, the following bulletin was issued at 9-35 A.M. :—

“The night has been a tranquil one and the august patient has reposed. The pneumonic process is in a state of complete resolution in that part of the lung which is not covered by the small quantity of fluids still remaining in the pleural cavity. The general condition continues to be better.”

It was also stated, but not officially, that the cyanosis of the fingers was less and that the lips were of a better colour. The temperature ranged between 36·2° and 36·6° C. According to *La Tribuna*, the official organ, Dr. Guido Baccelli, the Minister of Agriculture in the present Cabinet, who is also professor of medicine in the University of Rome, stated to-day that he “was glad that his studies had been able to contribute to the diagnosis and treatment of the illustrious patient.” This refers to the fact that he was the first to suggest the existence of fluid in the pleural cavity.

At the consultation held on the morning of the 9th it was decided to call in at the evening consultation as a physician consultant, Dr. Rossoni, the professor of special demonstrative medical pathology (performing functions almost exactly corresponding to those of a medical registrar), who also takes over the work of Professor Baccelli when his Cabinet duties do not permit him to do it. The Pope, when he was told of this by Dr. Lapponi, said that he was perfectly satisfied with his two medical attendants and asked why he should have a third. Dr. Lapponi explained that he thought it would increase the authoritative nature of the bulletins. The Pope answered that he did not insist and was grateful for their kindly thought. After the consultation was over the Pope became worse and it was decided to hold another consultation at 4.30 P.M. When Professor Rossoni was introduced the Pope, ascertaining that he was a Roman, asked him if he had studied under De Matteis, who had a ward in the Hospital of Santo Spirito and was the foremost exponent of the Roman school of medicine in his happy boyhood which he remembered so well. As this was about the year 1824 Professor Rossoni naturally replied that he did not remember him. The consultation lasted about an hour and after it, at 6 P.M., the following bulletin was issued :—

“The general condition of the august patient becoming somewhat worse during the day a consultation was held at 4.30 P.M., at which there was also present Professor Rossoni. An objective examination was made and it was ascertained that the pleural effusion was again rapidly increasing. The sounds of the heart are weak, without symptoms of valvular lesions. Pulse easily compressible, 90. Respiration superficial, infrequent. Diuresis scanty. The condition of His Holiness may be considered as serious.”

After the consultation the Pope asked one of his medical attendants : "Do you hope more or fear more ?" showing his complete knowledge of his precarious condition.

Dr. Laponi and Professor Mazzoni visited the Pope again at 10.55 P.M. and found that the general condition was unaltered. During the visit the Pope asked them what Professor Rossoni had said and asked to see the bulletin. To this quite unexpected question the answer was given that the bulletin was only issued in the morning and that it would then be laid before him. This has necessitated the printing of a special bulletin "ad usum Pontificis."

On Friday, the 10th, when Professor Mazzoni and Professor Rossoni entered the room at 10 A.M. the Pope, who was sitting up, offered the latter his snuff-box and said that he did not feel quite so well, complaining in particular of a heavy feeling at the pit of the stomach. This, it is to be noticed, the Pope had also complained of just before the first operation. He then went back to bed again without any help and the operation was performed after a preliminary hypodermic injection of camphorated oil and hypodermic cocainisation. About 1000 grammes of a sero-sanguinolent fluid were withdrawn in the time of 20 minutes and on hearing the fluid being poured out of the aspirator into another receptacle the Pope said : "What a fountain." A microscopical examination of the fluid was rapidly made and there were found in it "many mononucleated corpuscles, a few multinuclear, many hæmatocytes. The presence of tubercle and of a thoracic tumour was thus to be definitely excluded." At 11 A.M. the following bulletin was issued :—

"The august patient passed the first half of the night with a certain amount of tranquillity but afterwards the difficulty of respiration and malaise increased and there was a greater sense of oppression. Pulse small, weak, 92. Complete apyrexia. Scanty diuresis. An increase of the endopleuritic effusion having been ascertained the indication for emptying is definite. A thoracocentesis was immediately performed by Professor Mazzoni. About 1000 grammes of sero-sanguineous fluid were extracted. His Holiness supported very well this, the second, operation. After the operation the respiration and the strength of the heart suddenly improved."

At 9 P.M. the following bulletin was issued :—

"His Holiness has reposed during the day without pain. The pulse retains the frequency and the strength of this morning after the thoracocentesis, 92 pulsations. Respiration, 28 ; temperature, 36.5° C. Diuresis always deficient. General condition unchanged."

On Saturday, the 11th, the bulletin was as follows :—

"During the night His Holiness has reposed at intervals. Pulse 90, its strength and compressibility being unchanged from last night. Respiration, 30 ; temperature, 36° C. Renal function always deficient. General condition somewhat better."

At 8 P.M. the bulletin was as follows :—

“The day has been passed fairly tranquilly. The improvement in the general condition has permitted of the repetition of the physical examination of the thorax. The level of the slight amount of fluid remaining from the withdrawal (of fluid) performed yesterday has remained stationary. In the region above this level faint pleuritic friction sounds and a few mucous râles can be heard. Pulse less small and less weak. Pulsations, 86; respiration, 28; temperature, 36.9° C. The morale of the august patient is better.”

The following bulletin was issued on Sunday, the 12th, at 9 A.M. :—

“The night has been passed tranquilly and several hours of sleep have improved the general condition of His Holiness. Pulse less small and a little stronger; pulsations, 82; respirations, 30.”

The evening bulletin was as follows :—

“Nothing noteworthy in the course of the day. The general condition of His Holiness is unchanged. Pulsations, 86; respiration, 30; temperature, 36.8° C. A good night was passed.”

At this point in the illness one of the medical men in attendance considered that a critical period might have arrived though the hope was necessarily very slender. But two days later the increasing weakness became manifest and for the next four days the bulletins bore but one construction—the strength of the patient was slowly failing. The pleuritic fluid, as it collected, was withdrawn by a Pravaz syringe, otherwise medical care was chiefly directed to the administration of nourishment. On Sunday, July 19th, the Pope fell into a condition of stupor, the long death agony being closed on July 20th. A few hours before his death he recovered consciousness and twice raised his hand in the act of bestowing the blessing.

The Pope was nursed throughout by his faithful valet, Pio Centra, and by Dr. Lapponi. While the windows of his room have only been opened for an occasional ten minutes in the early morning, oxygen has been continually generated in the next room in order to keep the atmosphere purer, vitiated as it necessarily has been by the presence of many people—cardinals, members of the Pope's family, and other intimates.—*Lancet*, July 25, 1903.

THE BEARING OF CHEMISTRY AND PHYSICS ON THE HOMŒOPATHIC LAW.

By JOHN M'LACHLAN, M.A. & B.C.L. (Oxon.), M.D. & B.Sc. (Edin.),
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IN 1851 Professor Christison, who occupied the *Materia Medica* chair in the University of Edinburgh, said "It is undeniable that all important discoveries in science at large, are preceded by a period of incubation, as it were, during which the world is gradually prepared to receive them. . . . There has been no shadow cast before the coming event (homœopathy), no antecedent approximation, no universal adoption, no intruding claimant." On this point, however, the Professor showed a sweet simplicity in things historical, and the object of Dr. Dudgeon's first lecture (in his "*Lectures on Homœopathy*") is to show that the great Truth, revealed in its full splendour by Samuel Hahnemann, *did* cast its shadow before it in antiquity, and that there was an antecedent approximation to it in remote as well as in more recent times.

Hippocrates has been called the "father of medicine," and he is just as much (if not more so) the "father" of homœopathy as of allopathy; though, as a matter of fact, the "father" of the good, old, thorough-going allopathy is not Hippocrates, but Galen. Yet even Galen himself occasionally recognized the homœopathic law in the treatment of disease. But though homœopathy was recognized by medical writers, and by popular belief, ages before Hahnemann, nevertheless he was the first to place it on a scientific footing; his were the eyes that really *saw*. I suppose many people, before Newton's day, had seen an apple drop from a tree, yet Newton was the first who really *saw* what it meant. I have no doubt, also, that many eyes had watched the swinging of the great chandelier in the Cathedral at Pisa before Galileo was born, yet his were the eyes that first recognized the true inward meaning of the phenomenon. To all others the phenomena exhibited were merely a falling apple and a swinging chandelier, nothing more. Having eyes they saw not.

In chemistry we also find, to a certain extent, a homœopathic principle acknowledged, and a somewhat similar formula, *vis.*, "*similia similibus solvantur.*" Thus carbon di-sulphide is the best solvent for common sulphur; phosphorus tri-chloride and tri-bromide readily dissolve phosphorus; potassium iodide is the best solvent for iodine; fluid mercury dissolves many *metals*, but no other kind of substance; salts containing water of crystallisation, as a rule are easily soluble in water; the insoluble cyanide of silver is readily dissolved by adding cyanide of potassium; aluminium hydrate is insoluble, but is easily dissolved by adding potassium hydrate, and the same is true of zinc hydrate and chromic hydrate, and so on. We see, therefore, in these cases, that solubility seems to be dependent upon the existence of a similarity of composition between the solvent and the substance dissolved.

"*Omnis cellula e cellula*": every cell is derived from a pre-existing cell.

Beginning with the ovum, and ending with the fully developed tissues of the adult, we have an uninterrupted series of generations of elements, which with Schwann we call *cells*, and with Brücke "*elementary organisms*." Each cell shows the phenomena of *growth* (which presupposes those of *nutrition*) and *reproduction*, and all of them, at some period of their life history, show the phenomena of *contractibility*, or amoeboid movement. Charles Darwin long ago pointed out the two main factors in all evolution, *viz.*, heredity and environment, and the single cell is just as subject to these two influences as the most highly developed mammal; and the scientific physician must constantly keep these two great factors in his mind if he is to heal the sick promptly, safely, and pleasantly. The "heredity" of the evolutionist is merely Hahnemann's doctrine of chronic diseases in a modern dress, but the essential idea in both cases is the same. We look upon the cell, therefore, as the *unit*, as the animal reduced to its lowest possible denomination. Through the cell the phenomena of health and disease are manifested, and on the cell our medicines must act if they are to act at all. Herbert Spencer has taught us that perfect correspondence between the organism and its environment would be perfect life; "were there no changes in the environment but such as the organism had adapted changes to meet, and were it never to fail in the efficiency with which it met them, there would be eternal existence and eternal knowledge." Such a state of affairs, I need not tell you, can never exist; this perfect correspondence of organism to environment is merely theoretically possible, like a perfect vacuum. When there is a want of correspondence between organism and environment, then are manifested the phenomena of disease; the function of medicine is to restore this correspondence, to adjust internal relations to external relations, the organism to its environment. When this is impossible, then *death* is the result.

I must apologise for introducing such matter into my short paper, but it seemed to me to be necessary to do so in order to show the connection of the dry bones (physics and chemistry) to the living flesh and blood. The minute structure of the cell I need not discuss, further than to state that its protoplasm is covered with a fine membrane which possesses in a most marked degree the property of "semi-permeability"—a property of the greatest importance to the physical chemist. Because of this "semi-permeable" membrane the protoplasmic contents of the cell contract when the cell is brought into a concentrated salt solution, *i.e.*, the exterior solution has greater osmotic pressure than the protoplasmic contents of the cell. If the osmotic pressure of the exterior liquid is equal to that of the cell-contents, the cell will undergo no apparent change, because the organism and its environment correspond; if the osmotic pressure of the exterior solution is less than that of the cell-contents, then the cell itself will swell and become dropsical. By diluting the salt solution it is possible to find that concentration in which the osmotic pressure outside just equals that of the cell contents. The concentration will bear the same relation to the molecular weights of all kinds of salts; *e.g.*, suppose the

the concentration required in the case of sodium chloride is one-tenth of its molecular weight, say 5.8 grammes, to the litre; then to find the weight in grammes of any other salt which will give a corresponding concentration, take one-tenth of its molecular weight; e.g., in the case of potassium chloride we would require 7.4 grammes to the litre. Then these two solutions will possess the same osmotic pressure; in other words they will be *isotonic*, to use a term introduced by De Vries.

These facts are explained by the hypothesis that a substance in solution consists of very small moving particles (molecules, atoms or "ions"), which behave *as though they were in the gaseous state*, the pressure being supposed to be due to the "bombardment" of the particles of the dissolved substances on the "semi-permeable" membrane, and it is found that the laws which regulate this osmotic pressure have the same form as the laws of Boyle, Charles, and Avogadro for gases; but for this to be true the solution must be *very dilute*. In such cases, just as in gases, it is supposed that the dissolved molecules are widely sundered, and not within the range of each other's attraction. I ought to remind you, however, that *salts*, strong acids, and bases in aqueous solution form an exception to the above laws; for this class of substances gives *twice* the osmotic pressure one would expect from general chemical analogies. This fact is explained by saying that the salt is dissociated into its "ions," so that the number of free molecules is doubled, and hence the osmotic pressure which is due to the "bombardment" of such free molecules against the "semi-permeable" membrane is also doubled. One often wonders whether this "ionic dissociation" does not, at least partly, explain the difference between the *mode* of action of some *metals* (if not all) and their salts; e.g., metallic silver acts deeply, but is very slow in its action, whereas nitrate of silver shows a quick onset and a rapid progress.

Pfeffer in his experiments, examined the diffusion of liquids through cell-walls of plants. He added a solution of manure to earth surrounding the plants, and up to a certain point of concentration observed that the solution passed into the cells of the plant faster than water passed; too concentrated, the plant rejected the excess, and the currents were reversed; water passed in faster than before, and manure came out, and in this way the plant got rid of excess.

Experiments and observations such as these show, I think, the absurdity of large doses of concentrated medicines. Medicines can only act on the cell through the medium of its "semi-permeable" membrane, and when they are *dissolved* in the fluids of the body, and if not sufficiently diluted before their introduction into the body, then the body itself will have to dilute them. I have often thought that a medicine acts much more promptly when diluted with plenty of *water*, not spirit, and in cases of acute disease always administer them in this form for that reason. How dilute is a question I will not enter upon, for on that point *ionic dissociation* and electric conductivity do not help us much; for ionic dissociation is probab-

ly quite complete when the gram-molecule of any salt, dissolved in a litre of water, is further diluted with about 50,000 litres ; in any case diluted with a further 50,000 litres hardly makes any appreciable difference. This amount of dilution would only represent something like our 5x potency or dilution, and I believe that most of us have proved clinically that the 12th or 30th, or even the 200th has produced powerful medicinal effects, and has most undoubted curative virtues. These dilutions are far beyond the domain of physical or chemical experiment, even the most delicate, *e.g.*, electric conductivity. This method is exceedingly delicate, for the addition of a single drop of water to a litre of the solution can be detected with the greatest ease and certainty, *i.e.*, about 1 in 20,000.

But we must not expect too much from physics and chemistry, for they cannot approach, in delicacy, the clinical test ; though as far as they go they tend to show that the belief even in very infinitesimal doses (as seen with allopathic eyes) is by no means so irrational and unreasonable as often supposed. In this connection I would lay special stress (1) Upon the presence and function of the " semi-permeable " membrane ; (2) That a substance in *very dilute* solution behaves as if the dissolved matter was in the *gaseous* state ; (3) Electric conductivity experiments. (4) The electric theory of matter and all that that involves. But these great facts do not explain altogether, nor do they entirely account for, the undoubted curative activity of infinitesimal doses ; still the support given by the collateral sciences of physics and chemistry to homœopathy, is of that order of support which collateral sciences usually give to each other. These collateral sciences do not give a sufficient (in the sense of a *complete* or *ultimate*) explanation, but they point the way along which a rational explanation is to be found, and there can be no doubt at all, that that way is *not* in the direction of massive doses, whether of single substances or of mixtures of substances, but decidedly *is* in the direction of the infinitesimal. In this connection I would remind you of the very important part played by (1) The state of division, and (2) The influence of water, in effecting chemical change. (3) The nature of the cathode or X-rays. (4) The change in meaning of the term "atom": the so-called "atom" of the chemist is no longer regarded as indivisible. The "electron" has now taken the place of the "atom," and is the most definite and fundamental and simple unit which we know of in nature. The mass of this unit is of the order one-thousandth of the atomic mass of hydrogen, and in size about one hundred-thousandth of the linear dimensions of the "atom" of the chemist. At the same time these facts can only have a bearing on the question of *dose* ; & at the most, can only point to the intrinsic reasonableness of the *small dose*. But we must not forget, however, that the question of dose, within certain limits, is one of very minor importance compared with the questions of the selection of the *similimum*, and the administration of the *single remedy*. I trust that no one will run away with the idea that I regard infinitesimal doses as *the* most important article of the homœopathic faith. It is an unfor-

fortunate fact that the small dose is regarded by the members of the allopathic schools, and even by educated people and professed homœopaths, as being the *essential characteristic* of homœopathy. Now, I do believe that the question of potency is one of great importance, but it cannot for one moment rank in the same order of importance as the questions relating to the selection of the *similimum*, and the administration of the *single* remedy. The small dose was no part of homœopathy as originally conceived by its founder, but was of a later growth. Hahnemann made many startling cures while still using the crude doses of the allopathy of his day.

Is there, then, in the living cell a something that is incapable of explanation by the laws of physics and chemistry? What is this something, and how is it that infinitesimal doses—doses so infinitesimal that no power on earth, save the cells of the living animal, can detect them—are able to adjust the discord between the organism and its environment, which we call disease, and transform this discord into that harmony of correspondence which we call health? To say that life is a correspondence, or series of correspondences, is only to express a *partial* truth; there lies a something at the back of the correspondences existing between the organism and its environment. Hahnemann called this something “vital force,” often using its untranslated Greek equivalent. We may, if we will, call it a “principle of life,” but we can’t get rid of the term, or something representing it. However clumsy, however provisional, however much a mere cloak for ignorance, science is unable at present to dispense with the *idea* of a “principle of life.” We must work with the word till we get a better. Science cannot define “life,” cannot even tell us what “*matter*” is, except by adopting the most high-flying metaphysics, albeit disguised in scientific terms. On the definition of “life” will depend the definition of “disease.” At present we can only say with Herbert Spencer that “perfect correspondence” between the cell (organism) and its environment “would be perfect life,” and that disease or death is the result of a lack, partial or complete, of this correspondence.

“*Omne vivum ex vivo*,” said Harvey: Science can say no more to-day. It is just as impossible to-day as it was in the days of Johannes Müller to discover the nature of vital phenomena by the exclusive aid of chemical and physical experiment. We may, if we are so minded, with Ernst Hæckel speak of the “cell-soul” or “psychoplasm”—a certain sum of physiological properties possessed by cells; or with other German scientists we may speak of the “*ontogenetic directive force*”: or we may regard the cell, to adapt a phrase of the late professor Tyndall’s, as endowed with “infinite potentialities.” All these phrases (and there are many others of a similar nature) indicate that there is a deep-seated belief in the scientific mind that there is a “something” beyond the reach of either chemistry or physics. At the same time it must be clearly understood that this general conception of a definite vital principle is to be used simply as a working hypothesis. Science may yet have to give up this idea of an “outogenetic

directive force." But in the absence of any proof to the contrary, and especially of any satisfactory alternative, we must still work with the old hypothesis, call it what we may. Hahnemann's hypothesis was that the attenuated medicines acted directly on this vital principle, this "psychoplasm," this "directive force," and neither physics nor chemistry to-day can prove he was wrong, or offer a more satisfactory alternative.

Now although, in conformity with other great scientific truths of the past, the presentiment of homœopathy existed long before it was clearly and distinctly enunciated by Hahnemann, in fact, from the very beginning of medical "science"; and although chemical and physical experiments (especially the recent discoveries in physical chemistry), *so far as they can go*, show that small doses are intrinsically more rational than massive, and far more likely to effect the end in view, viz., the restoration of the sick body to health, and we gladly welcome all such confirmatory evidence as to the truth of our science; yet these facts are by no means the most characteristic and startling about homœopathy. The facts that stamp it most indubitably as a true science, and raise it to the unique position of the science of therapeutics, are in my opinion the following :--

(1). Based, as I believe it is, on a law of nature, it is capable of *infinite progress* along the lines originally laid down. Working details and modes of expressing its main facts, no doubt, will vary from generation to generation; the hypothesis of to-day may be thrown aside as a useless tool to-morrow, in conformity with evolutionary law, and the methods pursued in other progress would be the greatest proof that it was no science. The law of evolution is just as universal as the law of cure---a fact that we are slow to recognize, and that even Hahnemann himself, I do not think understood. But though *details* may vary, the great foundation law remains undisturbed, and one is unable to imagine any possible developments of the auxiliary sciences (especially chemistry and physics) that could disturb this law, far less overthrow it. Progress is imperative, but this progress will not disturb the previous steps; we do not need to pull down and uproot to-morrow what we have builded or planted to-day, and begin all over again.

(2). But what stamps homœopathy with an absolutely unapproachable uniqueness in the domain of therapeutics, is its power to *foreknow*, its pre-science or pre-vision, its ability to provide for the prediction of future events within its own domain; to furnish us with the means of curing new and unknown diseases, and of enabling us to treat *the very first case* with certainty and precision. Many examples could be given of this pre-science, from Hahnemann and his treatment of cholera, to Lieut.-Col. H. E. Deane and his treatment of plague. But for purposes of pre-vision our foundation law *alone* would be useless without our *Materia Medica*---just as useless as a general without an army. It is the possession of its *Materia Medica* that gives homœopathy its power, and as the *Materia Medica* is perfected so will this power increase. Even now medicines are ready and waiting for

the cure of innumerable and, as yet, unknown diseases, but which diseases will be recognized as soon as they show themselves by the diligent students of the homœopathic *Materia Medica*.—*Monthly Homœopathic Review*, August 1, 1903.

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CHOLERA.

VII.

(Continued from last Number, p. 832)

New School or Homœopathic Treatment.

DISTINCTIVE CHARACTERISTICS OF THE TWO SCHOOLS.

The great merit of the therapeutic system of the New School is that it is based upon a law of Nature. This law is the expression or enunciation of a relationship that exists between diseases and their remedial agents. The relationship that was availed of by the founder of Homœopathy consists in the similarity of the symptoms of the disease with the symptoms produced by drugs in the healthy human organism. This similarity is a fact and a very remarkable one too. Had it not been for this similarity homœopathy would have been as hopelessly at sea as the system which it has dared to supersede and succeeded in doing so. The similarity is so close as to have led Claude Bernard to declare: "There exists so remarkable an analogy between the symptoms of legitimate diseases, and the disorders which result from the introduction of toxic agents into the economy, that the effects of poisons may, up to a certain point, be considered as the most perfect specimen of morbid actions, which can possibly be selected as a type."

The only other relationship that can possibly exist between the two sets of symptoms is opposition or contrariety. It is this latter which forms the foundation of the system of therapeutics of the old school. The great defect of this system depends upon the fact that very few symptoms of disease find their opposites in the symptoms of single drugs, and hence the necessity of the use of a combination of drugs to combat a single disease, and when this does not suffice, a number of other drugs have to be added or had recourse to which have no sort of relationship with the disease. This has necessarily led to the greater play of fancy and imagination in the selection of remedies than of reason and the observant faculties. And this accounts for the endless divergencies of opinion among medical men which has become proverbial.

The law of similars was arrived at by induction from a sufficient number of instances to warrant its being made the basis of a provisional rule of practice. This rule has met with success in almost every instance in which it has been applied, and has thus been confirmatory of the law. The law is thus established as a law of nature, receiving support, as every natural law does, from every additional case in which it is verified. It has brought order and unity and uniformity in the healing art where confusion and perplexing multiplicity prevailed. It has not only armed the practitioners of the art with instruments of precision against known and familiar diseases, but has conferred upon them a power of prevision to deal with unexpected contingencies which it could not do if it itself had not been a real law based upon the unerring and eternal relationship of cause and effect. This has been well seen in the case of the disease under consideration which, as has been shown above, has proved such a stumbling block to the majority of the profession who are ignorant of the law, or perversely ignore its existence and refuse to avail themselves of its advantages.

Suggestions and Successful Trials of Homœopathic Remedies in Cholera by Hahnemann's Followers.

When the cholera threatened Europe in 1830, Hahnemann's followers were busy in finding its analogue in the drugs that had been proved. Dr. J. A. Schubert, of Leipzig, published a work in that year on the *Treatment and Prevention of Cholera*, in

which he recommended its treatment by *Veratrum*, *Ipecacuanha*, *Arsenic* and *Chamomilla*, and when the inflammatory character was predominant, by *Aconite*, on homœopathic principles. He likewise recommended *Veratrum*, *Ipecacuanha* and *Arsenic*, as prophylactics in the disease. Dr. Preu, of Nuremberg, shortly after published a paper in the *Archiv*, in which he showed "the close resemblance of the symptoms of Asiatic Cholera with those produced by *Arsenic* and *Veratrum*. "How just," says Dr. Dudgeon, "Dr. Schubert's notions respecting the proper remedies to be used in the disease, before he had an opportunity of treating a single case, the success attending their subsequent employment fully demonstrated." We learn also from Dr. Dudgeon that Dr. Peterson, of Pensa, and Dr. Arnold of Kasan, both in Russia, "were the first to test the efficacy of the system in the real Asiatic Cholera," and met with the most encouraging success. Dr. Peterson used *Ipecac* 20th, *Chamomilla* and *Arsenicum* 30th, and out of 68 cases that he treated only he lost 14.

Hahnemann's Own Suggestions.

These suggestions were offered and these trials were made before the Founder of Homœopathy wrote his famous letter, dated the 10th September 1831, from Cœthen, to the editors of the *Archiv für homœ. Heilkunst*, giving directions for the *Treatment and Prevention of the Asiatic Cholera*. In this letter were announced "the curative virtues of *Camphor*, in doses so large, and at intervals so short," says Dr. Dudgeon, "as completely to stagger those of his disciples who could see in Homœopathy nothing but a system of decillionths, and were unable to separate in their own minds the principle of *similia similibus*, from the doctrine of infinitesimal doses." Camphor is recommended only for the first stage of the disease, in which it is not only the most useful but really an infallible remedy. After the first stage is passed "*Camphor* is no longer serviceable," and its administration "must only be continued so long as decided benefit is observable (which with a remedy of such rapid action as camphor manifests itself within a quarter of an hour). If in such cases decided benefit is not soon perceived, then no time must be lost in administering the remedy of the second stage." This is copper, prepared from the pure metal according to the directions given by him in the *Chronic Diseases*,

and "of which the patient is to get one or two globules every hour or every half hour," "until the vomiting and purging diminish, and warmth and rest are restored. But nothing else at all must be given beside; no other medicine, no herb tea, no baths, no blisters, no fumigation, no venesection, &c., otherwise the remedy will be of no avail. Similar good effects result from the administration of as small a portion of white hellebore (*Veratrum album*); but the preparation of copper is much to be preferred, and is more serviceable, and sometimes a single dose is sufficient, which is allowed to act without a second being given, as long as the patient's state goes on improving." For the typhoid stage we are told, "*Bryonia*, alternately with *Rhus tox.*, proves of eminent service."

In a note he adds: "If the dear and scarce (frequently falsified) cajeput oil be actually so serviceable in the Asiatic cholera that out of ten scarcely one died, it must owe this quality to the camphor-like property (it may almost be regarded as a fluid camphor) and to the circumstance, that from the copper vessel in which it is imported from the East Indies, it takes up some portion of copper, and hence, in its unpurified state, it is of a bluish-green color. It has moreover been found in Hungary, that those who wore next the skin of their body a plate of copper were exempt from infection; as trustworthy intelligence from that country informs me." This does not seem to be consistent with what he says in the last paragraph of his letter, that when cuprum is being taken as a prophylactic, "the vapor of camphor must be avoided, as it suspends the action of the copper." If Camphor suspends the action of Copper how is it that a combination of Camphor and Copper in Cajeput oil was so efficacious in cholera?

This was all that Hahnemann advised about the treatment of cholera. The remedies recommended by him, it will be seen, are, with one exception, different from those which his followers previous to the publication of his letter, had used with considerable success. The exception is *Veratrum*. The two other remedies are new and were not thought of by his disciples. These are *Camphor* and *Cuprum*. Camphor, with its large doses and frequent repetition, was a startling discovery. How he came to it is not clear from the recorded documents we have

before us. At the very beginning of the *Essay on the Cure and Prevention of the Asiatic Cholera*, he says: "A receipt has been given to the world, which proved so efficacious in Dünaburg in the Asiatic Cholera, that of ten patients but one died. The chief ingredient is *Camphor* which is in ten times the proportion of the other ingredients. But not a tenth—nay, not one in a hundred of the patients would have died had the other ingredients, which were but injurious and obstructing, and the venesection been left but, and the *Camphor* been given alone and always at the *very commencement of the disease, for it is only when given alone, and at the first invasion of the disease, that it is so marvellously useful.*"

Whether the recommendation of *Camphor* in the very first stage of the disease was suggested by the recipe spoken of above, it is impossible now even to surmise as he himself says nothing about it. In his letter to Stapf, dated Aug. 5, 1831, he writes: "As long as the Allopaths represented to us (without giving any trustworthy picture of the disease) that cholera is a compound of vomiting and purging, so long we poor Homœopaths at a distance had to regard *Veratrum* and *Arsenic* as the specific remedies for it. But the faithful description by a Homœopath has taught us that its character is quite different. It is a tonic spasmodic diathesis of all the systems, spheres and tissues of the organism, which only towards the end of life passes into convulsions and paralysis, and then there follows watery vomiting and diarrhœa, and that only in some cases; nothing of the sort is to be seen in most cases, but only rapid death. Such being the case neither *Veratrum* nor *Arsenic* can be of much use. Schreter writes me from Lemberg, when he arrived on the 15th July, that he was able to do some, but not much good with *Veratrum*, and when it did no good then *Camphor* was successful (when he wrote he had just received my essay on *Camphor*)."
 Are we to suppose from what he says here that he recommended *Camphor* in the first stage because the disease is not a compound of vomiting and purging as the Allopaths had represented it, but because it was "a tonic, spasmodic diathesis of all the systems, spheres and tissues of the organism"? Hahnemann himself is not explicit on the point. In this letter he speaks of having enclosed an explanation of why he had recommended large doses of *Camphor*, which Stapf

is said to have published in the *Archiv*. But unfortunately no body has thought of giving the exact words of the "explanation." Dr. Bradford, Hahnemann's biographer, contents himself with saying: "Hahnemann says that the reason he gave *Camphor* in large doses is *that the effect* to be produced is an Allopathic and not a Homœopathic one. A palliative action must be at once produced or the patient will die before the Homœopathic medicine has time to act." If this was really the explanation Hahnemann gave, it was a strange one and does not accord with what he says in his Essay on the subject and in his letter to Stapp, part of which we have quoted from Dr. Bradford himself. For the sake of Homœopathy and of its Founder we should have the exact words of the explanation, nothing short of which will satisfy us as to the correctness of Dr. Bradford's representation of it.

It is true this was not the first occasion Hahnemann recommended large doses of *Camphor*. In the article on the drug in the *Materia Medica Pura*, vol. iv, 2nd edit., 1825, where he speaks of its action as very puzzling and difficult to determine and its curative action as equally puzzling and wonderful, he does not hesitate to recommend it in influenza in frequent but ever increasing doses, "only as a palliative certainly but an invaluable palliative." "It does not shorten the duration of the disease, but renders it much milder, and hence it conducts the disease innocuously to its termination." So that he did not neglect the administration of a palliative when urgently needed and calculated to do good. Might he not have been influenced by some such consideration when he recommended the drug in cholera in large and frequently repeated doses? And in this he was certainly not inconsistent with himself. If he had said so when he made the recommendation, no doubts and misgivings could possibly have arisen in the minds of his disciples. It would have only shown that when the life of mankind was concerned he could rise above his own dogmatism in the matter of the dose.

It is further to be noted that if what Schreter wrote to Hahnemann from Lemberg was fact, namely, that *Camphor* was successful after *Veratrum* had failed, then it must be admitted, which Hahnemann has not done, that *Camphor* was useful not only in the first, but in the second stage also, for it is more than

probable that *Veratrum* must have been given in this and not in the very first stage as understood by Hahnemann.

However arrived at, the recommendation of Camphor in cholera, especially in its first stage, constitutes a most important discovery and has given us a priceless remedy for the disease, though it is not an infallible remedy, as we shall see, in even the very first stage in every epidemic. It is a remedy which, as Hahnemann would say, has no substitute, nor can it, we must say, be a substitute for others. It has its own sphere of action and is "marvellously useful" in that sphere, but beyond that it is useless and often injurious.

TREATMENT OF THE DIFFERENT STAGES OF CHOLERA.

For purposes of treatment the disease may with advantage be considered as consisting of the following stages:—

- I.—The First is the stage of Premonitory Symptoms.
- II.—The Second is the stage of Full Development.
- III.—The Third is the stage of Collapse.
- IV.—The Fourth is the stage of Reaction.
- V.—The Fifth is the stage of Sequelæ.

In the most virulent forms, the first stage may merge so rapidly into the second as not to be distinguishable. In the majority of cases, however, it is present, and should be availed of to cut short the disease. In the milder varieties the fifth stage may be wanting, the fourth or the stage of reaction being followed by a return to health. The most dangerous are the third and the fifth stages, or the stages of collapse and of sequelæ. Death takes place in either of these stages.

I.—**The Stage of Premonitory Symptoms**, we should consider to cease with the first appearance of the rice-water stool. It is of variable duration and severity. It generally occupies only a few hours, but it may occupy even a few days. And from being a slight malaise barely distinguishable from health, it may exhibit profound prostration hardly distinguishable from the actual disease itself. About the end of it there is purging, or purging with vomiting or at least nausea; but it does not necessarily commence with these symptoms. It is, however, essentially characterized by disturbance of the digestive organs. Often at the beginning there is some constipation, and almost always an impaired appetite. However produced, these ought to serve as

warnings, especially in seasons when the disease is raging. But unfortunately these warnings are too often disregarded and the individual goes on with his usual vocation, and what is worse, his usual diet. It is not simply the quality but the quantity as well of the food that very often disposes to attacks of cholera. The quantity being small, even bad quality of food may not be seriously injurious. As the most fertile cause of the disease we may mention the use, of course excessive, of raw, acid, or sub-acid fruits, of ripe fruits in a state of decomposition. In this country new rice is a very frequent predisposing, and sometimes exciting, cause of the disease, specially among the poorer classes. Next in order we should mention greasy food, ill-cooked food, fried food, food not sufficiently salted, or too much salted. Late hours, and excessive indulgence in alcoholic drinks, especially the fermented beverages, do very frequently predispose to the disease.

The treatment of the disease in the preliminary stage is perhaps the most difficult of all. On this treatment the subsequent character and course of the disease will in a great measure depend. We do not mean to say that the disease can in every instance altogether be averted; but our firm conviction is that it can be in a large number of cases, and that the mortality can be greatly lessened.

The cases are very few in which we have not been able to trace the disease to some influence over which the individual had control; and in the majority of instances we could detect some error in diet previous to the attack. We do not question the general nature of the cause which predisposes to cholera, but we doubt if in any instance the immediate exciting cause is not some deviation from the ordinary course of living. We draw attention to this fact from a belief of its importance. People should be made acquainted with the predisposing and exciting causes of the disease, in order that they may avoid those which can be avoided. Besides, in homœopathic treatment a knowledge of these causes is essential. In fact, the treatment of the preliminary stage should be chiefly directed to counteract their deleterious influence upon the constitution.

The first anxiety of the physician should, therefore, be to inquire into the previous history of the patient, in order to ascertain

the determining cause. This should never be neglected. The patient and his friends and relations will almost always tell us that nothing unusual has preceded the attack; and we may be charged with idle, if not impertinent curiosity, for making such minute inquiries. But we should be perfectly heedless of these remarks, and we should never be satisfied till we have succeeded in discovering the antecedent circumstances calculated to disturb the digestive functions or at least exhaust the nervous energies. Treatment directed according to these circumstances will be more successful.

The object of treatment in the preliminary stage is to counteract the general depression of the system and to remove the irritable condition of the digestive organs. The great drawback of the old school treatment of cholera, as in fact, of all disease, is that it does not attack the very seat of the disease; and consequently the drugs being used in massive doses produce other effects than simply removing the symptoms they are prescribed for. We can avoid this by a *judicious* homœopathic treatment. We say *judicious* advisedly, because our conviction is that even homœopathic treatment when not so will prove injurious. We submit, it is a mischievous error to think that homœopathic remedies do no harm if they do no good. Our experience has proved the very reverse. Indeed, common sense suggests that if potent for good when rightly administered, they must be potent for evil when wrongly administered; and so we find them to be. The injurious effects of homœopathic medicines often show themselves not merely in the shape of aggravations; but also in the development of other morbid conditions not present in the case. Hence we cannot too strongly deprecate what is called domestic physicking, when scientific medical aid is available.

In this stage the following remedies have been found useful:—

Aconitum, when there is nausea with sweat, at times preceding at times following the diarrhœa; when with the white stools there is red urine; when with a feeling as if only flatus were passing, there is unexpected discharge of thin fœces; when the diarrhœa consists of watery stools; when the stools are green, or black and very offensive, or clay-colored; when the stools and urine are involuntary. When the hypogastrium on being touched

feels painful and sensitive; when the weakness of the bowels has resulted from abuse of purgatives; when there is a sensation as of a warm liquid coming out of the anus. ACONITE is exceedingly useful when the alimentary irritation has culminated in acute congestion of the mucous membrane. Under ACONITE the moral symptoms are worth noting: there is excessive restlessness, anxiety, dread of some accident happening, fear of approaching death, disinclination for mental labor. Under ACONITE there is either great thirst, which is often unquenchable, or there is coolness and dryness of the mouth *without* thirst.

Arsenicum or **China**, when the disorder of the bowels can be traced to eating fruits. In both the painless stools are watery, profuse, and offensive. In both they may be corrosive. In both the aggravation is at night, in ARSENIC chiefly after midnight. We prefer ARSENIC when there is disturbance of the stomach as well as of the lower bowels, especially where there is burning of the stomach; when there is violent thirst, drinking often and small quantities at a time or large quantities; when there is aggravation from cold food, ice-water or ice-cream. We would prefer CHINA when with the stools the undigested foods make their appearance, and there is tympanites; when we have to suspect previous loss of vital fluids, such as semen or blood; when there is ringing in the ears. If along with the other symptoms there is *dread of Cholera*, ARSENICUM is the remedy.

Pulsatilla, when indulgence in fatty or greasy food has been the cause of the diarrhœa; when the diarrhœa has followed an attack of measles; when the diarrhœa is chiefly nocturnal; when the stools look like stirred eggs; when the stools are first green, then consist chiefly of mucus. PULS. is especially adapted for females and persons of effeminate nature and reserved disposition; with weeping mood, and actually weep when relating their symptoms. The irresistible desire for fresh air and thirstlessness are characteristics of PULSATILLA.

Nux vomica, when intemperate drinking with or without the use of rich food has preceded the attack, and when there is much acidity of the stomach, especially if the diarrhœa has followed a constipated condition of the bowels. NUX V. is useful in diarrhœa when it occurs early in the morning, and after dinner; when the stools are fœtid and a-bilious; when there is ineffectual urging to stool. It is adapted for persons of irritable disposition.

Phosphorus or **Phosphoric Acid**, when the disease has supervened upon a chronic, especially painless diarrhœa. We prefer **PHOSPHORUS** when there is a good deal of heat in the abdomen, or *coldness and a sense of coldness* therein; when there is oozing from the constantly open anus; again in the case of old people with fatty degeneration of the liver, and other important organs, we would give preference to **PHOS**. We should use **PHOSPHORIC ACID** when we have reason to suspect there has been much sexual intemperance preceding the attack. The **PHOS.** patient is lean and slender; the **PHOS. ACID** patient is the young person who has grown too rapidly. **PHOS.** has aggravation from lying on the *left* side, **PHOS. ACID** from lying on the *right*. Both have aggravation after eating, but **PHOS.** has aggravation from *warm* food.

Carbo. Veg., if the patient had been exposed to great or prolonged heat either of the sun or of the fire. It is very useful for cooks, blacksmiths, masons, and for all those whose occupation exposes them to the sun or the fire. Sometimes cholera is ushered in by hæmorrhage from the bowels; in these cases we have found **CARBO V.** eminently serviceable. **CARBO** is useful in diarrhœa associated with great development of flatulence. It is serviceable also when the stools are papæsent, profuse, and pink-colored, not quite bloody. It may be doubted whether cases presenting such symptoms are true cases of cholera, but their occurrence during epidemic visitations of cholera, and their other symptoms corresponding with those of cholera, can leave no doubt in the mind as to their real character. Reduction of the temperature of the body as manifested by the coldness of the surface, of the tongue, and even of the breath is a marked symptom of **CARBO V.**

Chamomilla or **Colocynth**, when the disease would seem to have arisen from fits of anger or chagrin or both. We would prefer **COLOC.** if anger and chagrin had been combined in producing the result. The **CHAMOMILLA** patient is never tired of complaining, he cannot cease talking about old vexatious things; whereas the **COLOCYNTH** patient is not inclined to talk though he may suffer the greatest vexation. Both have sour, corrosive, offensive watery stools; those of **CHAMOMILLA** are *hot*, those of **COLOCYNTH** are *frothy*. In **CHAM.** there is relief from the abdominal pains

after stool, whereas in **COLOCYNTH** the gripes and colic are worse after stool and are very severe, or are only temporarily relieved by it, not ceasing till a number have been passed.

Ipecacuenha, when the tongue is coated white, when there is continual nausea with or without vomiting, when the stomach still continues loaded with heavy indigestible food, when the diarrhœa is accompanied with pain, griping, tenesmus, and when the stools are grass-green or lemon-colored, or have the appearance of being fermented, or when they are fœtid or covered with bloody mucus. *Ipecac.* and *cham.* are especially serviceable in the choleric of children, the latter being particularly indicated when the diarrhœa is dependent upon teething.

Aloe and **Sulphur** are two remedies which have done excellent service in the preliminary stage. Both have early morning stool, the urging being so great as to drive one out of bed. Both have semi-liquid, and even watery stools, which are hot (scalding-hot in the case of **SULPH.**); in both undigested matter appear in the stools. The distinctive characteristics are: The stools of **ALOE** are *gushing*; involuntary when passing flatus or urine; the stool passes without his needing to make any exertion, it falls, as it were, out of the rectum. The stools of **SULPHUR** are *sour*; *corrosive*; involuntary when sudden, not when passing urine or flatus, but when only imagining that flatus was passing. Excoriation is a characteristic of **SULPHUR**, urine is excoriating, tears are excoriating. The diarrhœaic stools of **SULPHUR** are frothy which is not the case with **ALOE**. **SULPHUR** has prolapsus ani and recti during and after stool, a symptom wanting in **ALOE**.

Podophyllum is a precious remedy for the first stage, and when properly selected it has also averted the full development of the disease. It has, like **ALOE** and **SULPHUR**, hot, watery evacuations. It has diarrhœa, acute and chronic, early in the morning, which continues through the forenoon, after which it has a natural stool in the evening. It has, like **SULPHUR**, frothy stools, and prolapsi ani and recti, recent or chronic. It is suitable in cholera infantum, especially during dentition, thus vying with **CHAMOMILLA**. It has not only hot stools, but hot vomiting which will often differentiate it from other remedies, except **PHOSPHORUS**. It is generally characterized by thirstlessness, but may have

violent thirst. It acts better in cases where the former is the predominant symptom. It has cramps in the feet, legs (calves), and thighs.

Cantharis has been used with success even in this stage. Its range of applicability is of course very limited, but within this limit it acts marvellously. It has violent diarrhœa, with intolerable burning at the anus; the diarrhœic stools are frothy, watery, copious, corrosive. The appearance in the stools of shreds like scrapings of the intestines is a characteristic of **CANTHARIS**. If with this there is frequent, ineffectual desire to urinate, we have a good indication for the drug, and its selection in such cases has not disappointed. It has other symptoms which, as we shall see, eminently qualify it as a remedy in the stages of full development and of collapse.

Camphor, as we have seen, was recommended by Hahnemann in massive doses for the very first stage of cholera. What did he mean by this stage? Here we have his own words—“Where the cholera first appears it usually comes on in the commencement in its first stage (with tonic spasmodic character); the strength of the patient suddenly sinks, he cannot stand upright, his expression is altered, the eyes sunk in, the face bluish and icy cold, as also the hands, with coldness of the rest of the body; hopeless discouragement and anxiety, with dread of suffocation, is visible in his looks; half-stupified and insensible, he moans or cries in a hollow, hoarse tone of voice, without making any distinct complaints, except when asked; burning in the stomach and gullet, and cramp-like pain in the calves and other muscles; on touching the precordial region, he cries out; *he has no thirst, no sickness, no vomiting or purging*. In the first stage **CAMPHOR** gives rapid relief but the patient's friends must themselves employ it, as this stage soon ends either in death or in the second stage, which is more difficult to be cured, and *not* with **Camphor**.”

Unless we have Hahnemann's explanation, in his own words, of the frequent and large doses of **Camphor** recommended by him in the very first stage of cholera, we cannot know on what principle he made the recommendation, whether on the principle of similars or of contraries, even though we have Dr. Bradford's assurance that he did it on the latter principle. But whatever

doubt there may be on this point, so far as the pathogenetic action of Camphor is concerned, there can be no doubt that he recommended it also for its germicidal action, as the following extract from his *Appeal to Thinking Philanthropists respecting the Mode of Propagation of the Asiatic Cholera*, will show :—

“ If physicians would but take warning, and, rendered un-infectable by taking a few drops of camphorated spirit, approach (ever so quickly) the cholera patient, in order to treat him at the commencement of his sickening with this medicine (*pure, unadulterated camphorated spirit*) which alone is efficacious, and which most certainly destroys the miasm about the patient, by giving him, as I have taught, every five minutes one drop of it and in the interval assiduously rubbing him on the head, neck, chest, and abdomen with the same medicine poured into the hollow of the hand, until all his giddy faint powerlessness, his suffocative anxiety, and the icy-coldness of his body has disappeared, and given place to reviving animation, tranquillity of mind, and complete return of the vital warmth—if they would but do this, then every patient would not only be *infallibly* restored within a couple of hours (as the most undeniable facts and instances prove), but by the cure of the disease with pure camphor, they would at the same time eradicate and annihilate the miasm (that probably consists of innumerable, invisible living beings) in and about the patient, about themselves, even in the clothes, the linen, the bed of the patient (for these all would be penetrated by the vapour of the camphor if it were employed in this way), in the very furniture and walls of the apartment also, and they themselves (the physicians and nurses) would then carry off none of the contagious principle with them, and would no longer infect persons throughout the town.”

We have given this long extract in order to show that one of the positive reasons of Hahnemann's recommendation of Camphor was, as he states, its power of eradicating and annihilating the miasm of cholera which, he shrewdly suspects, “ probably consists of innumerable, invisible living beings.” How his penetrating genius anticipated the discoveries of modern bacteriologists! We have no doubt that if he had been living to this day, his large and comprehensive mind would have welcomed these discoveries and allowed them to have their due weight in modifying

some of his views on disease and its treatment. It is a pity that none of our bacteriologists have thought of determining the action of Camphor on the life of the microbe, especially of that of cholera. It is not too late yet to do it.

We have given Hahnemann's indications of Camphor in his own words, inasmuch as there has prevailed great diversity of opinion amongst his followers regarding the use and efficacy of the drug since his time. While some, such as Dr. Hempel, have gone so far as to altogether deny the homœopathicity of camphor to cholera in any stage; others, such as Dr. Rocco Rubini, of Naples, have gone as far in the opposite direction,—and this is far beyond the Master—as to assert that Camphor alone present the true *similimum* of cholera in all its stages. According to Dr. Rubini cholera is a disease of an exceedingly acute and evanescent character, and therefore must be met by a remedy whose action must be analogously powerful and evanescent, which, in his opinion, is no other than Camphor. We do not believe that cholera is in every case a very transient disease. Even when left to itself, it continues for many days and even many weeks, of course not in the shape in which it first manifests itself, but in the form of the sequelæ which it gives rise to. We do not question the accuracy of Dr. Rubini's statement, that of 592 cases treated with Camphor alone not one ended fatally. Dr. Rubini himself admits that he got to treat his own cases in the very first stage and that very few of the whole number were especially severe (in the Royal Alms-house only 15 in 200). This cannot justify the sweeping conclusion that all the stages of the disease will yield to Camphor. Hahnemann is more correct, though not quite so, in limiting the use of the drug to the stage when no sickness, no purging or vomiting have yet taken place. Diarrhœa, it is true, must be a very rare symptom of camphor; the *involuntary diarrhœa* noticed by Jahr must have been the effect of an extreme dose. Again the nausea and vomiting are not frequent effects of camphor; in all the reported cases of poisoning these do not figure at all. But these symptoms do now and then appear. I observed them lately in a child who had taken a large quantity of the drug. Two cases reported by Dr. Bhuban Mohan Sircar, in the *Calcutta Journal of Medicine* for April 1869, show that Camphor does produce decided cho-

leraic symptoms in young children, and, if in young children, why not in adults in suitable doses? From these facts it must be evident that Camphor *is* in homœopathic rapport to cholera.

At the time Hahnemann wrote his now famous directions for the treatment of cholera, the disease was perfectly unknown to him, it was looming in the far distant, he only knew of it from report, and his knowledge of Camphor was imperfect too. As far as his knowledge of the disease and of the drug went, his recommendations for its treatment bear the impress of genius, and unmistakably point to the truthfulness of the law of healing discovered by him. Used according to the indications pointed out by him, camphor will give "rapid relief," and patients will be restored to health, "as if by magic." But the use of Camphor need not be restricted to cases where purging and vomiting and even sickness have not yet commenced. If Hahnemann had been acquainted with the power of Camphor to produce copious rice-water stool and vomiting he would certainly not have made the restriction. With our knowledge of that capability we shall not be justified in following our Master to the very letter. Abundant experience has testified to the usefulness of Camphor in cholera when both stools and vomiting have commenced; and indeed the miasmatic theory of the genesis of the disease, whether the miasm consists in living germs as modern bacteriology would seem to show, or in deleterious gases as sometimes seem but too probable, does point to Camphor as the best remedy to begin with, preliminary to other remedies that may be required corresponding to symptoms developed in the subsequent course of the disease.

Camphor has been shown to be not equally efficacious in all epidemics. This only points to the multiple origin of the disease. Camphor should be desisted from when it invariably aggravates the existing vomiting or when it brings on vomiting after each dose, and when vomiting aggravates the collapse. In such cases a milder dose, such as a few globules moistened with the tincture or even with a dilution, 2nd or 3rd decimal, may be tried.

The homœopathic physician, when called upon to treat a case in which allopathic drugs have been fruitlessly employed, may preface his treatment by the exhibition of Camphor, as an antidote, but he should be content with a dose or two only.

(To be continued.)

EDITOR'S NOTES.

A Sweet Girl Multigraduate.

Miss Mary C. Lowell, M. D., of Boston, is said to be the only woman in the world who is entitled to practise the professions of medicine and law by virtue of the possession of degrees in those faculties. She was the first woman Assistant Superintendent of the Maine State Hospital for the Insane. After holding this position for five years she visited the hospitals of various European capitals. The love of study prompted her to elect a course in law, and it is said to be her intention to obtain two more degrees—Bachelor of Jurisprudence and Master in Chemistry.—*Brit. Med. Journ.*, Aug. 29, 1903.

Repeated Tubal Pregnancies.

COHN (*Zentralbl. f. Gynak.*, No. 29, 1903) gives a short but clear report of two clearly authentic cases of that condition. In the first a fetus $3\frac{1}{2}$ in. long was found in the peritoneum; its placenta lay in the ampulla of the left tube, which bore a laceration big enough to admit a finger; the funis hung out of it. It was reported that the right appendages were normal. Four years later a second operation was performed for ruptured tube; the fetus, $2\frac{1}{2}$ in. long, had been expelled with its placenta through a rent in the ampulla of the right tube. In the second case a fetal sac in the left tube was removed; it was noticed at the time that the right appendages were bound down by adhesions from which they were set free. One year and a-half later the patient underwent abdominal section for internal hæmorrhage with rise of temperature. An incomplete tubal abortion was discovered. The patient made a good recovery.—*Brit. Med. Journ.*, Aug. 15, 1903.

Scholarship and Medicine.

Professor Thorndyke, of Columbia university, New York, as we learn from the *Journal of the American Medical Association*, has traced the careers of 5,283 college graduates (1840-1900) who were elected to the Phi Beta Kappa, membership of which is a recognized mark of scholarship. His object was to learn whether any given profession is gaining or losing in attractiveness to the type of men represented by membership in this fraternity. In the first place Professor Thorndyke finds that there is a remarkable uniformity in the percentage of Phi Beta Kappa men entering the leading profes-

sions—namely, from 64 to 68 per cent. for 1840-1900. The percentages entering the various professions have, however, been far from constant; thus the number taking up law was nearly twice as large in 1890-4 as in 1840-60. There has also been considerable variation in the number that have taken up teaching as a profession. The Phi Beta Kappa man was "three times as likely to become a clergyman in the middle of the century as he is to-day." The ministry has lost steadily in its attractiveness to this kind of man, and this loss has been uniform throughout the United States. It is interesting to note that Professor Thorndyke's statistics show that medicine has not been a popular profession with what he calls scholarly graduates. From 1840-85 the percentage ran from 8 to 4; from 1885 to 1894 7.5 and 7 per cent. entered medicine. He suggests that the gain after 1885 is due to the advance of medicine to the dignity of a science, and to the introduction in the colleges of elective courses in science. Professor Thorndyke is moved by the facts which he has collected to make the following prediction: "The future will probably witness a steady gain in medicine, a slight gain in teaching, a rapid but unstable gain in law, and a continued decline in the ministry." At the present time law and teaching get the larger share of the scholarship of the United States, as represented by the careers chosen by the members of Phi Beta Kappa. Our contemporary, however, believes that the indications point to a steady increase in the number of scholarly men choosing medicine for the field of their life-work. In this country, while it is true that graduates of the older universities are entering the medical profession in larger numbers than before, we doubt whether men of a scholarly mind are greatly attached to medicine. It is certain that the old type of the scholarly physician is all but extinct. *Brit. Med. Journ.*, Aug. 29, 1903.,

The Results of the Surgical Treatment of Tumours of the Brain.

Professor M. Allen Starr of New York has published in the *Journal of Mental and Nervous Diseases* for July a valuable paper summarising the "results of the surgical treatment of tumours of the brain as practised during the past ten years and drawing the conclusions necessary for our future guidance in regard to diagnosis and treatment. In 1893 he was able to collect from literature 70 cases of tumour of the brain in which an operation had been undertaken. As a knowledge of the possibility of operation became more widespread, says Professor Starr, and the technique of the surgery

of the brain more perfect reports of such operations grew more frequent and it was possible to collect 365 cases up to Jan. 1st, 1903. The results of operation in these 365 cases are tabulated as follows:—

Results of operation.	Number of cases of cerebral tumour.	Number of cases of cerebellar tumour.
Tumour removed and patient recovered	152	16
Tumour removed and patient died ...	51	8
Tumour found but not removed	21	6
Tumour not found	91	20
Total	315	50

There are two elements which render the chances of success in the operation for tumours of the brain better at present than formerly. First the accuracy of diagnosis is more possible. Given a history of a slowly progressing sensation of cerebral discomfort, progressive emaciation and feebleness, and optic neuritis, and the only probable hypothesis is the existence of a tumour of the brain. Hence the diagnosis of the nature of the disease is not difficult. Secondly, the possibility of localising tumour has also become more definite within the last 20 years. The occurrence of such symptoms as aphasia, local spasm and hemiplegia, hemianopsia, cerebellar staggering, and mental disturbance would help to locate the tumour, while the absence of these localising symptoms would make it evident that the tumour was inaccessible. The use of electrical saws has during the past three years largely superseded the use of the trephine, gouge, and chisel, and access to the brain can now be obtained in from six to eight minutes after the incision through the scalp has been made. Usually, adds Professor Starr, the brain can be exposed within ten minutes of the time of the beginning of the operation, whereas in older methods from 18 to 25 minutes were often expended in this part of the operation. Moreover, excision of a tumour which may reach to a depth of one or two inches below the cerebral surface, is now freely attempted and performed, and he considers that the statistics of the next ten years will show a very much greater percentage of successes than do the statistics up to the present time. The operation for cerebellar tumours is attended with great difficulty and danger. The surface of the lateral cerebellar lobes accessible to the trephine or the saw is very rarely the seat of a cerebellar tumour. Such tumours lie either in the middle lobe of the cerebellum, directly beneath the tentorium,

a point which cannot be reached from the lower surface of the cerebellum, or else they lie in the sulci between the cerebellum and the pons and medulla oblongata upon the base of the brain, a point which is equally inaccessible. For this reason, concludes Professor Starr, failures are numerous in operations for cerebellar tumour, and after a considerable experience he concludes that it seems futile to attempt this operation. Occasionally a tumour may develop in one part of the brain and give rise to localising symptoms of a misleading character referable to another part of the brain. The local symptoms are therefore not infallible in their indication and this may occasionally be a cause of failure. Soft and infiltrating tumours such as gliomata are difficult to remove entirely, and this variety of tumour is liable to recur even if removed in part. The dangers of hæmorrhage and of meningitis are less dreaded to-day than formerly, proper asepsis preventing the latter complication in all cases.—*Lancet*, August 15, 1903.

Infants that Refuse Breast or bottle.

Le Gendre (*Comptes Rendus de la Soc. d'Obstét. de Gynéc. et de Péd. de Paris*, June, 1903) opened a discussion on infants born at term that cannot suckle. His own case was that of a child, aged four months. It was being successfully reared by artificial feeding, woman's milk being introduced into the stomach by means of a funnel and catheter. The mother was a primipara; she had an attack of measles during the pregnancy, but labour occurred at term and the child was externally well formed. As it would not take the mother's breast it was thought that the nipples were not long enough, so a wet nurse was tried, but without result. The bottle was absolutely refused. Then a few drops of milk were carefully poured on its tongue at the base, deglutition was then excited, but when any milk touched the tongue too near the edges or tip it ran out of the corners of the mouth. In short, the child could neither suckle, suck, nor drink. At four months it was fairly nourished. The anterior fontanelle was rather broad. The nerve centre for suction and voluntary deglutition was apparently ill-developed. Pinard reported a curious case where a very well-developed child began to refuse the breast when a fortnight old. A wet nurse with long nipples was then employed. At the end of a week the infant refused her. Pinard found that the reflex area for suction receded steadily from the tip towards the base. Nipples were made for the infant's bottle and had to be constructed longer and longer, till at last the longest did not excite suction and the child died with signs of hydrocephalus. The father had been under Fournier for syphilis five years before marriage.

The mother had not been treated by any drug during her pregnancy ; in later pregnancies she underwent antisyphilitic treatment, and gave birth to children that could take the breast. Lepage treated a neurotic primipara for diphtheria early in pregnancy. She gave birth at term to a child weighing 8 lbs. It was very well nourished, but would not take the breast, though the introduction of the finger into the mouth excited suction. It also refused a wet nurse. Suddenly, on the sixteenth day, the child took its mother's breast, and henceforth there was no further difficulty in rearing it. There was no history of syphilis.—*Brit. Med. Journ.*, Aug. 29, 1903.

Bradycardia in Health.

On looking up the subject of bradycardia in standard 'works' on cardiac diseases one is struck by two facts, the first being that some diversity of opinion obtains as to whether it is a comparatively common or a very rare affection and the second that great dissatisfaction exists with regard to the name itself, although it is blessed by the approval of the Joint Committee of the Royal College of Physicians of London, some preferring the term "brachycardia" and others insisting on a change of nomenclature to "araiocardia," oligocardia, &c. Osler affirms that bradycardia "depending on individual peculiarity is extremely rare," whereas Professor Clifford Allbutt states: "Of normal slow pulse we see many examples." The former view is supported by Dr. Frederick Taylor who states: "As a purely functional disturbance it (bradycardia) is extremely rare," and in "The Twentieth Century System of Medicine" by the statement that "permanent bradycardia implies, as a rule, organic disease usually of the nervous system of the heart," the inference being that permanent bradycardia without organic disease is rare. In Osler's view I think most general practitioners will concur and the writers of the smaller books on medicine support this opinion by the fact that they dismiss the subject in a few lines. Osler treats of the syndrome under two heads and speaks of physiological brachycardia, giving ten causes of the latter which may be briefly summarised as follows: (1) convalescence from the acute fevers; (2) diseases of the digestive tract; (3) diseases of the respiratory system; (4) cardiac disease; (5) disease of the genito-urinary tract; (6) toxic agents such as lead, alcohol, tobacco, digitalis, &c.; (7) anæmia; (8) disease of the central nervous system; (9) certain diseases of the skin; and (10) asthenia. Professor Clifford Allbutt's epigrammatic summary of our knowledge of the condition is worth quoting. He says: "Bradycardia is a superfine name to denote slow pulse; it connotes nothing."

In military practice, whereas tachycardia, or as the official nomenclature puts it, "273 Disordered Action of Heart (b)," is a very common disability amongst young soldiers, "Disordered Action of the Heart (a)"—to give bradycardia the name by which it is known in army medical statistics—is, in my experience, an extremely rare affection, so that a case which came under my care last year appears to be worthy of record, especially as it recalls the classical case of Napoleon, who is stated by Corvisart to have had a pulse of only 40 per minute.

The patient is a soldier, over 40 years of age, of medium height and exceptionally fine physique. He is a man who has led an extremely active life and has held many responsible positions. He is a good athlete and has lived carefully and abstemiously in a manner worthy of his military training. He came under my care complaining of præcordial pain of a transient character at long intervals. He was aware that his pulse was unusually slow as the fact had been commented on many years previously by a medical attendant. On examination I found the apex beat in the usual position and the areas of superficial and deep cardiac dulness perfectly normal. The cardiac sounds were absolutely clear over the various auscultatory points but the pulse was found to be only 45 per minute. Violent exercise sent the rate up to 50 or 55 per minute but it never exceeded the latter figure and rapidly fell to 50 or less after a brief rest. The lungs, liver, kidneys, and spleen were normal and there was not the slightest trace of organic nervous disease. The patient is a man of iron nerves, as may be gathered from the fact that he is a rifle shot of the first order and has won many prizes for shooting. He had suffered from occasional attacks of flatulent dyspepsia and it was to one of these attacks with its concomitant cardiac pain from distension of the diaphragm that I was indebted for an opportunity of observing a case of what I believe to be absolutely physiological bradycardia. I placed the patient on a careful dietary and a course of stomachic bitters with pepsine and the præcordial distress rapidly disappeared and, so far as I am aware, has not returned. He was under my immediate supervision for upwards of six months and I have heard from him at intervals since. The last Indian mail brought me a letter from him informing me that at the time of writing he was in excellent health and free from the præcordial discomfort but that the pulse-rate remains unaltered, so as the patient came under my observation nearly 18 months ago the condition may be safely considered to be permanent.

The case is, of course, not unique, as in addition to the case of Napoleon mentioned above, Roux, Sir William Broadbent and other observers have recorded somewhat similar ones, but it is, I think sufficiently uncommon, especially in military practice, to merit being placed on record.—*Lancet*, August 22, 1903.

CLINICAL RECORD.

Indian.

CASES OF PLAGUE.

By DR. D. N. RAY, M.D.

1. *A Case cured with Buboninum.*

I was urgently sent for to attend a case of high fever on the midnight of the 1st of March 1903. As a rule I do not attend night calls, so, I directed the party to go to Dr. J. N. Ghose, who lived close to my place, and take him to attend the case for the night. They did so. Early next morning a carriage with a messenger was sent for me to attend the same case. The patient was living at 33, Hogulkuria Lane, Goa Bagan, a place not far from my place, so I directly went there without attending the patients who were waiting at my office. On my arrival I noticed he was surrounded by a number of persons, who were all impatiently watching my arrival and were anxiously waiting for the diagnosis and prognosis of the case. The patient was a *Marwari*, a very strong looking fellow, dark and short, aged between 45 and 50. He was the owner of a flour-mill; in a part of which mill he was living at the time. He began to have fever the day before yesterday for which he took some allopathic drugs and was no better, rather at night the temperature went up to 105.5 F. and the patient became very uneasy and restless; this condition of his made his people very anxious and they without waiting till next morning at once sent for me in the middle of the night. The special cause of alarm was that there were several deaths from plague in that neighbourhood and that there was a patient in a moribund condition suffering from plague a few doors from his. He had several loose motions and vomited several times at night. The purging and vomiting were going on in the morning when I saw him. There was no urine in the night and none this morning. He was very restless; the expression of his countenance dictated that his sufferings were very great, his morning temperature that was taken before me was over 103.0 F. Pulse was fairly good. I gave all assurance of recovery to the patient but aside I told his relations that it was likely a case of abdominal variety of plague, consequently I could not give them a favourable prognosis. They were not quite unprepared to hear such thing from me. They knew it was not an easy case. He was given *Arsenicum 6* by Dr. Ghose at night; however, I changed the medicine and gave him *Pyrogenium 6*

especially for high temperature, restlessness, purging and vomiting. This was given every two hours. At 4-30 P.M. I was called again as there was no change for the better. He had six loose motions by 4 P.M. and vomited several times within that period. Over and above these, there was the appearance of hiccough occasionally. The restlessness was less, but it was due greatly to muscular exhaustion. The temperature was nearly 104.0 F. So, I did not think it was advisable to go on with *Pyrogenium* any more. I thought of two remedies—*Buboninum* and *Rhus tox.* In administering the former drug I was half hearted as I was not aware whether it would meet the abdominal symptoms of the patient: The medicine was given every three hours and he took only 3 doses of it during the night, and I was glad to see him considerably better the next morning. The report of the night was that he had no stool since taking the medicine; he perspired now and then and his temperature during the night fluctuated between 103 and 102 F. Passed urine several times at night, there was not much restlessness; slept off and on. This morning he was looking better. There was dryness of the mouth with no desire for water; temperature 100. The skin was moist. There was some difficulty in talking with a feeling of thickness of the tongue. I could not account for this peculiar symptom and the patient repeatedly asked me why his speech was embarrassed. I could not give him any satisfactory reply; all that I said was, you would get well. There was slight hiccough. I did not feel inclined to repeat *Buboninum* as I thought it had done its work. I gave him *Nux vom.* 30 one dose and no medicine unless the temperature went up. In the evening I called again, he had passed only one liquid stool, small quantity; hiccough now and then; the temperature was 100 during the whole day; slight thirst, not much restlessness, the difficulty of speech was also less, in fact, he was better in every respect except that he was very weak. He took some milk and barley to-day. My instruction was that *Buboninum* should be repeated if the temperature went above 103. The next morning the report was that the patient became restless with the rise of temperature and two doses of the medicine were given at night. This morning his temperature was almost normal; he was very much better. He complained of great weakness. This he got over gradually and made a good recovery. Was this really a case of plague? I would not have thought it was, had it not been for the prevalence of the disease in epidemic form at the time in the neighbourhood.

2. *A Case of Plague Cured by Rhus tox and Lachesis.*

The wife of a nephew of Babu Sham Lal Bose, a homœopathic practitioner of this city, a stout young lady, aged 19 or 20, mother of two living children, was taken ill with high fever and pain all over her body on Saturday the 3rd of May 1902. She was given *Belladonna* 30 on that day as she complained of severe headache. On the very day at night the temperature went up to 105 F and remained so till next morning when a big glandular swelling was observed on the left groin; this gave rise to a strong suspicion in the mind of the doctor that it was likely a case of plague as there were several cases of deaths from that disease in that locality, Kambulittolla lane, Sham Bazar. On Sunday the temperature instead of falling continued 105 the whole day and at night it rose to 106°. She was delirious the whole night and at times there was respiratory difficulty showing symptoms of failure of the heart. She was given *Belladonna* 30 and *Rhus tox* 6x alternately by Dr. Bose. On the morning of Monday she was not any better. The swelling in the groin increased to the size of a fist, the temperature was 104.5; there had been no urine or stool since yesterday; look was anxious, difficulty of respiration, semi-consciousness, excessive thirst, restlessness alternated with drowsiness. She was given *Baptisia* 3x in the early part of the day and *Arsenicum alb* 6 in the afternoon. In the evening I was sent for to see the case in consultation with the doctor. When I visited at 8 P.M., she was semi-conscious, respiration was hurried, could not answer to my questions correctly. There was acute pain on pressure over the inflamed glands, this was obvious by the jerk she made as soon as my hand touched the swollen part. The pulse was then soft and compressible and the look was wild and anxious. She had not passed any urine or stool since yesterday. The extremities showed a tendency to get cold; slight perspiration over the face and great restlessness. All these symptoms made me, without hesitation, to pronounce that the prognosis of the case was very unfavourable, so much so that I thought she would not survive the night and that it was without doubt a typical case of plague. There was not the least doubt that her life was in imminent danger. However I proposed to the doctor to give her *Rhus tox* 1x, one drop for a dose every hour until some relief was perceptible. He took my suggestion and it was administered. The medicine was continued hourly till 2 P.M. and her condition remained almost unchanged. At 2 A.M. with a copious urination she began to

feel easier and the temperature came down to 103 F. At 3-30 A.M. there was a further fall of temperature, it was then 102. This temperature was maintained till I called at 8 A.M. with the doctor. We were really surprised to see such a change in her condition for the better, but on my part I must say I could not understand what this quietness meant. Since the early morning hours she had not been so delirious, on the contrary when I saw her she was much quieter. The medicine was continued at an interval of every three hours, and diet was milk and soda water. At noon the report was that the temperature had a tendency to fall, it was 100.4 and there was some difficulty in breathing. This news made me very anxious again and the wandering thought came to my mind that she would soon succumb. I told the husband of the lady patient who came to me with the report that this respiratory difficulty and slight perspiration did not forebode well, and if the temperature further went down and the pulse showed tendency to failure, the case would terminate fatally. However, I suggested *Lachesis* 30, one or two doses to be tried first. If this failed to give any relief, recourse to be had to *Naja* or *Arsenicum* both in low potency but to my happy surprise the report in the evening was quite astonishing; after a dose of *Lachesis* 30, the difficulty of respiration passed away and she was very easy. The temperature remained stationary and she had been given no medicine since. I also advised the party to discontinue all medicine for the present, and that in case the temperature should go up, a dose of the same wonderful *Rhus tox* was to be given and the report of the case should be brought to me early the next morning if every thing would pass well at night. On the 7th the report was still more satisfactory. She had no occasion to take any medicine at night. She was quiet all night, slept off and on; this morning's temperature 99.4 and she was perfectly easy. I discontinued all medicine as there was no urgent symptom to call for any. The swelling of the groin was less painful and there was a slight reduction in size. Within a very short time she made a splendid recovery with complete disappearance of the swelling.

A CASE OF PLAGUE.

DR. HEM CHANDRA RAY CHAUDHURI, L.M.S.

*Babu P. Ray's baby aged about one year, was under the treatment of an old school practitioner for seven days, suffering from fever. I was called to see the child on the morning of the eighth day, the 24th March, 1903. On examination broncho-pneumonia

in the base of the left lung was detected. The history as far as could be gathered seemed to suggest that it was not a case of primary pneumonia. Probably the child was attacked only yesterday or the day before, as the difficulty of breathing was observed from the last evening. He was lying in a semi-unconscious state on the lap of his mother. There were occasional screams. Slight abdominal distension was also visible, though he was passing one ordinary stool almost every day. The countenance was hippocratic. His temperature was 103 F. The feature and the look of the patient at once suggested that it was a case of plague, the broncho-pneumonia being a secondary complication. I gave Ant. T. 6x gles., four doses every three hours, two globules at a time. In the evening, the temperature rose to 104. Ant. T. 6x gles., two more doses.

25th March. The temperature at 7-30 A.M., was 103.2. The crepitations seemed to have lost their dry character. They were rather moist and there was less difficulty of breathing than yesterday. Ant. T. 6x gles, four doses, one every four hours. In the evening the temperature was 104. Placebo gles.

26th March. Temperature at 7-30 A.M., 103.4. The crepitations changed to dry cracking sounds. Ipec. 6x. gles, 4 doses, one every 3 hours. In the evening the child was restless. The screams were rather increased. Temp. 105. Verat v. 1x gles., three doses, one every three hours.

27th March. Temp. at 7-30 A.M., 104. The screams almost disappeared. There were moist râles in the affected lung. The cause of the rise of temperature could not be ascertained. Vefat. v. 1x gles, three doses, one every three hours. Evening 104.6. Aco. 1x gles. and Bell 6x gles. alternately, two globules each time.

28th March. Temperature at 7-30 A.M., 104. No more screams. Large bubbling râles were distinctly audible. Sweat in covered parts. Chin. 1x gles., three doses, one every three hours. Evening temp. 102. Chin. 1x gles. two doses, one every three hours.

29th March. The countenance of the child seemed to look better than before. The half unconscious state has disappeared. Temp. 98.2. Hardly the râles could be heard. Evening temperature 98.6. Placebo gles.

30th March. Chin 1x. gles., thrice during the day.

31st March. The report was brought that he was doing well. Placebo gles., twice daily, for three days.

Remarks.

The case was evidently one of septicæmic plague in which broncho-

pneumonia was a secondary complication, which considerably heightened the danger. Verat. v. could check the screams, and was able to produce the moist rales, but no benefit was derived from it in reducing the temperature. Chin. lx gave the greatest benefit, indeed it saved the life of the child, notwithstanding the moist rales in the left lung. It should be said that the secondary pneumonic attacks are not without great danger.

Foreign.

THE SUCCESSFUL TREATMENT OF THORACIC ANEURYSMS BY LARGE DOSES OF IODIDE OF POTASSIUM.

By WILFRED R. KINGDON, M.B., B.S. Durh.

In the treatment of internal aneurysms with iodide of potassium I think that failure often results from the physician hesitating to give a sufficiently large dose, especially should symptoms of iodism manifest themselves. Within the last few years I have had several cases and as all have had a happy termination after the employment of unusually large doses of iodide of potassium I propose to give a short record of two or three of them.

The *first* case was that of a man, aged 23 years, who used to cycle to excess and to indulge in other violent forms of physical exercise. He came to me with a painful, pulsating tumour at the root of the neck, just above the suprasternal notch. A very loud bruit could be heard and there was little difficulty about the diagnosis. He was kept in bed and placed on the "Tufnell" diet. Iodide of potassium with various anodynes was given in gradually increasing doses until the patient was taking 70 grains three times daily and then, and not until then, a marked improvement began to be noticed. After three months he got up and a week later was walking quietly about with no pain and very little of the swelling in the suprasternal notch. He went to the seaside and two months later when he returned to his business in the city he was looking well, there was no swelling, and I could hear no bruit.

The *second* case was of a similar nature. The patient was a man who had engaged in violent physical training and presented on examination a painful pulsating tumour in just the same situation, though the bruit was not so easily heard; but evidently in this case as in the former, the aneurysm was sacculated and was not an enlargement of the whole circumference of the aorta. He was kept in bed on the same strict diet and was given iodide of potassium in

increasing doses with at times aperients and anodynes and on one occasion arsenic. When the doses of iodide of potassium had reached 75 grains three times daily a marked improvement commenced and this was kept up for 14 weeks. At the expiration of this period he got up and shortly afterwards went into the country. I saw him some months later and he expressed himself as feeling exceedingly well and thought that he could do a little "training" again, which, however, I strongly advised him against.

The *third* and last case which I propose to describe was the worst and looked for some time almost hopeless. The patient was a man, aged 23 years, who had undoubtedly been suffering for a considerable time and had received various kinds of treatment in accordance with the different diagnoses which had been made. He had been accustomed to play the cornet almost every evening and to this, as the immediate cause, I attributed his trouble. It was six years before I saw him that he first began to be troubled with pain on the left side of his chest which he stated was at times so severe as to produce actual vomiting; at other times it was of a dull, aching nature, and increased on taking a deep inspiration. After enduring these pains for four months he consulted a medical man who treated the condition as one of rheumatism. After continuing in this state for about a year, the pains troubling him on and off, he noticed a swelling on the left side of his chest near the clavicle. Becoming gradually worse, he consulted several other medical men, two of whom applied iodine externally, while the last said that nothing could be done for him. He first consulted me on March 6th, 1901, when I prescribed lead-and-opium lotion to be applied over the swelling which was situated in the second left intercostal space. On March 19th I placed him on iodide of potassium with some other ingredients of a simple nature. He seemed to have slightly improved, for I lost sight of him and he went on playing the cornet up to December, 1901. In January, 1902, he had, however, become so ill that when he sent for me on the 11th I found him in bed and in a most serious condition, the tumour protruding about an inch and a quarter from the anterior wall of the chest and pulsating strongly. It was expansile and a bruit was audible. I at once prescribed a restricted diet, aperients, and iodide of potassium with anodynes and depressants. Some weeks later Sir William Broadbent saw him in consultation with me and thought it best to continue with the same treatment. After he had been in bed for eight weeks Sir William J. Collins saw him with me and was of opinion that he had better try another eight weeks of the same

treatment. Sir William Broadbent did not advise a larger dose of iodide of potassium than 60 grains. About the ninth week I increased the dose to 70 grains three times a day and one evening the patient became so ill that I was sent for hurriedly and Dr. F. Edridge-Green who accompanied me on this visit, remarked that he would not give much for the patient's life. The thin part of the anterior wall where the skin was tightly stretched had given way slightly and a considerable quantity of blood had escaped, which, however, ceased as the pressure became lower. Up to then, be it noticed, there was little or no indication of any improvement and I thereupon increased the iodide of potassium to 80 grains three times daily, the low diet, absolute rest, and scarcely any drink at all being still maintained. After taking 240 grains daily for a few weeks the patient made very excellent progress; in about seven weeks from the date of the hæmorrhage he was out of bed and in about three weeks more he was at the seaside. I have seen him within the last few weeks and he is looking exceedingly well; he goes to business and leads a quiet life without much inconvenience. Beyond a few spots on his legs and two on his forehead he betrayed no signs of iodism and I cannot help remembering the words of one of my old teachers, who is unfortunately no longer among us, that if iodism showed itself the proper course was to double the dose.

I think that most physicians hesitate to give iodide of potassium in doses of more than 60 grains, but the point which I wish to insist on is that little result is obtained in bad cases until the dose is over 60 grains. I have not as yet, however, given more than 240 grains per diem to any patient.—*Lancet*, August 22, 1903.

Excerpts from Contemporary Literature.**ADDRESS ON THE DEVELOPMENT OF INSANITY IN
REGARD TO CIVILISATION.**

*Delivered at the Annual Meeting of the British Medical Association
at Swansea, July, 1903.*

By ROBERT JONES, M.D., B.S., M.R.C.P. Lond., F.R.C.S. Eng.,

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ASYLUM, CLAYBURY.

GENTLEMEN,—The object of this address is to demonstrate that with the progress of civilisation mental breakdown becomes more serious and more frequent and the varieties of insanity are more chronic and less curable than in the early days of a century ago, when life was simple and men were more content. It is a universal law that the most highly integrated functions of vital organisms are the most apt to suffer derangement.

The human mind—the most highly evolved process in relation to matter—has from the earliest times been subject to some obscuration or disintegration, but the cure and care of the insane, now so much in the “ambient air,” was hardly known as a subject of serious study 100 years ago. The last century has been the most marked of any of its predecessors in regard to the material, mental, and moral progress of mankind and a short review of this progress with some lessons to be learnt from it cannot but be a matter of much interest to practical persons. Over many of us the history, the traditions, and the personal narratives of the past cannot but exercise a potent spell. We can learn from our failures as well as from our successes and these failures may possibly convey to us some notes of warning and act towards us as beacons and signals of danger. As, however, “hope springs eternal in the human breast” and our faith and aspirations are ever forward and to the future, some hopeful prophecy might be expected as to the alleviation, if not the prevention, of mental derangement; but will the lesson of our retrospect justify this anticipation?

The sum-total of the physical, moral, social, and religious energy which has caused our progress during the past century has been unparalleled in the history of man, but action and reaction are always equal and contrary and we shall find that our advance has not been without sacrifices—losses here and retrogression there—and that civilisation itself has not been an unmixed blessing, for in the struggle which has marked our advancement the conflict between intelligence and ignorance has resulted not solely in pure reason and limpid wisdom, but the path of progress has been freely strewn with mental wreckage and physical degeneration.

In the whole range of medical science insanity is, perhaps, of all others the most painfully interesting subject. It is the debatable land of the imagination which presents many subordinate varieties of its wanderings—the dream of the poet, the fable of the mythologist, and the fiction of

the romancer being woven with its threads. Insanity, in the excursions of mania with its varieties, its fancied consciousness of unlimited power, its self-satisfaction—that abundant source of mental delight—bestows upon its victims feelings of bliss much more exalted than fall to the lot of sober reason, but insanity in the self-condemnation and misery of melancholia inflicts far severer pangs upon its victims than can be produced by the most extraordinary anxiety and the most acute bodily pains. What are the consequences of insanity? It means in the first place a deprivation of liberty, perhaps a life-long maintenance upon the public purse—already heavily overburdened—a maintenance including housing, clothing, and food which tends each year to rise in cost. In addition to this useless life or living death, a stigma probably attaches to those who are related to, and are dependent upon, the sufferer, by which they are made to feel the curtailment, of the necessaries of life, increasing the liability to a similar breakdown in themselves. Surely, if the possession of reason be the proud attribute of humanity may not such a disease of the reason as insanity be ranked as the greatest affliction and is one not forced to make the study of such a disease which touches society, involves the law and defies medicine, one of deliberate and anxious thought?

What it is that characterises insanity? It is not the presence alone of delusions or hallucinations. There are many persons in daily life who fulfil all their duties and obligations to society and themselves and yet suffer from hallucinations. Insanity, although a perversion of mental functions, is not exclusively an intellectual disorder, for persons gifted with high intelligence may fail to respond to ordinary motives and become so defective in their habits as to be socially unfit to mix in the world. Again, the distribution of mental faculties may be so uneven and mental endowment may be so unbalanced that their possessors are unfit to be at large. There are many persons who are properly incarcerated in asylums, in whom there are merely exaggerations of normal tendencies, fluctuations of the mental faculties which may be described only as excessive or beyond normal limits and which render these persons unstable, untrustworthy, and even dangerous, yet in whom there is hardly, if any, loss of mind. It is only too well known that there are imperceptible gradations as well as abrupt transitions between health—which is the easy, harmonious, and unconscious performance of the organic functions—and disease. Health of mind, like health of body, is a somewhat indefinite expression.

I shall exclude from the subject of this paper senile forms of insanity, the mental decay of involution which results in more or less normal loss of mind, as also the primary defects of idiocy and imbecility which are pathological variations not entirely dependent upon individual stress and which exist in all grades of society and all states of civilisation.

So far as any trustworthy information is to be had it appears that insanity increases as man departs from the savage and semi-civilised states and approaches the highest civilisation. In primitive states of society and among uncivilised races insanity is rare, the pure psychoses

are unknown, the chief forms—apart from the low grades, idiocy and imbecility—being associated with the taking of drugs and correspond to the insanities of civilisation resulting from alcohol, ether, cocaine, morphia, &c. and which in the main are curable. Insanities which end in dementia are rare and dementia itself is uncommon, and it is only when we come to higher civilisation that the higher forms of insanity are seen. Diseases, like the physical causes which produce them, have their evolution, their cycles, and their day, and I shall proceed to demonstrate that the progress of mankind has caused a more or less complete change in the type of insanity such as now comes under treatment. As to the causes of insanity, the actual and proximate exciting causes will always be stress of some kind acting upon an organism predisposed to break down, the great predisposition being determined by heredity and by the social environment of the individual, for we know that social relations and obligations constitute the preponderant factor in any mental life. As to heredity we need say no more than that an inherited instability of organisation makes itself evident in the present day more than in any previous period at the physiological crises of life, a hereditary tendency being responsible for more than one-third of all occurring insanity. The tendency of recent years to look upon insanity more as the result of bodily than mental causes is no new view. Haslam, in the early part of last century, classified the causes of insanity and insisted that the disease was never purely mental—that, on the other hand, positive bodily conditions were the causes and that insanity was structural and active in its origin. Earlier writers, however, laid great stress upon a disturbance of the emotions as a cause of insanity, sudden violent affections or the habitual indulgence of any passion whatsoever being looked upon as definite exciting causes. Those whose professions required the exercise of the imagination and the indulgence of the passion such as the *personnel* of the drama, were said to be peculiarly liable to insanity, but probably some physical factor, such as a dissolute and irregular life was concerned in causation. Fright, anger, religious terror, grief, ungratified desire, and disappointed pride were specially referred to by those earlier writers as definite causes of insanity. It was pointed out by Pinel that 30 per cent. of all his cases were due to domestic bereavement, 26 per cent. to the events of the Revolution, and 22 per cent. to fanaticism and disappointment in love. It is also an interesting record by Charles Booth that the anxieties and uncertainties of professional life are responsible for the largest proportion of insanity which this class of all others shows. He also points out that loss of trade affecting bodily health is responsible for causing insanity, and that provided wages are regular although low and there is no nervous strain, there is little tendency to insanity.

As to civilisation, this means progress and it implies a development from the simple to the more complex. When the conditions of life become more specialised the nervous system of man has to react to more

stimuli ; not only are these more numerous but they are more complicated. For each stage of civilised life a special standard is fixed ; the more perfect and the higher the standard the more culture and knowledge are attained and better results obtain in consequence. Highly civilised man thus lives in a more complicated environment, which calls for the higher forms of self-control and more prolonged and varied efforts than are customarily aroused by the simple emotions and the elementary sensorial stimuli of a primitive life. In these efforts numbers of unfortunate ones will not succeed, they are incapable of elevation to this higher plane of civilisation owing to mental, physical, and moral deficiencies. Not having the qualities essential to success they are left behind, evolution proceeding at the expense of the less fit—those, in fact, whom civilisation itself in the struggle renders unfit for the standard it has itself fixed. It is thus seen that civilised society, in forcing the pace, practically manufactures its own unfit—viz., its own paupers, its own lunatics, and its own criminals. London alone in this respect is responsible for the production of over 70 insane persons per week and this number is destined unrelentingly to increase. The only neutralising agency is the fact that sterilisation follows in the wake of three or four generations of town-bred people—a natural law which insures that the unfit shall cease to cumber the earth. Not that civilised life, properly developed, tends in itself to cause insanity, but by implying a more complex mental structure with more delicate parts and nicer construction, this mental machine is more liable to faults of mechanism and varieties of derangement than is the case with the simpler and more vacant minds of primitive people. In cities where the population has to accommodate itself to the pressure of competition the tension of mind is more continuous. There is an increased inhibition from pent-up mental energies which in a primitive life find a ready exit through muscular actions. In cities also artificial desires multiply, unhealthy activities are created, and ambition further forces the overworked brain, which, sooner or later, results probably, in its complete breakdown. The wants of modern civilised life are many and are rarely gratified, the eager hand reaches to grasp the prize which is plucked away by some other of the numerous competitors, and bitter disappointment is added to the nervous strain and mental overwork. It is doubtful, however, if mental labour alone is ever an actual cause of insanity, for habitual application of the mind, when not excessive, strengthens it and renders it less liable to disease. Dr. F. W. Mott has shown that the best and most exact nervous reaction takes place when the nerve circle is complete and in a state of healthy tonus or strain. There is no doubt that fatigue is unfavourable to good mental work and by experience we know that fatigue is caused by intense thought. Böerhave said that unremitting mental attention to a single subject for a whole day once kept him for six weeks without sleep. Bodily fatigue we also know to be demonstrably injurious to thought, for Kraepelin has shown that muscular exhaustion weakens brain power in definite curves

and ratiōs.* It is not overwork, however, so much as worry and anxiety which cause insanity. Civilisation, as we all know, brings in its train different effects to different groups of people. To the idle rich it brings sensuous luxuries of all kinds which account for the insanity of those in easy circumstances who are prone to much self-indulgence, who pay over-much attention to personal longings and sensations, and who have too little occupation or whose occupation is irrational and unhealthy. To the poor—the stratum in society which is most prone to insanity—who are at the mercy of every economic fluctuation, it brings lack of proper nutrition, overcrowding with unsuitable hygienic and moral surroundings, and all the other evils and abominations caused by the massing of people in large cities, such as alcoholic and other indulgences, poverty, and crime, the latter an evil worse than poverty and which bears a very intimate relation to insanity—the instinctive criminal and the morally insane being considered to be identical individuals, characterised by the same psychical and physical stigmata of degeneration. As to overcrowding an immense number of poor people live in small and badly ventilated apartments with filth and squalor in their mean streets and dwellings. Their food is often deficient in quality and quantity, which predisposes them to physical and mental disease. How can vegetables, fish, and milk be fresh and digestible by the time these reach the poor of London where even the cooking for this class is stated on good authority to be worse than in the country. Surely the plainest food with health under a hedgerow must be better than such semi-starvation with the glamour of the city. Overcrowding leads to many and various miseries and personal discomforts which are humiliating and demoralising to the grown up and are a source of moral contamination to their descendants in whom they cause mental and bodily degeneration. All the year round these dwellers of the city are at a disadvantage compared to the country folk. In winter they suffer from cold, want of food and clothing, and in summer they endure a debilitating atmosphere from the reeking odours of dirt, decomposing garbage, and noisome refuse. The disposal of refuse, the sterilisation of milk, the detection of adulterations, and the provision of pure water are great problems which big cities have ever before them. London, probably the healthiest of these, breeds her legions of anæmic, hydrocephalic, and unhealthy children from the want of pure air and radiant light. Crowds of people have their happiness stifled by their environment in our great cities, with the result that they seek to drown their misery and depression in the effects of alcohol. This sedative taken to lull and to veil the little worries, the small pains, and the general mental disturbance of whole classes is the cause of at least a fifth of all insanity occurring in males and more than half this proportion in women—the proportions are probably much higher—and call loudly for definite action and treatment. Such indulgence leads to other sensuous excesses which are all deleterious to nervous centres. There is no doubt that London and, *a fortiori*, other towns produce in the present day a tension of the nervous system as baneful as it is unnatural. One has only to look at

the living maelstrom which pours into airless and sunless London offices, workshops, and factories every day from the suburbs to see the strained, eager, earnest, and inwardly preoccupied people who are compelled to sacrifice their health and overstrung nerves in the cause of "civilisation."

Let us briefly contrast the state of civilisation a century ago with what it is to-day and see for ourselves the reason why the stream of progress has been strewn with physical and mental wreckage. Beginning with education the great mass of the people was entirely without it. At Queen Victoria's accession 44 per cent. of the community were unable to read and to write or even to sign their names. Now this proportion is less than 6 per cent. Another great change within the past century has been the migration of the population from rural districts into towns, which has been caused in the main by our present system of education.

In the first year of the reign of Queen Victoria sufficient wheat was grown in the land to feed the people for 11 months in each year, now there is only enough grown to provide the population for two and a half months. Further-more, the cultivation of the potato—a measure of industrial as well as of arable progress—is declining in this country, where it is only 38 acres per 10,000 persons, as against 161 in Germany and 98 in France. In the year 1800 more persons lived in the country than in the towns, in 1841 the urban total was one half of the whole population, and in 1891 the urban constituted 77 per cent. of the whole population. Such a system of education which drives each year 80,000 persons from the country into the towns and, as Mr. Rider Haggard states, leaves the land without labourers and ploughmen, and which yet causes millions a year to be paid away to the little culturists of the continent for fruit and eggs and over half a million for onions alone, which can so well be grown in this country, is evidently unsuited for rural districts. Not until each local authority can determine what should be taught in each district, as foreshadowed in the new Bill, can any improvement take place. The present system of education is too rigid and the hard-and-fast curriculum of cramming should give way to a minimum of bookwork and a maximum of outdoor instruction so as to train the eye to observe and the hand to work. Shelley's diatribes against the selfish oppression of the people by the landowners and others were doubtless fully justified, but it is a question whether the political franchise has not extended power into the hands of masses of people who are incompetent to grasp issues involving great risks. What is now the condition of the villages, the looms of which were once in active work and where the handicraftsman once throve in patient contentment, feeling joy and pleasure at the performance of work done as well as it could be done? These handicraftsmen have now left for the towns, where they work in small, hot, and ill-ventilated shops and are at the mercy of every trade fluctuation, the curse of drink following on the heels of their uncertain occupations.

Perhaps in no department of human activity has progress been more marked than in that of communication. In the early part of the last

century it cost 1s. 4d. to send a letter 60 miles, and in 1837, when the penny post was established, four letters were sent by each person annually, whereas now 100 letters and two telegrams are sent and a staff of 160,000 is employed exclusively in this department. In 1830 the only railway was from Liverpool to Manchester and at the late Queen's accession in 1837 there were only 110 miles of railway which were opened in spite of prolonged and strenuous opposition. Although steam was used on the Hudson in 1807 it was not until the second year of the reign of Queen Victoria that it was used to cross the Atlantic. A century ago there were no telephones or telegrams, no steam, and no electricity. Means of communication were rude and costly and only the well-to-do could travel, roads were bad, and tolls and turnpikes were frequent. The stage coach was the only conveyance for the many, but life in the open air tended to chivalry and to courtesy. Our ancestors read less than we do, but their reading was of a more solid and enduring character than is ours. The scarcity of books and the comparative paucity of journals induced readers to master what they read, with the result that they absorbed real nourishing intellectual food. A superficial attention to an ill-digested course of reading dulls and benumbs the intellect. I have had not one but several youths whose insanity was distinctly traceable to the injurious tone of the literature which they indulged in. It is also stated, by those best qualified to give an opinion, that this steeping of our youth in the prurient, exciting, and unreal literature of to-day—a literature that crowns even vice and crime with an illusory halo of glory—has been the principal cause of neglected domestic duties, unhappy homes, and a large percentage of crime, as is frequently testified in the summing up of our magistrates.

The emancipation of women from unfair and unjust disabilities and the larger measure of education and freedom granted to women have especially marked the last century; but it is a serious assertion that they look with complacency upon the conjunction of an increased marriage-rate and a diminishing birth-rate. It is believed that the idle women of the upper classes (who are more self-indulgent than ever before) regard the immorality of the average man with less aversion and that they bewail the injustice of visiting condign social ostracism and punishments upon women for similar delinquencies. Further, the revolt against domestic service among the lower classes is also to a great measure a reflection of the love of pleasure in high places.

I do not deny that vast improvements have taken place in the social condition of the people in the past century. But what have been the physical and psychical effects of progress upon the nation? In spite of the progress in sanitation—the science of preventive medicine—which concerns the great tripod of life—food, air, and water—and which now forms one of the most important departments of medical education—a science which in the late reign has caused £150,000,000 to be spent in providing pure water alone, which has directed special attention to temperance, to the reduction of mortality (the rate of which has declined from 1 to 23 in 1685

to 1 to 40 in the middle of the century, and at the present day to 1 to 55), and especially to infant mortality, calculated by the proportion of deaths under one year of age to 1000 births, which, according to the Registrar-General's information, was yet higher in 1902 than 1881, and to the protection of adult and child life by special statutes, yet I say that in spite of all these facts the physique of the nation has deteriorated, the deaths from cancer and nervous diseases have absolutely increased, as may be seen from Table I.

TABLE I.—*Showing the Annual Death-rate per 1,000,000 Persons.*

	1861-65.	1886-90.
Cancer... ..	367.8	599.7
Nervous diseases	1546.0	1785.3

Furthermore, out of 1000 consecutive male cases admitted into Claybury Asylum 143 were between the ages of 15 and 25 years inclusive, and these are typical of their class. Table II. gives the actual physique of these 143 persons in weight and height at the respective age period, compared with the averages in the general population at the same ages.

TABLE II.—*Giving the Physique of 143 Persons admitted into Claybury Asylum in Weight and Height at different Age Periods, compared with the Average General Population at the same Ages.*

Number of patients.	Admitted at the age of—	Average height of patients.	Healthy standard of height according to age.	Average weight of patients.	Healthy standard of weight according to age.
		Inches.	Inches.	Pounds.	Pounds.
1	15	56	61	64	103
6	16	61	63	109	117
4	17	64	65½	117	130
12	18	65	65½	120	142
16	19	64	65½	122	139
13	20	65	65½	123	138
22	21	66	66	130	145
17	22	64	66½	130	141
16	23	66	66½	128	145
20	24	66	66½	132	145
16	25	64	66½	127	144

Does not the above point to a physical degeneration in certain strata among a large number of the population for which some cause should be found? I know it is asserted that the growth of the upper classes has increased, but where is the proof of this? Talbot and Kingsley have recently called special attention to the contracted jaws and the poor teeth of town-bred persons, and the attention recently called by the Royal Commissioners on Teaching in Scotland, by the report of the Inspector-General of Recruiting who states that one out of every three persons brought up by the recruiting sergeant is rejected, by the special report of the Director-General of the Army Medical Department, by Sir Lauder Brunton and many others,

deserves most careful inquiry and investigation. It is stated that there are at the present day more feeble-minded among the children of the metropolis in proportion to the population than ever existed before, and it is computed that there is one such for every 180 healthy children who requires special educational care and training. Not only is there thus a lowering of physique among town-bred people, but their mental condition is also affected and some remedies should be pointed out towards the more efficient progress of our present system of civilisation.

The cult of athleticism which has become the absorbing passion of Englishmen, old and young, must be looked upon as, on the whole, a corrective of neurotic heredity, but it is not certain whether excessive exercise does not lead to overstrain of the circulatory system for which future generations may have to pay heavy penalties. Already cardiac diseases unknown in the last century are calling for special methods and institutions and their treatment and cure. The seriousness of high arterial tension is being discussed on all sides and tonics in the form of phosphorus, arsenic, and strychnia are much more common, as also are cardiac sedatives. In Germany much attention is paid to suitable open-air play places exclusively for children and teachers are appointed to play with them. There is no doubt that physical culture is one of the greatest needs for our young people of to-day. I can speak in high praise of Swedish drill as a successful addition to the treatment of the insane. Its use has been very beneficial in the experience of my colleagues and myself at Claybury. It is a system which connects mental and muscular processes, engages the attention, and insures a more precise and ready reaction to outward stimuli.

What have been the psychical effects of "civilisation"? As regards education the present system has doubtless raised the general intelligence of the community, but it has destroyed individuality, it does not train the eye to see, the hand to work, or the imagination to create. Few men of the first rank now rise from the masses. It is also said by those who know that respect for personal qualities has disappeared and has given place to respect for the longest purse. This adoration of the millionaire demonstrates the craving for luxury and the means to obtain pleasure and it permeates every rank of society. Men now think they have a right to gratify every passion irrespectively of the misery this may involve to those dependent upon them. The question is whether the pendulum has not swung dangerously far in the direction of toleration and whether liberty has not degenerated into licence. Already there are not wanting signs that legislation is being called for to deal with prodigals, spendthrifts, and persons guilty of gross self-indulgence. There is no doubt that to-day altruism has lessened and individual selfishness has greatly increased. Our hospitals languish for lack of funds, charity has never been doled with less liberality, and our great universities—the pride of our country in the Middle Ages—make futile appeals for support. Benevolence, as in past centuries, does not in our day found great institutions for charity, education, and religious devotion. Further, the judicial statistics (1903) show

that certain kinds of law-breaking are on the increase, there are more divorces than ever among the upper classes, and the petitions for dissolution of marriages in 1901—the last year reported upon—were higher than in any previous year. Orders made by the Summary Court for judicial separation have increased by 31 per cent. It is only too apparent that there is less general heed paid to marital constancy and the laxity of morals among the “smart set” of women cannot but exercise a baneful influence upon the future morals of this country. Commercial morality has declined, for crimes of embezzlement and betrayal of trust on the part of trustees, managers, secretaries, clerks, and the like, have shown a decided tendency to increase. There is a dearth of sincerity and of men who “run dead straight.”

As to the sharp differentiation and subdivisions of workmen into groups, pointed out by Charles Booth, is it now certain that these groups do not hurry to get through their tasks so as to “enjoy themselves” in some banal and senseless amusement and that their work is performed indifferently and without pleasure in contrast to the individual attention from the workmen of former days, who, as stated, showed their joy in work well done? It must not be asserted that when wages are high the people are contented. The reverse is often the case and it would be true to say that there has never been an age more discontented than the present. Socialism, that feeling of the body politic in the aggregate which levels down rather than up and which provides for the many at the expense of the few, tends to the extinction of individual enterprise of every kind. It tolerates, if it does not sanction and encourage, the present state of nearly one-fourth of the wage-earning population who are reported to exist at rates of wages just above starvation and who never rise with, or participate in, the country's prosperity. This socialism is favoured, if not determined, by the fact that the preponderating vote of the elective body decides the policy of the elected body. Under this system, among other developments, a vast amount of municipal indebtedness has been incurred and so serious is this that the president of the Incorporated Association of Municipal and Country Engineers (Mr. Weaver) recently called attention to the increase of 216 per cent. in local indebtedness which has taken place during the last quarter of a century and which, to prevent municipal bankruptcy, can only result in the nationalisation of municipal loans. The spirit of chivalry and courtesy already referred to has certainly all but disappeared. The difficulties of travelling in past days made women much more dependent upon men than they are to-day, for travellers in their hurry and scurry to “catch the tube” have no time for courtesies and no occasion for gallantry. On the other hand, women being more free are more addicted to pleasure than they ever were before and they find this in the excitement of gambling, for they have become more the companions of men in sports and pastimes. It is also certain that the women of to-day drink more alcohol than formerly and to a great extent secretly. As to the general

question of alcohol, the subject will be dealt with fully in the debates of the section and I shall not further allude to it here.

From what has already been said—and we are much indebted to Mr. James Stanley Little for his records—it is seen that high pressure and a subdivision of labour have evolved a very complicated mental mechanism with every possible liability, therefore, of getting out of order, which has resulted in the appearance of a large variety of mental diseases unknown to the older physicians. We shall see the import of this in our comparison of the diseases of to-day with those of 100 years ago.

It is interesting to note that the first serious legal enactments in our country respecting the care of the insane do not date back farther than the second or third year of the reign of William IV. By the courtesy of the Commissioners in Lunacy I am informed that some statistics date as far back as the reign of Edward II. Possibly the mental infirmity of King George III. gave an impetus to the more enlightened modern treatment of mental diseases which, until about this period, was not only a reproach but also highly reprehensible. Before this reign we have no noteworthy records of asylums other than Bethlem. St. Luke's Hospital had been opened less than ten years, but from 1762 to 1822 we have valuable contributions in regard to mental diseases from Cox of Fishponds, Arnold of Leicester, and Haslam of Bethlem Hospital—an institution in which the skilful and kindly treatment of mental diseases was then, as now, an honour to our land. About the year 1793 we have the work of that great champion of the rights of the insane—viz., Pinel of the Bicêtre translated into English by Davis of Sheffield, a philosopher, a scholar, and a physician. Haslam was the first to describe general paralysis of the insane, a disease which is probably the most highly evolved form of mental breakdown, and the opposite pole to the primary defects of idiocy and imbecility. General paralysis was then rare, but now is so common that Dr. T. S. Clouston, in his last report of Morningside Asylum, considers it to be in the proportion of 21·7 per cent. for male admissions and 6·7 for female admissions as against 17·3 males and 3·3 females for the whole of the London county asylums. Whether the disuse of mercury as a general therapeutic remedy in our day compared to the equal salivation for the smallest elements in the past may have anything to do with this increased prevalence is uncertain and too speculative to be considered here.

There is reason to think that syphilis is more common now than it was a century ago (although the opinion of Sir Alfred Cooper dissents from this view) and it is possible that its dire effects upon the nervous system might be controlled, or modified if not altogether avoided, if these were more generally known or if information respecting the far-reaching effects of syphilis and the nature of the disease were more widely disseminated. The ravages in India among our troops have given rise to loud cries for special protective legislation against contagious diseases of a luetic character and only last year a unanimous resolution was conveyed from the section of Psychological Medicine of this association urging the attention of

the Government and public bodies to the horrible results of this disease, but our statesmen are timid about the health of the people when fanatics, faddists, consciencious objectors, and other irresponsible agitators begin to make political capital out of the "moral" question. It is not too much to say that the more highly developed a race becomes the more cases of general paralysis and other forms of insanity due to the same cause will occur, and it is too much to infer that the diseases named are preventible and should be prevented. Haslam refers, before the year 1800, to the disease described as dementia præcox, then so rare but now so common that it may almost be described as the scourge of our asylums, for it attacks prematurely our most promising youth, it is practically incurable, and helps to fill our asylums of the future with the hopelessly insane. It is of all forms the one caused by the overstrain and the mental rather than the manual worker subject to its ravages; also, as stated, the great majority never recover from it. This is Haslam's description of it in 1800: "A species of insanity sometimes occurring about the time of puberty, especially in those who have possessed a good capacity and lively disposition and in females more frequently than males, their faculties are gradually obliterated until they are at last complete and incurable idiots." That which was then occasional may now be described as having become a common variety of insanity among our promising and educated youth.

Haslam reported prior to 1806 upon the treatment of 8874 cases of insanity (4042 males and 4832 females) in the second Bethlem Hospital, built in Moorfields in 1676, and the result of 46 year's experience. The maniacal form of insanity was then more common. Those were the days when men were content and the nation had faith in its destiny. In the *Times* of July 11th, 1803, was published a war song in which, after inviting the consul-king to attack us, it proceeds:—

" that Britons
Can fearless still maintain their stand,
And single-handed crush the pride of France."

All classes then bore the necessary hardship of high taxation with resignation and without discontent.

As to the recovery-rate, Haslam states that his own among cases of mania was 67 per cent. Last year in all the asylums of London the recovery-rate from all cases of mania amounted to 38·4 per cent. There were few insane in those days but those which occurred were acute and curable. Not until Jan. 1st, 1859, was the number of lunatics officially registered in this country. At that date there were 36,762 insane persons, a proportion to the population of 1 to 536. To-day they number over 113,964, a proportion to the population of 1 to every 293, and the tendency of much of the insanity which comes under treatment to-day is to end in dementia and to become incurable. Even a quarter of a century ago the type of insanity was different from that of to-day. There is an increased tendency to melancholia which is less recoverable than mania, being probably a deeper reduction of nerve elements than occurs in mania. Melan-

cholia has shown a considerable rise among the educated and private class of the insane, and I am stating a fact and not an opinion when I say that recovery may be complete after a sharp attack of mania, whereas this is rarely the case after melancholia, more especially in men. This supports the opinion of the earlier physicians that "furious insanity is much more curable than melancholy madness," both Haslam and Pinel having recorded this observation.

Of all the 9267 patients (4096 males and 5171 females) who have been under treatment in the Claybury Asylum since its opening—a period of ten years—and of whom I have direct personal experience and record, 1132 males and 1625 females recovered, a percentage of 27 males and 31 females. Of the 8874 at Bethlem Hospital (4042 males and 4832 females) referred to above and under treatment over 100 years ago 1155 men and 1402 women recovered, a proportion of 27 per cent. for the men and 29 per cent. for the women, an improvement in the recovery-rate of to-day of just over 1 per cent., in spite of all the means of treatment which a century's progress in applied art and the sciences has placed at our disposal. Surely there must be some other explanation than the failure of modern therapeutic means. May not this be discovered in the changed type already referred to and incident to our civilisation?

If a comparison is made between the reports of the Commissioners in Lunacy for the years 1878 and 1902—a period of 25 years—which, as stated, is within my experience, a reduction is seen in the percentages of all cases of acute insanity recorded, a decrease from 75·3 to 70·9 per cent., and further, as cases of *dementia præcox* or premature dementia in young persons—already referred to—were not recorded in the statistics of 1878 and they almost invariably commence in depression, it is justifiable to conclude that they were classed as melancholia, which has risen from 21·5 per cent. in 1878 to 27·9 per cent. in 1902, the reduction in cases of mania in these years being from 53·8 per cent. to 43 per cent. The age periods in the statistics of these Blue-book reports are not given but the calculations ascertained are absolutely confirmatory of the statements which I have made. As to the recovery-rate the Blue-book for 1878 gives it for males as 34·81 per cent. and for females as 42·84 per cent., an average total of 38·48 per cent.; whereas, for the year 1902 the recovery-rate is given as 34·4 per cent. for males and 39·7 per cent. for females, an average total of 37·1 per cent., an actual decrease in the recovery-rate for the first and last of the 25 years under review.

With the progress of civilisation, therefore, not only is insanity on the increase, but the occurring varieties are less curable, the physique of the town-dwelling section of the population has deteriorated both in height and weight, and the statistics of recovery are less favourable to-day than they were 25 years ago. Serious as this may appear, while such a state exists one can neither hope for nor expect relief from the great financial and economic burden of providing accommodation for the insane in the future. If relief is to come it will be in some great change affecting the physical as

well as the mental health of the masses of the people—a foreshadowing of which is beyond the scope of this paper.

There is yet one factor in the psychical condition of the people which affords opportunities for high ideals, which kindles a spirit of sympathy, devotion, and fervour even among the roughest characters and in the most crowded areas of our cities—I refer to the effect of spiritual influence. In an assembly such as ours I touch upon it with extreme diffidence, but it is an element in human character for which even the Prime Minister has recently appealed, and the life of Father Dolling, the work of such institutions as the Salvation and the Church Armies, testify to its influence over the mental and moral character of those hopeless persons who become the deposit of our civilisation. The indifference of the great bulk of the people to this aspect of life is a matter of common knowledge and an interesting contrast has been recently furnished in the July number of the *Edinburgh Review*. At the present time there are in London alone over 700,000 young men between the ages of 16 and 51 years—and mostly sons of working men—who need special guidance and training. It is not improbable that “hooliganism” and other forms of social outbursts might be much modified through an influence from this direction. Everything points to the strong and immediate necessity for preventing the extension of this lowered mental and physical vigour. Our zeal, energy, and skill should be directed to assist a more healthy adjustment of the mind of man to his ever-varying and progressively complicated environment.—*Lancet*, August 8, 1903.

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CHOLERA.
VIII.

(Continued from last Number, p. 365)

New School or Homœopathic Treatment continued.

TREATMENT OF PRELIMINARY STAGE concluded.

Aloe and **Sulphur** are two remedies which have done excellent service in the preliminary stage. Both have early morning stool, the urging being so great as to drive one out of bed. Both have semi-liquid, and even watery stools, which are hot (scalding-hot in the case of **SULPHUR**); in both undigested matters appear in the stools. The distinctive characteristics are: The stools of **ALOE** are *gushing*; involuntary when passing flatus or urine; the stool passes without his needing to make any exertion, it falls, as it were, out of the rectum. The stools of **SULPHUR** are *sour*; *corrosive*; involuntary when sudden, not when passing urine or flatus, but when only imagining that flatus was passing. Excoriation is a characteristic of **SULPHUR**, urine is excoriating, tears are excoriating. The diarrhoeaic stools of **SULPHUR** are frothy which is not the case with **ALOE**. **SULPHUR** has prolapsus ani and recti during and after stool a symptom wanting in **ALOE**.

Colchicum has frequent, profuse watery evacuations, generally yellowish, very often painless and sometimes involuntary and without any sensation to the patient; and thus vies with **Podophyllum** as an excellent remedy in the preliminary stage. But the difference between the two consists in the stools of the former being less gushing, and containing large quantities of small white shreddy particles, mixed with white membrane-looking matter; in the time of aggravation which is evening and night with the former and morning and forenoon with the latter; in the stools of the former not being hot as in the latter; in the greater predominance of nausea and thirst and loss of appetite with the former than with the latter. It should be remarked that the stools of **COLCHICUM** may be excoriating and sour-smelling which is not the case with **PODOPHYLLUM**.

Cantharis has been used with success even in this stage. Its range of applicability is of course very limited, but within this limit it acts marvellously. It has violent diarrhœa, with intolerable burning at the anus; the diarrhœaic stools are frothy, watery, copious, corrosive. The appearance in the stools of shreds like scrapings of the intestines is a characteristic of **CANTHARIS**. If with this there is frequent, ineffectual desire to urinate, we have a good indication for the drug, and its selection in such cases has not disappointed. It has other symptoms which, as we shall see, eminently qualify it as a remedy in the stages of full development and of collapse.

Iris versicolor has diarrhœaic stools of all degrees of consistency from soft papescent to watery like that of cholera. The color of the stools may be all shades of yellow and green, even to dark and blackish. The quantity is profuse, often running out in continuous stream. The frequency is very great. The stools may contain undigested matter and are aggravated after eating (breakfast and supper). A great characteristic is that they are almost always attended by great burning of the anus and rectum which feel as though they were on fire. This burning very often extends throughout the whole length of the alimentary canal, from the mouth to the anus. The burning of the anus continues after stool, though it diminishes after each stool. The stools are generally preceded and accompanied by rumbling and distressed pains in the intestines. It has violent vomiting,

the vomited stuff consisting of the ingesta, of bile, of an intensely sour liquid which excoriates the throat. There is from the very first extreme exhaustion and debility, with cold limbs and body. Hence it is likely to be useful in the first stage. It seems to be doubtful, if it will prove equally useful in the stage of full development, for the evacuations, notwithstanding that they may be and are often watery, they are always more or less bilious and never rice-water like. Nevertheless if the characteristic symptoms correspond, we should not hesitate to give it a trial. In animals poisoned by it the pancreas was found to be highly congested, so that this circumstance is one of the causes of the diarrhoea produced by it, and should be borne in mind.

II.—The Second Stage or Full Development of the disease commences with the establishment of the rice-water stool and vomiting. In this stage the prostration becomes serious, indicated by an exceedingly feeble pulse, sunken and pinched features, hoarse voice, cold, clammy skin. The urine becomes totally suppressed. These are the general features of this stage, and constant in all the forms met with. Distinctive features rise, as we have said above, from the preponderance or unusual development of some one or more of the symptoms. Thus in the diarrhoeaic variety we have the downward evacuations from the bowels extremely frequent and profuse. In the gastric variety we have the irritability of the stomach, evidenced by the nausea, continual retching and vomiting, as the most distressing symptom. In the gastro-enteric variety we have both vomiting and purging in an equally distressing degree. In the spasmodic variety, we have the spasms in a most alarming aspect;—first commencing in the lower extremities, they next manifest themselves in the upper and are then found in the muscles of the abdomen and chest, threatening suffocation and syncope, by invading the diaphragm and the muscular structure of the heart. In this variety the spasms are generally out of proportion to the evacuations, though in some instances they may appear to be in direct ratio to them. In the inflammatory variety we have a bounding, full but easily compressible pulse, heat of abdomen, and sometimes of the general surface. In what is called the acute variety the prostration is quite out of proportion to the evacuations, the countenance at once becomes livid or blue, the

pulse rapidly fails, the voice becomes a whisper, the perspiration becomes profuse and clammy and seems to take the place of the evacuations. In the dry variety this stage seems to be wanting, or rather is followed at once by the next stage or collapse, before being manifest outwardly.

The chief remedies in this stage are :

1. **Veratrum album,**
2. **Arsenicum,**
3. **Cuprum,**
4. **Secale cornutum,**
5. **Ricinus,**
6. **Acónitum,**
7. **Camphor.**

The differential indications of these drugs are of course to be gathered from their pathogenesis. In general terms we can only say that in the diarrhoeaic variety we should prefer VERATRUM and RICINUS ; in the gastric variety, ARSENICUM ; in the gastro-enteric variety, ARSENICUM, or ARSENICUM in alternation with VERATRUM ; in the spasmodic variety, CUPRUM and SECALE, in the dry and acute varieties, CAMPHOR, and after it ARSENICUM ; in the inflammatory variety, ACONITUM.

Veratrum and **Arsenicum** are the two great remedies upon which homœopathic physicians chiefly rely when the cholera is fully developed, always assuming that CAMPHOR had been administered previously and has failed.

In the *Materia Medica Pura*, Vol. iii, 2nd edition (1825), Hahnemann gives the following as the gastro-enteric symptoms of **Veratrum alb.**, mostly from old school authorities: "Great nausea before the vomiting. Vomiting of food. Two attacks of vomiting, each time vomiting three or four times, in the intervals between the vomiting, persistent nausea, vomited matter sour. Vomiting first of bile and slime, then black bile, lastly blood. Violent, enormous vomiting. Each time before vomiting shivering all over the body. Excessive evacuations; frequent painful and violent diarrhoea; diarrhoea with profuse perspiration; diarrhoea with pains during and after stool; violent bloody diarrhoea." In Allen's *Encyclopædia* we have the following additional symptoms: "Excessive thirst during the perspiration; much thirst for cold drinks, great thirst with hunger; vomiting

and diarrhœa as many as ten times, with pale sunken face, covered with cold sweat; excessive, copious evacuations; sudden involuntary watery evacuations." These gastro-enteric symptoms, with the other symptoms which VERATRUM can produce,—namely, prostration and weariness of the whole body, coldness and sensation of coldness over whole body, blue nails from coldness, spasmodic drawing of the limbs, cramps in the calves, pulse very slow, almost or completely lost, general spasms,—form a close analogy with those of cholera.

Arsenicum has the following gastro-enteric symptoms in the *Materia Medica Pura* and the *Chronic Diseases*: "Unquenchable thirst, drinking affords no relief, drinks often but little at a time. Or, uncommon thirst, drinks much cold water every ten minutes from morning till evening, not at night. Vomiting immediately after meal, without nausea; vomiting of the ingesta; excessive vomiting with great effort, of drinks, yellowish-green mucus and water, with persistent bitter taste in the mouth. When vomiting ceases, frequent, very watery diarrhœaic stools set in; violent continual vomiting, with diarrhœa; during vomiting severe internal burning heat and thirst; frequent vomiting with *dread of death*. Yellow, watery, scanty diarrhœaic stools, with subsequent tenesmus as if more would pass; with violent burning in anus; black, fluid stool, burning in the anus like fire, often much restlessness and pain in abdomen." The following additional symptoms are taken from Allen's *Encyclopædia*: "Vomiting every time after drinking, even water is immediately thrown off, sometimes the vomiting is relieved by water. Diarrhœa, copious, involuntary and painless." ARSENICUM produces other symptoms which with those already mentioned strongly point to it as a true hemœopathic remedy in cholera. These are: "profound collapse, not necessarily connected with the alvine evacuations, with quick, weak, irregular pulse, pulse scarcely or not at all perceptible; absence of pulse being characterized by frequent, irritated beating of the heart; palpitation and tremulous weakness after stool; frequent oppressive shortness of breath in every position of the body, causing anxiety; cold clammy sweat over whole body; cold as a corpse; restlessness and anxiety, throwing himself from side to side, excessive sinking from slightest paroxysm of pain."

It is usual to give VERATRUM first and then to follow it up with ARSENICUM if it fails to arrest the progress of the disease. It is not easy to determine which drug is to be used in preference. Both the drugs have a great deal in common, especially in reference to those symptoms which analogise with those of cholera. There seems however this difference between them, that the prostration of VERATRUM seems to be in direct proportion to the alvine evacuations, whereas the prostration of ARSENICUM is more profound, is a destructive effect of the drug upon the very innermost recesses of life. The discharges of VERATRUM both by purging and vomiting, are copious and free, whereas those of ARSENICUM are scanty, and attended with distressing urging and retching. Both the drugs are indicated when there is violent, unquenchable, burning thirst, especially for cold drinks; but VERATRUM should be given in cases where the patient can take large draughts of water without any inconvenience, and ARSENICUM should only be given when the patient can swallow but little at a time, and that little aggravates all the symptoms, especially the vomiting and the purging. Besides, ARSENICUM is a powerful antidote of various miasmata, which VERATRUM is not. VERATRUM therefore would be more suitable in sporadic cases, and in the mild cases during epidemic visitations; whereas ARSENICUM would be indispensable in times of epidemic virulence, and in all cases in which prostration precedes the outbreak of the disease, and has probably resulted from miasmatic infection. In such cases it would in our opinion be simple waste of time to withhold the administration of ARSENICUM till VERATRUM has failed.

It is not a little singular that Hahnemann, to whom we owe such graphic description of arsenical poisoning, should not only not have included ARSENIC in his enumeration of remedies for cholera, but should have gone so far as to say that it could not be of much use in the disease. Yet scarcely has any remedy vindicated the reputation of homœopathy in this dreadful disease so much as ARSENIC. Generally the most deadly cases of cholera resemble acute arsenical poisoning, and indeed, in not a few cases was the latter mistaken for the genuine disease itself. Some years ago, as we have already said, a druggist in this city was treated by able physicians for cholera, and it was dis-

covered after his death that the patient had taken ARSENIC to commit suicide. Indeed, poisoning with ARSENIC in so many cases simulate the symptoms of cholera that medical jurists have begun to form a class of such cases by itself. But just as it is not every case of arsenical poisoning which presents symptoms of cholera, so it is not every case of cholera which has symptoms resembling those of arsenic-cholera. Hence the necessity of extreme caution and discrimination in the use of ARSENIC in the treatment of cholera. But a hard experience compels us to confess that in spite of the utmost caution and discrimination the selection of the drug may be still wide of the mark, showing how far we are still from comprehending both the disease and the remedy. Cases apparently requiring ARSENIC had become worse under its administration and were brought round by VERATRUM, and *vice versa*. But as a general rule we have found that where CAMPHOR should have been given first we have the worst result from ARSENIC, VERATRUM, &c. Then again the similarity between ARSENIC and ACONITE in some respects is so great as to render the differentiation between the two of extreme difficulty. A faithful narration of cases successfully treated by ARSENIC can alone clear up the obscure points. In the generality of cases, however, in addition to the three marked characteristics of the drug, namely, excessive restlessness causing the patient to toss about in bed, the peculiar unquenchable thirst causing him to drink often but little at a time, and the burning of the stomach and of the rectum and anus, and may be of the rest of the alimentary canal, we have adynamia quite out of proportion to the apparent extent of the disease, and the mental symptoms, such as indescribable melancholy, absolute hopelessness and despair, constant dread of death, which will decide in favor of ARSENIC. The drug has been found useful in dread of cholera. Sometimes, especially in children, the constitution breaks down after an attack of cholera, and chronic diarrhoea and dysentery accompanied with general marasmus takes place. In such cases ARSENIC should be thought of.

It should be noted that ARSENICUM has actual suppression of urine which VERATRUM has not. But the presence of this symptom in any case is no contraindication for VERATRUM. It has often by itself restored the urinary secretion after causing improvement in the stools and vomiting.

When the cholera declares itself at once in the spasmodic form, the spasms being simultaneous with the first vomiting and purging, and being as alarming as these and other symptoms, or when the spasms become developed in the course of the treatment and in spite of it, our chief reliance is on **Cuprum** and **Secale**.

We have seen what Hahnemann understood by the first stage of the disease for which his infallible remedy is Camphor. When that stage is passed, when, says he, "this period of the commencement of the disease, so favorable to recovery and speedy cure, by the above indicated employment of Camphor, has been neglected, then things look worse; then Camphor is no longer serviceable." He then gives the following description of the second stage: "There are moreover cases of cholera, especially in northern regions, where this first stage, with its tonic spasmodic character, is hardly observable and the disease passes instantly into the second stage of clonic spasmodic character: frequent evacuation of watery fluid, mixed with whitish, yellowish, or reddish flakes, and, along with insatiable thirst and loud rumbling in the belly, violent vomiting of large quantities of the same fluid, with increased agitation, groaning and yawning, icy coldness of the whole body, even of the tongue, and marbled blue appearance of the arms, hands and face, with fixed sunken eyes, diminution of the senses, slow pulse, excessively painful cramp in the calves, and spasms of the limbs. In such cases the administration of a drop of Camphor spirit every five minutes must only be continued so long as *decided* benefit is observable (which with a remedy of such rapid action as Camphor manifests itself within a quarter of an hour). If in such cases decided benefit is not soon perceived, then no time must be lost in administering the remedy of the second stage." This, as he says immediately, is **Cuprum**.

In the *Chronic Diseases* Hahnemann gives, not as the result of provings by himself and fellow-provers, but as citations from old school authorities, the following symptoms of **CUPRUM** relating to the stomach and bowels: "Extremely violent thirst; constant, violent vomiting, with colic and diarrhoea, like cholera; frequent vomiting of mere bile; bloody diarrhoea." One of his provers (Ruckert) had "vomiting of water, after

slight nausea, while much water flows from the eyes." He himself had the symptom: "the vomiting was suppressed by drinking cold water." In Allen's *Encyclopædia* under Cuprum we find the symptom, "Cutting pains, with three stools like water, the abdomen being painful on touch, recurring several times through the day," produced in provers taking Fincke's transcendental potencies. Under *Cuprum aceticum* we find the symptom, "Awakened at 2 A.M., while lying on abdomen (an unusual position with him,) by a copious liquid stool, so hurried that it escaped over a portion of the bed, with colic and headache," as a result of poisoning by artichokes kept in a copper vessel.

If the gastro-enteric symptoms given above are genuine, (which there is no reason to question except for the symptom obtained from Fincke's potencies), then there can be no doubt that Copper is homœopathic to cholera? We have a striking proof of the choleraic character of the copper stools furnished by Hempel, who, in the 2nd Edition of his *Materia Medica*, has related the cases of poisoning of a lady of sixty-seven years, of her daughter aged thirty-nine, and of a servant girl, twenty-two years old, from partaking of chicken fricassee, which had been cooked in a badly tinned copper saucepan. In all these the symptoms were "ineffectual effort to vomit, contraction and dryness in the inner mouth, thirst, violent pains in the epigastrium, colic, followed by several watery whitish stools. These symptoms continued on the following morning; the daughter was moreover attacked with uninterrupted anguish, convulsions, painful and hard swelling of the abdominal walls and frequent fainting turns." These appear to be genuine symptoms of copper poisoning, but why the cases have been removed from the last (3rd) Edition of the work by Dr. Arndt we cannot make out. Then again, the symptom derived from a case of poisoning by artichokes kept in a copper vessel, cited above, has a great similarity to cholera evacuation from the time of its occurrence which was 2 o'clock in the night, and also from its character. As we have no reason to doubt the genuineness of these symptoms, we are forced to admit that though the gastro-enteric action of copper and its salts are generally and eminently inflammatory, yet that action, like the gastro-enteric action of arsenic, may also be, in particular cases, and

under particular conditions, non-inflammatory in the beginning, and thus so far analogise with the action of the cholera poison.

But it is not the stools alone which constitute copper homœopathic to cholera. We have the greatest similarity presented by the drug when, associated with the characteristic stools and vomiting, we have spasms of the muscles. What is the characteristic of the spasms in cholera to which copper corresponds? Hahnemann, as we have seen, recommended Cuprum in cholera when the disease has passed into the second stage, or, as he calls it, the stage of *clonic spasmodic* character. Clonic spasms are convulsions, and except in the very rare cases of children, and in some of the rarest cerebral sequelæ of the disease in adults, convulsions or clonic spasms never form a symptom of cholera. It is true Hahnemann derived his knowledge of cholera from reports. But we cannot believe that in any professional report of the disease convulsions were described as a symptom. It is difficult, therefore, to understand how Hahnemann could have made such a mistake. From the narration of the symptoms that he gives of this stage, we cannot make out if he looked upon convulsions as one of them. "Excessively painful cramp in the calves, and spasms of the limbs," are all the details he gives of the spasms. Though "cramp in the calves" belongs to the category of tonic spasm, "spasms of the limbs" is a vague term, and might mean tonic or clonic spasms, and we have no means of ascertaining which was meant by Hahnemann. But we need not attach much importance to what Hahnemann might have understood by clonic spasmodic, when we know that copper is capable of producing both tonic and clonic spasms, cramps and convulsions. Proving and poisonings show that copper can produce spasms in the muscles of the extremities; in the muscles of the abdomen; in the muscles of the chest, causing spasmodic attacks of dyspnoea, and rendering the respiration difficult even to suffocation; probably the spasm of the diaphragm have much to do with such arrest of breathing. Copper produces spasms also in the muscles of the jaws and of the throat. Thus copper very closely approaches that variety of cholera which is characterised equally by gastro-enteric irritation and by tonic spasms of the voluntary muscles, and probably also of the diaphragm. One characteristic of cuprum spasms is,

according to Lilienthal, that they start from the utmost extremities of the peripheral nerves, of the fingers and toes. Though this is not substantiated by positive provings we may just bear it in mind, in order to see if it will admit of clinical verification. Of the same nature is Kafka's differentiation between the spasms of *Cuprum* and those of *Secale*, namely, that the former are chiefly confined to the flexors, the latter to the extensors.

The indications for *Cuprum* receive additional support when any of the following symptoms are present in addition to those given above:—When drinking, the beverage descends into the œsophagus with a gurgling noise; when there is desire for warm food and drink rather than for cold; when with the nausea and vomiting there is the most violent, horrid colic in the abdomen; when there is restless tossing about and constant uneasiness; when the eyes are sunken, with blue rings around them; when the extremities are icy-cold, as well as the general surface; when there is tingling in the rectum as of ascarides; when there is spasm in the throat which hinders speech; when there is suffocative arrest of breathing.

In the present state of our knowledge it is extremely difficult, if at all possible, to determine which to prescribe in a given case of disease, the preparations of the metal or of any of its salts. The salts of the metal are certainly more energetic in their action than the metal itself, and hence as homœopathic remedies we would prefer the pure metal so long as it does not disappoint. If it fails to produce the desired effect we may then have recourse to the acetate, or even the sulphate which is a more easily obtainable salt.

Secale Cornutum has no place in the *Fragmenta, Materia Medica Pura*, and the *Chronic Diseases*. Hahnemann evidently had paid no attention to it. All our knowledge of its symptoms are from provings, poisonings and experiments on animals. We take the following from Allen's *Encyclopædia*, where will be found a rich collection of symptoms from 170 different sources: "Frequently bites his tongue, which is often torn during the convulsions. Constant and intense thirst, with dryness of mouth and throat, burning and tingling of tongue, with inability to drink much on account of its causing distress in the stomach. Unnatural appetite, even when dying from exhausting discharges from the bowels;

or complete loathing of food and drink. Urgent thirst, with longing only for acidulated drinks; loathes every thing but sour drinks. Nausea and vomiting. Sudden attacks of incessant vomiting at night, with most violent headache and pain over whole body. Either fruitless efforts to vomit, or easy vomiting affording relief. Nausea and vomiting of sour dark green matter, containing bile, mucus, and shreds of membrane; vomiting of blood, membrane, and coffee-grounds matter; vomiting of tenacious mucus or worms, giving relief. Great distress and oppression at stomach. Sensation of burning in internal organs. Long-lasting, very exhausting diarrhœa. Sharp diarrhœa yielding to repeated hot baths; thin, involuntary discharges from the bowels. Discharges from the bowels of a great quantity of disorganized mucous membrane as that thrown off in dysentery. Hæmorrhage from the bowels. Micturition seldom, difficult, dribbling, without relief. Urine diminished or entirely suppressed; urine albuminous with casts. Anxious difficult respiration, with sighing and hiccough. Pulse small, rapid or slow, intermittent or entirely absent. Face collapsed, sunken, livid, hippocratic. Lips bluish. Mouth distorted. Trismus. Voice feeble or almost lost. Power of deglutition nearly lost. Tonic and clonic spasms, emprosthotonus, opisthotonus, risus sardonius, and raving. Spasms chiefly of the extensors, causing fingers and toes to be bent backward or spread apart. Restlessness and extreme prostration. Coldness of surface, particularly of the face and extremities. Notwithstanding this coldness, aversion to heat and to being covered, and is actually worse from external heat."

The symptoms cited above furnish elements of morbid conditions which are often met with in cases of cholera. We have not been able to exactly ascertain who it was that introduced this precious drug into homœopathic practice in the treatment of cholera. Probably it was Dr. Friedrich Jacob Rummel, an early convert to Homœopathy, and who assisted Hahnemann in his provings. Dr. Dudgeon, in his *Homœopathic Treatment and Prevention of the Asiatic Cholera*, says: "SECALE CORNUTUM is serviceable, according to Rummel, when after the cessation of vomiting the evacuations persist and continue colorless. Schmid and Fleischmann found it useful where there were severe cramps; the latter preferred it to CUPRUM in such cases. It is also invaluable in Cholérine, accom-

panied by vertigo, anxiety, cramps in the calves, diarrhæic stools of a brownish color, or almost colorless, with or without flakes, with rapid prostration and coldness of the limbs. The following range of symptoms observed in one individual, from the ingestion of *Secale*, point most markedly to cholera. 'Sudden peculiar alteration of the features, the eyes are sunk deeply in their sockets, and are surrounded with blue circles, constant nausea and vomiting after partaking of anything, frequent diarrhœa, with watery, slimy evacuations, dry cool skin, indescribable anxiety and burning sensation in the scrobiculus cordis, hoarse hollow voice, suppression of the urinary secretion, cramp in the calves, paralysis of the superior extremities, scarcely perceptible pulse, unquenchable thirst' (Siedel, *allg. Hom. Ztg.* I. p. 127).

Dr. Rutherford Russell, in his *Treatise on Epidemic Cholera*, thus speaks of it: "SECALE CORNUTUM, or ergot of rye, is a medicine in which we have great faith in some of the worst varieties of cholera. We have seen the most decided advantage from its administration in cases of very copious discharges both alvine and by vomiting. While we would recommend *Cuprum* and *Veratrum* to be given rather by themselves than in alternation, we should feel inclined to give *Secale* in alternation with *Arsenicum*. It is not easy to give a reason for this beyond the observation, that so given, we have seen more benefit to the patient than from either singly; and we do not think that the two medicines interfere. We should give it strong, in the first, second, or third dilution, a dose every half hour, alternately with *Arsenic*, and this in cases, particularly of women, where there is great prostration and violent watery discharges. We have seen cases, which we looked upon as quite hopeless, steadily rally under this treatment, and we have no doubt of the beneficial effects of the remedies."

We are now in a position to define the province of *SECALE* more precisely as distinguished from *CUPRUM* and *ARSENICUM*, than was possible for the authors quoted above. The gurgling noise drinks make in descending down the œsophagus into the stomach, the desire for warm rather than for cold food and drink, and the peculiar character of the spasms affecting the flexors, distinguish *CUPRUM* from *SECALE*, which is wanting in the first

two symptoms, and which has spasms of the extensors and abductors rather than of the flexors and adductors. SECALE has moreover more frightful distortion of the features from spasms than CUPRUM has. Under SECALE the patient often bites the tongue, which is not the case with CUPRUM. SECALE and ARSENICUM have many symptoms in common. But even the thirst, which seems to be so similar, has this difference. The ARSENICUM patient has unquenchable thirst but drinks little at a time, because satisfied with it for the time being. The SECALE patient has also unquenchable thirst, but cannot and therefore does not drink much because it causes distress in the stomach. The SECALE patient notwithstanding the cold he feels, is averse to heat and being covered. The ARSENICUM patient, notwithstanding the feeling of internal heat, has a desire for heat and being covered. These differentiating characters were not known at the time Dr. Russell wrote, and hence his recommendation of alternating SECALE with ARSENICUM, which there is no necessity of acting up to, unless a case presents the prominent symptoms of both the drugs.

Whatever the character of the spasms SECALE may be given when they are not relieved or only partially relieved by CUPRUM.

SECALE is preferred when any of the following symptoms are likewise present:—considerable dryness of the mouth and nose, not relieved by drinking water; vomiting of mucus, lumbirci, or ascarides; vomiting affords relief; vomiting without much effort.

To the late Dr. Edwin M. Hale, justly called the "Father of New Remedies," is due the credit of suggesting that *Ricinus* "ought to be useful in *Cholera Asiatica*, cholera morbus and infantum." To Dr. Leopold Salzer, of our city, is due the honor of first acting on this suggestion, and introducing it successfully in the homœopathic treatment of cholera in India. Dr. Hale's suggestion is based upon the following cases:

Giacomini relates that when a child he experienced a violent attack of vomiting and protracted exhaustion from eating nine or ten of the seeds. Bergius records the case of a man in full health who ate a single seed of *Ricinus*, which, however, left an acrid taste in his mouth. Early the next morning he was seized with violent vomiting, which continued alternately with purging throughout the entire day. Lanzoni saw a young woman attacked with violent cholera morbus, and an excruciating pain in the bowels, from eating three of the fresh seeds. Dr. Taylor records a fatal case of poisoning from this cause. Three young women ate of the seeds,

one about twenty of them, another four or five, and a third two of them. Upon the two latter persons the effects were those of a violent cathartic, but the first was seized with vomiting and purging, and looked like one in an attack of malignant cholera; the skin was cold, pale, and shrunken, there was pain in the abdomen, and the mind was in a drowsy, half-conscious state. The dejections consisted of bloody serum. No reaction took place, and death occurred within twenty-four hours. On examination, the gastro-intestinal mucous membrane was found to be abraded and inflamed. A soldier in Algeria is said to have died from eating only three Castor oil seeds. The whole intestinal mucous membrane was found after death coated with blackish blood. The lining membrane of the stomach was somewhat reddened and softened.

A case is related by Bergius where only one seed produced symptoms of poisoning, namely, nausea, vomiting, and diarrhœa.

After twenty seeds, gastro-enteritis and death, preceded by convulsions and general collapse.

A young and strong man, after eating two grams of the residue of the seeds from which the oil had been expressed, was seized with such violent vomiting that his life was in danger.

Devergie states that two patients who had taken each an ounce of Castor oil died in three hours (!).

Bean, a sergeant in the seventh company of engineers, enters the hospital at half-past five, July 10th, 1871. He ate the same day, in the morning, some *Ricinus* seeds as a purgative. The seeds were perfectly ripe, dry, and gathered in the fall of 1869. As he did not find the taste very disagreeable he ate seventeen of them. No accident happened immediately after eating them, and he took some beef-tea with appetite. Three or four hours afterwards he passed several loose stools, and suffered soon afterwards from pyrosis, cramps in the stomach, and nausea, followed by vomiting, which contained fragments of the seeds and drops of oil floating on it. The stools became at the same time more numerous and copious, were passed without tenesmus or colic, formed of serous liquid mixed with mucus.

About 4 p.m. the diarrhœa became incessant, with cramps and chilliness; at 5 p. m. he entered the hospital.

Pathology.—Present state: Pale face, the forehead covered by cold sweat and features drawn; the eyes are convulsed and drawn upward in the orbits, the conjunctiva injected, and copious lachrymation; the pupils only moderately dilated; pulse normal in frequency, but so small that sometimes it can hardly be felt at the radial artery. Intelligence perfectly clear; patient complains of headache, vertigo, buzzing in the ears, and a sensation as if a bar laid over his stomach, with profound anguish. Burning thirst; pyrosis, nausea, vomiting; the vomited matter is fluid, lightly colored by some bile, and holds some glairy filaments suspended; epigastrium very sensitive, and the *pains radiate* towards the navel and hypochondria; neither light nor strong pressure aggravates the pain, at the same time the patient feels a sensation of violent constriction in the intestines, the diarrhœa becomes colliquative, and the stools look like those in cholera. Complete anuria since 10 a.m.; voice very veiled; profound adynamia; it takes two persons to hold the patient.

The time for antidotes had passed, and the only indication remained to combat the coldness, the muscular contractions, the stoppage in the circulation—in one word, to remove the pseudo-choleraic symptoms consecutive to the enormous loss of water the patient had sustained.

From these and other cases Allen has compiled the following summary of symptoms for his *Encyclopædia*: Great, burning

thirst: Pyrosis. Violent profuse vomiting, vomited matters colored by bile; violent vomiting and purging, accompanied by burning in gullet and stomach, with all symptoms of Asiatic cholera; vomiting without pain; yellowish-green vomitings and violent colics. Epigastrium very sensitive, and pains radiate towards navel and hypochondria. Cramps in stomach. Pain over abdomen increased by pressure. Diarrhœa *without pain*. Stools frequent and watery. A few stools; in three or four hours after taking the seeds, alvine evacuations became more and copious, in the form of a serous fluid, they escaped without griping or colic; after about ten hours the diarrhœa became almost incessant, and was colliquative, presenting the same appearance as in cholera. Complete suppression of urine; emission of a small quantity of deeply-colored, thick, and highly albuminous urine. Voice very veiled. Pulse normal in frequency, but extremely small, sometimes scarcely perceptible at the wrist. Extreme collapse, accompanying the purging and vomiting. Muscles of limbs and of trunk affected with very painful cramps. Eyes convulsed and drawn upwards in the orbits. Coldness; forehead covered with cold sweat. Face pale; features contracted.

It will be seen how closely these symptoms resemble those of true cholera. From the above narrations it will also be seen that though the stools and vomitings do not seem to be invariably painless they are more generally so than those of any other medicine. And though not actually described as rice-water like, they were said to be like those of cholera. They were all very profuse. These characters of the evacuations, with the collapse and the anuria and the cramps immediately following, point to **Ricinus** as a true homœopathic remedy in this disease, and experience (including our own) has justified Dr. Hale's recommendation to a large, if not to the full extent that was expected from the pathogenesis. This shows that **RICINUS** is not the only remedy for cholera, and that there are others, especially those we have enumerated, which have a true place in its therapeutics and cannot be superseded.

(To be continued.)

EDITOR'S NOTES.

Suicide in the United States.

Mr. William B. Bailey has collected statistics on suicide in the United States from 1897 to 1901. They are taken almost wholly from the public press, as the United States Government affords no assistance. Thirty journals were studied to collect the data. Out of 10,000 suicides 7,781 were males and 2,219 females, giving a ratio of about $3\frac{1}{2}$ males to 1 female. As in most countries, the number of the married who took their own lives slightly exceeded that of the single, while single, widowed, and divorced women were found to commit suicide more often than men in like situation. Shooting appears to be the favourite method of taking life, followed closely by poison. Hanging as a means of self-destruction is not held in so much favour as in the northern parts of Europe, nor is drowning as in the Southern. Jumping from heights, poison, and gas are confined principally to the cities. With males the favorite method is shooting, and the one least used is jumping from heights. Women seem to have a predilection for poison, though a few take their quietus with cutting instruments.—*Brit. Med. Journ.*, September 19, 1903.

A Syriac Translation of the Aphorisms of Hippocrates.

M. Pognon, the French consul at Aleppo, is publishing at Henrich's of Leipzig the text and a translation of a Syriac version discovered by him of the "Aphorisms" of Hippocrates. The manuscript is of the thirteenth century. M. Pognon in his introduction gives adequate reasons for thinking that the original Syriac text, of which this manuscript is a descendant, was translated from the Greek before the rise of Islam and therefore it merits very high consideration as a companion to the Greek version of Hippocrates's work. He even suggests that the translator can be assigned in the person of the famous surgeon Sergius, who died at Constantinople about A.D. 536, and who, Bar Hebræus, a Syriac bibliographer, tells us, was the first to translate medical and philosophical Greek authors into Syriac. The high value set upon the "Aphorisms" by Greek, Roman, and mediæval medical men and authors is well known. In 1595 Foësius, in the work upon Hippocrates, enumerates 137 commentaries upon it. The Arabs esteemed it among the most important of all the great classic books and carefully translated it. Now, thanks to M. Pognon we have ocular testimony to the same high appreciation of it by the many peoples of Western Asia who in the earlier centuries of our era

before the Mahomedan Arabic conquests, spoke Syriac.—*Lancet*, September 26, 1903.

Misplaced Kidneys and Pelvic Tumours.

The possibility of pelvic kidneys must always be borne in mind both by physicians and surgeons who have to deal with abdomino-pelvic tumours. There seems to be some relation between retroperitoneal growths and kidneys placed in the pelvis, or at least on the pelvic brim. Billroth discovered a misplacement of this kind in operating on a fibromyoma of the broad ligament, and Doran had a similar experience when removing a large retroperitoneal lipoma. There was no difficulty in detecting the precise nature of the malformation in either of these cases, that is to say, not only was the kidney displaced, but its vessels clearly arose from the iliacs. A recent discussion before the Gynaecological Society of Munich shows that a misplaced kidney, lying in the pelvis, may lead to errors of diagnosis, whilst it is not always clear whether it be a floating kidney dragging down renal vessels of normal connexions or a kidney supplied by vessels in the pelvis. Otto Seitz exhibited a cystic kidney which extended deeply into the pelvis and bore other characters suggesting that it was an ovarian cyst. It proved to be renal and on the posterior layer of parietal peritoneum being divided it was removed by enucleation. Stumpf, in discussing this case, expressed the belief that it was a true pelvic kidney; it was on the left side, as is usual in this anomaly. Ludwig Seitz had observed a right pelvic kidney in a stillborn child. Amann related a case of great importance as to the clinical aspect of the question. An enlarged kidney which extended into the pelvic cavity was found closely adherent to a pyosalpinx. It could not be decided (presumably at an operation) whether this was a case of floating or of true pelvic kidney. Stumpf remarked that as far as diagnosis could guide us, nothing further was certain than that a tumour of this kind lay behind the intestines. More light is needed on the question of true pelvic kidney, and the demonstrators of pathology in medical schools have ample opportunities for making researches which might greatly increase knowledge of a subject of undoubted interest and of no mean importance in these days of abdomino-pelvic surgery.—*Brit. Med. Journ.*, September 19, 1903.

The Treatment of Sewage in Manchester.

About 50 members of the city council of Manchester recently

inspected the sewage works at Davyhulme where the old chemical system may be seen side by side with the bacterial system, so that they can be readily compared. There is not much difference in the clearness of the effluent, but it appears that the chemically treated effluent, if allowed to remain in a closed vessel in a warm place for a few days, will go black and give off an offensive smell, while the effluent from the bacterially treated sewage will, under the same conditions, undergo no such decomposition. The Mersey and Irwell joint committee has not decided at present if it considers the effluent from the bacterially treated sewage satisfactory. It must be remembered that as yet it only passes through one set of contact beds, though the scheme when carried out will provide for two. When completed the first set of bacteria beds will be of half an acre each and will number 92. The second set will cover 46 acres. After passing through the second set of beds the effluent will, it is said, be as clear as drinking water. "It is considered doubtful, however," our Manchester correspondent writes, "if the Local Government Board will accept the scheme, for the Board has a preference for running sewage through the land. Should this be insisted on irrigation works at Carrington and at Flixton, covering 100 acres, will be brought into use. The works at Davyhulme were originally designed for treatment by chemical precipitation. The precipitation tanks were 11 in number and of these six are now used as septic tanks. The works now being carried out will comprise five additional tanks, with contingent works similar to the existing precipitation tanks, 46 acres of first-contact bacteria beds, and 26 acres of storm-water filter beds, all at Davyhulme; a conduct for the conveyance of first-contact effluent from Davyhulme to beds and lands at Flixton, and 46 acres of second-contact bacteria beds at Flixton. The scheme has been designed to deal with 126,000,000 gallons in 24 hours, the flow up to 63,000,000 gallons being treated on the bacteria beds. The remainder will be dealt with on the 26 acres of storm-water filter beds which are to be provided."—*Lancet*, September 26, 1903.

The Drinking of Methylated spirit in Aberdeen.

Dr. Matthew Hay in his annual report for 1902 draws attention to the growing use in Aberdeen of methylated spirit as an intoxicant. It is not, perhaps, generally known that with a view to enable persons engaged in certain industries to obtain an alcoholic spirit for industrial purposes at a relatively small cost the Government authorised the addition to methylated spirit of a small proportion of petro-

leum oil (3 to 800) the mixture thus produced being practically free from the duty imposed upon ordinary spirits of wine. It was thought that if the spirit was thus rendered nauseous no one would be tempted to use it as an intoxicant. But in Dr. Hay's experiences this addition has failed in its object and he thinks that the poorer and more degraded class of drinkers in Aberdeen are using the altered spirit as an intoxicant in an increasing degree. According to Dr. Hay the only practical restriction upon the sale of methylated spirit is that it cannot be sold on Sunday, and he finds that the traffic in it is mainly in halfpenny and penny-worths, as much being procurable for a penny as would be equivalent to two glasses of whisky. As an indication of the extent to which the trade in methylated spirit is carried on it may be mentioned that as many as 70 men have been seen to enter a certain grocer's shop in the east-end of Aberdeen in less than two hours. Each is provided with a bottle and, having procured the needed spirit, proceeds to a neighbouring water-tap to dilute the spirit before drinking it. Consumption of the spirit in this form seems to produce a condition of stupor akin to that caused by opium, and Dr. Hay states that in some cases seen by him the stupor was so great that no conscious response could be induced. Methylated spirit tends rapidly to degenerate the drinker morally and physically, much more so than is the case under the excessive use of ordinary spirits. The cheapness of the liquid is such that almost anyone, however low in the scale of poverty, can succeed in satisfying his cravings, and although the drinkers of methylated spirit would prefer alcohol in its usual form they are too poor to be able to obtain their fill of alcohol in the shape of wine, whisky, or beer. The progress of methylated spirit drinking in Aberdeen is apparently such that the Labourers Federation is becoming alarmed at the evils resulting from the practice and, as Dr. Hay observes, it would be well that the attention of the Inland Revenue Department should be called to the practice in order that greater restrictions should be imposed upon the sale of this form of spirit either by means of more nauseous sophistication or greater control of sale. It might, too, be well to draw the attention of the central health department to the subject since the Revenue has but little concern with public health or morals.—*Lancet*, September 26, 1903.

Facts About Radium: Its Occurrence and Isolation.

Although a good deal has been said about the remarkable heat- as well as light- giving properties of radium, and it is possible that these

properties may be of considerable utility in medical science, there are some facts concerning its occurrence in, and separation from, its native habitat which are not generally known. It may be well, therefore, to point out that it was the better—but still rarely—known metal uranium which first gave rise to the suspicion of the existence of a radio-active property in elements; and in the methods adopted for the separation of pure uranium salts from their native source solutions were obtained which showed an intenser degree of radio-activity than did the pure uranic salts themselves. The suggestion soon followed that there were elements present in the uranium ores which were more radio-active than uranium and subsequent research proved this to be the case. The native ore of uranium known as "pitchblende" was found to contain radium, an infinitely more radio-active element than uranium. "Pitchblende" is found in Cornwall, in Adrianople, in Bohemia, and in other localities. The mineral contains about 75 per cent. of the oxides of uranium, the residue consisting of sulphide of lead, silica, lime, magnesia, iron, barium, manganese, and soda, and a small quantity of radium. Uranium is a malleable and hard metal with a colour like that of nickel. It readily discolours on exposure to air, is very nearly as heavy as gold, and is about one and a half times heavier than lead. The salts of uranium have long been known to be radio-active, but those of radium are probably 60 times more so. The process by which radium is extracted from pitchblende and separated from the uranium in it is very long and tedious while the yield is very small. Operations for extraction are commenced by crushing the pitchblende which, to start with, is by its comparative rarity an expensive ore, and then roasting the powder with carbonate of soda. After washing, the residue is treated with dilute sulphuric acid; then the sulphates are converted into carbonates by boiling with strong solution of carbonate of soda. The residue contains radium sulphate which is an exceedingly insoluble salt. The soluble sulphates are washed out and the residue or insoluble portion is easily acted upon by hydrochloric acid which takes out amongst other things polonium and actinium. Radium sulphate remains unattacked associated with some barium sulphate. The sulphates are then converted into carbonates by treatment with a boiling strong solution of carbonate of soda. The carbonates of barium and radium are next dissolved in hydrochloric acid and precipitated again as sulphates by means of sulphuric acid. The sulphates are further purified and ultimately converted into chlorides until about 15 pounds of barium and radium chloride are obtained by

acting on one ton of crushed pitchblende. Only a small fraction of this mixed chloride is pure radium chloride which is finally separated from the barium chloride by crystallisation, the crystals from the most radio-active portion of the solutions being selected. In this way the crystals ultimately obtained are pure radium chloride of a very high degree of radio activity. It occurred to the discoverers of radium—M. and Madame Curie—to determine whether commercial barium chloride contains radium, but the chloride obtained by the process of fractionation showed no radio-activity and contained, therefore, no radium. The salts of radium closely resemble the salts of barium and are white but gradually become coloured; they are lustrous in the dark and, besides, spontaneously and continuously evolve heat. The nature of this mysterious element and its puzzling behaviour are still the subject of all sorts of speculation amongst men of science, and it is curious to observe how ready some men have been to offer explanations which hitherto would have ranked as heresies in science.—*Lancet*, Oct. 3, 1903.

Gigantism, with an Account of the Post Mortem Examination of the American Giant, Wilkins.

An interesting account of the abnormal state of growth known as gigantism, together with the records of the post-mortem examination of a giant who died at the Presbyterian Hospital at Chicago, is published by Dr. P. Bassoe of the Rush Medical College, Chicago, in the *Journal of Nervous and Mental Disease* for September. The subject of these observations was Lewis Wilkins, a native of Minnesota, aged 29 years. In 1893 he was examined by Professor Charles Dana who described him as a case of "acromegaly and gigantism with unilateral facial hypertrophy." His parents were healthy people of average height and he had six brothers and sisters all of ordinary height. The boy grew steadily and rapidly till, at the age 17 years, he was over seven feet high. At the time of his death his height was eight feet two inches. He had been on exhibition during the past 12 years and had travelled extensively in the United States of America and Europe. The left side of his face showed a remarkable osseous hypertrophy involving the frontal bone and the upper and lower jaws. The hypertrophy corresponded closely with the distribution of the left trigeminal nerve. The upper alveolar process and the palate were also hypertrophied. About two years ago the patient was seen by Professor Virchow of Berlin who, it is stated

pronounced the osseous growth to be a benign one and said that it was on the external surface of the skull and would probably never cause him trouble. On admission to hospital on June 28th, 1902, he was found to be suffering from attacks of vomiting, tinnitus aurium, and diarrhoea. While in the hospital he was dull, almost semi-stuporous. The pupils reacted neither to light nor accommodation and the left eye-ball was immobile. There was an area of anaesthesia on the left cheek and on the left side on the tongue. He gradually grew worse and died in hospital on July 10th, 1902. The necropsy revealed the following conditions. The cause of death was ulcerative ileo-colitis and chronic catarrhal gastritis. The lungs showed evidences of hæmorrhagic broncho-pneumonia. There was diffuse hyperostosis of the frontal, left parietal, left temporal, and left superior maxillary bones. The region of the pituitary body was occupied by a sarcomatous mass. The thyroid gland weighed 12 grammes; it was uniformly enlarged and its follicles appeared to be distended with an unusual amount of colloid material. The heart and the lungs were normal. The frontal region of the skull was much thickened on the left side, the thickness in the median line being three and two-fifths inches. The base of the skull was greatly deformed. The left anterior and middle fossæ were almost entirely obliterated by the ingrowth of bone. The Pituitary fossæ was wide and its floor was partly eroded. Its cavity was occupied by a tumour portions of which had grown into the orbits, the ethmoidal sinuses, and the naso-pharynx. This tumour in its upper median aspect incorporated with the infundibulum. Gelatinous fluid exuded from the cut surface of the tumour. It had to be scooped out in pieces which, together with the part adherent to the infundibulum, weighed somewhat over 300 grammes. The brain (hemispheres and cerebellum) weighed 1540 grammes. The tumour was examined and found to be sarcoma of the spindle-cell type showing numerous karyokinetic figures. Here and there small necrotic areas were scattered within it. "The tumour may be designated," say Dr. Bassoe, "an osteoplastic sarcoma, with œdema and mucoid degeneration." The hypophysis cerebri was pressed upon and inclosed by the mass of the tumour and its substance was beset with numerous small hæmorrhages. The alveoli of the thyroid body were generally distended with colloid material and in places several alveoli appeared to have coalesced. Chemical analysis of the gland showed that the proportion of iodine in it was normal, but as the gland was of about six times the size of a normal thyroid the quantity of iodine was

correspondingly large. Dr. Bassoe regards this enlargement of the thyroid gland as a process of "compensatory hypertrophy" occurring in association of the disease of the pituitary body. Many cases of gigantism show some relation to acromegaly and are associated with an abnormal condition of the pituitary body. "That this giant, particularly with a diseased hypophysis, should have a large amount of iodine in his thyroid was to be suspected," adds Dr. Bassoe, "and agrees with theory." The interest of the case lies in the fact that a profound nutritive disturbance affecting particularly the growth of the osseous system and leading to the gigantism was found in connexion with an abnormal condition of the pituitary body, an organ the functions of which in man still await elucidation.—*Lancet*, Oct. 3, 1903.

Infection with Plague Bacteria.

In a paper read before the Berlin Medical Society and reported in the *Berl. klin. Woch.*, July 6th, 1903, W. Doenitz relates the circumstances in connexion with the fatal plague infection of a young Austrian practitioner, Dr. Milan Sachs. He had been studying plague bacteriology in Berlin, but had not worked in laboratory for five days, when he was taken ill. The signs consisted of a slight sore throat, a small patch of dullness below the right scapula with some rales, but were out of all proportion with the severe general symptoms. The condition was then regarded as some severe infection, and on the following day, plague was suspected. The patient was removed into isolation, but came by accident into contact with a number of persons. The expectoration was subjected to a bacteriological examination, and was found to contain bacteria which showed pole staining and general form like plague bacilli. The case appeared to be one of primary lung plague, and it was considered unusual that the incubation period should be as long as five days, and therefore the patient was seen by several experienced observers and further cultures were made. There proved, however, to be no doubt at all as to the correctness of the diagnosis; the clinical appearances showed great restlessness, in spite of marked wandering of mind, high fever, and a very soft pulse; the patient lay on his side with his body half raised and his knees bent, and his eyes were noted to present a glassy look. There was a diffuse swelling in the right side of the neck, which was taken to be a bubo. Dr. Sachs died on the third day of illness. The necropsy was conducted on the following day, and revealed infiltration of the lower lobe, which felt like a sponge, and bloody oedema of the whole lung, on the right side. There was a scar at the right apex, and dense old pleural adhesions. The spleen was slightly enlarged, and only a few petechiae were found on the serous membranes. Microscopical preparations made from the blood and juices of the lung and spleen showed large numbers of plague bacilli.—*Brit. Med. Journ.*, Oct. 3, 1903.

CLINICAL RECORD.

Foreign.

TAPEWORM AS A CAUSE OF CHOREA.

By JOSEPH A. W. PEREIRA, L.R.C.P. LOND., M.R.C.S. ENG.,

IN his "Principles and Practice of Medicine" Professor W. Osler says: "Reflex irritation was believed to play an important rôle in the disease (i.e., chorea), particularly the presence of worms or genital irritation, but I have met with no instance in which the disease could be attributed to either of these causes." He also says: "Various nervous phenomena, such as chorea, convulsions, or epilepsy, are believed to be caused by the parasites (tapeworms). Such effects, however, are very rare."

These words of Professor Osler are my excuse for publishing a case which came under my care two months ago and in which a girl, aged six years, suffering from tapeworm became the subject of an attack of chorea. The child was passing segments of the worm for two or three weeks when the first manifestations of chorea became evident. When I saw the child she was in the second grade, or the severe form of the disease, in which the movements were general and she could not talk. There was never any suspicion of rheumatism in the case and her heart remained normal throughout. A dose of filix mas dislodged the parasite and in a month's time the child was practically well. The cestode was, in my opinion, the direct exciting cause of the chorea.

Both Dr. F. T. Roberts and Dr. A. H. Carter of Birmingham mention the irritation of worms as exciting causes of chorea, whilst Dr. F. Taylor and the late Dr. Edward Ellis are silent on the point. I believe that the occurrence of tapeworms in children under six years of age is rare, an opinion which Dr. Ellis likewise expressed in his book. Professor Osler, however, says it is not uncommon.—*Lancet*, Sept. 19, 1903.

CASES I HAVE COME ACROSS.

BY FREDERICK KOPP, Greenwich, N.E.W.

I.—*Phosphorus* IN A COUGH.

A lady (aged 29) complained to me that she could not get any rest at night, owing to a cough with which she was troubled. I asked her to explain to me the symptoms, which she stated were as follows: The cough was constantly excited by tickling sensation in the throat, and was very dry; when there was any expectoration, it was of a greenish, sometimes a rusty, colour. There was also a

certain amount of hoarseness present. The cough was aggravated by motion, eating, talking, or laughing, so that the least thing brought on an attack of coughing. There was a sensation of tightness in the chest, with a feeling therein of irritation and shortness of breath. The constant, dry, short cough led to exhaustion, and there were signs of emaciation present. The chest was sore and painful. The appetite was very poor, the skin dry and hot, and the pulse small and rapid. On inquiry, I found that there was a phthisical tendency in the family, several members thereof having died of pulmonary consumption; in fact, both her mother and her mother's sister had succumbed to that disease. I put the patient on *Phosphorus* 2x. 2m. on lump sugar every two hours, with an occasional dose when the cough was troublesome. On seeing her a few days afterwards the patient stated that the first few days gave her wondrous relief; in fact, more so than any other remedy she had been taking, which encouraged her to persevere with the medicine. She continued taking it for several weeks, with the result that the tickling in the throat disappeared, and with it the cough. She also improved greatly in general health; the progress of emaciation was arrested, and she gained in flesh. I saw her only recently and appeared to be in the best of health. She informed me, in answer to a question, that the cough did not trouble her now, "thanks to homœopathy."

II.—*Phytolacca Octandra* IN A THROAT AFFECTION.

A young man came to me complaining of his throat and stated that, as there was an epidemic of diphtheria going about, he was very much afraid that he had contracted it. He explained that there was a feeling of roughness and dryness in the throat, with a certain amount of soreness, and choking sensation, as if the throat were closing up. On examining the throat, I discovered that it was somewhat inflamed, and that the tonsils were swollen. Not having any tincture of *Phytolacca decandra* by me at the time, I gave him a weak decoction of about four ripe berries of *Phytolacca octandra*, to a pint of water, requesting him to take half a wineglassful every two or three hours. The effect was magical. Within twenty-four hours the swelling of the tonsils had gone down, and the throat was much less inflamed; there was also only a slight sensation of roughness and dryness present. By the next day every trace of the affection had disappeared, greatly to the delight and astonishment of the patient, who felt certain that within another twenty-four hours he would have been confined to his bed with an

attack of diphtheria. It will be seen by the above that *Phytolacca octandra* has similar properties to *Phytolacca decandra*, and is just as efficacious as the latter in throat affections. In fact, I always make it a practice now, when visiting places in which cases of diphtheria have occurred, of taking a good dose of either the tincture or infusion of the berries as a safeguard. It is only the other day when a lady remonstrated with me for calling at her house, as her husband had only just recovered from a severe attack of malignant diphtheria. "It is all right," I replied, "I am protected by a prophylactic—*Phytolacca octandra*!" The lady, who was a homœopath, smiled, and expressed her pleasure that homœopathy not only cured disease, but could also prevent it.

III.—*Belladonna* AND *Acidum Sulphuricum* IN DOLOR FAUCIUM.

I have come across several cases of "sore throat," having the true *Belladonna* characteristics, namely, redness of the throat, accompanied with a feeling as if scraped raw, and pain on swallowing. In such cases I have always administered *Belladonna* 1x in 2m doses, every two or three hours, with great success. But I have found that, if the *Belladonna* is alternated with *Acidum Sulphuricum* 1x or 2x every two hours, this treatment proves more rapidly curative than when the *Belladonna* is administered alone. In making use of the latter remedy, I generally administer from 3 to 5m in a wineglassful of water, to be *swallowed slowly*, so as to come in contact as much as possible with the inflamed surface in the throat. This treatment is especially effective should there be any ulceration present in the throat—when the simple form of "sore throat" has merged into what is technically known as *fauces ulcerosee*. The application of a throat compress in such cases is a valuable accessory, and, undoubtedly, greatly assists in hastening the cure. In my earlier years, and, in fact, to within two or three years ago, I was often the victim of an attack of sore throat, especially after taking a cold, and tried many remedies. Personal experience, therefore, enables me to speak with authority on the rapidly curative properties of the two above-mentioned remedies, when given in alternation. I have, so far, not only in my own case, but also in that of others, never found this treatment to disappoint me yet, and I can, therefore, with the utmost confidence, recommend it to sufferers from "sore throat"—*Homœopathic World*, September 1, 1903.

CLINICAL CASES FROM PRACTICE.

BY R. F. RABE, M.D., HOBOKEN, NEW JERSEY.

A Lachesis intermittent.

CASE I.—Margaret M. Call, age four years, lives in a marshy, badly-drained neighbourhood. Was taken ill last fall with intermittent fever, tertian type, regular paroxysms of chill fever sweat. Was ill eight weeks in spite of quinine given by an old school physician. The trouble then disappeared until this spring, when it began again in April, and the child was sick one week before I saw her.

Her symptoms then were.

Chill comes on at 2 P.M. every other day, and the child runs to her mother and wants to be held in mother's arms. On one day the chill came on at 4 P.M.

Chill is preceded by dullness and drowsiness.

During chill there are thirst, red face and desire to be covered.

After chill and during heat there occur vomiting and coughing.

During the heat thirsty and very drowsy, walking now and then for a drink of water. Wants covers.

Is asleep through most of the heat.

After heat slight sweat, mostly on forehead, thirst continued and child wants covers. By 8 P.M. attack is all over. Severe gagging cough, both day and night, on day of attack, as well as during apyrexia.

These were the symptoms as obtained from the mother. Subjective symptoms were of course, out of the question; at least with this child. As the cough was very suspicious of pertussis, which was epidemic in the neighbourhood, I ruled it out in selecting the remedy.

Gelsemium, Lachesis, Lycopodium and a few others seemed to suggest themselves, but a closer study brought out Lachesis as the simillimum, which was given in the 30th, three doses at three-hour intervals, on the well day, and it cured within a week.

The whooping cough which followed was greatly modified by *Zali bichromicum* 30, given ten days after the Lachesis.

A Rhus Tox. Rheumatism.

CASE II.—August 3, 1901. Mr. G. K., pain down posterior aspect of left thigh < in damp weather, first moving and from rest; pain in dry weather < by warmth and continued motion. Is compelled to shift his position almost constantly, as he cannot sit long in one place.

Rhus tox. 500 (B. & T).

Improvement was prompt and relief complete. This man's occupation is that of a teamster, and as such he is exposed to all kinds of weather.

A Baryta Acetica Neuralgia.

CASE III.—October 20, 1901. Mr. R., duration of trouble several weeks. Pain in right hip, extending shown posterior surface of thigh to the knee. Pain is < from walking or standing, with weight thrown on right side; > by lying down or sitting quietly. Sensation as though the thigh were shortened or drawn tight.

Baryta acetica 200 (Jenichen).

Improvement began at once and continued until November 6, where there was slight return of pain.

Barita acetica 300 (Jenichen) was repeated and trouble promptly vanished.

A Sanguinaria Catarrhal Inflammation.

CASE IV.—L. H., a sufferer from chronic catarrh of the nose, was attacked by an acute coryza. The usual remedies soon controlled this when on November 13, 1903, severe pain was felt along the course of the right supra-orbital nerve, extending as far as the right temple. The right eye was suffused with tears and the blood-vessels were injected. A thin discharge issued from the right nostril, with an occasional lump of rather hard mucus. The patient was unable to attend to his business, being a chemist, as he was incapable of fixing his thoughts on any work and his memory was very dull.

Pain was slightly < by pressure of the hand, was > from stooping and especially so from blowing the nose.

The pain came on at about 9 o'clock in the morning and would last until 4 o'clock in the afternoon, in periodicity very strongly suggesting a malarial origin.

Occasionally a rather more profuse discharge from the right nostril and would relieve the pain for a few minutes.

Kali hydriodicum was given, first low, then high, with no effect.

Sanguinaria was then studied and given in the cm. potency (Skinner).

Relief began at once, each day the pain decreasing somewhat more, until all pain was gone within eight days. The discharge also became much less and of a thicker consistency and yellow color.—*Medical Advance*, September, 1903.

*Excerpts from Contemporary Literature.*A PRESIDENTIAL ADDRESS ON THE INFLUENCE
OF BRAIN-POWER ON HISTORY.*Delivered before the British Association for the Advancement of Science
at Southport, on Sept. 9th, 1903.*BY SIR NORMAN LOCKYER, K.C.B., LL.D., F.R.S.,
PRESIDENT OF THE ASSOCIATION.THE BRITISH ASSOCIATION AS A POSSIBLE FACTOR IN
NATIONAL EDUCATION.

* * * * *

Last year, when this friend of science ceased to be Prime Minister, he was succeeded by another statesman who has shown in many utterances that he has a clear understanding of the real place of science in modern civilisation. We then have good grounds for hoping that the improvement in the position of science in this country which we owe to the one will also be the care of his successor, who has honoured the Association by accepting the unanimous nomination of your Council to be your President next year.

On this we may congratulate ourselves all the more because I think, although it is not generally recognised that the century into which we have now well entered may be more momentous than any which has preceded it, and that the present history of the world is being so largely moulded by the influence of brain-power, which in these modern days has to do with natural as well as human forces and laws, that statesmen and politicians will have in the future to pay more regard to education and science as empire-builders and empire-guarders than they have paid in the past. The nineteenth century will ever be known as the one in which the influences of science were first fully realised in civilised communities; the scientific progress was so gigantic that it seems rash to predict that any of its successors can be more important in the life of any nation.

Disraeli, in 1873, referring to the progress up to that year spoke as follows: "How much has happened in these 50 years—a period more remarkable than any, I will venture to say, in the annals of mankind. I am not thinking of the rise and fall of empires, the change of dynasties, the establishment of governments. I am thinking of those revolutions of science which have had much more effect than any political causes, which have changed the position and prospects of mankind more than all the conquests and all the codes and all the legislators that ever lived."

Britain in the middle of the last century was certainly the country which gained the most by the advent of science, for she was then in full possession of those material gifts of nature, coal and iron, the combined winning and utilisation of which, in the production of machinery and in other ways, soon made her the richest country in the world. With the winning of mineral wealth and the production of machinery in other countries our

superiority as depending upon our first use of vast material resources was reduced, and while the foundation of our superiority depending upon our *material resources* were being thus sapped by a cause *which was beyond our control*, our statesmen and our universities were blind leaders of the blind, and our other asset, our mental resources, which was within our control, was culpably neglected. If our Ministers had been more wise and our universities more numerous and efficient *mental resources* would have been developed by improvements in educational method, by the introduction of science into schools, and, more important than all the rest, by the teaching of science by experiment, observation, and research, and not from books. It is because this was not done that we have fallen behind other nations in properly applying science to industry, so that our application of science to industry are relatively less important than they were.

Now the objects of the British Association as laid down by its founders 72 years ago are "To give a stronger impulse and a more systematic direction to scientific inquiry—to promote the intercourse of those who cultivate science in different parts of the British Empire with one another and with foreign philosophers—to obtain a more general attention to the objects of science and a removal of any disadvantages of a public kind which impede its progress." In the main my predecessors in this chair have dealt, and with great benefit to science, with the objects first named.

But at a critical time like the present I find it imperative to depart from the course so generally followed by my predecessors and to deal with the last object named, for unless by some means or other we "obtain a more general attention to the objects of science and a removal of any disadvantages of a public kind which impede its progress," we shall suffer in competition with other communities in which science is more generally utilised for the purposes of the national life. This struggle is one in which science and brains take the place of military weapons, which up to the present have determined the history and fate of nations. The school, the university, the laboratory, and the workshop are the battle-fields of this new warfare.

[Sir Norman Lockyer here quoted the Prince of Wales's admonition to Great Britain to wake up and also passages from speeches delivered by Lord Rosebery and Mr. Joseph Chamberlain in January, 1901, relative to the Commercial rivalry of nations. He continued:]

The Prime Minister said at Manchester in October, 1902:—"The existing educational system of this country is chaotic, is ineffectual, is utterly behind the age, makes us the laughing-stock of every advanced nation in Europe and America, puts us behind, not only our American cousins, but the German and the Frenchman and the Italian."

A careful study of the early history of the Association leads me to the belief that the function I am now dwelling on was strongly in the minds of the founders; but be this as it may, let me point out how admirably the organisation is framed to enable men of science to influence public opinion and so to bring pressure to bear upon Governments which follow public

opinion. "Firstly, unlike all the other chief metropolitan societies, its outlook is not limited to any branch or branches of science. Secondly, we have a wide and numerous fellowship, including both the leaders and the lovers of science, in which all branches of science are and always have been included with the utmost catholicity—a condition which renders strong committees possible on any subject. Thirdly, an annual meeting at a time when people can pay attention to the deliberations, and when the newspapers can print reports. Fourthly, the possibility of beating up recruits and establishing local committees in different localities, even in the King's dominions beyond the seas, since the place of meeting changes from year to year, and is not limited to these islands. We not only, then, have a scientific Parliament competent to deal with all matters, including those of national importance, relating to science, but machinery for influencing all the various councils and committees dealing with local matters, the functions of which are daily becoming more important. The Machinery might consist of our corresponding societies. We already have affiliated to us seventy societies with a membership of 25,000. Were this number increased so as to include every scientific society in the Empire, metropolitan and provincial, we might eventually hope for a membership of half a million. I am glad to know that the Council is fully alive to the importance of giving a greater impetus to the work of the corresponding societies. During this year a committee was appointed to deal with the question; and later still, after this committee had reported, a conference was held between this committee and the corresponding societies committee to consider the suggestions made, some of which will be gathered from the following extract:

"In view of the increasing importance of science to the nation at large, your committee desire to call the attention of the Council to the fact that in the corresponding societies the British Association has gathered in the various centres represented by these societies practically all the scientific activity of the provinces. The number of members and associates at present on the list of the corresponding societies approaches 25,000, and no organisation is in existence anywhere in the country better adapted than the British Association for stimulating, encouraging, and co-ordinating all the work being carried on by the seventy societies at present enrolled. Your committee are of opinion that further encouragement should be given to these societies and their individual working members by every means within the power of the Association; and with the object of keeping the corresponding societies in more permanent touch with the Association they suggest that an official invitation on behalf of the Council be addressed to the societies, through the corresponding societies committee asking them to appoint standing British Association sub-committees, to be elected by themselves, with the object of dealing with all those subjects of investigation common to their societies and to the British Association committees, and to look after the general interests of

science and scientific education throughout the provinces and provincial centres. . . .

Your committee desire to lay special emphasis on the necessity for the extension of the scientific activity of the corresponding societies and the expert knowledge of many of their members in the direction of scientific education. They are of opinion that immense benefit would accrue to the country if the corresponding societies would keep this requirement especially in view with the object of securing adequate representation for scientific education on the Education Committees now being appointed under the new Act. The educational section of the Association having been but recently added the corresponding societies have as yet not had much opportunity for taking part in this branch of the Association's work; and in view of the reorganisation in education now going on all over the country your committee are of opinion that no more opportune time is likely to occur for the influence of scientific organisations to make itself felt as a real factor in national education." . . .

I believe that if these suggestions or anything like them—for some better way may be found on inquiry—are accepted great good to science throughout the empire will come. Rest assured that sooner or later such a guild will be formed because it is needed. It is for you to say whether it shall be, or form part of, the British Association. We in this empire certainly need to organise science as much as in Germany they find the need to organise a navy. The German Navy League, which has branches even in our colonies, already has a membership of 630,000, and its income is nearly £20,000 a year. A British Science League of 500,000 with a sixpenny subscription would give us £12,000 a year—quite enough to begin with. I believe that the British Association would be a vast gainer by such an expansion of one of its existing functions. Increased authority and prestige would follow its increased utility. The meetings would possess a new interest. There would be new subjects for reports. This magnificent, strong, and complicated organisation would become a living force, working throughout the year instead of practically lying idle for 51 weeks out of the 52 so far as its close association with its members is concerned. There is another matter which I should like to see referred to a committee. The British Association—which, as I have already pointed out, is now the chief body in the empire which deals with the totality of science—is, I believe, the only organisation of any consequence which is without a charter and which has not His Majesty the King as patron. . . .

LACK OF UNIVERSITIES.

It is fully recognised that our universities, both in numbers and efficiency, are unequal to the modern needs of our people, so that not only our captains of industry, but those employed in the nation's work generally, do not secure a training similar to that afforded by other nations.

Chief among the causes which have brought us to the inferiority as compared with other nations in which we find ourselves are our carelessness in the matter of education and our false notions of the limitations of State

functions "in relation to the conditions of modern civilisation. Time was when the navy was largely a matter of private and local effort. William the Conqueror gave privileges to the Cinque Ports on the condition that they furnished 52 ships when wanted. In the time of Edward III., of 730 sail engaged in the siege of Calais 705 were "people's ships." All this has passed away; for our first line of defence we no longer depend on private and local effort. Time was when not a penny was spent by the State on elementary education. Again, we no longer depend upon private and local effort. The navy and primary education are now recognised as properly calling upon the public for the necessary financial support. But when we pass from primary to university education, instead of State endowment we find State neglect; we are in a region where it is nobody's business to see that anything is done. We in Great Britain have 13 Universities competing with 134 State and privately endowed universities in the United States and 22 State-endowed universities in Germany. I leave other countries out of consideration for lack of time and I omit all reference to higher institutions for technical training, of which Germany alone possesses nine of university rank, because they are less important; they instruct rather than educate, and our want is education. The German State gives to one university more than the British Government allows to all the universities and university colleges in England, Ireland, Scotland, and Wales put together. These are the conditions which regulate the production of brain-power in the United States, Germany, and Great Britain respectively, and the excuse of the Government is that this is a matter for private effort. If we grant that there was some excuse for the State's neglect so long as the higher teaching dealt only with words, and books alone had to be provided, it must not be forgotten that during the last 100 years not only has knowledge been enormously increased but things have replaced words, and fully equipped laboratories must take the place of books and class-rooms if university training worthy of the name is to be provided. There is more difference in size and kind between an old and a new university than there is between the old caravel and a modern battleship, and the endowments must follow suit.

What are the facts relating to private endowment in this country? In spite of the munificence displayed by a small number of individuals in some localities the truth must be spoken. In depending in our country upon this form of endowment we are trusting to a broken reed. If we take the twelve English university colleges, the forerunners of universities unless we are to perish from lack of knowledge, we find that private effort during 60 years has found less than £4,000,000—that is, £2,000,000 for buildings and £40,000 a year income. This gives us an average of £166,000 for buildings and £3300 for yearly income. What is the scale of private effort we have to compete with in regard to the American universities? In the United States during the last few years universities and colleges have received more than £40,000,000 from this source alone; private effort supplied nearly £7,000,000 in the years 1898-1900. Next

consider the amount of State aid to universities afforded in Germany. The buildings of the new University of Strassburg have already cost nearly £1,000,000—that is, about as much as has yet been found by private effort for buildings in Manchester, Liverpool, Birmingham, Bristol, Newcastle, and Sheffield. The Government annual endowment of the same German university is more than £19,000. This is what private endowment does for us in England, against State endowment in Germany. But the State does really concede the principle ; its present contribution to our universities and colleges amounts to £155,500 a year. No capital sum, however, is taken for buildings. The State endowment of the University of Berlin in 1891-92 amounted to £168,777. When, then, we consider the large endowments of university education both in the United States and Germany it is obvious that State aid only can make any valid competition possible with either. The more we study the facts the more do we find that we to a large extent lack both of the sources of endowment upon one or other, or both, of which other nations depend.

To compete on equal grounds with other nations we must have more universities. But this is not all—we want a far better endowment of all the existing ones, not forgetting better opportunities for research on the part of both professors and students. Another crying need is that of more professors and better pay. Another is the reduction of fees ; they should be reduced to the level existing in those countries which are competing with us to say, one-fifth of their present rates, so as to enable more students in the secondary and technical schools to complete their education. In all these ways facilities would be afforded for providing the highest instruction to much greater number of students. At present there are almost as many professors and instructors in the universities and colleges of the United States as there are day universities and colleges of the United Kingdom. The facts show that in this country we cannot depend upon private effort to put matters right. How about local effort ? Anyone who studies the statistics of modern municipalities will see that it is impossible for them to raise rates for the building and up-keep of universities. The buildings of the most modern university in Germany have cost £1,000,000. For up-keep the yearly sums found, chiefly by the State, for German universities of different grades, taking the incomes of seven out of the 22 universities as examples, are : —

First class ...	...	Berlin ...	... £130,000
Second class ...	...	Bonn	} ... 56,000
		Göttingen	
Third class ...	...	Königsberg	} ... 48,000
		Strassburg	
Fourth class ...	...	Heidelberg	} ... 37,000
		Marburg	

Thus, if Leeds, which is to have a university, is content with the fourth-class German standard, a rate must be levied of 7*d.* in the pound for yearly expenses, independent of all buildings. But the facts are that our towns are already at the breaking strain. During the last 50 years,

spite of enormous increases in rateable values, the rate have gone up from about 2s. to about 7s. in the pound for real local purposes. But no university can be a merely local institution.

I have pointed out that in old days our navy was chiefly provided by local and private effort. Fortunately for us those days have passed away ; but some 20 years ago, in spite of a large expenditure, it began to be felt by those who knew that in consequence of the increase of foreign natives our sea-power was threatened, as now, in consequence of the increase of foreign universities, our brain-power is threatened. The nation slowly woke up to find that its enormous commerce was no longer insured at sea, and that in relation to foreign natives our own had been suffered to dwindle to such an extent that it was no longer capable of doing the duty which the nation expected of it even in times of peace. At first this revelation was received with a shrug of incredulity and the peace-at-any-price party denied that anything was needed, but a great teacher arose. As the facts were inquired into the suspicion changed into an alarm ; men of all parties saw that something must be done. Later the nation was thoroughly aroused and with an universal agreement the principle was laid down that, cost what it might to enforce our sea-power, our navy must be made and maintained of a strength greater than those of any two possibly contending Powers. After establishing this principle the next thing to do was to give effect to it. What did the nation do after full discussion and inquiry ? A Bill was brought in in 1888 and a sum of £21,500,000 was voted in order, during the next five years, to inaugurate a large shipbuilding programme, so that Britain and Britain's commerce might be guarded on the high seas in any event. Since then we have spent £120,000,000 on new ships and this year we spend still more millions on still more new ships. If these prove insufficient to safeguard our sea-power there is no doubt that the nation will increase them, and I have not heard that anybody has suggested an appeal to private effort.

How, then, do we stand with regard to universities, recognising them as the chief producers of brain-power and therefore the equivalents of battleships in relation to sea-power ? In the United Kingdom we had until quite recently 13. Of these, one is only three years old as a teaching university and another is still merely an examining board. In Germany there are 22 universities ; in France, under recent legislation, 15 ; and in Italy, 21. It is difficult to give the number in the United States, because it is clear, from the tables given in the Report of the Commissioner of Education, that some colleges are more important than some universities, and both give the degree of Ph.D. But of universities in title we have 134. Among these there are 46 with more than 50 professors and instructors, and 13 with more than 150. I will take that figure. Suppose we consider the United States and Germany, our chief commercial competitors, and apply the Admiralty principle. We should require, allowing for population, eight additional universities at the very lowest estimate, some of which of course, will be colleges promoted to university rank and fitted to carry

on university work. Three of them are already named: Manchester, Liverpool, Leeds. Let us take this number and deal with it on the battleship condition, although a modern university on American or German models will cost more to build than a battleship. If our present university shortage be dealt with on battleship conditions, to correct it we should expend at least £8,000,000 for new construction and for the pay-sheet we should have to provide ($8 \times £50,000$) £400,000 yearly for *personnel* and up-keep; for it is of no use to build either ships or universities without manning them. Let us say, roughly, capitalising the yearly payment at $2\frac{1}{2}$ per cent., £24,000,000. At this stage it is important to inquire whether this sum arrived at by analogy merely, has any relation to our real university needs. I have spent a year in making inquiries, as full as I could make them, of friends conversant with the real present needs of each of the universities, old and new. I have obtained statistics which would fill a volume, and personally I believe that this sum at least is required to bring our university system up to anything like the level which is insisted upon both in the United States and in Germany. Even Oxford, our oldest University, will still continue to be a mere bundle of colleges unless £3,000,000 are provided to enable the University properly so-called to take her place among her sisters of the modern world; and Sir Oliver Lodge, the principal of our very youngest university, Birmingham, has shown in detail how £5,000,000 can be usefully and properly applied in that one locality to utilize for the good of the nation the enthusiasm and scientific capacity which are only waiting for adequate opportunity of development.

How is this money to be raised? I reply, without hesitation, *Duplicate the Navy Bill of 1888-89*; do at once for brain-power what we so successfully did then for sea-power. Let £24,000,000 be set apart from one asset, our national wealth, to increase the other, brain-power. Let it be assigned and borrowed as it is wanted; there will be a capital sum for new buildings to be erected in the next five or ten years, the interest of the remainder to go towards increased annual endowments. There need be no difficulty about allocating money to the various institutions. Let each university make up its mind as to which rank of the German universities it wishes to emulate. When this claim has been agreed to, the sums necessary to provide the buildings and teaching staff of that class of university should be granted without demur. It is the case of battleships over again and money need not be spent more freely in one case than in the other. Let me at once say that the sum is not to be regarded as practically gone when spent, as in the case of a short-lived ironclad. *It is a loan which will bear a high rate of interest.* This is not my opinion merely; it is the opinion of those concerned in great industrial enterprises and fully alive to the origin and effects of the present conditions of things. I have been careful to point out that the statement that our industries are suffering from our relative neglect of science does not rest on my authority. But if this be true, then if our annual production is less by only £2,000,000 then it might

have been, having £2,000,000 less to divide would be equivalent to having £4,900,000 or £50,000,000 less capital than we should have had if we had been more scientific.

Sir John Brunner, in a speech connected with the Liverpool School of Tropical Medicine, stated recently that if we as a nation were now to borrow ten millions of money in order to help science by putting up buildings and endowing professors, we should get the money back in the course of a generation a hundredfold. He added that there was no better investment for a business man than the encouragement of science and that every penny he possessed had come from the application of science to commerce. According to Sir Robert Giffen, the United Kingdom as a going concern was in 1901 worth £16,000,000,000. Were we to put aside £24,000,000 for gradually organising, building, and endowing new universities, and making the existing ones more efficient, we should still be worth £15,976,000,000—our property well worth defending by all the means and chief among these brain-power, we can command.

It is to be held that this, or anything like it, is too great a price to pay for correcting past carelessness or stupidity, the reply is that the £120,000,000 recently spent on the navy, a sum five times greater, has been spent to correct a sleepy blunder, not one whit more inimical to the future welfare of our country than that which has brought about our present educational position. We had not sufficiently recognised what other nations had done in the way of ship-building, just as until now we have not recognised what they have been doing in university building. Further, I am told that the sum of £24,000,000 is less than half the amount by which Germany is yearly enriched by having improved upon our chemical industries, owing to our lack of scientific training. Many other industries have been attacked in the same way since; but taking this one instance alone, if we had spent this money 50 years ago, when the Prince Consort first called attention to our backwardness, the nation would now be much richer than it is and would have much less to fear from competition. Suppose we were to set about putting our educational house in order, so as to secure a higher quality and greater quantity of brain-power, it would not be the first time in history that this has been done. Both Prussia after Jena and France after Sedan acted on the view:—

“When land is gone and money spent,
Then learning is most excellent.”

After Jena, which left Prussia a “bleeding and lacerated mass,” the King and his wise counsellors, among them men who had gained knowledge from Kant, determined, as they put it, “to supply the loss of territory by intellectual effort.” What did they do? In spite of universal poverty, three universities, to say nothing of observatories and other institutions, were at once founded, secondary education was developed, and in a few years the mental resources were so well looked after that Lord Palmerston defined the kingdom in question as “a country of damned professors.”

After Sedan—a battle, as Moltke told us, “won by the schoolmaster”—

France made even more strenuous efforts. The old University of France, with its "academies" in various places, were replaced by 15 independent universities, in all of which are faculties of letters, sciences, law, and medicine. The development of the University of Paris has been truly marvellous. In 1897-98 there were 12,000 students, and the cost was £200,000 a year. But even more wonderful than these examples is the "intellectual effort" made by Japan, not after a war, but to prepare for one. The question is, Shall we wait for a disaster and then imitate Prussia and France, or shall we follow Japan and thoroughly prepare by "intellectual effort" for the industrial struggle which lies before us? Such an effort seems to me to be the first thing any national or imperial scientific organisation should endeavour to bring about.

THE IMPORTANCE OF RESEARCH WORK.

When dealing with our universities I referred to the importance of research, as it is now generally acknowledged to be the most powerful engine of education that we possess. But education, after all, is but a means to the end, which, from the national point of view, is the application of old and the production of new knowledge. Its national importance apart from education is now so generally recognised that in all civilised nations except our own means of research are being daily more amply provided for all students after they have passed through their university career; and more than this, for all who can increase the country's renown or prosperity by the making of new knowledge, upon which not only commercial progress, but all intellectual advance must depend. I am so anxious that my statement of our pressing, and indeed imperative, needs in this direction should not be considered as resting upon the possibly interested opinion of a student of science merely that I must trouble you with still more quotations. Listen to Mr. Balfour:—

"I do not believe that any man who looks round the equipment of our universities or medical schools or other places of education can honestly say in his heart that we have done enough to equip research with all the costly armoury which research must have in these modern days. We the richest country in the world, lag behind Germany, France, Switzerland, and Italy. Is it not disgraceful? Are we too poor or are we too stupid?"

It is imagined by many who have given no thought to the matter that this research should be closely allied with some application of science being utilised at the time. Nothing could be further from the truth; nothing could be more unwise than such a limitation. Surely all the laws of nature will be ultimately of service, and therefore there is much more future help to be got from a study of the unknown and the unused than we can hope to obtain continuing the study of that which is pretty well known and utilised already. It was a king of France, Louis XIV., who first commended the study of the *même inutile*. The history of modern science shows us more and more as the years roll on the necessity and advantage of such studies, and therefore the importance of properly endowing them; for the production of new knowledge is a costly and unremunerative pursuit.

Years ago we had Faraday apparently wasting his energies and time in playing with needles ; electricity now fills the world. To-day men of science in all lands are studying the emanations of radium ; no research could be more abstract ; but who knows what advance in human thought may follow or what gigantic world-transforming superstructure may eventually be raised on the minute foundation they are laying ? If we so organise our teaching forces that we can use them at all stages, from the gutter to the university, to sift out for us potential Faradays—to utilise the mental products which otherwise would be wasted—it is only by enabling such men to continue their learning after their teaching is over that we shall be able to secure the greatest advantage which any educational system can afford. It is now more than 30 years ago that my attention was specially drawn to this question of the endowment of research—first, by conversations with M. Dumas, the permanent secretary of the Academy of sciences, who honoured me by his friendship ; and, secondly, by my association with Sir Benjamin Brodie and Dr. C. E. C. Appleton in their endeavours to call attention to the matter in this country. At that time a general scheme of endowment suggested by M. Dumas was being carried out by M. Duruy. This took the form of the ‘Ecole speciale des hautes Etudes’ ; it was what our fellowship system was meant to be—an endowment of the research of post graduate students in each seat of learning. The French effort did not begin then.

I may here tell, as it was told me by Dumas, the story of Leon Foucault, whose many discoveries shed a glory on France and revived French industry in many directions. In 1851, when Prince Napoleon was President of the Republic he sent for Dumas and some of his colleagues and told them that during his stay in England, and afterwards in his study of the Great Exhibition of that year, he had found there a greater industrial development than in France and more applications of science, adding that he wished to know how such a state of things could be at once remedied. The answer was that new applications depended upon new knowledge and that therefore the most direct and immediate way was to find and encourage men who were likely by research in pure science to produce this new knowledge. The Prince-President at once asked for names ; that of Leon Foucault was the only one mentioned during the first interview. Some time afterwards Foucault informed Dumas that the Prince-President had been discussing with him the possible improvement of French science and industry and had given him 200,000 francs, requesting him to do all in his power to aid the State. Foucault ended by saying that, on realising the greatness of the task thus imposed upon him, the responsibility seemed more than he could bear. In 1872 a society for the organisation of academic study was formed in England in connection with the inquiry into the revenues of Oxford and Cambridge, and there was a famous meeting at the Freemasons’ Tavern, Mark Pattison being in the chair. Brodie, Rolleston, Carpenter, and Burdon-Sanderson were among the speakers and the first resolution carried was, “that to have a class of men whose lives are de-

voted to research is a national object." The movement died in consequence of the want of sympathy of the university authorities.

In the year 1874 the subject was inquired into by the late Duke of Devonshire's Commission and after taking much remarkable evidence, including that of Lord Salisbury, the Commission recommended to the Government that the then grant of £1000, which was expended by a committee appointed by the Royal Society on instruments needed in researches carried on by private individuals, should be increased, so that personal grants should be made. This recommendation was accepted and acted on; the grant was increased to £4000, and finally other societies were associated with the Royal Society in the administration. The committee, however, was timorous, possibly owing to the apathy of the universities and to the general carelessness on such matters, and only one personal grant was made; the whole conception fell through. Meantime however, opinion has become more educated and more alive to the extreme importance of research to the nation, and in 1891 a suggestion was made to the Royal Commission which administers the proceeds of the 1851 Exhibition that a sum of about £6000 a year available for scholarships should be employed in encouraging post-graduate research throughout the whole empire. As what happened is told in the Memoirs of Lord Playfair it is not indiscreet in me to state that when I proposed this new form of the endowment of research it would not have surprised me if the suggestion had been declined. It was carried through by Lord Playfair's enthusiastic support. This system has been at work ever since, and the good that has been done by it is now generally conceded. It is a supreme satisfaction to me to know that in this present year of grace the national importance of the study of the *même inutile* is more generally recognised than it was during the times to which I have referred in my brief survey; and, indeed, we students are fortunate in having the support of two members of His Majesty's Government, who two years ago spoke with no uncertain sound upon this matter, Mr. Balfour and Mr. Chamberlain:—

"Do we lack the imagination required to show what these apparently remote and abstract studies do for the happiness of mankind? We can appreciate that which obviously and directly ministers to human advancement and felicity, but seem somehow or another, to be deficient in that higher form of imagination, in that longer sight which sees in studies, which have no obvious, necessary, or immediate result, the foundation of the knowledge which shall give far greater happiness to mankind than any immediate, material, industrial advancement can possibly do; and if that, lacking that imagination, we have allowed ourselves to lag in the glorious race run now by civilised countries in pursuit of knowledge, and we have permitted ourselves so far to too large an extent to depend upon others for those additions to our knowledge, which surely we might have made for ourselves?

"I would remind you that all history shows that progress—national progress of every kind—depends upon certain individuals rather than upon the

mass. Whether you take religion, or literature, or political government, or art, or commerce, the new ideas, the great steps, have been made by individuals of superior quality and genius, who have, as it were, dragged the mass of the nation up one step to a higher level. So it must be in regard to material progress. The position of the nation to-day is due to the efforts of men like Watt and Arkright, or, in our own time, to the Armstrongs, the Whitworths, the Kelvins, and the Siemenses. These are the men who, by their discoveries, by their remarkable genius, have produced the ideas upon which others have acted and which have permeated the whole mass of the nation and affected the whole of its proceedings. Therefore what we have to do, and this is our special task and object, is to produce more of these great men."

I finally come to the political importance of research. A country's research is as important in the long run as its battleships. The most eloquent teaching as to its national value we owe to Mr. Carnegie, for he has given the sum of £2,000,000 to found a system of endowments, his chief purpose being in his own words, "to secure if possible for the United States of America leadership in the domain of discovery and the utilization of new forces for the benefit of man." Here is a distinct challenge to Britain. Judging by experience in this country, in spite of the magnificent endowment of research by Mond and Lord Iveagh, the only source of possible competition in British interest is the State, which certainly could not put the 1-8000th part of the accumulated wealth of the country to better use; for without such help both our universities and our battleships will become of rapidly dwindling importance. It is on this ground that I have included the importance of endowing research among the chief points to which I have been anxious to draw your attention.

THE NEED OF A SCIENTIFIC NATIONAL COUNCIL.

In referring to the struggle for existence among civilised communities I pointed out that the solution of a large number of scientific problems is now daily required for the State service, and that in this and other ways the source and standard of national efficiency have been greatly changed. Much evidence bearing upon the amount of scientific knowledge required for the proper administration of the public departments, and the amount of scientific work done by and for the nation, was brought before the Royal Commission on Science presided over by the Duke of Devonshire now more than a quarter of a century ago. The Commission unanimously recommended that the State should be aided by a scientific council in facing the new problem constantly arising. But while the home Government has apparently made up its mind to neglect the advice so seriously given it should be a source of gratification to us all to know that the application of the resources of modern science to the economic, industrial, and agricultural development of India has for many years engaged the earnest attention of the Government of that country. The Famine Commissions of 1878 laid much stress on the institution of scientific inquiry

and experiment designed to lead to the gradual increase of the food-supply and to the greater stability of agricultural outturn, while the experience of recent years has indicated the increasing importance of the study of the economic products and mineral-bearing tracts. Lord Curzon has recently ordered the heads of various scientific departments to form a board, which shall meet twice annually, to begin with, to formulate a programme and to review past work. The board is also to act as an advisory committee to the Government, providing among other matters for the proper co-ordination of all matters of scientific inquiry affecting India's welfare. Lord Curzon is to be warmly congratulated upon the step he has taken, which is certain to bring benefit to our great dependency.

The importance of such a board is many times greater at home, with many external as well as internal interests to look after—problems common to peace and war, problems requiring the help of the economic as well as of the physical sciences. It may be asked, What is done in Germany, where science is fostered and utilised far more than here? The answer is, there is such a council. I fancy, very much like what our Privy Council once was. It consists of representatives of the ministry, the universities, the industries, and agriculture. It is small, consisting of about a dozen members, consultative, and it reports direct to the Emperor. It does for industrial war what military and so-called defence councils do for national armaments; it considers everything relating to the use of brain-power in peace—from alterations in school regulations and the organisation of the universities, to railway rates and the fiscal schemes, including the adjustment of duties. I am informed that what this council advises, generally becomes law. It should be pretty obvious that a nation so provided must have enormous chances in its favour. It is a question of drilled battalions against an undisciplined army, of the use of the scientific spirit as opposed to the hope of "muddling through." Mr. Haldane has recently reminded us that "the weapons which science places in the hands of those who engage in great rivalries of commerce leave those who are without them, however brave, as badly off as were the dervishes of Omdurman against the maxim-guns of Lord Kitchener." Without such a machinery as this, how can our ministers and our rulers be kept completely informed on a thousand things of vital importance? Some may say that it is contrary to our habit to expect the Government to interest itself too much or to spend money on matters relating to peace; that war dangers are the only ones to be met or to be studied. But this view leaves science and the progress of science out of the question. Every scientific advance is now, and will in the future be more and more, applied to war. It is no longer a question of an armed force with scientific corps; it is a question of an armed force scientific from top to bottom. Science will ultimately rule all the operations both of peace and war, and therefore the industrial and the fighting population must both have a large common ground of education. These, then, are some of the reasons which compel me to point out that a scientific council, which might be a scientific com-

mittee of the Privy Council, in dealing primarily with the national needs in times of peace, would be a source of strength to the nation.

To sum up, then. I have endeavoured to point out to you how the nation at present suffers from the absence of a powerful, continuous, reasoned expression of scientific opinion, urging that we shall be armed as other nations are, with efficient universities and facilities for research to uphold the flag of Britain in the domain of learning and discovery. I have also endeavoured to show that in addition to our many existing councils another is required to secure that the benefits which a proper co-ordination of scientific effort in the nation's interest can bring shall no longer be neglected. Let me also remind you that in 1859, when the late Prince Consort occupied this chair, he referred to "impediments" to scientific progress, and said, "they are often such as can only be successfully dealt with by the powerful arm of the State or the long purse of the nation."—*Lancet*, Sept. 12, 1903.

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CHOLERA.

IX.

(Continued from last Number, p. 412)

New School or Homœopathic Treatment continued.

TREATMENT OF STAGE OF FULL DEVELOPMENT concluded.

So far as observed pathogeneses go RICINUS is distinguished from VERATRUM ALBUM in having anuria and painless stools and vomitings, and therefore should have the preference whenever such symptoms are present. But we must not forget the observed and often verified fact that whereas VERATRUM has often succeeded in painless cholera with anuria, RICINUS has failed in similar cases in which the former has proved beneficial. This shows that we are not yet in possession of the full pathogeneses of either of these drugs, and that therefore in the treatment of cholera as of other diseases while our chief goal should be the pathogenetic actions of drugs we must not hesitate to be guided by the accumulated experience of our school as well, which is too valuable a treasure to be thrown overboard in favour of imperfect provings. All provings, we may say, are necessarily imperfect, and their therapeutic value must be established by clinical verification.

RICINUS, nevertheless, is a very valuable addition to our stock of remedial agents for cholera; and it is not a little singular, as pointed out by Dr. Salzer, that it should be indigenous in a country where the disease is indigenous, though of course for obvious reasons not much importance can be attached to the coincidence.

Of the use of **aconitum** in the preliminary stage of the inflammatory variety of the disease, we have spoken above. From the experience we have had with the drug we are inclined to believe it is likely to be of considerable service in the other stages. Those who view cholera in the light of fever look upon aconite as the infallible specific in the disease. Without going this length we may say that this remedy has been but very little thought of by the homœopathic physician. Dr. Charles Julius Hempel was the first to recommend it in 1849 when an epidemic of the disease prevailed in America. He recommended strong doses of the concentrated tincture. We are not told whether it was at all tried in the United States; probably not, as "this recommendation was laughed at by some, and very coolly received by others." During the epidemic of 1865 the drug was actually tried by Dr. Cramoisy, of France* (his name is spelt as

* "That which engages our attention most in the disease is the specific poison which accelerates the pulse, disturbs the whole economy, irritates the nervous system, and increases the contractions of the heart. What renders the pulse scarcely perceptible at such times we do not know. That the blood deprived of its water, circulates with more difficulty in the blood-vessels, during the last contractions by their natural elasticity, which in consequence lessens the vitality, we have not denied. But the practical idea we wish to establish as the essential feature of this disease, and the only one we have to guide us in our treatment is the *acceleration* or the *augmentation of the pulsations*; in a word it is this which we all characterise as *la fièvre*. That which we have advanced is not a hypothesis; for we can well remember in the cholera cases we examined when under our supervision in the Charity Hospital, 1854, and in our private clinique in

36, that the increase of the pulse more or less coincided with the degree of the disease, and not with the anguish or suffering; because the pulse frequently disappeared at this moment... We have prescribed from fifteen to twenty drops of the *tincture of Aconite* in six to eight ounces of distilled water, a teaspoonful of the same to be taken every ten, twenty, or thirty minutes, according to the intensity of the symptoms. Under its influence, the patient begins to revive, the circulation of the blood returns to its normal condition; the pulse rises, the internal heat ceases; the thirst

Cramoisy in the *N. A. J. Hom.*) and found to be highly beneficial. He has reported several cases, (twelve according to Dr. Hughes) "where the patients, after having been fruitlessly treated with the usual cholera-remedies, such as, *Camphor*, *Veratrum*, *Arsenicum*, *Cuprum*, and sinking very fast into the last stage of collapse, were speedily and completely cured with large doses of the concentrated tincture of Aconite." On the strength of this fact Dr. Hempel asks: "Indeed, why should Aconite be overlooked as a great and specific remedy for cholera? If there is any truth in the homœopathic law, the effects of Aconite upon the normal human organism point to it as a remedy for cholera. We do not think that it supersedes the use of other valuable specifics for this terrible epidemic, nor do they, on the other hand, supersede the use of Aconite. A few cases of poisoning*

is allayed, and the vomiting and diarrhœa arrested. At the same time the bluish cast of countenance disappears, the cadaverous expression changes to a natural one, the agitation of body and mind is replaced by a tranquil condition; the dread of death is transformed to joy and hope, and the patient recovers in three or four hours."—Dr. Cramoisy on Aconite in Epidemic Cholera: Translated from the Bulletin de la Société Méd. Homœop. de France in the *North American Journal of Homœopathy*, May 1867.

* The following are the most striking among the cases cited by Dr. Hempel:

A man, forty-five years of age, under the treatment of rheumatism, swallowed a teaspoonful of liniment composed of equal parts of the tincture of Aconite-root and water. This was followed by pain in the epigastrium, numbness of the hands and feet, and a sense of formication over the whole body. One hour after, the dose was repeated. At the time of my visit, an hour and a half after the first dose, the man had swallowed over a drachm of the strongest tincture of the root. I found him in a complete state of collapse; after the second dose he had vomited repeatedly, first bilious matter changing into copious watery discharges; he had also had several very large rice-water discharges from the bowels; he complained of terrible pain and anxiety about the heart, was pulseless, skin cold and clammy, face indicative of great suffering and fear, breath cold to the hand; occasional paroxysms of general opisthotonic spasms would leave him in a prostrated condition in which it would seem that his constantly expressed fear that he should die, was about to be realized.

By mistake a child was given a teaspoonful of the strong tincture of Aconite-root. The patient was a boy, six years of age. Doctor Hays of Covington, Ky., where the poisoning occurred, reports as follows: I

will conclusively demonstrate the homœopathicity of Aconite to Asiatic cholera. With high potencies, we must of course, not expect to accomplish every thing; large doses of the concentrated tincture are required to produce a curative effect."

ACONITUM then has pathogenetic effects in addition to those we have already enumerated, which analogise strongly with the characteristic symptoms of cholera. It has burning and numbness of stomach; it has burning feeling from stomach up through œsophagus to mouth; it has vomiting, followed by thirst; it has inclination to vomiting, with violent diarrhœa; it has vomiting and watery diarrhœa; it has vomiting after each drink; it has vomiting of blood, followed by perspiration; it has painless diarrhœa of rice-water stools; it has the hippocratic countenance so distinctive of cholera; it has bluish face with black lips; it has coldness of the extremities with blueness of the nails of the toes and fingers, coldness of the extremities with collapse of pulse; it has coldness of the tongue. It has scanty urine passed with burning and difficulty, and it has also total suppression of urine.

We have found from half a drop to one-tenth or even one-twentieth of a drop of the mother tincture quite enough to bring about a curative action. Somehow or other the dilutions do not act beneficially at all. Drop-doses may be used, but there is no need of employing more massive ones.

Camphor: After what we have said about this drug under the treatment of the first stage, we need not say much as regards its employment in the treatment of the second stage. We here

found the patient so much prostrated that, had there been an epidemic of cholera, and had I no examination to aid me, or any previous history, but had to depend upon the appearance of the patient, I would undoubtedly have pronounced it a collapsed state of cholera. The skin was cold, clammy and livid, with a profuse perspiration, there was no pulse to be felt at the wrist, the action of the heart was quite feeble and irregular, the capillaries were scarcely able to be filled when their contents were poured out. The head was cold, the eyes natural in appearance, except the dilatation of the pupils which was extreme and not at all sensitive to the effects of light. The facial expression was haggard, the nose pinched, the breathing extremely laboured, the lungs were filled with mucus, the rattles of which could be distinctly heard in any part of the room. The patient's bowels moved several times involuntarily. Under proper treatment the boy recovered.

recapitulate the symptoms which it can undoubtedly produce, and which correspond with the symptoms of a large number of cases of the disease: Depressed, sad, out of humor; great anxiety and extreme restlessness, tossing about in bed; attempted to stand but lay down again; falls down, without consciousness, with howling cries; staggered as if drunk; vertigo, so severe as to oblige him to sit down to prevent falling; countenance pale, distorted, sunken, bluish; great difficulty of speech and thought, speech broken, feeble, hoarse; continued thirst, with frequent drinking; longing for drinks, without thirst; nausea and vomiting, especially mornings; vomiting of yellow, watery liquid; vomiting like rice-water; coldness in stomach; great burning and sensation of heat in stomach; stool dark brown, thin, watery; stool rice-water like; urine diminished; in drops or suppressed, retention of urine; great anxiety in the precordial region; heart-beats and pulse slow and intermittent; pulse very weak, scarcely or not at all perceptible; spasms, tonic and clonic; convulsive circular motion (rotation of arms); catalepsy; feeling as if drunk, with staggering; body generally quite cold; cold, clammy sweat.

If these are the genuine symptoms of Camphor, about which we have not the least doubt whatever, then we should have no hesitation in prescribing the drug in the first and second stages of cholera on homœopathic principles, and it matters not in what doses we administer it, provided the doses are short of the doses which produce the pathogenetic effects. As these latter doses are very large, sometimes not less than a drachm or more, we do not think that drop doses, or two-drop, or even five-drop doses would be massive in comparison. So far as our own experience teaches us, drop-doses in sugar or sugar-puffs (*batasa*, बातसा) are quite enough for adults. For children a quarter of a drop, or even less is sufficient. And, as we have said above, circumstances may require the exhibition of dilutions.

The drugs that we have pointed out as useful in the stage of full development of the disease, are those ordinarily used. There are others whose pathogeneses point to their probable utility as remedies of this stage. These are:

1. *JATROPHA CURCAS*,
2. *TABACUM*,
3. *ANTIMONIUM TARTARICUM*,

4. ELATERIUM,
5. CROTON TIGLIUM,
6. IPECACUANHA.
7. EUPHORBIA COBOLLATA,
8. MERCURIUS CORROSIVUS,
9. MERCURIUS DULCIS (CALOMEL).

The following are their indications :—

Jatropha, which belongs to the same natural order as **Ricinus**, namely, Euphorbiacæ, has the following symptoms: Thirst, but dreads to drink on account of nausea; easy vomiting of a large quantity of watery substance resembling the white of an egg, together with watery diarrhœa (as if the contents of the rectum would gush out like a torrent), accompanied by anxiety with burning at the stomach, anguish, coldness of the body, viscid sweat, violent cramp-pains in the lower limbs to such an extent that the calves look flat like splints. Watery diarrhœa as if it spurted from him; stools copious, mucous, and not unlike the well-known rice-water stools; thin stool preceded and followed by much rumbling, and at times a noise as if a bottle were being emptied. Notwithstanding the very copious evacuations from the stomach and bowels, **JATROPHA** has not been found to produce anuria or suppression of urine. In this it resembles **VERATRUM** and differs from **Ricinus**. We are inclined to think that in many cases of cholera **VERATRUM** has been used where **JATROPHA** should have been. Hering has gone so far as to say that **JATROPHA** should be preferred to **VERATRUM** in the treatment of this disease. They have, however, distinguishing characteristics which make their selection easy.

Tabacum: This drug, though recommended for trial, does not appear to have been actually tried in cholera. Dr. Russell has given it a place in his *Treatise*, but says he has little experience of it. "The cases for which it would best answer are," according to him, "those attended with much depression, vomiting, eructations, and obstinate dysuria, or suppression of urine, along with pains in the bowels and cramps, and oppression of the chest." The following symptoms which it produces give a more precise and larger sphere of its usefulness: Most profound gloom, constant fear of death, yet attempting suicide; vertigo and intoxication, worse indoors, better in open air; deathly

paleness with the nausea; face pale, collapsed, covered with cold sweat, deeply sunken eyes, surrounded by blue rings; dryness of whole mouth, tongue, and lips, with violent thirst; speech difficult and unintelligible; incessant nausea and vomiting, worse indoors and from movement, better in open air; violent vomiting and diarrhoea, of watery liquid; vomiting in a stream; generally relief from vomiting; sinking at pit of stomach; heat and burning in stomach and epigastrium; suppression of urine (increased secretion is a more constant symptom); difficult, oppressed respiration; violent constriction of the chest; heart's action very feeble, nearly or completely paralyzed; pulse weak, intermittent, skin cold and covered with clammy sweat; pulselessness; cramp from the toes to the knee; violent spasms and convulsions, first of the arms, then of the legs, and afterwards of the whole body, followed by great prostration; whole body icy-cold, streaming with cold sweat.

The most prominent characteristic of this drug is that, however introduced, whether by the mouth or even applied externally, it produces almost unceasing nausea and vomiting. It is, therefore, according to Noack and Trinks, likely to be useful in those cases in which, after the purging having yielded to other drugs, the nausea and vomiting become persistent, recurring in constant paroxysms, being at times more violent, and when there are also cold sweat, oppression at the stomach, some anguish and restlessness, cramp and tearing in the limbs, occasional clawing in the calves; remembering that the characteristic of the tabacum nausea and vomiting is that they are aggravated on the slightest movement, and that the vomiting occurs sometimes in a stream.

Dr. Bell would seem to recommend TABACUM in cholera without stool, vomiting, or thirst; but the symptoms given above do not justify the recommendation.

Antimonium Tartaricum, (tartar emetic): The pathogenesis of this drug points it out as likely to be very useful in cholera, especially in the gastro-enteric variety. Tartar emetic would seem to be particularly indicated in those cases in which an alternation of vomiting and purging takes place; that is, on the cessation or amelioration of the vomiting, the purging becomes aggravated, and *vice versa*. We believe tartar emetic would,

if tried, be found to rank next to arsenic as an anti-choleraic remedy. In mild and sporadic cases we would prefer it to arsenic. As a general rule arsenic should be used in cases where the tendency is obviously to death; tartarized antimony in those in which the chances of recovery would seem to be greater.*

The following pathogenetic symptoms would enable us to prescribe it precisely: Hopeless despondent mood, dreads to be alone; state of stupor, interrupted by spasms; vertigo, on walking, on closing eyes, on lifting head; pale sunken face, covered with cold sweat; constant and insatiable thirst, or absence of thirst; violent nausea and incessant enormous vomiting, with purging and prostration; burning heat and cramps in stomach; the abdomen seems stuffed full of stones; copious alvine evacuations; very watery diarrhœa, with vomiting; very offensive diarrhœaic stools; involuntary, watery, blood-streaked stools; urine more copious and frequent at first, afterwards diminishes; albuminous urine; respiration heavy, anxious, difficult, rapid; feels as if he would suffocate, cannot get sufficient air, has to sit up whole night; oppression of the heart; violent palpitation, pulse rapid, weak, trembling; contracted, hardly perceptible; insensibility and coldness of the limbs, weak, almost imperceptible pulse, without vomiting (child); excessive restlessness, vertigo, syncope; convulsions and tetanic spasms, with loss of consciousness; cold sweat all over the body.

Elaterium: Pereira says: "Elaterium powerfully excites the secreting and exhaling vessels of the alimentary canal, and thereby occasions very watery stools: hence the term *hydragogue* applied to it. In some dropsical cases I have known a single dose discharge several pints of fluid by the bowels. The gripings and the increased number of evacuations prove that the irritation

* "One of the remarkable characters of the acute form (of antimoniai poisoning) is that, in spite of the violence and severity of the symptoms, even when the collapse and depression appear to indicate impending dissolution, there is an astonishing power of recovery. When one large dose is only administered the case proceeds to recovery or death, generally the former, if the case is placed early under treatment. In this respect, acute antimoniai is distinguished from acute arsenical poisoning. In the latter, in spite of early treatment, and the removal of the whole or greater part of the poison from the stomach, the case frequently terminates fatally." Taylor, *On Poisons*, 2nd Ed., pp. 537-8, 3rd Ed., pp. 458-9.

is not confined to the mucous coat, but is extended to the muscular coat. Under the influence of a full dose, the pulse is excited, the tongue becomes dry, and sometimes furred, and great thirst is produced. Occasionally the skin becomes damp under the operation of the medicine." The following is Dr. Chambers' description of the physiological action of the drug:—"It causes an enormous flow, of watery serum from the first mucous membrane that absorbs it. If its vapour be drawn up into the nostrils for a short time, it is a powerful errhine, and is followed by the secretion of floods of water from the Schneiderian membrane; if it is dissolved in the oesophagus it causes such a deluge of the gastric fluids, that the stomach cannot contain them, and they are rejected by vomiting; if it succeed in passing the pylorus, a choleraic diarrhoea gushes forth, stripping the mucous membrane of its epithelium just like its morbid prototype." From this Dr. Hughes rightly infers: "Elaterium would thus seem homœopathic to choleraic diarrhoea and vomiting. There is this difference, that the prolonged action of elaterium sets up gastro-enteritis, which the cholera poison never does." He recommends its trial in cases in which the excessive quantity of evacuations is especially noticeable.

We have no good proving of this drug, and consequently its selection cannot be made with strict homœopathic precision. We give the following meagre summary of its symptoms from Allen, which may help in this direction: Depression of spirits; fear of some approaching disaster. Bitter taste, with salivation; nausea, which continued till after two liquid stools; vomiting of a dark-brown fluid mixed with food, without pain, flatus, or nausea, with much prostration; frequent vomiting of a small quantity of clear liquid, followed by discharge of copious greenish substance; copious liquid stools; watery discharges of a frothy character; copious, painless motions, until the bowels were fairly emptied.

It will be seen that except the enormous quantity of the evacuations by the bowels and the stomach, which are painless, there are no other symptoms, such as anuria, cramps, collapse, &c., which can point to it as a remedy for cholera. It may serve as an intercurrent remedy when the profuse discharges prove to be obstinate.

Croton tiglium : Among the pathogenetic symptoms of this drug we have as especially characteristic :—Sadness ; great depression of spirits ; anxiety ; vertigo, especially on the right side, worse when walking in open air ; face, hands, and toes cyanotic ; countenance pale and shrunk, with sensation of coldness ; mouth dry and parched ; intense thirst ; insufferable nausea, with inflation of bowels and borborygmi in epigastric region ; vomiting, borborygmi, and diarrhœa ; violent vomiting of the ingesta after previous violent nausea ; sudden, violent, repeated attacks of vomiting, of a yellowish white frothy fluid occasioning the most violent efforts of the stomach ; anguish, oppression, and pressure in the region of the stomach, with great nausea and accumulation of water in the mouth ; violent burning in the stomach ; numerous liquid evacuations with tenesmus, without colic, or with nausea and colic ; liquid diarrhœaic stools, resembling yellow-colored water, forcibly evacuated and coming out like a shot ; violent purging, with a disagreeable sensation through the whole body, and nauseous taste ; watery, painless stool ; sweat during stool. Anxious, oppressed, difficult respirations ; sensation as though he could not get air enough into the air-cells, and could not perfectly expand the lungs ; palpitation of the heart, and accelerated, small, feeble pulse ; coldness, especially of the lower extremities, extending from the feet to the calves. In addition to these we have weakness and sick feeling ; fainting spell ; prostration of whole body, with frequent slight nausea, following stool ; constant fainting, and deathly indescribable feeling of prostration during and after vomiting ; lay in a lethargic state, sometimes drawing himself up as if in pain ; generally lying quiet on belly, but occasionally tossing himself.

“The purgation produced by Croton,” observes Dr. Hughes, “seems not the result of inflammatory irritation, but rather of such a transudation of the watery part of the blood as is caused by *Elatium* and *Veratrum album*, and obtains in Asiatic cholera. The accompanying symptoms in severe cases are strikingly choleraic in character : and Croton might fairly take rank among the remedies for *choleraic diarrhœa*, for which indeed Dr. Jousset recommends it.” According to Dr. Bell, “the three highly characteristic symptoms of *CROT. TIG.*, the yellow watery stool, the sudden expulsion, and aggravation from drink and food, form

a trio whose presence will render success certain and brilliant. This stool is not always painful." This last fact of painless watery stools being produced by CROTON would entitle it to have a place in the therapeutics of the fully developed disease.

Ipecacuanha : A case of poisoning with this drug (35 grains of the powder in one dose) was published in the *Calcutta Journal of Medicine* (1874, Vol vii, pp. 447-9). It has added materially to our knowledge of its pathogenetic effects. From this case it is seen that IPECACUANHA produces watery stools, which are often passed involuntarily in bed without the patient being aware of it, and that the stools are greenish or yellowish-green at first, but becomes fainter, till it is difficult to say whether they have any color at all. In this case the morbi-genic action of the drug was exerted chiefly upon the intestinal tract and liver and very slightly upon the stomach itself, thus verifying the pretty general law, that in cases under the influence of all gastro-enteric irritants, when the gastric disturbances are less, the intestinal disturbances are greater, and *vice versa*. This case has precisionized the spasmodic symptoms of IPECACUANHA. In the *Materia Medica Pura* Hahnemann tells us: it produces "symptoms of emprosthotonus and opisthotonus; the body of the child is stretched out stiffly; stiff extension of the whole body, followed by a spasmodic clapping together of the arms." From our case we have clear proof of its power of producing spasms of a definite character in both the upper and lower extremities which commence at the fingers and toes and extend upwards. It produces also spasms of the muscles of the neck, especially of the sternocleido-mastoids. This is a striking characteristic. Taking all the symptoms into account we make bold to say that IPECACUANHA would be an admirable remedy in cholera even in the stage of its full development when there is nausea but no vomiting, when along with copious involuntary stools there are severe cramps of the extremities and of the neck, and when the stools are attended and followed by distressing gripping and colic; or when the gastric symptoms—nausea and vomiting predominate and the intestinal symptoms are less severe. It would evidently not be suited to cases in which the stools are painless.

Euphorbia corollata : The following symptoms, produced by this drug on Dr. A. R. Brown, of Litchfield, Mich., who at one

time took 25 grains of the powdered root, and at another, 2 or 3 grains every two or three hours, have been reported by Dr. Hale: Great anxiety. Suddenly, with no premonitory symptoms of pain a distressing sense of deathly nausea set in accompanied in a few minutes by faintness; then *sudden and powerful vomiting, of first food, &c., in the stomach, then large quantities of water mixed with mucus, then clear fluid like rice-water.* In less than a minute after the vomiting commenced, great commotion in the bowels, followed immediately by copious watery evacuations; this simultaneous vomiting and diarrhœa continued for nearly an hour, at short intervals, or intermissions, all the while accompanied by great anxiety, a death-like sense of faintness and exhaustion. During the height of its action the pulse sank to 40. After 50 grains the symptoms were much more intense, but lasted only a little longer. Cool skin, covered with beaded sweat. Cold hands, feet, and nose.

Thus, as Dr. Hale has rightly observed, "the sphere of the action of EUPHORBIA (corollata) is on the mucous membrane of the intestinal canal, which it affects in a manner similar to Croton tiglium, Elaterium, Jalapa, Helleborus niger, and Veratrum album, ...affording us a good picture of cholera, cholera morbus, cholera infantum, &c., in which diseases I have used it as successfully in many cases as I have its analogues. It acts well in such colliquative discharges when given in the 3x to 6x dilutions."

One case was reported to us sometime ago as having been cured by the drug after failure of other drugs. In the above narration of Dr. Brown's symptoms the vomit is described as rice-water though the stools are said to be simply copious and watery; whether these were rice-water-like, or whether further proving would have developed such stools, is more than can be safely affirmed. We must remember that it is not every case of cholera which has both rice-water vomit and stool. And therefore in the dearth of genuine cholera-remedies the practitioner should do well to remember EUPHORBIA COROLLATA.

Mercurius corrosivus: Pathogenetically the difference between Arsenic and Corrosive sublimate is that the latter produces symptoms much more rapidly, and its action upon the alimentary canal, especially upon the colon, is more of an inflammatory

nature. It is not a little singular that while the mouth, stomach and the colon are deeply affected by the drug, the small intestines are untouched. Dr. Taylor has well observed that "the symptoms produced by Corrosive sublimate, in the first instance, resemble those of cholera; if the person should survive several days, they in some respects assume the character of dysentery." Corrosive sublimate is one of the most, if not *the* most, approved remedies in dysentery. And we are of opinion it is likely to be of use in those cases of cholera in which the stools are from the beginning mixed with blood, showing a tendency to dysentery; and also in cases in which choleraic symptoms have developed *after* an attack of dysentery. Suppression of urine is a predominant symptom of Corrosive sublimate.

The following pathogenetic symptoms will help in its selection: Great anxiety, dared not stir as the pain and vomiting were renewed by the least pressure on the stomach; stupor and delirium; repeated attacks of vertigo; countenance pale and anxious and features pinched; hippocratic countenance, sunken eyes as in cholera; insatiable thirst, called for cold water in large quantities; violent vomiting and purging; incessant, very copious, green, bilious vomiting; repeated vomiting, first of food, then of serum; vomiting of dark frothy substance, followed by purging; vomiting of a thick, stringy, albuminous substance; vomiting of a clear fluid like water, mixed with fresh blood; vomiting and purging of bloody mucus and membranous flakes; great sensitiveness of the epigastric region; burning in stomach; several watery stools, with colic; diarrhœa and bloody stools; sero-sanguineous stools. Partial and afterwards complete suppression of urine; blackish albuminous urine; bloody urine. Difficult respiration. Heart beat tremulous, undulating; seemed remote and slow; intermittent; pulse small, feeble, irregular, intermittent; scarcely perceptible. Tonic cramps involving the neck and back, hands and feet livid, cold, shrunken; convulsions of the right upper and lower extremities: spasmodic convulsions of fingers and toes. Dorsal decubitus, with knees bent up. Spasms, first in the toes and feet, then in the fingers and hands; afterwards extending up the legs and arms; a violent spasm attacked the right breast and shot through to the back; spasmodic motions of muscles of the face.

Constant restlessness and tossing about; general state of collapse; skin cold and clammy, dripping with perspiration.

Mercurius dulcis or **Calomel**: This is by far a milder preparation of mercury than corrosive sublimate. It was till lately very extensively used and chiefly relied upon by the Old School in the treatment of cholera. The drug must have been originally proposed on the ground of its influencing the liver, in cholera the function of that organ being supposed to be paralysed. Recent experiments having shown that Calomel, in repeated doses, produces rather a-bilious than bilious stools, have proved quite a puzzle to the members of the old school who are in the habit of using the drug for the purpose of promoting the biliary secretion. To homœopaths who are familiar with the double action of drugs, the puzzle is quite easy of explanation. Indeed, in this fact we see one reason of the occasional success of Calomel in cholera. Calomel is so far homœopathic to the disease that it can produce a-bilious diarrhœaic stools. The use of Calomel, however, in cholera is not so much its homœopathicity to the disease as its defibrinating or liquefying influence upon the blood. In the algide stage one of the great dangers is from coagulation of the blood in the pulmonary vessels and in the chambers of the heart, as evidenced by distressing dyspnœa and pallor of the countenance. Such a state of things is capable of being prevented by the timely exhibition of Calomel in appreciable but not the very big and repeated doses used by the old school. We shall recur to it when we come to treat of the collapse.

The following pathogenetic symptoms of CALOMEL would be worth remembering: Considerably agitated and apprehensive. Face pallid as a corpse. Urgent thirst; profuse vomiting and diarrhœa; watery diarrhœa; gripings, abdominal fulness, burning in epigastric and umbilical regions, followed by copious serous discharges which became gradually less, and in course of seven or eight hours were very small and composed of bloody mucus with tenesmus; stools watery, green, and small. Urine at first increased then diminished. Asthma. Uneasy and restless. Occasionally faint; much prostration. Convulsive paroxysms presenting frightful appearances. It will be seen that though the symptoms are very few and meagre they have some bearing on cholera, and if we have occasion to use it,

which we shall have seldom to do, we shall have the consolation that we are not using an un-homœopathic remedy. We should on no account use the massive doses of the old school. A grain or two of triturations from the first to the third decimal would be quite enough for a dose.

Besides the minor remedies we have enumerated above, some of the remedies we have mentioned under the TREATMENT OF THE FIRST STAGE have been found useful even in the STAGE OF FULL DEVELOPMENT, and notably **Aloe** and **Cantharis**. One of my pupils tells me that he has treated several cases of cholera in the stage of full development, when collapse had set in, most successfully with ALOE 30, after the approved remedies had failed. He was guided chiefly by the symptoms,—hot, gushing stools with loud gurgling in the intestines. One of these cases I had the opportunity of watching, and I was quite satisfied with the result. In some of these cases the cure was nearly completed by ALOE, in others it had to be supplemented by other remedies such as CANTHARIS, SECALE, &c. But in every one the improvement after ALOE was marked, and paved the way for the action of the other remedies.

That ALOE should be so useful in cholera is a surprize even to homœopathic physicians. Has it symptoms, beyond "the hot gushing stools with gurgling in the intestine," which have any resemblance to the other symptoms of cholera? The following summary will show: Great anxiety, timorousness, dread of death, and great anguish; anthropophobia; great disinclination to mental labor; exhaustion alternating with activity; paroxysms of vertigo. Dryness of the mouth and throat with much thirst. Nausea with inability to vomit; nausea with pain in umbilical region increased by pressure, with diarrhœa. Watery, long-continued diarrhœa; stool very hot; stool passes without exertion, falling as it were out of the intestines; involuntary stool; frequent, audible rumbling in the abdomen, swashing and gurgling; insecurity of the anus, difficult to keep it closed and clean; stool passes while passing urine and flatus; blood with watery stools; stool with burning in the rectum. Thus ALOE has no vomiting, no anuria, no cramps, no symptoms of collapse. And yet it has been useful in the true cholera.

I have myself treated several cases of cholera in collapse

with **Cantharis**, when the characteristic stools were going on and when there was suppression of urine from the beginning, after failure with **MERCURIUS CORROSIVUS**. The following pathogenetic symptoms of the drug will show how far they correspond with those of cholera: Extreme despondency, faint-heartedness, and anxiety; vertigo and fainting. Dry mouth with violent thirst; thirstlessness; violent nausea, retching, and vomiting of the contents of the stomach, and bilious mucus; nausea and repeated vomiting, without exertion, of mucus and the ingesta; vomiting of membranous flakes; vomits the water he drinks, with a considerable quantity of blood; copious vomiting of bile. Epigastric region sensitive, externally and internally; heat and burning in stomach. Watery diarrhoea, violent diarrhoea with intolerable burning in anus; diarrhoea of frothy, green mucus; diarrhoea, without colic, or when colic is present it is relieved by the diarrhoea; intense strangury; retention and suppression of urine; bloody urine. Respiration hurried, difficult, oppressed. Violent palpitation; hard full pulse; pulse thready, feeble, scarcely perceptible; pulse slow, irregular, intermittent. Frightful convulsions and death. Extreme prostration; threatened syncope; great restlessness. Skin icy cold and clammy; cold sweat, especially of hands and feet. Thus **CANTHARIS** has some of the most essential symptoms of cholera, and it is no wonder that it should have proved so eminently successful in the treatment of its stages of full development and of collapse.

Sulphur and **Podophyllum** deserve more careful study in the treatment of the **STAGE OF FULL DEVELOPMENT** than they have received at the hands of homœopathic physicians. They have characteristic symptoms, of stool, vomiting, &c., which are sometimes met with in cholera at its height, and their exhibition in such cases are likely to exert a beneficial if not a thoroughly curative influence. We are sure that, as in the cases under **ALON** cited above, they will modify the morbid process so as to pave the way for other remedies to act better, and this is no small gain.

(To be continued.)

EDITOR'S NOTES.

Burns treated locally with Glycerine of Tannin.

Capullano (*Gazz. degli Osped.*, September 13th, 1903) speaks highly of the above method of treatment which he and his colleagues have practised for some time. It is applicable to burns of all degrees. The author uses a 50 per cent (or less) solution, using the purest glycerine he can procure. If the burn is of the second degree he punctures the bullae, then applies the glycerine of tannin and covered with gauze and cotton-wool. The application is repeated several times a day without removing the gauze, which is allowed to remain *in situ* until it separates itself. By this simple treatment the author says he gets far better results than with any other of the numerous remedies in vogue. The tannin is slightly antiseptic, and by coagulating the albumen forms a sort of protective varnish over the tissues, whilst the glycerine also exercises a certain antiseptic power.—*Brit. Med. Journ.*, October 24, 1903.

Double Extra-uterine Pregnancy.

Chandler (*New York Med. Journ.*, August 15th, 1903) reports this case, which occurred in a woman aged 26. She married at 20, and then contracted gonorrhœa. The period continued perfectly regular until her 25th year, when, in July, 1902, the period ceased. In October something resembling a miscarriage occurred after an attack resembling peritonitis. Then the period was seen again on October 30. It never reappeared. A severe attack of pain in the left side of the pelvis, followed by syncope, came on in January, 1903. Then Chandler examined her, and detected two pelvic tumours placed laterally; the left was the larger. He operated at once. In the right tube were parts of a fetus and membranes, which gave indications of the first impregnation occurring in July. It was in the tube which had probably been the seat of gonorrhœa. On the left side the tube was occupied by a fetus in perfect condition, which died either during or just before the operation. The patient quickly recovered. In a case with a somewhat similiar history the pelvic tumours proved to be blood cysts of the ovaries.—*Brit. Med. Journ.*, October 10, 1903.

Ovarian Oyst weighing 72 Pounds.

Liell (*New York Medical News*, August 29th, 1903) reports a case of some interest as the patient was an extremely stout young woman, aged 27. She had been married seven years and was sterile,

soon after marriage a tumour began to develop and when Liell examined her, she was unable to lie down. The uterus was anteverted and but slightly enlarged. The tumour proved to be a unilocular cyst of the left ovary, the fluid was turbid and syrupy, measuring $6\frac{3}{4}$ galls. and weighing with the removed sac 72 lb. Twenty-five minutes were allowed for the evacuation of the fluid, and there was but little shock. Adhesions were free and the pedicle broad. As the adipose tissue of the abdomen was $1\frac{1}{4}$ in. in thickness, the peritoneum and then the fascia and muscle were united separately and the remaining wound allowed to close by granulation tissue, with dressings and iodoform gauze. The wound was entirely and firmly closed at the end of six weeks. Five months after the operation the cicatrix was firm.—*Brit. Med. Journ.*, October 17, 1903.

The Action of Human Gastric Juice on Tubercle Bacilli.

Terrannin (*Rif. Med.*, June 24th, 1903) took specimens of normal gastric juice from patients in the wards, determined its total acidity and the amount of free hydrochloric acid. In a series of test tubes, 5 c.cm. of the gastric juice was treated (1) by boiling, (2) by neutralizing the free acid, (3) by raising the percentage of HCl to 2 per cent. One or two fatal doses of a culture of human tubercle were added to each test tube, and the whole put in the stove at 37° , and left for periods of an hour or two hours. On removal the contents of the tubes were neutralized, and thence inoculated into the peritoneum of guinea-pigs. None of the animals escaped tuberculous infection. Those injected with the gastric juice containing 2 per cent. of free HCl and left for two hours in the stove in contact with tubercle bacilli died later than the other animals, and presented less serious lesions at the necropsy. However these experiments seem to show clearly that the gastric juice is not germicidal as regards tubercle bacilli.—*Brit. Med. Journ.*, October 17, 1903.

Action of Human, Bovine, and Avian Tubercle Bacilli on Cattle and Sheep.

Maffucci (*Clin. Modern.* an 9, n. 34) publishes a full account of his experiments of this subject. His conclusions are as follow: The bacillus of bovine tuberculosis is widely pathogenic for the same species of animal. Human tubercle bacillus causes in cattle a transitory lesion which heals, causing, however, trophic disturbances which may slowly disappear. The ox is capable of becoming habituated to strong doses of virulent human tubercle bacilli injected into the veins.

Tuberculous products derived from the corpses of human beings and subcutaneously injected into calves have determined a lesion, which, however, remains strictly local and slowly heals. The reverse of this occurs with bovine tuberculous products. Calves intravenously injected with human tubercle have shown no trace of infection after eight months, and yet 50 days later, after a strong injection, develop grey tubercles in the lung. The bacillus of human tuberculosis may remain alive in the tissues of the calf if the resulting abscess is encapsulated. A viatic tubercle is powerfully toxic for calves when intravenously injected.* The tuberculin reaction (practised with human tubercle bacilli) is positive in oxen and sheep. Sheep resist human tuberculosis less than calves if the bacilli are injected into the veins. It is possible to induce in cows a certain amount of immunity against pearl tubercle if they are previously treated with strong cultures of human tubercle.—*Brit. Med. Journ.*, October 24, 1903.

The action of Formic Acid on the Muscular System.

In a paper recently read before the National Society of Medicine of France Clement related the results of some experiments which he had made with formic acid. (*Lyon Med.*, August 2nd, 1903.) He first tried its action upon himself, taking 8 to 10 drops of the acid in a little alkaline water, such as Vichy, four times a day. In 24 hours the first effects of the acid were perceptible and consisted in a muscular excitation, which induced movement. Muscular work, such as climbing, became much easier of accomplishment and caused noticeably less fatigue. Measured by Collins's dynamometer, the muscular force increased from 40 to 48. Four healthy subjects together registered 169 before taking the acid, and 188 after a few days' use. The drug was afterwards administered to six people who were seriously ill, one suffering from multiple neuritis, one from exophthalmic goitre, one from malignant liver, and three from various stages of pulmonary tuberculosis. Before the administration, the addition of the numbers registered by the dynamometer made a total of 121; after the use of the acid for a few days the total became 147. The muscular improvement was not transitory, but persisted at least as long as the acid was used. The action upon arterial tension was not constant, decrease being a commoner result than increase. The ergograph showed even more strikingly than the dynamometer the effects of the acid. A weight of 2.5 kilog. caused complete muscular fatigue in 47 movements in a healthy subject before the acid was given. After its use for three or four days 94 more ample movements were accomplished.

Clement thinks himself justified in concluding that formic acid increases muscular energy and retards fatigue.—*Brit. Med. Journ.*, October 10, 1903.

Foreign Body in the Respiratory Tract.

Courmont and André (*Lyon Med.*, June, 1903) had under their care a man who died from the sepsis caused by the lodgement of a large pin at the bifurcation of the trachea. The pin, which was 8 cm. in length and which had a glass head, at first lodged at the level of the hyoid bone. Five days later it fell during an operation for its removal, and on the following day the symptoms of infection—pyrexia, sweating, jaundice, etc.—were already observed. The left base became dull up to the angle of the scapula, and after 300 c.cm. of blood-stained serum had been removed, multiple râles were heard, and bronchial, with occasionally cavernous, breathing. The sputum was purulent and mixed with blood. Muscular and articular rheumatism appeared, the jaundice increased, and the patient died from sepsis a little more than a month after the accident. At the necropsy, the head of the pin was found obstructing the bronchi leading to the lower half of the left lung. The lower lobe of the left lung was solid, the septic broncho-pneumonia being extensive and intense enough to simulate lobar pneumonia. The upper lobe, the bronchi of which were not obstructed was merely engorged with hyperæmia. The head of the pin was encysted and had to be removed forcibly at the necropsy; but at one stage during life it had evidently acted as a ball and socket valve, allowing the escape of sputum but not the entrance of air. The patient had complained of a sharp pricking pain after coughing, and on the lower end of the right wall of the trachea was a row of small punctures, one of which formed a purulent fistulous track, leading to an abscess, the size of a small nut, situated in the upper lobe of the right lung. The ball and socket action might account for the cavernous breathing occasionally heard. The pathogenic germs were multiple; the sputum contained typical pneumococci and some other cocci; blood obtained from the veins of the forearm about the fifteenth day after infection contained the staphylococcus albus, which was, however, harmless to both guinea-pigs and rabbits.—*Brit. Med. Journ.*, October 24, 1903.

Leucocytosis During Digestion.

It has long been admitted that during the process of digestion an increase takes place in the number of leucocytes to be found in the

blood, but the period of digestion when this increase occurs, the extent and duration of the increase, and the characters of the leucocytes, as well as their source or sources, have not been satisfactorily ascertained. Nor has the effect of the presence or absence of the spleen been determined. The inquiry is a difficult one but it has been attacked by three physiologists working in concert and the results of their experiments have been published in a recent number of the *Journal of Physiology* (vol. xix., No. 1). The enumeration of the leucocytes was undertaken by Dr. Alexander Goodall, the differential counts were made by Dr. G. Lovell Gulland, whilst Dr. Noel Paton was intrusted the operative part of the proceedings, as the withdrawal of the blood, the removal of the spleen, and the determination of the hæmoglobin. Eight experiments were made, seven being upon dogs and one upon a cat. In each case the animal was kept fasting for a day; a little blood was then withdrawn and the number of leucocytes in a definite quantity was determined by means of the Thoma-Zeiss leucocytometer, whilst simultaneously the amount of hæmoglobin was determined with Oliver's hæmoglobinometer in order that any error arising from differences of concentration of the blood might be excluded. The animal was then fed on as much minced beef and water as it would eat. The experiments showed that there was a tolerably regular rise in the total numbers of leucocytes in the circulation and that this increase reached its maximum about four hours after the ingestion of food. The increase is due partly to a lymphocytosis which is very constant as regards its incidence and degree and partly, in the greater number of cases, to a much more variable polymorphonuclear leucocytosis. Leucocytosis during digestion is not affected by removal of the spleen. The organs to which these experimenters attribute the increased numbers of the leucocytes during and after digestion will constitute the subject of another communication.—*Lancet*, October 24, 1903.

An Apparently Harmless Stimulant.

Some of our readers may be able to recollect an endeavour which was made many years ago to introduce into this country the use of yerba-maté. On that occasion it failed, but a second attempt may be encouraged by an interesting account of the uses and qualities of this herbal stimulant, otherwise known as Paraguay tea, which has been received by the *Journal of Tropical Medicine* from an unnamed correspondent in Paraguay in answer to a published request for information. The beverage is prepared as an infusion from the dried

and powdered leaves of *Ilex paraguariensis*, and for centuries it has been the national beverage of the populations of South America, while in Paraguay and Argentine it is, according to the writer, the sole stay and stimulant of the working classes. It is best drunk as a very hot infusion through a metal tube, but it can also be taken in the same way as tea or coffee, with milk and sugar. Most people however, after a short experience, prefer to drink it native fashion without any admixture. As such it is very bitter; but, nevertheless, those who drink it soon learn to consider it an agreeable and even palatable drink. Other people, especially workmen, drink it as an infusion prepared with cold water, and it is then known as "tereré." Its stimulating and sustaining effects, according to the writer's account, are very remarkable. Workmen apparently take the drink with them wherever they go, and from time to time take sips of it, and the energy which is thus infused into the otherwise lazy South American is notable. Woodcutters, for instance, commencing their labours at daybreak, work on with unfagging energy for five to six hours before their mid-day meal, which is really breakfast, because they take no solid food before it so long as they can get maté. The writer, from his own experience, confirms these results. He finds that its invigorating and sustaining powers are different in character to those of either tea, coffee, or cocoa. Taken as a stimulant for night work, study, or nursing, he states that it conveys an energy and lightness which make duty a real pleasure. These results are the more peculiar because on analysis there seems to be nothing in the drug which obviously explains them. The per centage of caffeine and the amount of volatile oil is very much less than that contained in tea and coffee. In the course of three years' experience the correspondent has been unable to discover any evil effects from the use of the drug. Very neurotic and neurasthenic individuals may have their symptoms aggravated by excessive maté drinking, but these cases are rare, and even when consumption of the beverage becomes an actual mania no special evil accrues.—*Brit. Med. Journ.*, October 24, 1903.

Bottini's Treatment of Hypertrophy of the Prostate.

K. VOGEL exemplifies the difficulties and dangers of Bottini's method of treating hypertrophy of the prostate by galvano-cautery incisions (*Dout. med. Wash.*, March 19th, 1903.) He records the history of a case of a man of 71, who was operated on without an anaesthetic, the incisions being made one on either side and one in the middle lobe, the bladder being filled with a solution of boric

acid. He was quite well after the operation, and spent the first half-hour in telling his ward comrades about the operation. He then said that he was going to sleep for a while, and a quarter of an hour later he was found dead. The necropsy did not give a clue to the cause of death. The incisions were not deep and had not caused a great destruction of tissue. As the incisors had been tried before the operation, he concludes that the fluid in the bladder had cooled the glowing point considerably. A second case was treated shortly after. The patient, who was 74 years of age, could pass his water, but did so in very small quantities at a time and frequently. He was suffering from senile dementia. The operation was carried out as in the first case; but failed to relieve, and after several weeks the patient could not pass a drop of urine by himself. The operation was therefore repeated, but this time with an empty bladder. The incisor was felt to go more deeply into the tissues of the prostate than in the operations with filled bladder. He did not complain of pain or discomfort but this may have been due to his dementia which had been getting worse during the last weeks. About six hours after the operation he had only passed about 20 c. c. of bloody urine through the retention catheter. After twenty-four hours he passed about 50 c.c., and on testing the permeability of the catheter. Vogel found that boric acid flowed freely into the bladder, which was not filled. The temperature rose on the evening of the first day, vomiting set in, the abdomen began to be tympanic, and after the course of forty-eight hours the patient died with all the signs of acute peritonitis. The necropsy revealed that the bladder had been perforated in the upper and posterior wall somewhat above the trigone. Vogel explains that the incisor must have caught up a fold of the bladder while it was still closed and in the necessary turning to get round the prostate had carried it in front of the gland. The result of this accident was a fatal peritonitis. He discusses the difficulties of operating with a bladder which is filled with fluid, in which case the incisor is cooled down, or with an empty bladder, in which case the bladder wall appears to be in danger. The suggestion of distending the organ with air would overcome the difficulty but might be objected to by most surgeons.— *Brit. Med. Journ.*, October 17, 1903.

The Influence of Season on the Occurrence of Glaucoma.

The influence of temperature and of season on the supervention of attacks of acute glaucoma is the subject of a communication by

Dr. Kurt Steindorff to the *Bulletin d'Ophthalmologie* for September. This seems to be a point in the etiology of glaucoma to which but little attention has been directed. It is not mentioned in Norris and Oliver's System of the "Diseases of the Eye" under the article on glaucoma written by Mr. Priestley Smith. Fuchs, Panas, and Swanzy are silent upon the subject, yet, as Dr. Steindorff observes, Hippocrates long ago drew special attention to the influence of temperature and of season on the number of cases and the variety of affections of the eye, whilst support is given to his statements by recent bacteriological researches which show that certain ophthalmic affections are attributable to micro-organisms and that the conditions most favourable for the growth and development of these bodies are coincident with the outbreak of the several diseases which they are believed to occasion. Dr. Steindorff, working in Professor Hirschberg's clinic at Berlin, has had the opportunity of studying that distinguished ophthalmic surgeon's case-books and finds that between May 1st, 1895, and April 30th, 1902—that is, during 17 years—there have been under treatment 7101 patients amongst whom there were 83 patients with acute primary glaucoma, the number of eyes affected being 102. The disease occurred more frequently in women than in men, the proportion being 64 to 19, or 77.1 per cent. By far the most frequent age was the period between 50 and 70 years. Some, perhaps ten, of the 102 cases should properly be excluded because the attack was directly induced by the use of mydriatics, in an eye already predisposed to the disease or resulted from operation on the opposite eye. Of the 92 remaining cases 68 were utilisable as showing the effects of meteorological influences, since they occurred in Berlin where the weather reports of the period were accessible. On examining the dates of the attacks of the entire number of 102 cases it was found that 95 cases occurred during the cold period of the year—that is, from October to March—whilst there were only 37 cases from April to September. Of the cases that presented themselves in summer the larger number occurred on the hottest days. Dr. Steindorff calls attention to the well-known influence of cold on blood pressure and therefore on the intra-ocular tension, an influence that is particularly well-marked in those suffering from the arterio-sclerosis which is frequently associated with glaucoma. Very high temperatures, on the other hand, have a tendency to lower the force of the heart and to lead in this way to venous stasis. No relation was observed between the attacks of glaucoma and the humidity of the air, the force or direction of the wind, or to storms.—*Lancet*, October 24, 1903.

The Death-Rate from Alcoholism.

The difficulty of reconciling public and private interests is rarely more marked than in those cases where, in deference to the susceptibilities of patients and their friends, medical practitioners have to conceal information obtained by them in the course of their professional work which might be of great service to the community at large. How much, for instance, might be done to check the ravages

of venereal disease if popular prejudice would permit of their notification. Similarly, in cases of alcoholism the part played by the poison in causing death is usually obscured by the unwillingness of the attending physician to add to the troubles of sorrowing relatives by an outspoken declaration of the real state of affairs. Death certificates are consequently often much less instructive than they might be and the value of the statistics compiled for the Registrar-General is materially diminished through the application of the principle *de mortuis nil nisi bonum*. In Denmark and Switzerland an attempt is made to meet this objection by provisions which enable the medical man to give such details of an illness as considerations of public hygiene render desirable, while at the same time secrecy is preserved in regard to the failings of the particular individual. The arrangements in force in the latter country were described by Mr. Mahaim of the University of Lausanne at a recent congress held in Brussels. During the past 15 years in the case of 15 of the larger towns of Switzerland and during two years throughout that country it has been the custom for the certificate of death to be written on a card bearing merely a number instead of the name of, and other particulars about, the deceased, as with us. The identity of the person to whom the certificate refers can, however, be ascertained, if this becomes necessary, by a circuitous method which involves application to the central administration at Berne. In this way the practitioner is enabled to express in full his views of the nature of the illness without appearing unduly censorious. The value of such a removal of the restriction imposed upon the medical attendant by the requirements of professional propriety is shown by the figures relating to the effects of alcohol which have thereby become available. Switzerland is not, as far as we are aware, a country where alcoholic intemperance is peculiarly rife, yet it appears that the deaths from delirium tremens in males over 20 years of age amount to 0.5 per cent., which is ten times the rate in France as officially recorded. For males over 70 years of age alcohol is given as a principal or concomitant cause of death in 10 per cent. of the cases, while general death-rate directly referable to acute or chronic alcoholism, without including hepatic cirrhosis or other subsidiary conditions, is 3 per cent. By the introduction into the country of some such method as is here described medical men would be given the opportunity of exercising a similar candour to that which characterises their brethren in Switzerland, and though the result would probably be rather distressing to our national self-esteem it could hardly fail to inculcate sundry valuable lessons.—*Lancet*, Oct. 31, 1903.

Some interesting facts in the annual report of the Commissioners of His Majesty's customs.

It is obvious that to a certain extent the annual reports of His Majesty's Customs officers must afford interesting information not only as to the nation's prosperity but as to its moral and also. For example, the reports show whether an increase or a decrease is taking place as regards the consumption of alcoholic liquors, of

certain taxed foods, and of tobacco. It is thus possible to gather from their pages how far the nation shows in certain directions moral advancement or moral back-sliding. In the report, for instance, recently issued for the year ended March 31st, 1903, there are some interesting fluctuations to be observed in regard to the clearance of alcoholic liquors. The clearance of foreign spirits increased from 8,981,880 gallons in 1901-02 to 9,785,976 gallons in 1902-03, or 9 per cent. It is true that the quantity used for "methylating" has risen enormously on account of the great reduction in the price of foreign spirits, but broadly while a little over 1,000,000 gallons were cleared for "methylating" over 8,000,000 gallons were taken for other purposes. Rum and imitation rum showed an increase of £18,062 this year (0·8 per cent.) and "had it not been for the comparative mildness of the winter the increase," the Commissioners think, "would in all probability have been greater, for prices have been low owing to over-production and to the cheapness of sugar." "Fluctuations in the consumption of rum are difficult to explain," they add; but is it not a fact, that rum is used for "blending" purposes? The duty received from brandy showed an increase of one-half per cent. and the Commissioners remark that the consumption of brandy is not so great as it was a few years ago, the decline being mainly attributable to the greater favour extended to whisky. There is a decrease in the amount of brandy cleared in casks and, in spite of an extra duty of 1s. per gallon, the increase first alluded to has been due to clearances of brandy in bottle. There has been a great demand for foreign plain spirit and to such an extent as to create considerable competition with British spirits. "Blending" or the pernicious practice of substitutes may possibly account for this increased demand. The consumption of wine has decidedly increased since 1900 and 1901—an "improvement" attributed to the cessation of the war. The stronger wines in cask are chiefly responsible for the increase but lighter wines in cask and sparkling wines in bottles also show an advance. The lighter still wines imported in bottles have diminished, a falling off that has been more marked since the imposition of the extra duty of 1s. per gallon on still wine imported in bottles. The greater part of the heavy wine was in connexion with wines from Portugal. Tobacco shows an increase of 17·8 per cent., which, however, is not wholly due to consumption, for the clearances of the previous year were considerably reduced in anticipation of a rise in duties by instalments made at the end of the year 1901. It is probable, however, that the normal rate of increase during past years has been maintained to tobacco. Chicory shows practically no change in the quantity cleared; cocoa shows a decrease of 11·5 per cent., chiefly in connexion with raw cocoa and the demands made previously for this article during the war. Coffee shows an increase, while tea remains at much the same figure as last year—that is, the net quantities of duty-paid tea were no less than 354,000,000 pounds. It is to be wished that the Government could exercise as much vigilance over the quality and description of the imported foods and beverages of the nation as it does in collecting every penny that is levied upon them.—*Lancet*, October 10 1903.

CLINICAL RECORD.

Foreign.

CLINICAL NOTES ON APPENDICITIS.

By T. E. PURDOM, M. D., C.M. (EDIN.), L. R. C. P., L. R. C. S. EDIN.
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I shall now read you my rough notes on one case, refer to some others, and give a brief analysis of the cases I can remember something of to illustrate from them as many clinical points as I can.

Miss M., aged 16. Very ill in the night with widespread abdominal pain. About 7 a. m. was very sick, and vomited bile. There was also a large action of the bowels. At 9 a. m. (February 5, 1898) I saw her. The sickness had not recurred; the pain was not quite so severe. There was tenderness in the right iliac region and extending up the colon; worse at McBurney's point. No heat of skin, no rigor, pulse hardly quickened, tongue thickly coated with a yellow moist fur.

History.—Previous health good; bowels regular; no chill could be traced. The evening before she had cocoa for supper and cold boiled bacon, after travelling from North London to Croydon. The day before she had eaten some sweets of which one or two contained almonds. The cold bacon plus the almonds may have served as the exciting cause; something, at least, had disturbed the resisting power of the appendix or cæcum and roused the usually innocent bacillus coli to perform a war dance in the neighbourhood. Pain being the prominent symptom, I gave the patient bell. \varnothing and nepenthe in drop doses alternate half hours till this was relieved, combined with hot applications. At 12 noon, three hours later, the patient was in a sound sleep, the pain being soon relieved, and very little nepenthe given. At 2 p. m. Miss M. had a severe rigor. At 2.30 I found the pulse 120, temperature 102°, tongue dry and partly brown. Diagnosed appendicitis. Continue bell. \varnothing $\frac{1}{2}$ -drop doses every two hours. A large poultice to be applied to right side of abdomen. Diet milk and water in sips. 9.30 p. m. Not much pain, save on movement; occasional paroxysm, as if from flatulence. Tenderness and fulness all over lower half of abdomen, more marked on right side. Rigidity of muscles. Continue bell. and poultices.

February 6.—10 a. m. Pulse 112, temperature 99.4°. Less pain; slept fairly well. Lies on right side with legs flexed. Tongue moist but thickly coated, with red tip. Continue bell. 9.30 p. m. Pulse 112, temperature 101.6°. Swelling on right side more distinct and tumour-like. Bell. 1x mij., merc. corr. 3x mij. in alternation.

February 7.—10-50 a.m. Pulse 96, temperature 100·2°. Had injection of warm water, followed by a small liquid stool, light yellow in colour. Bell. 1x, merc. dulc. 2x, alternate two hours. Poulitice. 9-30 p.m. Feels easier, can turn over. Continue medicine.

February 8.—10-30 a.m. Pulse 96, temperature 100·4°. Good night; bowels freely relieved by glycerine enema; same character stool. 10 p.m. Comfortable day; very little pain; can move more easily. Fulness and swelling very distinct in right iliac region. Respirations which had been hurried now normal.

February 9.—10-30 a.m. Temperature 100·1°. Abdomen softer; fur on tongue breaking up. Slept fairly well; feels better. 8 p.m. Temperature 101·1°. Had soft yellow stool. Improving all round.

February 10.—Pulse 80, temperature 99·6°. Good night; abdomen smaller and softer; natural action of bowels, less tenderness; tongue cleaning. 8 p.m. Temperature 101·2°. Large stool, very natural; continue medicine. Chicken tea had been allowed as a change from the milk and water; steady progress next few days, save for one slight rise of temperature from sitting up and taking some bread and milk *against* orders.

February 16.—Not so well. Pulse 96, temperature 100·8°; tenderness higher up behind colon, and extending round right loin. Bowels more constipated; tongue fairly clean, very red at tip. There was evidently extension of inflammation upwards.

February 22.—The relapse proved obstinate. The treatment for the last few days has been merc. corr. 3x miiij. and merc. dulc. 2x gr. iij. Bellad. extract and glycerine applied under poulitice. Occasional sharp shooting pain from right side to iliac region. Very distinct lump felt high up on right side just under twelfth rib and extending back towards lumbar region; this is painful to touch. Tongue has re-coated; has had slight chilly feelings this evening, with increase of fever.

February 23.—Morning Pulse 96, temperature 100·2°. Evening. Temperature 103·8°.

February 24.—a.m. Pulse 101, temperature 102·5°. More tenderness and swelling, more distinct under ribs; suspicion of abscess. p. m. Temperature 102·9°. Abdomen more tense.

February 25.—a.m. Pulse 84, temperature 100·2°. Tongue cleaning again, swelling diminishing. Still some pain. Abdomen softer; slight action of bowels, dark brown stool with some mucus; continue medicine. p. m. Temperature 101°.

February 26.—a.m. Pulse 80, Temperature 100·3°. p.m. Temperature 99·7°.

February 27.—Pulse 60, temperature 98.9°; tongue cleaning; continue medicine alternate four hours.

From this date improvement was rapid with complete recovery, and disappearance of all swelling, fulness and pain.

This case is a good illustration of a rather severe attack of appendicitis of the adhesive variety, going on nearly to abscess.

The relapse shows how easily that may be produced, and how strict we should be as to rest and food. The suspicious signs of abscess forming all cleared off. Save the drop or two of nepoche at the beginning for the severe pain, three medicines were given through the attack, viz., bell., merc. corr., and merc. dulc. These represent a very good trio for appendicitis coupled with large poultices—extract of bell. and glycerine—over the most painful part. I find a large light poultice all over the bowels does more good than a small one, quieting the pain and helping to disperse and pass off flatus also. Belladonna meets the general inflammatory condition, and is well indicated symptomatically and pathologically; merc. corr. has its specific action on the peritonium; and merc. dulc. acts more on the mucous surfaces. In more recent cases I have still more limited the liquid food, while allowing patients to frequently rinse the mouth with water or iced water without swallowing it.

Preventive treatment.—Care as to diet and mastication, a good set of teeth, and regulation of bowels.

Treatment generally.—Some surgeons tell us all cases should be operated on. Murphy, of Chicago, says the profession will come to the twenty-four hours' standard. The real life-saving operation is the operation within the first twenty-four hours of the first attack by a competent surgeon. McBurney says: "No medical treatment of approved value has ever been presented to the profession, and the pathology of this disease renders it extremely unlikely that any such treatment will ever be discovered." Considering that from 70 to 80 per cent. of all cases recover without operation this statement is very sweeping, and I don't think any of us would agree with it. English surgeons are much more slow to operate than this. It seemed at one time as if there was to be a new division of the human race into those who have or who have not undergone appendectomy. There is now a golden mean, as Dr. Hughes says, and with 70 or 80 per cent. of cases, there is plenty for the physician to work upon. The ordinary treatment consists in absolute rest; morphia; hot applications or the ice bag. I have tried this latter, but the patient did not like it at all. It has the advantage of cleanliness, specially in view of operation. Salicylates have their strong advocates—one writer says "drugs will

do little." Treatment on homœopathic lines is the great thing for us to work out, with a surgical eye ever open, or a good conservative surgeon at our back. The presence of microbes should not lessen our faith in drugs, here or in any other disease. I have mentioned my three medicines, bell. lx, merc. corr. 3x, merc. dulc. 2x; I give from 2 to 5 drops for a dose, and from 2 to 5 grains of merc. dulc. *Hughes* relies on bell. and merc. corr., and says bry. and coloc. may be useful. *Hale* advises bell. lx and merc. dulc. 2x, and says he has never lost a case. That is one for the American surgeons! *Fisher* relies on acon., ferr. phos., bell., and coloc. for the primary inflammation, merc., hep. sulph., and silicea for the stage of pus formation. For typhoid symptoms he mentions rhus., bap., arsen., and lachesis. *Joussot* says coloc. R̄, bell. 2x, are the best indicated remedies for the pains, vomiting and constipation; bryonia 2x or ̄ should the pains continue. After the acute stage is quite past, he says nux vom. 3, collinsonia lx, or lycopod. 30 may be indicated for the constipation, and to cause the doughy mass to disappear. Massage he mentions as having helped in the chronic stage, though I should think great caution was necessary in its application.

Here I will read a few extracts from a paper by Dr. Gordon of America, in the *Clinique*. Speaking of his results he says: "They have been quite remarkable when compared with those I formerly obtained when I advised the early operation in almost every case. My faith in early operation had received a severe shock, when one of our most celebrated surgeons, who used to say, in his lectures on the subject, 'Gentlemen, whenever you find a pain in the right iliac region cut down upon it;' being afflicted with the same disease himself, flatly refused to permit an operation, although it was strongly recommended by the most eminent men in the city!"

In concluding his paper Dr. Gordon says—note the points—(1) The indicated homœopathic remedy. (2) Absolute rest in bed. (3) Cleansing the lower bowel by the normal salt solution. (4) Absolutely no food per mouth for three, or even four weeks if necessary. (5) Rectal feeding. (6) No morphia or other palliatives except hot applications. (7) Almost certain recovery. *Try it and be convinced.*

In one of my cases rectal feeding was adopted for a few days. I should certainly allow a little liquid food by the mouth, but in very small quantities.

The cœcum and appendix are a long way from the stomach.—*Journ. Brit. Hom. Society, Oct., 1903.*

TAPEWORM AS A CAUSE OF CHOREA.

BY RONALD D. HODGE, M.B., CH.B. GLASG.

IN view of Mr. J. A. W. Pereira's clinical note on Tapeworm as a Cause of Chorea which was published in THE LANCET of Sept. 19th, p. 824, I think the following case will prove of interest.

On August 10th 1903, I was sent to visit a young girl, aged nine years, whom I found resting in a semi recumbent position with flushed cheeks, circumoral pallor, and a somewhat anxious look. She had been ill since the previous day and on examination of the chest I detected a slight to-and-fro friction sound between the tricuspid and apex regions of the heart. This sound was markedly increased on steady pressure with the stethoscope. There was also a long, soft, blowing systolic murmur heard most distinctly at the apex and also well heard over the tricuspid and pulmonary areas and conducted into the left axilla and to the lower angle of the left shoulder-blade behind. On the pulmonary area the second sound was reduplicated. The apex beat was within the vertical nipple line in the fourth left interspace. Her temperature was 102.5° F. and her pulse was 120 per minute. There was no history of rheumatism but there were a doubtful history of "growing pains" and a distinct one of chorea 14 months previously when she was attending the out-patient department of a public hospital. So far as the patient's mother knew there was no cardiac complication at that time. Although there were no choreic movements present I thought it as well to warn the girl's friends that the chorea would be likely to return, which it did in five days when the pericarditis had disappeared and the temperature and pulse had fallen to nearly normal. On the second day after the choreic movements became evident there were slight pain and swelling of both knees and ankles lasting for two days. The movements became gradually worse until the patient was unable to feed herself, but she was still able to swallow, while if questioned she made an effort to answer but would finish up with a fit of either crying or laughing. By Sept. 14th the girl was so much improved that she was able to get up and to go about.

On the 21st the mother informed me that the girl had that morning passed several pieces of tapeworm and on inquiry I learned that 15 months previously when attending hospital for chorea she was also troubled with the parasite, in proof of which I was shown the remains of the emulsion of filix mas which had been ordered; also that 18 months previously pieces of tapeworm were voided unaccompanied by chorea. Unfortunately, when the cestode was passed on

the next afternoon the head could not be found, although the part examined had broken off well up towards the head, judging from the very small size of the segments. The anthelmintic was repeated in two days time but although the motions were carefully searched the head was not found. Considering that the treatment was the same as that which proved successful in dislodging a tapeworm from an adult woman three months before it is possible that the head escaped notice.

Now what is the prime etiological factor in this case? The various combinations were: (1) 11 months previously the cestode was present; (2) 15 months previously the cestode and chorea were present; and (3) six weeks previously pericarditis, endocarditis, chorea, rheumatism, and the cestode were present. I might say in reference to the cardiac complications that there did not seem to be any increase of dulness towards the left side, but dulness extended to the right border of the sternum, whilst there was slight dulness at the base of the left lung in the axillary line which, with the friction sound in that region, existed for several days.

I am indebted to my principal, Dr. R. Bishop, for permission to report this case.—*Lancet*, Oct. 31, 1903.

AN ANTENATAL CASE OF MEASLES.

BY JOHN R. GIBSON, M.D., F.F.P.S. GLASCOW.

In Dr J. W. Ballantyne's book on "Antenatal Pathology and Hygiene" he says in the chapter on Foetal Measles: "No instance has been placed on record of a foetus suffering from measles, the mother escaping, although having been subject to infection," &c. The following case therefore deserves to be published.

Over a year ago I attended a woman in her third confinement. The birth was easy. The nurse when washing the child called my attention to some raised dull-red spots on both buttocks. It then struck me that this rash might be a syphilide but I did not venture any opinion as the two previous children were very healthy and the character of the parents was above reproach. On the next morning the uncertainty was cleared up, for I found the child covered with a typical measles rash and suffering from suffusion of the eyes, nasal catarrh, and bronchitis and, in short, all the cardinal symptoms of measles. The child recovered in the usual period and without any medicinal treatment. The temperature ranged from 99° to 100° F. The mother made an uninterrupted recovery and showed not a single symptom of measles. When the baby was eight months old the other two children took the measles but the baby did not. The mother had had measles when a child.—*Lancet*, October 31, 1903.

gleanings from Contemporary Literature.**THE MENTAL DISEASES OF THE CLIMACTERIC.**

*Delivered at the Medical Graduates' College and Polyclinic on
March 12th, 1903.*

BY GEORGE H. SAVAGE, M.D., F.R.C.P. LOND.,
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GENTLEMEN,—The mental disorders of the climacteric constitute a subject which one would have thought would have been very largely and generally handled not only by the alienist but also by the gynæcologist. It has really been very imperfectly dealt with until comparatively recently. It has appeared to be a sort of No Man's Land not to be cultivated. Yet the more one sees of the influence of the climacteric the more is one impressed with the very grave importance of it, first as a cause, or one of several associated causes, of mental disorder and next, and perhaps this is more important form a practical point of view, as to its influence in prognosis. I have, I believe, mentioned elsewhere that of youth it is a common thing to hear the friends say; "Here is a young patient with mental disorder of one kind or another, but youth is on his side." And I have been obliged to say: "No; youth is not always on the side of the neurotic." There have been some, relying chiefly, I believe, upon general experience or what appears to be common sense, who have said: "Surely, with this climacteric cause there will be a favourable prognosis." Certain patients have been nervous in development, they have been hysterical, they have suffered from puerperal insanity, they have had forms of insanity of one kind or another dependent perhaps even upon toxic causes. "Surely," it is said, "when these have passed the climacteric they will be all right." That is a common idea, especially in relationship to puerperal cases. Here is a woman having children, and having attacks of puerperal mania, suffering from attacks of insanity associated with pregnancy. When the period of childbearing is over surely there will be no more danger. Unfortunately that is not my experience. I find that those who are predisposed to break down along nervous lines, who have perhaps had attacks of insanity, are much more likely to break down permanently at the climacteric. Another thing I shall have to point out is that with the climacteric you do not get, or you very rarely get, a clearing away of the nervous disorder. This fact has been, and is constantly being, brought before me: here is Mrs. So-and-so who has been more or less of an invalid nervously all her life; she has been suspicious and troublesome at home with her hypochondriacal symptoms: "I suppose," say her friends, "that as soon as she has passed the climacteric we may hope that the mental symptoms will pass off," but they do not pass off.

Now to consider in detail the symptoms which may arise—that is to say, nervous or mental symptoms—in connexion with the climacteric. And I would say that we have to recognise a climacteric in men as well as in women, though it is not so evident. I have sometimes said that retiring from business and ceasing to menstruate seem to be equivalent in the two sexes, that the same sort of disorder that is seen in a man who has given up active work may be met with in the woman who has ceased to menstruate. At any rate, the climacteric has a very definite influence, more particularly, of course, upon the neurotic. Its effect is clearly observable even in the healthy person. All men who have had any general practice

know the troubles that are associated with it. Some of these symptoms and nervous exaggerations I shall refer to later, but under ordinary conditions you find that there are a fulness of the head, a sleeplessness, and a malaise. I sometimes say that just as we have morbid growth developing physically so we may have mental morbid growths developing just as clearly and that such symptoms may be accentuated or revealed by the climacteric. Even with the most ordinary symptoms there is a change—and a very material change—often to be observed at the climacteric and this is more marked in those with strong hereditary neurotic tendencies. No doubt the neurotic by inheritance are much more liable to break down at this period than those who are free from neuroses. Then, again, the climacteric is especially dangerous to those who have had previous attacks of insanity, whatever the cause of these previous attacks. Next you may have neurotic disorders depending upon the on-coming climacteric. One may be asked for how long a period do you posit the influence of the climacteric and I am obliged to admit that the cases I have come across, and which I am about to describe and to group under the heading of climacteric cases, not infrequently occur a year or even more before the cessation of menstruation. Probably many of you know, much better than I do, that in some subjects the menopause comes on almost suddenly, while in others there is a warning for a year or two, or even for three or four years previously. It is a common experience of mine to find an irregularity of menstruation, excessive menstruation, perhaps, with flushing of the face and a feeling of heat and of sleeplessness, and dyspepsia, and general unfitness for some years before the menstruation ceases. Now and then there are neuroses starting at that time. Take an example. A woman, three or four years before menstruation ceases, has irregularity of menstruation. First there is a cessation; she gets into a dreadful state of alarm, thinking she is pregnant; she thinks there is a late pregnancy and she worries about it and becomes sleepless and out of health generally, often, indeed, hypochondriacal or melancholic. The menstruation reappears, this time rather profusely. She loses for the time her melancholia. Then when another year or two have passed her menstruation, which has been in the meantime irregular, now ceases and she recognises that it has gone, but there comes a disorder of a different type. She believes that she has changed, that she is unnatural, that her husband no longer cares for her, that her children look upon her with suspicion, and that her neighbours avoid her. Thus the first nervous symptoms are associated with the first irregularity in connexion with menstruation, and the fully developed insanity is usually associated with the completion of the menopause. Of course, in the majority of cases the insanity associated with the climacteric is coincident with the other symptoms, with the immediate cessation or the irregularity of menstruation, with, in fact, the ordinary symptoms of the climacteric. In other cases, which can scarcely be classed under the same head, we get the menstruation ceasing altogether and mental disorder following after a considerable interval. I saw a case recently in a woman who had ceased to menstruate. She had had the ordinary symptoms of a slightly exaggerated type; she had had nervous breakdowns before; she had been self-indulgent and hypochondriacal; she thought she could no longer do this and that and the other. She had ceased to menstruate for two years and it was more than a year after the cessation before the sleeplessness from which she had always been a sufferer became so marked as really to produce serious mental disorder. Then she believed herself to be no longer an agreeable person to her relatives and her friends; she regarded herself as a devil and concluded that the best way of getting rid of that devil was to take a considerable dose of poison. It was in those circumstances that she came before me.

I may now ask—At what age does one generally meet with persons suffering from climacteric insanity? Well, there are some cases which come on early and others later. I see cases occasionally in which the climacteric insanity comes on very early. Now and then one comes across a case of a woman who ceases to menstruate soon after she is 30 years of age and it has been my chance to see a case in which both ovaries were removed even at an earlier age than that, and in such cases the patient may develop a surgical climacteric disorder. In fact, you may find these disorders occurring after removal of the ovaries at almost any age. You may have insanity coming on in people who have ceased to menstruate prematurely but the majority of women ceases to menstruate at between 45 and 50 years of age. One can hardly say that there is any one particular time which is more dangerous in this respect than another as far as surgical interference goes. Another important question, is there more danger with single or with married women or with widows? Looking through the records of many hundreds of cases which I have had under my observation I have found that the proportion of single women so affected is greater than that of married women and that, comparing the number of widows with married women in the population, there is undoubtedly an excess of insanity associated with the climacteric in the former. In fact, I have sometimes described it as a 'widows' disease or a widows' disorder. I shall have to refer to that again later.

Now as to collateral causes, it being assumed that the cases which we are considering have as their exciting cause the climacteric. We have seen that neurosis is a very important factor. We have seen that no actual age can be assigned as the culmination of the dangerous influence, that more single than married women suffer, and that more widows than married women break down in this way. But now comes a very important practical point—viz., the very large proportion of cases of climacteric insanity associated with alcohol. The number of women who take to alcohol and bring on alcoholic troubles at or about the menopause is quite astonishing. There is at that time this feeling of "sinking," this languor and inability to do what they would, and then there is the talking of a little "pick-me-up" occasionally. And in this way you find women at that time of life taking not only alcohol but drugs. Many a drug-taker has come before me who has taken chloral and even paraldehyde in large doses simply as the result of the restless, miserable feeling associated with the menopause. Alcohol is one of the most important collateral causes of mental disorder during the menopause.

To take the clinical forms of disorder which one is likely to meet with, it seems to me a natural way to take first the mere exaggerations of the ordinary clinical symptoms of the climacteric and also the exaggerations of the temper of the individual. With the climacteric you not infrequently get an insane interpretation of the physical symptoms. For instance, a woman who has got flushing associated with the menopause says: "I am blushing, and people look at me, and they think there is something I am ashamed of." There is nothing of the sort. She has simply got a feeling of flushing which she misinterprets and it slowly develops into delusions that people are watching and following her, looking after her and scandalising her and taking away her character, and the like. And so this simple symptom may tend to create an exaggerated susceptibility the foundation of delusions. In the same way there is a sensation of fullness in the head. The woman says: "There is something wrong with my brain; I have got cancer there." I recently saw a female patient who had had cancer removed from another part of the body. At the climacteric she complained of fullness in her head and she was sure that she had got a cancerous tumour there, another insane interpretation of what may be called an ordinary climacteric symptom.

An unnatural feeling about the skin not infrequently gives rise to the idea there is something wrong with it. One lady declined to shake hands because she vowed she had the itch; another declined to go near people because with these uneasy feelings about the skin she felt sure she had small-pox. In another, and a still more difficult case, the patient believed that these uneasy feelings in the skin, associated as they were in her case with hallucinations of smell, were associated with syphilis which she felt sure her husband must have given to her. So you see the whole growth of a delusion which not only implicates herself but her husband also, there being no truth in the accusation. She knew that she had no other way of catching syphilis and concluded it must have come through her husband. With these sensations there is often a sense of change which is very marked and characteristic: the patients feel they are no longer human. One said: "Look at the hair growing on my face. That is not womanlike—in fact, I do not believe I am an ordinary woman, I think it is a disgrace; I cannot expect my husband to love a woman with hair on her face; I am no longer a woman, I am no longer attractive; my children no longer can like and love me. How can a child kiss a mother with a beard? It is disgraceful, and the sooner I am dead the better." I have known cases of that kind. I have also found myxœdematous conditions associated with the climacteric and this has given rise to a double set of symptoms of mental disorder, a somewhat parallel causation. First the individual, looking changed in aspect owing to myxœdema, says, "People make remarks about me and say there is something wrong with my face." Others at the climacteric who develop myxœdema and get ideas that they are not like other people, that they are inhuman. With the climacteric you may get as I have said, exaggerations of any one of these symptoms depending upon a collateral causation or upon the climacteric itself. I mentioned in my last lectures that in relationship with sexual disorders of one kind and another you frequently get hallucinations of smell and that those conditions frequently give rise to more or less fixed delusions. I referred to "syphilitic" delusions and also to the ideas of being chloroformed and robbed. All these and many similar states are subject to the more or less considerable accentuation of the change occurring in the reproductive organs at the climacteric.

From the mere false interpretation of physical symptoms at the climacteric I shall now pass to the change or accentuation in the temperament of the individual. Take an example. It is a woman who has always been a careful, economical housekeeper. She arrives at the climacteric and becomes a terror to herself. Everything is exaggerated. A speck of dust becomes a mountain of mud. She is restless, she is here, and there, and everywhere upsetting everything and everybody. I have had men come to me saying, "Is my wife mad, or what is wrong with her? I say, "What is wrong?" "Well I go home and find all the servants have been discharged and all through the most trifling thing, too. She says this has not been properly cleaned and she appeals to another servant who says it has been cleaned and then she discharges the lot." The unfortunate husband suffers grievously under such conditions as these. I have seen such a woman who has been taken before a magistrate and sent to prison for bullying and ill-treating her servants. Such people are to be pitied and all those connected with them, for in the above case, for example, the unfortunate woman was without doubt suffering from an exaggerated dust and dirt consciousness, so to describe it, bullying her servants and losing her temper, striking them, and not feeding them properly. Such a woman will say, perhaps, "If you do not keep my house clean I shall not give you food." All this is an exaggeration of tempera-

ment, so to speak. In the same way one gets an exaggeration of the self-consciousness—a real hypochondriasis. For example, an individual who has been pampered and allowed to do very much as she likes, who never dreams of getting up to breakfast, gradually gets more self-indulgent till she may, as in several cases I have seen at the climacteric, become a chronic hysterical paraplegic, or she loses her voice, or becomes so hyperæsthetic that the slightest touch makes her scream. She will not allow her hair to be brushed or have anything done for her. This is an exaggeration of the self-conscious feeling which has been part and parcel of her nature; the accentuation is due to the climacteric. Then you get another kind of case which often causes great trouble to the husband, nor is it such a very uncommon kind of cases either. The woman thinks something is going on to happen to *him*. One man appealed to me and said, "What am I to do? I live so many miles out of town and I come to my office every day. In the middle of the morning my wife puts her head in at the door and says, 'Oh, it's all right is it? I got so anxious about you after you left; I thought some accident would happen to you.'" She may go home to luncheon and come back before the evening to be quite sure that all really was right. This woman had always been an anxious-minded person. Again, I have seen children positively injured through the exaggerated care of a climacteric mother or some change in her. Some women who have been quick-tempered, for example, become incorrigibly violent-tempered. And one is not uncommonly consulted about cases in this way. A man says, "I do not know whether I ought to consult you or my solicitor." "Why?" "Well, my wife is simply intolerable; she makes my life miserable. I come home and I say, 'What are you going to have for dinner?' and she immediately flies into a temper and says, 'As if you cannot trust me to arrange that. You are always gumbling about dinner,' and then she rages and dashes out of the house. She turns up again an hour or so afterwards in a more reasonable frame of mind. But on another day the passion and rage come on again." Fortunately some of the symptoms may pass off with the climacteric or its waning influence. But in many cases, as I pointed out in the beginning, they do not; in some cases the excitement becomes so marked that it leads even to homicide, infanticide, and suicide. The subject says, "I will not stand it any more" and she rushes out and drowns herself. I fear that is quite a common sequel. There is another, certainly most annoying, development which you will perceive to be a natural association with the function of reproduction—namely, amorousness. These cases are really dreadful. I had a medical man in my consulting room this morning with such a lady and her husband. The medical man applied to me by telephone to know what was to be done. Here was this lady who had been pestering him for considerable time and yesterday she appeared at his house, which is not very far from my own, and tried to get in. He on his part, knowing that she was about, kept a chain on the door. She raves at him through the door, a mob collects, two policemen are sent for, and I was going to say the character of the gentleman is involved, there being absolutely no ground for it. Then comes the husband; "It is not only Dr. So-and-so," says he, "but if he is out of the way it is one of my hunting friends." The woman is 52 years of age and is passing through the climacteric and there is alcoholic indulgence as well. Such cases as those are very dangerous indeed. They make terrible accusations and their chief victims appear to be medical men and persons. I shall refer specially to them later. Here I may point out that correlated with amorousness you get, and very naturally, jealousy. One of my favourite examples was that of a woman whose whole life was something of an idyll. An artisan of the good honest type falls in love with a milliner's assistant of good looks and capacity. They say:

"When we have got just enough money we will marry. We will work together and keep no servants." He says: "I will have a little shop for you and I will do my mechanical engineer—"you will keep house and we shall only want two rooms." They do marry. She, regarding herself and her feelings, gets up at four o'clock in the morning to clean the windows so that the neighbours shall not see her do it and know that she does not keep a servant. They are fairly successful and look forward to a house in the suburbs, where they will live and will then keep a servant. So eventually they get a pretty little house in a suburb with four or five rooms, nicely furnished *en suite*, gold and white being the characteristic ornamentation. The whole thing is ideal. But the husband becomes more occupied; he does not come home to lunch and he does not come back to tea, and later he does not come back till supper. There is no family; she is a childless woman. At the climacteric there comes the idea; "My husband is neglecting me; he might come home. Which way does he come? He comes George-street way, why should not he come John-street way? That seems nearer." She inquires and finds that there is a woman who has had an illegitimate child in George-street and she is quite sure that her husband must be the father of that child. She dwells upon this till she makes up her mind to put an end to it. I saw her husband after she had "put an end to it. She had destroyed his clothes, smashed the presentation clock, she had smashed everything which was smashable in the house; she had taken the carving knife and cut the stair carpet from end to end, and had written on the drawing-room paper, "Go to your whore!" She was sent to an asylum. On passing through the climacteric she got well.

I have before me a somewhat similar case in a professional man whose wife helps him, typewrites his letters; and so on. Here again the wife is a childless woman. With successful progress has come the need for employing proper assistants, clerks, and so on. His wife has no occupation now. She is no longer wanted where she was before. She develops jealousy, suspicion, and thinks there is somebody else replacing her. That is a very common form of disorder associated with the climacteric. There is also the form of suspicion which is shown in what I may call the "blotting-pad cases," for I have not infrequently surprised persons by saying, "Your wife looks at your blotting-pads." It is one of the items of experience. The woman is suspicious about her husband, thinks he is concealing things, and dealing improperly where he ought not. She gets his blotting-pad and puts it in front of the looking-glass. She does this over and over again; and at last she finds what she thinks is "My dearest" somebody, it is "dearest" with a blot, and she is satisfied. That is the tangible starting point of delusions of suspicion—the delusions of suspicion which not infrequently give rise to further perversion, for later comes the dominant idea, "He wants to get rid of me." A woman came to me some years ago. She was waiting in my room when I arrived from dinner. She said, "I wanted to see you very much." She had a black bag and began bringing things out one after another. I knew what was coming. She said, "I want you to have this analysed. Look at my nose, do you see the mercury coming through my nose?" I said "No." "Well, then, take a magnifying-glass and look." She was sure that her husband had become tired of her. She "had a past" and she thought that her husband wanted to get rid of her and was poisoning her. The sequel was that he would not believe she was mad and later she cut his throat. It did not kill him but very nearly. He was not satisfied even then and next she burnt the house down. That satisfied him and she is now in an asylum. In all this bear in mind that I am referring to disorders associated with the climacteric which are accentuations of the normal temper or temperament of the individual. Fortunately, a very

large number of cases occur in which the symptoms are not so pronounced as those about which I have been speaking, but still serious enough to prevent any possibility of domestic happiness. I once wrote a paper mainly on such cases, entitling it "Marital Misfits." Unfortunately most of them do not settle down but remain incurable all their lives.

Now let us speak of more distinct forms of mental disorder to be met with about the climacteric. First of all there are those associated with the defective control of which I have spoken, in which there are impulsive acts, passionate acts, and suicidal acts. Then come the defects of volition embodied in a state of doubt and inertia—that is to say, want of power. The contrast is striking and will bear repetition—viz., there are numbers of people at the climacteric who lose higher self-control and become passionate and impulsive, and so impulsive that they may be suicidal, while others lose the power of judgment and exhibit *folie de doute* in the most marked way, so that they can never make up their minds to do anything; they are thinking all the time what they will do and practically doing nothing. Some of these resemble a certain youth who was always trying to stimulate himself by good resolutions. He would say, "Now I will get up to-morrow morning at 8 o'clock and if not I will fine myself 5s." So one finds certain ladies who are going to begin "to-morrow" with their new method of management—and never do begin at all. The most serious cases of climacteric disorder are marked by defect of memory. One gets a certain number of these and it is noteworthy that among climacteric cases I have met 1 or 2 per cent. general paralytics in whom there is generally a marked progressive dementia as the chief feature indicating the onset of the disease as associated with the climacteric. Note also that with the climacteric you may have hallucinations of all kinds. Hallucinations of sight are very common; so are hallucinations of hearing, probably more common than those of sight. You have persons suffering from climacteric disorders who believe people are talking at or about them and they thus hear scandals about themselves, giving rise to further suspicions of one kind and another. And I have already mentioned there are frequently hallucinations of smell and taste and these may give rise to the idea of poison.

We are now beginning to see that there are various symptoms and delusions definitely associated with the climacteric. We have seen that the suspicious relate more particularly to the husband, if husband there be. If the woman is single it is very common to meet with cases in which a woman conjures up an imaginary husband, she thinks that she has just been married, or that she has been forsaken, or that there is a man at the other end of the world who is being kept away from her. In the case of the widow you may find one of two very definite forms of delusion. One is that her husband is not dead. I have two at the present moment, both of whom decline to accept the statement that their husbands are dead. One was the widow of an officer and she declines to receive her pension because she believes that her husband is still alive. I have had one or two other cases of the same kind. Such a patient will say, "My husband has been taken away and they wish to make me take his pension so that I may acknowledge that he is dead and then they will bring him out of his hiding place and kill him." As a morbid development you get delusions of a sexual type that the husband is inconstant and neglectful. A woman will very frequently believe that someone is wishing to marry her and is prevented by foes, or she believes that she is married to improper people, and demons, or Holy Ghosts. I have met cases of both. I see a fair number of spinsters at the climacteric who believe themselves to be on the point of bringing forth a Christ or some great prophet. There are also positive accusations of sexual offences. I suggest that you should always be on the look-out for dangers of that kind—false accu-

sations, false confessions, and statements about syphilis, for at the climacteric it is not uncommon for a woman to say that she has been seduced by this or that person, and here also the extraordinary thing is that skeletons long lying dormant are galvanised into life. A woman of about 50 years of age, happily married, comes to the climacteric and says that she can see me alone, that I must vow I will not tell anyone of her confession. Well, what is it? When she was 21 years old she was very much in love with a cousin and she rather thinks that she loves him still. At any rate, she is quite sure that she has been living for 30 years a life of moral adultery because of this penchant for her cousin. Confessions of that type are not infrequent and have to be taken with a very great amount of "salt." I should regard it as a case in point that if you have any reproductive organ disorder, or if you find a chance of that disorder, in hysterical girls with irregularity of menstruation, or suppression of menstruation, you often get statements that some old man has been taking advantage of them. We find the same sort of thing at the climacteric and wherever there is physical disorder of the reproductive organs there is the same risk. In the insanity which results you will find the same type of delusions, perhaps accusations against the husband in reference to syphilis and besides these disorders there may be moral perversions. I would refer in passing to the lying and tale-bearing which occur. Perhaps you will say that this feature also is only an exaggerated development of certain tendencies. It is, or it may be; assuredly one sees a certain number of those cases which cause infinite trouble by the development of the "lying spirit." Elsewhere when speaking of the insanities of development I pointed out that boys not infrequently, and girls often, took to lying naturally. There would seem to be a reversion type in some of these climacteric cases, a certain "romantic" lying associated with the confessions and accusations of which I have spoken. You will find a good deal of scandal-mongering, ingenious false letter-writing, sending of post-cards, and so on. Every now and then I have a whole budget of post-cards handed to me with, "What do you think of these?" They may be hysterical or they may be climacteric, they are commonly associated with one or other of these two states.

And now let us take from the medico-legal point of view one of the most difficult and interesting types—namely, kleptomania. Kleptomania is more commonly met with in the climacteric woman than in any others. In my younger days, when I was willing to appear in the police-courts, I not infrequently was asked to give evidence on behalf of kleptomaniacs—so-called. I should say that three out of four of them were women at the climacteric or women in whom there was some reproductive organ trouble if they were genuine cases of kleptomania. And I feel rather cowardly in not being still willing to attend these cases. But there is an odour about the police-court which one would prefer not to be in and one cannot help feeling inclined to avoid them, to say nothing of being looked upon as a bought witness and not only a paid one. Let me ask you,

however, to remember that should you have to defend a woman who is accused of stealing uselessly or objectlessly, if she is at the climacteric it is a very important point in her favour. If there be hereditary neurosis or climacteric and drink in the case it is likely to be true kleptomania. But unfortunately drink, in the eyes of the court generally, had better be left out of the question. Among the moral perversions and lying commonly there are found all sorts of letterwriting persecutions, and here again unmarried women of from 40 to 50 years of age are the most common—I was going to say sinners, but I should rather say sufferers. I am speaking of individuals who write to parsons, who hunt parsons, who have hallucinations in regard to more or less conspicuous individuals. One unfortunate Nonconformist minister suffered a good deal. In two cases I had to take steps. In one case a lady was perfectly sure he wanted to marry her. I said "He is married already." But she said: "No; that is all nonsense; he is going to marry me." She attends every Communion service on purpose to get near him. She goes to the Bible-classes to be near him. She watches at the hour he leaves the house and if he gets into an omnibus to go up to town she gets into the omnibus too. She writes afforuous letters and makes this man's life practically intolerable. That is a type of disorder that is not uncommon. In one such case I got a woman sent back to her native country, but she came back to England again. Do not forget that these people go in for letter-writing without end and that no amount of persuasion or arguing is of the slightest use.

But I think you will have already perceived that disorders of the menopause are, in the greater proportion of cases, of a depressed type, melaucholic, hysterical, with ideas of misery and persecution and watching. These are unhappy ideas and therefore it is not surprising to hear that it is very common to get as a result anything ranging from a simple lack of interest in life, a want of desire for life, to a feeling that they are in the way, that they cannot do as they like, that they do not feel as they should, that their husbands do not care for them, and that their children would be better without them, that they are avoided by their friends and acquaintances. All those ideas may coalesce and pass into a more definite and concrete melancholia. One has known a widow under such conditions simply to shut herself up and to decline to see anybody and to decline to have any but the plainest and simplest food—she said she was not worth more. A considerable number of these patients make an end of themselves, drowning perhaps being the most common means. On the other hand, one finds another type which is rather interesting from more than one point of view. With the expiry of the reproductive function there may be an accentuation of lust or desire or passion. It is not a very uncommon thing to meet with a climacteric-begotten child—that is to say, a case in which a child is begotten only a short time before the final cessation of menstruation. I have not infrequently seen women who have been pregnant just at that time become fearfully ashamed of themselves, they have sometimes committed suicide, or secluded themselves, or developed melanc-

cholia of the worst possible type, or they have accused themselves of being pregnant by the devil. They are quite sure it was an unnatural occurrence and that the offspring would be unnatural. Thus it is well to remember the wide diversity of melancholia at the climacteric and, remembering that with these patients you so often get a change in the physical state, you will find often a dry, harsh skin rather than that cold, clammy skin which you generally meet with in melancholia. And you may get a high-tension pulse. I often wish I dared to bleed these patients; I find it is sometimes a good thing to reduce their diet and to give saline purges. They are sleepless and many patients do well with small doses of opium which seems to suit them better than anything else. One does not give opium as a rule in many cases of insanity, but in these cases especially, where there are melancholia and a restless agitated pulling and picking of the fingers, accompanied by a dry skin and rather full pulse, opium does very well indeed. As to the mania which is seen in climacteric cases it is generally a result of some abnormality in the reproductive organs and exhibits the eroticism, obscenity, lasciviousness, and various sense perversions of which I have given ample illustration. It is very common to find masturbation also. And you may find associated a period of loss of higher control, with eroticism accentuated and frantic masturbation followed by a reaction of extreme prostration and melancholia, with ideas of unworthiness and wickedness. These subjects will believe that they are very wicked and abandoned and no longer esteemed in respectable society because they have behaved so badly. In cases of this kind where there is considerable eroticism I give without hesitation large doses of bromide of potassium once or twice a day. I give a prescription of a drachm of the extract of salix nigra with half a drachm of bromide of potassium at night. That will often procure sleep and allay the erotic tendency. You do no good in these cases by local applications of cold. But I have found a sitz bath followed by applications of calamine powder to be useful. I have known cases in old days when the clitoris has been removed, but I cannot recommend this operation. In other cases it has been suggested that the ovaries should be removed, but in England we do not do this, though I believe it is done in America. Do not forget that in the cases attaining to mania also there is a great danger from drink. We have already seen that the climacteric is a period at which drink and drugs are most powerfully dangerous and are very readily taken to.

So far we have seen that there may be mania, melancholia, or progressive weak-mindedness, with loss of memory or general paralysis. But next to melancholia probably the most common form, if not indeed more common than melancholia, is delusional insanity, with ideas of persecution. The self-conscious feeling associated with the cessation of the function of medication in patients leads to the idea that people are looking at them, that they are marked people, that people are saying something about them and following them about, watching them and saying something against them. "One woman shuts herself up in her top room and covers all the windows with brown paper, completely shutting out the light, and she will allow her food to be admitted only through the door. I was

shown into such a room and having struck a light I saw that there was no crevice through which light could come. The reason she gave for all this was that there were policemen at the opposite window watching her. Why? They said that she had been an immoral woman. Patients think their neighbours are taking away their character, they think they have procured men to stand outside their room or door to insult them, they think that these men are made to walk up and down opposite the house as decoys to get them out and then to say they have "spoken" to people in the street. A similar form of disorder is met with in widows. A youngish widow is left with an income of moderate amount and several children and has to live carefully and she has to be very jealous of her reputation and of what she does. When the climacteric comes she begins to think people are avoiding her. Her friends are dying; she seems not to be seeing so many people as she formerly did—which is a fact—and she is increasingly conscious of it. She worries about this and thinks that her friends are constantly referring to her and that they are telephoning to one another about her. One finds these patients with delusions coloured by the latest invention and I have had some who think that others are sending Marconigrams through them or that they are being photographed while in their bath with x rays; in fact, that people are in every way annoying them under the belief that they are wicked. Unfortunately, a very large number of these delusional cases are unfavourable. Where you meet a woman with a fully organised idea of persecution which has lasted one or two years the patient will never get any better and the sense perversions on which such cases are built up may lead to all sorts of fancies about criminal assaults.

I must now say a few words about the influence of the climacteric on prognosis. Ordinarily one would say a case of acute insanity if the patient does not get well in a year, whether it is melancholic or maniacal, is a very unfavourable case. But there certainly are cases occurring at the climacteric about which you are justified in saying, "This case may last four or five years and yet get well." If the patient, however, has had attacks of hysterical or puerperal insanity, or, indeed, of any kind already, the prognosis is distinctly unfavourable and if the patient gets well she will probably be maimed intellectually and scarred morally. Then, again, as I pointed out at first, people will say, "Here my mother is suffering from insanity and has been for the last ten years but she is coming to the change of life; will there be any improvement?" I say, "No." What will be the result? Probably there will be no improvement and no change whatever. If the patient is showing signs of dementia at the climacteric it is almost certain that the dementia will become more pronounced afterwards than it was before. The climacteric in itself does not lead to, or tend to secure, recovery. Therefore you must not say here is a case of various attacks of insanity which is now entering or approaching the menopause and we are likely to have a period of rest and calm. It is not so.

The last thing I would say is this. There is one problem which has never been solved. I remember a case in which a woman at the climacteric committed adultery. I myself was perfectly certain that she was suffering from erotic mania associated with the climacteric. Is that plea a bar to divorce? The friends would not try it and so it still remains a question to which, as far as I know, no answer has been given.—*Lancet*, Oct. 31, 1903.

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JUST OUT

ON THE SUPPOSED UNCERTAINTY IN MEDICAL SCIENCE, and on the relation between diseases and their remedial Agents; being the Address in Medicine, read at the fourth Annual Meeting of the Bengal Branch of the British Medical Association, held on the 16th February, 1867,—by Mahendra Lál Sircár, M. D., one of the Vice-Presidents of the Association; Life-Member of the British Association for the Advancement of Science.—2nd Edition (1903). Original Address printed *Verbatim et Literatim*, with Opinions of the Press and a New Preface Containing the Story of the Author's Conversion, the Present Position of Homœopathy in India, and the Future of Therapeutic Science. Pages xxxi and 125. Price Re. 1. (1s. 4d.)

OPINIONS OF THE PRESS ON THE 1st EDITION.

“A very interesting pamphlet.” “An eloquent protest.” “Calm and modest manner.” “He has striven to show how disease may be cured more rapidly, more frequently, and more pleasantly than” &c.—*Monthly Homœopathic Review* (London).

“Even for literary execution, the pamphlet is a remarkable production.”—*Hindoo Patriot*.

OPINIONS OF THE PRESS ON THE 2nd EDITION.

THE INDIAN MIRROR, AUG. 16, 1903.

The younger members of the medical fraternity and Indian community in general in Calcutta may not fully know how their eminent fellow-townsmen, Dr. Mahendra Lal Sircar, came to give up his profession according to the “orthodox” school of medicine, and attain the position he now occupies as the *doyen* of the Homœopathic practitioners in the Metropolis. Thirty-five years ago, he read an address at the Fourth Annual Meeting of the Bengal Branch of the British Medical Association, of which he was one of the Vice-Presidents. The subject was “The Supposed Uncertainty in Medical Science and the Relation between Diseases and their Remedial Agents.” In the course of this address, he had referred to the Homœopathic system of treatment, and testified to its efficacy, basing his opinion on the experiments with this system which he had made during the year previous. He was not an out-and-out Hahnemann-olater at the time, but he declared that Hahnemann's system had many recommendations, that he thought it worthy of trial, and that he felt it his duty “most humbly to urge upon the profession the necessity of recognising it as one of our therapeutic systems.” These remarks evoked a discussion which

cannot be adequately characterised by the word "cyclonic." One of the speakers, Dr. Waller, went the length of threatening Dr. Sircar with the prospect of being turned out of the room. The President of the meeting, Dr. Goodeve Chuckerbutty, thought that Dr. Sircar had brought the legitimate profession into disrepute. All present at the meeting, which represented the pick of the profession, sided against Dr. Sircar, with the honourable exception of Dr. Colles. Out of evil, however, cometh good. Dr. Sircar lost his practice as an "orthodox" physician, and what was a loss to the Allopathic school proved a gain to the Homœopathic cause. The *Calcutta Journal of Medicine* was started shortly after, under the Editorship of Dr. Sircar, who has continued to conduct it up to the present date with his characteristic ability and earnestness. In the preface to a reprint of the address which he has lately brought out, Dr. Sircar relates, in language bordering almost on the pathetic, the privations he suffered after his excommunication from the "orthodox" caste. The reprint is supplemented by reproduction of newspaper comments on the address and the meeting, as they were made at the time, the contradictions, published or suppressed, that followed, and various other items of intense interest to the profession and laity alike. The memorable meeting, which brought Dr. Sircar to an eminence, so the dream of by those who had sought to extinguish him, was held on the 16th of February, 1867, and its proceedings had well-nigh become ancient history, and Dr. Sircar has done well in causing that history to be brought within the reach of the younger generation of his countrymen. As illustrating the want of common courtesy, which characterised the conduct of the "legitimate profession" of the time towards those whom they regarded as renegades, and the courage of conviction on Dr. Sircar's part, the reprint will undoubtedly be read far and wide, and with avidity too. The President of that memorable meeting expressed a fear that if Dr. Sircar adhered to his opinion, his bread even might be affected, and, therefore, as a friend and former tutor, he exhorted Dr. Sircar to reconsider the matter more soberly. How this kindly expressed fear, born of a grandmotherly solicitude for the welfare of the wayward pupil, has been falsified, time has amply and unmistakably shown.

THE INDIAN NATION, SEPTEMBER 14, 1903.

The pamphlet entitled "*On the Supposed Uncertainty in Medical Science*," a copy of which has been kindly sent to us, is mainly a reprint of a lecture delivered by Dr. Mahendra Lal Sircar at the fourth annual meeting of the Bengal Branch of the British Medical Association, on the 15th February, 1867. It includes a report of the discussion that followed the reading of the paper, correspondence in newspapers, relative to the paper, and the discussion, Dr. Robson's reply to the paper, and also the comments of newspapers on the entire proceedings. The pamphlet constitutes an interesting chapter in the autobiography of our distinguished countryman but it has other interest as well. It strikes us like the excavation of a city that had been buried by a volcanic eruption and that lay covered for over thirty-six years. The old scene, such as it was at the moment of the catastrophe, re-appears, not as unrecognisable wreck as after a railway collision, not as a calcined mass as in a grave, but fresh and clear as in life. The lecture-hall, the president, the lecturer, the reading of the paper, the discussion in the hall, the discussion by the outside public, all appear before us with vividness, in the fresh hues of the present and not the decayed colours of the past. And what a moral does the re-animated

scene convey ! It is a testimony at once to the strength and the weakness of man,—Dr. Sircar's loyalty to truth, his boldness in the declaration of a scientific heresy, and the blindness, the obstinacy, the unconquerable pride and hate of the Court of Inquisition before which he was pleading. As surely as Galileo was told that his telescope was misleading and his calculations wrong, Dr. Sircar was told that his facts were fictions, and his inferences a *fata morgana*. Dr. Sircar has come unscathed out of the trial, however, and his opponents have been conquered by the event though they withstood his logic. Homœopathy has triumphed. She scarcely needs an *apologia* to-day. Many an allopath has been stealing homœopathic medicines and using them in a way that would disgrace a quack, abusing *Camphor* in cholera, *Aconite* in fever, *Nux Vomica* in hæmorrhoids, and prescribing a mixture of *Bryonia* and *Rhus Tox* in rheumatism. Shades of the critics ! Could they only come and see how many cholera patients seek allopathic treatment to-day, or how even a carbuncle could be treated without an operation ! But we must not digress into a discussion of homœopathy. That mode of treatment is not now before our Court. We have to judge between Dr. Sircar and his bigoted enemies who would strike but not hear. Among the mixed feelings with which we read the pamphlet is one of congratulation that every journalist who discussed the subject was on the right side. The journalists were men of literature and not men of science. What becomes of the vaunted claim of science that it creates openness of mind, develops a taste for truth and the faculty of observing facts and weighing evidence ! We can only close our brief notice by saying that we almost envy Dr. Sircar his martyrdom, and are perversely glad that he was subjected to no sterner persecution than these pages report.

THE ENGLISHMAN, SEPTEMBER 26, 1903.

Dr. Mahendra Lal Sircar has done well in republishing an address delivered before the Bengal Branch of the British Medical Association in 1867. It is an able and scholarly speech, and after the lapse of 35 years the learned doctor is able to re-print it without a single alteration. All who are interested in Homœopathy would do well to make a note of this pamphlet.

MONTHLY HOMŒOPATHIC REVIEW (London), OCTOBER 1903.

The above long heading explains what this pamphlet consists of. It is the "address in medicine" which Dr. Sircar delivered on the above occasion, thirty-six years ago, when he stood up as the first medical practitioner in India who had carefully examined the tenets and practice of homœopathy, who had been convinced of their truth, and who had the courage to explain to the society what homœopathy consists of, and his open belief in it. It is a very able address, and it is well worth reprinting. It stands forth as a landmark in the history of homœopathy in general, but especially in its history in India. Dr. Sircar prefaces it with the original preface of 1867, and a new one for this year, in which he reproduces the intensely interesting "Story of my Conversion," which he published lately in the *Calcutta Journal of Medicine*, and which we had the pleasure of reprinting in our *Review*. At the end of the address are a series of quotations from the Calcutta press on the event, and on the extraordinary treatment Dr. Sircar received at the meeting, letters to the press from Calcutta doctors, with Dr. Sircar's replies, and finally a re-print of a pamphlet by Dr. Robson written against Dr. Sircar and homœopathy. The whole pamphlet forms the material for a very interesting chapter in the history of homœopathy in 1867, and without it any such history will be defective. It is good that such episodes of courage and strength of mind on the part of the pioneers of homœopathy should not be forgotten, nor the virulent and narrow-minded treatment it evoked on the part of their colleagues. Hence we are glad to find the address re-published with an account of all the circumstances attending its original delivery.

RAIS & RAYYET, DEC. 19, 1903.

The Supposed Uncertainty in Medical Science may be safely handed down to posterity after prosperity without material alteration. If it was supposed when Dr. Mahendra Lal Sircar read his paper at a meeting of the Bengal Branch of the British Medical Association in 1867, it has become an ascertained reality after all. Notwithstanding all progress, several uncertainties are dropping up

one after the other, some being solved, others remaining in the same state as they had been. For his courage in speaking the truth, Dr. Sircar was bombarded by words of fire by some of the Philistines of the dominant school of medicine. Dr. Sircar was then on the threshold of the domain of homœopathy.

The reprint of his pamphlet in 1903 has given rise to a fresh recollection of the old stormy days of homœopathy. Forgive and forget is no doubt a noble maxim which cannot be always followed. The persecution which homœopathy has suffered knowingly and unknowingly from its antagonists, has strengthened the energy of its adherents. If conservation of energy is to be believed in all its essential particulars, a moment brings afresh that potential energy in kinetic form. An apology for an autobiography is unnecessary. Dr. Sircar has written a portion of his life in the interesting preface of this brochure. It would have lost much of its significance had not this prelude been incorporated. The battle is old but a fresh introduction imparts to it newness.

His "Story of My Conversion" has a peculiar importance. It was the initiation, into the unrecognized medical truth, of a qualified medical man by a lay practitioner. Indeed, the irregulars have the glory not only in homœopathy but also in other branches of science of eyeing the first glimpses of valuable truths. Homœopathy owes its decided attraction to the zeal of Babu Rajinder Dutt. His singular efforts caused its spread not only in Bengal but in the United Provinces. It may be said that the noble Gangetic plain was his conquest in this branch of medicine. Introduced long before him by other amateur practitioners, his position in Indian society carried a dignity which was the cause of the promulgation of the new truth. He could be believed but not the others. The efforts of Mr. Tennere, who was afterwards the Health Officer of Calcutta, in its olden days, did not succeed. His unsuccessful attempt drew the attention of Babu Rajinder Dutt who could grasp the truth of the new method of treatment owing to his general culture in those days. Kindhearted, persuasive, and good tempered as he was, he succeeded where Tennere had failed. He gradually made his way among the Bhadracraçy of Calcutta, but the practitioners of the Orthodox school remained obdurate. They felt the influence of the new method, but they could not encourage it. Some of their given-up cases were turned to good account having been cured by homœopathy. A few practitioners were convinced of its truth but had not the courage to adopt it. It remained for Dr. Sircar to be the first votary among the orthodox clan. As the first renegade he had to suffer a great deal. Indeed that suffering gave him a tenacity of purpose which was equal to the occasion. The intolerance of his old colleagues drew the attention of the press. They were almost unanimous in their condemnation of their autocratic behaviour. The sanhedrim of the pedants would have passed the order of an auto-da-fe on him if they could. They leagued for his downfall. The word was passed that he had lost his sanity. Their authoritative declaration was followed by many boobies. The sectarian cry was all round the town. Freedom of thought was attempted to be drowned in the trough of unreason. To the credit of a section of the Bengali community the despicable attempt utterly failed. The Hindoo Patriot was Dr. Sircar's foremost supporter. Dr. Sambhu Chunder Mookerjee thundered in it. The Englishman and the Indian Daily News were his supporters. Dr Sircar was judicious in starting his Calcutta Journal of Medicine from January 1868. His effort became singularly fruitful. Babu Rajinder Dutt and Pandit Iswara Chandra Vidyasagar were his valued friends and advisers. Others followed them in their admiration of courage and zealous effort. After all, the credit of homœopathy was established by a man of the regular school. The man and his creed became well marked and recognised.

Dr. Sircar's epilogue has a varied interest. It deals with the Present Position of Homœopathy in India. During the days when he first accepted the truth of homœopathy, his own position was unsafe. He had to create a status for himself. Now being the master of the situation and the acknowledged leader of homœopathy, he has another kind of strife to separate the regulars from the irregulars of homœopathy. His is an endless strife. The struggle for existence of the new doctrine having ended and it being placed in a safe situation the time has come to think of other safeties. There was danger from without. The enemies have been vanquished. Now there is danger from within.

THE
CALCUTTA JOURNAL.
OF
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CHOLERA.

X.

(Continued from last Number, p. 456)

New School or Homœopathic Treatment continued.

Sulphur has the following symptoms which it would be well to bear in mind in treating cholera: Depressed about her illness, and out of humor; anxiety, as if he would cease to live; remarkable forgetfulness, especially for proper names. Vertigo, with nausea. Face pale and collapsed, with expression of great anxiety. Unusual thirst, with dryness and agglutination of mouth; much thirst after stool; nausea in stomach, with trembling of whole body; nausea with eructations; nausea and prostration, with trembling of limbs; nausea, even to faintness; vomiting, with profuse sweat; vomiting of very salt liquid as clear as water; vomiting as soon as she eats or drinks; vomiting of food, with trembling of hands and feet. Feeling of weight in stomach; burning and heat in stomach, or feeling of coldness in epigastric region; griping in epigastric region, extending downward; violent cramp in stomach. Rumbling and gurgling in abdomen; emission of much flatus; before, during, and after stool, griping in intestines, and burning in anus. Diarrhoea,

like water, always preceded by rumbling in abdomen, *without pain*; watery diarrhoea, several times; frequent, frothy diarrhoea, with tenesmus; stool evacuated rapidly and almost involuntarily, driving him out of bed; stools burning or scalding hot (not a pathogenetic but a very often verified symptom); stools chiefly early in the morning; stool, always soon after eating. Urine generally very copious, rarely scanty; no actual suppression. Shortness of breath. Palpitation of heart, attended by anxiety as though about to faint. Pulse, feeble, irregular, intermittent. Cramp in soles of feet, extending to toes. Great weariness and sleepiness. Faintness and vertigo, with much vomiting and perspiration.

Dr. Hering, in his *Guiding Symptoms*, has given the following group, as symptoms verified by cures: "Stupor, with pale face, dropping of lower jaw, eyes half open, cold sweat on face, suppression of urine, and frequent twitching of muscles." Dr. Bell has exactly copied them under Sulphur in his *Therapeutics of Diarrhoea*. So that here we have additional proof that Sulphur may be of use in true cholera, though it has but few of the characteristic symptoms of the disease. It should be remembered in this connection that Dr. Hering, on what grounds not stated, recommended SULPHUR as a prophylactic against cholera. His directions are: "Put half a teaspoonful of *Milk of Sulphur* into each of your stockings and go about your business; never go about with an empty stomach, eat no fresh bread, nor sour food. This is not only a preventative in Cholera, but also in many other epidemic diseases. Not one of the many thousands who have followed this, my advice, has been attacked by cholera. At the beginning, when you have diarrhoea, Sulphur will relieve you, take it at once, and if it must be repeated, dissolve a few globules of it in a tumblerful of water and take a spoonful after every evacuation. If you awake after midnight with violent diarrhoea, vomiting, cramps in the calves of the legs, paleness and coldness, take *Sulphur* and keep quiet, the next day eat nothing but stale bread, and you will be well."

Podophyllum: The following symptoms, pathogenetic and clinical, will help in the selection of the drug: Vertigo, with inclination to fall forwards; headache, alternating with diarrhoea. *Dryness* of the mouth and tongue with violent thirst, or thirst.

lessness; extreme nausea; vomiting, without intermission, first of the contents of the stomach, then large quantities of bile; vomiting of hot, frothy mucus. Epigastrium and entire abdomen tympanitic and very tender, scarcely bearing the pressure of the bed-clothes; burning and heat in stomach; throbbing in epigastrium, followed by diarrhoea; pain in transverse colon, followed by diarrhoea. Diarrhoea immediately after eating and drinking; diarrhoea early in morning, continuing through forenoon, followed by a natural stool in evening; evacuations in morning, with strong urgings in bowels and heat and pain in anus; thin, watery, green discharges during the day; prolapsus ani and recti during stool; watery, flocculent discharges, very profuse and exhausting, with cramps in the abdominal and flexor muscles of the extremities (Hale). Scanty urine, with frequent voidings. Suppression of urine (clinical). Pulse very weak, scarcely perceptible at the wrist. Pain and cramps in right leg. Bathed in cold perspiration.

III.—**Algide Stage, or the Stage of Collapse**, is the most dangerous of all. The greatest number of deaths in cholera takes place in this stage. It is much easier to say when this stage ends, which is either in reaction or death, than when it begins. Yet for the successful treatment of this stage it is necessary to have an accurate idea of its commencement; and for this again it is necessary to have true conception of collapse and of the causes of collapse in cholera. Collapse is a falling in, a sinking, or depression, of the vital energies, only short of but verging towards, actual dissolution. In this condition of the system there is a total suspension of functions of all the assimilating organs; and very nearly the same of organs the most essential to the economy, such as the heart and the lungs, or of their governing nerve-centres. The heart continues to beat, and either it does not do so strongly enough to propel the blood through the capillaries, or there is not blood sufficient quantity, or of proper consistency, to be propelled. The lungs continue to expand and contract, but the blood is not duly or at all oxygenated.

This stage may be said to be chiefly characterized by negative symptoms. Vitality is at the lowest ebb. The pulse has retired

from the wrist, and sometimes is not to be perceived in the brachial, and even not in the axillary artery. The respiration is either simply slow, or as is more frequently the case, hurried and labored, or sobbing—being quiet at times, and at times heaving. It becomes more and more difficult as collapse advances. All this is indicative of stagnation in the vessels of the lungs. In place of the natural warmth we have icy, clammy coldness; and in place of the hue of health we have a deadly pallor or livid or bluish tinge of the surface. The countenance has become pinched and ghastly; the extremities, especially the fingers and toes, palms and soles, look as if they have been long soaked in water. The eyes have sunk deep in their sockets, and become congested and lustreless. The voice is nil or has been reduced to a whisper. The restlessness of the second stage has given place to almost total insensibility to suffering. The senses have become dull, and the mind indifferent. Even the demand, which was so incessant in the state of full development, for cold water to quench the burning thirst, and for cool air to allay the sensation of burning heat in the skin, becomes less, and finally almost ceases. In this stage the cramps have either altogether ceased, or appear at considerably long intervals when the patients shriek out in agony. The evacuations are altogether stopped, or are small in quantity and passed involuntarily.

The remedies useful in this stage are generally those useful in the stage of full development. But in addition we have others which are of signal service. Altogether we have to consider the following remedies:—

1. Camphor,
2. Aconitum,
3. Veratrum,
4. Arsenicum,
5. Cuprum,
6. Scacale,
7. Carbo veg.,
8. Hydrocyanic acid,
9. Cobra,
10. Lachesis,
11. Crotalus.

To these we may add as occasionally useful, **Argemone**, **Alcohol**, **Ether**, so frequently and so unsuccessfully used by the old school.

In the treatment of collapse, the treatment of the previous stages must be borne in mind. It would be useless to employ remedies which have been already employed, and in spite of whose employment the collapse has set in. If however they have not been exhibited, they deserve a trial.

The indications of **camphor** and **aconitum** might be gathered from what has been already advanced regarding these drugs.

Camphor, as Hahnemann has pointed out has been eminently successful in collapse when the disease begins with it. It has been also equally useful in the collapse succeeding the stage of full development. **CAMPHOR** may be usefully employed if too much of other medicines has been taken and in massive doses. In this latter circumstance it acts more as an antidote than otherwise.

Aconitum, as must have been seen from its pathogenesis, is an excellent remedy for collapse, especially of the syncopal variety, in which there is threatened rapid or gradual failure of the heart. The symptoms of the case to be treated should be taken note of from the onset to the setting in of collapse in order to see if there is correspondence between them and the other symptoms of **ACONITE**. For otherwise the drug may not be useful at all.

Veratrum may be employed in sudden collapse, or in collapse which has resulted from excessive evacuations, provided of course it has not been already employed. The same remark applies to **arsenicum**, **cuprum**, and **secale**. We employ **ARSENICUM**, when the collapse is out of proportion to the evacuations, when there is much tossing in bed, and when burning is complained of in the skin as well as in the stomach. We employ **CUPRUM** or **SECALE** when we have reason to believe the collapse has resulted from the violence of the cramps, or when cramps are still the prevailing condition, or when we fear death might result from sudden asphyxia or sudden syncope, as the effect of spasm of the diaphragm, of the pectoral muscles, or of the heart. The differential indications are to be gathered from what has been said before.

Carbo vegetabilis: Such authorities as Teste, Russell, Hempel,

and Hughes* altogether question the usefulness of this drug in the collapse of cholera. Dr. Hughes, after his pronouncement on the drug in his *Pharmacodynamics*, as given in the Note below, in his *Principles and Practice of Homœopathy* says: "Carbo vegetabilis was much used by Tessier to meet the later prostration of cholera, and Dr. Sircar seems to think it of value. But I am at a loss to perceive its appropriateness to the condition present; and British experience is against its efficacy." British experience may be unfavorable, but American experience is not altogether so. According to Dr. Joslin, CARBO VEGETABILIS is one of the principal remedies in the collapse of cholera. Dr. Fischer had cured several cases with CARBO 30 after collapse and paralysis had set in. And our own experience, as we found it in the very beginning of our practice, has been eminently in its favor.

CARBO VEGETABILIS is certainly not a rapidly acting drug, like the serpent venoms, Aconite, Arsenic, &c., producing profound collapse all at once, but under its action the following symptoms are developed which show that it can produce collapse in its own peculiar way, which is, we believe, by preventing the oxygenation of the blood: Breath quite cold; as also throat, mouth, and teeth. Icy cold hands and feet. Frequently wakes

* "I am disposed to think that it (carbo) is abused in epidemic cholera, for which some homœopaths consider it a specific remedy."—Teste, *Materia Medica*, p. 249.

"Carbo vegetabilis is said to have been useful in cases of great collapse, but for our part we cannot say we have any great faith in its efficacy in such a disease as cholera. We have tried it occasionally, but without obtaining any results."—Russell, *Epidemic Cholera*, p. 261.

"I am unable to perceive in what way Carbo is homœopathic to Asiatic cholera, where it has been used by some practitioners; the symptomatic similarity is entirely wanting and the use of this agent can only be accounted for on the ground of some general theory founded in the ideal rather than in natural and general experience."—Hempel, *Materia Medica*.

"There is an adynamia for which Carbo vegetabilis is specific. It is non-febrile, therein contrasted with that of Arsenic, and is attended by evidences (such as blueness and coldness) of defective circulation and imperfect oxydation of the blood. When such a condition exists in affections of the aged, and in advanced stages of typhus after the temperature has fallen, Carbo is an effectual rallier. But I cannot agree with those who see a Carbo adynamia in the collapse of cholera."—Hughes, *Pharmacodynamics*, p. 201.

up in the night with coldness of the lower extremities. Exhaustion. Very frequent but only momentary attacks of fainting, causing him to sink down, accompanied by vertigo. Great anxiety and sensation of heat though she was cold all over to the touch. Weak, depressed pulse; frequent, excessive palpitations, with rapid beats, and intermittent pulse.

In cases where the collapse has gradually taken place, especially after the employment of the ordinary remedies, such as VERATRUM, ARSENIC, &c., CARBO acts admirably as a general stimulant. The pulse rises, heat returns to the tongue and the surface, the voice improves, the eyes regain their lustre and the patient gradually shakes off his dulness and apathy. CARBO is especially useful when there is tympanitic distension of the abdomen and when the stools have become foetid. CARBO may be employed in alternation with VERATRUM or ARSENICUM, in cases where the characteristic discharges of these drugs are going on, provided of course they have not been previously used, or not sufficiently used.

It is not, however, in every case of collapse of cholera that CARBO VEGETABILIS will restore vitality to the patient. It is beneficial only when the body throughout is cold and covered with clammy sweat, and when the breath and tongue are cold, that is, when the reduction of temperature is general. It has not succeeded when with the coldness of the extremities there is abnormal heat of the chest and of the head, a condition which I have found to be of the utmost gravity, and which hitherto has resisted almost all our remedial agents. CARBO VEGETABILIS is especially useful after ARSENICUM, more particularly when the latter has been abused, as it generally is, in cholera.

Acidum hydrocyanicum is useful, in fact, is the only remedy when along with pulselessness, cold clammy perspiration, involuntary evacuations, staring fixed look, dilated pupils, the respiration is slow, deep, gasping or difficult and spasmodic, taking place at long intervals, the patient appearing dead in the intermediate time. If any remedy is entitled to being spoken of as acting like a charm, it is HYDROCYANIC ACID. It would at times seem to restore animation to a corpse. Apparently dead, and humanly speaking, beyond all hopes of recovery, the patient revives under its influence, quite to the surprise of those around,

and ever of the physician. The quack nostrum *Chlorodyne* owes its occasional charming but more often its deleterious effects in cholera to this agent, which is one of its constant ingredients. We cannot help taking this opportunity to remark how perversely prejudiced orthodox physicians prove themselves to be when they do not hesitate to use drugs of which the composition they cannot pretend to accurately know, whereas they refuse to use drugs which have been tried in the crucible of the healthy human constitution.

Dr. J. Rutherford Russell, in his *Treatise on Epidemic Cholera*, published in 1849, says: "Hydrocyanic acid, we have seen, gives at least temporary relief in a few cases where there was great prostration and oppression of the chest. One poor woman, a sober, respectable person, who had been ill for twelve hours when we saw her, and complained much of excessive uneasiness at the heart, exclaimed after a few doses of Hydrocyanic acid, 'God be thanked, my breast is getting benefit,' and for some time there was decided improvement both in her sensations and appearance. On the whole, however, we believe that the number of cases in which it is indicated, will not be found large, perhaps the particular period suited for its administration is very short."

This last remark is applicable not only to Hydrocyanic acid but to all the drugs which our school has got into the habit of using in cholera, not even Camphor excepted. We have seen the administration of drugs in inappropriate cases and in unsuitable states to be attended with serious, often disastrous, consequences. We have seen Camphor to bring on vomiting where there was none, Cuprum to make the cramps more general and more frequent, Arsenic to aggravate the thirst, Veratrum to convert simple diarrhoea or cholericus as it may be called, into genuine cholera, and so on.

For ready and easy reference we give here the symptoms of HYDROCYANIC ACID which have a direct bearing on the symptoms of the collapse of cholera: Sudden loss of consciousness and sensation, with great weakness. Weakness of whole body, especially of the lower extremities, not subsiding for many days. Cyanosis, lips pale and bluish. Fluid attempted to be swallowed remains in his mouth, ebbing and flowing with the respiratory movements. Great oppression of chest and difficult respiration;

gasping as it were for breath. Respiration after long pauses, only seven in a minute, each breath seemed to be the last. Very slow, excessively deep respirations, drawing the ribs to the spine. Slow, laborious breathing, accompanied with a hissing sound or stertor and rattling. Heart's action very weak, irregular with slow depressed pulse, rapid and weak; small and unequal in force, a weak impulse alternating with a strong one. Great paleness of the whole surface; cold clammy sweat over whole body. Spasms commencing in the toes, followed by distortion of the eyes to the right and upward. General spasm, frightful distortion of face; convulsion at first, paralysis afterwards. Suddenly fell down, without either cry or convulsions, breathing deeply forcibly and slowly; or without a trace of pulse or respiration, extremities cold, all the muscles paralysed, but eyes glistening, and as if full of life.

If HYDROCYANIC ACID were prescribed according to the symptoms given above, it would, we doubt not, be more often used than it is. It would be eminently indicated in those cases, by no means small in number, where the collapse is sudden after the first stool or two, the patient becoming blue and his voice husky at once. In such cases we should not wait for the oppression of the chest and the characteristic breathing. Of course where these are present the indication for the drug would be the more appropriate. It is indicated in cases, where in spite of the use of other remedies, the centres governing circulation and respiration become more and more deeply affected, giving rise to threatening failure of the heart, and deep, slow, gasping respiration. In such cases it would restore life, if the cavities of the heart and the vessels of the lungs are not already clogged with coagula.

Cobra (*NAJA TRIPUDIANS*) is the most virulent of serpent venoms. Its action upon the nervous system is more profound than upon the blood. Death takes place, in cobra-bites, more generally from asphyxia, that is, from paralysis of the nervous centre governing respiration, than from syncope. In one of our experiments we found the heart was beating after the respiration had stopped for some time, and when the animal appeared to us, to all intents and purposes, to be quite dead, and which in fact led us to lay him open. COBRA again seems to produce or favor coagulation of the blood in the vessels, even in the arteries. We

were guided to COBRA in the treatment of the collapse of cholera by the light of these facts, and in the few cases we have tried it (6th dil., globules) we have found it eminently successful. COBRA would seem to fulfil our most sanguine expectations in cases threatened with imminent dissolution from asphyxia, resulting either from extreme nervous exhaustion, or even from embolism of the pulmonary vessels, indicated by great dyspnoea and the most distressing struggle for breath which the cholera-patient in this stage not unfrequently manifests. We would deem COBRA to be especially indicated after ARSENICUM has been exhibited frequently without benefit, or perhaps to the extent of producing this mischief. COBRA seems to be very nearly an analogue of HYDROCYANIC ACID, and acts almost as rapidly and as charmingly.

The following symptoms produced under its action will help in the selection of COBRA: Great depression of spirits; sadness and irresolution; melancholy, broods over possible wrongs and misfortunes; confused memory; loss of consciousness, comatose; vertigo, unable to see, although eyes open. Face very pale, looks haggard and thin; jaws firmly clenched. Speechless and insensible; or unable to speak though conscious. Craving for stimulants which aggravate the state. Nausea, vomited plentifully; sinking in stomach; great heat in stomach. Rumbings and aching in abdomen. Diarrhoea, sudden, watery, bilious. Respiration extremely laborious; gasping for breath, with several deep-drawn inspirations; respiration hardly perceptible, could only be recognized by the hand on the abdomen. Fluttering of the heart; palpitation; unusual, audible beating of the heart. Heart beats after cessation of the respiration. Pulse weak and thready; hardly perceptible. Prostrate and miserable in body and mind. Torpor and listlessness pervade the whole system; body cold and collapsed; feet and legs cold, hands hot. Extremities cold and corpse-like up to upper part of thighs and arm-pits. Icy coldness affecting first the left side, then at night shifting to the right.

Lachesis: We have no experience with this drug. But from its general neurotic and hæmatic action being analogous with those of the cobra, and the neurotic action in both the drugs predominating over the hæmatic, we are inclined to believe that LACHESIS will be equally useful in the particular condition in which

COBRA is. We would prefer the latter when despondency and fear of impending dissolution constitute the mental condition of the patient; the characteristic psychological state of **LACHESIS** being rather excitation than depression.

Properly speaking we have no *foudroyant* or violent effects of the Lachesis poison from the bites of the serpent or from the use of massive or toxic doses, either by the mouth or by hypodermic inoculations. Allen has given some effects or symptoms purporting to have resulted from the bite as recorded by Hering in his *Wirkungen des Schlangengiftes*. But whether the bite was by the Lachesis *Trigonocephalus* of which he made triturations and dilutions, we have no means of ascertaining. Under the heading *General*, the symptoms—"Faintness and coldness, so that all the limbs became stiff, and he sank to the earth powerless, and died in spite of all remedies,"—are said to have been "from the bite of a serpent 'boschmeister,' similar to the 'surukukir,' in an Indian who had been bitten above the elbow; he followed and killed the snake and rubbed its gall into the wound." How far similar the two serpents, the surukukir (Lachesis) and the boschmeister were, whether they were varieties of the same species, we have no means of knowing. And however similar they might be, we shall not be justified from the homœopathic stand-point to use the effects of the one as if they were the effects of the other. The symptoms that we give below of Lachesis are those produced by the dilutions, excepting the very few said to have been produced from the bite, and which are so marked.

Loquacious; communicative; excited mood; extremely irritable; remarkable and persisted indifference and forgetfulness; confusion as to time; weakness of memory; mental activity or rarely indolence; crazy jealousy; mistrustful. Loss of consciousness as before apoplexy; loss of consciousness, with vomiting and purging (bite); loss of consciousness, irregular motions of limbs, cold clammy sweat, pulse small, slow, almost imperceptible, or with complete loss of strength and disappearance of pulse (bite). Vertigo, with reeling and loss of consciousness, as if from threatening apoplexy. Paleness of face with faintness; earthy gray color of face with abdominal troubles. Constant thirst, with dry mouth; longing for wine which does not affect him. Nausea, worse from thinking of it; nausea at 2 a. m., violent vomiting of

bile, with vertigo and profuse sweat, from 6 to 9 a. m. diarrhœa; vomiting at night by paroxysms, violently spasmodic, with diarrhœa. Burning in stomach. Sudden diarrhœa, with great urging, offensive; acids, even fruits, after Lachesis, easily cause diarrhœa; watery stools with burning in anus. Shortness of breath and great prostration; difficult respiration; desperate fits of suffocation, she must sit up in bed. Cramp-like pain in precordial region, causing palpitation and anxiety. Pulse small and rapid. Great physical and mental exhaustion. He falls unconscious to the ground, as if struck by lightning, with involuntary stool and vomiting (bite). Obligated to wear the clothes very loose, especially about the stomach, does not lay the arm across body on account of the pressure. Great sensation of coldness, with coldness and longing for fire. Profuse perspiration, staining shirt, sulphur-yellow.

Crotalus, though quantity for quantity is a less energetic poison than **Cobra** and **Lachesis**, produces collapse in man and animals not less violent and profound than either of these. It has its own sphere of action different from those of the allied poisons, and may be selected with accuracy from the following symptoms: Delirium, with convulsions. Depression, and indifference to every thing; melancholy, misanthropic and indifferent, with sudden weakness, headache, heartache, and excessive diarrhœa. Answers disconnected, with cold skin and rapid pulse; remarkable weakness of memory. Vertigo, with nausea, with sopor; pale, earthy leaden-colored face. Articulation indistinct; unable to speak, it seems as though tongue and whole throat were tightly constricted. Extreme nausea and vomiting of the least exertion; unable to retain anything in the stomach; vomiting of food, of bile, of blood. Burning, fulness, and pressure in epigastrium. Diarrhœa, with nausea, anxiety, and thirst; involuntary evacuations; watery diarrhœa, with colic and tenesmus, excessive thirst and repeated attacks of vomiting; slimy and bloody stools in abundance. Urine at first copious, then scanty and seldom. Respiration slow and laborious; gasping, panting; jerking; stertorous; suspended. Much palpitation and trembling of heart, and feeling as if heart jumped out or tumbled over; great diminution of pulse and depression of whole system, threatening collapse; pulse either too frequent

or too slow, especially the latter; pulse small, quick, thread-like, or intermittent and very rapid, scarcely perceptible. Along with some delirium and drowsiness, there was no pulse at the wrist, but auscultation showed the heart to be beating about 100 per minute, with feeble impulse, and remarkable shortness of the systo-diastrotic impulse. Extremities cold and insensible, body perfectly motionless and covered with cold viscous sweat. Hæmorrhage from all the orifices of the body, eyes, ears, nose, mouth, urethra,—even from beneath the nails. General spasm, without foaming at mouth. Frequent attacks of faintness, with paleness of face, inclination to vomit, and imperceptible pulse.

Dr. J. W. Hayward has observed with reference to *Crotalus*: "The sudden and extreme coldness, and blueness, the collapse, choleraic state, cramps and diarrhœa and vomiting; embarrassed respiration, scarcely perceptible pulse, suppression of urine, and speedy death or consecutive fever, afford very striking evidence in favor of the use of *Crotalus* in many cases of, at least sporadic if not true, Asiatic Cholera." We think the symptoms point more to true Asiatic cholera than to the sporadic form of the disease.

Ammonia, Alcohol, Ether. In recommending the employment of these agents in the treatment of the collapse of cholera, we might be thought guilty of advocating allopathy under the garb of homœopathy. Our creed is before the profession, and we are fearless of urging the claims of any drug and in any dose, provided we are convinced of its tested or probable utility in the relief of suffering or saving of life. In the present case, however, we are persuaded that in prescribing Ammonia, or Alcohol in any shape, or Ether, we are but acting on the principle of similars. The effect of a pretty heavy dose of any of these agents, is collapse, of the asphyxial or syncopal variety according to circumstances. And compared with the dose capable of producing this effect, the doses ordinarily prescribed for purposes of stimulation are minute, if not infinitesimal. It is not easy to give the differential indications of these drugs. Ammonia and Ether are more diffusible and act much more rapidly than Alcohol; and therefore are to be preferred when the collapse is more profound. Besides, Ammonia and Ether would seem to be more useful in asphyxia, and Alcohol in syncopal collapse. These drugs may well act in combination, provided the state of

the stomach will permit. Generally it is Ammonia which is less easily retained than Ether or Alcohol. But even this requires to be determined by actual trials. Sometimes Ammonia will be retained when Ether or Brandy will not. It is to be remembered that we recommend the administration of these so-called diffusible stimulants *after* failure of the remedies mentioned before. We have sometimes found homœopathic remedies to act better after the system has been stimulated by them. We do not say they invariably succeed in bringing on this stimulation. On the contrary, they fail more often than succeed, and the best allopathic authorities, as we have seen, such as Drs. Macnamara and McLeod, have come to admit this. We would not therefore advise them to be pushed too far, to the extent of causing distressing irritability of the stomach when it has already ceased. Besides, even if the stomach be not rendered irritable, it is not safe to fill it with these powerful agents. "Nothing," says Dr. Edward Goodeve, "is more pernicious than the system of pouring large quantities of brandy into a pulseless patient in cholera. Sometimes when the irritability of the stomach has gone off, he will, in the course of two or three hours, swallow a large quantity of brandy, water, ether, ammonia, sago, wine, &c., and the friends perhaps congratulate themselves upon the quietness of the stomach, the pulse remaining absent nevertheless. In the course of time the patient grows uneasy, and presently vomits the whole accumulation, perhaps two or three pints. Such cases as these show the uselessness of over-loading the stomach in the torpid condition in which the patient is in collapse, and what a reservoir of mischievous elements may be provided against the return of the circulation. The irritable stomach is made more so by the drugs."*

When these drugs are useful at all, we have found drop doses to be quite enough. Such doses are less likely to produce irritability of the stomach, and if tolerated may produce good.

Beyond the employment of Ammonia, Ether, and Alcohol in various shapes, the old school has hardly anything more to offer in the treatment of the collapse of cholera, unless, indeed, we except Calomel, and intravenous injections of saline solutions.

*Russel Reynold's *System of Medicine*, Vol. i, p. 79.

It had become till recently quite a fashion, especially in India, to use CALOMEL frequently and in large doses, in all the stages of cholera. By some practitioners it is said to be attended with uniform success, by others it is looked upon as only falling short of a *catholicon*. And we are advised to push the drug, dose after dose, and consoled with the hope that improvement will ultimately result though none might be apparent, and though the disease might advance and the life of the patient be threatened. This we regard, have found, and therefore must condemn, as not only mischievous but dangerous. The utility of Calomel in cholera depends upon its specific action upon the portal system, combined with its peculiar, catalytic action upon the blood by virtue of which it prevents its coagulability. Hence it has to be exhibited in rather appreciable doses, but not larger than a grain of the 1st, 2nd, or 3rd triturations. Certainly it ought never to be allowed to saturate the system to its utter and permanent ruin. Falling out of the teeth, cancrum oris, mercurial cachexia have not unfrequently been developed by the injudicious use of this drug in cholera.

When dyspnoea is great, when there would seem to be a sudden failure of the heart's action, or when cramps threaten to stop the machinery of life, the application of *mustard poultices* over the chest may be resorted to with benefit, and should not be forgotten by the homoeopathic physician, after his own remedies have failed.

IV.—**The Stage of Reaction** commences with the return of the pulse at the wrist. With reaction the choleraic symptoms seem to develop anew, but in normal reaction this is only for a short time, and indicates but returning vitality. The purging and the vomiting soon assume a bilious character, the evacuations being yellowish or greenish. The stools gradually become more and more consistent; and the urine is secreted, and either voided or retained in the bladder as indicated by the fulness of the hypogastric region.

In normal reaction the chief treatment is dietetic, drugs being seldom necessary. The purging and vomiting being rather beneficial than otherwise, should not be checked. Should they, however, threaten to be violent or distressing, remedies must be addressed for their subsidence, and these are generally those

useful in the second stage, only that they should be more cautiously and more sparingly used.

In the stages of full development and of collapse nothing in the shape of substantial diet is admissible. Indeed, nothing but water should be allowed. It is only when reaction has set in that the physician should think of something more substantial than simple water. What that something should be, it would tax his utmost skill to decide. It has been our invariable experience that so long as the secretion of urine has not been established even sago-water may prove injurious. But if we are satisfied from the state of the cerebral functions, from the clearness of the mind of the patient, that the secretion of urine is not in abeyance we may promote it by sago-water sweetened with sugar or slightly salted with common salt. Sometimes it happens that urine has accumulated in the bladder, but not in sufficient quantity to cause the patient to feel an urging or to enable the physician to diagnose its presence. In such cases the patient on being asked has often passed a respectable quantity.

It is when the stools have become bilious that we should think of barley water, or diluted milk, or vegetable soup, or soup of fish or of meat. We have seen the cholera symptoms to return and to jeopardize the life of the patient by the injudicious and premature administration of even barley water as diet. The physician should remember that there is less harm in withholding nourishment than in forcing it when the assimilative power of the stomach has not revived.

Reaction, however, is not always of this normal description. It may be imperfect, and soon fall back into collapse, as if the system had just enough vitality to react upon the disease or to respond to the stimulus of medicine, but not enough to resume and continue its functions. Or it may be abnormal, being followed by congestive, inflammatory, or typhoid condition; the whole system or particular organs, from an inherent weakness, being unable to recover thoroughly from the original shock of the disease or from its subsequent ravages, or, as is not unfrequently the case, being hampered by injudicious medication, take on abnormal action, and thus we have what are known as the SEQUELÆ OF CHOLERA.

(To be continued.)

EDITOR'S NOTES.

Woman as Scientific Help-mate.

If some one with leisure to explore the by-ways of the history of science would compile a sympathetic account of those women who have been content to give the work of brain and hands with the sole desire to help on the scientific investigations of husband, brother, or father, he might make a very interesting book. If it is ever written, not one of the least striking chapters will describe the share of Mrs. Bruce in the work which Lieutenant-Colonel David Bruce has done to elucidate the part played by the trypanosomes in the production of disease in animals and man. In his concluding report on nagana, Colonel Bruce writes: "My wife also has my best thanks. In her capacity of sole laboratory assistant she worked throughout the inquiry." Mrs. Bruce again accompanied her husband to Uganda to study sleeping sickness, and again gave invaluable assistance in the laboratory work, which has resulted in the important report analysed elsewhere.—*Brit. Med. Journ.*, November 21, 1903.

Sleeping Sickness.

Lieutenant Colonel Bruce, R. A. M. C., F. R. S., who returned from Uganda some weeks ago, has, it is stated, established by experiments conducted in conjunction with Dr. Nabarro and Captain Grieg, I.M.S., two important points. The first is that monkeys inoculated with the cerebro-spinal fluid of patients suffering from sleeping sickness, or with blood from natives not yet showing the symptoms of the disease, but containing a similar parasite, subsequently present all the symptoms of the disease; the second is that the disease is limited to districts of South Africa within which the particular tsetse fly, *Glossina palpalis*, occurs, and that where this fly does not occur sleeping sickness is absent. The evidence, therefore, to connect sleeping sickness with the presence of trypanosomes in the cerebro-spinal fluid is now apparently very strong.—*Brit. Med. Journ.*, November 14, 1903.

Sponge Retained in Uterine Cavity.

Morestin (*Ann. de Gyn et d' Obstet.*, July, 1902) exhibited before the Société Anatomique de Paris a piece of sponge, of inferior quality, about as big as a pigeon's egg, which had been introduced a week previously into the vagina and missed after coitus. Pain and free mucopurulent fetid discharge set in. The os was wide,

the cervical canal admitted the tip of the forefinger, and the sponge was detected and removed with perfect ease. The patient, aged 40, had for many years used the sponge without any ill-effect. The possibility that the foreign body had been introduced by an abortionist into the uterine cavity or had been passed into the vagina by the patient, a prostitute, to conceal menstruation, was raised, yet her own explanation seemed trustworthy. For medico-legal reasons it is advisable to bear in mind that a small sponge may possibly be forced into the uterine cavity during coitus. Morestin notes that whilst foreign bodies are so often retained in the vagina, the uterine cavity is very rarely the receptacle of such bodies, probably because they are rapidly expelled if introduced. He himself once exhibited a hairpin removed from the uterus of a young woman, and for the literature of the subject refers to Neugebauer, to Charaès (*Thèse de Paris*, 1894), and to Picque's report presented to the Société de Chirurgie, January 12th, 1898.—*Brit. Med. Journ.*, November 14, 1903.

Prostatitis due to Intestinal Lesions.

It is usual to regard prostatitis as related to some affection of the urethra or bladder. There are cases notwithstanding which can be traced to intestinal absorption, and it is important to recognize them, as the treatment differs considerably. Le Clech has investigated this variety of prostatitis (*Thèse de Paris*, 1903) of which he has collected a considerable number. Prostatitis of intestinal origin is common with chronic forms of the disease sets in gradually; in fact it is uncommon for the patient to complain of any inconvenience until an acute exacerbation sets in, accompanied by feeling of weight, pain, and difficulty in micturition. Treatment consists in relieving constipation, haemorrhoids, or any anal lesion which may be present, and the daily administration of a glass of one of the usual waters may prove of considerable use. In some cases the dilatation of the anal sphincter may afford immediate relief, as spasmoid contracture is very frequently present. Should there be a more general lesion of the intestinal tract, purgatives, copious injections, and milk diet are indicated, and at the same time protargol (1 to 7 per cent.), or silver nitrate (1 to 5 per cent.) may be injected into the bladder. Local massage to the prostate will be of benefit and the administration of a suppository containing extract of belladonna. On the authority of Guyon, massage is one of the most valuable methods of dealing with chronic prostatitis. In the major-

ity of cases patients recover completely, though the time which is required varies from four weeks to three months. Frequently this form of prostatitis is met with in elderly persons who suffer from habitual constipation, sometimes as the result of dysentery, hæmorrhoids, or any condition which may cause intestinal infection.—*Brit. Med. Journ.*, November 14, 1903.

Epidemics and Earthquakes.

Do earthquakes set microbes in motion or do they only affect the nerves? From early times pestilence has been regarded as one of the accompaniments of earthquakes. Nor is this perhaps a mere figment of superstition. Many instances of epidemics following upon earthquakes are on record. Thus, in 557-60 A.D., earthquake year, Constantinople was visited by a pestilence and in 615 A.D., after more than a decade of seismic disturbances which extended from Japan to the mediterranean, the whole of Italy was visited, according to Sigonius, by a fearful epidemic, of which the nature is not recorded. Old writers, such as von Plenciz, an authority on the Lisbon earthquake of 1755, were wont to attribute the proneness to disease exhibited by whole populations during earthquake seasons to shaken nerves begotten of prolonged suspense and broken rest at night. Von Plenciz particularly notes in this connexion the comment of Seneca upon the great apparent increase in the number of lunatics and imbeciles after the destruction of Pompeii and Herculæum. An earthquake in the Alps, probably accompanied by vast landslips, must have been peculiarly terrifying even to mountaineers of strong nerves. Such a disturbance occurred throughout Switzerland in April, 1802 A.D., and it was followed by a "fearful pestilence" according to the "Diarium Historicum" of Bertrand. Again the nature of the disease is left undescribed, but in 842 A. D., we are told specifically by Dom Bouquet that a severe "tuberculosis," from which many died, followed an earthquake which shook almost all northern Gaul. England became an earthquake centre in the eleventh century, when a sensible mortality among man and beast succeeded violent shocks in Worcester, Derby, and the West. It is remarkable, however, that though England was afterwards subjected to many shocks, which were usually preceded or followed by periods of violent rain or cold, the country does not seem to have been visited again by diseases accompanying earthquakes. The mainland of the Continent continued to suffer from these epidemics, especially Switzerland, Italy, and Carinthia, while England remained immune—

that is, if the old chroniclers, such as Baker, are to be accepted as unimpeachable witnesses in the matter.—*Lancet*, Nov. 21, 1903.

The Features of The Epileptic Aura and Attack.

Dr. B. Onuf, assistant physician of the Craig Colony for Epileptics, New York State, has published in the *New York Medical Journal* of Oct 31st an account of the features of the aura and the attack in epilepsy as studied carefully in 800 patients. The object of this investigation was to ascertain as accurately as possible the various clinical phenomena and the order of their sequence. Dr. Onuf states that the nature of the epileptic attack varied with the patient and that "the picture of the symptoms was not at all that given in the text books, to which he had seen almost as many exceptions as patients." The points to which special attention was paid were the epileptic "cry" preceding a fit, the character of the convulsions, the pupillary changes, the tendon reflexes after the fit, and the state of coma induced by the fit. The epileptic cry which ushered in the fit was really a "low, tremulous groan" and when the ear was accustomed to it the cry was readily recognisable. The pupils were not always dilated during the epileptic attack; sometimes they were contracted and insensitive to light and at other times they reacted to both light and accommodation. The convulsions were generally preceded by the well-known epigastric or other sensory aura, the face then grew pale, the eyes rolled upwards, and with a characteristic cry the patient's body and limbs stiffened in a rigid spasm, in which condition he usually fell down. During the stage of rigidity (tonic spasm) the arms were abducted from the body, the elbows were flexed, and the fingers were tightly and stiffly contracted, while the lower limbs were rigidly extended. The state of tonic spasm lasted about 20 seconds or less; then succeeded violent and jerky movements of the limbs, the head, the jaws, the face, and the trunk (clonic spasm). The saliva collected in the mouth and was churned up into a foam by the spasmodic movements of the tongue which was often bitten between the teeth. During the clonic spasm the patients were liable to be thrown out of bed by the violence of the movements and in many cases had been known to sustain a dislocation of the shoulder or other injury from the fall. The clonic spasms did not always equally affect the two sides of the body; asymmetry of spasm was common. At the close of the convulsive stage the patient passed into a condition of moderate or deep coma. In this stage the senses of sight and hearing were

abolished and cutaneous sensibility was impaired in proportion to the depth of the coma, being complete when the coma was profound. The knee-jerks were liable to be exaggerated immediately after a fit owing to the condition of exhaustion produced by the epileptic discharge in the cerebral hemispheres, during which time the bulbo-spinal reflex arc was in a state of temporary over-action as regards myotatic irritability, so that the tendon reflexes for a brief period were exaggerated.—*Lancet*, November 28, 1903.

The Operation upon the German Emperor.

THE following authorised announcement has appeared in the English and Continental Press:—

His Majesty the EMPEROR to-day underwent an operation for a polypus on the vocal cord (*Stimmklappe*). The operation was performed by Geheimrath Professor Dr. MORITZ SCHMIDT, and passed off quite smoothly. His Majesty has to refrain from using his voice until the wound resulting from the operation is healed.

VON LEUTHOLD.

Potsdam, Nov. 7th, 1903.

MORITZ SCHMIDT,
ILBERG.

The result of a microscopic examination carried out by Professor J. ORTH is officially given in the following terms:—

The polypus consists of a very soft connective tissue containing only a few cells. This tissue is covered by an epithelium of the pavement variety (*Plattenepithelium*), which is in regular layers and is everywhere sharply distinct from the connective tissue. Some of the cells in the connective tissue contain fine brown minute grains of pigment, which are evidently the result of previous small hæmorrhages. The polypus contains a considerable number of thin-walled blood vessels. It is therefore a case of an entirely benign polypus consisting of connective tissue.

Berlin, Nov. 7th, 1903.

Professor J. ORTH.

The feeling of every medical man on reading that in a man 45 years of age, whose father died from cancer of the larynx and whose mother succumbed to cancer of the breast, a laryngeal polypus had been discovered and removed was naturally one of uneasiness. We are certain that all our readers shared the public apprehension when first the news of the operation upon the German EMPEROR reached them. The report of the EMPEROR'S advisers, however, so far as it goes, is so very plainly expressed as to leave no doubt that if the piece removed, at any rate, there was nothing that justified a

suspicion of malignancy. In that connexion the statement made by Professor ORTH—viz., that the epithelium everywhere was quite distinct from the connective tissue—is of course, of the highest importance. Both Professor MORITZ SCHMIDT and Professor ORTH are authorities in their respective fields. The former is the learned surgeon who did not hesitate to pronounce the dreaded word cancer when he examined the then Crown Prince at San Remo exactly 16 years ago, and he would certainly not have undertaken an intra-laryngeal operation upon the EMPEROR, save merely for exploratory purposes, without previous consultation with other authorities if he had the least doubt in his mind as to the nature of the growth. Professor ORTH, moreover, would certainly have expressed himself much more guardedly and would not have spoken of the growth removed as “entirely benign” had the microscopic examination of the latter left any uncertainty as to its true nature. All these circumstances, as well as further reassuring statements as to the illustrious patient's condition, make it right for us to insist upon anticipation of a speedy recovery. The condition of the EMPEROR's larynx will be carefully watched by his medical advisers and fuller clinical details will probably be given if it appears that any useful purpose would be served by so doing. The courage and good sense of the EMPEROR in taking the world into his confidence are to be commended. He has doubtless by so doing prevented the dissemination of much sinister rumour and much idle gossip.—*Lancet*, November 14, 1903.

Alcohol in Tropical Climates.

Major Fribig, who has served in the Dutch East Indies since 1879 as an army surgeon, is the author of a paper on the influence of alcohol on Europeans in the tropics which was read recently, at Aix-la-Chapelle. Acclimatisation, he says, is the result of a new regulation of the course of the blood by the vaso-motor system. The use of alcohol in a hot climate weakens that system and consequently interferes with the acclimature. Up to 1898 every Dutch soldier serving in the tropics used to receive 100 cubic centimetres of wine daily as part of his ration, but in May of that year General van Heutsz, Governor of Atjeh, reduced the allowance by one-half and, moreover, permitted the men who were so inclined to draw its value in money instead of the liquor. The officers, whose daily allowance was half a bottle of red wine per head, were also given a similar choice. From that moment, continues Major

Fribig, the soldiers, stimulated by the example of their officers, became total abstainers in large numbers and exhibited a power of resistance against disease and fatigue, as well as an obedience to discipline, such as never before had been seen during any of the wars and expeditions which had occurred in Dutch India. The sick-rate at once began to fall, a remarkable diminution being observable even within the first three months. Major Fribig, who has been a total abstainer since 1894, used formerly to indulge in siestas but never does so now. The mid-day heat has no injurious effect on him and he is able to work during the afternoon with as clear a brain as in the morning. While he was a consumer of alcohol exercise under the sun's rays used to exhaust him very quickly, leaving him bathed in sweat and completely worn out. Now he can support the hardest outdoor work without blenching; although 46 years old he lately took part in an arduous expedition and was able to perform the longest and most toilsome marches with comparative ease. It was the same with the other abstainers but all who adhered to their wine suffered severely and in many cases broke down altogether. Major Fribig knows a great number of officers and men, who continue to consume alcohol but are nevertheless able to carry out their duties efficiently in time of peace. They are therefore looked upon as fit for active service but no sooner are they put to the test of hard work than they succumb. Their vascular systems are unable to withstand the extra strain; weakness or paralysis of the heart renders most of them absolutely unfit for duty. Many victims of the alcohol habit become moral wrecks, losing all energy and initiative. Suicides amongst the troops in Dutch India are invariably consumers of alcohol. Among the diseases which Major Fribig found far more virulent and fatal in non-abstainers than in abstainers were palustral fevers, hæmaturia, cholera, dysentery, cirrhosis of the liver, neurasthenia, cephalalgia, syphilis, and surgical injuries. The authorities in Dutch India are fully alive to the importance of the alcohol question. An influential association has been formed for the encouragement of total abstinence. Under its auspices several recreation rooms have been established in which non-alcoholic refreshments alone are sold, and in the principal garrison town a canteen has been opened where the only intoxicating beverage provided consists of a light wholesome beer. As an addendum Major Fribig, in conclusion, quotes the views of the following authorities: Dr. E. Rudel, Dr. Hugo Hoppe, Dr. Livingstone, Captain Hutton, Count Götzen, Emin Pasha, Sir Henry Stanley, General Galliéni, and Lord

Roberts. The list could easily have been extended.—*Lancet*, November 28, 1903.

The Pathology of Cerebral Rheumatism.

LITTLE has been written on the pathology of cerebral rheumatism, for only recently has a technique been elaborated sufficient to reveal the fine changes which occur in the nerve cells. At the meeting of the Société Médicale des Hôpitaux of Paris on Oct. 16th M. Josué and M. Salomon described the following case. A woman, aged 38 years, was admitted to hospital on July 25th, 1903. Her illness began four days previously with sore-throat. Soon the feet became painful and then the knees, the hips, the wrists, the elbows, and the shoulders. Violent headache and abundant perspiration followed. On admission she was delirious. The face was red and grimacing and from time to time presented spasmodic contractions. The pupils were contracted. There were convulsive jerkings and disordered movements of the limbs. The joints of the feet and the left elbow and the wrist were swollen and the overlying skin was red and hot. The right knee-joint was full of fluid and hot. On the 26th the temperature was 102.5° F. in the morning and 104.5° in the evening. The heart sounds were muffled but there was no murmur. There was marked dyspnoea out of proportion to the physical signs which consisted of some subcrepitant râles at the bases of the lungs. The urine contained a trace of albumin. Sodium salicylate was given. On the 27th the evening temperature was 103.5° and the delirium persisted. On the 29th the delirium was less violent, the face was cyanosed, and there were bronchitic râles all over the chest. The evening temperature was 104°. On the 30th the delirium was violent and the patient tried to get out of bed. Death occurred in the night. At the necropsy the brain was found to be very congested, especially in the frontal lobes and at the base. The cerebro-spinal fluid was not more abundant than normal. The right knee-joint contained thick cloudy fluid. The lungs were congested and oedematous at the bases. There were some filamentous pleural adhesions. There was no endocarditis but on the aorta at the origin of the coronary arteries were some gelatinous patches. Sections of the frontal lobe and of the motor region of the brain were stained by Nissl's method. In the frontal lobe the cells showed no signs of infiltration with leucocytes but the nerve cells were profoundly altered. Everywhere the chromatophile granules had disappeared. The achromatic substance had a uniform tint and a granular appearance and seemed to have a

tendency "to fragment." Some cells were fissured. The nucleus was more stained than normal. In many sections "neuronophagia" was observed. In some places cells were attacked by two or three "neuronophages" which dug out a sort of notch; in others, all the protoplasm of the cell had disappeared, leaving only the nucleus with one or several neuronophages in a vacuole; finally the cell was completely destroyed, leaving only a mass of neuronophages in a clear space. The neuronophages were of two kinds: some had a large clear nucleus and resembled macrophages; others had a small nucleus and the appearance of lymphocytes. In the motor area the meninges showed a mononuclear leucocytic reaction. The changes in the nerve cells were a little different from those of the frontal lobe. There were fewer neuronophages and the nerve cells were less affected. In the vessels of the pia mater were large diplococci and bacilli taking Gram's stain and in the pia mater itself and in certain cerebral capillaries were diplococci. Thus there was in the brain a striking contrast between the trivial microscopic and the intense microscopic lesions.—*Lancet*, November 21, 1903.

A Remarkable Case of Multiple Personality.

RECENT clinical investigations by physicians, especially of the school of Charcot, in regard to the subject of "double consciousness" have brought to light many facts of professional and medico-legal interest. In the *Journal of Mental Science* for October Dr. Albert Wilson reports a remarkable case of multiple consciousness in the person of a young girl who at different times of her life exhibited the varying and different characters of one or other of a dozen "personalities." At the age of 12½ years the girl was attacked with influenza and cerebral meningitis lasting about six weeks. The multiplicity of personalities which she exhibited during her life began during this illness and in the following circumstances. In the third week of the illness she was delirious and maniacal and showed intense fear of imaginary snakes (visual hallucinations). She was mentally blind in that she could not recognise people, "yet a hand or any crease in the counterpane became to her a snake." Chorei-form fits and opisthotonos occurred in the fourth week, the attacks being terminated by temporary coma. In the fifth week recovery set in and intelligence returned. In the sixth week there developed catalepsy and paraplegia and quite suddenly one day she developed into a different personality. Whilst in bed reading and

playing with her dolls she "commenced to shake and clear a space around. Then she said, 'It is coming,' turned a somersault, and sat up in bed in this new personality." Her manner was now childish and her words were clipped as in baby talk, she also used words wrongly, calling white, black; black, white; and red, green. In this state she had some conception of her normal self whom she called "that person." She always says she is "very cross with that person for going and leaving her." She has frequent cataleptic attacks while in this state and is noisy and forward in manners, whereas in her normal state she is a modest and well-behaved child. Other personalities succeeded from time to time in the patient and as a rule she gave herself a different name in each case. Thus her next personality (No. 3) was called by her "Old Nick." This new personality made its appearance on July 24th, 1895, stayed till August 8th, and then disappeared for a year, returning on July 12th, 1896, when it continued for ten weeks. When in this personality the patient was able to read and to write and enjoyed good health but displayed a very bad temper. When she returned to a normal state she had no memory of events which had occurred to her in the "Old Nick" stage. In the character of a fourth personality she was both deaf and dumb. The deaf-mute condition recurred five times, its last appearance being in August, 1895. It lasted a few days only. Other personalities were of varying character and duration; one of these was named by her "good thing" or "good creature" or "pretty dear." This was the most intelligent of the numerous personalities and while in this stage she learnt French. Another personality was characterised by imbecility, blindness, and paraplegia. "The striking feature in this case was that when blind she could draw, while at no other period of her life, either normal or abnormal, had she any ability in drawing." Moral delinquency was exhibited in another of her personalities. She was then violent and cruel, bullied her little sister, and on one occasion she would have pushed the latter into the fire if help had not arrived. When she grew up to be about 16 years of age her normal personality had practically entirely vanished. She was sometimes the individual which she called a "thing" but more usually she was another—viz., "good creature." In some of her personalities, adds Dr. Wilson, habits of baby-talk and a forward unmaidenly manner existed and when menstruation was established no difference was produced in her mental condition. When 17 years of age she developed another personality in which she was self-willed, disobedient to her parents, subject to strong erotic impulses, and inclined to wantonness. In all, says Dr. Wilson, about a dozen different personalities, alternating or occurring at irregular intervals, constituted the total of her psychical life. "This opens the very serious question which constantly confronts us, that of responsibility" for acts done in such states of abnormal consciousness.—*Lancet*, November 14, 1903.

CLINICAL RECORD.

Foreign.

THREE CHAMOMILLA CASES.

BY G. E. Dienst, M. D.

FIRST CASE.

One night last winter I was hurriedly called to see a lady who was said to be suffering severely from cramps. On arriving at the home I found a lady, aged about 58 years, in great anguish. She tried to vomit, but ejected nothing but a watery mucus; complained of violent spasmodic pains in the stomach, worse towards the pyloric end; her fingers and thumbs were drawn out of shape by the severe nervous strain she was undergoing and were so stiff that I could not bend them.

Her moans and screams were similar to those of a parturient woman. Her skin was cold and of a milky-white, her tongue slightly coated white, her face the picture of the most extreme anguish. When a paroxysm of pain came she would scream and declare she could not endure another.

I dissolved a small powder of *Cham.* c. m. potency in less than one-quarter glass cold water and gave a teaspoonful every thirty minutes until better. Before she had taken the third dose, the paroxysms were growing farther apart, shorter and of less severity, and before taking the sixth dose the pains were gone. The medicine was stopped and a placebo given, and apart from a postcramp soreness she was soon at her work again.

SECOND CASE.

Sometime since I was called early one morning to see a lady in the country said to be suffering very severe pain. On my arrival, and on examining my patient, she told me the pain was most severe below the waist line; was spasmodic, had produced nausea and vomiting, but no diarrhoea.

This was on Tuesday, and she had had these "cramps" since the previous Friday. She had been a victim of "stomach cramps" for some years, for which she received allopathic treatment. *Colocynthis* 1 m. (B. & T.), was given in water, a teaspoonful after each paroxysm of pain. I returned to my office feeling insecure about the results of my prescription, but I could find nothing more suited to her case than *Colocynthis*. The day passed and I had begun to think I had hit the mark, when at supper the telephone told me my case was worse.

I hastened to her bedside and found her writhing in pain, the skin cold but dry and the woman laboring between a condition of being frantic and angry. When asked where the pain was most severe she placed her hand on the upper part of her stomach and said: "Right here, doctor, right here." I gave her a powder of *Chamomilla* c. m. dry on the tongue, and prepared some in 6 teaspoonfuls of water, a teaspoonful to be given *after* each paroxysm of pain. I sat by her bedside for about thirty minutes and no pains came. I gave instruction that the medicine in the glass should not be given unless the pains returned. A telephone message the next morning told me that no more pains returned, nor did the lady take any more medicine. She recovered at once and went to her household duties which are many on the farm.

THIRD CASE.

This was a boy of about ten summers, who was suddenly taken with severe pain in the stomach, to which he is accustomed, and when I arrived at his bedside, he was moaning most piteously. The "cramps" did not seek to "double him up" at all, for I noticed he lay stretched out on his back and rolled from side to side holding his hands over his stomach. There was considerable nausea, but very little vomiting. I gave a powder of *Chamomilla* c. m. dry on the tongue, and left three teaspoonfuls of water in which I put a few granules of the medicine to be taken one teaspoonful after each pain if there was any. I have not learned whether he took those three doses, but saw him playing on the streets the following day and he has had no return of the trouble since then.

REMARKS.

The pains were paroxysmal, coming with equal regularity in each case about three minutes apart. In each case there was much irritation of the nervous system, impatience and fear that each successive pain would be worse than the preceding one.

In each case also the pain was confined to the stomach on and above the waist line and not in the bowels.

In each case the medicine acted promptly, a sensation of improvement coming within three minutes after taking it, and slowly continuing its work until entirely relieved.

In neither case was suggestion used to aid the remedy, nor did I resort to any local applications of heat or cold.

In neither case was there any disorder of the stomach following the administration of the remedy but all organs assumed their

normal functions within thirty-six hours, at longest interval, after pains ceased.

Naperville, Ill.—Homœopathic Recorder, October 15th, 1903.

CASES I HAVE COME ACROSS.

By FREDERICK KÖPP, Greenwich, N.S.W.

Silicea IN PARONYCHIA.

Being called in by a mother to see a little girl, aged about ten, who had what she termed a "bad finger," I found that she was suffering from a whitlow near the base of the nail of the middle finger of the left hand. I told the mother to make use of hot fomentations to relieve the pain, giving the child a two-grain powder of *Silicea* ̄ every four hours. There was, however, a persistence of the inflammatory symptoms, and there were no signs of early suppuration. I thereupon ordered a warm bread-and-milk poultice to be applied, and renewed when cold, to soften the parts. I then made a free incision with the lancet, so as to relieve the tension, and prevent sloughing. The treatment proved successful, and the finger soon again assumed its normal, healthy condition. A dose of *Silicea*, night and morning, was continued for a month afterwards. The child had previously been in a much debilitated state, and her countenance was very pale and somewhat sunken. Therefore, after ceasing to take the *Silicea* trituration, I put her on *Arsenicum album* 3x, 2 minims three times a day for six or seven weeks. The result exceeded my highest expectations. The child improved wonderfully, so much so that the mother remarked how she was growing out of all her clothes, and that "the tonic" she was taking was making her grow fat. She is now, to-day, a healthy young woman, and a great contrast to the puny, sickly little girl of ten years ago—thanks to the potent, health-giving power of homœopathy.

Nux Vomica AND *Sulphur* IN HEMORRHOIDS.

The success of the above two well-known homœopathic remedies has been well established in my hands in a number of cases having the following well-defined symptoms: Constipation, with ineffectual urging, or thin evacuations mixed with blood; prolapsus through loss of power of the muscular structure of the bowel. The patients were generally of sedentary habits, and, in several cases, the hemorrhoids had existed for a number of years, and been at times very troublesome. The treatment adopted by me was to administer a 3m dose of *Sulphur* 3 every morning on rising, and a 3 m dose of *Nux vomica* 1x on retiring at night. The diet adopted

was a liberal quantity of well-cooked vegetables and sound, ripe fruit, with a very sparing use of animal food. While on the subject of animal food, I may mention that some of the worst cases of hemorrhoids I have had to deal with were patients who were great meat-eaters having animal food three times a day. The patients, under the treatment mentioned above all made a rapid cure, with a speedy reduction of the hemorrhoids, and their ultimate disappearance. In some cases the medicines had to be continued for over a month; but in the majority a week or a fortnight fully sufficed to complete the cure. This treatment is especially effective in chronic cases.

Acidum Carbolicum IN ULCERATED SORE THROAT.

This was the case of a young man (aged 23) who complained of great pain in the throat, with much soreness, worse on the right side. The pain was pricking and sharp, and aggravated on swallowing. There was a hawking from the posterior nares and pharynx of clear white mucus. He complained also of a slight feeling of nausea in the throat. On examining the throat I found that it and the tonsils were much inflamed and ulcerated. He had taken various homeopathic remedies, including *Aconitum napellus*, *Mercurius solubilis Hahnemannii*, and *Belladonna*, but the throat symptoms kept increasing in severity. I ordered him to take a tablespoonful of the following every three hours:—

R. *Acidum carbolicum* ℞ m xxx.

Ad Aqua dest. ℥viii. m.

and also to gargle the throat well with the following lotion three times a day, taking good care that it reached the ulcerated parts:—

R. *Acidum carbolicum purum*, gr. x.

Ad Aqua dest. ℥viii. Solve.

The result was that the patient made a rapid recovery, and was perfectly well again in a few days. He spoke highly of the gargle, and of the great relief each application gave to him. I have on many occasions made use of the *carbolic acid* lotion as a gargle; but have several times substituted one prepared from *Mason's Perfumed Carbolic Acid*, which I have found to be more agreeable to the patient than the preparation of the pure *acid*, the formula of which I have given above. It is, moreover, just as effective in its effects as the latter.—*Homeopathic World*, November 2, 1903.

gleanings from Contemporary Literature.

MEDICINE AND SCIENCE IN THE MODERN UNIVERSITY.

Delivered at the Opening of the New Medical School of the University of Toronto on Oct. 1st, 1903.

By C. S. SHERRINGTON, M.A., M.D. CAMB., F.R.S.,

HOLT PROFESSOR OF PHYSIOLOGY IN THE UNIVERSITY OF LIVERPOOL.

PRESIDENT LOUDON, DR. REEVE, LADIES AND GENTLEMEN,—Believe me it is a difficult thing for a stranger, even at your invitation, to address you on an occasion like the present. So many significant events crowd in upon him and time for reflection is needed to weld into a connected whole the impression he would wish to offer to you. Not that the growth and doings of this University have not been followed and watched with interest by us in the old country; on the contrary, your activity has been felt not only as a matter of mutual congratulation but as a spur to arouse us to effort in our own similar pursuit of educational aims. But the stranger coming among you necessarily feels the shortcomings of his acquaintance with the details of these academic enterprises you have taken in hand. One advantage, however, is his. His view, gained, from a distance, necessarily has freedom and truth of perspective that may give it a value in your eyes. Some things lose by perspective. Some things large when close to hand dwindle when viewed from afar. Not so Canada. The perspective given by the width of the Atlantic is but an appropriate setting across which to view her greatness and her far-reaching activity. And this event, this academic celebration, this *dies festus* in your University to-day, retains from afar off all the significance of a great event. It loses no tittle of its dignity and import when viewed across the ocean from the crowded turrets of the older Cambridge or the hoary spires of Oxford. It shines, I assure you, like a beacon to the new university whose buildings are as yet unfinished on the hill above the port of Liverpool.

Coming from a region where history is long and the land little, to this where written history is short and the expanse of land incomparably great, one realises how relative is size. And in regard to the event of to-day the largeness of this country rises in my thought not as a matter of mileage, but that with you, more than with us in the old country, the size of to-morrow is vaster than the size of to-day. Each step of progress here, more than with us, has to be measured by its ample consequences in a more rapidly widening horizon of the morrow. These new laboratories have a field already demanding them and a still larger lies before them in an immediate and historic future.

PURSUIT OF SCIENCE A CIVIC DUTY.

Biology is the study of life in regard especially to growth and to organisation. Every medical man is a biologist, and as a biologist it may be as natural if I regard to-day's event from a biological standpoint and the community as an organism and the university as a living organ essential to the healthy life of the community. Science—especially medical science—is growing in importance to the community. We must have organisation in science as in industry. This University to-day makes provision of first-rate importance for the organisation of medical and allied sciences in the region which centres here. Capacity to rear and to support men constitutes the extent of a country, and population is the biological measure of the social organism. The ceaseless energy of the race has begun to plant a great

population in this land. Growth, great and rapid, is inevitably 'before it.' The growth of nations, as of individuals, requires the vigilance of guiding hands. Growth for it to take its course rightly towards perfection requires that provision for the security and expansion of the liberal arts and sciences forerun rather than halt behind the actual requirement of the hour. Not only for their direct utilitarian service. They form a whetstone for man's most universal tool—his intellect. Also a discipline for character in the pursuit of truth for its own sake. Scientific truth, when found, has often proved unpalatable to man—as when it dethroned him from his fancied seat at the centre of the whole perceptible universe, a universe he had imagined simply subservient to his needs; or again, as when he taught him that instead of being a creature altogether apart from brute creation there are flesh and blood bonds between himself and them. Regardless of its cost to his cherished fancies man strives for scientific truth. And, as the old Greek said, this purpose puts him further from the brutes and nearer to the gods. In nurturing science I would urge that a community cultivates more than mere utility. And even with regard to mere utility, as the fields of knowledge fall ripe under the ceaseless husbandry of the world's thoughts, those who would join in the great reaping and not only glean where others reaped before them must cultivate for themselves. To do this requires more than the devotion of individuals. It requires the intelligent cooperation of whole groups of individuals. Organised scientific inquiry becomes in advanced countries a conscious aim of the community as a community.

THE VARIOUS WORKERS.

That society may draw due benefit from wells of natural knowledge three kinds of workers have to stand side by side. First, the investigator who, pursuing truth, extends discovery with little or no reference to practical ends. He constitutes the fountain-head of the knowledge that is for distribution. Other hands may reap the harvest but his set and rear the seed. After the investigator comes the teacher. To him it belongs to diffuse the knowledge won. This honourable and difficult task receives its best reward in seeing the small spiritual beginnings of a pupil widen into the spiritual beginnings of a master. Thirdly, there is the applier of natural knowledge. His part consists in making scientific knowledge directly serve practical needs. It is this work which to the popular idea often represents the whole of science, or all of it that is commonly termed "useful." The practical results of this work are often astounding to the ignorant of the steps by which they have been reached. The greatest of these steps, however, is usually the first one, made in the laboratory of the investigator. These three co-workers of science are co-equal in the priesthood. Science and the applications of science are one growth, united together even as the fruit and the tree. The proper hearthstone round which the community should group these labourers, labouring for a common end, is the university. There the sacred flame of learning is fed from many sides, by many hands.

THE BIOLOGIST AS CITIZEN.

It is sometimes said that pursuit of science renders a man deaf to the appeals of practical life—that it tends to withdraw him from the everyday interests of the people. That I do not believe of any science, certainly not of biology, and the medical sciences. Why, from their very outset these subjects draw the mind towards study of an organisation the most complex and the most perfect it can examine. The ancient simile that our old school classic, Livy, drew between the human body and the body politic, the State, has not lost but won significance as the centuries have run. The achievement of the microscope has been the discovery that living things, whether plant or animal—all living things of more than minutest size—are

commonwealths of individually living units. These cells, as they are called, are living stones that build the house of life. In that house each stone is a self-centred individually-living microcosm individually born, breathing for itself, feeding itself, consuming its own substance in its living, and capable of, and destined for, an individual death. Each cell lives by exchanging material with the world surrounding it. In other words, its bulk depends on its surface. Hence surface increasing as the square, and volume as the cube, cell size is circumscribed by tiny limits—microscopic limits. Had the dependence been greater than it is and the average size of the cell less and too small for resolution and discovery by the microscopes of 70 years ago it is hard to imagine where biology would stand to-day. For two generations every biologist has been accustomed to think in terms of the cell theory. Every shred of the body he knows as an intricate interlacement, embodying co-operation and mutual support of associate thousands of individually existent cells. Division of labour has gone on and with it differentiation of structure: while this group of cells combines with its own inner life some special function subservient to the needs of the great commonwealth as a whole, another group is specialised for another duty again subservient to the general needs. Each organism, with all its solidarity, each one of ourselves here, is built up of living myriads. Each such organism consisted at the outset but of a single cell and from that in his life's growth have arisen the countless myriads composing him to-day. The blood relationship is close between all the cells of each one individual body. The cells of our nerves, of our muscles, of our lime-hardened bones are all blood relations through one common ancestor. Yet so far has specialisation of these unit lives gone on, so far does function reflect itself in microscopic form, that there is greater likeness between my nerve cells and the nerve cells of a fish than between my nerve cells and my own muscle cells, despite the blood relationship between these latter. And in the commonwealth of cells that constitute each one of us goes forward day long, night long, as in the body politic, the birth of new units to replace the ones outworn, the subordination of many individual purposes to one, the sacrifice and destruction of the individual life for the benefit of the many.

Trained in study of such an organism surely the biologist and the medical man will be the last to underrate the importance of organisation to the community for the common weal. Therefore I am rejoiced, but I am not surprised, that it is your Faculty of Medicine which to-day in its public-spiritedness erects and installs these fine laboratories, this potent addition to the organisation of your community for its activities in medicine and biological science. I would also, as a friend among you, offer you my congratulations on the consolidation of your two schools of medicine. Union means not only greater strength but the more effective application of that strength.

TWO ASPECTS TO MEDICINE.

I need not extol medicine to this assembly. Many of her votaries are here; I venture to count myself as one. But to-day the relation toward her of education is a matter on which our minds are naturally set. Am I wrong if in regard to this it rises saliently to me that from the educational standpoint medicine, like Janus of old, in a good sense, bears a double face? On the one hand, she is an empiric. She has learned to cure by what the comparative psychologist calls the "method of trial and error"—conquests over sickness acquired purely as the result of experience without help either from *a priori* or from inductive reasoning. And great and glorious is the rôle of her achievement on these lines. Of her humanitarian triumphs probably still—certainly until a generation ago—the greater share is assignable to this part. The use of quinine in malaria, the curative effects

of the iodides and various metals, the discovery of chloroform and ether as anesthetics—these and the names of a long line of famous physicians from the Renaissance down to some as justly famous as the past and with us now—to-day suffice to certify the inestimable gifts that medicine as empiric has given to suffering mankind. This face of medicine may well wear a garland.

In her other aspect medicine is not an empiric but a scientist. Who will refute me if I assert that medicine is as well an art as a science? Somewhere it is said that woman is the last thing man will ever civilise. So the scientific aspect, the male face of two-visaged medicine, thinks of that female face, the empiric, with whom his lot is linked. He feels sometimes that his other half is the last thing science will ever render wholly rational. By dint of patient toil he improves her practice, showing her a reason now and then. No sooner that than she is off on a fresh flight into the inexplicable and he must cudgel his brains anew to find her a fresh logical position.

That feminine, ever-youthful trait in medicine has to the student an undying charm. But on the whole the countenance of medicine has of recent years for the student become masculinely severe. The masculine head of medicine has indeed become the larger. Hydrocephalic even in appearance, yet is it filled not with water but with reasoned facts. All this development proceeds in the main from certain data acquired in the century just passed. The chemist, in discovering that all the million-sided chemical diversity of the perceptible universe is composed from a few—some 70—substances, therefore called elemental, discovered also that living matter instead of containing elements different from and subtler than those of the dead world, consists of just a few of the commonest of those same ones. Further, the doctrine of the indestructibility of matter was demonstrated in a new form—namely, as the indestructibility of energy, and the convertibility of any one form of energy into other forms. Thus dead and living matter have become united as subject material for study. It became really possible to consider the living body as a chemical and physical machine, a machine to which the laws of chemistry and physics can be applied. But this scientific progress in medicine, fruitful of benefit to the community, lays on the community a burden of obligation.

HISTORICAL SKETCH.

The empirical part of medicine is at once the most easy and the most difficult thing to teach. The preparation for learning it requires but little training in other subjects. Its facts lean on nothing but themselves.

With the scientific part of medicine it is different. That is based upon initiatory studies. Medicine, historically traced, we find first drawing help from the simplest and nearest at hand of these adjuvant studies. First she bent to the study of the gross form of the parts and organs of the body. The gross form of these is significant chiefly where they are machinery for application of mechanical powers. The greater part of the corporeal machinery is, however, not destined for such work, but has its purpose in properties, chemical, thermal, and electrical, to which—marvellous appendage—mentality is adjunct. Medicine in the course of the seventeenth and eighteenth centuries sucked dry for the most part what the study of the gross form of the body's parts could yield her. She then turned to the study of microscopic form—examined what Bichat first named the *tissus*, the fabric of the body. In so doing she came upon a great generalisation, the cell doctrine, discovering an essential and visible similarity of microscopic structure in all that has life, differentiating it from all which has not life.

But even before the advent of the cell theory medicine had begun to look of chemistry what it could give her. With the discovery of oxygen

and of the nature of combustion the links between biology and chemistry began to be tightly drawn. The young Oxford physician, Mayow, had performed the fundamental experiments on respiration and had discovered oxygen more than a century before Priestley and Lavoisier. But the time was not ripe until the stupendous work of Lavoisier had founded modern chemistry. The cell theory was from the first not only morphological but physiological. It meant, for the application of chemistry to biology, that the chemistry of the body or of one of its organs was a chemistry resultant from a thousand tiny living furnaces, individual seats of oxidation, deoxidation, polymerisation, hydrolysis, and what not. Not only that, but the living laboratory of the cell itself manufactures even the medium in which the cells themselves exist: the saps and juices of the body. And we are beginning to know, thanks to pathology, that every species of animal produces an internal medium specific to itself. Further, your distinguished physiologist here, Professor Macallum, who has done so much to reveal the distribution of the chemical elements within the cell, tells us that the internal medium which the cells of even the highest animal forms produce, as appropriate for themselves, still approximates in its salts to the water of the ancient geologic seas in which their ancestry arose and still reveals in fact the composition of that ancient ocean. In that respect these living cells, with all their flux of change, have been more durable and constant even than ocean itself. The contrast brings home to us a deep distinction between dead matter and living—the latter a moving equilibrium, gaining stability from the very motion of itself.

The bonds between medicine and chemistry with Schwann and Pasteur were drawn still tighter by their discoveries concerning those subtle influences named "ferments." Pathology, the study of these processes of the body in disease, even more than physiology as yet has drawn help from this part of modern chemistry. If the processes of health are in fact the resultant of the due co-operation of ten million little foci of healthy chemical action in the body, the processes of disease are similarly divisible and have to be traced to the unhealthiness of certain of these minute centres of activity. How extreme is the importance of chemistry to modern medicine no single statement can perhaps emphasise so well as this—that is, I believe, acknowledged on all hands—that in virtue of his chemistry a chemist, Louis Pasteur, during the latter half of last century was able to do more to alleviate the diseases of mankind and animals than any single physician of his time. To the physicist also medicine has made appeal. From him she has got understanding of the body's heat, the basis of the knowledge of fever; she has learned the intricacies of the mechanism of the eye and refined methods of examining that organ and of remedying many of its defects; the laws that govern the circulation of the blood, and the subtlest means of detecting the forces liberated in the working of the nervous system. In some cases, as sciences grow, their discoveries seem to sunder them the further one from another. In my belief that merely shows they are at the outset of their careers. To-day we find physics and chemistry converging and conjoining within a field of physical chemistry. It early became convenient to have a specific name for living material wherever found. The name given was "protoplasm." It might have been better to call it "x" or "y" so far as it in many respects an unknown quantity. Instead of looking forward to this material as a chemical entity we incline now to regard it rather as a field for chemical action satisfying certain particular conditions. Probably discoveries regarding these conditions will fall to the physical chemist, perhaps in a future very near at hand. Probably such discoveries will be among the most valuable that medicine has yet received from any source.

MEDICAL EDUCATION.

I have said enough to remind us how interlocked with science medicine

has become. She is applying sciences to her own problems and they form a vast capital fund from which she can draw wealth. To give instruction in this part of medicine, to turn out men trained in it, is now one of the duties of a medical school. The earnest student has a right to expect such training from his *alma mater*. But for it the requirements are importantly different from those that suffice as an introduction to empiric medicine. In the first place, as Pasteur said, we cannot have the fruit without the tree. For scientific medicine the student must perforce be thoroughly trained in his sciences before he can really grasp instruction or truly profit from his medical teaching. One of the aims of his instruction in empirical medicine is to teach him to observe for himself. So in his instruction in scientific medicine one of its aims is to enable him to apply science for himself. How small a fraction of all the realities of medical practice can be met in the few years of preparation of the student in the clinic as he passes through it in his school career. His teacher knows that well and uses the cases there as types whereby the principles of medicine can be fixed as a beginning. The rest must be accomplished by the man himself as his life's work. The more necessary that the man go forth from his school equipped, not only with the present applications of science to disease, but so possessed of root principles of the sciences adjunct to medicine that he may grasp and intelligently use the further developments of scientific medicine after he is weaned from his instructors and the school. That is a way to obtain enlightened progress in professional practice. What truer safeguard can a man have, alone it may be, and isolated from the centres of knowledge—what truer safeguard can he have against all the pseudo-scientific quackeries of the day than some real knowledge of the principles of the sciences along whose lines the discoveries of medicine must develop?

BURDEN ON TEACHERS.

Therefore it is that the burden of obligation falls heavy nowadays upon the teaching resources of every faculty of medicine worthy of the name. There is, in the first place, the burden of increased intellectual labour. For both the learner and teacher is this true. To seize the proffered assistance of these great and complex sciences is not always easy. These studies are more difficult than those that were needed once and they take longer to acquire. The mere instrumentarium of modern chemistry and physics as applied to medicine, and of physiology and pathology and bacteriology and of hygiene of itself suffices to bring conviction of the increased difficulty and longer training due for these studies now preparatory to medicine. Further, these initiatory studies have become vastly more costly than was all that formerly was required. Experts have to be found who can devote themselves heart and soul and undividedly to their particular subject. Laboratories have to be erected and equipped and on a scale that makes them a distinct feature of the modern world. Those that we see now here are models of their kind; wise foresight has planned them; public-spirited enterprise has constructed them accordant with that plan. Nor does the achievement end with their erection. The laboratories and their equipment are but the factory and the plant; both fail in their purpose if they halt for sustenance. And beyond that the likeness does not go. The factory, once started, if it be wanted, can expect to pay, to support itself. Not so the laboratory. The laboratory is both a school of instruction and a school of thought. Well, no higher instruction can be expected, unaided to pay the expenses it involves; it can only do so at the expense of those who come to learn, and that is to put its teaching beyond the reach of all but the wealthier few. And the instruction is costly, for it has to be practical.

Another source of expense is that the laboratory has not only to distribute knowledge but to manufacture it. The duties of a university do not begin

and end with the disciplinary and didactic. Besides schools of instruction they must be schools of thought. To be this latter the laboratory must pursue research. Even for the welfare of the class-teaching this is essential. Instructive lectures may be given by men of ability the whole of whose knowledge is second-hand, but it is doubtful whether the real life of science can be fully felt and communicated by one who has not himself learnt by direct inquiry from nature. Nothing more augments the teacher's power of impressive and incisive teaching of a subject than to have faced problems in it himself as an original inquirer. And after rudiments have been once fairly acquired there is for good students no training equal to that given by following even a small research under an experienced leader.

SCHOOL OF THOUGHT.

So, truly, does the laboratory become a school of thought. Your laboratories are arranged with admirable provision for research. The student should enter on his study of a natural science through the portal of its fundamental experiments. The attitude his mind thus takes is the true one—the only true one—for further insight into the subject. Too often humanistic studies at school have tended to kill the natural philosopher within the child—to destroy that innate curiosity for facts, the healthy heritage of childhood. He leaves school a little bookman. Even as to the phenomena of nature he has been insensibly led to ask for statements upon authority rather than to turn his own senses and observation to the phenomena themselves. To learn a science or to acquire an art resting upon sciences the first thing to do is to look at the fundamental facts, for ourselves. Our great teachers of medicine teach upon this plan. They teach where they learned, not in the library, but at the bedside of the sick. In laboratories such as those raised here for pathology and physiology students can learn these sciences as medicine is learned in the hospital ward, by direct inquiry into nature. The teachers you give them are men who have won widely recognised distinction as themselves direct inquirers into nature. Worthy students will appreciate this double boon their *alma mater* gives them—the means of learning at first hand those secrets of nature which lie at the root of their craft's skill, and to learn them under guidance by men who excel in unravelling such secrets.

ENGLISH ACTION.

Only by enabling men to continue their learning after their teaching is over can we secure the greatest advantage any educational system can afford. Your laboratories here will encourage post-graduate work. We look with keen interest to the researches that will flow from them. No subjects offer finer fields for research than do the progressive studies, physiology, pathology, and hygiene, to which your new University buildings are consecrated. And of the functions of a laboratory, research is pot the least costly. We in the old country find that. Our central Government has done little to support research. Our nation, proud of its success in things practical, has been prone to despise the abstract and the theoretical. We do so foolishly. We do so at our peril. Behind practical application there is a region of intellectual action to which, though our practical men have contributed little, they owe the whole of their supplies. They, if a goose, is the goose of the fairy tale that lays the golden eggs. No more such eggs if once you let her die. To speak of theoretical knowledge slightingly is for the lips of the fool. The value of abstract research to a country is becoming more widely acknowledged among us than it was. Sir John Brunner said the other day at Liverpool that there was no better investment for a business man than the encouragement of scientific research and that every penny of the wealth he possesses has come from the application of science to commerce and to manufacture. And we find that munificent citizens have, and do, come forward among us and meet by their individual gifts the pressing needs in this respect of our community at large.

NEW ERA DAWNING.

But we welcome a new era dawning on us. Liverpool, Birmingham, Sheffield, and other great centres begin to regard the local university as an institution entitled to support from the public means—for instance, by subsidy from public rates. Such subsidies can be used also for studies which do not come within allotment from the smaller subsidy from the central Government—Medicine, for instance. Proud of the young universities—to which yours of Toronto is a time-honoured veteran—communities and local governments are encouraging research within our universities. They do not expect such research to be able to pay its own way, but they recognise that indirectly it does pay the community that gives it a home. They feel it a duty which they owe themselves. Is not the university a part of their own life, and is not research a part of the university's life blood? They feel it a right due to their own higher selves. It stimulates progress. Supported by the large-handed sympathy of the community and the local government, it means quicker advance, both material and mental, it means invention, and it means medical discovery. And *qui facit per alium facit per se* is a motto worthy of a State.

USES OF LABORATORIES.

What, then, are finally the uses of these laboratories now opened by your University? They will assist in training men for various honourable callings especially for that most ancient one of medicine. They will assist, no doubt, also to render life by practical applications of science superficially still more different from what it was only a short generation ago. They will assist to bring home and to distribute to your community treasures of knowledge from all the quarters of the globe. They will themselves assist—and it is a thought dear to a high-spirited people—to add to the sum total of the treasures of knowledge of the whole human race. "Noblesse oblige" appeals to chivalrous nations as well as to chivalrous individuals.

But their highest office seems to me, perhaps, not even these high ones but a more difficult still. Genius cannot by any community, however wealthy and powerful, be made to order. In biblical language it is the gift of God. All a community can do toward obtaining it, be our riches and willingness a thousandfold what they are is to ensure the rare and glorious plant a meed of freedom, light, and warmth for blossoming upon our soil. Who can doubt that in this population here genius exists—not sown, it is true, broadcast, for nowhere is it thus—yet existent, scattered up and down? This it is for the community to foster, to discover. By help of these finely built and complete laboratories this much in one direction can be done. The problem to which a wise country turns is the discovery less of things than of men. By these laboratories, adequately supported, your community can create opportunity for the exercise of powers which come from sources within itself but are utterly beyond its power to produce at will. Their loftiest function is creation of this opportunity. For that aim the studies in them must be followed with no single, narrow technical purpose but must be wide of scope and full of access to every rank of student. So shall these laboratories prove a cornerstone for the upbuilding of a temple of knowledge and a touchstone for the best ore of intellect within the bounds of this great land.—*Lancet*, November 7, 1903.

THEORIES OF SLEEP.

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It is not easy to define the condition of sleep in terms that will not admit of many exceptions. We readily recognize the states of rest and activity, but where the element of consciousness must be considered we are at once upon uncertain ground. If we think of sleep as an unconscious state, sharply contrasted with waking, we do well to limit our use of the word to the case of man and the most intelligent animals. Sleep in this sense is only to be associated with highly developed nervous systems and its final explanation is to be sought in events taking place in the brain.

Various writers upon the subject of sleep have turned their attention to quite different aspects of the matter. Some have undertaken to show why there is the need of sleep and why the tendency to sleep comes on at the close of each day. These writers have dealt with general or systematic causes. Others have concerned themselves with the cause of the unconscious—or dreaming—state in which the sleeper lies. They have endeavored to suggest intimate and local causes. Since the several theories are thus distinct in their application, they are not necessarily mutually exclusive.

Broadly speaking, we feel sure that the need of sleep follows from general or local fatigue. During waking hours the decomposition processes of the body doubtless rise above the life-long mean, and sooner or later there must be a compensatory fall below the average. The adaptation of the race to alternating light and darkness has made this rhythmic rise and fall to coincide with day and night—though less rigidly under the artificial conditions of civilized life than in more primitive times.

Fatigue at bottom is a chemical phenomenon, and so the theories of the first class are chemical. When a muscle has been stimulated until it exhibits the well-known signs of fatigue, there are two possible inferences—either this means an exhaustion of fuel substances or an accumulation of poisonous waste. Analogous views have been supported in regard to the chemical changes that lead to sleep. We have had an exhaustion theory advanced by Pflüger and an accumulation theory offered by Preyer.

Pflüger's theory has little experimental evidence in its favor. We know that a bloodless muscle may be subjected to a vacuum and made to part with its free oxygen, but that it is still capable of doing much work and of giving off carbon dioxide. In other words, oxidation may take place in the absence of free oxygen. Of course there is but one reasonable explanation, namely, that there is a store of the element in loose chemical combination. This store in the cells is often spoken of as "intra-molecular" oxygen, and its amount may be supposed to vary between rather wide limits. Pflüger pointed out that during the day, the katabolic processes being above the average, this hoard might be reduced until the lack of it should lead to the depression of functional activity and the suspension of consciousness characteristic of sleep.

Perhaps no one will maintain that this theory is adequate by itself. If there were nothing but intra-molecular oxygen to be considered, we should expect that a day of idleness would leave one fresh and bright at bed-time and that severe exercise for half a day might make a long sleep a pressing necessity. Pflüger's idea seems to explain more readily the sensation of being tired than that of being sleepy, which is so often quite independent of the other.

The alternative theory is to the effect that the waste-products of metabolism are not fully and promptly removed as they are formed during the day's activities, but gradually clog and poison the system until torpor is induced. The lactic acid produced in muscular contractions is held responsible for a great part of this toxic process. Acidity of the blood pro-

duces coma, and whatever reduces its normal alkalinity might be expected to favor sleep. Many objections to this theory suggest themselves. It does not explain why many people are at their best late in the day, nor why the onset of sleep is relatively sudden, nor why we are sleepy in the height of digestion when the blood is most alkaline. It is perhaps less easy to assail it if we suppose that the waste products in question are not at large in the blood but have accumulated in certain cells, especially of the nervous system. In this case we need not assume a large quantity of these narcotic poisons, but only a peculiar distribution, and we can see why mental work is quite as fatiguing as physical work.

The transition from wakefulness to sleep seems rather abrupt but is not instantaneous. Motor control is generally lost before sensation, and most people agree that of the avenues of communication with the world without hearing is the last to be closed. This order of events is reversed in working when the alarm-clock or the unwelcome call is heard for an appreciable time before the eyes can be opened or a definite sense of one's situation realized. The sinking into sleep is favored by the removal of all that may excite either the attention or the reflexes. Darkness, quiet, bodily comfort and mental serenity are therefore sought. Sleep may be prevented by any of the contrary conditions—light, noise, pain or anxiety. When it is necessary, to contend against drowsiness, one instinctively seeks objects for attention or sensory stimulation, such as may be secured by taking a slightly uncomfortable position. Evidently sleep presupposes a release of the brain from many stimuli and may be warded off by seeing to it that no such release is granted. There is on record the case of an unfortunate boy who had no cutaneous sensibility, was blind in one eye and deaf in one ear. His mentality was of a low order. To cause him to sleep it was only necessary to cover the serviceable eye and ear for a few moments. Here the waking condition was clearly dependent on an unceasing flow of sensory impulses into the brain. A person of higher intelligence, similarly afflicted, would sleep much less readily for trains of thought might keep him awake in default of external stimuli.

The approach of sleep is accompanied by distinct vascular changes. The blood stream is shifting its bed. A most imperious summons to sleep comes from the dryness of the eyes, the signs, probably, of a lessened blood-flow through the tear glands. At the same time the temperature of the skin rises, possibly excepting that of the extremities. There is evidence then of a dilatation of the cutaneous vessels as sleep comes on, and the final passage into the unconsciousness is accompanied by a considerable further dilatation. These vascular changes have been nicely gauged by what is known as the plethysmographic method, where the subject lay with one hand and forearm fixed in a glass cylinder filled with water. An increase of blood in the arm displaced water from the cylinder and a delicate recording apparatus showed how this dilatation came on with sleep and passed off with waking. An account of such experiments, of more than technical interest, is that contributed by Dr. W. H. Howell to *The Journal of Experimental Medicine* (Vol. 11).

It is generally inferred that the cutaneous dilatation at once reduces the general blood-pressure and the quantity of blood flowing through the brain, by diverting a large share to the skin. The lowering of pressure has been demonstrated by Brush and Fayerweather; the fact that there is anæmia of the brain during sleep has been established by direct observations. An English physiologist, Hill, has been led to believe that the dilatation of blood-vessels that relieves the brain in sleep is not limited to the skin, but shared by the arteries of the digestive tract. That this is so is difficult to prove, but it is suggestive that a heavy meal is followed by a long sleep in the case of the lower animals, and often with us by a struggle with drowsiness.

Cerebral anemia may be merely a concomitant of sleep but it has frequently been held to be its immediate cause, the cells having previously been fatigued and suffered a lowering of functional capacity which has made them increasingly susceptible to depressing influences. This is the basis of Howell's theory. He has suggested that the exhaustion of the vasomotor centre is what induces sleep. We know that this centre is in tonic activity, sending out impulses which hold the blood-vessels in a state of constriction greater than is natural for them. This tonic activity can only mean constant metabolism in the cells of the centre. Furthermore, the centre is subject to the play of afferent impulses from all parts of the body. It is reflexly spurred to action by every sensory impression through eye or ear. It is called to respond in an appropriate manner to every change of posture or other muscular movement. It does not escape the effects of psychic processes, emotional states. Nothing is more natural than to suppose that the nerve cells of the centre become fatigued by this unceasing activity. After the hours that we habitually number in a period of waking it responds less and less readily to the demands made upon it. It begins to lose its grip, so to speak, on the superficial and perhaps the splanchnic vessels. The blood supply to the brain tends to become less and the pressure in its arteries to be reduced. The subjective consequence is drowsiness. If it is resisted by fixing the attention or by exercise, the center rallies temporarily under the spurring contracting the vessels and turning the tide of blood back into the brain. But the anemia soon returns, and the drowsiness becomes more compelling. When the person lies down, a flood of sensory impulses that have been pouring in from the contracting muscles is suddenly checked. The eyes are closed and the stream of visual impulses ceases. With the withdrawal of this reflex stimulation and the acquiescence of the will the center relaxes still further its hold upon the cutaneous vessels, the blood-flow in the brain becomes more reduced, and unconsciousness comes on. During sleep the vaso-motor center is responsive to stimuli from without as the plethysmographic experiments show. A sufficient stimulus produces waking, and seems to operate by turning back into the brain a sufficient quantity of blood displaced from the contracting vessels of the skin. Such a stimulus must be a strong one in the first hour or two of sleep, but later a much weaker one will answer. Several physiologists have tested the depth of sleep at different hours of the night, judging of it by the height from which a weight must be dropped that the sound of its fall shall arouse the sleeper. All have agreed that the greatest depth of sleep is reached as early as the second hour. According to one writer it becomes steadily more shallow from that time until the end. Others have observed a second, minor deepening toward morning. Many people will agree that their own sensations seem to imply such a second period of comparatively profound sleep.

What we call natural waking in the morning is usually due to some stimulus from without—light or sound—which would not have roused one from the deep sleep of midnight. But the stimulus may come from within, as from the state of certain organs or, curiously enough, from the previous resolution to wake at a certain time, which often operates with something of the compulsion of a hypnotic suggestion. Howell supposes that during sleep the nerve-cells of the vaso-motor center are gradually restored to prime condition and hour by hour become more irritable. So it is easier as time passes to induce the vascular changes that involve waking. Moreover, the recuperated center resumes something of its normal tonic activity before consciousness returns, and so the final step is taken with none of that sense of violence that accompanies a sudden waking from sound sleep. The border-line is likely to be crossed and recrossed several times before the waking state is well established. When

one is fairly roused, mental activity and the pouring in of sensory impulses keep him from further napping.

Now what peculiar condition can be conceived to exist in the brain during the period of anemia and unconsciousness? What microscopical changes may be supposed to mark the transition from wakefulness to sleep? Oddly enough, the two hypotheses which are extant are quite opposite in character. The first, which has attracted the greater notice, is that of Duval. He has suggested that consciousness depends on the contact of cell-processes in the brain whereby effects are propagated from neurone to neurone. If sensory impulses are to alter consciousness, there must be a pathway for their passage. If a single synapse on the course of such a pathway is rendered impassable, the message from the sense-organ is lost from conscious life. If every sensory path is interrupted at any point between the periphery and the cortex, there must be insensibility as to the outside world and the state of the body. If all motor paths are likewise broken, there can be no voluntary action. If in the third place, the association paths are also severed, there can be no synthetic processes of thought, no ideation. In short, the brain must lose its individuality by the breaking of connections between its structural elements. If we could suppose that every synapse in the central nervous system might be snapped, and impassable gaps opened between the cells whenever one had been wont to influence another, there must be an end of consciousness, for in utter isolation, these cells could no longer combine their activities into one whole such as forms the physical basis of psychic life. A much more local disruption of connection, limited perhaps to the cortex, might be sufficient to explain the subjective condition in sleep. At any rate, Duval's view is that the cortical cells are capable of retracting or extending their processes so as to sever and resume their relation with neighboring elements. Experimental evidence in support of this theory is naturally slight. Wiedersheim has described amoeboid movements on the part of cells in the nervous system of a small transparent crab. Of course it is only in such lower forms that the living cells can readily be brought under the microscope. Duval himself suddenly beheaded dogs that were awake and others in anæsthesia and made histological preparations from the brains. He believed he could distinguish the sleeping brain by the more contracted and isolated appearance of its cells.

The second histological theory of sleep, which has been said to be quite opposed to the first is that of the Italian neurologist, Lugaro. Both demand the capability of amoeboid movement on the part of the cells. But while Duval supposes that in sleep the cells have broken their contacts, Lugaro supposes that they have made *new contacts* with great freedom. At first thought this view seems unreasonable. A multiplicity of contacts and added pathways in the brain might be supposed to imply a richer and keener consciousness. But this would be true only to a certain point. When the indiscriminate combination had gone a step further mental confusion might be expected, then fantastic associations and meaningless

mosaic of memories—practically a state of dreaming. Let the cells commingle their impulses still more freely and consciousness will be lost, for the diffusion of energy in the brain will result in a lessened intensity of flow in the principal channels. If each cell scatters its communications in every possible direction no definite effect in consciousness is to be looked for. According to Duval the cells which are affected in sleep can not discharge; according to Lugaro, they may do so, but the resulting impulses are utterly dissipated in a maze of by-ways. Waking, according to Duval, is the resumption of intercourse among these cells; according to Lugaro, it is the restriction of intercourse to habitual and purposeful channels.

There is no reason why we may not be eclectic in regard to these two points of view. It may be that many paths are interrupted in sleep, while others are opened. In the hypnotic state it is clear that many paths are blocked, including those by which the will of the subject habitually asserts itself, while others, especially those making connections between the auditory and motor areas, transmit impulses with extraordinary efficiency. This condition is explicable if we suppose that certain synapses are broken, as Duval imagines, and that the tide of nervous impulses pours with intensified energy through the narrowed outlets remaining—an idea borrowed from Lugaro. If we consider that a man is most thoroughly awake when his attention is most rigidly concentrated, when he is a "man of one idea," we shall perhaps incline toward Lugaro's conception of sleep, which is certainly as far as possible removed from this mental fixedness. Hypnosis is accompanied by cerebral congestion and natural sleep by anemia. There is accordingly a strong temptation to suppose that the cell-changes in the two states are opposite in their nature, that in hypnosis the retraction of the dendrites is characteristic, and in natural sleep their extension. The sluggish condition of the mind under suggestion as compared with its fanciful flights in dreaming falls happily in line with this view. But such speculation is premature.

It was said at the outset that the several theories of sleep are not all mutually exclusive. It is possible to go beyond this statement, for we may assign a place to each of those mentioned without inconsistency. We may suppose in the first place that the alternation of day and night through the ages has impressed its rhythm upon the race, so that it is hard for the individual to break from the habitual course in which activity is associated with light and rest with darkness. In other words, the amount of the metabolism tends to keep above a mean for some hours and then to fall below it. The excess of destructive processes over those which are recuperative during the waking hours results in general and local fatigue, a condition into which may enter both the depletion of intra-molecular oxygen and the accumulation of toxic waste-products. While this progressive loss of condition affects the body as a whole, the nervous system is subject to its own peculiar drains. It is very pro-

bably the hard-worked vasomotor center which proves to be the vulnerable spot. With its release of the blood-vessels in certain areas from its reinforcing influence comes the cerebral anemia. Then, we may suppose, the nerve-cells become less active than in the brain which has its full supply of blood, that they cease to send impulses over the usual routes, either because gaps have opened or because such impulses as do arise are permitted to stray and be scattered, producing no effect in consciousness or one which is quite bizarre and meaningless.

Such an outline as this is a composite scheme in which the conditions emphasized by Pfleger and Preyer are given recognition as fundamental causes on sleep, Howell's idea is accepted as explaining well its onset, its varying depth and the awakening, while the pictures sketched by Duval and Lugaro are combined to represent the intimate state of the slumbering brain.—Popular Science Monthly in *Scientific American Supplement*, Oct. 10, 1903.

• Acknowledgments.

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