



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 Sanhitā.

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

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THE ACTION OF INFINITESIMAL QUANTITIES IN INDUCING PHYSIOLOGICAL ACTION.

It is never too late to redeem a promise. We accordingly proceed to notice the Paper under the above title which was read by Dr. Blackley at the last British Homœopathic Congress.

One of the greatest, if not the greatest, obstacle to the reception of Homœopathy is its posology. The efficacy of infinitesimal quantities of medicinal substances in curing diseased conditions was arrived at not by idle conjecture, but by actual trials of gradual reduction of the dose necessitated by aggravations produced by massive and ponderable doses. It is now the fashion to laugh at homœopathic aggravations, and the ridicule comes with ill grace from those who believe in the efficacy of the infinitesimal dose. An attentive physician cannot fail to notice these aggravations as stern realities, which are not to be laughed at, and cannot be laughed out of existence. Instead of exciting our risibility these aggravations ought to make us more humble and more careful in the selection of the proper remedy and the suitable dose, and to keep us on the alert to detect the mischief that we ourselves create in order that we may remove them at the earliest opportunity before it has assumed too formidable a character for our power.

These aggravations do not necessarily arise from the massive and ponderable character of the dose. We have seen lower doses tolerated where the higher are not, and vice versa. The aggravations, we may say in the present state of our knowledge, may arise either

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from the unsuitability of the medicine itself, in which case any dose will bring them on, or from the unsuitability of the dose, in which case doses on either side of a particular range will aggravate. So that to the homœopathic physician the problem of the dose is even more difficult than that of the remedy, for here as yet we have to depend entirely upon our experience. It is true Dr. Sharp has formulated a law for the selection of the dose, but that law can only be brought into operation when we have thorough and exhaustive provings with definite doses of medicines, which we have not.

We have to do in the present article, not with homœopathic aggravations, but with the efficacy of infinitesimal quantities in producing those aggravations as well as cures. Hahnemann was led to the infinitesimal dose, as we have said above, by the consideration of the aggravations, and when once convinced of the power of these doses, he was led to ascertain the pathogenetic action of a great many substances by administering them in infinitesimal quantities, they being inert in the crude state. The infinitesimal dose has thus a double value, therapeutic as well as physiological. It has been doubted if Hahnemann elicited the physiological actions of such remedies, as Silicea, Carbo Vegetabilis, Graphites, and indeed of most of the remedies mentioned in the *Chronic Diseases*, by provings in the healthy. But we have Hahnemann's positive assertion to the contrary. "The remedial virtue of certain remedies in psoric affections," says he, "has been revealed to me by trying those remedies on the healthy organism." Again, "generally, however, only such remedies have been arranged under the head of anti-psorics, as have developed in the healthy organism symptoms analogous to those, which were known to emanate from repelled itch." We think it would be uncharitable not to believe in the accuracy of these statements. If we do believe, then we must admit the capability of infinitesimal quantities of a great many substances of altering the functions of the human body. But this testimony is Hahnemann's, and it is not accepted by the majority of the profession, and all that we have in confirmation is clinical verification, which is the very kind of evidence which is looked upon with suspicion by orthodox physicians. Diseases are cured in so many different ways, with drugs and without drugs, that it is not possible to bring conviction home to one who will not look carefully and earnestly into the matter. Hence testimony other than Hahnemann's, and evidence other than clinical, must be of very great importance in the furtherance of the cause of Homœopathy which is so much derided on account of its imaginary and nihilistic doses. This is what Dr. Blackley has presented in his paper under review.

First of all, Dr. Blackley gives the results of the researches of Dr. William Roberts, of Manchester, on the action of *diastase* or *ptyaline* on starch. Diastase or ptyaline is found in the secretions of the salivary glands, and in the secretion of the pancreas. It is one of the digestive ferments, which all belong to the class of soluble or unorganised ferments, that is ferments which, though derived from living cells, are not in any sense living, in other words, have not the power of self-multiplication and self-nutrition, and are thus distinguished from the insoluble or organised ferments, of which yeast is the type. "Their mode of action," says Dr. Roberts, "bears no resemblance to that of ordinary chemical affinity, and has a distinctly physiological character. They do not derive their marvellous endowments from their material substance. They give nothing material to, and take nothing material from, the substance acted upon. The albumenoid matter which constitutes their mass is evidently nothing more than the material substratum of a special kind of energy—just as the steel of a magnet is the material substratum of the magnetic energy—but is not that energy. This albumenoid matter of the ferment may be said to become charged at the moment of elaboration by the gland cells with potential energy of a special kind, in the same way that a piece of steel becomes charged with magnetism by contact with a pre-existing magnet. The potential energy of the ferment is changed into the active form (i. e., becomes kinetic) when it is brought into contact with the alimentary substance on which it is designed to act."

The quantity of diastase which can convert a given quantity of starch into sugar is so small compared with it, that it may be looked up as almost infinitesimal. Thus according to Payen and Persoz the quantity of starch that can be transformed into sugar by diastase, is *two thousand times* the weight of the latter; according to Dr. Roberts, it is *forty thousand times* that weight; according to Messrs. Horace Brown and Heron, it is *even more*.

From the analogy which Dr. Roberts has drawn between diastase and steel magnet, it might be thought that the energy of the diastase remains intact and unexpended while the transforming process goes on, but this is not the case as he has himself shown. An excess of starch beyond 40,000 times the weight of the diastase employed remains unconverted, showing that the energy of the diastase becomes exhausted after having effected the transformation of 40,000 times its weight of starch. If this were not the case, then an infinitesimal quantity of diastase could bring about the saccharine transformation of any amount of starch. This fact of the exhaustion of the energy of the diastase has evident bearing, as Dr. Blackley has justly remarked, on the question of the dose and its repetition.

Dr. Blackley next refers to, and quotes from, the remarkable researches of the late Mr. Darwin, on the Insectivorous Plants. These researches have revealed the fact that several species of *Drosera* and other plants are not only capable by the peculiar conformation of their leaves of capturing insects, but also of actually digesting them and other nitrogenous substances, and thus deriving nourishment therefrom as animals do. The upper surface of the leaves of these plants, of the *Drosera Rotundifolia* in particular, are furnished with peculiar glands, the central ones being short, the marginal ones longer. They all secrete a viscid, acid fluid, which digests animal or nitrogenous substances when placed on the upper surface of the leaf. The outer glands, which are inclined outwards, have the remarkable property of inflecting inwards, whenever an insect or any nitrogenous substance comes in contact with the central glands. A motor impulse is thus evidently transmitted from the central glands through the tissue of the leaf to the marginal glands. Darwin found that this inflection could be brought about by exceedingly minute quantities of many nitrogenous substances, the most efficient being the salts of ammonia, and among these the most powerful being the Phosphate of Ammonia.

"The sensitiveness or irritability of the tentacles was ascertained," we are told by Mr. Darwin, "by three different methods—indirectly by drops placed on the disc, directly by drops applied to the glands of the outer tentacles, and by the immersion of whole leaves; and it was found by these three methods that the nitrate was more powerful than the carbonate, and the phosphate more powerful than the nitrate; this result being intelligible from the difference in the amount of nitrogen in the first two salts, and from the presence of phosphorus in the third."

Thus when the solution of the salt of ammonia was placed on the glands of the disc, it was found to require 1-960th of a grain of the carbonate, 1-2400th of a grain of the nitrate, and 1-3540th of a grain of the phosphate of ammonia to act indirectly on the outer tentacles; if applied directly to the gland of an outer tentacle, 1-14400th of a grain of the Carbonate, 1-28800th of a grain of the Nitrate, 1-153600th of a grain of the phosphate was necessary to cause its inflection. When a whole leaf was immersed in a solution of the salt, with time allowed to absorb all that it can, it was found that 1-268800th of a grain of the carbonate, 1-691200th of the grain of the nitrate, and 1-19760000th of a grain of the phosphate was able to cause inflection of each tentacle. "It is certainly a surprising fact," says Darwin, "that the 1-19760000th of a grain, or in round numbers the one-twenty-millionth of a grain (.0000033 mg.), of the phosphate should affect any plant, or indeed any animal; and as this salt contains

35.33 per cent. of water of crystallisation, the efficient elements are reduced to 1-30555130th of a grain, or in round numbers to one-thirty-millionth of a grain (.00000126 mg.). The solution, moreover, in these experiments was diluted in the proportion of one part of the salt to 2,187,500 of water, or one grain to 5000 oz. The reader will perhaps best realize this degree of dilution by remembering that 5000 oz. would more than fill a 31-gallon cask; and that to this large body one grain of the salt was added; only half a drachm, or thirty minims, of the solution being poured over a leaf. Yet this amount sufficed to cause the inflection of almost every tentacle, and often of the blade of the leaf." Each leaf, be it remembered, received only 1-80000th of a grain of the salt.

It is nothing surprising that these results should have for a long time been incredible even to Darwin himself, and that he should have anxiously sought for every source of error. "The salt was in some cases weighed for me by a chemist in an excellent balance; and fresh water was measured many times with care. The observations were repeated during several years. Two of my sons, who were as incredulous as myself, compared several lots of leaves simultaneously immersed in weaker solutions and in water, and declared that there could be no doubt about the difference in their appearance."

Darwin very properly observes that what is remarkable in his experiments is not the absorption by a gland of such a minute quantity, as one-twenty-millionth of a grain, of the phosphate of ammonia, but the fact that such a minute quantity, "when absorbed by a gland, should induce some change in it, which leads to a motor impulse being transmitted down the whole length of the tentacle, causing the basal part to bend, often through an angle of 180 degrees." He shows a just appreciation of the subject, and a deep insight into the workings of nature, when he concludes with the remarks: "Astonishing as is this result, there is no sound reason why we should reject it as incredible. Prof. Donders, of Utrecht, informs me that from experiments formerly made by him, and Dr. De Ruyter, he inferred that less than the one-millionth of a grain of sulphate of atropine, in an extremely diluted state, if applied directly to the iris of a dog, paralyzes the muscles of this organ. But, in fact, every time that we perceive an odour, we have evidence that infinitely smaller particles act on our nerves. When a dog stands a quarter of a mile to lee-ward of a deer or other animal, and perceives its presence, the odorous particles produce some change in the olfactory nerves; yet these particles must be infinitely smaller than those of the phosphate of ammonia weighing the one-twenty-millionth of a grain. These nerves then transmit some influence to the brain

of the dog, which leads to action on its part.* With *Drosera*, the really marvellous fact is, that a plant without a specialized nervous system should be affected by such minute particles; but we have no grounds for assuming that other tissues could not be rendered as exquisitely susceptible to impressions from without if this were beneficial to the organism, as is the nervous system of the higher animals."

Dr. Blackley, lastly, brings forward the results of his own researches on the etiology of hay-fever—researches which, we need hardly tell our readers, have been highly complimented on by Zuelzer, the writer on hay-fever, in Ziemssen's *Cyclopædia*, as "extremely important," putting "beyond question the complete dependence of the disease on definite causes." The causes are no other than the pollens of several plants, chiefly of the grasses, the severity of the disease depending upon the quantity of pollen inhaled. Dr. Blackley tells us that "by a series of experiments, pursued with as much care and precision as circumstances would permit, it was found that the quantity was exceedingly small. In the case of a young patient, kindly sent to me by my friend Dr. Drysdale, symptoms were produced by so small a quantity as the 120,000th of a grain, and in my own case symptoms could be distinctly perceived if one 100,000th of a grain was inhaled in each twenty-four hours. When the malady began to be really troublesome one 40,000th of a grain was found to be sufficient to make it so; and when the disorder had attained its maximum degree of intensity, in the height of the flowering period of the grasses, the quantity inhaled in each twenty-four hours was rather less than one 3,400th of a grain in weight." Taking into account only the granular contents of the pollen-cells as the only active matter, and leaving out of calculation the weight of the cellulose of the cell-wall of the pollen, and taking into consideration that an hour's inhalation was enough to give rise to decided symptoms, Dr. Blackley found that for the earliest symptoms of the disorder the necessary dose was about the *two millionth* of a grain; for the middle period of the disease, about one 800,000th of a grain; and for the period of greatest intensity one 60,800th of a grain.

But this is not all. The granular contents of the pollen cells of a great many orders of plants are chiefly composed of an amyloid body, with which *iodine* gives the same reaction as with

* The force of this argument would not suffer even if it were proved, as it is likely to be, that the sensation of smell depends, not upon the actual contact of the particles of an odoriferous body with the olfactory nerves, but upon the undulatory impulses communicated to them by the undulations of the ether set up by the vibrations of the odoriferous body, olfaction being analogous to vision. This would only remove the play of infinitesimals from one region into another. &

ordinary starch. Diastase, therefore, will have the same action on them as it has on starch; if so, diastase, by altering their character as starch, will have the effect of destroying the irritating qualities by which they produce the symptoms of disease. And this is what Dr. Blackley found to be the case by numerous experiments. "I cannot now attempt to give the details of the experiments tried in this direction, and it must suffice to say that I have frequently taken comparatively large doses of pollen without any inconvenience; and the natural inference is that the diastase of the digestive fluids acts upon the granular matter in such a manner as to rob it of its irritating properties. Outside the body the diastase of the salivary glands acts very slowly upon the granular matter. From this it would seem that contact with the living organism ensured a more vigorous action. Now, if it is a fact that that diastase can change the constitution of 40,000 times its weight of starch, the quantity that will be needed to operate upon the dose of granular matter that sets up hay-fever will be exceedingly small. It will be remembered that at the commencement of the troublesome form of the symptoms, one 80,000th of a grain of the granular matter taken in each twenty-four hours was sufficient; and that in the later and most acute stage, one 6,800th of a grain sufficed. If we divide these numbers by 40,000 (the proportion of diastase needed to neutralise the starch) we find that for the commencement of the troublesome form of the disease one 3,200,000,000th of a grain of diastase would be sufficient to neutralise the daily dose of pollen, and that for the most acute stage one 272,000,000th of a grain would be sufficient."

We are thus presented with the results of three different and important sets of researches, conducted in three different fields of inquiry with all the scruple and care necessary to satisfy the most rigid demands of the inductive method, by men of established reputation as accurate observers in the scientific world. These results, as we have seen, point unmistakably to the power to induce decided physiological and pathological phenomena exerted by quantities of matter which, though not infinitesimal in the mathematical, are very nearly so in the physical sense. It is immaterial for the argument of the existence of this power, in what way it is exerted, whether the infinitesimals act as reservoirs of force themselves, or merely as keys to unlock the force that resides in the matter on which they act. . .

BABU BRAJENDRA NATH BANERJEE ON THE
TREATMENT OF CHOLERA.

[The following letter from our esteemed colleague, Babu Brajendra Nath Banerjea, L.M.S., of Allahabad, is valuable in as much as we have the positive testimony of an intelligent and observing physician regarding the failure of Camphor even when administered at the outset of cholera, in a particular epidemic. We have had similar testimony of its failure in other epidemics, but as it was purely lay testimony we could not venture to place much reliance on it. We are therefore glad that we have now at least one reliable testimony that Camphor is not an infallible remedy in cholera, even when administered on the strictest Hahnemannian principles. We beg leave to correct an error, which we inadvertently committed when we said in our last number that "we have not as yet lost a single case when we could give Camphor at the beginning." We should have added "in the present outbreak," that is, in the outbreak that was then raging in Calcutta and the suburbs. We must say, however, that so far as our experience of previous epidemics went, Camphor maintained its reputation, though not quite so uniformly as in the recent epidemic. Babu Brajendra Nath is right in his observations regarding Arsenic, which agree in the main with what we said on the drug in our number for June 1882. With reference to *Ricinus Communis*, it might be objected to what both Babu Brajendra Nath and ourselves have said, that the choleraic stools and other symptoms were obtained not with the oil but with the entire seed. For our part we admit the force of the objection, and we would therefore invite clinical experience with the tincture or triturations of the seeds. We trust our colleagues will not hesitate to send us cases of failure as well as those of success. In scientific investigations we profit as much by our failures as by our successes.—Ed., *Cal. J. Med*]

DEAR SIR,

I am glad to come forward at your invitation with my comments on Dr. Salzer's letter on the treatment of cholera.

I cannot agree both with you and Dr. Salzer about the infallible, good effects of Camphor at the outset of cholera. In the great outbreak of cholera in 1880 I treated more than a thousand cases, and from what I have seen and observed I may safely state that camphor is not such a specific as you and Dr. Salzer believe it to be. I divide the outbreak of cholera in 1880 into three stages according to the percentage of mortality.

In the first stage of the epidemic when the rate of mortality was very high, Camphor in my hands failed totally. In the

second stage about 30 per cent. were cured by camphor alone, and in the third or declining stage 75 per cent. of cases yielded to this single medicine. Now in these three stages of the epidemic the violence and mortality were also different. With the decrease of the virulence of the disease the good effects of Camphor became apparent. I am obliged to differ from you because I have come to this conclusion from positive personal experience. I do not doubt your statement that you did not lose a single case where you could give Camphor from the beginning. I only beg to state that Camphor, though a *very* valuable medicine at the outset of cholera, is nevertheless not all-sufficient. In short its value is not always identical or uniform in all epidemics. I should here also state that the nature of cholera-epidemics differ as much from each other as those of malarious fevers.

I quite agree with Dr. Salzer that the action of Camphor in cholera, when it proves beneficial, is speedy. If in the first hour of the attack Camphor fails to do any good, in my opinion it should be stopped. This, however, was not my former opinion; for I used to push it on for a couple of hours or more. But I cannot agree with him when he says that the more virulent the choleraic attack the more exclusively we must look to camphor for help. This at least does not hold good in all epidemics, as I have stated above.

There is much truth in Dr. Salzer's assertion that "the stigma of failure falls upon the new school of medicine," even if the patient had been treated before by physicians of other schools of medicine.

I cannot also agree with Dr. Salzer when he asserts that the ejections from the poisonous effects of Arsenic are bilious in character and that "the exceptions to the contrary are so rare that they hardly deserve consideration." In Arsenic poisoning we sometimes get, first bilious stools and vomiting, and then rice-water discharges. When I was clinical clerk in Dr. Norman Chevers's ward I saw two such cases. Little did I know then of homeopathy, else I would have taken detailed notes of these cases. One of the cases was actually mistaken for cholera, and admitted in the cholera ward. There was very severe thirst, burning of the skin, rice-water ejections from the mouth and rectum and anuria; the only abnormality, which led to the determination of the actual state of things, was intense redness of the conjunctiva. For eighteen hours or so the case was treated as cholera. Another case of *arsenic* poisoning admitted in Dr. Chevers's ward presented all the symptoms of cholera, including rice-water ejections from the mouth and rectum. I have also seen rice-water ejections in a case of general anasarca in which *elaterium* was prescribed by a native doctor. Besides, I remember to have seen rice-water stools

also in purgings from Jalap, Scammony and even Eno's fruit salt. As in cholera and arsenic poisoning, so in case of these medicines, the stools were at first bilious and then rice-water color. Sir Joseph Fayrer experimentally produced rice-water dejections in a dog poisoned with *arsenic*. Thus you will see, Mr. Editor, that Arsenic produces symptoms closely allied to those of cholera. It is also a very significant fact to note that in cholera, generally we get at first bilious evacuations, which gradually turns to rice-water color, so in *arsenic* poisoning the first few stools and vomitings are bilious, and the latter ones only are rice-water color.

Dr. Salzer's suggestions as to the use of *Jatropha curcas* and *Ricinus* are no doubt worthy of consideration. He says that cholera symptoms (at least rice-water color stools) from arsenic are so rare that they hardly deserve consideration. But I fail to understand how he pleads the cause of *Ricinus*, which also very rarely produces rice-water color evacuations. Though several severe cases of purging are mentioned in Hale's New Remedies, the characteristic cholera evacuations are mentioned in one instance only. This case, in my humble opinion, should be taken as an exception and a *very* rare one; if otherwise, this symptom should have been a very frequent one, considering its use in large doses from time immemorial. I would ask Dr. Salzer to try *Ricinus* in cholera and give us the benefit of his experience.

Yours truly,

BRAJENDRA NATH BANERJEA, L.M.S.

HOMŒOPATHY IN BOMBAY.

The following from the *Bombay Gazette* of the 20th January, giving the proceedings of an influential meeting held in Bombay at the invitation of Mr. Malabari, the spirited and energetic Editor of the *Indian Spectator*, shows how Bombay has gone ahead of the Capital of the Empire in the matter of Homœopathy. The Western City has in one most important respect fully deserved the title of *primus in Indis*. Homœopathy was introduced into Calcutta during the lifetime of the Founder. A Homœopathic Hospital was actually founded here so early as 1852, under high auspices. Calcutta boasts of more Homœopathic practitioners, and we think we are within the bounds of sober truth when we say that there are more people in Calcutta who have been benefited by homœopathy, and who have stronger faith in it, than in all India besides. And yet the strange fact stares us in the face that nothing has been done, either by Government or by the people, for the furtherance of the cause of homœopathy, which means the diffusion of its blessings to the community. We trust that now that Bombay has given the shame to us, we shall be aroused from our apathy, our indifference and our ingratitude towards the greatest reform that has ever been achieved in medicine.

We wish every success to the projected Homœopathic Hospital in Bombay. We only hope that it will be carried on in a catholic, not in a sectarian spirit.

An influential private meeting was held at the Alexandra Girls' English institution on Thursday evening, at Mr. Malabari's invitation, to consider what practical steps could be immediately taken to establish a homœopathic charitable dispensary in Bombay. The meeting consisted of the Hon. Mr. Justice Kenball, Sir William Wedderburn, Baronet, Colonel Arthur Phelps, Mr. David Gostling, and Messrs. Dinshawjee Manockjee Petit, Manockjee Cursetjee, Premchand Roychand, Dadabhoy Navrojee (who had to leave shortly after arrival), Vandravandas Purshotundas, Jayram Narayan, Valabdas Valjee, Mansukhram Surajram, Javerilal Umayashankar, Ghelabhai Haridas, Motiram Bhagubhai, Dinsha Eduljee Vacha, Tookaram Tatia, Tulakchand Manockchand, Bhaishankar Nanabhai, Jamnadas Premchand, and Behramjee M. Malabari.

It was proposed by Mr. Malabari, seconded by Mr. Gostling, that the Hon. Mr. Justice Kenball be requested to take the chair.

Mr. Kenball said he had much pleasure in acceding to the request, and that seeing so many well-to-do citizens at the meeting, he felt assured that the cause of this new charity was in good hands. Mr. Kenball commended the proposed dispensary to the support of the public generally and believers in homœopathy in particular.

Mr. Javerilal Umayashankar proposed "that it be desirable to establish a charitable homœopathic dispensary, and that the meeting pledge themselves to assist in this object." Mr. Javerilal, in the course of an interesting speech, explained how he had benefited by homœopathic treatment. He suffered, he said, from a painful disease for fifteen years, and had been

operated upon more than once, with but temporary relief. He some time ago met a Hindu friend, who cured him completely in only six weeks by the simplest means. Mr. Javerilal highly appreciated the system of homœopathy, and hoped it would succeed in this part of the country.

Mr. Mansukhrām Surajram seconded the proposition, which was adopted.

Colonel Phelps proposed the following office-holders for the year 1883 :— The Hon. Mr. Justice Kemball, President ; the Hon. Mr. Justice Melville, Vice-President ; Mr. B. M. Malabari, Hon. Secretary ; Mr. Bhaishankar Nanabhai, Hon. Treasurer ; and Mr. Jannadas Premchand Nanavati, Medical Superintendent ; with most of the gentlemen named above as members.

Sir W. Wedderburn, in seconding the above resolution, made some very interesting observations on the advantages of the homœopathic system of medicine. He had been asked by a friend, he said, if he approved of the system, and he had explained that the system was capable of doing great good, that the homœopathic treatment attacked the exact locality of the disease without upsetting the patient's whole system, that it helped Nature in her work instead of opposing or retarding her operation, and that homœopathy was peculiarly well suited to the natives of India. Sir William further said that he had faith in the infinitesimal doses prescribed by the homœopath, and explained, by way of illustration, that if he had a thorn in his hand, he would prefer to take it out with the end of a needle to applying the hatchet to the whole hand ! Sir W. Wedderburn concluded by cordially commending the present movement, and sat down amidst much cheering.

Mr. Ghelabhai Haridas proposed, and it was seconded by Mr. Bhaishankar Nanabhai, "that the Hon. Secretary be requested to send out the circular and the subscription lists."

Mr. Tookaram Tatia proposed, and it was seconded by Mr. Dinshaw Eduljee, "that the Hon. Treasurer be requested to open an account at the National Bank on behalf of the Homœopathic Charitable Dispensary."

It was then proposed by Mr. Motiram Bhagubhoj, seconded by Mr. Premchand Roychand, "that sympathisers be requested to circulate subscription lists among their friends."

The seventh resolution, "that each subscriber be granted tickets in the proportion of 12 tickets yearly for each ten rupees subscribed annually," was proposed by Mr. D. Gostling, seconded by Mr. Vandrawandas Punsho-tandas.

A few questions were raised by Mr. Dinshawjee Petit, Mr. Tookaram, and others as to the advisability of issuing these tickets, and were answered by Messrs. Gostling, Malabari, and others.

Colonel Phelps brought forward the important question as to who should be called patrons and life members, and what should be their privileges. Colonel Phelps gave the gentlemen present the benefit of his experience at Birmingham and elsewhere, and left the matter to be decided by the meeting. It was suggested that a donation of Rs. 5,000 should entitle the donor to be considered a patron, and a donation of Rs. 1,000 a life member. This gave rise to an animated discussion, in which Colonel Phelps, Messrs. Dinshaw, Ghelabhai, Gostling, Javerilal Bhaishankar, and others took part ; some of the latter gentlemen strongly urging for a smaller sum for life membership, between one hundred and two hundred rupees. The debate would have continued much longer, but a suggestion was offered by Mr. Dinshaw Petit, which was approved by Mr. Mauockjee Cursetjee, and later on by a majority of those present. Mr. Dinshaw suggested that a donation of Rs. 5,000 should constitute a patron, a donation of Rs. 1,000 should constitute a benefactor, and a donation of Rs. 500, if need be by five yearly instalments, should entitle a person to the privileges of life

membership. Some technical difficulties were pointed out by Mr. Bhaishankar; but they were got over after explanation from Messrs. Dinshaw and Gostling and Colonel Phelps. Mr. Petit's recommendation was accepted by a majority, and it was resolved that such donations should go towards forming an endowment fund. The question of privileges was reserved for another meeting.

Dr. Jannadas proposed "that all duly qualified practitioners willing to practice homœopathy may, on production of their diplomas, be appointed hon. physicians."

Mr. Dinshaw Petit opposed this proposition, pointing out the injustice it would cause to those who had started the movement, and referring to the great difficulty in obtaining duly qualified and diplomated practitioners for such a dispensary. Mr. Petit proposed an amendment of the proposition, which was seconded by Mr. Liladhar Jayram, and carried.

Mr. Petit also proposed, seconded by Mr. Valabdas Valjee, that the dispensary be opened on the Kalbadevi-road, and an estimate of expenses (amounting to Rs. 6,600 for two years) was adopted for the year 1883-84.

Mr. Dinshaw took occasion to refer to the advantages of homœopathic treatment. He had every faith in the system.

Mr. Gostling spoke warmly in favour of homœopathy, detailing his long personal experience, and expressing an earnest hope that the movement now started might grow to be a credit to Bombay. Mr. Gostling referred to the services rendered to the cause by Dr. Jelovitz, and once more appealed to the gentlemen present to do their best to further the object.

Mr. Malabari, with the President's permission, referred briefly to an absent friend who, of all others, deserved most credit for his successful practice and his enlightened efforts to popularise the homœopathic system. Mr. Malabari mentioned that he was cured of jungle fever by homœopathic treatment. He then referred to a number of marvellous cures effected by his friend on European and native patients.

The President confirmed Mr. Malabari's statements.

Messrs. Javerilal, Ghelabhai, and others also spoke gratefully of the gentlemen referred to by Mr. Malabari, and hoped that he might be enabled to co-operate with the energetic Medical Superintendent then appointed, Mr. Jannadas Fremchaud, who was making a name for himself by his successful practice of homœopathy, and to whom the credit of that evening's meeting was mainly due.

Colonel Phelps proposed a vote of thanks to Mr. Manockjee Cursetjee for having allowed the use of the institution for the meeting.

Mr. Gostling proposed a vote of thanks to the Chairman, whose reply closed the meeting.—*Bombay Gazette*, 20th January 1883.

TREATMENT OF SYPHILIS (Concluded.)

(Translated from the French of Dr. P. Jousset in L'Art
Medical for Dec. 1882.)

In our last number we were occupied with the selection of medicaments which are suitable in the secondary period of syphilis, and principally with the method to follow in the administration of mercury and of iodide of potassium, as much from the point of view of the cure of these secondary accidents as for that of preserving from the tertiary accidents. We now proceed to occupy ourselves with the question of doses, and as we are certain to raise storms, we are happy to be able to arbitrate under the authority of our master, Hartmann. Here is how this author expresses himself in reference to the treatment of syphilitic chancre. "This is the reason why I prefer to it the *corrosive sublimate* which includes in it all the symptoms of mercury. I prescribe it ordinarily in doses of tenths of a grain, several times daily. Now a tenth of a grain several times a day already makes more than a fifth of a grain, or in modern style a *centigramme*, and as a little further on Hartmann speaks of "augmenting the dose still more," one sees that it is not repugnant to prescribe *one or two centigrammes of corrosive sublimate per day in the treatment of syphilis*.

Hartmann says elsewhere that if the first trituration proves inefficacious, "one ought to employ pure *mercurius solubilis*, in doses of $\frac{1}{3}$ to $\frac{1}{2}$ a grain (2 to 3 centigrammes), and later on: "I prescribe the *red precipitate* in doses of $\frac{1}{3}$ to $\frac{1}{2}$ of a grain three times a day." Certainly these are not infinitesimal doses, and we ought not to be reproached for bringing on innovation in the treatment of syphilis.

Now what preparation of mercury do we employ; by what path do we introduce it in the economy; lastly in what doses do we prescribe it? As for iodide of potassium we shall come back to it when treating of tertiary syphilis.

We eliminate at once the subcutaneous method for the administration of mercury; undoubtedly this method is very active, but it is not practical by reason of the pain which it always produces, and of the marks which it often leaves behind.

We administer mercury in frictions in the form of pomade; we administer it by the mouth in the form of proto-iodide, or of bichloride. These three modes of administration suffice in all cases.

(a) *Frictions with mercurial pomade*.—This is certainly, and by far, the most active means of administering mercury; it has the advantage of acting quickly and without disturbing the

functions of digestion; but precisely by reason of its activity it determines very easily mercurial stomatitis, a stomatitis which marches with extreme violence. Nevertheless in proper patients, careful of their person, one may derive the greatest advantage from mercurial frictions administered in the following manner:

Every evening, the palm of the hand, the axilla, or the groin is rubbed with three to five grammes of mercurial pomade, and covered over with wadding, or, if the hand has been rubbed, with gloves. The next morning all trace of the pomade is removed with soap and warm water. These frictions are continued for six days only, and interrupted by a rest of nine days; they may be continued several months, following the rules which we have given before. This is the treatment of Nicolas Massa. The treatment by friction is absolutely necessary when we have to deal with very grave form of syphilis with rapid progress, and in which the secondary and tertiary periods present themselves simultaneously.

(b) *Proto-iodide of Mercury*.—This salt of mercury is specially extolled by Ricord; it is certainly more frequently employed. I prescribe it in doses of five to fifteen centigrammes a day, in two divided doses, either in the form of pilule or powder. I prescribe, for example, a gramme of proto-iodide with a gramme of sugar of milk, divided into forty packets of five centigrammes each. The patient takes two, three or four of these packets during the day. This preparation ought to be administered in unleavened bread.

Some physicians prefer the biniodide to the proto-iodide of mercury, and prescribe it generally in feeble doses.

(c) *Bichloride of mercury or corrosive sublimate*.—This salt forms the famous liquor of Van Swieten, and represents the 3rd decimal dilution. The pilules of Dupuytren are composed of a centigramme of the sublimate with a centigramme of opium.

The sublimate is an excellent medicament. It produces less salivation than the other mercurial preparations, but it is less tolerated by the stomach, and frequently gives diarrhoea.

We advise the employment of Van Swieten's solution in doses of a dessert-spoonful, morning and evening, or better, the first decimal dilution in doses of two to six drops per day.

(d) *The means of preventing and curing mercurial salivation*.—We have said that the physician ought to avoid the production of mercurial salivation. Hence it is necessary to watch with the greatest care the state of the gums of the patient in order to stop the mercury as soon as they become red and swollen, the first signs of their inflammation. The painting of the gums with tincture of iodine and the internal administration of nitric acid, six drops in a mixture of two hundred grammes, six

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spoonfuls per day, will usually suffice for the cure of commencing stomatitis. We may afterwards resume the mercury, and it will be better tolerated than at the first time.

If from negligence of the patient or from other causes we find stomatitis completely developed, the tincture of iodine will be insufficient, and it will be necessary to cauterize the gums with hydrochloric or chromic acid. The chlorate of potash, internally and externally, enjoys a great favor.

Patients, subjected to mercurial treatment, in order to prevent stomatitis, ought to keep the mouth in extreme cleanliness. The following dentrifice has rendered us service:

Boro-tartrate of Potassium	...	...	30 grammes.
Chlorate of Potash		}	20 grammes.
Precipitated Phosphate of lime			
Muriate Ammonia	...	...	2 grammes
Cinnamon powder	...	...	4 grammes

But there is a precaution which specialists never neglect, it is that of interdicting absolutely tobacco smoking.

II. *Treatment of Tertiary Syphilis.*—Tertiary Syphilis is also called the late accidents of syphilis, accidents which have ceased to be contagious.

When I was interne (clinical clerk) of Ricord, *iodide of potassium* was the only medicine for treating syphilis. In the present day it is customary to give mercury concurrently with iodide of potassium in the treatment of this phase of syphilis.

We continue to prescribe uniquely iodide of potassium for tertiary accidents, and we do not deviate from this rule when we prescribe concurrently mercury in cases in which iodide of potassium appears to be insufficient. We have noticed this necessity chiefly in patients who have not been subjected to mercurial treatment during the secondary period.

There is still one circumstance in which we associate mercury with iodide of potassium, it is when we have to deal with *cerebral syphilis*, because the least delay may bring on either fatal accidents or incurable lesions.

We begin with fiftieth of a gramme of iodide of potassium three times a day, and if, at the end of the second week, the therapeutic effect is not produced, we raise the dose to two grammes per day. It is only in exceptional cases in which the patients resist these doses, in galloping syphilis with a mixture of the two periods, or in more pressing cases where we have to deal with cerebral accidents for example, we raise the dose of iodide of potassium still further. It is necessary to know that one can raise the dose to 10, 15, 20, and even 30 grammes per day, and that the accidents, which have resisted the classic doses, have

been cured by these enormous doses. With these high doses, it is sometimes necessary to use injections of the iodide.

We continue the iodide of potassium for two months, or till the time when the accidents shall have disappeared. Then, after a repose of three weeks, we resume the iodide.

We continue, during a year, to give the iodide of potassium, for three weeks followed by three weeks of repose, and we find it prudent to prescribe, during further three years, two courses of iodide of potassium of three weeks each, separated by months of repose. At this time we prescribe only a gramme per day.

I add that the patient ought to be watched with care, that on the least appearance of tertiary symptoms, he ought to resume the iodide of potassium as at the beginning of treatment.

Physicians who prescribe mercury concurrently with iodide of potassium in the treatment of tertiary syphilis often employ frictions of mercurial ointment. As, in all these cases, there is the question of grave syphilis, and sometimes of cerebral syphilis, it is of importance to select the mode of administration of mercury which gives the most rapid result; mercurial frictions are thus most perfectly indicated in these cases.

In my own practice I have very rarely met with success in the treatment of tertiary accidents from iodide of potassium alone. When I have been obliged to give mercury concurrently, I have employed the syrup of Gilbert in doses of two spoonfuls per day. Twenty-five grammes of the syrup of Gilbert contain one centigramme of biniodide of mercury and fifty centigrammes of iodide of potassium.

We have said that there are cases of syphilis which resist mercury and iodide of potassium methodically administered. In these cases what remains for us to do?

Evidently, we are perfectly authorized to search in the homœopathic materia medica for the resources we are in want of.

Nitric acid, aurum, lachesis, mezereon, arsenicum, and argentum are the principal medicaments which have been applied to the treatment of syphilis. But first of all, I will say a word about *syphilization*.

(a) *Syphilization*.—This mode of treatment consists in the repeated inoculation of syphilitic matter in patients arrived at the secondary or tertiary period. This mode of treatment appears to have produced good results. We have never had occasion to employ it, and we will expect that the experience of others will have decided its value. It is especially in Sweden that this medication has been employed, and we should consult the work of Boeck on this point of therapeutics.

(b) *Nitric acid*.—We have already said that nitric acid is one of the medicaments for the phagædenic form of syphilis. This

medicament is suited for confirmed syphilis under two circumstances: firstly, against syphilitic affections of the mouth and throat; secondly, to remedy mercurial stomatitis. In this last case, after having suspended mercury, we have seen nitric acid to ameliorate considerably the ulcerations of the mouth. Ought this effect to be attributed to the consecutive action of mercury or to the proper action of nitric acid? It is always a favorable practice to give *nitric acid* when the syphilitic affections of the mouth and of the throat become aggravated or cease to be ameliorated by the use of mercury.

I have never administered *nitric acid* in the first instance in syphilis. But several authors laud this medicament in the treatment of secondary affections of the throat and the mouth.

The doses of nitric acid vary according to authors. Some recommend the 30th, others the first dilutions. I may say that it has appeared to me to obtain good results in all doses.

(c) *Aurum*.—This is a medicament of the tertiary period. I am in the habit of prescribing it when iodide of potassium has no action. Gold is a medicament common to both the schools. We prescribe it chiefly for caries of bones of the face. *Aurum muriaticum* or *Aurum metallicum* in the first triturations are the preparations most employed.

(d) *Argentum* has been prescribed in cases analogous to the preceding, but not with the same success. Modern syphilographers reject this medicament. I believe it may be useful when syphilis is developed in bones in the scrofulous. The lower triturations ought to be preferred.

(e) *Arsenicum*.—It has been extolled by all schools in the treatment of cutaneous syphilides. United with iodine and mercury, it constitutes the solution of Donovan, frequently employed in England. We have seen that arsenic is the principal medicament of phagedenic syphilis, and is also indicated in the cachectic period of the common form.

As for *lachesis*, *mezerium* and other medicaments indicated by some disciples of Hahnemann, our personal experience does not permit us to pronounce either upon their value or upon their indications.

(f) Sulphurous and arsenical *mineral* waters may have their utility in the treatment of syphilides; the ioduretted and bromuretted waters act in the same way as iodide of potassium, and are indicated in the scrofulous who have become syphilitics.

As for the power of the mineral waters to find out the latent pox and reveal the last traces of the *virus* (!), it is an idle tale and has no other foundation than the fondness of physicians and patients for metaphors and hypotheses.

III. *Congenital form.*—Congenital syphilis is characterized by the simultaneous appearance of secondary and tertiary accidents and by an early cachexia. It is very contagious.

Treatment obtrudes itself here upon the physician, and expectation will be promptly followed by death. But how can mercury be administered to too young infants?

The syphilitic infant can only be nourished by its mother or by an animal. I recall to mind that congenital syphilis is fatally contagious to a nurse who is a stranger. We know on the other hand that the mother enjoys indemnity, and has never to fear from her infant, that the syphilitic infant has never infected its mother (Law of Collis).

The mother should then, take the mercurial treatment, and her milk will serve as the vehicle of the medicament. If the mother cannot nurse, we should bring up the infant with the milk of a goat or of a cow which should have been subjected to mercurial frictions and to absorption of iodide of potassium after the method of Labourdette.

If all means happen to fail, we should prescribe, after Davase, the following preparation: one milligramme of corrosive sublimate in 100 grammes of distilled water, of which we should administer one dessert spoonful in a little milk. It will be necessary to suspend the medicine, if it produces diarrhœa.

I believe (but it has to be proved) that we may have recourse to baths of corrosive sublimate with ten centigrammes per bath, or to frictions with five to ten centigrammes of mercurial pomade,—frictions for three days interrupted by a rest of three days.

IV. As for *hereditary syphilis*, its treatment does not differ from that of tertiary syphilis.

Such is the treatment of the common form of syphilis, of true, confirmed syphilis; but we ought to add that each of the syphilitic affections,—syphilides, mucous plates, angina, iritis, gummata, osseous and diverse visceral affections,—demands, outside constitutional treatment, a particular medication. Just as in scrofula, King's evil, ophthalmia, caries demand particular medications which do not dispense with the general treatment of the disease.

We have already said that hydrotherapeutics, sea-baths and an extended hygiene are powerful auxiliaries in the treatment of syphilis.

V. *Marriage of syphilitics.*—We would add one word upon the question of marriage of syphilitics. This question arises every day in practice, and entails such responsibility upon the physician that we think we ought to give here the rules which should guide these difficult cases.

The absolute rule is this: To permit marriage only after four years of the primitive accident, and only amongst individuals

who have been subjected to a complete treatment.

Syphilitics, who marry above ten months after the initial chancre, are certain not to communicate directly the pox to their wives; but, in a great number of cases, they will have syphilitic infants and they will infect the mother indirectly during conception.

The rule we have laid down applies only to ordinary cases. Syphilitics, whose disease resists the classical treatment, and in whom tertiary accidents frequently reproduce themselves, ought only to marry four years after the cessation of the last accident. The proscription should still be absolute if the patient is attacked with visceral syphilis, and if he is already touched with cachexia.

When the physician permits the syphilitic to marry, he ought to anticipate that the security can only be relative; since one has seen tertiary accidents to come on 10, 20, 30, and even 57 years after an apparent radical cure. Only in these cases, when the patient has been well treated, almost always have the infants enjoyed indemnity. The offensive return, possible at a long date, is not then an absolute obstacle to marriage, since it menaces neither the female nor the infant.

Will it be preferable absolutely to interdict the marriage of syphilitics? Undoubtedly so, if it concerns animals whom we can bring under the impossibility of reproducing. But here the question is different, and you will find syphilitics who will not wait even ten months in order to marry! It is necessary to take into account the passions and the interests of man in society; and, in following the rules which we have laid down, in protecting the bride and the infant, you have no right to prevent a syphilitic from marrying; it will then be necessary, under the same authority, to prevent the marriage of the scrofulous, and of the descendants of the phthisical, the insane, the epileptic and the cancerous: indeed, it will be necessary to suppress all marriages, for, where will you find a family which has not amongst its members one or more individuals attacked with maladies transmissible by heredity?

EDITOR'S NOTES.

OPIUM HABIT CORRECTED.

Dr. Benham has given two interesting cases of opium-habit corrected by Ipecac in the *Medical Counsellor* of Dec. 1st. The one was using Morphine regularly for 6 years, and the other the same drug for 20 years continually. Opium in any form was at once discontinued with the strict injunction that they were "not to take a particle of it under any circumstances whatever." Then he began treatment in the following way. "I then put 20 drops of the mother tincture of Ipecac into two ounces of cold water, and ordered a tea-spoonful of the said solution to be taken every hour." In both these cases the patients had to struggle hard for five days against this worst vice, the craving for Morphine, during which time they had to suffer inordinately for debility, nervousness and sleeplessness, and in one case the patient was even quite wild.

They quite abandoned the desire of taking Morphine or even the idea of taking this drug was loathsome after ten days, and in three weeks they entered upon a new life.

APOMORPHIA AS AN EMETIC IN POISONING.

Dr. Amand Routh has published two cases in *Lancet* Dec. 23, 1882, in which hypodermic injection of Apomorphia proved one of the most effectual means to produce vomiting. Though his first patient died from the effects of oxalic acid, still it is very clear what Apomorphia can do even in the last stage of such cases. He injected five minims of its solution and in two minutes and a half the stomach evacuated its contents with a rush. The second case, in which he used this remedy, was in a lady suffering from alcoholic poisoning followed by coma. He "injected three and a half drops of the solution, and in exactly three minutes and a half about a pint of alcoholic liquid was expelled, and altogether in about five minutes a quart (measured) of hardly altered brandy was vomited." The solution generally used is that recommended by Dr. Murrel of "1 in 50 strength, and to be given subcutaneously in doses of from $3\frac{1}{2}$ to 10 minims (1 and 15 to 1 and 5 grain)" The peculiarity of its action is that it produces vomiting without nausea, "with violent and visible muscular action of the stomach walls." The only poison on which this drug has no efficacy is chloroform. A case of poisoning with bitter almonds was followed by prompt emesis by an injection of 0.013 grain of Apomorphia (*Schmidt's Jahrbucher*).

OPIUM POISONING TREATED WITH ICE.

The *Medical Counsellor* of Sept. 1st gives a novel way of treating opium poisoning with marked success by Dr. A.P. Hanchett.

He saw the patient "lying upon his back in a comatose state, with stertorous breathing, livid countenance, rigid muscles, flesh almost

cold, pupils contracted to a mere point. Each respiration seemed as though it might be his last." The diagnosis was corroborated by finding a two ounce vial containing few drops of laudanum. Several medicines were administered but he could not swallow, stomach pump was not used, for he thought it would be mere waste of valuable time, so at last he called for some ice and had it broken into pieces as large as could easily be passed into the rectum, and immediately passed between one and two pints of these into the bowel. Also placed ice against the spine in the cervical region, and held some in the axilla. The result was most gratifying. In ten minutes he breathed more freely and the lividness was entirely gone, and he went on to a rapid and complete recovery. In a few hours he was able to talk, and could not understand what all the fuss was about." This is the first case on record, as far as we could recollect, in which a case of opium-poisoning has been treated solely by ice. The patient was on the point of death and the routine way of treatment would most probably have not saved the life of the patient in such a dangerous state.

EXTIRPATION OF THE GALL-BLADDER.

A brilliant feat has been achieved in the domain of surgery by Dr. Langenbuch of Berlin, extirpating the gall-bladder in "a man aged 43, who had been greatly reduced in health, strength and flesh by repeated attacks of biliary colic."

The idea of removing this organ was supported by the fact of its congenital deficiency in some cases and its absence in elephants and horses. The abdomen was opened by a T shaped incision, the cross piece corresponding to the lower border of the liver and the vertical part being parallel to the outer border of the rectus abdominis. Next the peritoneal cavity was laid open and the gall-bladder with its duct was found which was ligatured; the bile was drawn off by a Pravaz's Syringe. During operation "there was a little venous bleeding from the under surface of the liver which was immediately stopped by catgut ligatures without any trouble. There was apparently no escape of bile into the peritoneal cavity. The patient did extremely well after the operation, and in fact recovered without any bad symptoms, if we except a little dry pleurisy on the fourth day." In fact the patient gained considerable strength and weight after a short time. "It may be mentioned that there were only two gall stones, each of the size of a millet seed, in the gall-bladder, and there was some difficulty in getting an action of the bowels after operation. So far as we know, this operation has never been previously carried out or even suggested."—*Medical Times and Gazette*, Dec. 9, 1882,

THE EFFECTS OF EXTENSIVE BURNS ON ANIMALS.

EXPERIMENTS on the influence of widespread burns on the animal organism (dogs) have been made with a rare industry by Dr. Trojanow in Professor Paschutin's laboratory at St. Petersburg. We collate the following facts from an abstract by Dr. Petersen in the *Deutsche*

Medizinal-Zeitung of September 21, 1882. The temperature of the body mounts immediately after the burning, and not till a few hours before death (should this ensue) does it fall rapidly. Calorimetrical observations show that not only the production of heat, but also its expenditure, lessened. These facts go against the view of Falk, that death is due to the cooling, owing to the loss of heat. The quantity of urea, and also of chlorides, falls off quickly and progressively, and the former takes place regardless of the appetite of the animal. These considerations show that the "exchange of material"—Michael Foster's metabolism—is diminished, and tell against the theory of Awdakow, according to which death ensues because of the interference with secretion, whereby deadly materials accumulate in the blood, and so poison the economy. Against this also is the fact that some of the blood from the burnt animals, transfused in great quantity into the veins of a healthy one, does not produce any bad effect. This experiment likewise refutes the doctrine of Catiano, published in a recent number of *Virchow's Archiv*, to wit, that death is due to development of prussic acid; indeed, were this the case, death ought to ensue rapidly, and not gradually, as actually happens. The number of red discs really decreases after the burning, but relatively increases owing to the diminution of the quantity of blood-plasma. The specific gravity of the blood increases after the experiment, but never to such a degree as in cholera. Tappeiner's view, that the fatal result is due to the thickening of the blood, is therefore not supported. The loss of water in the first hours after the application of heat never goes beyond 2½ per cent., and then soon falls again. Transfusion with a view to supply oxygen (as suggested by Lesser) led to no results. The blood corpuscles for the most part maintained their form, and the few distorted ones disappeared after twenty hours. The quantity of urine was always lessened; the degree of hæmoglobinuria present was dependent on the height and duration of the heat used, as was also the albuminuria, which was always present. Frequently tube-casts of degenerated epithelium were found. Generally, the alteration of renal structure was the most constant of all the morbid phenomena, and showed itself mostly as a parenchymatous inflammation and exudation between Bowman's capsule and the glomeruli.—*Medical Times and Gazette*, December 9, 1882.

THE PROPER METHOD OF HANGING.

Dr. Græme Hammond, in a paper read before the New York Medico-Legal Society, gave his own experience of strangulation as follows.—“After being placed in a sitting posture, a towel was passed around my neck, and the ends twisted together. Of course with every twist very forcible compression was made on the entire circumference of the neck. One of my friends was entrusted with the twisting, while the other was stationed in front of me in order that he might watch my face, and at the same time make the necessary tests of the cessation of

sensibility. My sensation from the first twist may be briefly stated as follows :—I first noticed a sensation of warmth and tingling beginning in the feet, and quickly passing over the entire body. Vision partially disappeared, but there was no appearance of coloured lights. My head felt as if about to burst, and there was a confused roaring in the ears. I suffered no loss of consciousness, and was fully able to tell my friend whether I felt any pain from the knife-thrusts he was inflicting on my hand. In one minute and twenty seconds after the commencement of the operation all sensibility was abolished. After a few minutes' rest, a second trial was made. This was followed by symptoms similar in character, except that sensibility ceased in fifty-five seconds. A stab with a knife, sufficiently deep to draw blood, was indicative of no sensation whatever."

The orderly way in which the sentence of hanging ought to be carried in preference to the prevailing method, has been shown by him when he says "that the proper and orderly way to execute the law, in the case of a person condemned to death by hanging, is not to let him fall or to jerk him into the air, but to stand him on the ground, or on a suitable platform, and to adjust the noose carefully around his neck below the larynx. If he is made to fall through a trap, or is lifted suddenly from the ground, this important end can never be assured. The noose is almost certain to become displaced, and hence death is not so sudden as it ought to be. Having arranged the noose properly, the person should be raised from the place on which he is standing by pulling on the rope, which should pass over a pulley fixed to a beam above, and he should be allowed to hang for thirty minutes. The rope should be soft and flexible so as to fit closely to the neck. Probably one of cotton or flax would be preferable to the hempen one usually employed. Carried out in this manner, hanging will be effectually and mercifully performed. The condemned would undergo no physical or mental suffering from the moment that the suspension began, and his life would be taken as speedily and with as much freedom from horrible events as the circumstances of the case would allow. It would be better with persons weighing less than 150 lbs. to attach a weight to the feet, so as to assure a sufficient degree of traction on the cord. It is supposed by many that dislocation of the neck produces instant death; such however, is by no means certainly the case. There are instances on record in which the vertebræ of the neck have been dislocated and recovery has taken place. Moreover, even when death does occur, it is no more instantaneous than when asphyxia is accomplished, and there is no greater freedom from convulsions. In some recent cases of hanging there were no convulsions of the limbs, and yet the neck was neither dislocated nor broken. Of these things we may be positively sure that from the instant that suspension takes place there is no sensibility to pain, and that the convulsions which ensue are no more evidence of pain than are the movements of a decapitated chicken; they are such as always ensue with insensibility when the bloodvessels of the neck and trachea are suddenly closed."—*National Times and Gazette*, December 16, 1862.

CLINICAL RECORD.

A Case of Dysentery.

BY BABU GRISH CHANDRA DATTA, L.M.S.

Y . . . , daughter of . . . , at Tala, in the suburbs of Calcutta, aged 21 years, mother of four children, carrying seven months. On the death of her father-in-law she went to his house situated in a village affected with malaria; she had to undergo all the austerities prescribed by our religion, that is, to abstain from animal food, to live exclusively upon table rice, *khansari dal*, ghee, milk and fruits, and to sleep upon a straw bed without curtain for twelve days. During the Sradh ceremony she had to work hard. After the ceremony she returned to her father's house at Tala in a miserable condition of health; a day after her arrival there all on a sudden she had hæmorrhage from the bowels, the discharge was copious and bright red; a medical practitioner was called in, who prescribed, as I was told, massive doses of ergot of rye which checked the bleeding at once. A few hours after the whole abdomen became very painful, high fever supervened preceded by chilliness and shivering, and accompanied by nausea, vomiting, violent thirst, and constant calls to urinate, passing scanty high colored urine with severe burning sensation. Eight or ten hours after the stoppage of the bleeding she began to pass scanty bloody and mucous stools, at intervals of an hour or less than an hour, with severe tenesmus extorting cries, and severe headache and giddiness. The attending physician prescribed several medicines which were administered regularly without any relief. I was called on the 16th April 1881, the third day of her illness at 5 P. M., and found her pale and very much prostrated, with very high fever, temperature 104.5, pulse 145. Besides the symptoms above mentioned, I found the whole abdomen somewhat distended and very painful to touch and pressure, the uterine region was more painful than other parts of her abdomen, and I felt the uterus contracting, she complained of bearing down pains exactly similar to those of labour, was very restless, tongue dry and coated.

Treatment: To counteract the action of ergot I gave her spirits of *Camphor*, in two drop doses, diluted with a large quantity of water, every 2 hours, and I left instruction to the effect, that only three doses of the medicine should be given: diet, barley-water.

11 P. M. No relief, much the same, has passed ten stools since my last visit, consisting of light blood and mucus. very restless. bearing

down pains more severe than before. No diminution of fever and of other symptoms. *Merc. cor.* 6, every 2 hours: diet, barley-water.

17th April, 8 A. M. Last night at 2 A. M. she delivered a living child, which died half an hour after birth with convulsions. Sixteen stools since my last visit, all of them were thrown away, consequently I could not examine them, the character of the stools was said to be same as before. Pain in the abdomen much the same, but that in the uterine region much less, no bearing down pains. Fever as high as before, temperature 105, pulse 150. Bleeding from the uterus after miscarriage was as usual. No abatement of other symptoms. When two of the best indicated antidotes did not do any good, I at once resorted to *Sulph.* 30th, having found it useful in many similar cases, after failure of medicines apparently well indicated: diet, barley-water.

17th April, 4 P. M. Very little relief, much prostration, fever high, temperature 105, pulse 150, pain in the uterine region much less but that of the abdomen same as before, severe burning sensation in the whole of her body, violent tenesmus during and after stool, sixteen foetid stools since my last visit, they consisted of blood and mucus, just like scrapings of the intestine, constant urging to urinate, complaints of severe burning sensation, very restless and very thirsty, severe headache. Though many of the symptoms corresponded with those of *Ars.* and *Carb. v.*, yet I was led to prescribe *Cantharis*, as the character of the stools and the urinary symptoms were exactly similar to those of this drug. *Cantharis* 3, every 2 hours: diet, barley-water.

10 P. M. She is much better, fever much less, temperature 102.5, pulse 130, has passed three stools since my last visit, they are of pale reddish colour and almost void of mucus, tenesmus much less, thirst and headache much diminished. The burning sensation in her body, for which she was so restless, is almost gone. The urinary symptoms have entirely disappeared, pain in the abdomen much less, had slept for two hours, and is sleepy. She said that she was in much ease, lochial discharge normal, appetite still very poor; had two doses of the medicine. No more medicine; diet, barley-water.

18th April, 8 A. M. I saw her calm and quiet; appetite somewhat improved, had slept soundly last night, fever much less, temperature 100, pulse 112, lochial discharge normal. No burning sensation in her body, no headache, slight thirst, no stool since my last visit, very weak and very much prostrated. *China* 6th, twice a day: diet, barley-water.

7 P. M. No stool since my last visit, had slept about two hours during the day, no fever, temperature normal, pulse 100, in other respects much the same. *China* continued: diet, barley-water.

19th April, 9 A. M. No stool, no complaint except weakness; *China* continued: diet, barley and milk.

20th April, 10 A. M. Doing well, very hungry, passed one scanty natural stool, medicine continued once a day: diet, milk and barley and fish soup.

21st April, 10 A. M. Doing very well, medicine continued: diet, very old rice boiled to the consistency of paste, fish soup, milk and sago.

Remarks.

In this case the lady most likely inhaled the malarious poison during her stay at her father-in-law's. The poison would probably have been eliminated through some other channels of the body in a different shape, had not the alimentary canal been made susceptible to its action by the nature of the food and mode of living as stated before, and the consequence was the hæmorrhage from the bowels. The dysentery was brought on by the sudden stoppage of the bleeding by ergot. This imprudent measure caused miscarriage and death of the foetus. In this case the best antidote of ergot and the indicated medicine for dysentery failed to do any good, but *Cantaris*, though as far as I am aware, was neither an antidote of secale nor that of malaria, acted miraculously. The urinary symptoms and the character of the stools (scrapings of the intestine) were exactly similar to those of the drug, while the minor symptoms did not correspond. I should therefore suggest, that if all the minor symptoms of a disease are not similar to those of a drug, the similitude of the principal symptoms would be sufficient for our purpose. Of course if we can find a medicine whose pathogenesis exactly corresponds with the symptoms of the disease, we should at once give preference to it. But it sometimes happens that where the medicine rightly selected fails to do any good, a medicine, whose principal symptoms are similar to those of the disease, often cures it. From this we can conclude that the provings already made are not thorough and final. To prevent a relapse of the fever and to improve the general tone of her system I was obliged to have recourse to *China*. Its effect was rapid in removing the debility caused by the bleeding and miscarriage.

Cases of Cholera.

UNDER CARE OF BABU AKHIL NATH PAL, L.M.S.

Case 1.—K. C., 18 years old, of weak constitution, had cholera since the morning of the 18th Sept. 1882.

Previous History.—She was taking *Habishwa*, her father-in-law having died of cholera a week ago, and she had to attend her daughter, who had a mild attack of cholera on the 14th.

She was in the beginning treated by an allopath, who administered the following medicines without any effect. *Camp. Q.*, *Verat. 6*, *Acon 6* and *Cup. 6*.

I was consulted about 12 hours after, and I saw the patient in the stage of collapse with the following symptoms: small, thready pulse, urgent thirst, restlessness, copious rice-water stools and vomiting, cramps more marked in the lower than in the upper extremities.

Treatment.—7 P. M. *Ars. 12*, one dose.

10 P. M. Had two copious stools, and vomited once. Repeat another dose.

12 P. M. Had no stool since the last dose was taken, has vomited once only, is very thirsty, pulse better. Stop medicine. Ice water to drink.

1½ P. M. No stool, no vomiting. Is rather sleepy.

2 P. M. Her mother came to see her, and this sudden agitation changed her state, she passed two copious stools within half an hour, began to complain of pain in her chest and abdomen, the pulse also lost its steadiness. Repeat another dose of *Ars. 12*.

3 P. M. Little better.

4-30 P. M. Is sleeping.

19th. Had passed a few drops of water in the morning. Is thirsty, pulse very weak; no medicine. Ice water to drink, the loins to be fomented.

6 P. M. Passed water once more. Is little hungry: Diet, barley-water.

20th. Doing well: Diet, barley and *gandal soup*.

21st. Doing well.

Case 2.—S. M., aged 22, pregnant 8th month, attacked with cholera on the 23rd Sept. 1882. An astringent mixture containing *Gallic acid*, *Kino* and *Chalk* mixture was first given her. She had been taking *Ars. 3*, every two hours, when I was called. There was no pulse at the wrist, countenance hippocratic, surface cold, hands and feet shriveled

and blue, very restless, precordial anxiety, complaining of drawing pain in the gravid uterus, much fear of death, unquenchable thirst, passing small stools occasionally, cramps in both extremities.

Treatment:—Stop *ars.* 3, to have *aco.* \mathcal{Q} , $\frac{1}{4}$ drop.

I watched the action of *aco.* for an hour and a half. The cramps were checked and the pulse could, at times, be felt at the wrist.

I again saw the patient three hours after. She had passed only one scanty stool, no cramps, pulse same as before, still very restless and anxious, thirst much. Rept. *aco.* \mathcal{Q} .

24th. She had a little sleep after the second dose. Had three stools since I left her, passed a few drops of urine, pulse thready, no more pain in abdomen, precordial anguish, no thirst, still fears of death. Fœtal heart-sounds felt on auscultation. Temp. 97F. No medicine: diet, barley-water.

5 P. M. Had two stools, yellowish and scanty, urging to urinate, but passing no water. *Canth.* 6, one dose.

9 P. M. Had passed about half a pound of urine, no appetite: no medicine, stop barley-water.

25th. Had four stools in the night, whitish and watery, is very thirsty, passed urine with stool. *Ac. phos* 6, one dose.

6 P. M. Had one stool, passed water twice, no appetite: no medicine; diet, arrowroot.

26th. Had one stool in the night, slept well for three hours. No appetite, very weak; stop *ac. phos.* To have port wine, a tea-spoonful, thrice daily: Diet, barley.

27th. Doing well, feels a little hungry: continue port wine; diet, barley and *yandal* soup.

18th. Doing well.

THERAPEUTICS OF CONSTIPATION, DIARRHOEA, DYSENTERY, AND CHOLERA.

41. BRYONIA.

Constipation :

1. Obstinate constipation ; evacuation takes place with the greatest exertion. No stool, not the slightest desire for one.
2. Dry, parched stool, with effort, in the morning.
3. St. very unsatisfactory, only after much straining, which caused a rush of blood to the head, and a feeling of confusion in the head.
4. Very hard st., with pressing out of the rectum, which, however, returns of itself ; this is followed by a diarrhoea-like st., with fermenting in the abd.
5. Hard, unsatisfactory sts., preceded by colicky cuttings in the abd., followed by drawing and heaviness in the sacrum.
6. Sts. very dry, large, hard and dark.
7. Morning st. large, hard and dry.
8. The evacuations are very sluggish ; the fæces are never hard, yet the expulsion of them is only effected with great exertion, owing to inactivity of the intestines.

Diarrhoea :

1. D., so sudden that he was not able to retain it ; during the following twelve days the usual st. passed just as suddenly.
2. D., mostly in the morning.
3. D., especially at night, and burning in the anus with every passage.
4. D., without the slightest griping. Painless D., after eating.
5. Easy, painless D., of a greenish-brown liquid, preceded by a pinching pain, extending from the right hypochondrium to the stomach, after eating.
6. D., which smelt strongly of rotten cheese.
7. D., preceded by colic.
8. D., twice a day, makes her so weak that she must keep her bed.
9. Frequent, brown, thin sts., in an infant at the breast.
10. Three D.-like sts., without pain but with passage of very offensive flatus.
11. Pasty, offensive evacuations in the afternoon, followed by burning in the anus.
12. Bilious, liquid st. D.-like, bilious, acrid sts., with soreness in the anus, continuing eight days.
13. St. pasty, with much flatus, followed by hard portions, and again by soft, so that he believed that he would scarcely finish the evacuation.
14. Very liquid sts., after every meal.
15. Very offensive, profuse, watery sts.
16. Involuntary st. at night during sleep.

17. Immediately after a glass of beer, three successive, painless, liquid st̄s., discharged as from a tube, greenish-brown, followed by burning in the rectum and on the nates.
18. Urging to st. with audible rumbling in the intestines, followed by offensive, yellowish D.; he was obliged to rise nearly every hour for st., which caused burning in the rectum.
19. Liquid, watery st̄s., following rumbling, gurgling, pinching and griping in the intestines, without relief of these symptoms.
20. Sudden, painful cutting in the intestines, with a feeling as though one were digging him with the fingers, compelling him to bend double, relieved by profuse pasty evacuations.
21. Urging to st., followed by copious pasty evacuations with relief of all the symptoms except confusion of the head.
22. Inclination to D. from the slightest draughts of air.
23. Sensation as if he must go to stool after taking beer, or warm broth.

Dysentery :

1. Painless D., of thin slimy fluid, after eating.
2. D., of a green, slimy fluid, followed by loud passage of flatus.
3. Two mucous st̄s. in the evening and at night.
4. Thin bloody stool.

Aggravation :

1. At night ; *early in the morning* ; afternoon.
2. After meals ; warm broth, beer.
3. From the slightest draughts of air.
4. In hot weather, or change from cold to warm weather.
5. From movement.

Before St :

1. Pinching from right hypochondrium to stomach.
2. Urging to st., with audible rumbling, gurgling, pinching and griping in the intestines.

During St :

1. Burning at anus.
2. Prolapsus ani.
3. Rush of blood to the head, with confusion.
4. Passage of offensive flatus.
5. Shooting in abd.

After St :

1. Burning in the rectum and on the nates.
2. Rush of blood to the head, with confusion.

General Symptoms :

1. Irrational, delirious talk about his business. . .
2. Anxiety, he is apprehensive about the future.
3. Very cross and inclined to anger. Easily put out of humor.
4. Attempted several times to escape from bed ; somnambulist condition.
5. Confusion of the head and headache in the morning.
6. Vertigo on rising from his seat, disappearing after walking.
7. Heat in the head. Excessive heaviness of the head.

8. Red, hot, soft puffiness of the face. Lips dry, swollen, and cracked.
9. Swollen nose, with nose-bleed.
10. Tongue dry; coated thickly white, or yellow.
11. Mouth dry, so that the tongue sticks to the palate.
12. Offensive, fœtid smell from the mouth.
13. Taste, flat, insipid; sweetish; *bitter, every thing tastes bitter*; salty; sour, dry.
14. Violent thirst; she can and must drink much at a time; thirst, especially in the morning.
15. He longs for many things which he does not relish.
16. No appetite for milk, but relishes on taking it.
17. Food smells good, but on beginning to eat, appetite disappears.
18. Longing for wine, coffee, acids and warm broth.
19. Aversion to every kind of food; to tobacco; to beer in the evening.
20. Eructations, after eating; tasting of the ingesta; bitter; sourish; tasteless.
21. Hiccough, after eructation; after eating, and on every shock caused by it, pressure in the forehead, as if the brain shook from behind forwards.
22. Gulping of food. Eructation of the contents of the stomach, with hardly any effort to vomit.
23. Nausea, even to vomiting, from the slightest motion; this obliged him to lie perfectly quiet. Nausea in the morning or evening, with accumulation of water in the mouth; nausea, after food, from tobacco.
24. Vomiting of solid food, not of drink; of yellow and green mucus; of bitter, musty and putrid liquid which leaves a similar taste in the mouth.
25. Painful sensation in the œsophagus, rather low down, as if it were constricted there.
26. After every meal, pressure in the stomach, as if a stone lay there; and distension of the abdomen.
27. Excoriation in the folds of the abd., in the iliac region.
28. Burning pain in the abd. Horrible cutting in the bowels.
29. Urine scantier and darker; red; hot as it passes. Cannot retain his urine long; when moving, there often pass unconsciously some drops of hot urine.
30. General weakness. Weakness in the lower extremities, which compelled him to sit down. Weak, lazy, tired and sleepy.
31. Great exhaustion on awaking from sleep.

Remarks: *Bryonia* is a precious remedy in constipation, scarcely inferior to *nux v.* and other remedies. Hahnemann has remarked that "*Bryonia* seems more frequently in its primary action to keep back the stool, and its secondary action, in which it does the opposite, is rarer; hence when its other symptoms indicate it, it can cure con-

tipation permanently, which few medicines besides *nux vomica* and opium can do." The characteristic stools of the constipation, to which **bryonia** is homœopathic, are *large*, dry and hard, as if parched, and passed with great effort. Sometimes the stools may not be hard, but their evacuation can only be effected with great exertion. The straining for stool, whether hard or not, causes a rush of blood to the head resulting in a feeling of confusion. Dr. Hoyne has given a good case, from his own practice, of an allopathic physician. "He had employed every known remedy in his *materia medica*, but all had failed after becoming somewhat accustomed to their use. Lately had resorted to injections of warm water and oil, and even these frequently failed. The stools were hard and dry, as if burnt. Ordered the injections to be stopped and gave him *Bryonia* 200, one dose a day. After three days the bowels moved regularly. Medicine was continued for three weeks with complete cure."

Hahnemann's observation, that the secondary action of *Bryonia* giving rise to diarrhœa is rarer than its primary action causing constipation, should not deter us from using it in diarrhœa and even dysentery. The stools are quite characteristic, being sudden, generally painless, or attended with burning in the anus, occurring chiefly at night, especially in the morning, offensive, involuntary during sleep at night, worse in hot weather, indeed at every change of weather from cold to warm, and after meals. There is, in addition, the aggravation from the slightest motion. Dr. Hoyne has cited the following case from Dr. W. H. Holcombe: "Stool every half hour; the least motion of the body, raising the arms or even bending the toes, produced a disposition to go to stool. Cured, in a few hours with the 2000th potency of *Bryonia*."

Bryonia, according to Dr. Hoyne, has been serviceable even in cholera, "if the vomiting and diarrhœa commences in the morning, preceded by cutting pain in the bowels and aggravated by the slightest motion. During the last cholera epidemic in Baltimore, Dr. Haynel gave *Bryonia* 30 in all cases for vomiting alone, or for vomiting and purging. It cured even the worst cases, with want of consciousness, inability to speak, icy cold skin, and flesh wrinkled; pulseless. For typhoid symptoms following cholera this drug is beneficial."

Gleanings from Contemporary Literature.

ON THE PHYSIOLOGICAL AND THERAPEUTIC ACTION OF THE ELEMENT ARSENIC IN THE FORM OF ARSENITE AND ARSENIATE.

BY SYDNEY RINGER, M.D., F.R.C.P.,

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BOTH oxides of the element arsenic—viz., arsenious and arsenic acids—are employed in medicine, either as such, or in combination with some base or other. In the *British Pharmacopœia*, the liquor potassæ arsenitis, the liquor arsenicalis, and the liquor sodæ arsenicalis, are given in practically equal doses. The solution strength of the former two is one part of arsenious acid in 120 parts of water; of the latter is one part of Anhydrous arseniate of soda in 120 parts of water. Calculated out from their formulae, it will be seen that the arseniate preparation contains a little over half as much metallic arsenic as either of the two arsenious acid preparations. This is practically recognising the arseniate as the more active preparation.

The present experiments were made in order to test this point, the importance of which is apparent. Chemically considered, the arseniate is a stabler form of combination than the arsenite, the two salts standing to one another in the same relation as the phosphate and phosphite of the analogous element phosphorus, though the difference in degree of stability between these two latter combinations is much greater.

On the action of arsenious acid, there has been much work done; on the action of arsenic acid, but little. It is known generally that, qualitatively, arsenic acid acts similarly to arsenious acid; but, beyond this very general statement, little definite is discoverable. Of late, a series of papers have appeared (*Archiv für experimentelle Pathologie und Pharmakologie*) on the subject of the mode of action of the element arsenic in its oxygen compounds. In the first paper (*Op. cit.*, Band xi, p. 213) the authors, Biuz and Schulz, state, with reference to the comparative action of arsenious and arsenic acids, that some investigators have found that arsenic acid was slower in its action, whilst others have found it to be the more active preparation. They further state that, so far as their own task is concerned, which of these two statements is the true one is unimportant. It is clear that no such statement as this could be made in the face of very definite experimental results, giving superiority of action to either of the two oxides of arsenic.

Some work, however, had been already done on this subject. Thus, in a paper by Wöhler and Frerichs (*Annalen der Chemie und Pharmacie*, Band lxxv, 1848) "On the Changes which Organic Bodies, in particular, suffer in their Passage into the Urine;" two experiments with arsenic acid are quoted—one on a rabbit, one on a dog. From the results obtained, the authors concluded that arsenic acid was less poisonous than arsenious acid.

They further stated, as amongst the differences between the two oxides, that arsenic acid showed less local irritant and caustic action; that its effects appeared more slowly; and they suggested that these were probably, in part, due to a reduction to arsenious acid occurring in the alimentary

canal; they thought that the marked injection of the large intestine which was found *post mortem* in the cases observed spoke in favour of this reduction.

With reference to this relative position of arsenious and arsenic acids, it is very natural that the analogous element, phosphorus, should have been looked to, in order to see if any particular relation existed between the corresponding oxides of this element. Of these, viz., the phosphorus and phosphoric acids, the latter, when its acidity is neutralised by a suitable base, e.g., soda, is very little, if at all, irritant; phosphate of lime is, of course, a natural constituent of the organism, and, indeed, it is probably in the form of phosphate alone that the element phosphorus occurs in the tissues.

As to the action of phosphorous acid, but little work has been done; it is not employed in therapeutics, nor mentioned in text-books on toxicology. In the above-mentioned paper (*Op. cit.*, p. 347), however, Wöhler and Frerichs quote some experiments, three in number, with phosphorous acid; the doses used were from 0.5 gramme to 1 gramme of the pure dried acid, administered in dilute solution. The animals experimented on—a pigeon, guinea-pig, and cat—in each case died, but the experiments were less satisfactory than they might have been, since in two of the three cases there is no doubt that the fluid may, in part, have entered the air-passages. Indeed, the value of this paper of Wöhler and Frerichs, both with reference to arsenic acid and to phosphorous acid, lies less in the experiments themselves, than in their statement of what they conceive to be the position of matters. In the end paragraph, treating of this subject, they say: "It is not without interest that the analogy between the elements, arsenic and phosphorus, is manifest also in the action of these elements on animals. The lower oxides of both the arsenious and phosphorous acids are most poisonous, whilst, of the higher oxides, arsenic acid acts relatively mildly, but phosphoric acid is harmless." In addition to this general view, must be remembered their suggestion that arsenic acid is reduced to arsenious acid, and then becomes active.*

Further evidence on the subject of arsenic acid is very scanty. According to Taylor (*Medical Jurisprudence*, vol. i, p. 276), Orfila states it to be more poisonous than arsenious acid, but gives no instance. Dr. Glover (*Loc. cit.*) introduced four grains of arsenic acid into the stomach of a rabbit; the animal died in four hours, with symptoms of irritant poisoning. Dr. Christison (*Treatise on Poisons*, p. 284, 1845, ed. iv.) cites the potash salt; stating, however, that he has read of but two cases of poisoning with it. He further mentions an account of the accidental poisoning of seven horses with this salt; the animals died with the symptoms and morbid appearances of well-marked inflammation of the alimentary canal.

More recently in the *Journal of Physiology*,† the results of experiments with arseniate of soda and arsenious acid are given. These, so far as stated, agree with those obtained in the present series of experiments. According to them, the arseniate would be decidedly the weaker poison, but, in particular, they show forth the relative slowness of action of the arseniate as

* Wöhler and Frerichs make reference to a paper by Weigel and Krug on the Different Effects of Pure and Impure Phosphoric Acid (*Casper's Woehenschrift für die gesammte Heilkunde*, 1844, No. 28, p. 455.) The impurities here referred to are phosphorous and arsenic acids, both of which, according to the authors, render the comparatively inactive phosphoric acid very poisonous. The papers would be in point if the experiments were more conclusive, but the materials supplied are so scanty, that they are in themselves of but very little value.

† On the action of Arseniate of Soda and Arsenious Acid on Frogs, *Journal of Physiology*, vol. i. No. 4, Drs. Ringer and Murrell.

compared with arsenious acid ; the object in view, however, being different from the present one, the experiments were not planned so as to furnish the data requisite for a precise comparison of the relative activities of the two oxides. This same objection applies to the experiments of Sklarek, referred to in the above-mentioned paper in the *Journal of Physiology*.

The evidence, then, so far as it goes, is to the effect of qualitative similarity of action of the two oxides, but, as to the quantitative relation, the evidence is indefinite on the whole.* The view of Wöhler and Frerichs as to the relative position of the two acids, though clearly enough stated, is scarcely supported by sufficient experimental work ; still, as representing a scientific aspect of the question, it must be treated as a theory of the mode of action of the element arsenic in its oxygen compounds.

Against this view, comes the more recent one of Binz and Schulz. These authors represent the mode of action of these oxides of arsenic on the tissues as one, the essential part in which is played by the element oxygen. Throughout, an analogy is drawn with the process of burning ; thus, they liken the action to that of ozone, and they hold that the fatty degeneration of the cells, and the diminution of glycogen, which both obtain in cases of poisoning by arsenious acid, are the results of such burning.

When the precise mode of action, as they state it, is examined into, it will be seen that the above is an incomplete representation ; for the authors consider that arsenious acid, in contact with tissues holding oxygen, takes from them this oxygen, and becomes arsenic acid ; that in this higher form of oxidation the element arsenic readily parts with its oxygen to the protoplasmic tissues, and becomes reduced again to the state of arsenious acid. This process is held to continue indefinitely, reduction to arsenious acid being followed by reassumption of oxygen and reformation of arsenic acid ; the steps are then retraced.

The process, then, as described by Binz and Schulz, would lead one to infer—indeed, there is actual statement—that the same molecule of protoplasm can take up oxygen from arsenic acid, reducing it to arsenious acid, and then may itself suffer reduction by the arsenious acid formed. It is just this to-and-fro movement (*Hind-und Her-Schwingen*) which, according to the authors, is the essential cause of the disintegration of the tissues obtaining. Thus, then, we should have as cause for the tissue change, which is an undoubted fact, a process consisting of two precisely opposite steps—a burning and an unburning. It is, however, quite clear that no two such steps could yield any effective force whatever ; for what the one does the other undoes ; the resultant equals zero. That this is a true representation of the theory propounded will be seen on reference to the original papers. (Compare in particular vol. xi, pp. 213, 214, and again vol. xiv., p. 249, of the *Archiv für Experimentelle Pathologie und Pharmakologie*.) But even though one should not insist on this oscillation of the oxygen between arsenious acid on the one hand, and the protoplasmic molecule on the other, and should accept the view that arsenious acid reduces certain protoplasmic molecules, becoming itself thereby converted into the higher oxide, and then parts with its oxygen to certain other molecules, suffering thereby reduction to its former state, yet, even accepting this as their view of the process obtaining (a process to which, in no sense of the word, the term oscillation would be applicable), they would claim effect for each step in the process ; i.e., reduction would effect disin-

* It must be mentioned that Garrod, in his *Materia Medica*, states that, as the result of numerous observations, he finds the metal arsenic, in the higher oxide as arseniate of soda, equally effectual therapeutically with the lower oxide, but milder in its action, and less likely to produce irritation of the mucous membranes.

tegration of the tissues; so, also, would oxidation. Two opposite processes burning and unburning, would be factors in the result obtaining.

Binz and Schulz instance, as analogous in kind, the action which occurs when nitric oxide, free oxygen, and a body capable of further oxidation, e.g., sulphurous acid, occur together. Here, as is well known, the nitric oxide takes up oxygen and becomes nitrous acid, and then suffers reduction by the sulphurous acid back to the state of nitric oxide; this process will continue indefinitely, provided a constant supply of fresh "oxygen" and fresh "oxidisable body" be maintained. It is, however, clear that this process is a continuous one and in one direction; there is a constant flow of oxygen by way of the carrier to the "oxidisable body;" at no time is oxygen passed on and then taken back.

If, without further criticism of previous statements, this representation be accepted as applicable to the function of arsenious acid in the organism, the position claimed for this compound will be that of a carrier of oxygen, whilst the active element will be oxygen, and the active preparation will be arsenic acid. The assumption of such would be quite warranted; for haemoglobin appears to hold exactly such a position, as oxygen-carrier, in the organism. To such process the term "burning" would be strictly applicable. However, whether the last-mentioned theory, or the oscillation modification, be true, it is certain that, according to either theory, the two oxides of arsenic must have practically equal toxic value.

The method adopted by Binz and Schulz consisted in the admixture of arsenious acid and of arsenic acid, separately, with animal tissues just removed from the body, care being taken to secure intimate contact, whilst the steps of the process were effected as rapidly as possible, so that the metallic oxide might come into contact with tissues as near the living state as could be. The admixtures were then placed in an incubator. The further stages consisted in the separation by dialysis, and in the detection of the higher oxide where the lower had been used, of the lower oxide where the higher had been taken.

By such means, Binz and Schulz state that they were enabled to demonstrate that living protoplasm is capable of oxidising arsenious acid to the state of arsenic acid, and of reducing arsenic acid to the state of arsenious acid. But, even though this twofold action of oxidation and of reduction be granted, experiments of this nature yet yield no data as to the relative influence of these bodies on the organism. Indeed, with the knowledge that arsenious acid and arsenites are reducing agents, whilst arsenic acid itself is reducible, as, for instance, by sulphurous acid and by hydric sulphide, it would not be surprising to find that, in living tissues, where the processes of oxidation and of reduction are constantly going on, these oxides of arsenic should also take part in these processes. On chemical grounds, the settling of this question is extremely difficult; for qualitative negative results as to the oxidation of arsenious acid by living protoplasm will count as little against the positive results of Binz and Schulz; they will be put down to technical errors; whilst the quantitative solution of the question, viz., the determination of the amount of arsenious acid oxidised, would be extremely difficult, if, indeed, trustworthy results could be counted on.

There scarcely remains any other way of settling the question than by the examination of the symptoms produced. If the theory of Binz and Schulz hold, then, on their own admission, the two oxides of arsenic should be equally poisonous. This must be regarded as a test proposition.

Mode of Experimentation.—By the kindness of Professor Graham of University College, we were furnished with solutions of arsenious acid, arsenite of soda, and arseniate of soda, of definite strength. The arsenious acid solution contained 1 per cent., of the oxide, As_2O_3 ; the arsenite and

arseniate of soda solutions contained each 1 per cent. of the element arsenic. From the formula As_2O_3 is easily calculated the quantity of the solution of arsenious acid which must be taken in order to contain as much of the element arsenic as given quantities of the arsenite and arseniate solutions. The strengths of all three would have been made equivalent to 1 per cent. of the element, but for the insolubility of arsenious anhydride.

Of these solutions, definite quantities, containing known and therefore comparable quantities of the element arsenic, were injected under the skin of the back of frogs. The common English frog (*Rana temporaria*) was taken; and care was observed to select, for the parallel series of experiments, specimens, as nearly as possible of the same size and condition. Each experiment consisted in the injection of three frogs with the above arsenic preparations; for each frog, one of the arsenic compounds. The three injections were performed at the same hour, one after the other, as speedily as possible. Each frog was then placed under a separate bell-jar, and observed. The observations extended over two days, as a rule; sometimes over three; they were taken morning, noon, and evening. The experiments were performed during the months of May and June 1882; a few during August of the same year.

Thus, comparable quantities of the element arsenic, in three different states of combination, were administered to frogs chosen as nearly alike as possible. The results obtained are given in the form of tables (pp. 1136-37 of *Brit. Med. Journ.* for Dec. 9, 1882). The headings chosen for the columns will not need explanation, except perhaps that described as "Death of the Central Nervous System." The evidence of this death is, that the frog neither moves spontaneously nor answers to any stimulus by volitional movements. The absence of these latter in response to stimulation has been assumed to correspond with abolition of sensation. This absence of the more complex co-ordinated movements was at times to be noted whilst the less complex co-ordinated movements constituting reflex action still persisted; but, as a rule, reflex action outlasted but a very short time the abolition of the more complex movements. Hence, practically, "Death of the Central Nervous System" corresponded to:

1. Absence of spontaneous movement;
2. Absence of volitional movement on stimulation;
3. Absence of reflex action.

Though these three occurred so nearly together as practically to constitute but one group, the above is the order of their disappearance. It may be further mentioned that, together with the above noted, the automatic centres of respiration and circulation ceased to perform their functions. It is clear that, with a peripheral apparatus, nerves and muscles, still efficient, the above indicates extinction of the functions of the central nervous apparatus of the brain and spinal cord.

The subsequent death of this peripheral apparatus is given in the next column, headed "Death of Muscular Tissue." The nerves are left out, because their condition is rather less readily examined, and hence not so well adapted for comparative examination. The sciatic nerves were, however, tested in nearly every case; and it was established that, at the time of "death of the central nervous system," as above evidenced, the nerve-trunks still conducted well; and, further, that death of the nerve-trunk preceded, as a rule, by a considerable period, the death of the muscular tissue itself. Hence, then, the two test-tissues chosen are:

1. That of the central nervous system;
2. That of the muscles.

In the column headed "Remarks," is given the peculiar action on the skin in the shape of desquamation, which may vary from a slight separation of the epithelium to a condition in which this may be picked up or

scraped off in large flakes. This condition has been fully described in the *Journal of Physiology*, vol. i. In this same column, anything noteworthy at the time is recorded.

The results set forth in the tables may be summarised thus.

As to the comparative action of arsenious acid and arseniate of soda, the series of both salts are perfectly parallel, the same doses of each drug being administered in each experiment; hence the comparative action may be read off at once in the "time" columns. If these numbers be individually compared, it will be seen that there is considerable variation, but certainly not more than one would expect with the individual differences which must exist between frogs, however carefully selected; added to which, there must be taken into consideration the range of variation necessitated by the mode of experimentation. If, however, the results be taken in the aggregate, the agreement is certainly as close as one could expect. Thus, the tables show seventeen experiments with arsenite of soda, and sixteen with arsenious acid. Of these, thirteen are available for comparison, since in each case definite results were obtained. If the double series of numbers be summed up, we get as follows :

Death of Central Nervous System. Average.		Death of Muscular Tissue. Average.	
Arsenious acid	266 hours	260 hours	23
Arseniate of soda	223 hours	278 hours	21.5

The numbers representing the death of the muscular tissue were obtained by adding up the "anterior limb column." It was thought unnecessary to repeat this operation for the other two columns, though of course, each column, or all three, may be used for comparison.

The numerical agreement which thus appears, requires no further comment. In addition to this, however, the agreement qualitatively between the arsenite of soda and arsenious acid was throughout the experiments so very marked, that one could scarcely doubt that one had to do with equally active preparations of arsenic.

The solution of sodium arsenite used was strongly alkaline; hence it would appear that the element arsenic is equally active whether in the form of arsenious acid (the aqueous solution would probably be represented by the formula H_3AsO_3), or of a further combination with sodium as sodium arsenite, Na_3AsO_3 . This being so, it was thought unnecessary in the further experiments to continue the parallel series of threes, and accordingly the arseniate of soda and arsenious acid were thenceforth alone contrasted.

Proceeding at once to the consideration of the arseniate series, the experiments recorded in the table may be divided into three parts. In part I, the arseniate dosage is the same as that of the arsenious acid and arsenite of soda. The results here obtained show that, whilst these latter caused death after a maximum of 24, 26 hours, the arseniate frogs were not only alive after 48 hours, but appeared quite normal. In part I, then, we have the results of "equal dosage."

In part II, the dosage of arseniate was at first increased by one half, then brought back again to the original dosage of part I; but all the experiments included under part II in the parallel series corresponded to a dosage of two parts of the element arsenic as arseniated against one part as arsenite and arsenious acid—i.e., in part II, we have double dosage of arseniate.

Of seven experiments with the arseniate, the dose was fatal in two cases, at the end of 29 hours and 64 hours respectively. In a third case, the experiment was discontinued at the end of 57 hours. The frog at this time was

severely affected, and ultimately died ; but beyond this period of 57 hours, the comparative observations were not continued, and the time of death was not noted. Accepting, however, 57 hours as the interval after which death occurred, we should have the numbers 29, 64, 57. The remaining four frogs appeared normal after periods of 46 hours, 48 hours, 31 hours, and 72 hours respectively.

Of the six corresponding experiments with arsenious acid, death occurred in five cases ; in the sixth, the experiment was ended, and the frog killed at the end of 29 hours. At this time, however, the frog was severely affected, the voluntary movements being helpless, and the respirations markedly irregular, so that there is not the least doubt but that the frog would have died. However, leaving this frog out, we have the times of death, ranging between the extremes of 36 and 12 hours, with an average death-interval of 29 and 3-5th hours.

Of the seven experiments with arsenite of soda, death occurred in six cases, whilst, quite unaccountably, in the seventh, the frog appeared normal after an interval of seventy-two hours. In the six cases of death, the times varied between the limits of eleven hours and a half, and fifty-two hours, with an average death-interval of 24½ hours.

The arseniate series of part II, showing three deaths against four survivals, would seem to indicate that one had come near the limits of the toxic dose ; the three deaths are too few to strike an average from, even were this not inadmissible on the grounds of inconstancy of result. In part II, then, we have a marked contrast between the toxic effects of the arseniate on the one hand, and of the arsenite and arsenious acid on the other ; the former not only yielding an inconstant result, but also in those cases where death did obtain, a considerably higher death-interval than the two lower oxides. This contrast is the more striking that the dose of metallic arsenic as arseniate, is in this series twice as large as that in the form of arsenious acid and arsenite of soda.

In part III, we pass to the consideration of larger dosage, and here the experiments were between arsenious acid and the arseniate alone.

Under (a), the experiments represent equal dosage of metallic arsenic. The doses being large, death occurred in each case, but the time differences are very striking here. Thus, for the four experiments in this series, we have, for the arseniate, the following results.

Death of Central Nervous System.	Death of Muscular Tissues.
9 hrs. 40 min.	9 hrs. 40 min.
8 " 45 "	21 " 15 "
9 " 30 "	22 " 30 "
9 " 20 "	9 " 20 "
37 hrs. 15 min.; Av. = 9 hrs. 20 min.	62 hrs. 45 min.; Av. = 15 hrs. 40 min.

Against these, we have for arsenious acid the following :

Death of Central Nervous System.	Death of Muscular Tissues.
1 hr. 10 min.	9 hrs. 30 min.
— 40 "	5 " 18 "
— 30 "	5 " 30 "
— 55 "	4 " — "
8 hrs. 30 min.; Av. = 52 min.	24 hrs. 10 min.; Av. = 6 hrs.

The ratios stand, then, arseniate to arsenious acid as 9 hrs. 20 min. : 52 min. ; and as 15 hrs. 40 min. ; 6 hrs.

Thus we see that, death being effected in each case, the death-interval varies greatly with the preparation used ; arsenious acid causing death of the central nervous system in one-tenth of the time taken by the arseniate,

whilst, with regard to the muscular tissue, the very lowest estimate makes the arsenious acid two-and-a-half times as active in point of time. It must be remarked here that the two numbers with the asterisk against them represent the times, not of death of the muscular tissue, but of systemic death, and that at these times in question the muscles all acted powerfully. Through some mischance, the time of destruction of muscular irritability was not noted; however, the error is in the direction of making the arseniate more active than is actually the case, probably very considerably so; this is borne out by the results obtained in part III (b), in which, with larger arseniate dosage, the death-intervals of the muscular tissue in no case fell as low as ten hours.

In part III (b), the arseniate was given in doses containing five times as much metallic arsenic as the arsenious acid doses; these latter were maintained the same as in part III (a). The results obtained here give as follows:

Arseniate of Soda.

Death of Central Nervous System.

3 hrs. 20 min.
2 " —
3 " 20 "
5 " 15 "
6 " 15 "

20 hrs. 10 min.; Av. = 4 hrs.

Death of Muscular Tissue of Anterior Limb.

27 hrs.
23 "
17 "
19 "
15 "

100 hours; Av. = 23 hrs.

Arsenious Acid.

0 hr. 45 min.
— " 50 "
— " 35 "
— " 50 "
— " 50 "

230 min.; Av. = 46 min.

7 hrs. 15 min.
5 " 40 "
3 " 15 "
4 " 45 "
6 " 10 "

27 hrs. 5 min.; Av. = 5 hr. 25 m.

Here, the dose being fatal in each case, the arsenious acid caused systemic death in one-fifth of the time taken by the arseniate; and this, though the dosage of metallic arsenic, as arseniate, was five times as great as that in the form of arsenious acid. The contrast between the times of death of the muscular tissue in the two cases is almost as marked, the arsenious acid acting four times as quickly.

We may point out here a result of some interest. On referring back to the tables with smaller dosage, it will be seen that the muscular tissue outlived but by a short time the central nervous system. Thus we have the average numbers 20.5 and 17 for the latter, against 23 and 21.5 for the former; whilst in these latter tables, we find very considerable difference between the death-intervals of these two tissues; this is well marked for the arseniate, but is much better marked for the arsenious acid; here, indeed, the ratio, one to six, is within the mark. We see, then, that, as we increase the intensity of our poison, the action on the two tissues, does not keep equal pace, but affects the more delicately balanced structure at a relatively increasingly growing rate; indeed, the action on the delicate structures of the cardiac and respiratory centres is so sudden as almost to be of the nature of shock. The loss of reflex excitability of the spinal centres is possibly considerably accelerated indirectly through the impairment of the circulation.

The results may be advantageously recapitulated. It will be remembered that the element arsenic is here given in various forms of combination; and that the dosage refers, in all cases, to the amount of metallic arsenic present. We find, then, that in its lower grade of oxygen combination,

whether in the form of arsenious acid, or in further combination with soda, as arsenite of soda, metallic arsenic manifests equal activity; that, in its higher grade of oxygenation, as arseniate, metallic arsenic manifests considerably less activity than in its lower grade of oxygenation.

The latter proposition rests on twofold evidence.

1. We have the fact, that, taking equal dosage of metallic arsenic, the doses may be so selected, that the lower oxide shall cause death, whilst the higher oxide is ineffectual.

2. The further fact, that, increasing the dosage so as to cause death in each case, the difference between the action of the two oxides appears as difference in rate of action, the lower oxide acting much more speedily; and this, even when the dosage of metallic oxide, in its higher combination, is five times as great as in its lower.

So much for the quantitative comparison of the action of different forms of arsenic combination. With regard to qualitative comparison, it is perhaps a little difficult to avoid classing difference in degree of action amongst qualitative differences; but certainly much of the difference in effect witnessed is rather in degree than in kind. The lower oxide is the more active; and, especially with the large doses, there is observed a degree of rapidity of action which scarcely allows of the completion of the injection before its appearance. Amongst these appearances are: the violent attempts at escape during the first few seconds following the injection; the subsequent quiescence, frog scarcely moving unless stimulated; the frequently observed attempts at vomiting; the early and marked effect on both respiration and circulation, the latter being judged of by the abdominal pulsations; the paralytic symptoms appearing towards the end; and, finally, the desquamation. All these have been more fully described elsewhere. (*Loc. cit.*, *Jour. of Physiol.*, vol. i, no. 4.)

Passing to the action of the arseniate, the absence of sudden violent action, with the gradual supervention of respiratory and cardiac failure, and finally of paralytic effects, is what one observes. But, with the larger doses, together with the more rapid accession of symptoms, retching and vomiting were witnessed; whilst desquamation, which, even with doses of 0.5 c.c. (8.45 minims) of a one per cent. solution of metallic arsenic, was not a well-marked symptom, became strongly marked when the same dose of the five per cent. solution was employed. Amongst other symptoms, frothing was observed, both with arsenious acid and arseniate, as an occasional symptom, and early in the action. Fibrillation of the muscles was observed on a few occasions with the arseniate.

It is clear that, qualitatively, but little distinction between the two oxides of arsenic can be made out; in fact, comparing them together, the contrast is to be found in the suddenness of the onset and violence of the symptoms, in the one case; in the delay and gradual accession of the symptoms in the other.

The very concentrated solutions of arseniate of soda, employed in the end experiments, containing, viz., 5 per cent. of metallic arsenic, caused a certain amount of shock, following directly on the injection; this occurred in three out of the five cases, but recovery soon followed, and in all a stage of comparative well-being preceded the onset of symptoms.

It having been shown that there is a very decided difference in action between the two oxides, the question yet remains: How does the element arsenic act? The fact of the immediate onset of symptoms, with the lower oxide, proves that one has here an arsenic combination having a direct and powerful affinity for the tissues. The fact of the delayed action of the higher oxide bears two interpretations: the arseniate may still affect the tissues directly, and as such, the affinity, however being much more feeble; or, it may not act as such, but only after it has suffered reduction to the state of the lower oxide,—reduction, of course, involving time.

With reference to this last view, there are certain facts of importance, viz. :

1. The fact that the arseniate is a body which, not unready, suffers reduction to the state of arsenite, under suitable conditions.

2. The fact that the process of reduction is constantly obtaining in the tissues.

3. The fact, according to Binz and Schulz, that such reduction from arseniate to arsenite is actually effected in the tissues.

4. The fact of the qualitative similarity in the symptoms of arseniate and arsenite poisoning—a similarity which might exist truly, though either salt acted as such, but which *a fortiori* must obtain if the arseniate act only after reduction.

It is true that Binz and Schulz also state that the reverse process, viz., reconstruction of the higher oxide from the lower, also obtains in the tissues ; but having shown, as these experiments undoubtedly do, that the lower oxide is by far the more active preparation, we should regard such reconstructive process as obviating, rather than as constituting, poisonous action ; and we should hold that, if such double process do occur, the explanation of the arseniate action on the reduction theory will have to be found in that the process of reduction considerably outbalances that of reconstruction. This, according to Schulz (*op. cit.*, Band xv), actually is the case ; in the papers just quoted, he gives tables showing the relative powers of reduction and oxidation of certain of the tissues ; the former process is there seen to outbalance by far the latter.

These points are by no means mere points of contention ; they have obvious practical issue. The element arsenic is a most important therapeutic agent, and a very widely used one ; it is clear, therefore, that a scientific use of such demands, in the first place, a knowledge of the relative activities of the various preparations employed. These experiments here relate to the frog, it is true, and, moreover, they refer to toxic doses ; but there can be no question as to their indicating which is the more active preparation when thus employed. It may be objected that the rate of tissue-change in the amphibian organism is no measure of that obtaining in the tissues of the warm-blooded animal ; and also that the argument from toxic doses to medicinal doses is not necessarily valid. It is precisely these objections which give practical importance to the reduction theory ; for, if the arseniate do not act as such, but only after reduction to the lower oxide, why use it at all ? It may be that in the small doses employed, therapeutically, the arseniate is practically all converted into arsenite, and the equal dosage now in use, justified ; but we are distinctly dealing with an unknown quantity, for of our definite arseniate dose administered we cannot say how much precisely will suffer reduction, how much will be eliminated as such. Next to qualification, the scientific demand is quantification ; and how, in the reduction theory, is this possible ? On the other hand, are there any advantages to be claimed for the therapeutic use of this drug such as might outweigh these advantages ? Garrod states the arseniate to be far less irritant than the arsenite, and these experiments are certainly in favour of this ; but, in the very large use of the arsenite now obtaining, is this irritant action practically a source of much trouble ? Does it justify us in employing unknown quantities when we have known quantities at hand ?

To conclude this subject, the result of some experiments of a different nature may be briefly stated.

The isolated ventricle of the frog's heart was fed with an artificial circulating fluid, and by means of Roy's tonometer the contractions were registered on a revolving blackened cylinder. To the circulating blood-mixture, solutions of arsenite and arseniate of soda were added. The following are the results obtained, given in tabular form. The quantities of arsenite or arseniate employed in each experiment represent the quantities requisite to destroy the contractility of the cardiac tissue.

Both solutions were distinctly alkaline, the arsenite indeed strongly so.

Arsenite of Soda 1 per cent. metallic arsenic=2.5 per cent. about, Na ₂ AsO ₃ .		
May 9th T. of Room=17°C.	29cc.	
" 10th " " =18°C.	33	
" 11th " " =18°C.	44	
" 11th " " =18°C.	34	
" 12th " " =23°C.	33	
" 13th " " =18°C.	44	
	221	

Therefore Av. =37cc.

*This number 24c.c. was below the mark. The beats on this occasion not being completely abolished.

Arseniate of Soda, 5 per cent. metallic arsenic=11 per cent. about, Na ₂ HAsO ₄ .		
Aug. 29th T. of Room=18°C.	24c.c.*	
" 30th " " =15°C.	33	
" 31st " " =17°C.	23	
Sept. 1st " " =17°C.	33	
	116	

Therefore Av. =26c.c.

Again, we see in these experiments a similar relationship between the two oxides to that already found, for, to produce the same effect, viz., abolition of contractility, far larger quantities of the arseniate (compare the percentage strengths) are required than of the arsenite. The arseniate, indeed, is scarcely, if at all, more poisonous than the neutral salts of sodium, the chloride, bromide, iodide*; it behaved, moreover, just like these salts in other respects, and after the contractions had been reduced to a minimum, the substitution of fresh blood for the poisoned blood restored the contractility of the muscular tissue.

These results tend rather to confirm the reduction theory, for the reduction which is effected by the small amount of tissue represented by the ventricle must be very minute, and, when effected, if such do occur, it will be most probably swept away and diluted with the whole mass of circulating fluid, so that, practically, the ventricle would be in contact with the un-reduced arseniate, and this these experiments show to be almost inert.

On the other hand, we note that the arsenite is decidedly more poisonous; and, moreover, in two experiments, in which, after reduction of the beats to a minimum, fresh blood was substituted, the contractility showed no recovery.

It will be unnecessary to recapitulate; it is sufficient to say that these last experiments with a single tissue confirm those with the entire organism in their results, and, in particular, they render more probable the reduction theory by showing the absence of direct affinity of the arseniate for certain at least, of the tissues, ganglionic and muscular.—*British Medical Journal*, December 9th & 16th 1882.

* See paper, *Transactions of the Medical and Chirurgical Society*, vol. lxxv, p. 191,



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THE DIFFERENCE OF BEHAVIOUR OF THE SAME
SUBSTANCE OR AGENT IN DIFFERENT
QUANTITIES.

IF it is hard to believe that infinitesimal quantities of matter act, it is much harder to believe that the same substance or agent acts not only in different but in opposite ways in different quantities. Homœopathy deals with both these facts. Indeed they form the basis of the cardinal doctrines of Hahnemann's system. Being facts they are verifiable. But people in general and orthodox physicians in particular, being under the sway of pre-conceived ideas, refuse to verify them in the only way they can be verified, that is, in the way they have been arrived at, namely, by actual trials. Medicines were tried in health, eliciting symptoms; they were then tried in lesser quantities in disease presenting similar symptoms; and the result of these two sets of trials was that under their operation the symptoms disappeared, the patients being left in health, or in other words the disease was cured. This is a fact in nature; duly expressed or enunciated it constitutes a law of healing, and as such it is a precious truth. Those who are in possession of this truth may afford to laugh at the ignorance of it, and the ignorant opposition to it, displayed by the professors and practitioners of the healing art.

But as knowledge of the truth or ignorance of it literally affects the whole of humanity, those who have the privilege of knowing and associating the truth cannot possibly remain idle, apathetic and indifferent about it. They must look upon it as their bounden duty to help in the diffusion of a knowledge of that truth.

And when they fail to bring conviction directly home to the minds of physicians and the public, they must endeavour to remove the prejudices that stand in the way of even the verification of the truth. It was with this object that we gave, in our last number, a resumé of the admirable Paper of Dr. Blackley, read at the last British Homœopathic Congress, on the influence of infinitesimal quantities in inducing physiological action. In this number we propose to lay before our readers certain facts of ordinary physical science which analogise strongly with the startling facts revealed by Hahnemann in the department of biology. Hahnemann's law of healing is a physiological law, and there is so much complexity in the processes of physiology compared to those of ordinary physics, that there might be different interpretations of the same phenomenon, and even the same phenomenon might be viewed in different lights by different observers. We do not say that this may not be the case in physics. Indeed this must be the case in every field of inquiry whenever we have complexity to disentangle, and in proportion to that complexity. The phenomena of physics being much less complex than those of physiology, the chances of difference of opinion and of interpretation are less in the former than in the latter. Hence whenever physiological phenomena find their analogues in physical phenomena, they receive, not indeed strong support of their existence, which is independent of such analogies, but strong corroborative evidence of that existence.

Attempts have been made from time to time to bring forward these physical analogies of homœopathic action. Dr. Sharp, in his essay on *Antipraxy*, published in 1874, pointed out analogies in magnetism, chemical affinity, heat, electricity and light. Of these that drawn from the action of heat in different quantities to produce chemical combination and decomposition is, in our opinion, the closest in point, as illustrating the action of different doses. Other attempts, such as that of Dr. Madden in 1871, of Dr. Hale

in 1874, and more recently of Mr. W. Deane Butcher in 1881, are rather illustrations of similarity of action, than of the opposite action of the same substances or agent in different quantities.

The best analogies in this direction have been furnished by the discoveries of Mr. Crookes in radiant matter; and by the facts of thermo-electricity.

It must be known to our readers that in the ordinary state of matter, solid, liquid or gaseous, the direction of a current of Electricity through it is from the positive to the negative pole. This holds good down to a certain attenuation of even gaseous matter. Beyond this state of attenuation, the direction is reversed, passing from the negative to the positive. Thus if in a glass tube, containing dilute sulphuric acid, a globule of mercury be dropped so as to be immersed in the acid, and if wires leading from the poles of a voltaic battery be plunged into this acid at the two open extremities of the tube, it will be observed that the globule of mercury will move when the circuit is completed, and move in a direction from the positive to the negative. In ordinary Geissler's tubes filled with attenuated gaseous matter when the terminals are connected with the terminals of a Ruhmkorff's coil, the current will be found to pass from the positive to the negative pole. But when the degree of exhaustion in these tubes is carried beyond the 80,000th of an atmosphere, the current is found to pass from the negative to the positive terminal, or as generally happens, direct from the negative without any reference to the positive pole. It is true, as our readers are aware, that in Ruhmkorff's coil there are actually two currents in the secondary wire, alternating in rapid succession, the *direct* or that resulting from *opening* the circuit in the primary, being of shorter duration, but of higher potential, and the *inverse*, or that resulting from *closing* the circuit, being of longer duration, but of lower potential. By actual experiment with globules of mercurial as in the previous case we have succeeded in demonstrating the predominance of the one current over the other, and thus showing which is, in point of fact, the positive pole in Ruhmkorff's coil, so as to remove all fallacy about change of direction of current according to the state of attenuation of matter.

In the department of thermo-electricity we have equally strong analogy bearing upon this point. It is known that if we take wires

or bars of two dissimilar metals and join them at one of their extremities, and connect the other extremities with the terminals of a galvanometer, we find a current of electricity developed the moment the junction of the metals is heated or cooled, the direction being different according as the junction is heated or cooled. Thus if we take two bars of Bismuth and Antimony and join them at one of their extremities, and heat the junction, a current of electricity will be found to proceed from Bismuth to Antimony across the junction. If the junction be cooled, the current will proceed from Antimony to Bismuth across it. Now heating and cooling are but manifestations of different degrees of heat. So that in this simple experiment, which was originally devised by Prof. Seebeck of Berlin, and which applies to all dissimilar metals, and even to the same metal in different states of molecular aggregation, we see opposite effects from the action of different quantities of the same agent, heat, on the junction of two dissimilar metals, or at the dividing line of the different states of molecular aggregation of the same metal.

If there be a lurking suspicion in the mind about the difference between heating and cooling, consisting in only different degrees of temperature, it is removed by the remarkable fact that has been discovered that in the case of some metals, at least, the direction of the current is found to be reversed when the heating is carried beyond a certain temperature. Thus if we take copper and iron wires, and twist them at one of their extremities, and heat the junction, we find the current proceeding from the copper to the iron across the junction when the temperature of the junction does not exceed 300°; but the moment the temperature rises beyond that point, the current is reversed at once. Here we have positive evidence of the opposite action of the different quantities of the same agent. We doubt not, but that if experiments are made, this will be found to hold with other dissimilar metals than iron and copper.

We look upon the analogies brought forward in this article, we believe for the first time by ourselves,* as the real analogies

* If we are not mistaken we were the first to have brought these analogies to the notice of the public and the profession in our lectures on thermo-electricity at the *Indian Association for the Cultivation of Science*, we have been drawing the attention of our audience since 1878 to the thermo-electric analogy, and since the discoveries of Mr. Crookes in radiant matter we have lost no

of homœopathic action, of the opposite action of different doses, which Dr. Sharp has christened Antipraxy. The functions of life are chiefly carried on, in higher animals, at least, by means of the nervous system, regulating, governing and modifying the various processes of nutrition, assimilation and secretion. Even the simple process of osmosis is under its control. It is not yet known in what way is this control exercised. From a consideration of the structure of nervous apparatus singularly resembling voltaic cells with conductors proceeding from them, from the fact of electric currents having actually been detected in the nervous system, we are led to believe that currents, if not identical with, at least akin to, electric currents are continually circulating from nerve-cells along nerve-fibres or tubules to periphery or their terminations and from periphery or these terminations back to the nerve cells. These currents it is, which regulate osmosis, absorption, deposition, &c., just as electric currents are known to regulate processes somewhat similar in galvano-plastic cells. The currents have a certain range of intensity and a certain fixed direction in health. It is variation in the intensity and direction of these currents which are calculated to disturb the ordinary functions of the various tissues and organs of the economy, in other words, to create disorder or disease. Such being the case, whatever can moderate or heighten, as the case may be, the intensity of these currents, and change their direction, will have the effect of counteracting their morbigenic tendency, in other words, of restoring health. Hahnemann has shown that whatever is capable of producing symptoms of disease in massive doses is capable of removing those symptoms in smaller or infinitesimal doses. We have daily clinical verification of this fact. Dr. Sharp has gone a step further, and shown that even in health some drugs, at least, produce different and even opposite effects in different doses. We have seen that the

opportunity to point out their bearings upon homœopathic action. In our lecture on "Hahnemann; his place in the History of Medicine," delivered before the Bethune Society on the 30th April, 1880, we said in conclusion: "But the system (Hahnemann's) is not without analogical support from other departments of science. * * * Witness the phenomena of thermo-electricity, in which, in some cases, at least, the direction of the current changes with the variation of the temperature. Witness, last of all, the recent researches of Mr. Crookes, in which you have ocular demonstration of the infinitesimal, and reversal of the importance and activity of the poles in vacua." (See *Proceedings of the Bethune Society* (Session 1879-80); or *Cal. J. Med.* for May 1882, p. 182.)

same agent or substance produces opposite phenomena in different quantities, phenomena, which being the reversal of the direction of electric currents, are, however rudely, analogous to the phenomena of the nervous system, which is the acknowledged regulator and controller of the phenomena of Life. Thus, far from there being absurdity in the action of homœopathic remedies, they are supported by the strongest analogies that can be drawn from physical science.

If the view we have taken of functions of the nervous system, a view which we expressed so long ago as 1867 in our address "On the Supposed Uncertainty in Medical Science," delivered before the 4th Annual Meeting of the late Bengal Branch of the British Medical Association, be correct, it will throw light on many obscure points in therapeutics. It will help in our understanding the ultimate process by which cures are brought about, indeed, by which alone cures can be brought about, namely, by regulating the abnormal intensity or by reversing the abnormal direction of nerve-currents. It will help in our understanding the reason of toleration of medicines as well as aggravations from medicines. It will show the possibility of more than one method of bringing about cures, though there might be but one which is the best and the most direct. For whatever can modify the intensity and direction of abnormal nerve-currents will succeed in removing disease and restoring health. Sudden emotion, such as fright or joy or anger, may do it. A heavy fall may do it, and indeed has been known to remove grave pre-existing diseases. Mesmerism may do it. Strong faith may do it; without this it is impossible to understand the rationale of cures brought about by charms and amulets. Change of scene, change of climate may do it. Simple change of diet may do it. Drugs acting homœopathically, antipathically or allœopathically, may do it, and we find them daily and hourly doing it, the difference consisting in the length of time they take in accomplishing it, and in the general comfort or otherwise to the patient that attends their operation.

A MOST UNFAVORABLE SYMPTOM IN CHOLERA.

Reduction of temperature of the surface is characteristic of the collapse of cholera, which has been very properly called its algid stage. The skin, especially of the extremities and of the tip of the nose, is almost icy cold. The tongue and the mouth generally, even when no ice is used, feels to the touch icy cold. The temperature at the axilla indicates also great reduction of temperature, varying from 2 to 7 or 8 degrees below normal. Notwithstanding this remarkable reduction of surface temperature, the patient himself does not feel it. He does not complain of cold, but the very reverse, he complains of great heat, sometimes burning heat.

It is an interesting, nay a very important, question to determine, if this anomaly—an actually icy-cold surface with a sense of burning heat internally—is in reality an anomaly, the reduction of temperature being general throughout the body, and the feeling due to perverted innervation dependent upon changes in the blood; or if this anomaly is apparent only, being the result of the unequal distribution of heat in the body, there being concentration of heat in the inner parts, and diminution of heat in the periphery, more especially in the extremities. The latter view seems to be countenanced by the fact that the rectum and the vagina sometimes indicate higher temperature than normal, to the extent of 2 or 3 or more degrees. More extended observation, and the actual ascertainment of the temperature of internal parts and organs, are necessary before the question can be answered positively one way or the other. In the absence of such data all that we can say is, that the increase of heat in the internal parts and organs cannot be as great as is the decrease of heat in the external surface. For if there is such increase, how is it that it is not conducted to the surface? The conductivity of the skin and of the subcutaneous tissues could not have deteriorated so much as to fail to conduct to the surface such enormous increase of heat beneath them.

We are inclined to believe, therefore, that there is general reduction of temperature of the body in the collapse of cholera, and the sensation of heat so painfully experienced by the patient is due more to perverted nerve-function than to actual increase of heat in the internal parts. A low temperature with pulselessness or a barely perceptible pulse at the wrist is, if we may

so speak, normal collapse. The danger to life is in proportion to the lowness of temperature. But there is another condition which is of much greater danger, and that is an elevated temperature of the head or of the chest or of both coincident with coldness of the extremities and pulselessness. This is what we may call an abnormal collapse. We are not in a position to say if this condition is ever seen in untreated cholera; but we have often observed it developed in the course of treatment, and we are inclined to believe that it results from the action of drugs. But whether it is a genuine phase of the disease itself, or the effect of drug-action, it is a most dangerous condition, and demands the most prompt attention on the part of the practitioner. Dangerous in itself, it becomes hopelessly so when the practitioner, instead of appreciating its gravity, begins to congratulate himself on having succeeded in removing one of the symptoms of collapse—a low temperature. Nothing could be a greater and a more dangerous mistake than this. For the practitioner is then led to push on drugs which have brought on this state of things with greater vigour, and thus to hasten the fatal end.

On the contrary, if the practitioner is at all observant and reflecting, his first duty should be to discontinue the medicines under whose operation, or coincident with whose administration, the abnormal elevation of temperature has taken place, and to think of something else whereby to avert the mischief. It is not easy to point what these somethings may be.

In the case of heat of the head alone, the first thing that should be done is to have the head shaved at once, and this measure should be carried out even in the case of females. The physician should on no account yield to prejudice or delicacy. If he does, he is sure to lose his patient. The very circumstance of the removal of hair from the head would cool it, and would favour the application of cold water or ice to it, and such application should be continued as long as heat continues, or so long as it is not disagreeable to the patient. As for drugs, *aconitum* may be tried in the very beginning. We would prefer a higher, say the 30th, to a lower dilution, or the mother tincture, which last we use in collapse with general reduction of temperature. *Aconitum* should give place to *Belladonna* when, after a couple of doses or so, it ceases or fails to do good, and when delirium supervenes.

We have not yet tried it ourselves, but we would strongly recommend the trial of *Arnica* in such cases, as its pathogenesis contains the remarkable symptom: "heat of the head, the rest of the body being cool."

In cases of heat of the chest alone or associated with heat of the head, we have hardly any suggestion to make, as we have invariably found them end fatally. Here also in the very beginning *Aconitum* may be tried, but we think our main reliance may be placed on *Phosphorus*, or if there be much cold, clammy sweat, on *Antimonium Tartaricum*. We make these suggestions theoretically. We have had no practical experience with these drugs in such cases. We would therefore invite our colleagues to favor us with whatever experience they may have in the matter.

In this connection we would beg to offer our humble advice to our colleagues not to make light of any case of cholera. Cholera is a disease which, under a few general resemblances, presents the greatest diversity. It is emphatically true of it that every case of cholera is an individuality in itself, and taxes to the utmost the skill of the physician to bring out that individuality for its successful treatment. If called in to treat the disease in its earliest stage the practitioner should inquire minutely into the cause, and however unwilling the patient and his friends may be to admit errors of diet, he will find that in ninety-nine cases out of a hundred error of diet has been at the bottom of the disease, and he should direct his remedies accordingly. He should next direct his attention to the progress of the case, and the peculiarities of the symptoms in each stage. Even the manner in which stools are evacuated would help him in the selection of the proper remedy. The restlessness, which is so often a distressing symptom in cholera, has its peculiarities which require careful differentiation. Indeed, routine should be religiously avoided, and individualisation should be carried to the minutest details in the treatment of this dire disease. Where *Apis*, *podophyllum*, *nuxvomica* or *colocynthis* would lead the patient from the verge of death to life, *arsenicum*, *veratrum*, *cuprum* or *secale* blindly given would prove disastrous.

PUBLIC NEGLECT OF HOMŒOPATHY IN CALCUTTA.

Elsewhere will be found a letter from an intelligent, young homœopathic practitioner of this city lamenting, that while Bombay has taken the initiative in establishing a Homœopathic Hospital, Calcutta has done nothing in that direction. The writer approvingly quotes what we said on this subject in our last number, and attributes the strange fact of public neglect of homœopathy in Calcutta to our want of zeal, our selfishness, and our unpractical character. "Our" has a wide signification, and our correspondent has not particularized individuals or classes who are included in it. Non-believers in Homœopathy cannot be included in it, as having no faith in it they cannot be charged with selfishness and want of zeal in not helping its public recognition in the shape of a hospital. Believers in homœopathy are the only people who can be included in it; but of these we have two classes, professional and lay. Both these classes are interested in the spread of homœopathy, and it is the duty of both these classes to see its blessings extended to the poor. Both these classes come under the charges brought forward by our correspondent. But we must be impartial in adjudicating the share of blame to each.

Accepting the position that laymen believers can only derive their knowledge of the system from what they see of it in actual practice, and from what they can learn from professional believers, the onus of enlightening the public regarding homœopathy falls ultimately upon professional men who have adopted homœopathy from conviction. The question therefore narrows itself to seeing if the professional adherents of homœopathy in Calcutta have been sufficiently alive to their duty in properly representing the claims of homœopathy before the public.

Our young friend, whom we are happy to see to be so zealous in the cause of homœopathy, has no doubt taken care to acquaint himself with the history of the system in this country. If he has done so, and if he has no bias for or against any body, he must have seen that one practitioner of medicine, at least, a countryman of his own, did, immediately after public confession of his faith in the truth that is in homœopathy, start a journal for its advocacy, not indeed to proclaim it as the ultimatum but to

represent it as the most advanced point yet reached in the domain of therapeutics, and at the same time opened a dispensary at his house for the gratuitous treatment of patients on the principles of the new system. Both the dispensary and the journal are continuing to the present day.

The benefit derived from homœopathic treatment was so great by contrast with that from ordinary treatment in existing dispensaries, that the new dispensary, soon after being opened, began to attract numbers of patients, and these increased so rapidly that within a year of its establishment it was thought necessary to keep a record of the cases that came to it for treatment. A regular record of new cases was thus kept from July 1868. A register of old patients was not kept till from the latter end of June 1872. Tables of attendance at the dispensary from July 1869 to December 1873 were out of curiosity compiled; they were found to indicate such growing appreciation of Homœopathy by the people, especially by the poorer classes, that the Editor published them in the number of the *Calcutta Journal of Medicine*, for Jan. and Feb. 1874, in the hope of drawing public attention to homœopathy and of urging its claims to public recognition. These tables were prefaced with the following remarks, to which we beg to draw the attention of our readers in general and of our correspondent in particular, that they might see in what spirit were they made, whether in that of self-glorification, or in that of an earnest desire to secure for homœopathy such recognition from Government and the community at large, as is accorded to the orthodox system of medicine.

“For the following tables of new admissions into his Out-door Dispensary, the Editor is indebted to the kindness of Babu Mahesha Chandra Ghosha. The tables speak for themselves. They unmistakably point to the progress homœopathy has already made and is making. Indeed the limit to the number of patients is only prescribed by the limit of the time that we can devote to this object. Already the encroachment upon our time is serious enough to affect our private practice. The morning is the time when people want the attendance of their doctors, and it is the entire morning that is engrossed in the work of the Dispensary. Nevertheless we have been going on with the work without any patronage, or expectation of any patronage, from out-side, and

we intend to go on with it, whatever the pecuniary consequences to us personally may be, for the sake of the life-giving truth which Hahnemann had the privilege of bringing to light, and which it is the duty of all, who have the privilege of appreciating it, to be the humble instruments of bringing within reach of every suffering fellow-creature.

"It has been represented to us that by thus giving gratuitous medical aid systematically every morning, we not only injure ourselves but likewise the profession. For it has been argued that at least a part of the number of patients, who avail themselves of this gratuitous aid, would, but for it, have paid for it, and thus so much money is withdrawn from the profession. We readily admit this to its fullest extent, and we do not even deny that such charities are liable to unpardonable abuses. In fact we feel we are often made the victims of this abuse. We see that a considerable portion of our out-door patients can pay for the advice and medicine they receive, and still they do not. We nevertheless continue the practice on the principle that better far that the rich should abuse the charity, than that the poor, the really needy, should suffer from want of it. And the principle has peculiar force in the case of homœopathy. For strange to say, while homœopathy has charitable hospitals and dispensaries in the North-West,* it is still in lack of these in Bengal and in

* "It is due to that philanthropic gentleman, Mr. Ironside, that we should here repeat what we have often said in these pages, that these hospitals and dispensaries in the North-West, (at Benares, Allahabad, and Agra), owe their existence almost entirely to his patronage and indefatigable exertions. One drawback of these institutions is, that their professional management is in the hands of amateur practitioners, and not of regularly trained medical men. But whose fault is that? Certainly not of Mr. Ironside. Having benefited by homœopathy, his benevolence did not allow him to have its blessings confined to himself, he was anxious that the whole community, the poor in particular, should partake of those blessings. And if he could not get professional men to take up the cause, what could he do? What but start at once with the defective materials at hand? All honor to the amateurs for having upheld the cause of homœopathy at this emergency. But it is high time that the profession should not allow this opportunity to slip of being of service at once to humanity and to science. For, however brilliant the results may be in these institutions, their statistics, so long as they continue under the management of lay practitioners, cannot be made to contribute to the progress of medical science, and the reasons are obvious and not unreasonable. By symptomatic treatment, cures, and often marvellous ones, may be brought about by the lay practitioner, but the simple

the Metropolis. We publish the following tables, not for the purpose of writing our own eulogies, but simply to show that, however misrepresented by Orthodoxy and consequently unrecognized by Government, homœopathy is being largely appreciated and recognized by the people, and that, therefore, at least one homœopathic institution, combining in itself a hospital and a dispensary, has become a necessity, and must be allowed to have, with other hospitals and dispensaries, equal claims upon the patronage of the state and the public, for its foundation and support. However willing a single individual may be to meet the necessity to the best of his means and opportunities, it must be admitted that it is really hard for that individual to bear upon his shoulders the burden of the many. Besides, however steadily the work might have been done in the past, nevertheless when it has to depend upon one individual, it has to a large extent to depend upon haphazard and chance, and such work should not be allowed to depend upon chance and haphazard."

Upwards of two years passed away, and yet no notice was taken of the arguments put forward above on the necessity of a homœopathic hospital and dispensary in Calcutta. To draw the attention once again of the Government and of the public to the growing importance of homœopathy, the Editor published the statistics of attendance at his dispensary for 1874 and 1875 in the *Calcutta Journal of Medicine* for July 1876; the substance of these statistics was given in the daily average of cases as follows:—

New	Old	All		
4.9	...	...	... for	1869
5.8	...	...	... „	1870
11.4	...	...	... „	1871
16.9	62.34	78.24	... „	1872
23.7	76.14	99.94	... „	1873
23.23	76.45	99.68	... „	1874
28.80	84.68	113.46	... „	1875

statement and enumeration of these cures is not sufficient for the advancement of medicine. The actual diseases, with their pathological references, must be given before any thing can be made out of the cases of cures. This can only be expected from men who have had proper training in the science and in the art of therapeutics, which includes collateral sciences, the most difficult and recondite in their nature."

The following remarks were appended as additional reasons to what were advanced in 1874 for having a homœopathic hospital in Calcutta, in order that the benefits of the new system may be more widely and more freely extended to the poor.

“The rapid rise in the number of patients from year to year resorting to homœopathic treatment is remarkable. The stationary character of 1874 was due to the Editor’s inability to attend the Dispensary, thanks to his frequent and serious illness in that year.

“We are certain that if we had a steady organization—a paid establishment, and if we had time and health to enable us to devote due attention to the existing demand for homœopathic treatment, that demand would have been indicated by much larger figures than are shown in the above tables. It is not only from the city and the suburbs but in no small numbers from the remote mofussil, that patients come to us for treatment. And when we say that at least three fourths of this number are benefited by such treatment, we are within and not out-side the limits of fact. Such being the case, it is the duty of the community to see that the benefits of the system are extended as much as possible.

“The work of the Dispensary has been, it is true, to a large extent, a labor of love to us, but it has not the less been imposed upon us by a sense of duty—duty to a life-giving truth, and duty to suffering humanity. And therefore not only willingly but cheerfully we have hitherto been doing that work. But we feel it a duty as well to tell the public that that the burden we have been bearing upon our shoulders is in reality the burden of the many. What we said in reference to this matter when we first published the statistics of our Dispensary, we say again, that “however steadily the work might have been done in the past, nevertheless when it has to depend upon one individual, it has to a large extent to depend upon haphazard and chance, and such work should not be allowed to depend upon chance and haphazard.” The inevitable, though thanks to the available gratuitous services of the Editor’s revered uncle, Babu Mahesa Chandra Ghosha, only partial neglect into which the Dispensary fell in 1874, verified to the very letter the misgivings to which we gave utterance in the above sentence. Time therefore has arrived

when the community and the Government should no longer remain indifferent to the claims of homœopathy for the foundation and support of an Institution dedicated to the extension of its benefits to the suffering poor.

“There is hardly a part of the civilized world where homœopathy has not met with public recognition in the shape of public institutions either for teaching its doctrines or for diffusing the blessings of its treatment. In the United States of America, it has been received with all the enthusiasm of a youthful world, and there are Colleges and Hospitals there in abundance. In Europe there are also Hospitals and Dispensaries, and even chairs are being introduced in the very heart of the orthodox institutions. In Central and even in South America homœopathy has planted its banners. The other day we learned it to our surprise and joy that in the little Republic of Uruguay there is an Insane Asylum in charge of a homœopathic physician. Is it not a melancholy fact that in Calcutta, where we have so many staunch advocates of homœopathy, and where so many are receiving the benefits of that benign system of treatment, there should not yet be a single institution where those benefits may be publicly availed of by the poor?”

What was the reception which the statistics and the above further considerations on the necessity of a homœopathic hospital in Calcutta met with? The *Hindoo Patriot* in noticing the number of the *Calcutta Journal of Medicine* containing these statistics, among other things, said, “The present number of the *journal* contains an important article, showing the necessity of establishing a Homœopathic Hospital in Calcutta. Dr. Sircar maintains a homœopathic Dispensary in his own house, at which he treats all patients free of charge. The following statement shows the attendance at this Dispensary :—

	1874		1875
Hindoos ...	26,543	...	29,089
Mahometans ...	8,262	...	10,401
Christians ...	1,581	...	1,935
Total...	36,386	...	41,425

“These figures not only show the active service which Dr.

Sircar is rendering to the cause of humanity, but also the increasing popularity of the homœopathic system in Calcutta."

It would have been well if the *Hindoo Patriot* had confined itself to pointing to "the increasing popularity of the homœopathic system in Calcutta" as deducible from the attendance at the dispensary in question, and not drawn any other inference therefrom. But editors are a class of beings who never let slip an opportunity of giving out their opinions however unwise, and the editor of the *Hindoo Patriot* unconsciously retarded with progress of homœopathy in Bengal by making an unnecessary remark. He roused the ire and jealousy of some practitioner of homœopathy in this city who, though fully knowing the Dispensary and the person who maintained it, came forward in a local paper under the anonym of "Self-glorification," and insinuated that the statistics were a hoax manufactured for purposes of self-glorification! What followed we must forbear to relate, as we abhor descending into names and personalities. Our correspondent is no doubt aware of what followed; if he is not, we would simply refer him to the numbers of the *Calcutta Journal of Medicine* for Aug. and Sept. 1876, where he will see what professional jealousy can do, how under its influence a medical practitioner did not scruple to stab a brother practitioner by admirable manœuvre both in the dark and in broad daylight, even though that were to arrest the progress of reform and truth.

Our correspondent has very kindly asked us to take the lead in the matter. Without meaning or wishing to take the lead, we did, as we have pointed out, endeavour to take the initiative so long ago as 1874, and again in 1876, and the consequence was that we were roundly charged with falsehood. Now, in order to advocate and urge the claims of homœopathy upon public recognition what could be the best arguments to put forward? What but facts to show that the system is successful in practice and that it was growing in popularity? How few are the facts that can be gathered from private practice, and what insuperable difficulties are there in homœopathic private practice cannot be unknown to our correspondent. Under these circumstances what better could have been done than what was done, namely, to place before the public the statistics of attendance at a Dispensary where cases were regularly entered daily? Mere assertion that homœopathy

was successful, that people were appreciating it more and more, could not possibly succeed in commanding the confidence of the public. Such assertion must be supported and substantiated by facts. And this is what we endeavoured to do.

If, as requested by our correspondent, we were to move in the matter again, what better could we do than bring forward the subsequent statistics of our dispensary which still exists, and which, thanks to homœopathy, still attracts larger numbers of the suffering poor than it did before. In addition we shall be glad to publish statistics of other homœopathic dispensaries that are maintained by duly qualified medical men. These combined statistics would show the growing importance and popularity of homœopathy, and would constitute the very best argument for founding an institution from which the poor can derive all the advantages that homœopathy can confer on suffering humanity. If our correspondent is earnest and sincere in what he has written to us, if he has really at heart the interests of homœopathy, if he thinks with us that the public ought to be satisfied with facts, if he has any misgivings about the accuracy of the figures that we gave, let him comply with the invitation that we gave to all, "come and see," let him watch the working of our dispensary and examine its records, and then let him, not for our sake, but for the sake of homœopathy which has so long suffered,—let him with judicial impartiality say whether the attack that was made upon us was or was not the most unfounded and the most unjustifiable that has ever been made by a professional man against a brother professional. We are quite willing to forget and forgive the past, and we shall be glad, indeed, deem it a privilege, to do anything that will really advance the cause of homœopathy, not, as hitherto, dissevered from medicine and the profession, but as an integral part thereof, and we shall with head and heart co-operate with any body who wishes and works for that advancement.

TREATMENT OF DIABETES.

(Translated from the French of Dr. Jousset in L'Aart Medical for January 1883.)

Diabetes is a malady of the class of cachexiæ, characterized by the presence of sugar in the urine and by a peculiar cachexia of which the tendency is to gangrene and tuberculisation.

Diabetes is thus distinct from *glycosuria*, which is a symptom connected with very diverse diseases, and even with certain physiological states, such as pregnancy and lactation. In these cases, *glycosuria* is absolutely subordinated to the disease or to the physiological state on which it depends, and does not constitute a disease.

Diabetes presents for study five forms: the common form, the benign form, the acute form, the consumptive form, the irregular form.

I. *Prophylaxis*.—The prophylaxis of diabetes is very little advanced. We advise persons disposed to diabetes by heredity or by constitution to abstain from alcoholic and acid drinks taken in large quantities, to protect the body by woollen clothing from humid cold, to avoid fatigue resulting from intellectual work pursued at night, to take to muscular exercise.

II. *Treatment of the common form*.—*a. Regimen*. We ought to speak in the first place of regimen, since all the schools agree in regarding it as necessary in the treatment of diabetes. This regimen, which consists in abstaining from farinaceous and saccharine matters, constitutes the *palliative treatment of diabetes*.

This regimen is composed of meat, of fish, of eggs, of milk, of butter, of cheese, of green legumes, of red fruits, and according to Trousseau, of all species of fruits in which is comprised the raisin. In the beginning of diabetes when one can obtain of regimen all that it can give, I am of opinion that raw and cooked fruits ought to be entirely avoided. I noted once at least a great aggravation by the use of melons. The gluten should replace the dough for porridges; it serves to make a bread which, notwithstanding all the perfection which they can bring to it, is very disagreeable; nevertheless some diabetics get accustomed to it. To those who absolutely refuse to take gluten bread we may allow a very small quantity of ordinary bread well baked, and advise them to eat hard eggs in the manner of bread.

Muscular exercise pushed to perspiration, walking, hunting, gymnastics are exceedingly useful to diabetics, and Bouchardat insists particularly upon this mode of treatment.

The principal medicines for diabetes are *nitrate of uranium*, *phosphoric acid*, *arsenic*, *nausea vomica*, *creasote*, *chamomilla*, *opium*, and *curare*.

(a.) *Nitrate of uranium* is for us the principal medicament of diabetes. This substance, which produces an artificial diabetes in dogs, reduces considerably, or even causes to disappear entirely, the sugar in diabetics, sometimes in the absence of all regimen. There have been even a number of complete and definite cures by this medicine. In cases where the *nitrate of uranium* has not been able to bring about a cure, it almost always produces a diminution of the sugar, and a most notable amelioration of the general condition.

I habitually begin with the 6th dilution, and descend in the posological scale to the 1st trituration (decimal), stopping at the dilution which modifies for good the state of my patients.

Curie and Ozanam very particularly advise strong doses, but Love has obtained the best results from the 6th dilution, and I can add my testimony to his.

(b.) *Phosphoric acid*.—Phosphoric acid contains in its pathogenesis excessive thirst, polyuria, emaciation, debility, and the production of sugar in the urine; It is thus a medicament of diabetes, and Richard Hughes places it in the first rank. In the cases which this physician has related in support of his opinion, phosphoric acid has succeeded as well in the crude state, in doses of 14 grains of the anhydrous acid in 6 oz. of water, three dessertspoonfuls per day, as in the 6th centesimal dilution.

Richard Hughes has endeavoured to specialize the indications of nitrate of uranium and phosphoric acid according to the nature of diabetes. Diabetes depending upon the nervous system demands phosphoric acid; that which proceeds from dyspepsia indicate nitrate of uranium; and that which is connected with the liver will be cured by chamomilla. These are physiologico-pathological hypotheses which we believe to be prejudicial to therapeutics, and in my opinion it is better to seek for the indications of the medicaments in the totality of the symptoms than in more or less special theories of the etiology of diabetes.

(c.) *Arsenic*. This medicament corresponds to the majority of the symptoms of diabetes, but it is specially indicated by furuncles, anthrax, gangrene and diarrhoea. Yeldham and Grauvogl have each had a cure by this medicament, and Jacoud affirms to have cured several corpulent diabetics by arsenious acid and regimen. This physician prescribes in the beginning two milligrammes of arsenic per day, and arrives progressively to eight, ten, twelve or more millegrammes according to the tolerance of these patients. I am well satisfied with the first centesimal trituration.

(d.) *Nux Vomica*.—*Nux vomica* is especially indicated in diabetic dyspepsia, and in these cases it will render daily service in feeble doses, 6th to 12th centesimal dilutions; but in stronger doses, mother tincture and first triturations, it acts upon the disease itself and may cause the sugar to disappear. Jacoud employs strychnine to the limit of its physiological action, and affirms to have seen at least temporary cures.

(e.) *Creasote* has appeared, in several cases, to successfully modify the state of the diabetics, but I have not been able to fix either the value or the indications of this medicament.

(f.) *Chamomilla*.—It is, in the *Manual of Therapeutics* of Richard Hughes that we find *chamomilla* indicated in diabetes of hepatic origin. Dr. Sharp has published two cases of cure by *chamomilla* in the first dilution without any great restriction of diet.

(g.) *Opium*.—*Opium* has been especially employed by the allopathic school in doses of some centigrammes per day; it diminishes thirst in a very notable manner, and in some patients it causes the disappearance of the sugar, at least for a time. We have demonstrated that this action is homœopathic. We name the following as worthy of study in the treatment of diabetes: *helonias dioica*, *natrum sulphuricum*, *lachesis*, *tarentula*, and *curare*. The three last of these substances produce glycosuria, the two first count some cases of cure.

Mineral Waters.—The natural alkaline waters are very often prescribed in the treatment of diabetes: Vichy, Vals, Ems and Carlsbad are the principal sources, but all alkaline and arsenical waters have been employed in this disease. The success obtained from Vichy are incontestible, and the infatuation which has resulted from it has led physicians to prescribe *alkalis* for

diabetes. But the alkalis have been found far inferior to the natural waters, especially when they are procured from their source, and we absolutely advise to renounce a practice, which rests only on analogy and on a false theory of diabetes. I may add that we ought carefully to abstain even from using the natural waters for patients who have an incipient cachexia, if we do not wish to see all the accidents precipitated.

In general, we prefer for diabetics who do not suffer from the chest, sea-air or mountain-air to natural alkaline waters the most renowned.

III. *Treatment of other forms of diabetes.*—I have not much to add except that in the acute form, Richard Hughes extols *morphia* and *curare*. This author bases the selection of these medicines upon their powerful action on the nervous system. We have nothing to say about this, having absolutely no clinical experience in the matter, and this is a question which, from a practical point of view, requires to be studied. Up to this day I have always found acute diabetes to terminate rapidly in death, and I therefore propose, on such occasions, to verify the affirmations of Richard Hughes.

IV. *Treatment of diabetic affections.*—*Furuncles, carbuncles, abscesses, gangrene, phlegmasias, diabetic phthisis, albuminuria,* find their complement of treatment in the therapeutics of each of these affections. As for the *cerebral accidents* which break out suddenly in diabetics, even before the cachexia, and which terminate very rapidly in death, accidents which are attributed hypothetically to poisoning by *acetone*, we have not yet any therapeutic indication, and we have lost the few cases that had come under our observation. The treatment of this accident, when it exists, has yet to be found.

Acknowledgment.

Hahnemann, the Founder of Scientific Therapeutics. Being the third Hahnemann lecture, 1882. By R. E. Dudgeon, M.D. E. Gould & Son 59. Moorgate St., London, E. C.

Hæmorrhoids. By Wm. Jefferson Guernsey, M.D. Reprinted from the Homœopathic Physician of November and December 1882.

EDITOR'S NOTES.

BLOOD AS A DIET.

A FRENCH savant, M. Regnard, has been lately trying the effect of a "blood diet" on lambs. Three lambs, which for some unexplained cause, had been abandoned by their mothers, were fed on "powdered blood" with the most gratifying results. The lambs increased in size in the most marvellous fashion, and attained unusual proportions for their age. The coats of wool also became double in thickness. Encouraged by his success with the lambs, M. Regnard is now feeding some calves on blood.—*Scientific American*, January 13, 1883.

COMMUNICABILITY OF PHTHISIS PULMONALIS.

Mr. Shield, House Surgeon to Addenbrook's hospital, after collecting replies from sixty members of the British Medical Association submitted an elaborate report in which he comes to the following conclusion. "All, however, we have learnt from the present replies, I think amounts to this: That communicability of the disease is not, at any rate common, but, in some instances, seems likely and probable." During the discussion that ensued, "it was remarked that in the Northern regions the communicability may be less than in the South where, especially Italy, the belief in it has long existed." It is a prevailing belief in this country, too, that Phthisis Pulmonalis is communicable.

HARVEY VERSUS CESALPINI.

Professor Filippi, the editor of *Lo Sperimentale*, refutes Dr. George Johnson's charge against the Italians with systematic attempts to snatch from Harvey the honor of the discovery of the circulation of the blood, and says that "not all the water that bathes the shores of England would suffice to cleanse Harvey of the sin of ingratitude towards Cesalpini, in that he does not name him even once in his *Exercitatio de Motu Cordis et Sanguinis* published in 1628; but on the contrary with wild allusions and with a show of magnanimity, he slights him, and criticises or depreciates and forgets." He claims for Cesalpini the recognition of both the pulmonary and systemic circulation, according the honor of its first and exact demonstration to Harvey.—*British Medical Journal*, Jan. 1883.

ISOLATION IN CONTAGIOUS DISEASES.

The following is the conclusion of a report adopted by the French Academy of Medicine with regard to isolation in contagious diseases.

1. Pupils infected with chicken-pox, small-pox, scarlatina, measles, mumps, or diphtheria shall be strictly kept apart from their companions.

2. Isolation should last forty days for small-pox, measles, scarlatina, and diphtheria, and twenty-five days for chicken-pox and mumps.

3. Isolation should continue until the convalescent has been bathed.

4. The clothes which the pupil was wearing when taken sick ought to be submitted to a heat 90° C. and sulphurous fumigation, and then well cleaned.

5. The bedclothes, draperies, furniture, and even the walls of the sick-room should be thoroughly disinfected, washed, and aired.

6. The pupil who has been seized, when away from a public educational institution, with one of the contagious diseases mentioned in this report, shall not be readmitted unless furnished with a medical certificate stating that he has met the conditions herein announced.—*New England Medical Gazette*, January, 1883.

TRISMUS FROM CEREBRAL LESION:

M. Lépine narrates the following case as a contribution to our knowledge of cortical localisation. The patient, a woman aged sixty-five, was brought to the hospital in a state of unconsciousness after an apoplectic seizure. After she had recovered consciousness she did not speak, the lips remained somewhat apart, the jaws were firmly clenched and could not be separated even by a considerable amount of force. There was no paralysis of the face or lips, no strabismus, the pupils were equal and sensitive, the movements of the eyes and eyelids were natural. There was flaccid hemiplegia of the left arm and leg, more complete in the arm than the leg. There was no loss of cutaneous sensibility. She died on the third day, the trismus having persisted almost to the last. On examination, a recent clot, about the size of a pigeon's egg, was found on the right side just beneath the grey matter of the island of Reil and the foot of the ascending frontal convolution; the hæmorrhage had invaded and destroyed the *avant mur*, external capsule, and part of the outermost segment of the lenticular nucleus. There was also a yellowish cicatrix occupying the corresponding position in the left hemisphere, but somewhat smaller, and not

extending into the *avant mur*, being confined to the external capsule and lenticular nucleus. M. Lépine points out that the situation of this recent hæmorrhage corresponds exactly to the spot determined by Ferrier's experiments to be the centre for the movements of the muscles of mastication.—*Practitioner*, January 1883.

AN EPIDEMIC OF DIPHTHERIA FROM INFECTED MILK.

Dr. Morell Mackenzie and Dr. Cameron have traced this epidemic to infected milk and supplied the following note to the *British Medical Journal*, Jan. 20, 1883.

“Fifteen persons were attacked on a single day, the disease in every case being a typical example of what French writers call *diphthérie d'emblée*. All the patients received their milk from the same vendor, and no other case occurred among the comparatively large population supplied by other dairymen. It has been discovered that the purveyor of the tainted milk, washed his cans in water derived from a brook which contains a large amount of sewage-matter. Indeed, up to the present time the whole of the Church End district of Hendon is drained by an open ditch into the Brent, and this ditch passes slightly above and in close proximity to the brook used by the dairyman in question. In the Tenterden Park district, every household made use of the tainted milk except two. One of these families had cows of their own, and the other had thrown away the milk supplied to them the day before the outbreak began, because it was thought ‘it looked bad.’ These two were the only houses in the Tenterden Park district which altogether escaped infection.” This fact clearly shows how infection is carried through milk, and we suspect that milk as also date juice plays an important part in the propagation of cholera during an epidemic.

CLINICAL RECORD.

A Case of Parotitis, Salivary Fistula and Tonsillitis.

BY BABU DOCOWRY GHOSH, L.M.S.

A lady, R , aged 34 years, and of pretty good general health, complained of severe pain in the left ear on the 6th of November last after an exposure to cold. On the next day, the 7th, she got fever and the left parotid gland began to swell and became painful. I advised her to take *Aconite* 3 and *Belladonna* 3, internally, and to have sago with milk for diet.

10th. Now No fever, but the pain and swelling of the parotid have increased. I gave her *Quinine* internally, and externally hot fomentations followed by application of *Extr. Bell.* with *Glycerine*.

12th. No fever, but the pain and swelling of the left parotid and submaxillary glands much increased, cannot open the jaws more than half an inch. *Bell.* 3 internally, and linseed poultice over parotid.

14th. Passed very restless nights on the 12th and 13th, is very much prostrated. Pain in the parotid gland is very intense, cannot open the jaws. Fever came on with violent shivering this morning at 7 A. M. There is no distinct fluctuation in the swelling, but it pits on pressure. I called my friend Dr. D. C. S., an assistant surgeon, and requested him to operate on the gland. With some hesitation he made an incision over the left angle of the lower jaw, and about an ounce of stinking matter with a little blood came out. The wound was then dressed with hot poultices, and *Liq. arsenic* was given internally.

15th. The fever left a few minutes after the operation, and it has not yet returned. Pain and swelling in the gland less. Passed a good night, slept well. Bowels free, discharge scanty and healthy. Continue *Arsenic* and poultice; diet, milk and sago, and meat broth.

18th. No fever, pain in the gland much less. Can open the jaws about one inch from yesterday, salivary fluid is coming out from the wound, no pus. Dress the wound with *Ghee*; *Silecea* 6, twice a day.

20th. Feels rather depressed and drowsy. Pain in swallowing and chewing. Very little pain in the gland. The discharge of saliva from the wound continues. Temperature 99.7. Continue medicine and dressing.

21st. Fever subsided in the middle of the night, slept very little, was very uneasy the whole day. The parotid gland is again swollen,

hard and painful, discharge as before. Bowels opened twice. Feels thirsty. This morning Dr. Sircar kindly came and prescribed *Merc. sol.* 6.

2 P. M. Temperature 99.5, very uneasy, complains of headache especially in the left side. Much difficulty in swallowing and coughing.

22nd. Passed a very bad night, slept very little, felt something like suffocation at 11½ P. M., which feeling still continues to a slight extent. Pain in the left side of the throat very severe, left tonsil considerably swollen. Incessant cough with expectoration of thick sputa, severe headache specially on the left side. The left parotid and submaxillary glands are hot and painful. The wound is nearly healed up, discharge thin and saliva-like, strong thirst. Temp. 100.2°, pulse 120. *Baryta carb.* 6, every 3 hours. This medicine was suggested by the patient herself and was approved of by Dr. Sircar.

23rd. Last evening the temperature rose to 101°, at 2 A. M. in the night a small quantity of pus and blood suddenly came out in a fit of coughing, probably from the bursting of an abscess in the left tonsil. Felt great relief since then and slept easily. Temperature 98.5, pulse 112, bowels free. Tonsil less swollen and congested, deglutition easy. Dr. Sircar stopped *Bar. carb.* and gave *Hepar sulph.* 6; diet, milk and bread.

24th. Passed a much better night, difficulty in swallowing much less. There is very little pain in the parotid and tonsil. No blood, no pus from the tonsil. The salivary discharge from the external wound not less. No fever, bowels rather loose. Feels very weak. Continue *Hepar sulph.* and milk and bread.

25th. No fever, slept pretty well, no difficulty in swallowing. The salivary discharge from the external wound stopped yesterday for 3 hours, and again continued. Had 5 loose motions in last 24 hours. Stop *Hepar sulph.* and give *Puls.* 6; diet, fish broth, suji and milk.

26th. No fever, no discharge from the external wound since yesterday. Three stools in 24 hours, slept well, very weak. The swelling of the tonsil and parotid very nearly gone. No pain, no medicine.

30th. Doing well in all other respects, but the discharge from the fistula after stopping for 3 days has again appeared from the 28th instant. Repeat *Hepar sulph.* 6.

4th Dec. Discharge from the salivary fistula has stopped altogether from the 2nd instant. The external opening healed up. The tonsil is now natural, the swelling of the parotid and submaxillary glands have very nearly gone, no medicine.

Remarks.

Here are three very interesting points to be observed: 1st.—the suppuration of that part of the parotid which lies behind the angle of the lower jaw. Almost the whole of the left side of the face was swollen and cedematous without any sign of fluctuation, still there was an abscess with its contents decomposed.

2nd.—The fistula, formed by the sloughing of the salivary duct on the 17th of November, that is, on the 3rd day after the operation, healed up within 16 days, simply under the administration of *Hep. sulph.* What a great comfort it was to the patient, who could neither speak nor eat without wetting her clothes with the flow of a large quantity of saliva from it.

3rd.—How speedily the abscess in the left tonsil, which one day threatened to suffocate the patient, was cured by *Baryta Carb.* and *Hepar sulph.*

In conclusion, I would advise our allopathic friends to take note of this case and think if nature could cure it without the help of medicine, and whether modern surgery, with all its boasted plastic operations, could effect healing of the salivary fistula, formed by the sloughing of the duct, within so short a time and with so little inconvenience to the patient.

A Case of Malarious Fever complicated with Dysentery.

By T.K.D., L.M.S. (Bombay.)

H. M., aged 30, Mussulman by caste, came to me on the 10th October 1882, with fever and bloody stools. Stated that the fever is preceded by chills and is followed by perspiration; the hot stage lasts for about 4 hours, generally the fever comes on at noon. The stools are said to be very frequent, about 20 in 24 hours. They are scanty and contain blood and mucus. Complains of griping and straining. Face anxious, tongue coated, feels thirsty, pulse 82. The disease is said to be of 3 days' duration. Prescribed *acon.*, $\frac{1}{2}$ a drop of the tincture, British Pharmacopœia, in alternation with $\frac{1}{2}$ a drop of *Liq. Hydragryri Perchloridi* every 2 hours.

At 6 P. M., temp. was 100, pulse 80. Bowels not moved after taking the medicine. Skin soft and perspiring. Medicine continued.

2nd October, temp. 98.4, pulse 76, bowels moved 8 times after midnight; stools bloody and accompanied by griping pains near umbilicus. Same medicines were continued.

At 6 P. M. temp. 102, bowels moved about 7 times up to 2 P. M. No motion after 2 P. M.

3rd Oct., temp. 98.4, pulse 100, bowels moved 3 times, stools being scanty and bloody, complaints of slight tenderness in the region of the liver, spleen slightly congested, tongue dry and furred; medicines continued every 3 hours instead of 2.

6 P. M. Temp. 99, bowels not moved.

4th Oct. Temp. 98, pulse 80, had 4 stools but no trace of blood in them, no gripes.

5th Oct. Temp. 100, pulse 94, bowels moved 4 times but no blood, no griping pains. Same medicines continued.

6th Oct. Temp. 97, pulse 72, bowels moved only once; medicine continued.

7th Oct. Steadily improving, stools natural. Omit *aconite*.

9th Oct. Temp. rose to 103, burning thirst, chills not well marked; prescribed *arsenicum alb.* 3; other medicines omitted.

Since this time the fever kept on and off for nearly 10 days, for which he was given *arsenic alb.* 3. Subsequently some tonic mixture containing *cinchona* was given for about 4 days.

This case shows that in the absence of homœopathic attenuations fractional doses of indicated medicines may be used with benefit. In this case small, fractional doses of *aconite* and *mercury* succeeded in checking a bad case of dysentery. In the same way I have seen fractional doses of *Vin. Ipecacuanha* of the British Pharmacopœia to be very serviceable in cases of fever, of diarrhœa more especially in children, and in cases of bronchial catarrh.

A Case of Acute Tonsillitis.

By T.K.D. L.M.S. (Bombay.)

S. D., aged 8 years, was brought to me on the morning of the 22nd January 1883, with difficult and painful deglutition. There was slight tenderness on pressure at the angle of the lower jaw on the right side, on examination the throat was found congested, and the right tonsil enlarged to the size of a small betel-nut. It was covered with thick white mucus. The affection probably resulted from cold; *Mercurius sol.* 6, few drops in half a tumblerful of pure water, was prescribed; a dessert-spoonful to be given every three hours. On the next day he said he felt much better, there was no tenderness at the angle of the jaw, and he did not complain of so much pain. Swelling of the tonsil decidedly less. The same medicine was continued for 4 days more, and on 27th he was discharged perfectly cured.

THERAPEUTICS OF CONSTIPATION, DIARRHŒA, DYSENTERY, AND CHOLERA.

42. BUFO.

Constipation :

1. Suppression of sts.; the whole body is cold, while the head is burning hot. Hard, difficult sts.
2. Frequent urging to st., for three or four days, but resulting in only one very scanty evacuation daily; then for three or four days, four daily sts., accompanied with colic and flatulence.

Diarrhoea :

1. Two sts. in the day, which are yellowish, soft but consistent.
2. Sts. at night, towards 2 or 3 o'clock A. M.
3. Whitish sts. as in icterus; yellowish, liquid sts.
4. Sts., sometimes hard, sometimes soft, sometimes both together.
5. Semi-liquid sts. after meal; followed by an obstinate hæmorrhoidal tumour outside the margin of the anus. The appearance of this tumour is preceded by smarting pain.
6. Lancinating colic, so violent as nearly to cause fainting, thirst, cold sweat in the hair, followed by four sts., increasingly liquid.

Aggravation :

1. After meal.

Before St :

1. Colic.

During St :

1. Colic and flatulence.

After St :

1. Shivering.

Rectum and Anus :

1. Reappearance of hæmorrhoids, with loss of clear red blood and a feeling of comfort.
2. A jet of blood flows from hæmorrhoidal tumour after straining, followed by sense of fatigue.
3. Lumbrici in sts.

General Symptoms :

1. Propensity to bite.
2. Black tongue.
3. Abundant, frothy saliva.
4. Bitter taste.
5. Hears what is said without being able to answer or move.
6. Aversion to food and drinks.
7. Incessant inclination to vomit.
8. Flatulence and eructation especially after a meal.
9. Clear urine, with liquid sts.
10. Scanty urine of a yellow-ochre colour, with yellowish sediment, with some pains in the loins; after the pains in the loins, the urine is clearer and very abundant.

11. Urine scanty, thick, yellowish, depositing sediment and diffusing a strong ammoniacal smell during constipation.
12. Suppression of urine.
13. Invincible drowsiness after a meal.
14. Sense of fatigue during sleep and of numbness in every limb, obliging him to change his position frequently.

43. CACTUS.

Constipation :

1. Dry, hard st.,
2. Hard, black fœces ; on the following day bilious evacuation.
3. Hard st., followed by discharge of fluid blood from the anus which continued to drop a moment or two.
4. Hard sts. and bleeding piles ; bleeding after sts., followed after two or three days by loose mushy sts., and disappearance of piles.
5. Constipation as if from hæmorrhoidal congestion.

Diarrhœa :

1. Morning D., of very loose fœces, preceded by very great pain, eight motions from 6 to 12 A. M., no motion in the afternoon.
2. Bilious D., with pain in the abdomen, always preceded by pain.
3. Mucous D., preceded by drawing pains.
4. Watery D., very abundant each time, during morning, always preceded by pain and borborygmus.
5. Soft st., followed by very severe pains in the hypogastrium.
6. Mushy sts.

Aggravation :

1. Morning.

Before St :

1. Pains in bowels.
2. Borborygmus.

During St :

1. Scraping of rectum and prickling sensation.

After St :

1. Severe pains in the hypogastrium.
2. Sharp cutting pains in the umbilicus.
3. Bleeding from piles.

Rectum and Anus :

1. Swollen varices outside the anus which cause much pain.
2. Blood from piles after st.
3. Copious hæmorrhage from anus, which soon ceases.
4. A peculiar sensation in the anus as if the rectum was swelling, it caused a scraping during st., and a prickling sensation.
5. Sensation of great weight in the anus, and a strong desire to evacuate a great quantity, however nothing passes.
6. Pricking in the anus as from sharp pains, which ceases on slight friction.

7. Great itching in the anus which causes him to rub the part very often.

General Symptoms :

1. Love of solitude ; he avoids those around him who wish to comfort him.
2. Sadness, taciturnity and irresistible inclination to weep.
3. Sensation of weight in the vertex, with dull pain increased by sound of talking and by any noise.
4. Heavy pain like weight in the vertex which diminishes by pressure.
5. Fœtid breath in the morning.
6. Constriction of the œsophagus which prevents swallowing, he must drink a great quantity of water to force any thing down into the stomach.
7. Complete loss of appetite ; he cannot take the least morsel of food.
8. Copious vomiting of blood.
9. Sensation of weight in the stomach.
10. Sharp cutting pains in the umbilicus, continuing about one hour after stool.
11. The abdominal parietes, when touched with the hand, impart a burning sensation and are much hotter than the other parts of the body.
12. Borborygmus in the bowels before the alvine evacuation.
13. Very violent pains in the bowels almost causing him to faint, which continue more or less during the day.
14. Severe cutting pains in the lower umbilical and hypogastric regions.
15. Distressing sensation in the bowels, as if a serpent was turning round here and there.
16. Constriction of the neck of the bladder which at first prevents the passage of urine ; but when he strains much he urinates as usual.
17. Frequent desire to urinate with abundant flow of urine each time during night.
18. Urine of a straw colour ; reddish, turbid, very abundant ; on cooling deposits red sand.
19. Great prostration of strength, so that he must remain in bed, not feeling able to use his legs.
20. Sensation of constriction in the heart as if an iron band prevented its normal movement.

44 CAINCA.

Constipation :

1. Scanty st., followed by itching at the anus.
2. A somewhat hard st.,

Diarrhœa :

1. Fœcal evacuations increased, occurring two or three times a day, of semifluid consistence, yellow-colour, preceded by

cutting pains in the belly, but moderate and of short continuance.

2. *D.* followed by rumbling in bowels.
3. Soft, dark colored st.
4. Immediately after rising, a copious soft st.
5. After increased colicky pains, st., mixed with many air bubbles.
6. Pap like st., followed by short colicky pains, which returned periodically throughout the day, never lasting more than half a minute.

Aggravation :

1. After rising.
2. After dinner.

Before St :

1. Cutting pains, colicky pains.

After St :

1. Rumbling.
2. Short colicky pains.
3. Itching at the anus.

Rectum and Anus :

1. Inclination to go to st., with pressure at the anus.
2. Frequent calls to st., with escape of nothing but air.
3. Burning at the anus.
4. In the evening on lying down to sleep, lively tickling in the anus, obliging him to scratch frequently.

General Symptoms :

1. Feeling of anxiety, with increased warmth of the lower abdomen.
2. Tongue coated with mucus, furred, white.
3. Much tasteless eructation, dryness of the throat, trembling of hands.
4. Some nausea ; constant vomituration (retching). —
5. Pain under the umbilicus with desire to go to st.
6. Although a st. had already been passed, the abdomen soon became full and distended.
7. Gurgling and rumbling in the abdomen.
8. After breakfast and dinner, cutting abdominal pains.
9. Cutting pains in abdomen before evacuation of the bowels.
10. Cuttings in abdomen with calls to make water.
11. Renal secretion abundant and clearer in color.
12. Polyuria of some months' duration disappeared (on the 10th day).

Gleanings from Contemporary Literature.

ARNICA MONTANA.—A STUDY.

By S. LILIENTHAL, M. D.

I TAKE this drug for my subject this evening, because our school neglects this plant too much ; whereas the old school of olden as well of recent times, has found it of great merit in cases where we are apt to neglect it, perhaps on account of the wealth of our inexhaustive *Materia Medica*, though every drug is an individual *per se*, and none other can take its place when strictly indicated.

We beg to differ with our allopathic friends, when they consider that trimethylamine is the really useful ingredient of Arnica. The ethereal oil of the plant as well as the Arnicine ($C_{20}H_{30}O_4$) must also be taken into account, if we wish to develop the full power of the drug. We are at variance with the members of our school when they only use the preparations made with alcohol, when in many cases an infusion of the flowers or a decoction of the root, or an infuso-decoction, would act more beneficially, and when those of our school who prefer the higher potencies, would make their primary dilutions of the infuso-decoction with distilled water, and only the higher ones for preservation with alcohol. May not such treatment also hold good with many other plants, certainly where strong alcohol fails to extract all the properties innate of them.

It is astonishing with what spite from pure hate to homeopathy old school authorities throw Arnica among old lumber. Thus Farquarson (*Mat. Med.*, p. 148) says, in relation to its internal action : the physiological and medicinal actions of Arnica can only be balanced with difficulty, as the evidence regarding the former is very conflicting, and the opinions on the latter certainly err in the direction of over-confidence. As it is rarely, if ever, used as a medicinal agent save by homeopathic practitioners, it does not seem necessary to say more about its asserted virtues.

Ringel fails to mention it in his hand-book of therapeutics. Bartholow (*M. M.*, p. 405) puts the whole curative power of the Arnica in the trimethylamine which it contains, but recommends an infusion in febrile diseases and inflammations as an antipyretic, as in full doses it depresses the action of the heart and lowers the arterial tension ; when, however, in febrile diseases there is present the condition of asthenia, small doses of the tincture (5 minims) are to be preferred. That this remedy will produce different results in small or large doses, need not occasion surprise. Good results have been obtained from the use of Arnica infusion in mania and melancholia as well as in delirium tremens, with depression. Decided curative effects have been obtained from Arnica in rheumatism and rheumatic gout.

Wood (*M. M.*, p. 158) considers in the present state of our knowledge, the internal use of Arnica absolutely experimental. Externally it is employed

to a great extent as a stimulating application in bruises and sprains, generally in the form of a tincture, which may be applied pure, but sometimes as fomentations of the flowers. Its property of occasionally producing intense dermal irritation should be borne in mind.

Stillé and Maisch (*National Dispensatory*, p. 242) waste only one page on Arnica, and report: The local action both of the root and the flowers of Arnica is irritant, but that of the flowers is the more powerful. Internally, a strong infusion irritates the throat and stomach, occasions a burning pain in the stomach, tends to excite vomiting, increases the frequency of the heart's action, the respiration and the secretion of the skin, bronchia and kidneys, and occasions headache, giddiness, inability to stand or walk, and disturbed sleep. These symptoms are followed by depression and exhaustion. After excessive doses the phenomena of stimulation are not observed but in their stead vomiting, purging, giddiness, oppression, debility, cold extremities, frequent pulse, dilated pupils, muscular spasms and collapse, with infrequent pulse. In relation to its medical uses Arnica has been reported to be an efficient stimulant in all diseases presenting a typhoid state. In Germany its stimulant local action has been popularly employed for the relief of local paralysis, bruises, sprains, abrasions, wounds, etc., whence its name Fallkraut, which may be translated "accident plant."

Phillips, Piffard (*Mat. Med. and Therap.*, p. 171), also consider trimethylamine the active principle of the plant, and in relation to its therapeutic action say: Arnica, which has always been so favorite a medicament with the homœopaths, is a remedy much older than homœopathy, and some of the most valuable evidence in its favor has been given by non-homœopathic physicians.

Mental diseases were the field upon which Schroeder Van-Der-Kolk chiefly tested the powers of Arnica. He employed the infusion of the flowers in the milder cases, and the decoction of the root when a more powerful remedy was required. He found Arnica invaluable in that condition of idiopathic mania where the first excitement having diminished the head remains hot, and where a tendency to imbecility or to paralysis is shown. Exhausting diarrhoea and general cachexia are also checked by Arnica with great certainty.

In paralytic affections Arnica has been found useful by many observers. Meyer cured with it a paralyzed bladder, and Mannoir employed it with success in amaurosis, for which it has long been a popular remedy in Germany.

German and French experience speak highly of the action of Arnica and of trimethylamine in typhoid fevers and in rheumatism.

For external bruises and cuts Arnica is undoubtedly very useful, the mischances that have attended its use have probably resulted from the fact that the tincture containing Arnicine and the volatile oil have been employed. For internal bruises Arnica is a most excellent remedy. Echy-moses and sanguineous effusions are rapidly dispersed by it, provided the medicine be administered shortly after the injury has been sustained. Under these circumstances I recommend that 5. to 10 minims be taken

every two or three hours in a wine-glassful of water. I believe there is no drug that can so well restore the contracted muscular fibre to its healthy condition in so short space of time as Arnica. When used after amputation, Arnica certainly has the power of uniting the surfaces very rapidly.

Lewin (*Incidental Effects of Drugs*, p. 134) remarks: In some persons, irrespective of the mode of employment, even small quantities of Arnica may cause disagreeable accidents. Infusions of 0,3 to 1,0 : 120,0 grams of water (gr. iv. xv., fl. ℥iv.) not infrequently produce burning and tickling in the throat and mouth, pains in the stomach and abdomen, eructations and occasional rectal tenesmus and diarrhœa. There also occurs oppressive headache, a sensation of fulness, giddiness, and unquiet sleep. Wilkinghoff (*Med. Beiträge zur Kenntniss der Arnica*) has recently shown that when Arnica is kept for some time, its active principle may become weaker and finally become inert. This fact explains the differences which have been observed in the action of the drug. It seems that the symptoms detailed, affecting the primæ viæ, are due to a local irritant action of the drug, and that the nervous disturbances are of a reflex nature. This view is sustained by the fact that if the tincture of Arnica is applied to the healthy human skin, there may appear, in accordance with the strength of the preparation, either itching or burning, and later, redness of the affected parts or miliary or pea-sized vesicles may develop upon a reddened base, or even well-formed bullæ. These changes are followed by corresponding general symptoms.

Koehler (*Mat. Med.*, p. 417), gives the provings which Joerg (*Materialien* p. 182) instituted with twelve persons, who took 0,09—2 grm. flores Arnicæ. He found that :

1. Its action on the digestive organs differed in different persons. Most of them complained of scratching and burning on the tongue and in the throat; less constantly of nausea; sensation of fulness and pressure in stomach; a constrictive feeling; nausea; eructations; vomiting; cutting in abdomen and diarrhœa. In all such cases its action on the brain was less outspoken.

2. The frequency of the beats of the pulse was increased.

3. Respiration accelerated and temperature rose.

4. Increase of renal and cutaneous secretion.

5. Pain in back between shoulder-blades; pressing headache, vertigo; dulness of head, mental hebetude, restless sleep with dreams, and heaviness of head with general lassitude.

Koehler is also inclined to throw Arnica as obsolete among old lumber. Still some authorities use it as an excitans for cerebral function in asthenic fevers with danger of rapid collapse (Musk, Camphor, Ammonia). Increased irritability of the nervous system; plethora; active congestion to internal organs; active hemorrhages and great debility of the stomach or sensitiveness of the intestines contraindicate the drug.

In asthenic typhus and in typhoid pneumonia Hildebrandt, Voigtel and Richter, praised the action of Arnica, but other remedies now-a-days take its place; but the homœopathic school still believes in its virtues.

Progressed stages of encephalitis, running a slow course, as then it increases the circulation in the chronically inflamed organ. In cerebral oppression after apoplexy or concussion of the brain, some have used it, but it is a dangerous weapon, as it produces cerebral hyperæmia, especially in cases complicated with atherosis of the cerebral blood-vessels. Its use in paralysis is obsolete.

Hufeland used it in peripneumonia notha. As Arnica increases the secretion of the pulmonary mucous membrane and, like Camphor, counteracts the adynamia, there may be something in this recommendation.

Perfectly obsolete in its use in intermittens, dysentery, dropsy and hemorrhage. Like all drugs containing etherial oils, it may possess some emagogue action.

We advise our readers to study carefully Hahnemann's preface to Arnica in the *Materia Medica Pura*, I, p. 61. The Master considers it a polychrest, though its effect does not last beyond six days, and in most inveterate chronic diseases he found it an indispensable intermediate remedy. He agrees with the old school that it ought never to be used in purely inflammatory, acute diseases, characterized by external general heat, nor ought it to be used in diarrhœa. If this remedy is indicated, its thirtieth potency acts more speedily and safely than any other below it. (A hint to Milwaukee.)

Noack and Trinks offer the following remarks: Arnica is suitable when the nervous system, the animal as well as the vegetative, is in a state of torpidity. It is suitable for those stages of inflammation where the vital powers begin to become extinct; where torpid fever or neurophlogosis sets in. Under these circumstances it is the contrary of Acon., which corresponds to the purely inflammatory, especially the synochal character. Arnica is especially useful in the so-called status gastricus nervosus putridus; it appears to be suitable to the nervous venous constitutions, to plethoric young people with a red face, or to persons of a lymphatic temperament; to exhausted individuals that have been weakened by disease, with a pale, yellow, livid face.

We often felt sorry to see the Knights of the Legion of Honor raising the war-whoop against Richard Hughes' *Pharmacodynamics*, for this author has done more to elucidate the action of remedies than any other writer of our school. We might extract the whole article to do the author justice, but let a few annotations suffice: Arnica is to an injury what Acon. is to a chill; that is, it will almost infallibly obviate the ill effects, if given before organic mischief has been set up; but unlike Acon., it follows up the cause to many of the changes it effects, even when of long standing and profound character. The tissue affected in all these instances is the muscular, and Arnica above all things is a myotic, and it thus becomes the main remedy for myalgia (pleurodynia from over-exertion, clergyman's sore throat from loud speaking, heart affections from over-exertion, asthenopia

from over-exertion of the eyes). In the railway spine its beneficial effect is undoubted. Hughes truly remarks that the action of Arnica on the nervous tissue is less known and hence undeservedly neglected, and gives us the important hint that in paralysis improvement is generally preceded by peculiar sensations in the affected parts, as tingling and electric shocks.

Burt (*M. M.*, p. 109) explains the beneficial action of Arnica in concussion, sprain or other sufferings from mechanical violence, because in the prover the drug asserts the secretory power of the venous capillaries and produces a state similar to what we find attending violent contusion; hence when given in remedial doses it acts upon these venous capillaries, stimulating their absorbent power. In fact some of our best prescribers consider Arnica the absorbent par excellence, and prefer it by its concise indications in many cases of cerebral hemorrhage. He also praises it in hæmatic fevers attended with the greatest indifference, putrid breath and much prostration, and with Grauvogl, finds it indicated in septicæmia with low typhoid symptoms.

Heinigke hits the nail on the head when he says: *Arnica causes painful over-sensitiveness of the whole body with general restlessness, accompanied by great lassitude and relaxation, increasing even to complete loss of strength, and aggravated by any excitement or occupation.* This is the keynote for Arnica, whatever organ may be affected, if the other symptoms coincide.

Old reliable H. N. Guerusey in his notes on *Materia Medica* gives the following special characteristics of Arnica: In all bad effects resulting from mechanical injuries. Head hot, body cool; thirst during the chill, none during fever or perspiration; bruised sensation in any part of the body; left upper extremity; right chest, as in pneumonia in the right side of the chest, with a bruised sore feeling and bloody expectoration; belching eructations; vomiting of blood; insufficient stool; retention of urine; the bladder feels full and is apt to feel sore, as if the presence of the urine hurts him. -Afterpains. Affections on the external chest, on the back of the foot, on the toes, particularly the big toe. Pains as if bruised, particularly of external parts; sensation of concussion as from a fall; dragging pain; pressing pain in inner parts; pain in joints as if sprained; this pain may occur in other parts of the body also. Black and blue spots on body which may be produced from bruises or from internal derangements. Varicose veins which feel bruised and sore. Painful glands; small boils, which feel sore and bruised; painful eruptions; bed sores; yellow spots. Tingling itching, which moves from place to place over the body, and as soon as the patient scratches in one place the tingling is off somewhere else.

Grauvogl, in his text-book on homœopathy, considers the action of Arnica in pyæmia, whether arising from puerperium, from wounds or other causes, as the most appropriate remedy to prevent the formation of pus. From our drug provings we know that Arnica and Arsen. very decidedly delay, or utterly prevent the formation of pus, or even prevent its development, and for this very reason hasten cicatrization and cure. Even in smaller injuries this effect of Arnica may be perceived. One sees clearly how the serum

of the wound becomes thickened, how the edges of the wound approach each other and finally agglutinate, and that without the formation of pus. *This can only happen by the withdrawal of a certain quantity of water from the serum.* This phenomenon and the observation of an increase of the watery contents of the urine after the internal use of Arnica, without increased drinking and without any other quantitative or qualitative change of the other constituents of the urine, lead to the conclusion that the fundamental action of Arnica consists in the withdrawal of water from the organic tissues in general. As long as Arnica (1st to 3rd) is taken, so long suppuration is delayed, and finally patient recovers without pain. Hence, where it is possible, he always gives a few doses of Arnica a day or two before and after every bloody operation, whether occurring in the domain of surgery, ophthalmology or obstetrics, or before and after every delivery, even where it is quite normal; and since he pursued this course he never met with a case of child-bed fever.* He finds our drug equally beneficial in carbuncle. By the internal use of it the extension, the progress to mortification will be prevented, and after a few days a rapid recovery takes place at once, while, externally, nothing is necessary, unless it be a little cold cream dressing.

If we now examine the provings of Arnica as given in Hahnemann's *Materia Medica Pura*, in Hering's *Guiding Symptoms* or in Allen's *Encyclopædia*, we feel convinced that all the cures reported by allopathic authorities rest on a homœopathic basis, and that this panacea in surgery, this polychrest for internal diseases, deserves better treatment than to be thrown among old lumber. But even in our own school this drug is too much neglected, and a bruised sensation is not its only indication.

We have seen that Schroeder Van Der Kolk recommended it in mental diseases, especially in idiopathic mania. Our own Worcester (*Insanity and Its treatment*, 184, 275, 354) quotes cases where it aided in the cure, and from Jahr's *Mental Diseases*, we can learn that this drug is of great importance in traumatic insanity, especially after concussion of the brain, when the patient becomes forgetful, absent-minded, thoughts wander from their objects and dwell on images and fancies; does not speak a word, indifferent and hopeless: great heat in head; body cool; awakens from the heat and fears to sleep again; or in melancholia, even attonita, where the patient sits as if in thought, yet apparently thinks of nothing; a sort of waking dream; says there is nothing the matter with him; prays, quietly, for his soul; sheds tears and makes exclamations; naturally cheerful, kindly and genial, he became down-cast, waspish and peevish; sensation of being good for nothing.

In hemorrhage of the brain it has many a time proved our sheet-anchor, and it may be applied with some confidence in paralysis depending on extravasation of blood in the brain, or from concussion of cord (railway

* We have verified this application of Arnica in midwifery in many an instance, but we always use the two hundredth potency, for Guernsey is right when he insists on the impressionability of women at this time.

spine) where it aids in causing the absorption of the clot. This paralysis may be preceded by jactitation of single muscles, twitching in all the limbs, over-sensitiveness of the whole body, feet numb and insensible, pulse intermittent or irregular, paralysis of left side, aggravation in damp, cold whether.

The same hyperæsthesia we find in the headache of *Arnica*, especially in migraine, where it may be indicated by its periodicity, the attack commencing slightly in the morning in the forehead, with flickering before the eyes, aggravated by reading and writing, gradually extending through the temples into the occiput, and reaching its acme in the afternoon. A warm room is unbearable, but the open air does not ameliorate; must lie perfectly still, stretched out on the back; worse from any motion, quick walking, bending, going upstairs, talking, thinking and after eating (Ræue). There is often a pressing pain as if the head were being distended from within outwards; a feeling of weight in the head, and on making any exertion a sensation as if liquid was fluctuating in the brain; great relief from nose-bleed during the attack; vertigo with nausea when moving and rising; better when lying; vertigo from a too copious meal, with nausea and obscuration of sight.

Norton (*Ophthalmic Therapeutics*) employs *Arnica* with marked success in a variety of eye troubles resulting from blows and various injuries. It seems to be better adapted to contused than lacerated wounds, and to injuries before inflammatory symptoms have become prominent. In hastening the absorption of extravasation of blood in the conjunctiva, aqueous humor, retina or other ocular tunics, especially if resulting from injuries or the straining in whooping-cough, *Arnica* often acts well; it seems also, sometimes, to correct the relaxed condition of the blood-vessels and the too fluid condition of the blood, which predisposes to subconjunctival hemorrhages in whooping-cough. Payr cured a case of paralysis with it of the oblique muscle, resulting from violent muscular exertion. Rheumatic iritis, with much lachrymation, photophobia, redness, shooting and tearing pains in and around the eye; worse at night; relieved by warmth.

Deafness or hard hearing from concussions or following typhoid or other continued fevers, is well met by this drug; sometimes with buzzing or humming before the ears; discharge of blood from the ear.

The too fluid condition of the blood shows itself also in epistaxis—copious after every exertion; from mechanical causes; after washing the face, etc.; or occurring in growing children, with tingling in the nose.

After extraction of a tooth *Arnica* may stop the bleeding and hasten healing of the gums. It is equally beneficial in ulcers, pain and swelling after operation on teeth; throbbing toothache, with sensation as if the tooth was being forced out from its socket by the blood; worse from external warmth or from inhaling fresh air; toothache as if the teeth had been bitten out, sprained, were wabbling, throbbing; more painful when touched; sometimes roots feel as if they had been scraped with a knife.

In our American affliction, dyspepsia, *Arnica* is too much neglected. Eating, to benefit mind and body, is a science to which most of our citizens

are strangers. *Tolle causum*, and if this does not suffice, give Arnica whenever you find : sensation of lassitude and fatigue during eating ; restlessness and agitation after a meal ; burning heat in pit of stomach ; frequent eructations, smelling of sulfuretted hydrogen (decomposition of food), especially in the morning ; bad taste on waking up ; constant sour taste in mouth, all that he eats tastes sour ; thick, brown tongue ; desire for acids ; repugnance to milk, meat and fat soup ; inappetency ; nausea and vomiting after eating ; fulness in epigastrium, with flatulence and distension of abdomen after a meal ; tendency to diarrhœa or lienteria ; feeling of lassitude in the extremities ; restless, disturbed sleep, cannot find an easy position for his wearied body ; dulness of head, especially forehead and over the eyes ; obscurity of sight, especially when moving head or walking ; furunculosis (overwork of an asthenic stomach).

Dr. Ussher (*Hoyle's Clin. Therap.*, I, 200) leads our attention to the symptom that Arnica helps in gastralgia when the pain is *during* eating or immediately after, while Nux vom. is more suitable for pain *after* eating.

The same muscular asthenia prevails all through the intestinal canal, and we may have obstinate constipation, or a diarrhœa with involuntary stools during sleep. There may be for several days sensation of rumbling in the bowels, not followed by stools, with passage of offensive flatus, or the patient discharges undigested food ; the stools may be brown, fermented (like yeast), offensive, papescent, acrid, often with a sore, bruised feeling in abdomen ; foul and putrid eructations, with feeling of nauseous repletion after eating. Its indications in dysentery are clear and to the point : long intervals, from four to six hours between the stools ; copious discharge of dark venous blood, at intervals of several hours, greatly relieving the pain in abdomen for an hour or two ; dysentery with ischuria or tenesmus of neck and bladder, with fruitless urging ; tenesmus with severe pains, leaving a sensation as if anus were bruised—or frequent small stools consisting only of mucus ; before stools : abdomen distended ; during stool : rumbling and pressure in abdomen, urging, tenesmus ; after stools : exhaustion ; must lie down. Locally and internally it relieves hemorrhoids, blind or bleeding, when there is painful pressure in the rectum, constipation and some tenesmus ; worse from standing and from cold things. From piles to prolapsus ani there is only a step ; we might expect it from the relaxed or weakened state of the muscular fibres.

Urine very acid, burns and excoriates, with increase of specific gravity, with lateritious sediment ; urine scanty, offensive ; bladder feels over-filled ; ineffectual urging ; frequent attempts to urinate, and has to wait a long time for urine to pass ; tenesmus from spasms of the neck of the bladder ; involuntary urination ; nocturnal enuresis—the old motory paresis with sensory hyperæsthesia, hence its beneficial effect also higher up, when ureters and kidneys are affected, hæmaturia, or passing blood and pus from mechanical causes.

We cannot find that Arnica has any specific effect on the sexual organs except where the cause lies in an injury received. Still Guernsey in his

Obstetrics gives us some valuable hints in relation to pregnancy and puerperium, and as we justly consider the lying-in-woman as a wounded and bruised patient, Arnica must necessarily be often found indicated as a preventative as well as a curative drug. Almost as a rule pregnancy begets some gastric derangement, and though in the earlier part the derangement might be the result of concussion, over-exertion or lifting, in the latter months the same may be produced or continued by the motion of the foetus, causing a bruised and sore feeling throughout the stomach and abdomen, or in the joints of the pelvis; frequent eructations, belching as of rotten eggs; vomiting of blood; at night head hot, trunk and extremities cool; varicose veins of the vulva and vagina.

During labor Arnica ought to be given, when with each pain there is great flushing of the face and heat of head while the rest of the body may be cool. The pains are so violent as to drive her almost distracted, yet little good is accomplished. Frequent desire to change position; feeble pains; she feels unaccountably sore and bruised in any position and constantly wishes to change it. Pains wear the woman out and she may faint. During puerperal convulsions it is indicated: when the pulse is full and strong and during every pain the blood rushes violently to the face and head; symptoms of paralysis of the left side; loss of consciousness; involuntary discharge of stool and urine; while the head is very hot the body is nevertheless cool or of a normal temperature. Post partum there may be retention of urine with urging to urinate, there being the same sore, bruised feeling prevailing. It aids in restoring the parts to their natural condition, thus preventing severe after-pains, by removing the causes which otherwise would have produced them. We find the same indication for Arnica during the first days of lactation, when the nipples feel sore, as if bruised, and often cures in a few days when applied early.

Nor can the gynecologist do without his Arnica. We again follow Guernsey, who teaches, in cases of shocks, falls, bruises or concussions, a pregnant woman should always take Arnica at once, more particularly if she commences to flow, with or without pain, or to have pains without flowing. It hurts her to move. If the period of quickening has passed the motion of the child hurts her; she is sure the child is lying crosswise the abdomen. In menorrhagia from mechanical causes the blood is of a bright red color mixed with clots; pain in the small of the back, extending into the groin and down the inner side of the thigh and leg to the great toe. The bleeding from erectile tumors after coition or from an injury, not only yields to Arnica, but the remedy that will cure the hemorrhage may also cure the tumor itself if allowed to act for a long time. Prolapsus vaginae and uterine displacements from mechanical causes remind us immediately of Arnica.

Prof. Ludlam praises Arnica very highly, considering it the most effectual antidote for the traumatic injury of the endometrium consequent upon labor, whether it be natural or not. The three last stages of pelvic cellulitis, viz: effusion, resolution and suppuration, are equally well met by Arnica (*Ludlam's Lectures*, 5th Ed., p. 411). There is no valid objection against alternating Aconite and Arnica for the relief of these symptoms. The Arnica should, however, be given at longer intervals, and if you prefer it, in a higher potency. Equally important is this drug in ovarian affections, whether caused directly by a jar, bruise, strain, or to a pressure from the gravid or subinvolved uterus, or incidentally to obstinate constipation.

In relation to the respiratory organs, we meet the same lassitude and relaxation of the vocal organs from over-exertion, which is so beautifully toned up by Arnica, a fact which I have verified over and over in actors and singers. Even where an actor was worn out from appearing too often

on the stage and, as it were, carried the whole tragedy on his shoulders, Arnica gave him force to carry it through successfully.

The Arnica cough is dry and concussive, excited by a creeping in the trachea, with difficult, frothy and bloody expectoration, or of a badly tasting slime which the patient has to swallow. In whooping-cough the child coughs in day-time at long intervals only, but the paroxysms are worse during the first part of the night, when it coughs until the blood gushes from nose and mouth, supporting his chest with his hands during the coughing fit. Really the young patient is afraid to cough, and has crying spells before and after the paroxysm; worse from motion, in the warmth and after drinking. The over-exertion of the chest from coughing may produce intercostal myalgia.

In neglected pneumonia it may come in during later stages, where in venous-plethoric persons pneumonic infiltration shows a tendency to hemorrhage: there is a torpor in the capillaries; breath fetid, short and panting; dry, short, hacking cough, with bloody expectoration, or it is offensive, green and purulent, streaked with blood; prostration and emaciation; dry, cold extremities. Equally well it acts in the pneumonia of old people with fetid expectoration, brought up in small quantities and with pain.

In pulmonary hemorrhage after mechanical injuries and often in the blood-spitting of tuberculous persons, Arnica proves curative, particularly if the characteristic dry cough is present with creeping in the trachea. Brigham (*Tubercular Phthisis*, p. 90) finds it indicated whether the blood is black or of a bright red color, frothy, mixed with mucus and coagula. At times the stomach is disturbed, which seems to come from an irritation and tickling in the right lung. There is a periodical flushing of heat which increases the action of the heart.

Asthma from fatty degeneration of the heart sometimes finds its palliative in Arnica; suffocative oppression of chest with inclination to move about; dyspnoea and orthopnoea; sleepless before midnight; face red, head hot, body cool; faintness, feels as if dying; feeble, hurried, variable pulse, and irregular rhythm of heart. As hypertrophy of the heart is sometimes induced by over-exertion, especially in young men, as from rowing, it is well to keep Arnica in mind; but there is also a compensatory hypertrophy of the heart, as in hepatic and renal affections, where Arnica likewise may come in. Such a patient often complains of a bruised, sore feeling in the cardiac region, worse from the least exertion, especially going up stairs. According to Dr. H. Noah Martin and others, Arnica ought to be remedial to some cases of angina pectoris, as we find among its symptoms: sudden pain as if the heart was tightly grasped by the hand; pain extending in the direction of the liver, upward through the left pectoral region and down the left arm; violent attacks of anguish and vertigo when raising and moving the head; short, panting breath; stitches in the heart from the left side to the right, with fainting fits; the beating of the heart is more like a quivering, the motion of the heart first very rapid and then suddenly slow; almost any exertion brings on the attack.

Again, Arnica is only indicated in the later stages of inflammation of the cord, where its great absorbing power must be brought into use; hence, such symptoms as sensation of great weight across the lower part of loins and feeling of being drawn in, as if a cord was tightly drawn across; spine pains as if not capable of carrying the body; bruised feeling in whole body, especially in region of cervical and dorsal vertebræ; great weakness of muscles of neck and compression of the chest or stitches when coughing, breathing deeply or coughing; feet numb and insensible; knee-joints suddenly bend when standing; paralytic pains in all joints during motion, as if bruised; hopeless, downcast, peevish.

We will find *Arnica* far more frequently indicated in rheumatism and in arthritis deformans than in a simple inflammatory affection, and we agree with Bayes, who teaches: "Among the laboring classes, their life of heavy toil, of daily physical strain and of exposure to all kinds of weather, often causes a comparatively early old age (see pneumonia senilis), with supposed rheumatic pains, which incapacitates them from further toil, and send them to sit in the chimney corner in their warmest wraps, in all but the hottest weather. I have seen many of these miserales greatly benefited by *Arnica* 1st to 3rd. In rheumatism of the intercostal muscles, *Arnica* is rapidly curative." There is tearing pain, great soreness, numbness and swelling of the affected parts; fears even the possibility of being touched; sensation as if resting on something very hard; blue spots on thighs, which felt as if bruised when touched; tingling and formication in legs with lame feeling.

A remedy which produces such great prostration and decomposition of the blood must certainly be of some benefit in zymotic diseases. In typhoids it covers the following indications: apathy; stupefaction, he sits as if in thought, yet thinks of nothing; forgets the words while speaking; head confused and cloudy; eyes dull, expression stupid, face deep red; dry lips and dry, brown tongue; foul breath and large yellowish-green spots on skin; weakness, weariness and bruised sensation; general sinking of vitality, compelling the patient to lie down, and still he asserts that he feels well; involuntary and unnoticed defecation and urination; distension and hardness of abdomen; loud blowing inspirations and expirations; sleep unrefreshing and full of dreams, with whimpering and loud talking during sleep.

Malaria intermittens: During apyrexia, headache, yellow face, bitter taste, aversion to meat. All three stages, rigor, heat and sweat, well marked; before the chill gaping and thirst; chill felt worse in the pit of stomach; internal chill with external heat; head hot, red face, and drinking a great deal during chill; no thirst during heat and sweat; during the fever constant desire to change position; head hot, hands and feet cold; sweat and breath sour, offensive, sometimes cold; apathy and weakness, so that he faints when attempting to sit up.

Whether *Arnica* will do much in the typho-septic forms of eruptive fevers is doubtful. Still let us remember its apathy, the ecchymoses on different parts of the septic blood with its hemorrhagic tendency from all the openings of the body, and we have hints enough for its application.

We already hinted in the first part of our study how the external application of the strong tincture irritates the skin. The course of this eruption usually is: first heat and great itching of the skin, then redness, then vesicles, increasing in size, with intolerable itching; slight desquamation, followed by some redness of skin, and where irritation had been worst, the skin remained hard for some time, leathery. Sometimes it may even produce small painful boils, which are extremely sore.

RESUME.—The action of *Arnica* may be summed up in a few words: Hyperæsthesia of the posterior roots of the cerebro-spinal nerves with paresis of the anterior ones; venous hyperæmia with fluidity of the blood more or less expressed; weariness and exhaustion on the one side, hyperæsthesia on the other, go in the provings, and in the clinical experience hand in hand. During the entire proving we repeatedly meet the expression: "a bruised sensation," and it may be worth while to find out what a bruise means.

Bryant in his *Practice of Surgery*, p. 116, says: A contusion is caused by a blow from a blunt instrument, and is uncomplicated with any solution of continuity of the skin. When the blow has been sufficient to produce

rapture of the small vessels in the skin and subcutaneous tissue, an ecchymosis or bruise is said to exist, showing itself as a livid red, deep blue or black patch, assuming gradually lighter colors till it fades away. A lotion of the tincture of Arnica, one ounce to a pint of water, seems to have some influence in hastening the absorption of blood. Arnica thus removes the stunning of the nerve fibrillæ which follows the blow or blows, removes the swelling and pressure caused by the extravasated blood, and heals because such action is natural to the drug.

Should Arnica remain among old lumber, as so many authorities of the old school have decided, ought we not to teach them that their trimethylamine is only a part of the whole plant, and that the part hardly ever contains the virtues of the whole plant. But even physicians of our own school only think of it when the patient complains of that bruised sensation. This is also only a part of the whole, and only in the corresponding totality of the symptoms can we find the key to a perfect healing process.—*North American Journal of Homœopathy*, Feb. 1883.

Correspondence.

TO THE EDITOR OF THE *Calcutta Journal of Medicine*.

SIR,—I am glad to learn from the January number of your Journal that an influential meeting was held at Bombay for the purpose of establishing a Homœopathic Hospital in that City. You remark very justly when you say that “there are more people in Calcutta who have been benefited by Homœopathy, and who have stronger faith in it, than in all India besides. And yet the strange fact stares us in the face that nothing has been done either by Government or by the people for the furtherance of the cause of homœopathy, which means the diffusion of its blessings to the community.” In an inquiry as to the cause of this, we find, here in this part of India we are more given up to selfishness than our brethren of Western India. Moreover, the people of Bombay are more practical than ourselves. Really Bombay has put us to shame by taking the initiative in diffusing the truth of homœopathy. Without any further discussion, I request you to take the lead in the matter of establishing a homœopathic hospital in Calcutta. We may all differ in opinion with respect to many disputed questions, but there is no voice that can possibly be raised against such a noble object. It is through want of zeal among ourselves, the upholders of the homœopathic system here, that a homœopathic hospital has not yet been established in the Metropolis. If we move in that direction with sufficient energy we will surely meet with success. We must not be guided by the petty feelings of selfishness, but unite and join in the common cause of humanity. Before the year passes away we like to see our cherished idea fulfilled in a practical manner. Now let us all join in the name of our illustrious master, Samuel Hahnemann. Please give this a space in a corner of your valuable journal, and oblige

Calcutta, }
60, Beadon Street. }

Yours truly,
PRATAP CHANDRA MOJUMDAR, L.M.S.



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REVISION OF THE MATERIA MEDICA.

It is a matter of no little surprise that the school of Hahnemann, while acknowledging the necessity of, and professing to act with, a *Materia Medica Pura*, should be so indifferent and unmindful of its purity. The great founder himself, while teaching how the materia medica ought to be constructed, set a bad example by the haste and impatience he displayed in endeavouring to complete his system. His followers, and chiefly those who call themselves his true disciples, the purists and hahnemannians, have proved themselves the most reckless in the matter of the materia medica. The result of all this has been that in the materia medica as we have it now, a few grains of fact have been buried in bushels of fancies and illusions; and the whole has attained such gigantic proportions that the beginner and even the veteran are well nigh frightened out of their wits and driven to manuals and routine practice, which for homœopathy must be unscientific and in the majority of cases unsuccessful.

When we charge the body of the Homœopathic School with indifference about the purity of the materia medica, we do not mean to say that there have not been members who have pointed out and loudly condemned its defects and who have urged their removal upon the school. We have done so ourselves several times, and quite recently in two American Journals, the *New York Medical Times* and the *North American Journal of Homœopathy* have appeared from the pens of Dr. Dake of America and Dr. Hughes

of England respectively, articles strongly condemnatory of the impure condition of the materia medica, and containing suggestions for its rectification. Dr. Dake has gone so far as to say, "it cannot be denied that reverence for some of the 'Fathers' in our school and fear of the frowns of publishers have led the Journals devoted to Homœopathy specially in this country, to allow heaps of trash and volumes of nonsense to be foisted upon the profession, without a word of condemnation or dissent." Dr. Hughes has pronounced the Materia Medica as it now exists to be "as foul an Augean stable as was the common one when Hahnemann exposed its condition, and set to work for its purification."

It is worth examining the causes which have rendered the materia medica so bad as it is. In the first place, even when direct provings were used, it was not possible to get absolutely healthy individuals to prove medicines, consequently there was some probability of the naturally existing diseased conditions being mixed up with the real pathogenetic effects of the drugs proved. Again, assuming that absolute health was attainable, there is a normal range within which physiological functions vary. In a proving these variations might be set down as the action of the drug. "Hahnemann," however, as Dr. Hughes has justly said, "did his best to eliminate them; and his work is pure gold, with only such alloy as the necessities of human currency compel."

But besides these inevitable vitiations which after all are not of much consequence, there are others which are truly of very serious import, and which must be eliminated in order to render the materia medica at all reliable. Hahnemann, it is known, was not content with having provings by himself and his trustworthy disciples. In good faith, no doubt, he availed himself of the "observations of others." These citations from others were either from cases of poisoning or from the action of drugs on the sick to whom they were administered. It is in these latter that he failed to exercise his usual discrimination. Where the authors themselves had not ascribed the phenomena in the sick to the action of the drugs given, he unwarrantably assumed that action, and thus has he burdened some drugs with symptoms which were in reality the manifestations of the diseases themselves and not of the drugs which were given for them. Thus, as pointed out by Dr. Hughes, we have the *green stools* of Belladonna, the *rage* and *tenacious leucorrhœa* of Aconite, the *purulent expectoration* of Conium, the *hernia* of Antimonium crudum, the *dropsy, jaundice, phthisis* of China, the *gonorrhœa* of Chelidonium, &c." Dr. Hughes has characterised these symptoms as "strange and incredible." We however fail to understand the reason of this characterization. As symptoms *per se* they are certainly neither strange nor incredible, and *a priori* we have no

right to say that they might not be the symptoms of the drugs to which they are ascribed. Having found that they have been wrongly ascribed to those drugs, we can only assert this much but not more.

Another source from which Hahnemann derived his symptoms were aggravations in patients of their existing troubles under the administration of a particular drug. It is our conviction, and we have definitely given expression to it in a recent issue, that aggravations may and often do arise as genuine drug-effects. But they may and do arise from other causes. It requires the utmost skill and knowledge and watchfulness to distinguish between aggravations resulting from the action of drugs and from other causes; and when so distinguished we may have valuable additions to the symptomatology of our materia medica. But it may easily be seen how the recording of every aggravation as genuine drug-symptom may be wide of the fact, and thus vitiate the materia medica. That Hahnemann was a singularly discerning physician, we have abundant evidence. But we have evidence also of his liability to error. Without rejecting all the symptoms which he has thus gathered, we ought to retain them subject to verification. But we have no means of knowing what were the particular symptoms which were aggravation symptoms. It is believed, especially by Dr. Hughes, that all symptoms warranted by him after his retirement from Leipsic to Coethen, "his additions to the later issues of the first two volumes of the *Reine Arzneimittellehr* (1830-3) and his copious contributions to the *Chronischen Krankheiten*," were derived from patients, and were therefore either aggravation symptoms, or newly developed symptoms other than those they were suffering from. In the face of Hahnemann's positive assertion that "the remedial virtue of certain remedies in psoric affections has been revealed to me by trying these remedies on the *healthy organism*," that "generally, however, only such remedies have been arranged under the head of antipsorics as have developed in the *healthy organism* symptoms analogous to those which were known to emanate from repelled itch," it would be, we must say, uncharitable to assert that *all* symptoms warranted by him in the Coethen period were from patients.

But besides aggravations and newly developed symptoms in patients, the cured symptoms (symptoms which disappeared during the action of a drug, but which were not known as actual pathogenetic effects of the drug,) have contributed, especially in the hands of Hahnemann's followers, to swell the symptomatology of the materia medica. The disciples are not content, as was the Master, in recording these cured symptoms as such or even as curative effects, but have included them among the genuine effects of drugs. Such symptoms are not without their

value, when repeatedly observed, and in that case they deserve to be recorded, though they ought, as they used to be, distinguished by a mark. We are inclined to think that Dr. Hughes is rather too severe about them. The beginner would learn very little from the *materia medica*, if nothing but pure pathogenetic symptoms had been recorded. Aconite, for instance, was never found to actually produce an inflammatory disorder, yet had it not been for Hahnemann's precious preface to the drug, it would have taken long before physicians would have used it in inflammatory disorders. So the cured symptoms, if repeatedly observed, and not mere chance symptoms, would greatly help the practitioner in the choice of remedies. We of course strongly condemn a reckless record of every symptom that disappears under the action of a drug as a genuine drug-effect. Such a procedure would produce, and indeed has produced, serious vitiation of the *materia medica*.

The above are the essential sources of error and corruption of the *materia medica*. To them have been added one which is accidental, the error incident to copying and translation. Though accidental, not being dependent upon the fault of the provings themselves, this is not unoften a serious source of imperfection.

Such is the untrustworthiness of the material with which the *materia medica* has been constructed. As for the mode of arranging the materials in the work of construction, it is impossible to use a too condemnatory language. It is artificial and arbitrary to a degree—the symptoms being dislocated from their natural order of evolution for purposes of a classification justified only by convenience of reference. In this way the true pictures of drugs have been lost sight of, so much so that the most powerful and the mildest ones scarcely appear to differ from each other. The worst of this is that great as is the evil, it is an inevitable one. Detailed reports of provings would prove not only too voluminous but too expensive. But even if detailed reports could be given the voluminousness and the expense being disregarded in a work of such importance, still there would be the necessity, we might say, the absolute necessity of supplementing these reports by the Hahnemannian schematic form of the symptoms. It cannot be expected that the detailed reports could be so mastered as to dispense with the necessity of all reference to individual symptoms. Hahnemann, who laid the chief stress upon symptoms in the treatment of disease, might have thought his schema sufficient for all practical purposes. That it is indispensable, if not all-sufficient, must be evident to every practitioner.

It was expected at the time Allen's *Encyclopædia* was projected that the defects pointed out above would be greatly, if not entirely, remedied in the forth-coming work. But this expecta-

tion has been disappointed. Notwithstanding the co-operation of deservedly celebrated authorities in our school; among whom was Dr. Hughes himself, we have a monster work whose only redeeming feature is that in it "is garnered up all our pathogenetic wealth." But if we remember that more than half this pathogenetic wealth is absolutely worthless, being more than doubtful pathogeneses of articles which will and can never be called into requisition by the bed-side, we can find no justification for the monstrous size of the work. And when to it is added that it "has all the defects of the Homœopathic Materia Medica as this has hitherto existed," and that, as admitted by the Editor himself, it has been guilty of the sin of imperfect translation, we can easily understand what a guide we have in the *Encyclopædia* for the homœopathic physician.

It must be evident, therefore, to all that the Homœopathic Materia Medica stands in urgent need of revision. But how is this to be done? The best method seems to be by the institution of re-provings, a method which we have often advocated in these pages, and which we urged upon our branch of the profession, in our *History of Homœopathy in India*, submitted to the late Convention held in London. We are glad to find Dr. Dake at one with us, and we hail his proposal to establish a College of Provers. The other method, which is very nearly that proposed by the British Homœopathic Society, is to take the materia medica as it exists, and subject it to criticism more as a literary than as a scientific work. As Dr. Hughes puts it: "What the British Homœopathic Society proposes is to furnish the text (of the materia medica), and to make it genuine and intelligible. Genuine, because all versions and copies will be traced back to their *ultimate* originals, and verified, corrected, or reproduced therefrom; because all clinical symptoms and (supposed) medicinal aggravations will be excluded, and phenomena observed in patients taking drugs accepted only on amply sufficient evidence; because provings themselves will be rigorously scrutinised, and not admitted at any rate to full-sized type, unless their source and method seem free from objection. And intelligible, because all observations will, where possible, be related in detail or sufficient summary, so as to preserve the order of the evolution of the drugs' effects; and, where this cannot be, the symptoms of each prover will be given separately, so that some approximation may be made to the same type."

It would no doubt be a consolation to the reader to know that the proposed exclusion of clinical symptoms and (supposed) medicinal aggravations are not intended to be applied to the pathogeneses left by Hahnemann in the *Chronic Diseases*. "I

fear," says Dr. Hughes, "we cannot incorporate the pathogeneses contained in that work, and yet we are reluctant to pass them by." We cannot, and we ought not to pass them by. And indeed we must protest against any interference, meddling, or tampering with the pathogeneses as left in the *Chronic Diseases*. Dr. Hughes invites competent scholars in the United States to undertake to render and present the *Chronic Diseases* as Dudgeon has the *Materia Medica Pura*, and he offers the same assistance in the matter of the symptoms quoted from authors. This invitation should be warmly accepted either by scholars in the United States or in England. But why does not Dr. Dudgeon himself undertake the task? He is the fittest person to do it. He has given the best and the most faithful translations of the *Organon* and of the *Materia Medica Pura*, and when he gives a similar translation of the *Chronic Diseases* he will have earned the lasting gratitude of the Profession and indeed of all mankind for having rendered the greatest works of the greatest medical philosopher in the most widely-spoken language in the world, works which have not only inaugurated a new era in medicine, but which have themselves furnished its solid and scientific foundation.

NOTES ON INFANTILE CHOLERA (CHOLERA INFANTUM).*

The reckless manner, in which statistics are collected in this country, altogether precludes us from arriving at a definite conclusion, with regard to the average annual death-rate among infants and children, from the effects of pure infantile cholera, nevertheless it is admitted by those who have had a large experience of this disease, that it goes by far to contribute a large number to swell the bill of infant mortality, although the disease is not so common as simple or inflammatory diarrhoea of children. It is therefore *per se* one of the most important disorders to which the infant life is subject. Strictly speaking, the designation cholera infantum is a misnomer. It is so called simply from the violence of its symptoms which closely resemble those of Asiatic cholera. Superficial observers apply this term

* My object in writing these notes on infantile cholera is simply to help others in making a correct and proper diagnosis of this disease, several cases having recently occurred under my notice in which the recognition of the true nature of the complaint became a matter of dispute among the attending physicians. I know no standard English author, who has bestowed legitimate and due attention in describing this disease, which is essentially a disease of the tropics. My informations were chiefly drawn from the modern American authors, but partly from my own limited but careful clinical observations.

indiscriminately to many other forms of infantile diarrhoea, either inflammatory or non-inflammatory, which originate during the hot summer months. But cholera infantum really constitutes a separate and individual entity, presenting some interesting clinical phenomena by which it may be easily differentiated from all other diarrhoeal maladies of a like nature.

Dr. Lewis Smith, in speaking of the term cholera infantum, says emphatically that "I employ it, and it should in my opinion be employed, to designate that form of infantile diarrhoea, in which there are frequent watery stools, accompanied by vomiting, great elevation of temperature and rapid and great emaciation."*

Etiology.—Amongst the various predisposing causes to which the disease is attributed I would only mention those that are of practical importance. *Dentition* is commonly believed to be a chief cause of infantile cholera. But careful observations would show us that age has a greater influence in the production of this disease. Infants are more liable to fatal attacks in the first year than in the second, though the process of dentition is more active in the second than in the first year of infant life.

Dr. Lewis Smith remarks that "cholera infantum occurs commonly under the age of two years. It is so frequent during the period of first dentition that some writers consider dentition a cause. At this period, however, there is great functional activity, and rapid development of the intestinal follicles, and the peculiar liability to cholera infantum at this age should be attributed to this cause rather than to dentition."† I wish to impress this fact strongly upon the minds of young practitioners who, when called to see an infant suffering from diarrhoeal malady, would possibly attribute it to dentition and set at once to lance the delicate gums upon insufficient ground, and thereby invite some fatal traumatic diseases, to wit, convulsions, tetanus, &c.

Weaning, as a predisposing cause to this disease, is less cared for than it ought to be. Sudden change of diet, especially in hot seasons, is fraught with great danger to the life of infants. In this country in particular where infants are generally nursed by the mother herself, sudden weaning is of daily occurrence. If, for instance, from any cause the mother becomes unfit to nurse the child from her own breast, recourse is always had to artificial feeding. This is partly owing to the difficulty in procuring wet-nurses in this country and partly from the natural aversion of the people to tend their young ones by means of wet-nurses. Thus this violation of nature's law is always attended with its usual penalty.

Excessive heat with its enfeebling consequences is one of the most influential causes of this disease. So long as the atmospheric

* Diseases of Infancy and Childhood.

† Diseases of Infancy and Childhood.

heat is moderate the resulting disorders will probably take the form of simple or inflammatory diarrhœa. But let the temperature rise a little higher and continue for some days together, the child previously healthy will be at once seized with choleraic diarrhœa, and those who were already suffering from milder forms of diarrhœa are prone to have their complaints suddenly assume a virulent type.

Improper alimentation is certainly one of the principal causes which give rise to this disorder. In Bengal the chief articles that constitute the infant's food are the mother's milk and cow's milk, and in some places goat's and buffalo's milk are also used extensively. Ass's milk is very rarely used. These are administered usually in a more or less diluted form. Farinaceous substances, such as barley, arrowroot, corn-flour, &c., are seldom, but occasionally used. It is therefore of paramount importance to see that the milk used by the infant is always fresh and healthy. The presence of colostrum granules in the mother's or the nurse's milk, or any other conditions under which the milk departs widely from its normal character, will be sure to produce choleraic disease in children. Cow's milk, when exposed to the air for a certain length of time especially in the hot months of Bengal, is liable to undergo certain putrescent or fermentative changes which render it altogether unfit for the consumption of children. Dr. Thomas B. Curtis of Boston has observed that "milk, when exposed to atmospheric air, is known to be eminently putrescible. So liable it is to become contaminated by the development of various ferments, that Prof. Lister used it as a substitute for Pasteur's solution in his experimental investigation into the subject of fermentation and putrefaction."*

Epidemic influences are certainly predisposing causes to this disorder. Under these unfavorable circumstances, the use of putrid milk, of stale articles of diet, of raw sour vegetables or other irritating substances, becomes the immediate exciting cause of infantile cholera.

These various causes act in a very complicated manner. They interfere with the general nutrition of the body and render the tissues susceptible of inflammatory changes by altering the composition of the blood and loading it with deleterious matters. Finally the digestive functions are interfered with, and the semi-digested contents of the alimentary canal undergo changes which render them highly irritating to the mucus membrane.

ANATOMICAL CHARACTERS. I had opportunities on two occasions only in Hospital practice to make *post-mortem* examinations on infants died of choleraic diarrhœa. These two were cases of a very acute nature, the one terminated fatally on the third day of

* Buck's Hygiene and Public Health.

attack, and the other on the 4th day. On opening the abdomen, the walls of the intestinal canal were found to be extremely thin, but the stomach and the duodenum were apparently healthy. The solitary glands of the intestines were swollen, prominent and enlarged, surrounded by an areola of congested vessels. The Peyer's glands also appeared to be a little raised and prominent, resembling minute grains of sand sprinkled over the mucous membrane. Ecchymosed patches were here and there seen along the tract of the Colon and Ileum. In some places the mucous membrane was pale, sodden and discolored, and in others slight abrasions were noted, there appeared nothing like actual softening of the mucous membrane any where, as described by pathologists. I did not examine the contents of the intestine microscopically. Externally they appeared to be of a whey-like substance, having extremely fetid and disagreeable odor. The liver appeared somewhat diminished in size but otherwise apparently healthy. Lungs a little congested posteriorly, but anæmic anteriorly. Heart cavities almost empty, there being a little dark fluid blood in the right ventricle. Brain diminishes in bulk and extremely anæmic, with a little effusion into the ventricles. Kidneys congested and somewhat enlarged. Beyond these changes nothing peculiar was noticed.

These morbid changes coupled with the clinical manifestations of the disease would naturally induce one to believe, that it partakes of the nature of an acute inflammatory disorder. Dr. Lewis Smith remarks, "it was formerly my opinion that cholera infantum is essentially non-inflammatory, but that it soon became inflammatory if not checked. Careful observations of its symptoms and lesions have since convinced me that it is the most violent inflammation* to which infants are liable in our climate." But the question may be asked what must be the nature of an additional element in this disease that impresses upon it such peculiar and fatal features resembling the collapse of Cholera Asiatica. As a very rational explanation of this question I shall quote the following passage from the admirable work of Meigs and Peppert which I think will not be a little interesting to the reader. "We recognise in cholera infantum, the presence of the general alteration of nutrition, and the change in the entire blood mass, as well as the local irritant action of the morbid contents of the intestines. But it is in the highest degree interesting and significant of the importance of this last element in the causation, that symptoms altogether indistinguishable from those of cholera collapse, may be produced by agencies acting directly and solely upon the coats of the

* Diseases of Infancy and Childhood.

† Diseases of Children.

stomach and intestines." Sedgwick has shown that "among the causes which are clearly established as capable of producing such an analogous condition, are poisonous doses of corrosive sublimate, arsenic, some of the mineral acids, especially nitric acid; and also of certain drastic purgatives, especially croton oil. In these cases the peculiar symptoms produced, which are uniformly described by accurate observers as most closely analogous to those of cholera collapse, are due exclusively to the direct irritant action of the substance upon the gastro-intestinal mucous membrane."

"The same effects have frequently been observed to follow the eating or drinking of poisonous animal matters, such as tainted or simply unwholesome meat or fish, and milk, which has undergone some injurious but as yet unknown change, decomposing vegetable and some of the poisonous fungi. In this last group of cases the local irritant action of the substances swallowed, must certainly be regarded, as the principal cause in the production of the symptom, although it is quite possible that the ingestion of such putrid animal or vegetable substances should also cause an altered condition of the blood. In like manner there are numerous morbid conditions of the intestines or their peritoneal covering (as perforation with subsequent peritonitis, peritonites from extension of inflammation, intestinal obstruction), which may be attended with symptoms closely analogous to those of cholera collapse." As a further explanation of the collapse of cholera infantum these authors (Meigs and Pepper) have quoted an excellent passage from the works of Rilliet and Barthez.—

"The disease we have just described is, in our opinion, a catarrh which has localised itself upon the digestive tract and the great sympathetic nerve. It is of all forms of the catarrhal affections, that, which clearly justifies the idea of a poisoning." * * * *

"The disease exists at the age and in the physiological condition (dentition), in which functional derangements of the nervous system, without lesions of the organs, are most frequent; it is often complicated with those very disorders of the general innervation, as is proved by certain profound changes in the functions of nutrition, circulation and calorification, which the amount of material waste will not always account for. We occasionally observe the same symptoms of nervous sideration, and particularly the extreme smallness of the pulse, and the algid phenomena, to arise in certain of the most violent attacks of spontaneous peritonitis. Now these phenomena, which cannot always be referred to the intensity of the pain, and which do not exist in inflammations of the other serous membranes, no matter what the rapidity of their course, are only to be explained by the fact that the disease seated in the abdomen, envelops the ganglia of the great sympathetic nerve."

SYMPTOMATOLOGY.

I do not wish to enter here into a detailed discussion of the symptoms of this disease ; what I intend to do is simply to mention and give prominence to some of the salient features which to me seem to carry a great weight with them both for the purpose of accurate diagnosis and treatment. The stage of attack or invasion generally sets in abruptly, commencing with diarrhœa and vomiting almost simultaneously : or there may have been diarrhœa, in the majority of cases of an inflammatory nature, for some previous days. Writers on this disease have invariably described that its onset is always marked with the setting in of sudden and violent watery or serous diarrhœa having no other premonitory symptoms worth noticing. But the few cases, which came to my notice and which I had the opportunity to watch with peculiar interest, have almost convinced me that there is in this disease a premonitory stage to that of actual *invasion*. Not that it is present in every case and in every climate or strictly analogous to a stage of incubation ; but cases of infantile cholera not unfrequently present to us, where there is a little high temperature of the body, with loss of appetite, constipation, nausea and obstinate vomiting preceding the stage of attack. High temperature of the body and persistent vomiting in infants for a day or two, especially in the hot seasons, are sometimes the only symptoms which ought to forewarn us of the impending crisis. It is not impossible even in this stage of the disease to avert the invasion altogether if strict precautions are taken both as regards hygienic and medical management. Then the diarrhœa commences with unusual violence, the stools being frequent and very large in quantity, having an extremely fœtid and nauseating odor, at first bilious and somewhat feculent, but gradually lose color and consistency and appear either perfectly colorless or resembling the urine of the child soaking through the bed clothes. These stools are always accompanied with severe colicky pains and cramps of the abdominal muscles. True infantile cholera seldom begins as a painless diarrhœa. The tendency to vomiting, with heat of the body which invariably manifests itself from the beginning, now assumes a violent character, and the child becomes at once exhausted and rapidly emaciated. It will throw up every thing it takes, not even a little water is retained although it is impossible to restrict the use of fluids to quench the extreme thirst and eager craving for water. The child becomes very much restless and tosses from one side of the bed to the other ; moans and groans, becomes cross and almost unmanageable, with the thighs generally drawn over the abdomen. The pulse beats very quickly and becomes extremely thin and compressible. I

have noticed that flatulence or rather a tympanitic condition of the abdomen is always present and becomes a source of trouble from the beginning. The respiration is accelerated and gradually becomes shallow. It is impossible to say positively whether there is any sort of pain or uneasiness in the head, but the child frequently turns it from side to side. One thing in particular which deserves our special attention is the range of thermometric reading in this disease. It is a valuable guide as a means to its diagnosis and treatment. The temperature in the axilla ranges usually, from the stage of its onset to the full development of the disease, from 100°F to 103°F and then gradually falls with the supervention of the collapse stage and then rises again with the reaction when it gradually assumes an alarming character rising from 100°F to 104°F or even more. This abnormality in the temperature of the body accompanied with vomiting and exhausting diarrhœa does not unfrequently stand in the way of its real diagnosis. As an instance of a very curious phenomenon with regard to body-heat in a case of true infantile cholera, I wish to mention here the following case from my private practice.

In the month of May 1852 I was called to see a case of an infant about 2 years old suffering from choleraic diarrhœa. That was on the fourth day of its attack when I first saw the child. On my approach I found the child in a quite helpless condition. There were nausea and constant vomiting. The child took no nourishment and was in a very reduced condition. The skin pinched and dry and shrivelled, eyes sunk, conjunctivæ anæmic, white, pupils seemed to be slightly contracted, lips and mouth dry, tongue dry, furred and anæmic with its papillæ prominent. Abdomen tympanitic, the stools thin and bilious, a little diminished in quantity and frequency; had passed water twice that day only since the attack; it was scanty and high colored. The child was somewhat drowsy but not perfectly comatose. Pulse at the wrist very feeble, thready, quick and compressible. Temperature at the axilla 102°F. The child was from the beginning attended by an amateur homœopath, and subsequently in company with a professional man. The case was at first treated as a genuine case of malignant cholera and had improved a good deal. But the persistent high temperature of the body, led them subsequently to believe that it was a case of malignant fever complicated with choleraic symptoms. They were partly strengthened in their belief by the slow and tardy progress of the case. The guardian of the patient told me that the child had improved a little gradually. I therefore did not like to interfere with the treatment adopted. This was about 10 A. M. in the morning. But at 2 P. M. that day I was again sent for to see the child whom I found to be in a perfectly collapsed state. Respiration

hard and difficult. The child had purged several times and vomited frequently. The pulse at the wrist was almost imperceptible, but the body seemed to be abnormally hot. I took the temperature at the right axilla and found it, to my utter amazement, to have risen to 104°F, though, the patient was comatose and in a collapsed state. This sudden aggravation, it should be remarked here, was due entirely, in my opinion, to the excessive heat of the day. The aggravation was so abrupt and apparently fatal, that one might easily be led to believe it was an attack of *coup de soleil*. The case was fortunately saved but not without great difficulty. Dr. Lewis Smith speaking of the temperature of blood in this disease remarks, "There is no disease of infancy in which the temperature of the blood is higher. In ordinary cases the thermometer introduced into the rectum rises above 105°F, and I have seen it* indicate 107°F." It has never fallen to my lot to have seen such an abnormal rise of temperature in infantile cholera, humbly admitting at the same time that my experience is nothing compared with that of the authority I have quoted. He further remarks that "there is no other infantile malady in which there is uniformly so high a temperature and under which patients sink more rapidly." * * * * "The opinion has been expressed by certain observers that cholera infantum is identical with thermic fever or sunstroke. There is, indeed, a resemblance as regards certain important symptoms. In cholera infantum the temp. is from 105° to 108°; in sunstroke it is also very high, often rising above 108°, great heat of head, contracted pupils, thin fecal evacuations, embarrassed respiration, scanty urine, and cerebral symptoms are common towards the close of cholera infantum, they are the prominent symptoms in sunstroke. Nevertheless I cannot accept the theory which regards these maladies as identical, and which removes cholera infantum from the list of intestinal diseases. In cholera infantum the gastro-intestinal symptoms always take the precedence, and are, except in advanced cases, always more prominent than other symptoms. It does not commence as by a stroke like *coup de soleil*, but it comes on more gradually though rapidly, and it often supervenes upon a diarrhoea or some error of diet. In the commencement of cholera infantum the infant is not apt to be drowsy and it is often wide awake and restless from the thirst. Contrast this with the alarming stupor of sunstroke. Sunstroke occurs only during the hours of excessive heat, but cholera infantum may occur at any hour, or in any day during the hot weather, provided that there be sufficient dietetic cause. Again, intestinal inflammation is not common in sun-

* Diseases of Infancy and Childhood.

stroke, while it is the common, or as I believe, the essential lesion of cholera infantum. These facts show, in my opinion, that the two maladies are essentially and entirely distinct.^{33*}

If prompt and immediate measures are not adopted to cut short the progress of this stage of development which usually lasts on an average from 30 to 40 hours or a couple of days in some cases, it generally verges on that of collapse. The stage of collapse, which is always threatening, becomes dangerous in proportion to the severity of the attack, the number, quantity and frequency of the alvine evacuations and the distressing and obstinate vomiting. This collapse, unlike that of malignant cholera, supervenes gradually but quickly, not so sudden or abrupt, or so universally fatal. From this stage the patient either dies in a comatose state or in fits of convulsions, or reaction takes place and recovery becomes gradual and somewhat tardy. There is every chance of a relapse, or the disease becomes converted into inflammatory diarrhœa (entero-collitis). Amongst the number of sequelæ to this disease I wish to mention here one in particular which obtains in this country especially, and which has not been mentioned by any foreign writer. This is a low form of parenchymatous keratitis ending in sloughing of the cornea. This is chiefly due to the state of malnutrition, which is induced during the protracted course of the disease analogous to a scorbutic condition of the system. Many children I have seen in this country have thus lost their sight altogether and led a miserable existence. Special care is therefore necessary to watch the condition of the cornea during the convalescent stage of the disease. The child ought to be fed on nourishing diet and the only medicine which I have found to be of especial value in this complication is *Arsenic*. This ought to be tried in such cases.

TREATMENT.

I would only touch here a few important points in the treatment of this disease. As regards prophylactic measures I need hardly find any thing to add to the general stock of knowledge. I wish to remark simply that as a rule I have seen animal diet, soup, &c., and condensed milk so much vaunted by modern writers, seldom agree with the stomach of infants in this country suffering from choleric diarrhœa. Fresh and diluted milk, barley water; arrowroot water, or milk and barley, &c., ought in my opinion, to constitute the chief dietary in this disease which is purely of an inflammatory nature.

The plan of treatment I generally adopt in these cases is usually based on the principle of the therapeutic law of similars,

and am glad to say always with the happiest results. Apart from the therapeutic values of *arsenic*, *veratrum* and *camphor*, which are always regarded by Homœopathic practitioners as valuable and potent agencies in the treatment of choleraic disorders, I, on my part, consider *aconite* as the sovereign remedy in cases of infantile cholera. I look upon it as a specific in this disease, and I do not hesitate to administer it in any stage of its progress and development. In my hand it has always proved successful. As I regard, with all modern pathologists, true infantile cholera in the light of an acute inflammatory disorder, I cannot but consider the pathogenesis of *Aconite* as Homœopathic to this disease. For this knowledge especially, I was originally indebted to Dr. Sircar who, in his "Treatment of Cholera," says—"From the slight 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. It has pathogenetic effects which analogise strongly with the characteristic symptoms of cholera. It has inclination to vomiting, with violent diarrhœa. It has vomiting and watery diarrhœa; it has the hippocratic countenance so distinctive of cholera, it has bluish face with black lips; it has expression of terror and imbecility in the countenance; it has coldness of the extremities with blueness of the nails of the toes and fingers, coldness of the extremities with collapse of pulse." I was subsequently confirmed in my faith in the efficacy of *aconite* in this disease by referring to such authorities as Hempel, Hughes and others. I quote the following passage from Hughes' Pharmacodynamics. "In cholera infantum Dr. Madden found it (*aconite*) indispensable in Australia; and Dr. Guernsey writes of it—'if a child is suffering from a watery diarrhœa, is crying and complaining very much, biting his fists, and is sleepless, *Aconite* will usually settle this trouble in a short time.' In the collapse of Asiatic cholera itself where the chill is so deadly that were it not for the consecutive fever its true nature would be hardly recognisable, but when (as in ague) the temperature is already rising *aconite* will assert its power. It is due to Dr. Hempel to say that from early times he has maintained the homœopathicity and potency of the medicine here." The high persistent temperature, 'violent watery diarrhœa' with constant vomiting and burning of the stomach, intense thirst, the quick though gradual weakening of the heart's actions, the rapid emaciation, the difficult micturition and the restlessness in this disease, all point to *aconite*. I usually administer the undiluted

tincture prepared from the root. The dose varies from $\frac{1}{4}$ drop to $\frac{1}{2}$ drop at intervals indicated according to the circumstances of each case. The case which I have described in the foregoing pages owed its life to this valuable drug particularly. Next in order of importance come veratrum and arsenicum; these have saved many a life when aconite has failed. They are used according to their special indications. *Puls.*, *nux.*, *china*, *carbo veg.*, *secale*, *bryonia*, *calcareo*, *borax*, &c., are valuable remedies in this disease to meet special symptoms. For convulsions in this disease *Belladonna* has proved very successful in my hands. *Iodide of potassium* is a valuable remedy which I always use when symptoms of effusion in the brain present to me. It ought to be borne in mind in treating this disease that the danger is in proportion to the loss of fluid from the body, and the sooner the diarrhoea is checked the better. This is quite unlike that of malignant cholera in which depression and collapse do not bear any relation to the number of alvine evacuations. Another very distressing symptom, and consequently a source of exhaustion, is the obstinate vomiting. It sometimes becomes almost unmanageable. I have seen *Ipecacuanha* do good in many cases but only temporarily. I have obtained better results from *Creasote* in this complaint. In two very obstinate cases of vomiting, I derived considerable benefit from administering minute doses of calomel ($\frac{1}{4}$ gr.) rubbed with sugar of milk and put dry on the tongue.

Accessory means. Mustard poultice over the epigastrium and abdomen are of value in many cases to relieve the gastrointestinal irritation. Ice to the abdomen is also a valuable adjunct. But the most valuable of accessory measures which I always adopt according to the recommendation of Prof. Niemeyer are the cold compress over the abdomen and wet-sheet packing of the whole body especially during the collapse stage. I have derived admirable results from their use, and their value in my humble opinion cannot be overestimated. Under their influence I have watched with considerable interest the rapid diminution of high temperature, or if the temperature was below par, its return to the normal condition. The gastric irritation, pain and vomiting abate in a marked degree, the respiration becomes less hurried and the difficulty of micturition is removed in great many cases. I always make use of cold water in its ordinary temperature. This plan is quite compatible with the law of similars when we remember that we are dealing with a case of pure and acute catarrhal condition of the intestinal mucous membrane with its accompanying symptoms.

TREATMENT OF CHLOROSIS.

(Translated from the French of Dr. Jousset in *L'Art Medical*
for February 1883.)

Chlorosis is a malady of the class cachexia, peculiar to the female sex, and in direct relation with menstruation. This disease is thus completely distinct from *anæmia*, which is an affection common to several diseases.

Chlorosis is characterized anatomically by the diminution of the number of red globules of the blood, by palpitations and debility connected with this lesion; by troubles of digestion and always by disorders of menstruation.

This disease presents three forms: the *common form*, the *benign form*, and the *grave or hæmorrhagic form*.

Prophylaxis.—Living in the open air, bodily exercise, good nourishment, hydropathy, constitute the prophylaxis of chlorosis.

I.—Treatment of the Common Form.

Iron and arsenic are the two grand medicaments of chlorosis; but they are not always sufficient for treatment, and then one ought to have recourse to one of the following medicaments:—*argentum, cuprum, pulsatilla, sepia, natrum muriaticum, lycopodium, conium maculatum, kali carbonicum, nitric acid, cicuta, and cyclamen europeum*. Mineral waters and hydropathy are also suitable in the treatment of chlorosis.

1. *Ferrum*.—Clinical experience, as well as the study of iron in the healthy human body, agree in making this medicament the principal agent in the treatment of chlorosis. Iron is not however a specific. There are cases where it fails completely in the treatment of chlorosis, whatever may be the doses in which it is prescribed. I believe that in cases in which iron is useless, it is injurious if it is administered in large doses. Iron in excess produces lesions of the head, cephalalgias with epistaxis; of the stomach, anorexia, gastralgia and constipation; of the womb, heaviness, hypogastric pains, and often disquieting metrorrhagia; of the chest, cough, hæmoptysis, and phthisis. Trousseau has admitted in one of his clinical lectures that the great impulse which he has impressed upon the employment of

iron in chlorosis has given birth to a great number of cases of pulmonary phthisis.

Iron is indicated by the following symptoms : face pale-yellow with redness easily coming on ; lips discolored ; emaciation and puffing ; œdema of malleoli ; dyspnoea which diminishes by gentle movement ; palpitations and vascular souffle ; anorexia ; want of appetite for meat and cooked food ; appetite for acids and raw things ; vomiting of food especially at night ; vomiting of water in the morning ; constipation ; diminution or suppression of the courses ; sadness, apathy ; muscular debility ; extreme fatigue from the least movement ; diverse neuralgias.

When iron is indicated, we give two doses of it in twenty-four hours ; rest six days, and then resume it. The rest ought to coincide with the menstrual period. Iron ought to be taken during meals.

What preparation of iron is the best and what dose ought to be prescribed ?

Opinions are very different as to the best preparation of iron. Some prescribe the soluble preparations, such as the acetates and oxalates, and at the first view they seem to be in the right. Others, and they form the greater number, prefer to administer iron itself, because in the stomach iron comes in contact with acids which render it soluble and at the moment of this chemical transformation its absorption ought to be the easiest. In fact, the experience of Quevenne (*Dictionn. encyclop. des sciences médicales*, p. 516) has established that metallic iron reduced by hydrogen or finely pulverized is the ferruginous preparation which is the most absorbable, 51 to 35 milligrammes administered in 50 centigrammes, whereas the soluble salts, *lactate* and *tartrate* are not absorbed in the small proportion of 20 to 11 milligrammes administered in 50 centigrammes.

The insoluble preparations are then, in point of fact, the most absorbable ; besides they have not immediate toxic action upon the mucous membrane of the stomach ; they do not blacken the teeth ; they ought therefore to be preferred.

For a long time I had prescribed the *acetate* or the *protoxalate* of iron ; now I prescribe by preference either the reduced iron, or the first decimal trituration of metallic iron. It is necessary to draw, from this exposition, a practical conclusion : it is that when

iron is well indicated, and when one preparation proves inefficacious, one ought to try another.

As to the dose, we separate ourselves equally from the pure infinitesimalists and from allopaths by prescribing in each dose two to five centigrammes. It is useless to prescribe with the allopaths enormous doses which fatigue the stomach and are rejected with the stools; and Jahr himself confesses that he has never obtained benefit from iron in chlorosis in infinitesimal doses. Hartmann has said with practical sense which characterizes him: "Iron administered in feeble doses never produces any effect; the contrary takes place with doses strong and long continued." Now there are circumstances in which one ought to prefer preparations which unite two metals in one chemical combination, the *iodide of iron*, the *arsenate of iron* for example.

Iodide of iron is chiefly indicated in scrofulous chlorotics. It sometimes succeeds better than metallic iron itself in non-scrofulous chlorotics, and without any precise indication; it is then a salt which ought to be tried even in non-scrofulous chlorotics when metallic iron has not succeeded. The preparation known under the name of *Pilules of Blancard* is no other than a preparation of iodide of iron.

Arsenate of iron ought to be preferred to iron when the prostration is excessive, the œdema considerable; when there exist anxiety and palpitations. Copious menstruation is no contra-indication for this salt, whereas it is for metallic iron.

2. *Arsenic* is the chief medicament for menorrhagic chlorosis; we will come to it when treating of this form of the disease.

3. *Argentum*.—The experiments of Bogoslowky have shown that argentum, administered in the form of *peptonate* or double salt of *argentum and sodium*, produces in animals the following symptoms: diminution of the weight of the body, atrophy of the fatty tissues, a *chlorotic blood*, degeneration of the muscles, also of the heart; whence stagnation of blood throughout the whole extent of the venous system; fatty degeneration of the liver; hyperæmia of the kidneys and *albuminuria*; catarrh of the air and alimentary passages; alteration of the spinal marrow, with phenomena of paralysis of movement and of sensibility (Nothnagel and Rossbach, p. 101). These symptoms have given us the idea to prescribe argentum in chlorosis when iron

has failed, and in several cases we have succeeded in the most remarkable manner.

It is especially when chlorosis is accompanied with very abundant menstruation and with tendencies to diarrhoea that *argentum* will be indicated. The pains in the bones, vertigo, symptoms of irritation of the spinal cord,—cramps, sharp and quickly recurring pains, paresis and especially albuminuria, confirm the employment of this medicament. We have prescribed the lower triturations of the oxide of silver, administered as we have said for iron.

4. *Cuprum*.—The action of copper has some analogy with that of silver. This metal is suitable likewise in chlorosis where diarrhoea and cramps predominate. Pécholier has stated that females who work in the manufactories of verdigris become stout and are never chlorotic.

We have very little information about the indications of copper in chlorosis, and the cases in which we have administered it are too few in number to enable us to formulate with precision on this point. It is a medicament which has to be studied and which may render service in difficult cases where chlorosis resists the ordinary classical treatment.

5 & 6. *Pulsatilla* and *sulphur*.—*Pulsatilla* is indicated chiefly by uterine symptoms, habitual to chlorosis: retardation, diminution, decoloration, then suppression of the menstruation; dysmenorrhœa; milky, abundant leucorrhœa replacing the menses; colic, heaviness of the lower abdomen and pains in the kidneys. *Pulsatilla* may be associated in treatment with iron, then it is administered some days before the epoch of the menses, to favor their appearance and render them abundant.

In some cases, *pulsatilla* alternated with sulphur has been able very happily to modify chlorotics who are not able to bear iron. The symptoms, which in these particular cases, indicate *pulsatilla* are: lancinating headache seated in one of the frontal eminences; diverse neuralgias; palpitations, sensation of chilliness; the tendency to remain seated, to retire to a corner, indifference to all; horror of movement and of conversation; mildness of character.

In these cases I have prescribed *pulsatilla* ʒ, two doses per day, eight days before the menses, and *sulphur* ʒo, also twice a day, after the menses, and continued for eight days.

Hartmann considered *sulphur* as one of the best medicaments in chlorosis, and he affirms having cured the disease at its beginning with few doses only.

7. *Sepia*.—The characteristic of *sepia* is leucorrhœa. The discharge is sometimes thick, yellow, greenish, foetid, sometimes watery; sometimes reddish, it is often prurient. The leucorrhœa of *sepia* is accompanied by pains and lancinations of the uterus, pains in the kidneys; but chiefly swelling of the lower abdomen. The amenorrhœa is less marked than in *pulsatilla*, and the menses though diminished, often appear in advance. Cephalalgia and large dirty, earthy spots on the body, still further indicate *sepia*.

The first triturations, even the first decimal have appeared to me to have more action than the other dilutions. *Sepia* is administered as iron is.

8. *Natrum muriaticum* is one of the medicaments of chlorosis in young females, when the course has not appeared, or when they appear with pain and at great intervals. The sufferings of the stomach with nausea, waterbrash, vomiting of food, debility, and sensation of fainting, appetite for acids, disgust for meat, bread and most cooked food are characteristics which indicate *natrum muriaticum*.

This medicament has almost always been prescribed in the 12th and 30th dilutions. Two days per day for four days, rest for four days, and then recommence.

9. *Lycopodium* is indicated when the menses have been wholly suppressed for a long time. Yellow or reddish leucorrhœa, preceded by uterine colic and accompanied with excoriation of the vulva, and obstinate constipation specialize the employment of *lycopodium*. This medicament presents a sufficiently complete image of the common form of chlorosis.

The 12th and 30th dilutions are the most efficacious. Modes of administration same as that of *natrum muriaticum*.

10, 11, 12, & 13. *Kali carbonicum*, *conium maculatum*, *cicuta*, and *nitric acid* correspond to several indications in chlorosis.

Kali carbonicum is specially indicated by retardation of menstruation; *conium*, *cicuta* and *nitric acid* for depraved appetite and desire for varied and unnatural food. *Cicuta* offers in its pathogenesis a violent desire to eat charcoal; *nitric acid* an appetite for chalk, earth, lime and herrings.

Cyclamen europeum is an analogue of *pulsatilla*, and it has been useful in chlorosis to bring back the menstrual course. Cephalalgia with vertigo and troubles of vision characterize this medicament. I prescribe it in the 15th dilution.

II. Treatment of Hæmorrhagic Chlorosis.

Arsenic, silver, bromide of sodium, and the salts of mother-waters are the three fundamental medicaments of this form of chlorosis. *Calcarea carbonica* and *ignatia* fulfil particular indications, and all the medicaments of metrorrhagia find their employment during the loss of blood which accompanies this disease.

1. *Arsenicum*.—The pathogenesis of arsenic represents all the symptoms of chlorosis; excessive prostration, considerable œdema, violent and irregular palpitations with anxiety; appetite for acids and alcoholic drinks; but especially the menses very copious, very prolonged and appearing too soon, characterise the action of arsenic and distinguish it from that of iron; when the menses, without being very violent, is so prolonged that the sanguineous flow becomes continued, arsenic is perfectly indicated.

I prescribe arsenic in the 3rd trituration, five centigrammes before two principal meals, during the whole interval between the menses.

2. *Argentum*.—Silver, of which we have mentioned the suitability in chlorosis, is particularly appropriate when this malady is accompanied with metrorrhagia. The oxide of silver has been employed empirically by the allopathic school in the treatment of uterine hæmorrhages, and I have several times verified its happy influence in females attacked with fibrous tumors or with hæmorrhagic chlorosis.

I prescribe by preference *argentum oxydatum*, 1st trituration, or 2nd trituration, if the 1st determines pains in the stomach, five centigrammes twice a day during the interval between the menses.

3. *Bromide of sodium and salts of the mother liquors*.—The action of the baths of mother-liquors on menorrhagia has led me to try against this affection bromide of sodium which constitutes the active principle of these waters, and the salt which I obtain by evaporating the mother liquors of Croisic. I cannot yet prescribe the special indications which should enable us to prescribe by preference these salts or arsenic: they are suitable.

in analogous cases. I prescribe these salts when arsenic fails, and I have often succeeded. The presence of constipation preferentially indicate the bromide and the salts of the mother-liquors.

The doses and the mode of administration are absolutely the same as those for arsenic.

4. *Ignatia* is indicated in cases where the menses comes on too soon. It is a medicine on which one may absolutely count; especially if the young female is nervous, melancholic, and sheds tears on the slightest occasion.

I prescribe this medicine in the 12th dilution, two globules every evening at bed time, eight days before the appearance of the menses. But as *ignatia* only retards the menses without having any great action on their abundance, it is necessary to prescribe at the same time arsenic or the salts of mother-liquors after the method we have indicated above.

5. *Calcarea carbonica* responds to considerable prematureness of the menses; it ought to be prescribed in place of *ignatia* and according to the same method of administration for females who are somewhat fat, and are disposed to scrofula rather than to hysteria.

The principal medicaments of metrorrhagia are *ipecacuanha*, *hamamelis*, *sabina*, *secale*, *ledum palustre*, *crocus*, *thlaspi*, *bursa pastoris* and *china*. The particular indications will be given when we come to the treatment of *menorrhagia*.

Ferruginous mineral waters, sea-air, mountain-air, baths of sea-water with or without the mother-waters, hydropathy complete the therapeutics of chlorosis.

Forges, *Spa*, and *St. Moritz* are the three principal springs, indicated in the treatment of chlorosis. The last has, in addition to its ferruginous waters and its baths, the advantage of the energetic action of considerable altitude; *Royat* and *Luxeuil* have a less energetic action, but it suits certain chlorotics who can ill bear strong doses of iron.

Orezza is especially a water which is drunk after being transported from its source. As it is full of gas, it keeps perfectly, is well supported by the stomach, and is very agreeable to the taste.

Sea-air and mountain-air have, in certain rebellious cases, a decisive action in the cure of chlorosis.

Sea-baths, when the reaction is clear, and the bath may be borne during ten minutes and a half hour, are a powerful means of treatment in chlorosis. In certain patients, very feeble or very nervous, I find well to prescribe hot sea-water baths mixed with 10 to 12 litres of mother-waters of Croisic. This medication is especially indicated in menorrhagic chlorosis.

Hydrotherapy is sometimes a powerful means in inveterate chlorosis which resist all medication. But it is necessary that this energetic modifier be employed with great prudence in order that the reaction may never be missed. It is necessary always to bear in mind that chlorotics can with difficulty get warm. A douche very cold, very short, and very strong is a necessary condition of reaction in these cases.

Acknowledgment.

*Pasteur and Jenner an example and a warning.** By J. J. Garth Wilkinson. W. Young. Victoria Street, Westminster, S. W.

A momentous Education Question for the consideration of Parents and others who desire the Well-being of the Rising Generation.

By P. A. Siljeström. W. Young. 114, Victoria Street, Westminster S. W.

"A Ghastly risk," submitted as a reasonable excuse for non-compliance with the law of Compulsory Vaccination, Testimonies concerning Vaccination and its Enforcement. By Scientists, Statisticians, Philosophers, Publicists, and Vaccine Physicians.

The Vaccination Inquirer and Health Review. The organ of the London Society for the Abolition of Compulsory Vaccination, Nos. 49 & 50, Vol. v.

ঔষধ গুণ সংগ্রহ। *Homœopathic Materia Medica.* জীপ্রতাপ চন্দ্র

মজুমদার, এম, এম, এম, প্রণীত। দ্বিতীয় সংস্করণ।

Report of the Alipore Reformatory School for the year 1882.

Gastein, its Springs and climate. By Gustavus Proell, M.D., Salzburg.

CLINICAL RECORD.

A Case of Chronic Diarrhœa.

By T.K.D., L.M.S. (Bombay.)

M. J., aged 13, a virgin girl, was brought to me by her mother on the 19th December 1882, for diarrhœa of four months standing, and whites; she complained of severe muscular pains in both her lower extremities; gets about 6 stools in 24 hours, semi-solid in consistence. After each meal she was obliged to go to stool. Tongue coated white, not much thirst. Prescribed *Puls.* 6, four doses in 24 hours.

20th.—Diarrhœa has stopped, had one well formed stool this morning; muscular pains and whites continue as before. The same medicine was continued for two days more, this lessened the discharge as well as the pain. On the 22nd, *China* 3 was given, this removed her pains completely, and not only lessened the discharge but improved her appetite. This was continued for one week. On the 30th, *Sepia* 3 was prescribed. On the 1st of January she discontinued treatment, the discharge having almost ceased.

Cases of Purulent Ophthalmia in new born Children.

UNDER CARE OF BABU AKHIL NATH PAL, L.M.S.

Case 1. The little patient was attacked with purulent ophthalmia on the 8th day of her birth. Both the eyes were affected, the upper lids were so swollen as to cover the globes of the eyes, profuse flow of purulent mucus when eyes were forcibly opened; morning agglutinations, photophobia and chemosis.

Treatment:—*Bell.* 6 gles, thrice daily, removed the swelling of the lids in two days. *Arg.* 6, twice daily, stopped the discharge in four days. The redness, specially of the palpebral conjunctivæ, was removed by *Sulph.* 12 gles.

Case 2. Patient, a male child of four days old. I saw the case in consultation with an allopath, under whose treatment the child was for a fortnight. *Alum*, a grain to an ounce of rose water, was first given as eye drop. This failing, a solution, containing *Alum*, and *Zinc. Sulph.*, each a grain to an ounce, was next dropped into the eye. This latter lotion so much irritated the eyes, that they bled. When I took the case under my care the following were the prominent symptoms:—lids swollen, red, and agglutinated in the morning, profuse discharge of purulent matter, photophobia, cannot bear to have the eyes washed; screams on attempting to open the eyes, considerable redness of the palpebral conjunctivæ and at the angles.

Treatment:—*Arg.* 6 was given for two days without any effect; *Merc. cor.* 6 was next tried, suspecting the disease to have been caused by syphilitic leucorrhœa of the nurse. This failing, *Sulph.* 12 gles. was chosen by the symptoms, "cannot bear to have the eyes washed" and "redness of the palpebral conjunctivæ" and "at the angles." Cure was effected within four days. Mustard oil was dropped into the eyes morning and evening as an adjuvant of *sulph.*

**THERAPEUTICS OF CONSTIPATION, DIARRHŒA,
DYSENTERY, AND CHOLERA.**

45. CALADIUM SEGUINUM.

Constipation :

1. St. omits the first day, with a feeling of D., in the evening.
2. Very scanty, pasty st.
3. The 3rd decimal dilution increased the constipation in one of our patients.

Diarrhœa :

1. Frequent desire for a soft pasty yellow st.
2. Seven sts., at first watery, afterwards thicker.
3. Soft st., followed after an hour by discharge of blood ; later, moving about and burrowing in the abd.; an hour after a second st., hæmorrhoidal symptoms, with passage of blood.
4. Soft, yellow, pasty st.; he was scarcely dressed after the st., when he was obliged to go again.
5. Mucus passes after the stool, and later a thin fluid passes from the anus.
6. After st., thin, red blood passes in considerable quantities.

During St :

1. Much straining.

After St :

1. Stitches in the rectum.
2. Passage of mucus, and later, of a thin fluid.
3. Thin, red blood in considerable quantities.

General Symptoms :

1. Apprehensive about health.
2. Frequent eructations of very little wind, *as if the stomach were full of dry food.* Hiccough for some time.
3. Nausea during and after smoking.
4. Cuttings in the pit of the stomach, and at the navel.
5. Abd. very hard, distended, painful to pressure.
6. Region of bladder painful to touch ; without desire to urinate, the bladder seems as if full, followed by moderate urination.
7. Sexual organs seem larger ; skin of scrotum seems thicker.

Remarks : We have found *Caladium* very useful in discharge of blood *after* stool, whether hard, soft or diarrhœaic. It deserves a trial in elephantiasis of the skin of the external genitals, especially if attended with pruritus.

46. CALCAREA CARBONICA.

Constipation :

1. Increased constipation from day to day. She had no stool without an injection. He had to take castor oil.
2. No st., with constant urging ; with confusion of the head.
3. Hard, black st.

4. Hard st., with mucus, burning when passing.
5. Unusually thick, formed st.
6. Hard, undigested st., and not every day. • Undigested, hard, intermitting st.

Diarrhœa :

1. Diarrhœa-like st.
2. Frequent passage of st., at first hard, then pasty, then liquid.
3. St., at first thin, then crumbling, without colic.
4. Undigested st., rather thin.
5. Perfectly white st ; °often of sour smell.

Dysentery :

1. White st., streaked with blood, with great ill-humour and colic, caused by breathing and coughing.
2. Offensive st., like rotten eggs.

Before St :

1. Pœvish about trifles, and very irritable in the morning.
2. Nausea.

During St :

1. Prolapsus of rectum and hæmorrhoids.
2. Passage of pin-worms.
3. Much loss of blood, in the evening.
4. Burning in rectum.
5. Pain in the rectum as if torn.
6. Twitching in the abdominal muscles.

After St :

1. Drawing and cutting in rectum in and about anus, with a feeling of heat in the rectum.
2. Burning in rectum in the morning, after a copious st.
3. Burning-itching in anus.
4. Pressure in the pit of the stomach when pressing upon it.
5. Stitching pain in the pit of the stomach on pressing.
6. Feeling of weakness.
7. Oppression of breathing.

Rectum and Anus :

1. Hæmorrhoids as large as nuts, with itching in anus, and constipation.
2. Hæmorrhoids painful and swollen, when sitting, and discharge of blood.
3. Crawling in the rectum as from worms.
4. Ineffectual, painful urging to st., day and night.
5. Hæmorrhage from the anus, accompanying a severe coryza.
6. Oozing of moisture from the anus, smelling like herring-brine.
7. Stitches in the anus during coition.
8. Soreness of the anus and between the thighs.

General Symptoms :

1. Great desire to be mesmerized.
2. Disinclination for every kind of labor.
3. Much crying in an infant (whose mother had taken calcarea). Weeping when remonstrated with.
4. Despondent and melancholy in the highest degree.

5. Great anxiety and palpitation.
6. Very hypochondriac, she thinks she is deadly sick, nevertheless can complain of nothing.
7. Fearful and restless, as if some evil would happen; fears she would lose her reason.
8. In infants, head too large, with cranial sutures separated, and open and sunken fontanelles.
9. Face pale or yellow, lean, with deep seated eyes, surrounded by dark rings.
10. Swelling of the upper lip.
11. Swelling of the glands under the lower jaw.
12. Cracked lips.
13. Offensive smell from the teeth.
14. Painful swelling of the gum. Bleeding from the gum.
15. Thick, white-coated tongue. Burning pain on the tip of the tongue; she could take nothing warm on account of the pain.
16. Slimy mouth in the morning; not relieved by rising.
17. Blisters in the mouth which form ulcers.
18. Accumulation of much mucus in the mouth, though it does not cause spitting.
19. Sweet taste, day and night; flat, watery taste; offensive taste; bitter taste; sour taste, with much tough saliva; sour taste of all food, without a sour taste in the mouth; metallic taste, taste of lead; taste of iron, inky taste; every thing tastes unsalted; fatty taste, and much thirst; faecal taste in the mouth and fauces; taste blunted.
20. Ravenous hunger, in the morning, with weak stomach, with great weakness in the evening.
21. Much appetite for wine, which she never before liked; great desire for salt things, for wet things.
22. Complete loss of appetite; loss of appetite, but when he began to eat he relished his food; she will eat nothing cooked; does not relish his accustomed tobacco, smoking causes headache and nausea.
23. Frequent eructations tasting of the food, of bile; eructations at night, obliging her to rise to be relieved; acid eructations; rancid eructations.
24. After milk, water-brash; tasteless fluid rises into the mouth.
25. Nausea in the morning fasting, with qualmishness and shuddering; with blackness before the eyes so that he was obliged to sit down; nausea when eaten almost enough, disappear if he once ceased eating.
26. During menstruation nausea and ineffectual urging to st.
27. Milk does not agree with him, causes nausea.
28. Vomiting of sour water at night; black vomiting.
29. Burning in the stomach extending up into the throat, after every meal, especially after the use of hard dry food.
30. Pressure in the stomach as of something heavy and solid.
31. Severe pressure in the pit of the stomach, when pressing upon it, and after st., in the forenoon.

32. Spasmodic pressure in the stomach, after supper, and when this passes off, a feeling in the intestines as though he would have diarrhœa, which however does not come on.
33. Stitching pain in the pit of the stomach, on pressing on it, especially severe after st.
34. Tight clothes about the hypochondria are unendurable. A feeling as if laced below the hypochondria, with trembling and throbbing in the epigastric region.
35. Pressure in the hepatic region, on every step, when walking.
36. Abdomen distended, hard.
37. Constant rumbling in the bowels ; incarceration of flatus.
38. Slight pain and trembling in the small intestines, with pain in the small of the back and dragging towards the rectum as if st. would follow.
39. Pinching sensation in the bowels with diarrhœa.
40. Cutting in the left side of the abdomen, which disappeared on the passage of a soft st.
41. Frequent severe cramp in the intestinal canal, especially in the evening and at night with coldness in the thighs ; colic.
42. Gripping crawling in the abdomen, extending towards uterus, with passage of bloody mucus with the st.
43. Pressure in the lower abdomen, on physical exertion, severe pressure in the lower abdomen, and a hard st.
44. Frequent urinating at night.
45. Urine very dark colored without sediment ; pungent odour ; offensive dark brown, with a white sediment.
46. Prostatic fluid is discharged after the st., and after the urine.

Remarks : *Calcareæ Carbonicæ* is a remedy *par excellence* of disorders of development. Hence, as a general rule, it is more suited to the young subject, babies and children, than to advanced life ; and Hahnemann, with his singular penetration, has warned us of this fact. "In affections of persons advanced in age, *Calcareæ*," says he, "even after other intermediate remedies, can scarcely be repeated with advantage ; a dose, which is given after another without any previous intermediate remedy, is almost always prejudicial ; in cases of children however, several doses may be given in succession, provided the remedy continues to be indicated ; the younger the children, the more frequently may the remedy be repeated."

"In selecting *Calcareæ c.*," as Dr. Bell has very justly remarked, "the stool is of less importance than the person, and the concomitant symptoms." Two cases have been reported in this Journal (Dec. 1882) which corroborate this view. It is for this reason that we have given a very copious list of general symptoms. Clinical experience has gone beyond pathogenesis. Thus, though no sour-smelling stool is seen in the provings, copious, watery, sour-smelling diarrhœa is a sure indication for *Calcareæ c.* Hahnemann's experience has shown that *Calc. c.* may be useful in "costiveness ; stools scanty and hard ; frequent or constant looseness of bowels ; involuntary discharge of loose stool intermixed with gas ; protrusion of the varicos of the rectum, with

burning pain, during stool; physical depression after an evacuation, accompanied by a sensation as of being bruised, throughout the whole body." Noack and Trinks recommend it in "obstinate constipation; chronic disposition to looseness of the bowels and diarrhœa; diarrhœa, with prolapsus recti; diarrhœa of phthisical patients; diarrhœa of scrofulous children during dentition; acute, dangerous diarrhœa of children, which are described as ramolissement of the stomach and intestinal canal; diarrhœa, which comes on without any perceptible cause, the copious evacuations, which take place more or less frequently in proportion to the violence of the disease, consist of watery, slimy, either greenish or grayish, flocculent substances, with a cadaverous smell, which also characterises the flatus, and being communicated to the clothes and the bed-clothes of the child, imparts a pestiferous smell to the atmosphere accompanied by slight fever, burning of the hands and soles of the feet, continual violent thirst, want of appetite, rapid emaciation of the whole body, and especially of the face, which looks old, owing to a peculiar expression of suffering and numerous folds and wrinkles, constant uneasiness, tossing about, whimpering and screaming, pale, parched, dry skin, without any elasticity, painful elastic distension of the abdomen, occasional vomiting, scanty pale urine, stupor or little sleep, with half closed eyes."

Calc. c. is especially suitable for diarrhœa when it is an accompaniment of tabes mesenterica. The late Dr. Caroll Dunham has related (*Homœopathy the Science of Therapeutics*, p. 470) such a case in which a single dose of a high potency (200th) effected a cure. Particulars of the case were: Patient, 10 years old, had diarrhœa for six years; was emaciated, but lively and full of mischief; appetite prodigious; thirst very great, not satisfied with small quantities; distress in epigastric region, much greater just before stool, compelling him to press his hand upon that region and bend forward; epigastrium sensitive to touch; abdomen habitually distended, hard and tympanitic; hard, ovoid bodies deep in abdomen; stools copious, pappy, dark-greenish, very offensive, five to twenty per day; aggravation 4 A. M. to noon.

Calc. c. may be useful in constipation, especially when it is chronic. The stools may be either black, or white, chalk-like, but always hard; the indication will be all the more sure, if they are intermitting in character, and contain undigested matter.

47. CALCAREA PHOSPHORICA.

Constipation:

1. No st., with scraping sore pain in the anus especially while walking in the evening.

Diarrhœa:

1. D. after cider or juicy fruit; after vexation.
2. D. in which there were many small white points, or flakes like pus, scarcely perceptible.
3. Very offensive D.

4. She was taken with D.; and pain in the ball of the thumb.
5. D., with much wind during first dentition.
6. Watery looseness day and night, with an urging after st., every fifteen minutes.
7. Mornings, copious, soft st., renewed urgency directly on wiping after which a little more was evacuated.
8. After supper pressure in rectum with a st.; the first hard, the last thin.
9. Heaviness and urging to st., with costiveness, or after looseness.
10. Cutting, pinching, sharp colic, followed by looseness.
11. Severe pain in the abdomen, with flatulence, with unusually frequent sts., at first natural, afterwards soft.

Dysentery :

1. Two sts., mornings and evenings, the last with much blackish blood, mucus, and some bloody, fibrinous, membranous pieces.
2. Three sts., with excessive protrusion of hæmorrhoids that are sensitively sore and throbbing. After the third evacuation, tenesmus and urgency as if more were to pass ; no st., the two following days.
3. Pappy st., mornings after awaking, with dark, at first clotted, afterwards liquid blood ; half an hour after, diarrhœa with tenesmus. Three hours later urgency to st. again, when nothing was passed but some mucus tinged with blood with much greater protrusion of hæmorrhoids than during the previous six days with scraping, cutting, and itching pain in them ; they do not recede for sometime.
4. Evenings after driving a whole day, a second stool with somewhat more blood than usual.
5. St. soft, mixed with blackish blood, more than formerly.
6. After omitting st., for two days, an evacuation with more blood than for sometime past.
7. Bleeding after st., or with a soft st., followed by slime ; protrusion of piles after short buzzing in ears ; very weak feeling in male sexual parts.
8. After the copious morning st., with blood, renewed urgency when wiping himself, upon which he passed a few soft small pieces without blood.

Aggravation :

1. After juicy fruit ; cider.
2. Morning after rising. Evening after driving.
3. During catamenia.
4. After vexation.
5. During first dentition.

Before St :

1. Pressure in rectum.
2. Sensitive pain in the abdomen.
3. Cutting, pinching, sharp colic.

During St :

1. Protrusion of hæmorrhoids.

2. Bleeding.

After St :

1. Urging.
2. Tenesmus and urgency.
3. Bleeding.
4. Bellyache less.

Rectum and Anus :

1. Sore aching in anus when getting up in the morning.
2. After supper pressure in rectum with a st., the first part hard, last thin.
3. Stitches in the rectum evenings ; single stitches in rectum towards the anus or shooting in anus.
4. Itching, sticking and cutting in the rectum ; itching, tickling, prickling in the rectum, with a desire to draw it in very much, without having had a st. all day.
5. Protruding piles, aching and itching, sore ; oozing out of a yellow fluid.
6. Warmth, burning, pulsating in anus ; bearing down towards anus.
7. Sore feeling in anus, worse outside with stitching, burning, throbbing.
8. Itching in anus ; most in the evening
9. Shooting through perinæum into the penis.
10. Heaviness and urging to st. with costiveness or after looseness.
11. Fistula in ano, alternating with chest symptoms.
12. Small furuncle near anus to right with much pain ; cannot sit, has to stand or lie on left side ; discharges bloody pus, and there remains a painless fistula.

General Symptoms :

1. A child of fifteen months, with a big head and open fontanel. Violent screaming, grasping with hands in great agony, towards his mother ; cold sweat most in face ; whole body cold ; lasted nearly two hours ; next day 6 P. M., another spell, lasting only fifteen minutes. Sooner than expected the fontanel closed.
2. After vexation, depressed as if lame ; cannot work, hardly walk ; gets a looseness of bowels.
3. Peevish and fretful children.
4. Complete loss of memory so that he does not know at all what he has just done, or what he should do.
5. During catamenia, vertigo and throbbing in the forehead ; blood rushes to the head ; throbbing headache, increasing after ; over os pubes pressure ; want of appetite ; bellyache and diarrhœa ; backache, shooting ; lower limbs weary ; over fatigued ; going upstairs, feels stiff all over.
6. Acute hydrocephaloid with cholera infantum (Raué).

(To be Continued.)

gleanings from Contemporary Literature.

DIABETES INSIPIDUS.

BY F. F. LAIRD, M.D., UTICA, N. Y.

SYNONYMS.—Polydipsia, Polyuria, Chronic Diuresis, Hydruria, Hyperuresis, Urine Profusis.

“THE name diabetes insipidus is applied to every chronic, morbidly increased excretion of urine, free from sugar, which is caused by no profound structural changes of the kidney, and which constitutes either the sole or at least the most important and primary morbid phenomenon” (*Senator, in Ziemssen*).

In the latter part of the eighteenth century, P. Frank and Cullen, following the suggestive writings of Sauvages, made sugar in the urine the basis of classification in diabetes, and divided it into mellitus (*verus*) and insipidus (*spurious*). The idea of an essential unity in the two diseases was, nevertheless, strong in the minds of physicians. Thenard and Bouchardat announced that they had found a “tasteless sugar” as characterizing polyuria; Mosler discovered “muscle-sugar” (inosite) as the connecting link. Strauss demonstrated that an equal amount of inosite appeared in the urine of the healthy after the ingestion of large quantities of water, which simply washed it out before its conversion into carbonic acid and water, while the theory of Thenard and Bouchardat perished almost at its birth. The fact that glycosuria was a special morbid alteration in nutrition now forced a recognition and compelled the profession to sharply draw the line between it and polyuria. To confirm the distinction came the experiments of Bernard, showing that irritation of the floor of the fourth ventricle at a point just above the “diabetes puncture” (glycosuria) would induce hydruria, not unfrequently associated with albuminuria; and the observations of Eckhard, Loeb, and Gruetzner that salivation sometimes followed puncture of the medulla oblongata in dogs and rabbits. From these discoveries dates the intelligent study of diabetes insipidus.

ETIOLOGY.

1. *Predisposing Causes.*

1. Age: The disease is most common, according to Bartholow, between 20 and 45. It has been known to be congenital (Dickinson), and has also occurred in patients over 60. Under 5 and over 50 years of age, it must be regarded as very rare.

2. Sex: Males are more subject in the ratio of two or three to one. In infancy and childhood it is doubtful if this distinction exists.

3. Heredity: This predisposition has been observed sufficiently often to render it a prominent factor. An hereditary association with glycosuria, noticed in several cases, does not seem strange when we reflect that the “diabetes puncture” and the “polyuria puncture” are close neighbors.

4. Neuropathic and Psychopathic Predisposition: Patients of nervous temperament and of peculiarly sensitive minds are justly believed to be especially susceptible—a view in strict accord with the generally accepted nervous origin of the disease.

5. The Strumous Diathesis: In which distant irritation is especially liable to awaken reflex excitability in the brain.

II. *Exciting Causes.*

1. Injuries of the skull, such as falls, blows, concussions. Exostoses of the skull.

2. Injuries in general: Piorry and Troussseau report cases occurring after a blow upon the hepatic region. Perhaps the emotions (fear, anger, etc.), may in such instances exert more influence than the injury.

3. Diseases of the brain, acute and chronic, including extravasation of blood, inflammatory and degenerative changes, concussion, sunstroke, epilepsy, tumors, etc. In Bartholow's experience, *syphiloma of the brain has been the most common exciting cause.*

4. Psychological impressions, strong mental emotions.

5. Chronic diseases of spinal cord.

6. Following convalescence from acute or chronic diseases.

7. Exposure to drafts of cold air when overheated, sudden variations of temperature, and a single excessive ingestion of cold fluids.

8. Abuse of alcoholic stimulants.

9. Violent exertion and fatigue.

10. Unknown—includes a considerable number of cases.

In order to arrive at the *fons et origo mali*, we must solve the problem of how a morbid increase in the urinary exertion can occur without any disease of the kidneys. The conditions influencing the excretion of urine are, so far as we know, (1) increase in general blood pressure, (2) abnormal composition of the blood, such as an excess of water (hydræmia), or the presence of certain "diffusible and diuretic substances, such as urea, sugar, and certain salts," (3) nervous influence, exerting its power independent of increase in general blood pressure. Increase in the *general* blood pressure in polyuria can be at once excluded as unsustained by clinical facts, pathological changes, or the inferences of analogy. The concentrated state of the blood found by Strauss, and the inefficiency of means which prove curative in hydræmia, offer no support to this theory. The presence of "certain *normal* diuretic substances (urea) in abnormally large amount, or *abnormal* substances of a similar sort" has been invoked as the cause of the diuresis, but is unsupported by any strong arguments. The increase in the urea and urinary salts is not constant during the whole course of the disease, and yet the diuresis persists; moreover, in the majority of cases the excess of these substances is no more than would naturally result from the thorough washing out of the tissues and the nitrogenous metamorphosis thereby induced. Throwing aside the fact that "the diuretic action of urea and of the normal urinary salts is insufficient to explain the great increase in the amount of urine which is observed in diabetes," the untenable character of the hypothesis is still further shown by remembering that an excessively nitrogenous diet will greatly increase the solid constituents of the urine without producing diabetes. The only *abnormal* product in the blood which could possibly cause polyuria is *inosite*, and as Strauss has demonstrated, this appears in very minute quantity as an accidental ingredient.

We must therefore look to nervous influence as the source of diabetes insipidus. The experiments of Bernard confirmed by Eckhard and scores of co-laborers, are now universally accepted by the profession as furnishing the most rational explanation of the disease. Eckhard found that by irritating the posterior lobe of the vermiform process of the cerebellum in rabbits, hydruria (generally with glycosuria) was produced, "without, however, causing increase of blood-pressure in the aorta," but that this only occurred when the splanchnic nerves were intact. In other words, division of the splanchnics not only cut off the vaso-motor nerves supplying the kidney, but also those going to the intestines; hence the vascular network of the intestines would become so dilated that blood-pressure in the kidneys would actually be below the norm, and urinary exertion absolutely diminished, as was ascertained by experiment. In dogs, division of a greater

splanchnic nerve caused an increased excretion from the corresponding kidney; but on irritating the peripheral extremity of the divided nerve, diminution or absolute cessation of the excretion followed. "After section of a splanchnic nerve, a still further increase in the urinary excretion could be produced by irritation of the fourth ventricle. For the hydruria thus produced there must be, therefore, a nervous channel other than that in the splanchnic nerve (and this is the case both in dogs and rabbits). This channel lies in the spinal cord as far as the seventh cervical vertebra, for a section of the cord above that point abolishes permanently the secretion of urine." An explanation of this cessation in the urinary excretion may be found in the suggestive and frequently-verified experiments of Ludwig and Thiry, who demonstrated the fact that section of the cord in the upper cervical region produced "dilatation of most of the blood-vessels of the organism, but notably of the mesenteric vessels, and that galvanization of the cord at its lower cut extremity caused the vessels to contract" (Flint, *Physiology of Man*). If the cord be divided below the twelfth vertebra, a permanent slight increase in the urinary excretion frequently follows; and section of the cord between the seventh and twelfth vertebra, *arrests for a time* the secretion of urine (Bernard). From the above facts we draw the rational inference that division of the cord *above* the twelfth vertebra so paralyzes the *general* vaso-motor nerves as to produce a widespread dilatation of the blood-vessels, thus inducing diminished blood-pressure in the kidneys; while section *below* the twelfth exerts an influence more directly upon the renal vessels.

The experiments of Peyrani in 1870 upon cats, dogs, and rabbits, point to the sympathetic system as exercising a marked control over the secretion of urine. Prolonged galvanization of these nerves in the neck caused an increase in the amount of urine and urea, the increase being greater with the induced than with the constant current. When the sympathetic is divided the quantity of urine and urea sinks to the minimum. Changes in the sympathetic nervous system as an element in the etiology of diabetes insipidus, offer a wide and as yet almost unexplored field of study. Thus far, in only one case (Dickinson's) has the disease been recognized as thus originating.

As the investigations of Bernard and his fellow-physiologists have shown that diabetes *mellitus* may, in many instances, at least, be referred to dilatation of the hepatic vessels, so recent pathologists justly attribute diabetes *insipidus* to a permanent dilatation of the renal vessels. "The diameter of the blood-vessels both of the kidneys and liver is regulated by the vaso-motor centre in the medulla oblongata. The nerves of the kidney pass down through the spinal cord and the splanchnics and along the renal artery to the hilus. When they are divided as they pass along the renal artery, the flow of blood through the kidney is increased, the pressure in the glomeruli becomes greater, and the urine is secreted more abundantly.

Like the hepatic vessels, also, the renal arteries may be dilated reflexly by puncture of the floor of the fourth ventricle, by irritation of the central end of the vagus, or by injury to certain parts of the cerebellum" (Brunton, in Reynolds). Whether this localized dilatation of the renal vessels is caused by *paralysis* of the vaso-motor nerves is a matter of doubt, since Fr. Goltz has incontestably proven the existence of "actively dilating nervi vasorum." Practically, the dispute is of no importance, since the result is the same in both cases. The discovery of Goltz, however, renders unnecessary the hypothesis of "specific secretory nerve-fibres,"—a theory rendered all the more improbable by the fact that *no* nerves have ever been traced to the *cells* of the kidney (Dr. Tyson, *Bright's Disease and Diabetes*.)

Bearing in mind that the lesion of the central nervous system has been most often found in close proximity to the "polyuria puncture," we must,

in the present state of our knowledge, "look to disturbance of the nervous channels which connect the floor of the fourth ventricle and vermiform process of the cerebellum with the kidneys, as the ultimate cause of diabetes insipidus" (Senator).

SYMPTOMATOLOGY.

Diuresis, independent of drug action, occurs under the following conditions (Parkes, *On the Urine*):

I. Associated with excessive thirst (polydipsia).

II. Connected with insufficient action of skin and lungs.

III. During removal of dropsical effusions or retention of water after febrile diseases, or from other morbid conditions unconnected with thirst or deficient elimination from the skin.

His first classification is *true diabetes insipidus*; the second and third are merely temporary conditions, a simple acute diuresis, in no wise entitled to rank with the stubborn persistency of genuine polyuria.

The characteristic symptoms of this disease, the increased primary excretion and the consequent thirst, sometimes appear in the midst of perfect health. More commonly they are preceded by various disturbances, generally of a nervous character, varying from simple headache, sleeplessness, restlessness and irritability, to acute and chronic affections of the brain and spinal cord, derangement of consciousness, of senses or of speech, with convulsions, paralysis and disorder of sensation. Sometimes the diuresis is associated with these phenomena; at other times it sets in as they are passing off; or, more rarely, it may make its appearance some time after the original malady has disappeared. But *only* when this diuresis "constitutes the sole or, at least, the most important and primary morbid phenomenon" (*vide definition*), can it rightfully be called diabetes insipidus. If the disease be induced by powerful nervous shock, such as violent mental or moral emotions, acute disease, wounds, blows, concussions, or great excess in eating or drinking, its development may be sudden. Hysteria may not only be a well-defined precursor but a constant associate; care must be taken, however, to distinguish the *temporary* diuresis of this condition from *confirmed* diabetes insipidus.

Polyuria once established, the urinary excretion gradually increases, reaching its maximum, as a rule, only after several weeks; exceptionally, it attains its height in a few days. When fully developed, the daily evacuation of urine "is very unequal in different cases and in the same case at different times. It may vary from a point only slightly above the physiological limit to ten or twenty times that amount" (Senator). We may safely place the daily average at from one to five gallons. Trousseau reports a case in which the daily discharge amounted to forty-three liters (*about ninety-one pints*). Although the evacuation of water with the urine is greater in the diabetic patient than in a healthy man under the same regimen, a peculiarity is found in the fact that in the former the ingested fluids do not, as a rule, manifestly affect the urinary secretion for several hours. In health the *alternate dilatation and contraction* of the vessels favors the rapid elimination of surplus water; in diabetes the *constant dilatation* of the renal capillaries renders its evacuation less speedy *but more persistent*.

The physical characteristics of the urine may be thus briefly summarized:

I. Color: Very pale and clear, often resembling purest spring water; if less diluted or the pigment be relatively increased, of a greenish tint.

II. Odor: The *urinous* smell is almost entirely absent; but, according to the writer's experience in two cases, the urine may have a pungent or *sour* odor as a transitory condition.

III. Reaction : *Very faintly acid, becoming quickly neutral, or alkaline and turbid with earthy phosphates and bacteria.*

IV. Specific Gravity : Always below the normal, may approach 1015 or sink as low as 1001, varying at different times according to the ratio between the water and solid constituents ; average between 1004 and 1010.

V. Quantity : Owing to its unstimulating character, the urine may be retained for some time and each evacuation be very large ; a small bladder or an irritability of the urinary tract (frequently present) may cause frequent micturition with corresponding reduction in quantity.

The urine is subject to great fluctuation in its solids. At one time they may be actually diminished ; at another time, normal (hydruria) ; one constituent may be in excess of the others, giving phosphaturia, azoturia, exaluria, lithuria (in one case, *vide* Parkes), etc. As a rule, all the solids except perhaps uric acid and creatinin, are relatively decreased but absolutely increased. The greater relative excess of phosphate of lime is regarded by Dickinson as peculiarly suggestive of the nervous origin of the disease. It is claimed by Senator and others that the increase in urea, *cæteris paribus*, is "due to a thorough washing out from the tissues and the greater decomposition of albumen accompanying the increased amount of fluid passing through the body." But on this theory how shall we explain those cases which, like Trousseau's, are characterized by marked emaciation ? "There is also sometimes," says Parkes, "rapid loss of flesh, which is much more easily explained by the hypothesis of an increased tissue change than in any other way. On the other hand, there is none of the febrile action which ordinarily attends increased tissue metamorphosis." Becquerel and others have adopted unreservedly the opinion that there is a disease characterized by this rapid disintegration and increased urinary solids and water, without other obvious symptoms, except the attendant emaciation. To such an affection Becquerel would restrict the term "polyuria," and regard the thirst (polydipsia) as merely a consequence. The accidental presence of inosite has already been alluded to (*vide* p. 712), and hippuric acid in Bouchardat's case probably comes under the same category. The reported cases of diabetes insipidus with albuminous urine are regarded by Bartholow as examples of fibroid kidney.

The thirst increases *pari passu* with the urinary excretion, and so intense does it sometimes become that patients deprived of water will drink their own urine (Dickinson). Niemeyer places the daily ingestion of water, including that taken in the food, as high as thirty or forty quarts. Since the volume of urine excreted was often found to exceed that of the ingested liquids, it seemed reasonable to suppose that the missing quantity must either be absorbed through the skin or taken directly from the tissues. But experiment has shown that the water in the solid articles of food, plus that formed by the direct union of hydrogen and oxygen in the body, not only makes good the deficiency, but also leaves a surplus for perspiration or accumulation in the tissues.

The appetite and digestion are generally good ; the former may even be ravenous, as observed by Bernard, Novellis, Trousseau, and, in one case, by the writer. "Trousseau also tells of a patient who ate such enormous quantities that, at a certain restaurant where bread was furnished *à discretion*, they paid him to stay away" (Niemeyer). Headache, tympanitis, nausea and vomiting, heartburn, cardialgia, epigastric and lumbar pains, and a longing for certain articles of food, or a craving for indigestible substances, have been noticed ; but these symptoms are probably the outgrowth of the diseases which *cause* the diabetes. Thus, anæsthesia and convulsions, due to hysteria, may occur in patients suffering from diabetes hysterica. The bowels are usually constipated, the stools being hard and dry ; exceptionally there is diarrhœa.

The mouth and lips also feel the drain, and are commonly more or less parched. As a most interesting exception, ptyalism may be present as a strong reminder of the experiments of Eckhard, Loeb, and Gruetzner (*vide* p. 712).

The skin shares the same fate as the mucous membranes, being generally dry. Not only is the insensible perspiration markedly diminished, but even the *tendency* to perspire is greatly reduced. Less often the skin is normal, or may even be covered with a profuse perspiration, which, in strumous subjects, is especially noticeable about the head. Scrofulous and syphilitic eruptions are common when the diabetes is the outgrowth of these dyscrasæ. Likewise purpura, œdema, and other cutaneous phenomena may result from the cachexia which occasions the polyuria.

If water be allowed *ad libitum*, the only marked and constant effect upon the general health, "so far as its direct influence is concerned," is a slight (a few tenths of a degree) lowering of the temperature, which has been attributed to the abnormal ingestion of cold fluids. If water be withheld, the tissues become dry and shrivelled, and the emaciation very apparent. The disease naturally renders the patient frothy and peevish. The face is liable to erythematous congestion (Tyson). In some cases a remarkable tolerance of alcoholic drinks has been observed; in others, just the reverse (Tyson). Impairment of the mental faculties and sexual function, although occasionally present, are far more rare than in glycosuria.

The course and duration of genuine diabetes insipidus is so uncertain that he who ventured to predict them might indeed be deemed mad. Says Senator: "In the absence of any fundamental disease threatening life, diabetes insipidus may have an unlimited duration. . . . Especially are those cases which depend upon a hereditary predisposition without any recognizable organic disease, remarkable for their duration." It. Willis records a case which lasted fifty years! The disease may assume an *intermittent* character. Maxwell and Bartholow have observed a temporary entire cessation of thirst and polyuria. Intercurrent febrile disease and pregnancy produce an improvement, which is sometimes permanent, but far more often transitory. A case of scarlatina without influence upon the diabetes is, however, mentioned by Dickison. Diet has almost no effect upon the course of the disease; but strong emotions often aggravate.

DIAGNOSIS.

In the very beginning of the disease the urinary excretion may be only slightly above the physiological limit, and a diagnosis, therefore, very difficult; but careful measurement of the urine from day to day and close observation will soon solve the problem. The only morbid conditions with which it could well be confounded are simple acute diuresis, glycosuria, fibroid kidney, pyelitis, and hydronephrosis. As an example of the first, Ellis (*Diseases of Children*) writes: "A simple diuresis occasionally follows a more or less prolonged condition of disordered stomach. In such cases there is thirst, and the child wastes often apparently causelessly. The urine is generally transparent, pale yellow, of a specific gravity of 1010 to 1025, containing an excess of urea. The strumous diathesis is commonly found in connection with this complaint. Attention to diet (animal and farinaceous foods and milk being the most suitable) suffices for a cure." Such a case is distinguished from chronic diuresis (*true* diabetes insipidus) by the higher specific gravity of the urine, its temporary character, and the ready response to hygienic treatment.

From glycosuria and the renal diseases diabetes insipidus may be differentiated by the absence of sugar in the urine, its low specific gravity, the intense thirst, and the non-appearance of characteristic symptoms pertaining to these maladies.

PROGNOSIS.

Depends largely upon the conditions producing the diabetes. Reference has already been made to the effect of intercurrent febrile diseases, pregnancy, and hereditary predisposition. Most authorities agree that the disease, *per se*, is rather an inconvenience than a dangerous malady. As an exception, Da Costa and Trousseau seem to regard it as equally if not more perilous than glycosuria (Tyson). Trousseau's cases, however, exhibited bulimia, succeeded by anorexia, diarrhœa, wasting, with shrivelled skin, fetid breath, and even phthisis. Hence Bruntou regards excessive appetite as an unfavorable symptom. Complete recovery is rare, and, if it occur, generally takes place within one year from the inception of the disease (Tyson). A far more favorable prognosis may be given when the disease results from syphilitic affection of the brain (Bartholow). According to Dickinson, cases due to drunkenness are apt to run a very severe and rapid course.

POST-MORTEM APPEARANCES.

The few post-mortem examinations have disclosed the important facts that the changes principally involve (1) *the base of the brain (most frequently the medulla oblongata)*, and (2) *the kidneys*. At the base have been observed: Inflammatory and degenerative changes in the fourth ventricle, as well as tumors in the same region or in the cerebellum, namely, tubercles and tuberculous meningitis and gliosarcoma; left pedunculus cerebri softened and discolored in middle portion, and central part of the floor of fourth ventricle colored pale yellow; fracture of base of skull, with contusion of the anterior lobe; fibroid tumor of pituitary gland; carcinoma of the pineal gland. Syphilitic exostosis of the cranial roof, with gumous tumors of liver and bronchial glands, is also reported by Lancereaux.

The *kidneys* were sometimes found enlarged and hyperæmic, as might have been expected. In one instance, without change in the gross appearance of the kidney, the tubules were dilated, some being deprived of their epithelium, and others filled with epithelial cells in a state of fatty degeneration. Cases of marked structural disease must be excluded from diabetes insipidus.

The organic diseases in other parts of the body with which the polyuria was associated are: Lobular pneumonia; cavities in lungs; fibrous tumor between the uterus and rectum; enlargement of the mesenteric glands; cancer of the liver and of the abdominal lymphatic glands, with degeneration of the solar plexus.

HYGIENIC.—A good nutritious diet, water *ad libitum*, warm clothing, skin friction, plenty of exercise in the open air, warm baths, and a warm winter climate. In severe cases, quench thirst by bits of ice, and acidulated drinks. Abstain from salt and all foods which cause thirst.

ALLOPATHIC.—Jaborandi, lime-water, valerian; astringents, such as acetate of lead, alum, ergot, gallic and tannic acids, and iron; tonics, arsenic, cod-liver oil, iron, and strychnia; belladonna, camphor, digitalis, opium and its alkaloids, potassium bitartrate and bromide; blisters to nape of neck and pit of stomach. "Remedies designed to restrain the urinary secretion," says Dickinson, "rarely fail to do harm."

ELECTRICAL.—Constant galvanic current (10 to 30 cells), positive pole applied high up in nape of neck, negative pole over loins and epigastrium, alternately, for four minutes each (Tyson).

HOMŒOPATHIC.—The barrenness of our literature upon diabetes insipidus was made sadly apparent to the writer when he encountered his first case of this obstinate disease. In the hope, therefore, that others may not only be spared time and trouble, but may also verify the superior efficacy of

Strictly homœopathic treatment, the offspring of weeks of close communion with "Allen" is now presented :

1. *Allium cepa*, *alum.*, *Anansth.*, *Arn.*, *Ars. alb.*, *Bell.*, *Bry.*, *Cainoa*, *Calc. c.*, *Calc. phos.*, *Cannab. ind.*, *Caust.*, *Ham.*, *Helon.*, *Ign.*, *Iod.*, *Jabor.*, *Kali iod.*, *Kali nit.*, *Kreos.*, *Merc. sol.*, *Mosch.*, *Natr. m.*, *Phos. acid.*, *Phos.*, *Puls. n.*, *Rhus tox.*, *Spig.*, *Squilla*, *Sulph.*, *Tarax.*, *Trif. pr.*, *Valer.* 2. *Apis*, *Coccul.*, *Coccus c.*, *Dros.*, *Gnaph.*, *Lachesis*, *Lactic acid.*, *Mur. acid.* 3. *Cactus*, *Canth.*, *Chel.*, *Crot. tig.*, *Cyc.*, *Kali brom.*, *Kali permang.*, *Oxalic acid.*, *Polyg.*, *Plant.*, *Sarrac.* 4. *August.*, *Anthrok.*, *Cina* (*Sant.*), *Iris v.*, *Mag. c.*, *Mag. sulph.*, *Ratanhia*, *Sec.*, *Senega*, *Sep.*, *Silic.*, *Stram.*, *Tarent.*, *Thuya*, *Verat. alb.*, *Zinc.* 5. *Berb.* (?), *Cimicif.* (?), *Gels.* (?), *Hura.* (?), *Nitric acid* (?), *Ustilago* (?).

Allium cepa.—Copious urination; sensitiveness over the bladder, pain in the kidneys, weak feeling of bladder and urethra; fulness in vesical region; very pleasant sensation of warmth in urethra. Very melancholy; dryness of mouth, root of tongue, soft palate, and throat, sometimes with bad odor from mouth; hunger generally increased; belching of (sour) gas, with flatulent distension of abdomen and offensive flatus; constipation or diarrhœa after midnight or towards morning; rhagades at anus, with stitches in rectum; weakness in hips, worse ascending; soreness in limbs; skin on the heels is easily rubbed off by the shoes; restless sleep, dreams of being near water, storms at sea, etc.; flashes of heat, and thirst, worse evenings; neuralgic pains, like a long thread, worse in evening; nettle-rash on thighs; pricking, as from pins, in various parts; symptoms go from right to left. *Cepa* has cured polyuria.

Alumina.—Feeling of weakness in bladder, in genital organs in evening, with fear of wetting the bed; involuntary urinating when defecating; frequent copious emission of pale urine, often hot, and preceded by burning in urethra. Tension of skin of face, as though white of egg had dried on; craving for indigestible substances, such as chalk, starch, rags, etc.; easily drunken from the weakest spirituous liquors; great straining to evacuate even a soft stool, or, must stand up to urinate, and then sit down to defecate; dryness of all the mucous membranes, with thirst; sleep restless, frequent awakening with palpitation of heart, anxious dreams; chilly, skin dry, with entire inability to sweat; spare habit. General aggravation on alternate days, or from eating potatoes; better from moderate exercise in open air.

Anantherum.—"Clear, abundant urine, day and night, with debility, great thirst, dryness of the mouth; stools hard, gray or dark-colored, with many other symptoms, chiefly of the liver and stomach;" involuntary urination when walking, and even at night in bed, during sleep, as if caused by paralysis of neck of bladder. Restless, suspicious and irritable; marked increase in appetite; craving for strong liquors, cider, sour drinks, spices; love of strong odors; unhealthy skin, easily suppurating; restless, unrefreshing sleep, with anxious dreams; all symptoms worse from motion.

Arnica.—Frequent micturition of pale urine, containing an excess of phosphates; involuntary discharge of urine at night, when asleep, and during the day when running. Dryness of the mouth, with much thirst; longing for alcoholic drinks, for vinegar, and sour things; obstinate constipation; bed feels too hard. Amelioration in evening, at night, in open air. Caused by mechanical injury.

Ars. alb.—Frequent urging to urinate, with profuse discharge. Insatiable hunger and thirst, with emaciation and great weakness; watery diarrhœa; slight motion causes dyspnœa, with palpitation and fainting; dryness of mouth and throat; anxiety, restlessness, fear of death, burning pains, drowsy.

Bell.—Urine more copious than the drink taken would warrant, frequent, pale, watery, often difficult to retain; urine, when heated, almost invariably

deposits a cloud of phosphates; vesical region sensitive to pressure or jar. "It does not seem to reach the kidney until it has been some time in the stomach, and has exerted its specific action upon the brain" (an exact correspondence with diabetes insipidus). Marked symptoms of cerebral irritation; dilated pupils; hyperæsthesia of the senses; congestion to face, or face pale and cool; lips, mouth, and throat dry with thirst; starts, as in affright, during sleep, and on awaking; singing, talking aloud, and moaning during sleep; entire want of sweat; worse from 3 p. m. till midnight. Especially in full-blooded plethoric patients.

Bryonia.—Urine copious and pale; during motion, some drops of urine pass out of the urethra without sensation. Very irritable, inclined to fright, fear, and vexation; bad effects from violence and anger; dryness of all the mucous membranes; appetite increased; great desire for oysters, sweets, coffee, and wine; great thirst, desire for large quantities of cold water; obstinate constipation, stools very large, hard and dry, only passed after much straining; when walking, prickling like "pins and needles" in soles of feet; much sleepiness during day; restless sleep disturbed by dreams about the business of the day, household affairs; starts in affright before falling asleep; motion of lower jaw, during sleep, as in masticating. General aggravation from motion; dropsical swellings, gradually increasing during the day and disappearing during the night.

Cainca.—Frequent passage of pale urine. Yawning, stretching of limbs with cramp-like feeling of lower extremities; somnolence. "Polyuria of some months' standing disappeared" during the proving.

Calc. carb.—Frequent and copious urination; nocturnal enuresis; urine odorless (Dros., Graple), sour, or pungent; trickling of urine after micturition. Apprehensive, despairing mood, leucophlegmatic temperament; vertigo when ascending a height or locking upward; child scratches its head impatiently on awaking; profuse perspiration on the back of the head when sleeping; pupils habitually dilated; face pale, bloated, with blue rings around eyes, emaciated, old and wrinkled, with retarded dentition; swelling of upper lip in the morning; canker sores in mouth, especially during teething; ravenous appetite and continual violent thirst for cold drinks; desire for wine, salt, sweet things, and eggs; milk causes nausea and sour eructations; pit of stomach swollen like an inverted saucer; enlargement of abdomen, with swelling of mesenteric glands; constipation or diarrhoea; menses too early, too profuse, and last too long; scrofulous swelling of glands; cold, damp feet; emaciation; insomnia; children scream after midnight, and cannot be quieted; scrofulous eruptions, skin unhealthy; easy straining resulting in sore throat, stiff neck, headache, backache, or prolapsus uteri; great liability to take cold, and over-sensitiveness to moist, cold air. Especially in strumous cases, inclined to obesity, and where the disease has been induced by sudden variations in temperature.

Calc. phos.—Large quantities of urine, with sensation of weakness. Disease induced by grief, or disappointed love (Phos. acid.). Peevish; headache along the cranial sutures; much thirst, with dry mouth and tongue, especially in after part of day; abdomen flabby, sunken; craving for salted meats; constipation or diarrhoea; disturbed sleep, worse before midnight; skin dry and cold; emaciation. In children, the cranial bones are very thin, and the patient looks old and wrinkled (Sulph.).

Cannab. ind.—Profuse colorless urine, in a full, clear stream; has to wait some time before urine flows, and must force out the last drops with the hand; the urine dribbles out after the stream ceases. Exaggerated idea of the duration of time and extent of space; face pale; skin of face and scalp feel as if drawn tight; dryness of mouth and throat, with intense thirst for cold water, or great desire for and yet dread of cold water; white, thick, frothy, and sticky saliva; appetite-increased even to bulimia; sensation in anus as if sitting on a ball, and as if anus and a part of the urethra were filled up by

a hard round body; painless yellow diarrhoea; sensation as if drops were falling from the heart; starting of limbs while sleeping, causing him to awake, with anxious dreams; nightmare every night, as soon as he falls asleep, with grating of the teeth; great sleepiness; loss of animal heat; exhaustion.

Causticum.—Frequent micturition, the urine looking like clear spring-water; he urinates so easily that he is not sensible of the stream, and can scarcely believe, in the dark, that he is urinating until he makes sure with the hand; involuntary urination when coughing, sneezing or blowing the nose. Low-spirited, anxious, nervo-bilious temperament; afraid at night in the dark; child does not want to go to bed alone (Stram.); old warts on nose, eyebrows, upper eyelid; styes; he speaks low because his voice sounds so loud; thirst for beer and cold water, or thirst with aversion to drink; aversion to sweet; fresh meat causes nausea, smoked meats agree; constipation, stools covered with mucus and shine as if greased, possible only while standing. Unsteady walk of children, they fall easily; restlessness, especially at night, with anxious dreams and starting from sleep. Aggravation at night (urinary symptoms), from coffee (all symptoms), in the open air. Patients who are scrofulous, or rheumatic, with dark hair, rigid fibre, and delicate skin.

Hamamelis.—Increased desire to urinate, urine pale, clear, and copious; micturition more frequent when lying down; passive congestion of kidneys, with dull pain in renal region. Depressed and irritable; epistaxis, flow passive, non-coagulable; dryness of lips and fauces, must drink large quantities of water to assist deglutition; very thirsty, especially in afternoon and evening; pork causes nausea, eructations, and violent hiccough; stool costive, hard, covered with mucus; takes cold easily, especially from exposure to moist, warm air; pricking stinging in veins, muscles and skin; bruised soreness in various parts (passive congestion); subject to varicose veins.

Helonias.—Profuse, clear, light-colored urine, containing amorphous phosphates, urea increased, specific gravity diminished; thinks the bladder is completely emptied, when another "overflow" convinces him of his error. Irritable, resenting any contradiction or suggestion; tongue coated white, dry, with bitter, disagreeable taste on awaking; minnie-ball stools (vide Allen); all tired out, with weakness and weight in renal region; drowsy and heavy. General amelioration from moving around and when exerting the mind.

Iodine.—Copious and frequent micturition, urine bright-yellow, thin, watery; polyuria. Low-spirited, with irritable sensitiveness; constant restlessness, can neither sit nor sleep; sickly face, often cold in fleshy children; pyalesia, aphthæ and ulcers in mouth, with fetid, breath; canine hunger, yet loses flesh, followed by anorexia; thirst; constipation or diarrhoea; coldness of the hands and feet; sleeplessness after midnight, restless sleep, with vivid, anxious dreams; swelling and induration of the glands; nightly bone-pains; rough, dry skin, often containing nodosities. Scrofulous patients, with dark hair and eyes.

Jaborandi.—Profuse urine, of diminished specific gravity. Profuse sweat and profuse salivation. Has cured cases in allopathic hands.

Kali iod.—Frequent discharge of urine as clear as water, more profuse than the drink taken would warrant; passes from forty to fifty quarts daily (!). Excessive thirst, day and night; constipation or diarrhoea; sleep restless, with horrid dreams, weeping during sleep; purpura; exostoses, enlarged glands, swelling of bones; dropsy; emaciation. Secondary and tertiary syphilis; scrofula; after abuse of Mercury.

Kali nit. (*Nitrum*).—Profuse emission of urine, as clear as water. Headache (and diarrhoea) after eating veal; mouth slimy; with fetid breath; appetite increased, especially in the evening; great thirst; stools hard, like sheep's dung, with tenesmus; drowsy during the day; sleep restless, with nightmare, insomnia after midnight; light morning sleep;

sour taste; cough and pain in small of back on awaking; sensation as if parts of the whole body were made of wood. Generally worse from warmth of stove, and during wet, cold weather.

Krésote.—Frequent urination, always in great haste, and always passing a great deal; obliged to urinate every half hour from 4 A. M. till noon, also, aggravation toward evening and during the night; urine colorless, offensive, and often so hot as to cause burning; deposits a white sediment. Sorrowful, or apprehensive mood; ailments from emotions; old-looking children with sickly complexion; very painful dentition, teeth are wedge-shaped, or decay as soon as they come through; tongue dry; keen appetite, especially for meat, or aversion to meat, with vomiting after eating it; great thirst; great desire for spirituous drinks, with weakening leucorrhœa; constipation, or cadaverous-smelling diarrhœa; skin on the extremities dry and rough; sleeplessness, worse before midnight; child moans constantly, or dozes with half-open eyes; tosses about all night without apparent cause; starting when scarcely fallen asleep; laughs aloud during sleep; nocturnal enuresis in children who are very hard to arouse (Guernsey); sweat almost wanting; rapid emaciation; skin remarkably pale. Perfect depression of the trophic nervous system (Lilienthal).

Merc. sol.—Frequent and profuse micturition, far more urine passed than water drunk; urine often sour and pungent. Ptyalism, thirst, stabby tongue, fetid breath, easy perspiration giving no relief, general aggravation at night.

Natr. mur.—Polyuria; involuntary urination when walking, coughing, laughing. Sadness and weeping, aggravated by consolation; face shines as if greased; mouth, lips, and tongue dry; mapped tongue: excessive hunger, longing for salt, bitter things, oysters, fish and milk; aversion to bread and coffee; unquenchable thirst; constipation; stool fissures the contracted anus, causing bleeding; severe backache, relieved by pressure and by lying on the back; loss of sleep, with vivid dreams of robbers in the house; starts, tosses about, and talks in sleep; no sweat; emaciation, especially of the neck; skin generally cold; great debility.

Phos. acid.—Frequent emission of pale urine, often as clear as water, difficult to retain, and decomposing easily with deposit of a white cloud; worse at night. Bad effects from grief and unfortunate love; skin of face feels tense as if white of egg had dried on, with sensation of a crushing weight on the vertex; dryness of mouth and throat, often with accumulation of tenacious mucus; unquenchable thirst, wants food warm; desire for beer and milk, or aversion to beer, spirituous liquors, and coffee; difficult discharge of even the soft stool (Alum.), or undebilitating diarrhœa; drowsiness; awakened by canine hunger; emaciation; sensation as if beaten, in back and limbs, especially in rapidly growing youths.

Phosphorus.—Urine profuse, pale, watery, of reduced specific gravity; sometimes passed involuntarily. Great anxiety and restlessness, especially at twilight, when alone, or during a thunderstorm, with palpitation of the heart and acuteness of the special senses; excitable, easily angered; epistaxis during stool; nose, lips, mouth and throat dry; appetite increased, or loss of appetite alternating with bulimia; wants food and drink cold, thirst for very cold drinks; after eating, sleepiness; belches much, even after a little food; regurgitation of food in mouthfuls without nausea very soon after swallowing it; characteristic constipation; weak, gone feeling in abdomen, with burning between shoulders; emaciation, with great nervous debility and very cold feet; hyperæsthesia of all the senses; epilepsy, with consciousness; paralysis; exostoses, especially of skull, with tearing, burning pains, worse at night; small wounds bleed much; purpura; aggravation from lying on left side. Especially in tall, slender patients, who are nervous and weak, and in young persons who have grown too rapidly; tendency to phthisis.

Rhus tox.—Frequent urging, with increased secretion of urine, which deposits a white sediment; urine may be voided slowly from affection of

Spiga. Mouth and throat dry with thirst; desire for oysters, sweets, beer; *craving for cold milk*; aversion to spirituous liquors and meat; *dreams of great exertion, as if rowing, swimming, etc.*; *rheumatic pains and stiffness, relieved by motion*; even rheumatic paralysis; *constant restlessness, worse from keeping quiet*, where the disease is caused by fatigue and strain of muscular system.

Spigelia.—Urine copious, passed frequently, preceded by pressive pain in bladder, which is relieved by micturition; spurting of urine when pressing on the bladder; urine deposits a white sediment; urging worse at night. Anxious about the future; *characteristic headache and prosopalgia*; mouth dry; ravenous appetite, with nausea and thirst, or anorexia, with violent thirst; constipation; body feels heavy and sore when rising from a seat; skin pale, wrinkled, yellow, or earthy.

Squilla.—*Violent urging to urinate, with frequent emission of pale, limpid urine, looking like water*; involuntary urination, *especially when coughing*. Great anxiety of mind, with fear of death; angry at trifles; mouth and throat dry; insatiable appetite, and increased thirst; longing for acids; painless constipation; frequent yawning without sleepiness; restless sleep with much tossing about; perspiration absent. General aggravation in the morning, and from motion. "Forms of diuresis (diabetes) occur, in which this drug, increasing the secretion of urine as its primary action, and also corresponding homœopathically to the other symptoms of the disease, will be found a specific and curative remedy." (HAHNEMANN.)

Sulphur.—Urine profuse, pale, watery, passed more frequently at night; preceded by *sudden almost uncontrollable urging*; *specific gravity decreased, solid constituents increased*. Heat on top of head; *pressive pain in vertex, which is tender when touched*; dryness in mouth, throat, and palate, or ptyalism from abuse of mercury; *appetite increased even to bulimia*; *great thirst, always exceeding the hunger*; violent thirst for beer, longing for brandy, or sweets (which disagree); *milk causes sour taste and sour eructations*; *feeling of fullness in the stomach*; *hungry and faint at 11 A. M.*; constipation, stools hard as if burnt, and often crumbling, or hard, knotty, scant, with frequent "false calls" (*Nux*); or *painless early morning diarrhœa driving patient out of bed, sleeps in "cat naps," jerks and twitches, awakens with a start or scream, talks loudly while asleep, must lie on his back, burning of feet, children dislike being bathed*; *offensive odor to the body despite frequent washing* (*Comp. Psor.*); *dry flabby skin*; *emaciation with an old look to the face*; *skin eruptions*. Especially in scrofulous patients who walk stoop-shouldered; and when well-selected remedies fail to act.

Tarax.—Frequent, profuse, and pale urine. *Tongue covered with a white film, with a sensation of rawness followed by peeling off of this film, in patches, leaving dark-red, tender, very sensitive spots (mapped tongue)*, gastric symptoms; thirst; *stool difficult*, but hard, requiring much pressure; pimply, scyotic skin, with stinging in it. Better from walking. "It is of use, homœopathically, in forms of diuresis (diabetes), when the other symptoms correspond to Taraxacum, and when the disease is not of miasmatic origin, as often happens." (HAHNEMANN.)

Trifolium pratense.—*Diuresis*; *urine pale, with uneasiness in the region of the kidneys*. Headache; dry, husky feeling in throat; constipation, each defecation followed by several drops of dark blood, with a bearing-down sensation as if the bowel would prolapse from its own weight; stool covered with mucus; unrefreshing sleep. Better in the evening and in the open air. The high specific gravity (varying from 1021 to 1036) of the urine, renders the value of this remedy in polyuria somewhat problematical. Clinical experience must decide.

Mineral Waters.—*Carlsbad, Gastein, Bethesda, and Vichy.*—*The Hahnemannian Monthly*, Dec. 1882 & Jan. 1883.

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HAHNEMANN, THE FOUNDER OF SCIENTIFIC
THERAPEUTICS.

EVEN when Homœopathy shall have gained the victory it is destined to do, absorbing the profession or being absorbed into it, Hahnemann will continue for a long time further to be the theme of the introductory lectures in Medical Schools. The development of his colossal mind as indicated by his writings, from the earliest to the latest, will be traced with the keenest interest. And indeed this will be necessary in order to understand and definitely settle beyond all dispute what Hahnemann's homœopathy was. A systematic and unbiased study not only of all his great works, but of all his writings in all their editions, will alone enable any one to achieve this difficult task. Nothing short of such a minute study can supply materials for an accurate or even fair criticism of the man in order to fix his place in the history of Medicine. It is then that the unseemly division of the New School into sects will cease, these sects having taken their rise from different interpretations given by them of the Master's words.

The London School of Homœopathy, by founding an annual Hahnemannian lecture as introductory to its Sessions, has adopted the best means whereby the consummation to be earnestly and devoutly wished may come. Of course a great deal will depend upon the selection of the lecturer. We are of opinion that the basis of selection should be the ability of the person and not his opinions, and then we shall have, as we should have, representatives

of all opinions. So far as the persons who have already given the Hahnemannian lecture are concerned, we are glad to say that the selections have been unexceptionable. And the three Hahnemannian lectures we have already had are, we must say, excellent and have sustained the reputation of the gentlemen who have delivered them.

Dr. Compton Burnett, the first Hahnemannian lecturer, has given us a lively sketch of Hahnemann as a man and as a physician. "When I go over his wondrous life," he concludes his brilliant lecture, "I am profoundly impressed with his greatness as a mere man; he taught Hebrew at the age of thirteen; he knew eight languages when he went to the university at twenty; he became a doctor of medicine at twenty-four; he lived to be nearly ninety, and labored all the time, certainly he was a hard worker for eighty years; throughout the course of his long life I do not find one single shameful act recorded against him by real history. Of how many men can we say as much? He was indeed a great and almost a perfect man. As a physician he stands exalted far above any the world has ever seen since the time of the divine Hippocrates. As a physician he was, indeed, incomparable; his was, and is, the truest definition of the real physician, viz., one whose sole business is that of healing the sick *cito, tuto et jucunde.*"

Dr. Richard Hughes, who delivered the Hahnemannian lecture in 1881, has exhibited Hahnemann as a medical philosopher by the light of his *Organon*. With his extensive scholarship the lecturer has shown the changes which Hahnemann's opinions underwent in some points of doctrine, as shown in the editions of the *Organon* subsequent to that of 1824, up to which time, says Dr. Hughes, almost everything in Hahnemann's work is of enduring worth, being positive, experimental, sound. These changes of opinion, it is shown, did not affect the cardinal doctrines of homœopathy, which remain true to nature, without them and in spite of them, and which have borne substantial fruit.

The theme chosen by Dr. Dudgeon, the Hahnemannian lecturer for 1882, was "Hahnemann, the Founder of Scientific Therapeutics." This is, in one sense, a smaller subject than the two we have considered. Dr. Burnett's was the largest, in as much as he had to review Hahnemann's life as a man and as a physician. Dr. Hughes narrowed himself to a subject of much less extent than Dr. Burnett's, but he had still to take one of Hahnemann's greatest works, and review its doctrines seriatim. Dr. Dudgeon's subject, so far as Hahnemann is concerned, is of lesser area, so to say, than that of Dr. Hughes; but so as far as the development of therapeutics is concerned, it is a much larger and

wider one. Both Dr. Burnett and Dr. Hughes had to present the pre-Hahnemannian state of therapeutics, but they had only to do it incidentally. With Dr. Dudgeon the presentation of therapeutics, anterior to its reformation and reconstruction by Hahnemann, was a necessity; and accordingly we find him in the beginning of his lecture taking a survey of old therapeutics in order to contrast it with the new, or the one which Hahnemann founded.

Polypharmacy was one of the greatest sins of old therapeutics, and to this was added all sorts of loathsomeness. "From want of a guiding principle," says Dr. Dudgeon, "for ascertaining the curative properties of medicines, therapeutics had degenerated into a senseless farrago of uncleanness and absurdity, a *caput mortuum* of inert rubbish, a cesspool of filthy abominations, and a torture chamber of painful and noxious appliances." The following recipes which Dr. Dudgeon has culled from a work of one William Salmon, Professor of Physick, entitled *Doron Medicum, or a Supplement to the New London Dispensatory*, will show that the severe language here used, condemnatory of the loathsomeness of the materials used by old therapeutics, is not severe enough:

"*Quinta Essentia Bufonum Fabri*, Faber's Quintessence of Toads.—R. Toads in great numbers in the month of June, hang them up and dry them in the sun, then calcine till the ashes are white, from which, with Carduus or Scabious water, or water of Limon-Peels, extract a Salt to the highest whightness: mix, and keep this Salt with Treacle water. There are some which order this Quintessence to be made with the distillation of live Toads; but Faber affirms that water to be the highest poison, and, from its Volatile Spirit, to kill by its odour. This salt is one of the chiefest Antidotes against Poison, resisting all Venom to a wonder."

"*Quinta Essentia Ossium Humanum Fabri*. Quintessence of Mans Bones.—R. Mans bones in gross powder (and infused in generous wine for 8 days) of which make an Oyl per descensum, which rectify by a seavenfold distillation in a Retort. The fæces or Caput Mortuum calcine in a strong fire, from which Calx, with boyling water, extract a Salt, which purify and make white; then conjoyn it with its afore-prepared Oyl, and digest, that they may be perfectly incorporated. This will be best and most efficaciously done, at Sol his entrance into Aries, which is about the tenth day of March every Year. The same ought to be observed in making the Salt of Mans skull, with sweet Spirit of Vitriol. There is nothing in *Rerum Natura* more powerful than this Balsam in curing and taking away all manner of arthritick pains and torments. It speedily takes away all kinds of rottenness, and corrects every other vice of the Bones. Let it be applied warm in manner of a Balsam, with Lint, to the part affected. The *Potestates Cranii Humani* is a similar preparation employed chiefly for the cure of Epilepsia or Falling Sickness."

"*Unguentum Sympatheticum*. The Sympathetic Oyntment.—R. Bears Greave, the Brains of a Boar, Powder of washed Earth-worms, red Sanders, Mummy, Bloodstone, ana ℥i; Moss of a dead Mans Skull, not buried, ʒj; make an oyntment according to Art. Or thus according to Barbet (which he affirms to be the best description): R. Oyl of Roses, fine Bole, ana, ʒj.

Oyl of Tarseed ʒij, Moss of a dead Mans Skull, Mans Fat, ana, ʒij, Mummy, Mans Blood, ana, ʒss. Mix and make an Oyntment. All wounds are cured by this Oyntment (provided the Nerves and Arteries, or some of the principal Members be not hurt) thus: Anoint the Weapon that made the Wound daily once, if there be need and the Wound be great, otherwise it will be sufficient to anoint it every other day. When note, 1. That the Weapon be kept in clean Linnen, and in a temperate heat; for if the dust fall, or Wind blow upon it, or it be cold, the Sick will be much tormented; so also if it be kept too hot. 2. That if it be a stab, the Weapon must be anointed towards the point descending. 3. That if you want the Weapon, take Blood from the Wound upon a stick, and use it as if it were the Weapon. Thus the Tooth-ache is cured by pricking the Gums and anointing the Instrument."

The use of any part of the human body as medicine is not only loathsome beyond all description, but criminal in the last degree, and ought to be prohibited by law. For once admitted that any part of the human body may be used as a remedy in disease, there will be no limit to human unscrupulousness to murder human beings in order that the real or fancied diseases of rich or of selfish men may, in the opinion of unscrupulous and designing or avaricious physicians, under the guidance of a lawless therapeutics, be effectually treated. When therapeutics, in its vain gropings in the dark in search of remedies for our ailments, could descend so low as this, it surely had arrived at a state when it should either have ended or mended. And it is a wonder that physicians of undoubted ability should have tolerated such a state of things. "I do not suppose," says Dr. Dudgeon, "that these loathly and grotesque remedies were patronised by Stahl, Hoffmann, Boerhaave, Haller and Cullen, the great medical authorities of the eighteenth century, to which Hahnemann belonged; but medicine has never been practised solely by great men, and it was long before their half-hearted teachings of an unprincipled therapeia exercised much influence on the practice of the rank and file of the medical profession, as they could give no more reason for the remedies they proposed than *against* those they denounced."

It was reserved for one man to shake old therapeutics to its foundations, and thus to inaugurate the beginning of its end; and it was reserved for the same individual to build a new, a scientific therapeutics, on the foundations of natural and eternal law. Chaotic as was the state of therapeutics as he found it, with the eye of genius he saw that, whether recognized by its professors or not, it was reducible to two systems—the system which proceeded to cure diseases by administering their contraries, that is, medicines which had an action *contrary* to the disease, and the system which attempted to cure diseases by remedies whose action was *different* from the disease; that is, old therapeutics was either antipathic, or allopathic, or both.

The next step was to see that there was the possibility of another system, by which medicines are to be administered for the similarity of their symptoms to those of the disease. Whether Hahnemann, before he tried the cinchona experiment, was aware of the dictum of Hippocrates, of the observations of Paracelsus, Stahl and others pointing to the possibility and the actual though occasional practice of this method, we cannot say, as Hahnemann has not himself said so. The probability is, that he was not, and that the cinchona experiment was a spontaneous suggestion from his own mind, resulting from an analytic reflection on all possible relationships between drugs and diseases. He did not rest contented with the one cinchona experiment that he performed. It served to lead him to other experiments with other drugs. The formula for treating diseases homœopathically was not arrived at by him hastily, but gradually and carefully. Indeed, his first recommendation of the method was for *chronic* diseases. "After six years of patient reflection and experiment," says Dr. Dudgeon, "he suggested that the administration of medicines according to the rule *similia similibus curentur* might be the best method of treating *chronic* diseases—acute diseases might still be best treated by the contrary or palliative method. His suggestion fell unheeded by the great and the small men of the day. They were quite content with their old and traditional methods, their bleeding, blistering, purging, salivation and complex prescription. Hahnemann nothing daunted, went on with his experiments, and nine years later published a work in Latin *On the Positive Effects of Medicines*, partly ascertained by experiment on himself and the members of his own family—for as yet he had no disciples—partly culled from the records of poisoning and observations of the effects of drugs in the writings of medical authors. At the same time he published that remarkable work *The Medicine of Experience*. Fortified by his nine years of diligent experimentation with medicines, in order to ascertain their pathogenetic powers, and his equally long trials of the curative powers of medicines given on the *similia similibus* principle, he felt himself justified in declaring his therapeutic rule to be of general application, and the use of palliatives to be limited to tiding over temporary difficulties, such as apparent death from freezing or asphyxia, and hysterical convulsions."

With every advance that he made in eliciting the actions of drugs on the healthy human body and in applying them as remedies on the principle of similarity, he was convinced more and more of the applicability of that principle in the treatment of disease, and he felt called upon to give a systematic exposition of the doctrine he had so nearly elaborated. This he did in 1810, the last year of his residence at Torgau, in a work which was entitled the "*Organon of the Rational Healing Art*," a work

which has been for medicine, what Aristotle's *Organon* was for the deductive, and Bacon's for the inductive sciences. It was in this work that the word *homœopathy* occurs for the first time, and he used it to designate his doctrine. He was not satisfied with a mere exposition of his doctrine. If he had done so, the experimental proofs he had already adduced in support of it, would have convinced any unbiased man of its truth, and if he had done nothing more, his name would still have been immortal, and perhaps would have been recognized by the whole profession as the discoverer and expounder of the best system of therapeutics.

But Hahnemann saw that the success of the new therapeutics depended not upon its plausibility, but upon its actual ability to cope with disease, and to this end it was necessary that provings should be multiplied as much as possible. He had hitherto conducted provings on himself and probably on some of the members of his own family. But this was not enough, he required more extensive and more scientific co-operation, and this he could not obtain in the little town of Torgau. He, therefore, immediately after the publication of the *Organon*, removed to Leipsic, where within a year of his arrival he published the first volume of the *Materia Medica Pura*, containing whatever provings he had made up to that time, just to give an idea of what the materia medica of the new therapeutics ought to be, in order to attract co-operators in the noble cause of advancing and perfecting medicine. This he soon succeeded in doing, for after he had obtained the licence to teach, an enthusiastic band of young disciples gathered around him, "who entered heart and soul into his scheme, and aided him so effectually in his work of proving medicines that, between 1816 and 1821, he was enabled to publish five more volumes of his pure materia medica." What the character of this work was, has been well shown by Dr. Dudgeon. "The six volumes of this colossal work contain the positive effects of sixty-four medicines. It constitutes a real treasury of materia medica, displaying the accurately observed effects of medicines on the human body, without any alloy of hypothesis or conjecture. Such a materia medica had never been offered to the medical world since medicine had been cultivated as an art. It upset and rendered useless all the treatises and text books on materia medica that had hitherto passed current in medicine. These contained mere hypothetical or traditional accounts of the supposed virtues of medicines. Hahnemann's materia medica, excluding hypothesis, recorded only the well-ascertained effects of medicines on the human body."

During his stay at Leipsic, 1810 to 1821, Hahnemann developed the cardinal doctrines of homœopathy by an appeal to observation and experiment, and without any reference to hypothesis or

speculative theory of disease and drug action. The principles of similarity, the provings of medicines on the healthy human body, the single remedy and the small dose these were the cardinal, the fundamental doctrines of the new therapeutics, and these were arrived at by the most cautious inductive process of which we have record in the history of science. There is and can be no dispute about them. They constitute the common platform where all his followers can and do meet. And it is supposed that if Hahnemann had left homœopathy there, his school would have remained a united body without any split into sects and schisms. But to these fundamental doctrines were superadded others some of which are positively hypothetical, and others do not appear to have a broad basis of fact for their support. These superadditions have not recommended themselves equally to all his followers, and thus was division introduced into his school in his lifetime.

As these superadditions were made by him during his stay at Coethen, to which he went at the invitation of its reigning duke, after being forced to leave Leipsic by the action of the apothecaries at the instigation of his colleagues, and where he lived a solitary life, it is supposed by some, and among them by Dr. Dudgeon, that had it not been for this forced exile from the centre of learning and science and friends, and disciples, homœopathy would have remained the pure and scientific system of therapeutics it was preached at Leipsic in the first edition of the *Organon* and of the *Materia Medica Pura*. "Deprived of his practice," says Dr. Dudgeon, "torn from the society of his friends, no longer able to superintend an admiring circle of devoted and enthusiastic fellow labourers in the construction of his indispensable *Materia Medica*, the sense of having been unjustly treated by his colleagues, by whom he felt that he ought to have been honored and respected, gnawing like a canker-worm at his heart; conscious as he was of having done more for scientific therapeutics than any physician of the past or present, of having found the way to truth in medicine and of having trodden it all alone; in his enforced solitude and isolation, as he grew old he took to the dangerous course of spinning hypotheses, which being uncorrected by discussion with other minds and incapable of being tested by experience at the sick bed, he came to consider as truths of equal value with the great fundamental truth he had slowly and painfully elaborated by experiment and observation. We see this fatal tendency to speculation and dogmatism in the works and revised editions he published during his exile in this Patmos of Coethen. From a close and diligent observer in the prime of his life, he became a seer of apocalyptic visions in his old age." But there are others who do not think so, who far from believing with Dr. Dudgeon that Hahnemann's "expulsion

from Leipzig was an unmitigated misfortune for homœopathy," on the contrary believe with Dr. Burnett, that "his expulsion from Leipzig was *necessary* for the further development of his system." Our leaning is towards this latter view, though we also believe that along with real further development, there has been much retrogression of the system, from dogmatism and unprofitable and unnecessary speculation, which have effectually repulsed serious minds from studying homœopathy.

We do not believe that full justice has yet been done to the new doctrines broached at Coethen, the superadditions made by Hahnemann to the fundamental doctrines he had elaborated and established before. We are sorry, our space will not permit us even to glance at these doctrines, far less to review them to see, which of them are purely hypothetical, and which may stand the test of observation and experiment, and therefore not only worthy of acceptance, but demanding adoption for the advancement of medicine. We must leave the consideration of this important subject for a future number. In the mean time we can assure our readers in the words of Dr. Dudgeon that "the rejection of what is hypothetical in Hahnemann's teachings does not affect that which is practical and experimental. His discovery of the general therapeutic rule, *similia similibus curentur*, his immense and self-denying labours to render the application of this rule possible by proving medicines on himself and others, so far excel all that had previously been done for therapeutics, that the heroes of medicine of ancient and modern times sink into insignificance beside him; indeed, disappear altogether from the field of therapeutics; and it is a case of Hahnemann first, the rest nowhere." "The history of medicine," continues the learned lecturer, "may be ransacked in vain to find any figure at all comparable to him. He stands out in bold relief as the first, the only one who brought order into the chaos of therapeutics, who transformed medicine from a wild wilderness of hypothesis and caprice into a blooming, fruitful garden of regularity. It was not so much by intellectual greatness, it was not by superhuman intuition that he accomplished his great reform, it was by his innate love of truth and abhorrence of specious falsehood, by his firm resolve to accept nothing as true that did not stand the test of experiment, even though it were hallowed by the tradition of millenniums. And having once discovered the clue, he pursued it with a singleness of mind, with a self-sacrificing diligence, that grudged no toil and shirked no pains, and was not to be diverted by any promise of ease or honour, nor yet by the sneers of the heads nor the persecution of the tail of the profession. The greatness of his aim, to relieve the sufferings of his fellowmen, was at once his stimulus and his reward."

PURULENT DIATHESIS.

(Translated from the French of Dr. Jousset in *l'Art Medical* for March 1863.)

Under this name, we understand, with J. P. Tessier, a disease characterized by a tendency to purulent transformation of the solids and coagulable liquids of the living body.

This malady, which includes most of the accidents which follow delivery and operations, may also happen spontaneously: it has been, following the schools, called "*phlebitis, purulent infection, pyæmia, &c.*"

The purulent diathesis presents five forms: the *common form*, the *dreadful form*, the *malignant* or *ataxic form*, the *primitive regular form*,² the *benign form*.

Medical theories have had a disastrous influence on the treatment of purulent diathesis.

At the commencement of this century the hypothesis of *irritation* had brought in favour, to the great detriment of patients, the antiphlogistic method in all its forms: at the present day the infatuation for parasitic etiology has overtaken physicians, and the whole of the therapeutics of maladies, called *infectious*, is summed up in the single problem, to kill the microbe. Never had the parasiticides been in so much honour; and what has made a certain illusion, is that if phenic acid and its congeners are completely impotent to cure the purulent diathesis, the antiseptic method seems to have a great power to prevent it.

We cannot even incidentally treat the question of the antiseptic method applied to operations, but we will only observe that the happy success of contemporary surgeons depends on the new methods of dressing and not on the parasiticides employed by most of them. To convince oneself of this it suffices to consider that the wadding dressing, which is certainly not inferior in its results to Lister's dressing, employs neither phenic acid nor any other parasiticides, and that its thick cushion of wadding perfectly allows of the development of the microbe. I add that since last year a great number of American surgeons, all maintaining the improvements which distinguishes the modern dressing, have completely abandoned phenic acid and its congeners.

Laying aside all hypothetical treatment, we proceed to expound the means which positive therapeutics has acquainted us with to combat this formidable disease.

I. *Prophylaxis*.—It must not be forgotten that purulent diathesis is contagious, and consequently that *isolation* of the wounded and the lying-in woman is the prophylactic means *par excellence*. This means is so powerful that purulent diathesis is unknown in the country; and physicians advise those of their patients, who can afford the luxury, to go for accouchement out of towns. At the *Maternité* of Paris the mortality has considerably diminished since they have isolated patients, and in the pavillion where each lying-in woman has a separate chamber there has been no death for years. Not only is it necessary to isolate the wounded and the lying-in woman, but it is still necessary to purify the chambers and the wards in which the purulent diathesis may be manifested. Our lamented friend, Dr. Helot, physician-in-chief to the *Maternité* of Rouen, has found that the best means to purify the midwifery wards is to keep them uninhabited, and the windows wide open, for one week.

For the wounded and the operated, wadding dressing, or dressings of alcohol with or without phenic acid, and the easy exit of pus; for the lying-in woman, ergot in sufficient doses to produce contraction of the uterus and reduction of the placental wound, or suckling which produces the same effects; are very powerful prophylactic means.

Homœopathic physicians are in the habit of administering to their patients, immediately after delivery or after operation, *aconitum* and *arnica* alternated every three hours, during the first week; they prescribe the 6th or the 12th dilution.

II. *Curative Treatment*.—*Aconitum*, *arsenicum*, *sulphate of quinine*, and *lachesis* are the four principal medicaments of purulent diathesis. *Carbo vegetabilis*, *belladonna*, *hyoscyamus*, *chamomilla*, *bryonia*, *pulsatilla*, *hamamelis* fulfil special indications.

(a) Febrile movement commencing with shivering and vomiting, fulness and frequency of the pulse, thirst, anxiety, indicate aconite at the beginning of this disease. Further, when the face becomes pale, when there is a tendency to collapse, and yet when anxiety and agitation from hyperthermy have still more become augmented, aconite continues to be indicated. J. P. Tessier always prescribed one to two grammes of the mother tincture to be taken daily, one spoonful every two hours. I have obtained very good results from the first decimal trituration.

(b) *Arsenicum* is suitable when aconitum has been insufficient, and when the malady has arrived at the period of collapse : pulse small, frequent, sometimes unequal and jerking ; pungent and dry heat, or cold and viscous sweat ; countenance discomposed ; eyes sunk, dull ; jaws pendent ; excessive feebleness ; colliquative evacuations. The dose which I advise, is the 3rd trituration, 25 centigrammes in 20 grammes of water, one spoonful every two hours.

(c) *Carbo vegetabilis*.—This medicament is suitable after arsenic, and under the same circumstances when arsenic has proved insufficient. The 30th dilution is the most suitable.

(d) *Sulphate of Quinine*.—Our adversaries know well the happy effects of sulphate of quinine in the treatment of purulent diathesis. Only they employ it systematically to kill the microbe and prevent the formation of pus, or further for reducing the temperature ; whereas this grand medicament is suitable only in cases where the disease progresses by paroxysms, when the regular return of shivering and the considerable difference between the evening and the morning temperatures gives to the disease the aspect and manners of intermittent fever.

As for the intermittent fever, it is necessary to administer sulphate of quinine in large doses. A gramme to a gramme and a half to be taken in three doses, one every half hour, during the decline of the paroxysm.

Aconite, mother-tincture, ought to be administered in such cases, during the paroxysm.

(e) *Lachesis* should, according to Richard Hughes, be the principal medicament of purulent diathesis. Though the opinion of this physician rests upon an erroneous theoretical idea, yet, in purulent diathesis, the general symptoms spring from a local accident and the absorption of a poison, as in the bite of a serpent, all the symptoms spring from the bite and the absorption of the venom, we nevertheless take his opinion in great consideration.

Lachesis, in fact, produces symptoms very analogous to those of purulent diathesis : the shivering, the sweats, the febrile movement with collapse, the frequent and febrile pulse, the lypothymic state, the jaundice, the ecchymoses and the suppurations of an unhealthy character.

•Dr. Caroll D^rnham employed lachesis in purulent diathesis in the 12th dilution.

We would prescribe the 3rd trituration or the 6th dilution.

(f) *Belladonna*.—Hartmann advises *belladonna* in the 30th dilution as a very certain medicament when there is partial engorgement of the breast, redness in rays around the breast; uterine colic, heaviness in the hypogastrium, tenesmus in the rectum; lochia darkish and fœtid. He should add to these indications delirium with agitation (uneasiness), erysipelas and lymphatitis. I have always prescribed this medicament in the 3rd dilution.

(g) *Hyoscyamus* is suitable in analogous cases; the pallor of the face, the coldness of the extremities, co-ordinated delirium, the tendency to escape from the bed, characterise this medicament.

(h) *Chamomilla* is suitable when the febrile heat alternates with slight shiverings; when the face is alternately red and pale; or red on one side, pale on the other; where there is a green diarrhœa with intestinal colic; when the secretion of milk is changeable; when the lochial flow is very abundant with uterine colic; when the patient is anxious, agitated with jactitation, as in commencing agony.

(i) *Bryonia* is specially indicated against pneumonia and pleurisy which often complicate purulent diathesis.

(j) *Pulsatilla* is above all indicated when the lochia is suppressed, when there exist uterine colic, pains in the ovaries, palpitations, a febrile movement with flushes of heat and anxiety. This medicament is also indicated in cases of phlebitis.

(k) *Hamamelis* is the principal medicament in phlebitis, when the lochia is very abundant and composed of blackish blood.

The purulent diathesis may be complicated with diverse purulent phlegmasias which require special treatment, and which we will expound *à propos* of the treatment of each malady.

III. *Regimen*.—It is necessary to feed the patient as much as the digestive functions will permit. Wine and brandy ought to be given for drink in doses of 200 grammes of wine and 30 grammes of brandy in twenty four hours. If collapse supervenes we should double and even treble the dose, always having regard to the age, sex, and habits of the patient.

चरकसंहिता ।

सूत्रस्थानम् ।

सप्तमोऽध्यायः ।

नवेगान्वारणीयोऽध्यायः ॥ ७ ॥

अथातो न वेगान्वारणीयमध्यायं व्याख्यास्यामः ॥

इतिह स्माह भगवानालेखः ॥ १ ॥

न वेगान्वारयेद्द्वीमान् जातान्मूलपुरीषयोः ।

न रेतसो न वातस्य न पथ्याः क्षययोर्न च ॥ २ ॥

नोद्गारस्य न जृम्भाया न वेगान् क्षुत्पिपासयोः ।

न पाप्यस्य न निद्राया निश्वासस्य अमेण च ॥ ३ ॥

CHARAKA SAṅHITA.*

CHAP. 7. NAVEGANDHARANIYA.

1. And now I shall treat of the Chapter called navegān-dhāranīya, thus said the venerable A'treya.

2. The intelligent should not suppress the urgings of micturition, of defæcation, of discharge of semen, of flatus, of vomiting, of sneezing ;

3. Nor of eructations, of yawning, of hunger, of thirst, of lachrymation, of sleep, of panting from fatigue.

* We have resumed the translation of Charaka Saṅhita, and hope to be able to continue it. The 7th Chap. of Sutrasthanam was translated to Sloka 54, and was given in the 8th Vol. of our Journal. We give this Chap. from the beginning for the convenience of our new subscribers. The text and translation of Charaka Saṅhita (in the form here presented) to the end of Chap. 6 is about to be published in a pamphlet form, and any of our subscribers, who wishes it, may have it for Re 1, exclusive of postage. To non-subscribers the price is Re 1-8.

एतान्चार्यो जातान् वेगाजोगा भवन्ति ये ।
 पथक् पथक् चिकित्सायं तन्मे निगदतः पथु ॥ ४ ॥
 वसिभेहनेयोः शूलं मूत्रक्षयं शिरोरजा ।
 विनामो वङ्गपानाहः स्थाक्लिङ्गं मूत्रनिग्रहे ॥ ५ ॥
 स्वेदावगाहनाभ्यङ्गान् सर्पिषश्चावपीडनम् ।
 मूत्रे प्रतिहते कुर्वात्पुविधं वसिकर्म च ॥ ६ ॥
 पक्वाथयशिरःशूलं वातवर्जोनिरोधनम् ।
 पिण्डकोष्ठेऽनाधानं पुरीषे स्थाद्विधारिते ॥ ७ ॥
 स्वेदाभ्यङ्गावगाहश्च वर्तयो वसिकर्म च ।
 हितं प्रतिहते वर्जस्थानपानं मनाथि च ॥ ८ ॥

4. Listen, and, for the purpose of treatment, I shall speak separately of the disorders that arise from the suppression of these urgings.

5. The suppression of the urging to urinate gives rise to pain in the bladder and urethra, to dysuria, to headache, to bending of the body, to tensive pain in the groins.

6. In retention of urine, fomentations, bathing, rubbing of oil, administration of ghee in excess (by the mouth), and the three kinds of injections should be had recourse to.

7. The suppression of the urging to stool gives rise to pain in the intestines, headache, retention of flatus and stool, cramps in the calves, and tympanites.

8. In suppression of the urging to stool, fomentation, rubbing of oil, bathing, clysters, injections, and administration of such foods and drinks as loosen the fæces, are useful.

४ अथोक्तमिति वाचस्पत्यतः पाठः ॥

७ वातवर्जोऽप्रवृत्तं निन्द्य पाठः ॥

मेद्रे दपणयोः शूलमङ्गमर्हो हृदि व्यथा ।

भवेत् प्रतिहते शुक्ले विषहं सूत्रमेव च ॥ ८

तलाव्यङ्गावगाहश्च मदिरा चर्यापुषाः ।

शालिः पयोनिरूहश्च यस्तं मैथुनमेव च ॥ १० ॥

वातसूत्रपुरीषाणां सङ्गाभानं क्लामो रजा ।

जठरे वातजाश्चान्ये रोगाः स्युर्वातनिग्रहात् ॥ ११ ॥

स्नेहस्वेदविधिसूत्रवर्तयौ भोजनानि च ।

पानानि वक्ष्यन्ते च यस्तं वातानुलोभनम् ॥ १२ ॥

कण्डूकोठाकचिव्यङ्गशोथपाण्डूभयञ्चराः ।

कुष्ठहृल्लासवीसर्पाञ्जैर्द्दिनिग्रहा गदाः ॥ १३ ॥

9. The suppression of seminal discharge gives rise to pain in the penis and testes, pains of the body in general, pain in the heart, and retention of urine.

10. In such cases rubbing of oil, bathing, wines, fowl, śali rice, milk, injections, and coition are useful.

11. The suppression of the urging to expulsion of flatus gives rise to incarceration of flatulence and of stool and urine, to tympanites, to weariness (as from exhaustion), to pains in the bowels, and to other disorders from wind.

12. In such cases oily fomentations, clysters, and such foods, drinks, and injections as are calculated to expel the wind, are useful.

13. The suppression of the urging to vomiting gives rise to the following disorders,—Itching, ring-worm, anorexia, patches of discoloration in the face, dropsy, anæmia, fever, leprosy hiccough, erysipelas.

भुक्त्वा अच्यर्त्तनं घ्नो लङ्घनं रक्तमोक्षणम् ।

रुक्षाद्यपानं व्यायानो विरेकश्चात्र यत्स्यते ॥ १४ ॥

मन्दाशयः शिरःशूलमर्दिताङ्घ्रिवभेदकौ ।

इन्द्रियाणाञ्च दौर्बल्यं ज्वरयोः स्नाद्दिघारणात् ॥ १५ ॥

तलोर्ध्वजत्रुकेऽभ्यङ्गः स्वेदो घूमः सनावनः ।

हिमं वातघ्नमाद्यश्च घृतश्चोत्तरकृत्तिकाञ्च ॥ १६ ॥

हिक्का काशोऽरुचिः कण्ठो विवन्धो हृदयोऽसोः ।

उङ्कारनिग्रहात्तल हिक्कायास्तुल्यमौषधम् ॥ १७ ॥

विनाभाक्षेपसङ्कोचाः रुग्निः कण्ठः प्रवेपनञ्च ।

जृम्भाया निग्रहात्तल सर्वं वातघ्नमौषधम् ॥ १८ ॥

14. In such cases vomiting after having taken food, inhalation of smoke, starvation, bleeding, use of unoily food and drink, exercise, and purgation, are useful.

15. The suppression of the urging to sneezing gives rise to stiffness of the neck, headache, hemiplegia (or rather paralysis of the muscles of one side of the face and neck), hemicrania, weakness of the senses.

16. In such cases the rubbing with oil and fomentation of the parts above the clavicle, inhalation of smoke with snuff, the use of foods that destroy wind, and of ghrita after food, are useful.

17. From suppression of eructations arise hiccough, cough, anorexia, shivering, constriction of the heart and chest. In such cases the remedy is the same as that for hiccough.

18. From suppression of yawning arise bending forwards of the body, convulsions, tonic spasms, numbness, shivering, tremor. In such cases the remedies that destroy wind should be used.

(To be continued.)

EDITORS' NOTES.

FACIAL INDICATIONS OF PAIN.

We take the following from the *New England Medical Gazette* for Feb. Marshall Hall says that in general it may be observed that the brow is contracted by pain within the head; the nostrils are drawn acutely upwards by pain in the chest; and the upper lip is raised and stretched over the teeth or gums by painful affections of the abdomen.

BORAX IN PSORIASIS.

Dr. R. J. Melatchey attaches a very high importance to the curing effect of Borax in "branny tetter" in a paper read before the Hahnemann Club, Philadelphia, and published in the *Hahnemannian Monthly* for February, 1883. Though the authorities, recommending Borax for Psoriasis, are so very few, yet he finds its ample success from his own clinic. He has generally used the "6th dilution,—never higher than the 12th, and never lower than the 3rd decimal trituration."

MERCURIUS SOLUBILIS IN URÆMIC CONVULSIONS.

Dr. Stewart of Philadelphia has reported a case of uræmic convulsion cured by Mercurius solubilis in the March number of *Hahnemannian Monthly*. He "found the patient in a comatose state, had great difficulty in arousing her; found the tongue swollen, unable to articulate; pulse weak and intermittent; coldness over the whole surface of the body and puffiness still increasing, with a bluish, moled appearance of the face." In consulting Marcy and Hunt's *Theory and Practice*, Vol. ii, page 65, he found under the head of "Merc. sol. Hahn." almost every thing that could be desired for the administration of the medicine. Five hours after taking the medicine she "had voided at least two quarts of urine, the last nearly normal in quantity and colour." This is a remarkable instance clearly showing what drugs can do when properly used.

AN EXTRAORDINARY CASE OF TWINS.

The *New England Medical Gazette* for Feb. has taken the following from the *Presse Medicale Belge*: The brothers Tocci, born in Turin in 1877, are considered to be even more curious than the famous

Siamese twins. They have two well-formed heads, two pairs of arms, and two thoraces, with all internal organs; but at the level of the sixth rib they coalesce into one body. They have only one abdomen, one umbilicus, one anus, one right and one left leg. Their genital organs consist of a penis and scrotum, and at the back there is a rudimentary male genital organ, from which urine sometimes escapes. It is a curious fact that the right leg moves only under the control of the right twin (named Baptiste), while the other is movable only by the left twin (named Jacob). As a result they are unable to walk. This left foot is deformed, and is an example of *talipes equinus*. Each infant has a distinct moral personality: one cries while the other is laughing; one is awake while the other sleeps. When one is sitting up, the other is in a position almost horizontal.

SYPHILITIC POLYURIA.

Professor Semmola, of Naples, has reported three cases from which it would appear that cerebral syphilis may be the cause of polyuria. "In one of those cases (the most characteristic of all) the patient used to void forty-three pints of urine in twenty-four hours, with a specific gravity varying between 1001 and 1005. He had seen several physicians, but, feeling no relief from their treatment, he finally consulted Professor Semmola, who found out that the man was affected with chronic syphilis, to which he attributed the causation of his disease. Very probably some syphilitic lymph or deposit was locally effused into the walls of the fourth ventricle of the brain, and so had pathologically reproduced the celebrated physiological experiment of Claude Bernard—that is, the production of polyuria and glycosuria in dogs by simply puncturing with a needle the floor of the fourth ventricle. In accordance with this diagnosis, the patient was submitted to a general antisyphilitic treatment, which consisted in hypodermic injections of albuminate of mercury and the long continued use of iodide of potassium. In two months he was perfectly cured."—*Practitioner*, January 1883.

AMERICAN TRITURATIONS.

In reviewing the Transactions of the thirty-fifth session of the American Institute of Homœopathy the *British Journal of Homœopathy* for January writes as follows on the startling disclosure about American high triturations. "Professor J. Edwards Smith, of Cleveland, assayed a so-called 30th trituration of *Aurum*, and procur-

ed therefrom a 'button' of pure gold large enough to handle and examine. Dr. Breyfogle, thinking there must be some mistake, procured from nine reputable homœopathic pharmacies, specimens of the 1st, 2nd, 3rd, 4th, 5th, 6th, and 30th of *Aurum* and sent them to Professor Smith for examination, concealing from him their nominal potency. It turned out that the reported 30th and even 60th yielded the same amount of gold as the 7th decimal. The inference is that the pharmacists contented themselves with triturating up to the 7th decimal, but not beyond this, though they sold triturations professing to be 30th and 60th. Professor Smith furnishes a paper to these *Transactions* which gives these and many more instances of equally disreputable tricks, such as large proportions of foreign matters mixed up in the triturations." What have the American high dilutionists to say about these triturations?

ANTIGENETIC DISCOVERY OF FŒTAL SEX.

The differentiation of sex cannot be accidental. It must depend upon definite causes. Do these causes begin to operate from the moment of impregnation? It would be interesting inquiry to know which parent has most to do in this matter, or are both parents equally concerned, or is the mother the sole determiner of sex? If the causes of differentiation are in operation from the moment of conception, then the organism must shew signs of their activity from that epoch, and therefore they must be discoverable. What could these signs be? Among the most important changes that take place in the maternal organism are the changes in the circulation, the external appearance, the contour of the abdomen, &c. If it is possible at all to determine the sex of the fœtus, it must be from these changes and their variations, or from the character and rate of the pulsations of the fœtal heart, or from both combined. Hitherto gynæcologists of Europe have depended for their guesses upon the rate of the fœtal pulsations, and those of India (we mean Kavirajs who pretend to be able to make the diagnosis) upon the character of the maternal pulse. How far either class have been successful we cannot say.

One Dr. Drummond Macdonald, of Liverpool, has come forward, (*Lancet*, Feb. 3), with a new mode of diagnosis. According to him, "if the form of the abdomen be conoid and projecting (child carried in front), the child is male; if the form be more flattened and rounded (child carried round about), the child is female." We would ask our readers to verify this, and to do us the favor of reporting to us the results of their investigations.

CLINICAL RECORD.

A Case of Facial Neuralgia.

By T.K.D., L.M.S. (Bombay.)

K. S., aged 31, clerk by occupation, came to me on the 9th of December 1882 for shooting pains in the face extending from the temples to the cheeks, ears, lower jaw and teeth. It was more marked on the side, also complained of pain of a shooting character in the right heel. The pain in the face was intermittent and used to appear every few minutes, while the pain in the heels was more marked early in the morning after leaving the bed. Sometimes he suffered from this sort of pain, in other parts of the body at random. States that the pains in the right heel is of about 3 months' duration, but it was not so severe as to induce him to seek medical advice, but when with the pains in the heels there appeared severe pains in the face, he came to me. He is subject to cold every now and then, and suffered from malarious fever of a remittent type about 2 years ago. I diagnosed his case to be one of facial neuralgia resulting probably from malaria. Malaria instead of showing itself in fever appeared as neuralgia. I gave him *Colocynth* 3. This relieved him a little but did not check the pains altogether. At night the pains increased to such an extent that he came to me again at 10 o'clock p. m., now I prescribed *Bell.* 6, which only relieved him for about a couple of hours. At midnight the pains returned with the same severity and he could not sleep, he passed the night in extreme suffering.

On the morning of the 10th he again came to me, and *Bell.* 6 was continued during the day. During the day time the pains were much less, but again in the evening all the former symptoms returned. Now I gave him pills of *Coffea* 3, two pills to be taken every 3 hours. The first dose acted like a charm, not only the facial pains disappeared but he got sound sleep. Next morning he found that the pains in the heels which were troubling him for the last 3 months had disappeared. He only took one dose of *Coffea*.

A Case of Fracture of the right Iliac bone.

By BABU GRISH CHANDRA DATTA, L.M.S.

A lady, aged 30 years, wife of , of Darjiparah, in the enjoyment of very good health, had a fall from the roof of her house, about ten feet high, on the 16th November 1881, at 7½ p. m. Just after fall she became senseless; her brother immediately went to the spot and

made her inhale strong tincture of *arnica*; and dashed cold water on her face: after a few minutes she came to her senses and complained of severe pain in her right gluteal region. Two or three doses of the same medicine, in drop doses, were administered every $\frac{1}{2}$ an hour. After a while she was removed to her room. The family physician, an assistant surgeon, came and examined the injured parts, and said that he could not find any fracture but that there was laceration of muscles. He ordered ice application to the affected parts and perfect rest. I was called at 9 $\frac{1}{2}$ p. m., when she was in her perfect senses. On examination I found fracture of her right iliac bone transversely from the sacrum to the pubes; she could not stand, and felt severe pain in the affected parts on movement; the pain was much less felt at rest. Passed urine freely twice after her fall, no vomiting, no nausea. There were a few marks of bruises on her back and right arm.

Treatment: Should lie on her back on a hard even bed in perfect rest; *arnica* lotion (℥iii to Oj of water) to be applied constantly, *arnica* 1, in half drop doses, every 2 hours to be given internally; diet, sago water.

17th Nov. 9 A. M. She talked some nonsense last night, was feverish, temperature 99.4. Pain in the affected parts same as last night, no head symptoms just now, interrupted sleep last night. The family physician came just in time; I spoke to him of my diagnosis of the case but he differed, consequently the guardian of the patient sent for Dr. McLeod, the first surgeon of the Medical College Hospital; in the meantime the lotion and the internal medicine were continued. The letter to Dr. McLeod was written by the family physician.

4 p. m. Dr McLeod called when the family physician and myself were present; he examined the injured part for more than half an hour and said that he could not find any fracture. As on re-examination I found that the fracture was distinct, I requested him to examine the patient again; he was very kind to do so, and was satisfied that the right iliac bone *was* fractured; then he ordered a long side splint from the foot to the loins with a rightly adjusted bandage; his prognosis was that she might get well in six or eight weeks provided there were no interference from any other disease. As per instruction of Dr. McLeod a side splint and bandage were applied, but the lotion and the internal medicine were continued. Patient was somewhat feverish, temperature 99.4., passed urine freely. Diet, sago water.

18th Nov. 11 A. M. She was very restless on account of the splint and bandage, and could not sleep for a moment, they were therefore removed in the latter part of the night, and then she had slept for an hour. The guardians of the lady, I mean her husband and mother,

placed her entirely under my treatment. I prescribed *Symphetum*, both internally and externally; the lotion was of the strength $\mathcal{Q} \frac{3}{4}$ to Oi of water; and the 1st dilution of the medicine in drop doses every 4 hours. A hard pad exactly of the size of the part injured and a bandage from the loins to the upper third of the thigh were applied; she was enjoined to rest on her back on a hard even bed. No stool since her fall, no appetite, temperature 99.4. Diet, sago-water.

19th. 10 A. M. No fever, slept rather well last night, passed one scanty healthy stool this morning, pain somewhat less. Medicine continued; diet, milk and bread.

21st. Much the same, pad and bandage changed; treatment continued.

24th Nov. 11 A. M. Bowels regular, appetite fair, pain in the affected part has almost subsided; *symphetum* liniment, and *symphetum* 3, internally.

27th. Doing well, sat up and felt very comfortable on resting her back on a high *takia* (pillow). It was found on examination that the wound had almost healed up; treatment continued.

1st December. No pain in the wound, she could stand with very little pain. I prevented her from doing so for a week more, pad and bandage removed, internal medicine discontinued, the liniment to be rubbed now and then.

7th Dec. I made her walk with the help of a stick, but she could do so without any help, and she walked in my presence without any assistance and difficulty.

Remarks.

As a general rule the time required for the union of a fractured bone is from four to ten weeks, but in this case the union was complete and perfect in less than three weeks, and it can be assumed that this was due to the action of the drug, *symphetum*, which was used both internally and externally; it undoubtedly hastened the formation of the callus.

**THERAPEUTICS OF CONSTIPATION, DIARRHŒA,
DYSENTERY, AND CHOLERA.**

47. CALCAREA PHOSPHORICA (Concluded).

General Symptoms : (Concluded) :

7. Crawling sensations run over top of head, as if ice were laying on upper part of occiput; the head is hot with smarting of the roots of the hair.
8. Mornings, a whitish coated tongue, with furrows on it, as if split; insipid sweetish taste after the ice cream of day before.
9. Tip of tongue sore, burning, little blisters.
10. Bitter taste in morning with headache.
11. Desire for coffee, wine; great desire for tobacco-smoking, headache relieved. °Longing for salted and smoked meats, ham, bacon, &c.
12. Nausea after smoking, or drinking coffee. Complete want of appetite before and during catamenia.
13. An empty sinking sensation at the epigastrium.
14. Burning at the stomach and rising of water into the mouth. Violent pain in stomach, with great debility, headache and diarrhœa; pain is excited by introducing least morsel of food into stomach.
15. Aching soreness and pain around navel; after drinking cold water the pains are violently renewed, evenings; lessens after fetid wind passing off.
16. Much flatulence and rumbling in the abdomen with some pain, which soon increased to a dull pain which was always more sensitive on stooping; this continued until a thin evacuation followed, preceded by sensitive pain; quite well the next day.
17. Abdomen sunk and flabby.
18. Abdominal pains, with headache, earache, hot face, pain in groins, looseness of bowels, weary legs, crawls; or in alternation with headache, burning throat, uterine pains, lassitude.
19. Bellyache less after passing wind, after st. or after discharge of leucorrhœa.
20. Before appearance of menses, griping and rumbling in bowels and leucorrhœa.
21. Cutting pinching sharp colic followed by looseness.
22. In region of kidneys, violent pain when lifting and when blowing the nose. Pain in back, jerking, rending, cutting, shooting.
23. Large quantities of urine with sensation of weakness.
24. Urine dark colored, hot, smelling like strong tea.
25. More urine with flocculent sediment.
26. The genito-urinary organs seem generally affected after the passage of a stool and urine.

27. Before catamenia great sexual desire followed by a copious flow; headache three to seven days before; griping and rumbling in bowels; stitching pains in left side of head; whites and sleepiness during the day.
28. Phosphatic diathesis.
29. Rachitis; fontanelles open; diarrhœa, emaciation.
30. Great weakness and weariness; sharp pains in the stomach and in the knees with headache; pain in the right great toe, worse when walking; pain in stomach and headache with diarrhœa.
31. Ailments from grief and disappointed love.

Remarks: Pathologically it is not easy to distinguish between **calc. carb.** and **calc. phos.** In both there is arrest of development of bone resulting in open cranial sutures with consequent open fontanelles and a hydrocephaloid condition, in weakness and curvature of the spine, in general rachitis. In both there is a tendency to and actual enlargement of glands, especially the mesenteric. The remedies can only be distinguished by finer shades as developed by pathogenesis. Thus in **calc. carb.** the catamenia is invariably too early and too profuse; in **calc. phos.** it is either too early or too late. In **calc. carb.** the abdomen is generally tumid, distended; in **calc. phos.** it is sunk and flabby. There is hardly any genuine dysenteric stool in **calc. carb.**, whereas in **calc. phos.** there are several.

General experience has corroborated Hahnemann's in pointing to the suitability of **calc. carb.** especially in children. We have not the benefit of the Master's observation about **calc. phos.**; but it seems that while it is suitable to children equally with **calc. carb.** it is also a medicine of adult life. In fistula in ano, especially when complicated with tubercular disease of the lungs, it is an invaluable remedy.

Dr. Hoyne has cited a case, reported by Dr. E. A. Farrington, of a child who, it appears, was suffering from cholera infantum with tendency to hydrocephalus, and who was cured, after the failure of other remedies, by **calc. phos.** (200), selected, it is said, on the symptoms of "longing for bacon, ham-fat, &c." It is not easy to understand why the remedy was selected for the peculiar longing here spoken of, as it is not found in any pathogenesis with which we are acquainted.

In the case of a baby about a month old whom we recently treated, who was suffering from diarrhœa and fever almost from birth, and who in the course of a few days presented a wrinkled appearance as that of an old man, and whose fontanelles were wide open, **calc. phos.**, after failure of other remedies, worked almost a miracle so far as the diarrhœa was concerned. The stools, which were green, slimy, and very numerous, four to six in an hour, were so improved after a single dose, that they were solid and almost natural, and in number was scarcely one in twenty-four hours. The fever however increased, and the child succumbed.

The association of violent pain in stomach with diarrhœa, *aggravated by the introduction of the slightest morsel into the stomach*, is not

in Allen ; but it is in old Jahr, and appears to be a genuine symptom, as under its guidance we effected a brilliant cure.

48. CAMPHORA.

Constipation :

1. Constipation for five to eight days.
2. St., sluggish and incomplete ; hard and retarded.
3. The fœces are passed with difficulty not without exertion of the abdominal muscles, as if the peristaltic motion of the intestines were diminished, and at the same time the rectum was contracted.
4. Two sts., the first day, preceded by some griping in the abdomen, second day no st., the third a rather hard and difficult st.

Diarrhœa :

1. St., dark-brown, thin and scanty.
2. St., generally painless, involuntary ; blackish like coffee-grounds ; sour. (Hg.)
3. St., increased during the first days, afterwards passed only with much exertion and great pressure, and also much flatus passed with as much difficulty as the hardest st., this usually precedes the evacuation.
4. Cramplike pain in abdomen, with D., following several times.

Cholera :

1. Rice-water sts., difficult passage of fœces preceded by passage of much wind, but with the same difficulty. (Hg.)
2. Cholera infantum ; cold spell coming on at night with desire to be uncovered. (Hg.)
3. Anxiety and restlessness, absence of evacuations, frequently chilly or feeling as if cold air was blowing on covered parts ; great sinking and collapse. (Hg.)
4. D.; attack very sudden ; sudden and great sinking of strength, cold sweat on face ; eyes sunken and fixed ; icy coldness of whole body ; face pale, livid, purple, icy cold, distorted ; upper lip drawn up, exposing teeth ; foam at mouth. (Hg.)

Aggravation :

1. During cholera epidemic ; hot sun ; cold night.

Before St :

1. Flatus passed with as much difficulty as the hardest st.
2. Cramplike pain ; griping.

Rectum and Anus :

1. The rectum seems contracted, swollen, and painful on passing flatus.
2. Pressive sensation along the rectum, with urging to urinate, not only in the bladder, but beginning in the kidneys, and extending along the ureters to the bladder, with a dragging sensation along the spermatic cords to the testicles, and a general feeling of turgescence in this part of the body.

3. Smarting in the rectum.
4. Urging to st., the st. is of usual hardness, but only a little passes, followed by very violent urging again, and a scanty discharge again.

General Symptoms :

1. Agitation. Often felt as if he ought to kill people, when in the street, never felt a disposition to kill any of his own family but thought he ought to kill some body.
2. Delirium with pain in stomach. Delirious, but when spoken to gave rational answers.
3. Great anxiety and extreme restlessness, tossing about in bed; attempted to stand, but he lays down again.
4. Countenance pale, haggard, distorted, sunken, anxious, livid. Bluish colour of the face.
5. Tongue thick, spongy fissured, covered with much thick yellowish mucus. Tongue cold, flabby, trembling.
6. Severe burning on the palate, extending down into the pharynx, that obliges her to drink, but is not relieved by any amount of drinking.
7. Increased taste of all food; broth tastes very strong. The taste itself is natural but every thing that he tastes, and even the customary tobacco, tastes bitter.
8. Speech feeble, broken, hoarse.
9. Eructations frequently after eating and almost continuous.
10. Nausea and inclination to vomit, which disappeared every time after an eructation.
11. Vomiting of yellow watery liquid, smelling of camphor. Bilious vomiting colored with blood.
12. Gradually increasing pain in the epigastrium, loins, and bowels, with strangury.
13. Coldness only in stomach. Burning in the stomach.
14. Pressive pain in the pit of the stomach or in the anterior part of the liver.
15. Flatulent troubles in the abdomen.
16. Pain in abdomen as if she would get D. which, however, did not come.
17. Cutting colic at night.
18. Almost involuntary urination; after urinating pain in the urethra like a contraction from before backwards.
19. Retention of urine with urging to urinate; tenesmus of the neck of the bladder.
20. Burning urine. Strangury. Urine in drops or suppressed.
21. Urine contains sugar, is pale, odorless, contains mucus, without sediment.
22. Urine with white or red sediment.
23. Convulsive circular motion (rotation of the arms).
24. Cataleptic rigidity, with loss of consciousness, followed by relaxed sinking down of the whole body, so that he could scarcely be held upright, followed by vomiting, after which consciousness returned.
25. The body generally quite cold.

Remarks : With singular penetration Hahnemann has pronounced the action of **camphor**, pathogenetic and curative, as puzzling and difficult to determine, and we should add, to understand. With undoubted powers to produce a grave malady (impotency) it has not been known, so far as we have been able to ascertain, to exert any action in remedying the disorder. Hahnemann could only point to it as a general antidote to "the violent effects of very many, *extremely different*, vegetable medicines (and even those of the animal drug cantharides and of many mineral and metallic drugs); "only as a palliative certainly, but an invaluable palliative," in epidemic influenza; and as a remedy in the first stage of cholera. So that, with the exception of the last, all the uses for which Hahnemann recommended **camphor** are allœopathic or antipathic; and it is doubtful, if its remarkably restorative effects in cholera are due entirely to its purely homœopathic action.

"The rapid exhaustion of its action and the quick change of its symptoms render it incapable of curing most chronic diseases," thus saith Hahnemann. He very judiciously says "most," and not all. But he has not been able to point out any chronic disease which might be cured by camphor. We are afraid that camphor has not had any trial in the hands of homœopathic physicians beyond the uses pointed out by Hahnemann, namely, as a general antidote, as a palliative in influenza, and as a specific remedy in cholera. It is very rarely used in dilutions, and Dr. Hughes contents himself with the remark that "the drug does not seem to bear attenuation." We have seen undoubted effects (antidotic) from the 3rd decimal dilution.

We have said, it is doubtful if the beneficial action of **camphor** in cholera is due purely and solely to its homœopathic action. As has been demonstrated by two cases reported in this *Journal* (April, 1869) by Babu Bhuban Mohan Sircar, camphor does produce decided choleraic symptoms in young children, and if in young children, why not in adults? So in administering **camphor** in cholera we have the assurance that we are administering a homœopathic remedy. Hahnemann did not know that **camphor** was capable of producing, besides the deadly collapse, the rice-water stools and vomiting, of cholera. Hence his recommendation of it just in the beginning of the disease, when "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-stupefied and insensible, he moans and cries in a hollow, hoarse tone of voice, without making any distinct complaints, except when asked; burning in the stomach and gullet, and cramp-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.*" Hahnemann relied upon it not only as a homœopathic remedy for the collapse of cholera, but also because of its destructive action on the cholera miasm, as will be evident from the following extract:

“If physicians would but take warning, and, rendered uninfected 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, the 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 *infinitely* 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 could no longer infect persons throughout the town.”

If Hahnemann had been acquainted with the power of **camphor** to produce copious rice-water stools and vomiting, he would not have limited its use in only the very first stage of cholera, when “no vomiting or purging” has as yet commenced. And with our knowledge of that capability we shall not be justified in following our Master to the very letter. Indeed, 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 cholera, whether the miasm consists in animated germs or in deleterious gases, does point to camphor as the best remedy to begin with, preliminary to other remedies that may be required in accordance with the 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 such vomiting aggravates the collapse.

Camphor deserves a more extensive trial in diarrhœa than it has hitherto had. In diarrhœa with flatulence, when both stools and flatus are passed with difficulty, it is likely to do good.

Excerpts from Contemporary Literature.**ON MODERN THEORIES AND TREATMENT OF PHTHISIS.****Delivered at the Royal College of Physicians, London,*

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MR. PRESIDENT AND GENTLEMEN.

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Reviewing the literature of phthisis from the earliest times of which we have any record, we may say that the Greek word for *waste* expresses the idea of the disease when it was uppermost. The wasting of the bodily tissues was the earliest, the latest, and the most marked symptom of the disease throughout. It became evident before cough and expectoration, it fluctuated with the patient's other conditions, and it ended by exhausting him to the grave. We know now from auscultatory signs that this waste is greatest when the morbid product in the lung is breaking up, but before stethoscopes were invented the fact could only be proved by the increased amount of expectoration which then occurred. Fever, indicated by chills, heats, and sweatings, also coincided with increased waste of tissues. The correlation of these symptoms with waste was not understood. We now know that the waste itself and the debris of tissue poured into the blood are direct causes of the high temperature, and that there is a strict coincidence between three conditions—(1) active lung irritation, (2) tissue waste, and (3) high temperature. But we may take it that the ancient view before stethoscopes was that waste was the leading and most incorrigible symptom.

It remained for Laennec, Bayle, and their followers to describe and map out by physical signs the nature and amount of lung disease. We are familiar with their teaching. The grey milky tubercle deposited sparsely or thickly in portions of the lung underwent degenerative changes. The masses caseated, ran together, softened, and in their softening broke down the surrounding tissues of the lung, strangled its nutrient bronchial as well as the pulmonary proper vessels, cut off the circulation, and caused the death of the part. A cavity, more or less irregular in size and shape, resulted. Inflammatory products surrounded, and were a consequence of, this softening and disintegration. The secondary congestion so commonly observed in advancing cases of disease at the base of the same or opposite lung were fresh deposits of tubercle, only to be accounted for by the lowered constitutional state of the patient—the tubercular cachexia, as it was called. He got an unhealthy inflammation, involving all the tissues of the lung, though why he should have had any affection of the opposite lung does not appear from Laennec's reasoning. In like manner the well-known changes in the intestines causing tubercular inflammation of the mucous glands took place, and diarrhoea precipitated the fatal issue. The constitution or diathesis in which this occurred was called scrofulous, and glandular swellings tending to slow inflammatory change and caseation took place in the cervical, mesenteric, and other lymphatics. These, like the tubercle in the lung, were the secondary results, so to speak, of a primary cachexia or constitution and of the tubercular habit. I take it that this is a fair description of the theories of Bayle and Laennec. After

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an investigation of many thousands of cases of phthisis I do not think it can be taken to account for all the phenomena of that disease, but this I shall again notice. What the discoverers of auscultation did prove was this. They recognised certain morbid changes in the lung which they called tubercle. They noticed its physical alterations and its tendency to degenerate, and they gave us a means of defining and even measuring the progressive destruction of lung tissue, which resulted as these masses softened and involved the surrounding parts. I do not know that auscultation has added much to what Laennec taught us about phthisis. He was wonderfully accurate and perfected physical examination in a marvellously short time. What more do we know now of the signs of cavity or of pneumothorax than the knowledge he left us? We have refined on his teaching no doubt, especially in the diagnosis of incipient disease, and some phenomena of effusion into the pleura and pericardium, but he gave us a masterly method of identifying changes of lung structure. Nor was his pathology at fault. He did not go far enough. So far as his description of tubercle goes it is verified by daily practice, but it was all tubercle with him. He did not allow cases of phthisis which were originated in inflammatory change, and in which there was no tubercle at all. It would be unjust to the memory of Addison not to point out that he in England was the first to hold that inflammation is an occasional and common cause of phthisis. His beautiful illustrations are accurate pictures of the results of inflammatory change. There is, then, a phthisis without tubercle, and in many post-mortem examinations no tubercle is to be found. Again, the secondary deposits of tubercle, which often surround old inflammatory products breaking up in the lung, do not appear to have a fair place in Laennec's descriptions. The secondary congestions in the base of the same or the opposite lung were regarded as fresh tuberculous attacks, and the mechanical theory of morbid matters carried and deposited on the pulmonary tissue is modern, and found no place in his work. The influence of hæmoptysis, as now recognised by many, cannot be said to have been noticed fairly by the French school. The mechanical effects of effused blood insuflated into the pulmonary tissue, and forming clots which lose colour and become encysted or undergo the changes of caseation, were no doubt often mistaken for tubercle.

Again, in criticising the French school of that period by the light of experience at the bedside, I fail to discover in their teaching the division of cases according to their progress and duration and according to the structure of lung invaded, and the changes of a fibroid nature undergone. This, I hold, to be entirely due to the modern English school. In Laennec's time a cavity in the lung meant the third stage, the final consummation of the disease, the almost immediate death of the patient, and the abandonment of all hope. We now sit down to treat cases of cavity, to promote their shrieking, to diminish their secretion, to attack them surgically and drain them, and some of the most prolonged instances of invalid life with which I am acquainted are in persons with a single cavity in the lung. I had one such case under my notice for thirty years, many for periods of ten and fifteen years; and I have no doubt that the experience of all of us will bear out this statement.

Again, the whole series of chronic changes in lung tissue which have been called fibroid, and in which the lung is condensed and contracted and fresh fibroid tissues developed throughout its structure, extending in bands from the thickened pleura, closing up old cavities, strangling its bloodvessels, and leaving, in fact, only bronchial tubes which undergo dilatation, this condition, which supervenes more or less in every case of chronic phthisis, and which often prolongs life indefinitely after the patient has undergone thickening of the lung, softening of tuberculous or inflammatory deposit

and cavity, had not been described till modern English observers depicted it.

In contrasting more recent views and observations with those of the Laennec period, there is one of surpassing importance which seems to pervade the theories of all lung affection, and its consideration leads us to review the modern German pathology. There was so much of form, consistency, and precision in the French doctrines. It was so convenient to have found one single element, tubercle, with definite form, and history which underwent changes uniform and calculable, to each of which a stage of disease might be assigned, and from which the duration and result might be calculated, that it is easy to see now why it was accepted both by pathologist and practitioner. To the former it was a concrete idea, a unique morbid product, recognisable by its history and its appearance; it had a definite life or underwent changes, sooner or later, which converted it either into cheesy or chalky matters, and if a new crop appeared a like process could be predicted; while to the practitioner it was also a definite quantity; he could explain it to his patients' friends, and appear to be precise where, perhaps, he was not quite true! But to the whole profession, and to the public, its very precision and the known and invariable course which tubercle follows when once established in the lung, stamped it as incurable and hopeless. Now, this state of things was the death of all progress in medical knowledge and the stagnation of all hope of a remedy. The very precision with which the malady was known rendered investigation useless and advances impossible. It will be in our memory, however that out of this hopeless mass of cases, all of one gloomy aspect, there stood out certain ones which refused to follow the given course to death, in whom, if there were tubercle, it neither killed nor prostrated them. Persons were known to live for years with cavity in one lung, and eventually, perhaps, to die of something else. Was it, then, possible that if this tubercle always runs a certain course there may not be other morbid products in the lung giving rise to the symptoms and signs of phthisis, which run a different course, some of which may tend even to recovery, and others simply to alter lung structure, but not to destroy it? I doubt not but that some such reasoning as this struck anxious observers who were sick of regarding the sphinx of phthisis, and unable to answer its questions or account for all its phases on the old French theory, were not content to be absorbed by the problem, but rather received a new impulse towards its solution. The modern German mind, pretty commonly in opposition to the French, rushed at once to the conclusion that if there be such a thing as tubercle its presence was only an occasional result, and not a primary cause of phthisis. Tuberculosis is a danger incurred by the phthisical, but the disease is seldom initiated by it. All Laennec's teaching was wrong. Tubercle was not a new growth of specific nature which formed the essence, so to speak, of phthisis. The cheesy transformation so commonly found in consumptive lungs did not result from tubercle; they might be due to many causes, but chiefly to inflammatory products. That bronchial, peribronchial and pneumonic deposits often pass for tubercle; that the miliary form is the only tubercle; that those masses of infiltrated lung which Laennec called "stuffed" with tubercle are really masses of inflammatory products, the result of catarrhal pneumonia; that in many cases there is not a single tubercle in phthisical lungs. Then as to the origin of the disease, Laennec had been precise in assigning it to a constitutional cause; it never arose out of acute or chronic pneumonia; hæmoptysis is never a cause, though a frequent result, of phthisis. It never arose out of a catarrh or neglected cold, a bronchitis developing phthisis being not a primary genuine cold, but catarrh caused by irritation of the lung from already existing tubercle. His mistake was not that tubercle is a new

growth, but that condensations of lung which have quite a different origin are also products of a development of tubercle. In enunciating these startling propositions the well-known German, Niemeyer, naively remarks that "pathological anatomy is in advance of clinical medicine." Well for its truth if it be not sometimes in opposition to it! In estimating the influence of the various theories of phthisis on its treatment, I shall have occasion to call your attention further on to this opposition in views, and to ask you whether, in your observation, phthisis arises from neglected colds, or whether the catarrhal symptoms have become developed in the course of the phthisis?

The well-known teaching of the modern school is that the primary block of the lung is due to pneumonia or inflammatory products, and I beg your patient hearing if I briefly describe it.

Catarrhal pneumonia begins in catarrh of the smallest bronchi, extending to the alveoli, which become packed with exudation rich in young round cells. The acute cases are a frequent result of measles and whooping-cough. Under favourable circumstances the cells fill with fat-globules and disintegrate, and the contents of the alveoli become fluid and are absorbed or expectorated. In less favourable cases, the lung tissue becomes consolidated, the cellular element increases in the alveoli, fatty changes are incomplete, the cells lose their rounded form, and shrink into irregular shapes; this represents cheesy transformation. Every form of pneumonia may end in this necrosis of the cells and caseation. In this process the walls of the alveoli are pressed on, their bloodvessels become compressed and the walls are broken down, and the form of destruction of lung tissue with which we are familiar takes place. In chronic catarrhal pneumonia a formation of connective tissue fills up the collapsed cells, so that the lung becomes tough and impermeable to air. The pleura is thickened and adherent, and from it bands extend throughout the lung, contracting its volume as the tissue shrinks; the whole side is drawn together, and the bronchial tubes become dilated, giving rise to the phenomena of cavity. These are the more chronic and favourable cases. The diaphragm is drawn up and the heart displaced in their advanced stage.

But the two points on which the German and French schools are at issue are the influence of cheesy transformation of the morbid products in the lung and the secondary eruption of tubercles in chronic cases of phthisis. It seems acknowledged on all sides that cheesy deposits, in breaking up, give rise to or are followed by an eruption of miliary tubercle either in the neighbouring part of the lung or in the opposite lung. Laennec described this, and it was known that it is at the period of softening of such masses that the appearance of fresh tubercles occurs. Thus cheesy transformations in some part or other originate tuberculosis, which is in this instance a secondary disease. Cheesy masses in some way infect the system. Buhl says that miliary tubercles constantly depend on pre-existing cheesy products. Tuberculosis is an infectious disease caused by reception into the blood of the tubercular poison. He compares it to pyæmic septicæmia. Laennec knew that a secondary eruption of tubercle takes place in a lung already broken down by primary disease: he called it "secondary"; Niemeyer called it a "complication"; but both referred it to a previous caseation of the mass in the lung, which the German said was inflammation, but the Frenchman "tubercle." In either case we see it was regarded as an infecting agent, and this is important as leading on to more modern views still. I must beg your patient indulgence in this recapitulation. We are taking note of the successive theories of phthisis; we are watching the evolutions of thought in observers at different dates; and we must remember that all this time phenomena other than those of tubercle were being equally studied, and old doctrines of disease overturned.

In examining the relations of scrofula to phthisis, we shall find that cheesy transformation of the products of slow inflammations of lymphatic glands is held to be an infecting agent, and that such matters carried in the blood, or by the lymphatics, are deposited in distant parts, and there, as in the lung, originate phthisis, or in another lymphatic far from that originally affected. Thus, we have a step in the direction of blood poisoning—septicæmia—or at least that morbid products are so carried and deposited, for septic they are not. If this be the origin of phthisis, the inflammation theory is interfered with; but, again, what is it which has originated the scrofula which started the lymphatic enlargement? Are we then driven back to the old “diathesis,” or “constitution,” which covered so much ignorance on our parts? In pursuing this line of thought, we are compelled to ask why some persons get catarrhal pneumonia—that is, a block of a portion of lung by inflammatory products which will not liquefy nor be absorbed, but undergo cheesy degeneration,—and others get croupous or sthenic pneumonia, by which a fibrinous exudation is poured out into the alveoli of the lung, nay, of a whole lung, and in the course of fifteen or twenty days is wholly liquefied or cleared out, leaving the delicate structure of the alveoli unimpaired? These two diseases are so unlike in their morbid products, in their symptoms, and in their results and sequences, that they have no right to the same name. Indeed it was in an evil hour that such identity was stamped on them, for they do not possess any point in common, excepting that of their seat. They both affect the lung, but this may be said of several other disorders.

The German school will not acknowledge “constitutions,” or delicacy of system, leading to those deposits which will not clear up, but go on to poison the system, and produce like localisation in other organs. They say such persons have a “vulnerability”; that tuberculosis is “not heritable,” but that “the disposition to it is.” But we know that lung attacks leading to cheesy infiltrations occur chiefly in delicate and badly nourished persons, whose inflammations tend to an abundant production of cells, and thereby to cheesy metamorphosis anywhere may lead to tubercle. So much for the nature of the product which blocks the lung, and which is known to end in phthisis. We ought to distinguish four kinds: (1) The inflammatory exudation, which is not tubercle; (2) the miliary tubercle, which is secondary and rare, as the Germans say, but primary and common according to Laennec; (3) the cheesy transformation, which is common to all; and (4) the developed connective tissue, which contracts and hardens the lung into a fibroid state.

There is another consideration to which I must draw your attention, and that is the localisation of the morbid product in the lung; and it does not appear that this has received sufficient attention. I do not allude to the lobar or lobular arrangement of deposits, nor to the interesting question why the apex of the lung suffers most in phthisis, but rather to that portion of the lung structure which is the seat of the morbid product, be it inflammatory or purely tubercular. I take it that here will be found points of difference in the purely inflammatory as compared with the other forms of structural injury to the lung. Perhaps we may make this more clear by asking why it is that lung mischief is so productive of ultimate injury to the individual, giving rise to fever and wasting and all the pernicious results of phthisis? If it were due merely to the amount of pulmonary space lost, the ordinary croupous pneumonia which blocks with the greatest rapidity a large portion of the lung would give rise to these symptoms. But the phenomena of acute pneumonia are altogether different from those of phthisis. We have a sudden attack, very high temperature, and an exudation of a fibrinous character into the alveoli of the the lung, in many cases blocking the entire organ—even the opposite lung may be attacked in

sequence, and the respiratory space be lost over almost the whole of both sides,—and yet the patient recovers. In practice we say that if the heart be strong enough to drive the blood through the obstructed lung, and does not fail in the effort, the patient may get well. Especially is this the case in that turn or crisis of the disease when the exudation begins to break up and liquefy. The case might almost in practice be called a heart, and not a lung, problem; and those who support the circulating force at the heart will have the greatest number of cures. The lung is not diseased in its structure during such an attack, its terminal cells are filled up, but that is all, and we know that perfect recovery may and does daily take place, the delicate elastic structure of the alveoli being found entirely unimpaired after the exudation has been removed.

Now compare this with the smallest exudation or product of inflammation which has broken down the alveolar walls and infiltrated the peribronchial and interlobular tissues, and we shall see at a glance wherein the difference lies. So long as the alveolar walls are not broken down there commonly is recovery, but infiltrations into the proper lung tissue are not so recovered from. The results in the latter case are not liquefaction and absorption of the exudation, but first mechanical pressure on and strangulation of the nutrient vessels of the lobule, causing the death of the part, so that the infiltrated material is compressed, the alveolus collapses, and those changes are initiated which end in cheesy transformation. How is it that a pneumonia which is not resolved after about two months becomes a phthisis? We believe that it is because in the very earliest phase, that of exudation, the interalveolar tissue has been invaded by the inflammatory product, and that we are not dealing with a portion of lung which has its alveoli filled up with fibrin, but a portion where the alveolar walls have given way and a diffused deposit has solidified the whole lobule and its surroundings. This is not a croupous pneumonia at all, it is an insidious deposit in the lung tissue, and will have a different ending from that of sthenic pneumonia.

As I have commented on the errors of the French school as seen from one point of view, so it must be remarked that the German has fallen into errors easily pointed out. Having the great task of enunciating new and true doctrines regarding the inflammatory nature of many products in the lung hitherto called tubercle, it was not unnatural that they should have been led into the common exaggeration of making all phenomena of phthisis harmonise with the new theory. Thus the common origin in catarrh was implied when the name was adopted; the term was no doubt given just as pneumonia was forced into the service in order to inform the medical mind once for all that the exudation in the lung was of inflammatory origin, and must have originated in the ordinary causes of irritation of the air passages of which cold and exposure are the chief agents. But we have seen how unlike a true pneumonia is to the so-called catarrhal variety in its seat, the nature of its products, and in its termination; and so we may say of the term catarrhal, which has misled many a practitioner, and induced a prognosis not verified by the result. Its influence on treatment must also be remembered, and the question will arise whether what is suited to a catarrh is applicable to a phthisis. In adopting this word we appear to have gone back to the old vulgar idea that all consumption came from a neglected cold, and that hot and close rooms and means to relieve bronchial irritation are the best remedies to adopt.

There is another statement of this school to which I must advert, and it will be remembered that my object is not to subvert any doctrines, but, as will be seen later on, to show by a study of the changes of opinion on phthisis how a gradual evolution of the most modern teaching has taken place, and to follow the line of thought in the minds of successive masters.

Is hæmoptysis ever a cause of phthisis? Is it ever actually the first in the train of symptoms, the one which initiated the disease? Laennec and Louis lay it down that hæmoptysis indicates that tubercular mischief is already established in the lung. The irritation of the tubercle causes congestion, and hence the hæmorrhage. Niemeyer says that capillary hæmorrhage, bronchial or pulmonary, often induces phthisis even where there was no tubercle, and that in the majority of cases irritation of the lung follows hæmoptysis. The blood which remains and coagulates in the bronchi and alveoli becomes a cause of phthisis. In some rare cases he says hæmoptysis is not a cause, but a consequence, of pneumonic processes which lead to consumption; but the rule is otherwise, and hæmoptysis is most ordinarily a cause of the disease which is to break up the lung. Thus, as regards the earliest stages of phthisis, we have two sets of conflicting opinions. As regards clinical observation, we see a large number of cases initiated by an hæmoptysis. Every practitioner will endorse this observation. The theory of course is that the blood retained in the aveoli, together with pneumonic infiltration, undergoes cheesy change, and this is followed by breaking down of the lung, or by an eruption of miliary tubercle. We cannot forbear from asking the question why the hæmoptysis should occur at all if there be no preceding disorder of the lung. Is it within our clinical experience as a fact? Why should a portion of lung suddenly permit of hæmorrhage? We know that the pulmonary structures are capable of undergoing immense strain from sudden and prolonged exertion, and, further, that when a hæmorrhage occurs from such causes, or from cardiac valvular disorder, that lung disease, and especially phthisis, does not follow. It is true that hæmoptysis is in a vast number of cases the earliest symptom of phthisis to which the attention of the medical attendant is called, but do we not almost always find that for weeks or months previously the patient has been slightly losing flesh, has felt unusual weakness, has had some suspicious febrile symptoms, or has had slight dry cough? Taking the German theory of a pneumonia as the ordinary cause of phthisis, we can see how the influence of hæmoptysis as a primary cause came to be insisted on. If there was anything morbid in the lung before the hæmoptysis, it was most likely to be what Louis and Laennec said it was—tubercle! And it was necessary to combat this, and to account for the hæmoptysis as the first evidence of the congestion and the inflammatory exudation which were to follow. Here again, pathology was in advance of clinical observation, for the facts of practice do not bear out the theory. People do not get a consumption because they spit blood, but they spit blood because they are consumptive; and insurance offices and those who advise them are right in attributing that meaning to the symptom. But in truth, the Germans want to prove too much—their statement that inflammatory products often passed for tubercle is abundantly proved without this attempt to account for a symptom which seems to tell against them. Hæmoptysis is commonly due to something already wrong in the lung, be it tubercle or not, and all experience proves it. In those cases where it is not, it is harmless, and probably due to cardiac causes, or general fragility of the whole vascular system. I have myself records of about three hundred cases of hæmoptysis which did not originate nor result in any disease of the lung.

I venture to recall your attention to that remarkable and able debate on the connexion of tubercle with phthisis in 1873, at which, Sir, you yourself presided. At that time we had not fairly reached the doctrines of infection, nor had bacilli been discovered in the sputa of phthisis. The medical mind of this country, which had long reposed on the doctrines of Laennec and Bayle, had been roused by the strong assertions of the German school which I have described, and the result was a declaration of faith on the part of some of our ablest inquirers. The solid observing English mind, which is

conservative of old opinions while impartially open to every novelty ; which is little given to belief in the dogmas of any school as such, but waits for their verification by evidence, was ably represented by the leading speakers on that occasion. As in surgery it used to be said that operations were invented in France but made safe in England, so the lighter and more ephemeral part of German theories are often reduced here to the level of facts which have been proved by investigation, and if found to bear such crucial test are assimilated with medical science, but, if weighed and found wanting, are rejected. I take it that in no country are the names and doctrines of great names so worshipped as in Germany ; but I must maintain that no country is so practical as England.

I will venture briefly to recapitulate a summary of the views of the prominent speakers on that occasion, in so far as they were not contradicted. It was recognised that under whatever name, tubercle or otherwise, it might pass, that a product of known anatomical appearances was found in the lung in phthisis ; that caseation is not invariably tubercle, but often results from inflammatory products ; that a new growth takes place in the walls of the alveoli in all cases of phthisis, leading to destruction of their nutrient vessels ; that this does not take place in ordinary acute pneumonia ; that caseation was not due solely to inspissation of inflammatory products, but to a new growth in the walls of the alveoli, with which destructive changes in the lung are associated almost uniformly ; that if this growth dies quickly, a rapid caseous change takes place, but if slowly, a fibroid change, leading to the well-known alterations in the lung structure that bear that name ; that all these changes are manifestations of the disease, and that all occur in the most typical form of acute tuberculosis ; that tubercle may occur without inflammation of surrounding tissues, or that it may be secondary to inflammation.

Dr. Wilson Fox states that implication of the alveolar wall is the most constant and typical appearance in the process of tubercularisation. As regards the dispute about inflammation and tubercle, he considers that both may arise simultaneously, and that inflammation may give rise to secondary growth in the alveolar walls, which is a main cause of phthisis, and that the causes of tubercle may be the causes of inflammation. As regards the nature of the so-called tubercle, he is borne out by Dr. Burdon Sanderson, in considering it to be a lymphatic overgrowth, produced by irritation under special circumstances, anatomical or constitutional, and he believes that adenoid or lymphatic tissue is found in the walls of the air-vesicles, and that as lymphatic irritation may prevail in any part of that system, so it may show itself here. The boundary line between tubercle and inflammation cannot be accurately defined, but there is no doubt that the tubercular growth precedes the caseation. We come now to another element in the case, and that is that certain constitutional conditions are essential to the production of tubercle. Any irritation of the tissue may, in the presence of local or constitutional predisposition, give rise to secondary growths, diffused or circumscribed, which constitute tubercle, and which may be the source of further infection, and that with or without antecedent caseation, although this stage, and that of softening, appear to be most favourable to the change. The real agent in infection is the small-celled growth in the walls of the alveoli.

Again, attention was called to the fact that irritants introduced under the skin of the rodentia give rise to lymphatic deposits in the lungs, liver, and spleen ; even the irritation of a seton has done so. It was considered that overcrowded corpusculum in any organ may give rise to similar processes elsewhere, but Dr. Moxon thought that there was no phthisis without caseation, and that tubercle was another phase of inflammation, which latter can cause caseation, and so enter the system. I believe it may be

stated with truth that no speaker upheld that common catarrh can originate caseation, and in this view it was pointed out that the initial stage of phthisis is local and not diffused, as catarrh. Finally, it may be said Dr. Wilson Fox spoke the sentiments of the majority of those present when he said, "Tubercle tends to multiply, but can it be produced in the human subject by indifferent caseous products or by any inflammatory change not associated with a peculiar liability of constitution? I strongly doubt both."

It will be seen, Sir, that the tone of this debate was broad as regards the foreign schools, but accepted the data of neither. You will have noticed also that the whole debate turned both on the nature of the product in the lung and the changes which it undergoes, but also very much on the part of the lung which was so injured. If the doctrine is a new caseation or no tubercle, then no phthisis, it is also no less strongly that if there be no new cell-formation crushing and destroying the walls of the alveoli, then also there is no phthisis. The recoverable cases are those which after inflammatory or tubercular or catarrhal attacks remain with the alveolar walls intact. Destruction of alveoli is never recovered from, there are collapse and thickening of that part of the lung, but there is no restitution of structure and no vesicular breathing in that part again. Localisation of disease rises into great importance. We used to think that the consumptive died of a constitutional irritative fever, but, tracing their symptoms alongside of the physical signs, we now know that their fever and their waste are coincident, and that it is just then that the tissues around the alveoli and in the peribronchial spaces are filled with a new cell-growth, which rapidly proceeds to caseation and softening. We also know that at this very time a mass of detritus of inflammatory or tubercular products is being carried into the blood and lymphatics, and deposited in other parts of the system, and that high fever wastes the patient while other organs or the opposite lung is being infected. Whatever initiates the disease this secondary result seems as manifest as the spreading of a fire in a dwelling, while, like the latter, the mystery remains of the originating causes of the combustion.

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It is possible that many, if not all, diseases are specific in one sense—that is, they may have a peculiar and individual cause, and an undeviating course in dependence on it, and to this view the modern pathology undoubtedly tends; yet that any affection stands outside the general laws of diseased action and may be studied apart from others would be an error misleading in the study of that individual disease, and which must inevitably result in mistakes.

We have now arrived at the germ theory of phthisis, having examined those of the French and German schools which preceded it, and, so far as we are able, the English mind on the subject; and as I hold it impossible to subject phthisis to an isolated examination, and to regard it as separated from general pathology, I shall take the liberty of examining briefly the whole theory of the induction of diseases from germs introduced from without, as well as the disorders resulting from their introduction into the economy of the living body, and the method of their multiplication in the system, with the symptoms thereby induced. We shall then examine the phenomena of phthisis from this point of view, comparing its symptoms with those of other affections which are recognised as due to a similar infecting cause.

In the outset, let us observe that the argument regarding the introduction of germs, parasites, or septicæmia into the living body implies a recognition of the localisation of disease. None of the theorists argue that the whole system is at once infected. There is a given starting-point, be it the wound or inoculated spot, and even when the breathed air has introduced

septic or specific germs into the blood by the lung, it must, and does, soon find a local centre in which it forms a nidus, and whence it spreads by some of the methods we shall consider. That each specific germ has a point of selection, or a locality, in which it can especially grow and multiply, is an observed and necessary part of the infection. Thus the typhoid germ selects the mucous glands of the intestines, and the poison of rabies the brain and nerve centres, probably the pons. From this consideration it is evident that there are structural or other peculiarities of certain localities in the body in which they differ from other parts. To carry this view higher, it may be almost considered that the proposition of Bichat is true, and that the various tissues are possessed of a particular life. The modern theory would seem to show that you can poison the individual life of certain tissues, as the nervous, or at least that certain infectants address themselves peculiarly to particular structures of the body, and there find a centre in which they flourish, and in which alone they can germinate and fructify. Bichat taught that the life of superior organisms, as man, is not due to the action of a unique central force, but to the ultimate result of the particular lives of the various tissues which enter into their composition. The organism of an animal he likened to a federal State, and the elementary cells to the citizens. Virchow, in his Cellular Pathology, especially studies to discover the causes which interfere with the life of the ultimate tissues of the body, and he thought that a great number of the disease-producing causes are living beings, vegetable and animal, which live as parasites at the cost of the human organism. There is no doubt therefore that long before there was any discovery of infecting germs the pathological mind was being prepared for the new theory. It was no longer sufficient to recognise a blood-poison acting by indescribable means on the whole system, devitalising and destroying it in totality, but it was seen that the death of particular parts of the system was possible, and that certain poisons addressed themselves to certain structures. This was proved to be true of chemicals introduced from without, as lead, which affected the muscles, or antimony, which is found in the solid viscera. It is but a step from this to recognise that certain germs manifest a selection for certain parts of the human body, and this was seen in the days before microscopes, in the known habitats of hydatids in the liver, lungs, and brain, in the lumbricus in the small intestine and the ascaris in the rectum. In 1835, Owen found the trichina, and Virchow somewhat later described the fever dependent on these parasites and their peculiar site in the muscles. There are, doubtless other examples, but the foregoing will illustrate the fact that the localisation both of certain poisons and of certain parasites was known. In 1836 Latour gave the name of *torula cerevisiæ* to the ferment which converts sugar into alcohol and carbonic acid. The vegetable nature of certain germs, and their power of indefinite multiplication, by assimilating to themselves all the materials of an organism to which they are exposed, till "the whole lump be leavened," must have struck many thoughtful observers. The experiments of Schwann at Berlin in 1837 proved that meat can be preserved from putrefaction by keeping it from the air or by subjecting the air to a high temperature, and upset the theory previously held that septic processes are due to oxygen. Thus we arrived at the fact that putrefaction is caused by organisms springing from germs in the air, and that heat can deprive these germs of their vitality. As the *torula* converts sugar, so germs convert albumen. In both instances the minuteness of the agent is remarkable. It was found that putrefying pus contains myriads of vibriones or jointed bodies which arose by a process of self-multiplication out of similar bodies by segmentation, or fissiparous generation. Pasteur's well-known experiments confirmed these results and largely extended them, and it was thus established that the atmosphere is filled with myriads of such germs, found

indeed less abundantly on the tops of the Alps, or in equatorial parts, but literally everywhere. From hence has arisen the well-known methods of Professor Lister, who has applied the knowledge of these facts with such splendid results to operative surgery.

In 1866, Rindfleisch first noticed bacteria in the organs of those who died of traumatic infective disease, as pyæmia and puerperal fever in the form of pinhead deposits in the heart and muscles. Later on these become filled with a thin fluid pulp. These cavities contained vibriones, which afterwards penetrated between the fasciculi of the muscles, and then into the muscular fibre. They were found in the heart and kidney, and finally in the blood. The unhealthiness of a wound was found to be in direct proportion to the number of spheroid bacteria in its pus, and general infection was held to be due to bacteria in the blood. Further observations demonstrated the existence of micrococci in the bullæ of erysipelas, and in the lymphatics on the edge of the erysipelas. Bacteria were also found in the pus of phlegmonous abscess, in its walls, and in diphtheria. In the latter diseases they penetrate deep layers of tissues and lymphatics. When traumatic infective diseases set in the discharges become putrid. Anthrax is remarkable for the uniform presence of bacteria. These were also found in scarlet fever, small-pox and typhus, as also in cholera. The two tests of microscopical examination and chemical reaction were applied by Koch to these parasites in septicæmia, and the diseases we have named, and a third and most important one, inoculation. In form the bacilli are found either as bacilli or micrococci, as chains of granules, or rods, or long oscillating threads. Koch thinks that a distinct bacteric form corresponds to pyæmia, septicæmia, erysipelas, gangrene, and spreading abscess; but Nægele says, "I have for ten years examined thousands of different forms of bacteria, and I have not yet seen any absolute necessity for dividing them even into two distinct species." It is certain, therefore, that a peculiar morphological form is common to several diseases, as pyæmia, diphtheria, small-pox, and cholera; yet even Koch is struck by the difficulty, and says that it is impossible that all these diseases can be produced by one parasite, and asks, although the bacteria appear the same, may there not be a difference, just as the sweet and bitter almond look alike, but have important chemical differences? Chemically it has been found that bacteria resist acids, alkalies and ethers, but are demonstrable by their absorption of certain aniline dyes; and it is to this fact, as is well known, that we owe their recognition with certainty. It is possible to remove the albuminoid structures in which they are imbedded and leave the coloured vegetable parasite.

The experiments by Davaine on inoculation of animals with putrid matters are well known, and the remarkable fact discovered that by transmitting the infection through a series of animals the germs are not exhausted, so that at last he succeeded in producing the characteristic effects by using the trillionth part of a drop of blood. He thus infected successively twenty-five animals. He used diverse fluids, from scarlet fever, puerperal fever, small-pox, typhus, and always found bacteria in the blood. He also produced diphtheria and erysipelas artificially in animals. He found (as did Koch) that bacilli grew into the vessels and entered the circulation through spaces in their walls. They penetrate the white corpuscles of the blood, the capillaries and large veins, and appear to have entered the system by the subcutaneous cellular tissue in the neighbourhood of the spot inoculated. It is found that when the bacilli disappear the disease can no longer be produced by inoculation. The animals made use of in these experiments were rabbits and mice; but Koch distinctly states that the septicæmic bacillus cannot be inoculated on every animal, and often failed in mice. On the other hand death occurred in twenty-four hours after inoculation with the smallest drop of blood from anthrax, and the

lungs, liver, spleen, and capillaries were found filled with bacilli. The well-known experiments of Pasteur and Klebs, which have been called the culture of germs, offer much evidence on the difficult and disputed question as to each disease in which bacilli are found having a separate parasite which is capable of identification. Taking a material presumed to contain an infective virus and others, they have by exposing it to certain conditions of temperature and free access of oxygen found one germ specially grow, and its infecting power increase more than the others. A preponderating development thus obtained in one germ is found to have stronger infecting powers than the others in the mass examined. By successive experiments the one infecting germ is isolated. To this have been applied both the inoculation test described, and also the chemical. Thus it has been observed that the bacillus of anthrax does not colour with fuchsine, while that of leprosy does. Crudele is of opinion (and no one has more thoroughly adopted the germ theory) that in the greater part of cases there is no proof of different kinds of bacilli except from pathological effect, and that we must obtain the morbid ferment isolated from every other substance with the greatest clinical care. He acknowledges that the entrance of septic ferments into the blood is not always followed by disease, and contends that for such production of morbid effects they should necessarily find a home in the body, and there grow and form a colony.

I have hitherto considered septicaemia and the opinions of experimenters on the so-called ferment and on the parasitic bacteria presumed to be the essential cause. But we are aware that many other diseases besides those named are referred to the same cause—namely, germs entering the system from without, and amongst these are found malarious fevers, and notably tubercle. Before proceeding to discuss the latter I would state in a condensed form the physiological, and pathological reasons assigned by the eminent originators of the doctrine of germs both for and against the theory. Pasteur argues that all contagious endemic and epidemic diseases result from ferments. All infectious diseases are due to living beings capable of multiplying in the organism. He argues from the disproportion between the determining cause and the effect—the quantity of the poison introduced in relation to the gravity of the resulting disorder; and, secondly, from the reproduction of infecting material in the organism in enormous quantities.

Chemical ferments do not augment in quantity, although they produce changes in the composition of other substances. In living ferments they always go on increasing in proportion as the fermentative process advances; precisely what occurs in the specific agent of each infection during the course of the specific disease. The incubation period is remarkable. In chemical ferments we should see the specific action always show itself till it had met with all the material in the organism which it was capable of decomposing; but in animal ferment there is always an incubation found, more or less long, till the germs are evolved of all the living organisms which constitute the disease. It may be supposed that these remarks apply only to diseases of infection or contagion, like scarlet fever or erysipelas; but it will be seen that they are made with regard to the most chronic affections attributed to parasitic origin, as tubercular diseases, also to malaria and rabies. The duration of the incubation period varies according to the species of the infecting agent. It is short in the acute exanthemata, longer in others of milder course. Tuberculosis has latency of twenty days, and rabies often a period of years. As is well known, Pasteur reduces the period of incubation of rabies by inoculating direct in the brain. The poison is thus at once fixed in its bed of choice instead of having to make its way to it through various tissues (during which time it is latent), and the well-known symptoms can be produced in a few days. He has no doubt

that a living organism causes rabies, which finds in the brain the conditions for its development and multiplication.

The cyclical course of diseases so originated is also dwelt on in proof of their parasitic origin. In all acute miasmatic affections the stages of disease can only be explained by the progressive multiplication of a living ferment in the body. This is followed by the death of the organism, when there is recovery. In such cases there is always a stage of invasion, increase, acme, decrease, and resolution; or there are remissions, either daily or of some days, accounted for by the death of one crop of parasites, followed by a renewed access of disease when a new generation of germs is matured, and set free in the organism. In this way the remission and return of tertian or quotidian fevers and the daily hectic access of phthisis are accounted for. Chemical ferments would not act so, but would work through the whole system at once, and either kill the patient, or exhaust themselves by finding no more material to work on.

To prove this doctrine it is necessary that the presence of the parasite be constant in all materials which show themselves able to produce infection, that it can and does develop and reproduce itself in the organism of man, and that this parasitic being can alone, and isolated from every other matter contained in the infecting material, determine any given infection. To this we might add that each parasite should have distinct morphological characters; but it is well known that there is often a perfect likeness between germs, some of which are infective and some not.

The questions whether the microscopic organisms, of which we have been speaking, constitute a distinct species, or are capable of modification, and are even mutually convertible, and whether they are not found naturally in the tissues and fluids of healthy animals, have occupied some of the most acute observers of our time. Lister asserts that they are not found in healthy tissues. Bastian is of opinion that they may take their origin in unhealthy or dying processes by a method which he calls heterogenesis. Lewis has experimentally shown that by impairing the nutrition of any given organ bacteria may be made to appear, and Burdon Sanderson that they may be also made to appear in tissues of previously germless animals by exciting an intense inflammation within the peritoneum or beneath the skin by means of germless chemical agents.

Virchow, at the Medical Congress of 1881, taking the parasitic nature of certain diseases as proved, inquired whether there were not different forms of the same parasite giving rise to different affections or to modifications of the same disease, and spoke of the great interest attaching to the process of culture of germs, now well known. Büchner had by this method modified, and almost transformed, the germs of bacillus anthracis, and by a series of culture generations had developed a perfectly innocent plant, the hay bacillus. Again taking the hay bacillus, he thought he could give it virulent properties by a sort of "undomestication," making it wild again. Thus by giving the organism a special kind of soil and a more vegetable diet it might be made innocent; by a more nitrogenous diet, and under other circumstances it might be made wild or malignant again. Virchow, again while he believes in the difference of the kind of germs entering the body, recognises strongly the resisting powers of the system, and the facilities given to the entrance of disease by weakness, which diminishes such resistance. Béchamp believes that germs of bacteria exist in all living and healthy animals, an opinion endorsed by Billroth. Some are of opinion (or were at the Congress) that there are no specific bacilli, as Forker, who considers that these organisms produce infection only in a secondary manner, their morphological form being indifferent. Hüter thought that there were specific modes of activity in micro-organisms, but a certain unity in all.

I must apologise for reciting these various opinions, but those I have quoted are all from personal experimenters on a large scale, and their

recorded judgment is representative of the varied and fluctuating views of the thoughtful on the subject in all countries. By scrutinising their variety we shall at least learn that knowledge, while rapidly progressive, demands an impartiality of mind and a caution in decision, for the facts may not be borne out by the later experiments of to-morrow. As regards the germ theory in traumatic diseases many hold that normal blood and tissues contain micro-organisms, and that these are not causes of disease, but become so from an abnormal increase in their number, because the fluids have become so altered as to present conditions favourable to their development. To this it is replied that Burdon Sanderson and Koch himself did not find such in healthy blood, nor did bacteria spontaneously develop in man or animals. The latter author concludes that the frequent discovery of micro-organisms in traumatic infectious disease renders their parasitic origin probable, but thinks that we should have established for every such disease a parasite with marked morphological characters, while he is so persuaded of the ultimate truth of the proposition that he says: "May there not be the possible presence of a lifeless disease ferment never yet demonstrated, or other unknown quantities?" With these unknown quantities we have, however, but little to do at present.

Before examining the latest discoveries regarding tubercle let us shortly notice some of the other parasite diseases. The bacillus of typhoid finds its principal centre in the small intestines, but it can multiply itself outside the body and penetrate living organisms by means of air, water, milk, &c. However it may have been introduced, it is found in the lymphatics of the intestine and the mesenteric glands, passing thence by the bloodvessels into the whole organism. Transfusion of blood has carried the disease from one to another, as also has taken place in malarious fever according to Crudeli. These two diseases are not considered contagious, though secondary colonies of bacilli are found in the spleen, lymphatic glands, and spinal cord. Most curious and interesting is the discovery of the specific ferment of malaria attributed to Obermeier in 1873. According to Crudeli, who in Rome has had abundant opportunities of studying the subject, the parasite is a spirillus, and appears as filaments. The bacillus is sporigenous, multiplies by spores inside its filaments, which break up and gain their exit either from their centre or from one extremity or both. They require a free exposure to the air and a temperature of 20°C. for their development. They are found in all marshes and in malarious districts not marshy, and in the superincumbent air of such districts. Not only spores, but developed bacilli, are found in the air. Cuboni found them in the sweat of his hands and face when in the Pontine marshes. These spirilli move briskly in the blood, are always found during an access of fever, diminish after the access, and entirely disappear in the period of apyrexia. This has been observed in man and in apes, and Carter inoculated apes with the blood of man in malarious fever, and with the result of producing the fever. Guttman has seen the spirilli in the blood thirty hours after death, and Koch in the interior of organs. In 1879 Crudeli and Klebs appear to have satisfied themselves of these facts. In pernicious fever (the worst form of malarial fever, in which I have seen patients who fell down, comatose while at work in the fields), these bacilli are most numerous in the blood and the spleen, which is of a dark colour, almost black. They are also found in the brain. Experiments in 1880-81 in Rome prove their existence in the blood in the invasion or cold stage of the fever. A subcutaneous injection of these bacilli in rabbits and dogs produced certain and quotidian fevers. They grew rapidly in favourable conditions, which seems to be moderate moisture, free exposure to oxygen, and a tolerably high temperature. The presence of putrid matters is hostile to their growth, so that soils which have never been manured are most favourable. It is a notable circumstance that quinine placed in the

soil even in small proportions kills them. During the access of fever these bacilli get liberated into the blood and lymphatics, and the periodicity of these marsh fevers is said to be due to successive generations of parasites being sent into the blood. I would only further notice that in influenza and hay fever bacilli have been found in the nasal fossæ and frontal sinuses, a fact which led Helmholtz to treat coryza by injection of quinine. In acute rheumatic fever micrococci have been observed by Crudeli and others in the articulations and in the mitral valve. In acute pneumonia the presence of parasitic germs has been demonstrated. In syphilis germs of micrococci are held to be the essence of the disease, being found in the blood of infected persons, and in the lymphatics. Gummata are new colonies—slow of formation; and it is noticed that maladies beginning with mild symptoms find the system prepared to resist them. Inflammatory reactions in chronic infections retard their course by retaining the infective matter in their various centres, but these are in their turn preventers of the action of remedies which cannot reach the part.

We come now to the experiments of Koch on the bacilli of tubercle, which have attracted so much attention, and seem especially to have awoken the public to the opinion of the specific character and contagious nature of phthisis. I have purposely considered other parasitic diseases before this one, in order that we may see how tubercle is allied to many affections and shares their pathological meaning. We may condense Koch's opinions as follows. By late researches on the tubercle ferment the constant presence of bacilli is proved in recent tubercular formations. These are small, like those of leprosy, but finer, with pointed extremities. Their protoplasm easily colours with methyl blue, the solution having been made alkaline. They are found in great quantity in inflammation of a tuberculous character while progressing; when the height of the affection is past they diminish, as we found in malarious fever. They are always seen in the periphery of tubercular nodules isolated or grouped, in the so-called giant cells, and in chronic tubercle often only in the giant cells. They are always present in caverns mixed with others of analogous form, which do not, however, turn blue with methyl blue; the others take the brown colour of vesuvium. In very recent tubercular formations, they are found without the colouring test in bloodvessels, lymphatics, and intercellular spaces. Koch established an artificial culture of these bacilli, making use of the serum of the blood of the ox for that purpose, which he dried by gentle evaporation at a temperature of 122° to 129°F., the coagulation of the serum being avoided. The bacillus of tubercle must be at a minimum temperature of 94°, the maximum 105°. The bacilli of malaria require a higher temperature. Those of tubercle take about ten days to produce the germs, which cover the surface like scales. With these he experiments on animals (rats and mice). He either introduced bacilli into the blood or into various tissues of the body, and always obtained a positive result—viz., tubercular infection. Nothing occurred in tissues where inoculation was practised under eight days, the glands inflamed in fourteen days the general infection of the system took place in six weeks, then tubercle was developed in various organs, chiefly the liver and spleen. In phthisical cases in men half the number had bacilli in the sputa, and Koch never found them in persons not affected by pulmonary tuberculosis. Further, from inoculation with the sputa of phthisis, even when it had been previously dried, he never failed to produce tuberculous infections. The inference would seem to be that a spore producing a bacillus is the cause of phthisis. The opinion and experiments of Crudeli of Rome are especially advanced. He thinks scrofulous and tuberculous inflammations distinguished from all other pathological processes which produce cheesy masses by this: that the cheesy masses contain the tubercular contagion, which is proved by the inoculation of rabbits which repro-

duces the tuberculous inflammation. The cornea of the rabbit inoculated with tubercle evidenced inflammatory action after twenty days, from which tubercle can be reproduced. Tubercle in its earliest days has in its centre a mass of very minute granules, with a small bloodvessel or lymphatic. These granules are not the fatty albuminoid detritus of tissues, for they resist the action of alkalis and ethers. The granules in tubercle are micrococci; they multiply themselves in the blood, and in tissues where scrofulous inflammations are present. A wounded part will be invaded by them if inoculation occur. Bacilli are found in the tubercular nodules, and the peculiar contagion is probably in these. It is found endogenous—that is, it is produced and multiplied in a system affected by what he calls tubercular sickness. It is transmissible from the sick to healthy persons; is found especially in localities where tuberculous men, or animals as oxen, are grouped in numbers; in the morbid secretions of affected organs; in the liquids of normal secretions, and notably in milk. It can be transmitted by using the milk of tuberculous cows, they being very liable to that class of disease. Klebs made animals tuberculous by feeding them on the milk of tuberculous cows. Lockmann, of Christiania, found a whole population in a district of Sweden, previously free from tuberculous affections, become so soon after the introduction of a breed of Ayrshire cows which were known to be affected by that disease. On this evidence Crudeli asks whether man did not originally derive tubercle from cows through their milk. He says it is a matter of historical record that America had no tubercle before its discovery by Columbus, and the introduction of European population who imported cows. There were no mammiferous herb-eating animals on the American continent previously, excepting the llama of Peru. On this point I think we shall agree to await further evidence. Crudeli considers that tubercle can enter the organism in intra-uterine life through the placenta, also by the father communicating it to ovum. Tubercular metritis in the female and prostatic tubercular disease in man can infect. The contagion may also enter by the respiratory tract; to breathe the air where many consumptives are assembled, as in hospitals, may turn out very dangerous, and he thinks this is proved by the experience of the Consumption Hospital. The disease is especially communicable from husband to wife. Wounds exposed to-tubercular air can be also infected.

(To be continued.)



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THEORETICAL THERAPEUTICS.

WE HAVE presented to our readers the admirable lectures delivered before the Royal College of Physicians of London, by Dr. Pollock, of the Brompton Hospital, on the "Theories and Treatment of Phthisis," not only with the object of laying before them the theoretical views that have been entertained by physicians from the earliest times of medicine to the present, about the nature of a most important disease, but also to show the influence which these theoretical views have exerted on the treatment of that disease.

It is doubtful if we can ever divest ourselves of theory in any department of knowledge. We may boast of having, in the present day, arrived at the positive phase, if not of all knowledge, at least of the methods of inquiry by which knowledge is acquired. But we must not forget that what we look upon as facts are but our own interpretations of nature's phenomena, and as such they cannot be absolute facts, but must have a tincture of our minds, must have a theoretical side. And besides, theory is a potent agent in the discovery of new facts. Some of the greatest discoveries have been made under the influence of preconceived theories, and the greatest discoverers have been the greatest theorizers. Theory is not bad, is indeed a very good thing, if it is kept subordinate to facts positively ascertained. Theory becomes unsafe, retards the advancement of knowledge, when it is made to disregard facts. And when knowledge has a practical side, a wrong theory, that is, a theory that does not accord with facts, leads to positive mischief, and becomes dangerous. Thus,

to take a single instance, the cause of malarious fever, namely, the obstruction to the natural drainage of a locality, being overlooked, jungle or forest, in other words, over growth of vegetation might be mistaken for that cause, and if under this idea, forest is felled in extensive tracts, the result will be disastrous, being no less than want of rain or drought.

In the exercise of the physician's art nothing can be more dangerous than wrong theories of disease. The history of medicine shows what a mischievous influence have the theoretical views of a few physicians exerted on the whole profession, and how alternately opposite theories, both wrong, have prevailed to the great misfortune of suffering humanity. At one time diseases have been considered sthenic, and accordingly depletory measures have been the rage, so much so that when death actually resulted from these measures, it was ascribed not to them but to their not having been sufficiently carried out! Again, when the asthenic theory of disease was in vogue, therapeutics consisted in pouring into the stomachs of patients stimulants of all varieties and descriptions, and so converting them into regular grog-shops. Many a patient, both male and female, has taken to the bottle simply as a consequence of this mode of treatment.

In individual diseases wrong theories have been equally mischievous. To take the case of Phthisis for instance. The theory, which led to the least evil, was the theory which most approached fact, and this was the theory of the ancients, namely, that phthisis was a wasting disease, and therefore required strengthening medicines and strengthening food for its treatment. We say this theory led to less evil than other theories, we do not say it was altogether a harmless one. Where strengthening medicines and strengthening food were injudiciously given, regardless of their effects on the digestive organs, and on the general condition, they did produce the most injurious consequences, hastening diarrhœa, increasing the hæmoptysis, aggravating the fever, &c.

It can be easily conceived what influence the inflammatory and catarrhal theory of phthisis must exert on its treatment. The old school can only combat an inflammation according to the view it holds of its nature, which according to the fancy or whim of the practitioner may be considered either as sthenic or asthenic, and then depletory or tonic and stimulant measures will be adopted, in either case to the detriment of the patient.

The latest theory of the disease, which well nigh threatens to be the theory of nearly all disease,* is that it depends upon a

* "The latest fad of this sort is the ingenious speculation of Pasteur, who, though no medical man, has propounded a new pathology which has fascinated

living parasite, which having the form of rods or clubs is called the bacillus of tubercle. Now it is an unquestionable fact, which the microscope has brought to light, that these parasites are found in tubercular lungs, in and around the tubercles. On the strength of this fact pathologists have rushed to build up a theory of the disease. "The theory is," as Dr. Pollock has well stated it, "that the germ has first a local position—say in the lung—that after a period of incubation it multiplies, and that parasites are carried by the blood and lymphatics to another and distant part where a colony, or station, or nidus is formed, a fresh deposit of morbid parasitic matter taking place with phenomena, as in the first local irritation and general febrile condition. Now the story of phthisis," continues Dr. Pollock, "is well known to consist of exacerbations and remissions, and the history of secondary deposits of miliary tubercle, of secondary infections of the opposite lung, and of the small intestine and of meningitis, singularly corresponds with the theory we have described." What then is simpler in the treatment of this formidable, and hitherto incurable disease, than to attack it with parasiticides, or drugs which are destructive of the life of these parasites?

In the same way the parasiticidic method of treatment has been adopted in diseases in which parasites of some form or other have been discovered, such as pyæmia, septicæmia, erysipelas, gangrene, typhoid fever, &c., and in all with the worst results. Now assuming for a moment that the parasitic theory of disease is the true one, is it possible to kill all these parasites with one agent, in other words, is it possible to have an agent which is destructive only of all these parasites, and innocent to other animal or vegetable life? It is true that the forms of these parasites are so similar that Naegel after ten years of research has not been able to divide them even into two distinct species. But nevertheless we must all feel the difficulty which has struck Koch that all diseases in which parasites have been discovered could have been produced by one parasite. We may ask with him, "though these parasites look alike, may there not be a difference between them, just as the sweet and bitter almond looking alike have important chemical differences?" If so, why should we think there is a common parasiticide? We have besides abundant evidence to show that this in all probability is not the case. Thus while santonine is destructive of the *ascaris lumbricoides*, it has no influence whatever on the *tænia solium* and other forms of intestinal parasites; and that while filix mas is destructive of *tænia solium* it is harmless to *ascaris lumbricoides*; and so on.

a credulous profession and a large portion of the semi-scientific public. According to him, all diseases are divisible into two classes, those in which a micro-zoon has been found, and those in which one will be found."—DUBOIS: *Hahnemannian Lectures*.

Carbolic acid, which was hailed as the universal parasiticide, has proved more a homicide than a parasiticide. "It gradually transpired," says Dr. Dudgeon, "that some of the minute organisms so far from being destroyed by carbolic acid, increased and multiplied, and enjoyed themselves amazingly under carbolic acid dressings, and that almost all their varieties could exist in the organism without causing disease; and more astonishing still, it was shown by Rossbach that an inorganic chemical ferment of vegetable origin free from foreign organisms, when introduced into the blood of a healthy living animal, caused this blood to swarm with bacteria in countless profusion in an incredibly short time; and further, it was found that carbolic acid was not so 'harmless to animal life' as had been represented, for some surgeons have had to give it up, because it poisoned not only their patients—which might be borne with equanimity, for patients are used to be poisoned, as cels are to be skinned—but even their illustrious selves, which was intolerable. A recent attempt in the Paris Hospitals to apply the carbolic acid treatment to the cure of typhoid fever was followed by disastrous consequences, the mortality having been something shocking even to the allopathic mind and conscience."

It is becoming a serious question with sober minded physicians, whether the microbes found in the diseased tissues and diseased products are the cause or the effect of the disease. The tendency of opinion is that the germ theory will not account for all the phenomena of disease, at least not of phthisis, when of hereditary origin. "The theorist will no doubt say, as regards the hereditary cases," says Dr. Pollock, "that the seed was sown before birth; but if this be true, what a long period of incubation it has required!" Now, if the parasites are the effects of disease then the parasiticial treatment of such diseases will become, as they have already become in numerous instances, homicidal, unless indeed the multiplication of the parasites in the organism has been such as to cause aggravation of the disease itself. Even then it is doubtful, if a treatment which does not strike at the root of the disease will be successful, can be at best better than merely palliative, and to be even that we must have specific parasiticides, parasiticides for each species of disease. But how to discover them? This much is certain, that no theory can help in solving this important question. If any help can be derived from any quarter it must be from the Hahnemannian method of proving drugs.

RACHITIS (RICKETS).

(Translated from the French of Dr. Jousset in L'Art Medical
for April 1883.)

Rachitis is characterised *anatomically* by a disorder of nutrition of bone, which causes this tissue to remain in its cartilaginous state; *symptomatically* by swelling, softening and deformity of the skeleton and a particular cachexia.

[The first English authority on the disease, Glisson, believed rachitis to be the same disease as mollites ossium; up to this day he has his adherents, Trousseau, Bouclut, and others being among the number. Virchow has, however, conclusively established the non-identity of rickets and mollites ossium. The former is essentially a disease of infancy and childhood, whereas the latter is as essentially a disease of adult life, and chiefly of the female sex. In rickets there is an arrest of the development of bone, in consequence of which true ossification, (which includes, but which is not merely, calcification) does not take place, and consequently the bones *remain* soft. In mollites ossium, the fully-formed bone melts as it were, the calcareous salts being removed from it by a morbid process, and thus the bones *become* soft. In rickets something introduced from without, or more probably generated within the system, acts as an irritant to the osteo-plastic tissues, and prevents the deposition of calcareous salts. In mollites ossium some changes take place in the already organised osseous tissue whereby the lime salts already there are dissolved and removed. While rickets is a very common, mollites ossium is a very rare, disease.

The following statistics, quoted in Ziemssen's *Cyclopædia*, will show the comparative frequency of rickets at different ages in childhood:

<i>Guérin's Statistics.</i>	<i>Von Rittershain's Statistics.</i>
Before birth 3	During first six months of life 91
During the 1st year of life 98	" second " 175
" " 2nd " " 176	From 1 to 2 years 154
" " 3rd " " 35	" 2 " 3 " 62
" " 4th " " 19	" 3 " 4 " 15
" " 5th " " 10	" 4 " 5 " 7
From the 6th to the 12th year	" 5 " 9 " 17
of life 5	
Total 346	Total 521

<i>Bruenniche's Statistics.</i>		<i>Ritchie's Statistics.</i>	
During first half year	1	During first half year	7
" second "	19	" second "	65
From 1 to 2 years	79	From 1 to 2 years	109
" 2 to 3 "	47	" 2 " 3 "	25
" 3 " 4 "	7	" 3 " 4 "	9
" 4 " 5 "	6	" 4 " 5 "	4
" 5 " 8 "	4		
<hr style="width: 10%; margin-left: 0;"/>		<hr style="width: 10%; margin-left: 0;"/>	
Total	163	Total	219

It is generally supposed that deficiency of calcareous salts in the food is the cause of rickets. But recent researches, especially those of Tripier, Chossat, Weiske and Wildt, show that this alone is not sufficient, at least in every case. Along with deficiency of calcareous salts in the food, there must be some substance in the blood which proves an irritant to osteo-plastic tissue. Wegner has shown that continual administration of minute quantities of phosphorus would produce true rickets, when at the same time food is made deficient in lime. Heitzmann's researches seem to show that lactic acid acts similarly to phosphorus, at least in the carnivora. Now lactic acid in excess has been detected by Marchand, Lehman, and Group-Besanez in the urine of rickety infants. All these researches taken together throw some light on the genesis of rickets. The abnormal excess of lactic acid, and the abnormal deficiency of calcareous salts are the two conditions which are calculated to favor the development of rickets. But rickets may arise where there is no deficiency of lime-salts in the food. For some reason or other not understood, the growing bones do not or rather cannot assimilate these salts, or perhaps the salts are in such a condition that their precipitation is prevented. Such is the case with children born of syphilitic parents.—Ed.]

I. *Hygienic Treatment.*—Alimentation, aeration, position, orthopædic apparatus, frictions with saline waters, gymnastic when possible, constitute the hygienic treatment of rachitis.

Alimentation—The common form of rachitis develops itself in the first infancy, and it is the result of a nourishment ill suited to this age. The aliments which contain calcareous salts are indispensable for the development of the skeleton, and if these are deficient, rachitis develops itself fatally. Infants, like young animals, fed exclusively upon broth and meat, become rachitic. The aliments,

which are proper for this age, are in the first rank : milk which contains all the necessary principles for nutrition, the calcareous salts being included in them. Then follow eggs, then flour of wheat, haricot and lentils. The first of these ought to be preferred as being more digestible.

Physicians ought to be on their guard against pharmaceutical preparations which are intended to furnish to nutrition the *phosphates of lime* of which it is in want. The cattle-breeders, who have studied this question of alimentation with great care, have completely rejected these preparations, after having recognised experimentally that they are detrimental to the nutrition of young animals. It is necessary then to return, in the hygienic treatment of rachitis, to natural preparations, to foods which contain calcareous salts necessary for nutrition, that is to say, to milk, eggs and bread.

Horizontal position.—This position is absolutely necessary during the period of ramollissement. It is the only means whereby to prevent great deformities of bones of the lower extremities and of the spine. This position ought to be perfected by certain apparatuses calculated to combat deformity of the skeleton.

Exposure to the air and to the sun is absolutely necessary to rachitic infants condemned to the constantly extended position.

Gymnastics.—Lotions of saline water.—These practices are only applicable in the benign form which comes on in the second infancy and in the beginning of puberty. Gymnastics ought to have for its object not only the amelioration of the general state, but also the correction of the commencing deformity.

In order to be able to fulfil this last indication it is necessary that muscular contractions may be calculated in a manner to act in a favorable direction upon the osseous curves determined by the disease. For example, if the vertebral column is inflected to the right in its upper part, it is particularly necessary to exercise the muscles of the left arm in order that the great muscles of the shoulder may exercise upon the spine a traction in the inverse direction to that of the pathological deformity. The exercises which tend to develop the muscles of the vertebral grooves combat very favorably against the deviations of the spine.

Frictions with cold saline water constitute a powerful adjuvant to gymnastics in the benign form of rachitis.

Lastly it is necessary to remember that rachitis predisposes to fracture, and that the little patients ought to be enclosed with the greatest care.

II. *Medicinal Treatment.*—Under the head of hygienic treatment we have declared ourselves upon the inanity of the proportions of phosphate of lime so generally employed in the treatment of rachitis, a treatment which rests upon the chemical theory of the disease: render to the economy phosphates of lime which are wanting for the consolidation of bone and which are evacuated in such large quantities by the urine. This is altogether very simple and very gross, and this practice recalls to mind the treatment of diabetes by honey, and of albuminuria by white of egg. It is not the loss of lime which it is necessary to replace, but it is the disposition of the organism which should be changed.

Homœopathic clinic recommends three principal medicines: *Silecea*, *Calcarea* and *Phosphoric Acid*. It is necessary to add to these three medicines *cod-liver oil* which has been administered empirically on a grand scale and which has given the very best results. We also advise to have recourse to it altogether when the digestive functions of the patient permit it.

The *artificial cod-liver oil*, which I have prepared by mixing in sugar of milk the first centesimal triturations of sulphur, of phosphorus, of iodine and of other substances which enter into the composition of the oil of the liver of the cod, has appeared to me useful in cases where the natural oil has not been tolerated.

(a) *Silecea* is much recommended by Richard Hughes; it is the principal medicament of rachitis. It is indicated by sweating of the head, retardation of dentition, of the fontanelles and of walking.

(b) *Calcarea*, and in particular *calcarea acetica*, is indicated by acid diarrhœa. [*Calc. ph.*, when *Calc. c.* and *Calc. ac.* fail, should not be forgotten.—ED.]

(c) *Phosphoric acid* is also indicated by diarrhœa and by pains in the bones.

[(d) *Hepar Sulphuris*. With this remedy we have effected a brilliant cure. There was hardly a bone in the patient that was not affected. The vertebræ of the neck, the sternum, the clavicle, the humerus, the radius, the ulna, the femur, the tibia and fibula were particularly affected.

(e) *Belladonna*. This remedy is recommended by Raue for "curvature of the lumbar vertebræ; squinting; enlarged pupils; pain in the throat when swallowing; thick, protruding belly."

(f) *Phosphorus* would deserve a trial when other remedies fail, especially when there is a tendency to, as there often is, inflammations of the respiratory apparatus.

(g) *Sulphur*, when the history points to constitutional syphilis in parents, should not be forgotten; and indeed may be necessary as at least an intercurrent remedy.—ED.]

III. *Surgical Treatment*.—*Fracture* and *section* of bone have been proposed to remedy the deformities which persist after the cure of the disease. The last proceeding (section of bone) may give good results and ought to be employed in cases where it will serve to remedy considerable deformities of the inferior extremities. The process of fracturing deformed bone has this great inconvenience that the operator is never sure of effecting the fracture at the required point.

चरकसंहिता ।

अन्नस्थानम् ।

सप्तमोऽध्यायः ।

कार्श्यदौर्बल्यवैषम्यमज्जनहोश्चिर्नमः ।

क्षुद्भेगनिग्रहान्नात्तल्लिप्तोष्णं लघुभोजनम् ॥ १९ ॥

कण्ठास्त्रयोषो वाधिर्यं भ्रमः खानो हृदि व्यथा ।

पिपासानिग्रहान्नात्तल्लीतं तर्पणमिष्यते ॥ २० ॥

अतिव्यायोऽक्षिरोगश्च हृद्रोगश्चाश्चिर्नमः ।

वाय्वनिग्रहणान्नात्तल्लेभो मद्यं मिथाः कथाः ॥ २१ ॥

जृम्भाङ्गमर्हस्रान्द्राच्च शिरोरोगाक्षिगौरवम् ।

निद्राविचारणान्नात्तल्लेभः संवाहनानि च ॥ २२ ॥

CHARAKA SANHITA.

CHAP. 7. 'NAVEGANDHARANIYA.

19. From suppression of hunger arise emaciation, debility, alteration of the natural hue of health, aching of the body, anorexia, vertigo. In such cases oily, warm, and light diet should be observed.

20. From suppression of thirst arise dryness of the throat and mouth, deafness, vertigo, panting, aching in the heart. In such cases cooling drinks should be used.

21. From suppression of the tears arise catarrh, disease of the eyes, of the heart, anorexia, vertigo. In such cases sleep, wine, and sweet words are the remedies.

22. From suppression of sleep arise yawning, pains in the limbs, lassitude, disease of the head, heaviness of the eyes. In such cases sleep, and kneading the limbs are the remedies.

शुष्कहृद्द्रोगसम्बन्धाः अमनिःश्लेष्वाद्यात् ।
 चाचन्ते तत्र विनाभो वातघ्नान् च क्रिया हितान् ॥ २३ ॥
 वेगनिग्रहज्ञा रोगा यएते परिकीर्त्तिताः ।
 इहोभयुत्पत्तिं वेगानेतान् च धारयेत् ॥ २४ ॥
 इमांस्तु धारयेद्देवान् हितैषी प्रेत्य चेह च ।
 साहस्रानामयस्तानां मनोवाक्कायकर्म्मणाम् ॥ २५ ॥
 लोभशोकभयक्रोधमानवेगानविधारयेत् ।
 नैर्लज्जेष्यातिरागाद्यामभिध्यायाच्च बुद्धिमान् ॥ २६ ॥
 यदृषस्यातिभावस्य सूचकस्यानृतस्य च ।
 वाक्यस्याकालयुक्तस्य धारयेद्देगमुत्थितम् ॥ २७ ॥

23. From suppression of the panting from fatigue arise tumors in the abdomen, disease of the heart, fainting. In such cases rest, and whatever tends to destroy the wind, are the remedies.

24. Those who wish to avoid the diseases here described as arising from suppression of the various urgings, should never attempt such suppression.

25. Whoever is anxious for welfare in this world and the next, should suppress urgings such as these;—urgings of blameworthy rashness, of wrong actions of the mind, of speech and of the body.

26. The intelligent should, for instance, suppress the urgings of greed, grief, fear, anger, arrogance, shamelessness, envy, inordinate desires for sensual pleasures, and malice.

27. And should suppress the urgings of extremely harsh speech, of abusive speech, of false speech, and of unseasonable speech.

२६ लोभशोकभयक्रोधमानवेगान् विधारयेत् । इत्यभि वागान्तरम् ।

देहप्रवृत्ति र्वा काचित् वर्तते परधीयया ।
 स्त्रीभोगशेषविंसाद्या तस्या वेगान् विधाययेत् ॥ २८ ॥
 पुण्यधर्मी विपापत्वान्मनोवाक्कायकर्माणां ।
 धर्मार्यकामान् पुरुषः सुखी भुङ्क्ते चिनोति च ॥ २९ ॥
 यरीचेष्टा वा चेष्टा स्त्रीर्षार्थां लभतिर्हिनी ।
 देहव्यायामसंख्याता मालया तां समीचरेत् ॥ ३० ॥
 स्थाच्छिलालसुडाकर्षास्तुराकार्षणादपि ।
 प्राथमादृक्कुशाङ्गानां व्यायाम इति शब्दितः ॥ ३१ ॥

28. Of the actions of the body which tend to the injury of others, such as adultery, theft, violence, &c., suppress the urgings.

29. The righteous man, from the purity of the actions of his mind, speech and body, happily enjoys and accumulates virtue, wealth, and the objects of desire.

30. Whatever exertions of the body are agreeable, give firmness and strength, are called deha-vyāyāma (exercises or gymnastics). They should be practised in due measure.

31. In as much as from the lifting of heavy stones, wielding of clubs and bows, the limbs become extended in various ways, such exercises are called vyāyāma.

३० स्त्रीर्षार्थलभतिर्हिनीति पाठः ।

३० तां समीचरेदिति टीकासम्मतः पाठः ।

(To be continued.)

REVIEW.

British Homœopathic Pharmacopœia. Published under the direction of the British Homœopathic Society. Third Edition. E. Gould and Son, 59, Moorgate St., London, E. C. 1882.

HAHNEMANN has brought the utmost simplicity imaginable in pharmacy. Only one drug at a time being used as a remedy, the drug being either an inorganic or an organic substance, existing as such in nature or derived from natural substances by physical or chemical processes, the necessity for complicated formulas for the compounding and mixture of medicines has been knocked on the head, and pharmacy may be said to have been reduced to the two processes of preparing triturations and solutions. "For this reason," as Dr. Willmar Schwabe, of Leipzig, has said in his *Pharmacopœa Homœopathica Polyglotta*, "one homœopathic pharmacopœia suffices for all countries. Indeed, there can be, and ought to be, but one." Homœopathic physicians in all parts of the world ought to see that this is so. In order that the law of similars may be properly tested and made to bear substantial fruit in the shape of successful clinical results, there must be uniformity in the materials used by all homœopathic physicians.

To secure this result all that is necessary is to see (1) that the substances, which are to be used as drugs, and of which triturations or solutions are to be made, are pure or rather the same that were used by the provers,—(2) that the triturations and solutions are made on a uniform scale.

The first point is of the utmost importance. The pharmacist should stick to the substance proved, and never under the guidance of a mistaken chemistry take the liberty to substitute anything for it, unless indeed there be actual identity of composition. Thus chemically pure carbonate of lime should never be substituted for *calcareæ ostrearum*, nor liquor potassæ for *causticum*. The carbonate as chemically prepared was never proved. We have symptoms from the snow-white portion which exists between the inner and outer surfaces of the oyster shell, and it is this which should be used for trituration and solution. Again,

although the causticum of Hahnemann may have caustic potash in it, it is not caustic potash alone, and therefore the latter should not be substituted for it.* In the case of the metals, however, it would make no difference if they are obtained pure either in one precipitated or in any other form. The object is to obtain them as pure as possible, and the precipitation has been now preferred to other methods as giving the purest metals. In the case of Platinum Hahnemann himself had preferred this mode of preparation, and if he had lived he would doubtless give his sanction to this mode for all metals.

The second point is not of so great importance as the first. It is immaterial on what scale we triturate and dilute, provided we know the actual quantity of drug we use. Two scales are in vogue in homœopathic pharmacy, the centesimal introduced by Hahnemann, and the decimal introduced by Dr. Constantine Hering. The latter was introduced in Hahnemann's time, and was warmly advocated by Dr. Vehsemeyer, of Berlin. There cannot be the slightest doubt that in preparing triturations, the decimal scale has considerable advantage over the centesimal, in as much as it "insures a more thorough preparation, it being found," says the *British Homœopathic Pharmacopœia*, "by the microscope that the addition of so large a proportion of sugar of milk at one time (33 grains to 1 grain of medicine) renders it more difficult to reduce the size of the particles of the medicine, especially if they are hard, and thus deteriorates the value of the trituration." The authors of the *Pharmacopœia* rightly observe that "since Hahnemann avowedly invented his process for the

* In the first Edition of the *British Homœopathic Pharmacopœia* there was a paragraph under causticum which is very much missed in the present Edition. The paragraph ran as follows:—"It will be observed that Hahnemann says nothing about the presence or absence of *Potass*; he merely says that neither Sulphuric Acid nor Lime are to be found in it when properly prepared. In the 24th vol. of the *British Journal of Homœopathy* there is a paper by Dr. Black, wherein he states that all the specimens he had analysed were found to contain *Potass*, and, in fact, he believes that it is a very weak solution of *Potassic Hydrate*, and he proposes that this should be substituted for *Causticum* in future. It might be well worth to prove *Potassic Hydrate*, and ascertain whether its effects corresponded with those of *Causticum* and if found to do so, the one could be substituted for the other, but until such proving shall have been made it is much safer to adhere to Hahnemann's preparation, especially when prescribing the high dilutions."

purpose of reducing the drug to the finest possible powder, the modification proposed (viz. the introduction of the decimal scale) is merely carrying out his own ideas to a higher degree of perfection."

But whatever the scale that is adopted it should be adhered to throughout, whether for preparing medicines or for prescribing. We therefore fail to see if much wisdom is displayed by the authors of the Pharmacopœia when they say that "after a careful review of all the arguments in favor of both scales, it has been determined to adopt the *centesimal* scale for *prescribing*, while the decimal possesses so many advantages in the preparation of the drugs that it should be always followed in the *making of the triturations and other attenuations*. * * To prevent confusion the homœopathic practitioners are advised to adopt the *centesimal* scale only." And the reasons assigned for this course are—"1. That all or nearly all employ the centesimal scale exclusively in denoting the high attenuations. 2. There are only two attenuations, viz., the 1st and 3rd decimal, which have been much used and which could not be equally well notated centesimally." These do not appear to us to be quite cogent reasons at all, the second is a good enough reason for the confusion which it is intended to prevent. Besides, why should homœopathic practitioners be advised to adopt the *centesimal* scale in prescribing, when pharmacutists are enjoined to adopt the decimal in preparing medicines. If we are to prescribe none but centesimal attenuations, we are precluded from prescribing the odd decimal attenuations, as the 7th, 9th, 15th, &c.

The adoption of two scales, one for the chemist, another for the prescriber, has necessitated the following somewhat arbitrary, and we were almost tempted to say, somewhat absurd rule: "It is directed that in future no chemist will send out a decimal attenuation without the x being distinctly marked; and that no practitioner will prescribe a decimal attenuation without the distinctive mark; and also that all will abstain from using the decimal notation whenever the attenuation required can be expressed centesimally; for example, that 2x shall never be used in place of 1, 4x in place of 2, 6x in place of 3, &c." It would have been much more simple if it had been directed that the practitioner should affix an x or a c after the roman numeral,

according as he wishes to order a decimal or a centesimal attenuation. The pharmacist would not find any difficulty whatever in making out such an order; whereas the roman numerals alone being used for the centesimal, and the roman numerals with an x after for the decimal attenuations, will often lead to much confusion both on the part of the practitioner and the pharmacist.

The chief menstrua in homœopathic pharmacy are water and alcohol, and too great care cannot be taken to insure their purity. The present edition has given sound directions for the purpose. We are glad to see a blunder made in the first edition in regard to the still recommended for the distillation of water has been corrected in the present. In the first edition the distilling apparatus was recommended to be of glass or porcelain, forgetting that silica is dissolved in steam of high temperature. In the present edition "a well-made tin-lined copper still with worm and all connections of pure tin" is substituted. We believe Messrs. Bœricke and Tafel use a copper still with both the receiver and the worm lined with gold. This, we need hardly say, will give us distilled water as pure as it is possible to have. For homœopathic purposes the extra expense should not be minded. There is no harm in distilling alcohol in glass apparatus, and accordingly it is advised to re-distil *Rectified Spirit of the first quality*, 60° O. P., of commerce, in glass apparatus, or in a similar still to that recommended for water. The authors of the *Pharmacopœia* add that "no alcohol which has not undergone this fresh distillation should be employed in making any attenuations intended to be carried beyond 3x."

Among the numerous applications of electricity the rectification of alcohol has turned out a most successful one in the hands of M. Naudin. For certain alcohols, it is said, the purification is completed by the zinc-copper couple of Messrs. Gladstone and Tribe, for others direct electrolysis is required in addition. By a combination of the two methods M. Naudin has arrived at the most satisfactory results, even the alcohol from beet roots, so notorious for its bad quality, has been obtained pure and of the strength of 80 per cent. But the process is too complicated to be applicable for small quantities. We believe the process is likely to be adopted for the manufacture of alcohol in large

quantities, and then there will be no difficulty in obtaining pure alcohol for homœopathic purposes.

Ever since we have been convinced of the truth of homœopathy and of the efficacy of the medicines prepared according to the methods invented by Hahnemann, namely trituration and succussion, we have been led to believe that it would be prejudicial to the purity of homœopathic medicines to use the same pestle and mortar for triturating more than one medicine. In former pharmacopœias, it was considered enough to heat the pestle and mortar to redness after having triturated one substance, in order that it might be used for another. We are glad therefore to find the British Homœopathic Pharmacopœia recommend separate pestles and mortars for different substances. "In consequence of the extreme difficulty with which pestles and mortars can be cleaned to the degree necessary for our refined processes, all careful homœopathic chemists procure perfectly new ones for each substance and then label them with the name of the medicine, and never use them for any other purpose, and even, notwithstanding this, it is necessary to be very careful in the thorough washing and cleansing of the apparatus, since a very small quantity of 1x trituration, for example, would injure the perfection of the 3rd centesimal."

On the same principle we would object, and we are sorry the authors of the Pharmacopœia have not objected, to the same percolator being used for the preparation of tinctures of different substances. No amount of washing and cleansing can rid the percolator of the substance whose tincture has been prepared by it. Indeed, we shall have, by this process, only higher attenuations of the substance, and the mother tincture of another substance, prepared subsequently, will be adulterated with the attenuations of the former substances, and so on. It is no easy matter from a financial point of view to have different percolators for different substances, but we must sacrifice economy to the purity of homœopathic medicines. From a therapeutic point of view such economy would be worse than waste.

The authors of the Pharmacopœia do not seem, however, to be unaware of the danger to the purity of homœopathic medicines from the use of the same vessel for holding different medicines at different times, as will be evident from the following caution en-

joined by them : “ All the mother tinctures, and especially all the attenuations, should in the first place be put into perfectly new bottles, closed with perfectly new corks, or better still with glass stoppers, and these bottles should never in future be filled with any other medicine or attenuation.” They however make an exception in the case of measure glasses, &c., believing that the method of washing recommended by them is effectual, as will be seen from the following paragraph :

“ It must happen, however, that measure-glasses, bottles which have contained mixtures, &c., are required to be used again and again, and hence it is well to know how they can be thoroughly freed from every trace of the medicine which they have previously contained. This may be effectually accomplished by *washing the bottle in an ascending stream of water* in place of a descending stream, as is almost universally employed. The chemist should have a fine nozzle and stop cock adapted to the water cistern in his laboratory (over the sink), and so arranged that the stream of water ascends like the jet of a fountain. He then washes his bottle or glass, as the case may be, in the usual manner, and then, while the vessel is still wet, he should hold it over the fine nozzle (which must be fine enough to pass through the neck of the smallest sized bottle he has to wash), and while in that position open the stop cock and allow the stream to strike against the bottom of the glass or bottle he is washing ; in this, as soon as the water mixes with the remains of the medicine, it flows down the sides of the vessel and escapes into the sink, and in a very short time not the slightest trace of medicine will remain in the glass or bottle. It can then be drained and dried in the ordinary way.”

This method of washing would be effectual, if the inner walls of the vessels could be wiped with the finger or with a stick covered over with linen. For we have seen, no amount of mere washing is able to remove the residue of substances that collects at the angles and corners of vessels, unless actually wiped out. If this can be done with percolators, we need not have separate ones for each drug. But we must satisfy ourselves that this is feasible.

We have dwelt at some length on some of the minutæ of homœopathic pharmacy, from a belief of their utmost importance.

Unless pharmacutists are authoritatively warned against danger to the purity of homœopathic medicines from neglect of the precautions we have pointed out, there will be no reliance in future upon preparations from the shops, and such a contingency will be a serious obstruction to the spread, and even to the development, of homœopathy itself.

With the exception noticed above, and it will have been seen they were very few indeed, the work before us has been executed with all the scrupulousness and care which a thorough knowledge of homœopathy and its requirements could command from an intimate knowledge of modern chemistry coupled with very high pharmaceutical skill. The patience and industry with which experiments on the solubility of Sulphur and Phosphorus were carried on by Mr. Wyborn of Messrs. Gould and Son will show the extreme care that has been bestowed for securing uniformity in the strength of these medicines, and serves as a sample of the care bestowed on other drugs. The work has been thoroughly done, and will prove a safe guide to the homœopathic chemist, and even to the practitioner who wants to prepare his own medicines. Neither chemist nor practitioner should be without it. To the homœopathic chemist in India it is indispensable.

EDITOR'S NOTES.

PICRIC ACID AS AN URINARY TEST.

Picric acid is the best substitute for nitric acid. It is a more delicate test for albumen, and is far more cleanly and convenient for use. It is at the same time a good test for sugar. The best test of serum-albumen is HEAT. The blood-albumens are alone coagulable by heat, at temperatures ranging from 72° to 76° C.

CAUSES OF INCREASE OF CANCER IN ENGLAND.

Mr. H. P. Dunn, as the result of an inquiry into the above, has come to the conclusion that the increase of cancer in England is due—

(1) To the success attending legislative measures and other means for the preservation of the infant population, by which a large proportion of persons reach adult age, in consequence of which there is a

numerical augmentation of those who, thus living, become liable to cancer.

(2) To the greater prominence which, in the present day, prevails of the most predisposing causes of the disease—such as the fecundity of women, the prevalence of high nervous tension, and the existence of possibly greater general luxury in the mode of living.

So civilization is not without its evils. Indeed, its advantages and disadvantages are probably equally balanced.

CAUSE OF VERTIGO.

Dr. Edward Woakes (*Brit. Med. Journ.* April 18) has adduced strong evidence to show that vertigo is essentially *auditory* in its seat. "The weight of experimental evidence," says he, "conclusively justifies the assumption that the function of equilibration resides in the semicircular canals, and that interference with this function produces the phenomena of vertigo." The causes which disturb this function are classed by him under two heads. The first class includes alteration of tension, *plus or minus*, of the fluid contained in the semi-circular canals, produced either by direct pressure due to local ear-disease or induced by reflex vaso-motor influences, or by both these causes combined. The second class embraces such intra-cranial diseases as irritate or disturb the nerve of the organ, and are thus central in their original. The internal auditory branch of the vertebral artery is the chief source of blood-supply to the labyrinth. The vertebral artery is under the control of the inferior cervical ganglion, which has afferent nerves from the pneumo-gastric, that is, to which impressions are conveyed from the stomach, liver, and lungs. This relationship will explain the cause of gastric vertigo.

CONVALLARIA MAJALIS IN HEART DISEASE.

Professor Germain Sée, of Paris, has come to the following conclusions after an elaborate series of experiments on men and animals, and from his own clinical observations (*Hahn. Monthly*, Feb):—

First.—The *Convallaria majalis* constitutes one of the most important cardiac remedies which we possess.

Second.—In the form of the aqueous extract of the entire plant (which is a very convenient way of giving the medicine), administered in the dose of one-half gram to one and one-half grams daily, the *Convallaria* produces on the heart, blood-vessels, and respiratory

organs, effects constant and constantly favorable, to wit: slowing of the beatings of the heart, with often a restoration of the normal rhythm, and, on the other hand, augmentation of the energy of the heart, also of the arterial pressure; in fine, the inspiratory force is increased, and the *besoin de respirer* is less injurious, less painful.

Third.—The effect the most powerful, the most constant, and the most useful, is the abundant diuresis, which is above all things essential in the treatment of cardiac dropsies.

Fourth.—The therapeutic indications are summed up as follows:

(a.) In palpitations, resulting from a state of exhaustion of the pneumogastric nerves (cardiac paresia), the most frequent source of palpitations.

(b.) In simple cardiac arrhythmia, with or without hypertrophy of the heart, with or without lesions of the orifices or valves of the heart.

(c.) In mitral constriction, especially when it is accompanied with failure of compensation on the part of the left auricle and right ventricle, the contractile force augments visibly under the *Convallaria*, as the sphygmograph testifies.

(d.) In mitral insufficiency, especially when there are pulmonary congestions, and when, as a consequence, there is dyspnoea, with or without nervous trouble of the respiration.

(e.) In Corrigan's disease the peripheral arterial pulsations disappear, and respiration becomes markedly restored. In dilatation of the left ventricle, without compensatory hypertrophy, it restores energy to the heart, which tends to become more and more feeble and dilated.

(f.) In dilatations of the heart, with or without hypertrophy, with or without fatty degeneration, with or without sclerosis of the muscular tissue, the indications of the *Convallaria majalis* are clear.

(g.) In all cardiac affections indifferently, from the moment that watery infiltrations appear, the *Convallaria* has an action evident, prompt, and certain.

(h.) In lesions with dyspnoea the effect is less marked. To combat cardiac dyspnoea, *Convallaria* is inferior to *Morphia*, and especially to Iodine, but *Morphia* suppresses the urine, and the preparations of Iodine are every way preferable. The combination of *Convallaria majalis* with Iodide of potassium in the treatment of cardiac asthma constitutes one of the most useful methods of treatment. Finally, in cardiopathies with dropsy the *Convallaria* surpasses all other remedies. One is often obliged to suspend the employment of *Digitalis* on ac-

count of vomiting, digestive disturbances, cerebral excitation, the dilatation of the pupil, which it so often produces after a prolonged use of this medicament, etc.

The final action of *Digitalis* is exhaustion of the heart, increase with enfeeblement of the heart's pulsations—just the opposite effects from what we seek when we give the drug.

Convallaria majalis has no deleterious effects on the economy, and has no cumulative action.

CLINICAL RECORD.

CASES FROM THE EDITOR'S CLINIC.

1. *A Case of Amaurosis.*

Gopal, aged 28, came to the Out-Door Dispensary on the 23rd June 1879.

He is by profession a black-smith and was suffering from amaurosis of the left eye. The left pupil was widely dilated and he complained of indistinct vision as if he saw through a film. *Carbo v. 30.*

On the 5th July he reported that his sight in the affected eye to be much better than before. The left pupil was smaller than before but not of the same size yet as the right. *Cont. med.*

On the 16th August he said that his dimness has almost disappeared and whatever was left that did not prevent him from working. The pupils were now equal.

For the little indistinctness of vision that was left after this, he took medicine up to the 17th of October, after which he had no trouble whatever with his sight.

Remarks.

In this case *Carbo veg.* was selected because the patient was by profession a blacksmith, and the indistinctness of vision was supposed to have been produced by the excessive heat to which the eyes were exposed, out of deference to a tradition, how originated we cannot say, but which we have verified often, that *Carbo veg.* acts remedially against the effects of heat, whether of fire or of the sun.

2. *A Case of Facial Paralysis.*

Adya Nath Biswas, aged 45, came to the Out-Door Dispensary on the 5th of July 1879, for treatment, having been attacked with facial paralysis of the left side.

Previous History. About 10 days before, one afternoon he had felt a biting and throbbing pain in the occipital region and nape of the neck of the left side. The next morning when he went to wash his mouth he noticed that he could not gargle properly. The same evening one of his friends remarked that the outer angle of his mouth was hanging down a little.

Present Symptoms: He had pain in the left side of the occipital region and nape of the neck and also on the left temporal region. He could not blow properly, and air escaped from the angle of the mouth on the left side. The angle on the right side hung down a little. The left eye can be closed well. The sensibility of the left cheek was also diminished. *Rhus Tox.* 6.

He was continuing the medicine with but little improvement till the 16th.

On the 17th he reported that he had fever. *Aco.* 3.

On the 21st he was seen to be much better. He could blow with his mouth much better than he could do before. *Cont. Aco.* 3.

On the 12th August he was seen to have no more trace of paralysis in his face.

Remarks.

Had it not been for the fever which came on in the course of treatment, we would probably never have selected *Aconite*, and we would have had to grope long for the proper remedy. We have treated several cases of facial paralysis, all apparently having been the result of cold, but we have never succeeded in effecting their cures by one remedy for all, though the symptoms were scarcely different.

3. *A Case of Acute Dysentery.*

Rami, a Hindoo female, aged 15, came under treatment at the Out-Door Dispensary on the 18th of February 1881.

She was suffering from dysentery for the last three days and had to go to stool several times, about 40 or 50, in 24 hours. There was no blood with the stools, which were scanty and consisted entirely of mucus. There was considerable pain (gripping and tenesmus) during stool. *Ipec.* 6, t. d.

On the 20th, there was no improvement either in the number of stools or in the pain. A round worm was passed with a stool. *Cin.* 6.

21st. The number of stools and the pain were just the same. *Kurchicine* 10 grs. to be divided into 6 doses, of which she is to have three doses daily.

After taking *Kurchicine* she was much better. The number of stools and the pain considerably diminished, and a large number of round worms, about 15 or 20, were expelled.

Kurchicine was continued in the same dose up to the 26th instant, by which date the pain had ceased altogether, and there was but slight mucus with the stools.

On the 2nd March she reported that there was still slight mucus with the stools; our stock of *Kurchicine* having gone out we had to give *Ipecac.* again, and this completed the cure within a short time.

Remarks.

Kurchicine is the active principle of the plant called *Kutaja* in Sanscrit, and known by the botanical name of *Wrightia Antidysenterica*. The bark of the plant, in the form of decoction, is extensively used by our Kavirajs, native physicians, in dysentery, especially when it is chronic. A fragmentary proving of the drug (tincture of the bark) will be found in our number for May 1873, from which it will be seen that it is capable of producing at least the preliminary symptoms of dysentery. The alkaloid *Kurchicine* has been discovered by our friend, Babu Ram Chandra Datta, Assistant to the Professor of Chemistry, Calcutta Medical College, and Laboratory Assistant to the Indian Association for the Cultivation of Science. It is very likely to prove a valuable drug in dysentery and intermittent fevers. In the case reported here, it did excellent service. The reader will not have failed to notice its anthelmintic properties.

THERAPEUTICS OF CONSTIPATION, DIARRHŒA, DYSENTERY, AND CHOLERA.

49. CANTHARIS.

Constipation :

1. Retarded and hardened st., (primary action.)
2. No st., but passage of flatulence.
3. The whole first forenoon, neither st. nor urine.
4. Slight, somewhat hard st., passing with difficulty, with cutting pains in the rectum.
5. St. hard, and only passed by pressing, so that she could have screamed.
6. Discharge of hard fæces, with protrusion of the rectum.
7. In the morning, hard st., but afterwards soft, with colic.
8. Urging to st., which consisted of hardened fæces ; soon afterwards, liquid st., preceded by colic, in the afternoon.
9. After constipation, for five days, two very hard sts., with pressing ; after the second, twinging in the anus.
10. Difficult evacuation of st., he must press much more violently than usual, and still does not pass a sufficient st.

Diarrhœa :

1. D., without colic ; without any pain, several times during the day.
2. D., with colic somewhat relieved.
3. Violent D., with intolerable burning in the anus.
4. D., with violent colic.
5. D., of frothy fæces ; of brown, liquid fæces ; copious ; thin, pasty ; watery.
6. Two liquid yellow sts. during the day, with cutting in the abdomen, after every st., biting pain in the anus without tenesmus.
7. Thin st., with much irritability in the rectum.

Dysentery :

1. Mucous D. D. of green mucus, after constipation ; D. consisting of blood and mucus.
2. Fæces red, slimy ; evacuation of red, mucous, fæcal masses ; slimy and bloody st.
3. Passage of white tough mucus with the st., like scrapings from the intestines, with streaks of blood.
4. Passage of pure blood from the anus and urethra.
5. After violent efforts, he succeeded in passing by the anus and urethra only a few drops of blood.
6. Fatal dysentery.

Aggravation :

All periods ; chiefly afternoon and evening.

Before St :

1. Straining, urging, colic.
2. Gripping in the abd. below navel.

During St :

1. Cutting, colicky pains ; burning in anus ; prolapse of rectum ; pressing and urging, extorting cries.
2. Gripping in the abd. below navel.

After St :

Colic relieved ; burning, biting and stinging in anus ; straining ; faintness ; shuddering ; violent chill ; ineffectual urging to stool.

Rectum and Anus :

1. Tenesmus.
2. A violent cutting pain attacked her in the rectum, such as she had never experienced in her life before ; on standing and walking discharge of flatulence with relief, but immediately afterwards the same pain, with urging to st., followed by soft st., with cessation of the pain.
3. Crawling in the rectum.
4. Burning, like fire, in the rectum after D.
5. After st., burning and stitching, as with needles in the anus.
6. Pain in the perinæum, seemingly arising from the neck of the bladder rather than from the root of the penis.
7. Pressure in the perinæum.
8. Frequent desire for st. Urging to st., without st.
9. Urging to st. and three copious discharge of soft fæces. Frequent urging with scanty discharge of fæces.
10. When he passed water, was obliged at the same time to go to st., though nothing passed ; this desire for st. ceased after the bladder became empty.

General Symptoms :

1. Constant, complete, furious, almost frenzied delirium.
2. Expression of extreme suffering.
3. Death-like look, during and after the pains.
4. Dry lips, without thirst.
5. Tongue coated white, taste bitter, with nausea and aversion to everything.
6. Tongue highly furred, red at the edges.
7. Tongue swollen and thickly coated.
8. Sublingual glands swollen and red.
9. Tongue and back of mouth in part excoriated, in part covered with blisters.
10. Inflammation and considerable swelling of the buccal mucous membrane, with very profuse salivation ; ulceration inside the mouth.
11. Burning pain in the mouth, throat, and stomach.
12. Salivation, without coppery taste. Frequent accumulation and spitting of tasteless water.
13. Mucus and blood from mouth and nose.
14. Taste insipid, nauseous, bitter, sour, foul and bloody. The food seems unsalted to her.
15. Throat swollen ; burning soreness, constriction and intense pain at the back of the throat.

16. Dysphagia. Painful, difficult, and sometimes impossible deglutition.
17. Increased appetite. Hunger immediately after relief of the pains.
18. Diminished appetite. Disgust for food ; she cannot bear to see or hear of food.
19. Aversion to tobacco.
20. Urgent thirst, with great pain in throat and stomach ; great and constant thirst ; unquenchable thirst.
21. Eructations of sour, frothy mucus, tinged bright red.
22. Eructations of air with relief.
23. Nausea in stomach on walking and standing ; after coffee in the forenoon.
24. Nausea and disgust when eating.
25. Nausea and vomiting of bloody mucus.
26. Vomiting, with strangury, followed by inflammation of the kidney. Vomited and urinated incessantly.
27. Vomiting of mucus, bile and ingesta ; of greenish, offensive matter ; of membranous flakes ; of blood.
28. Acute pain in the region of the stomach and bladder, with such exquisite sensibility that the slightest pressure produces convulsion.
29. Incarceration of flatus under the short ribs.
30. Abdomen tender, swollen, and tympanitic.
31. Rolling in the abdomen with sensation as if D. would appear.
32. Growling, audible rumbling, and gurgling in the bowels.
33. After frequent urging, some flatulence with relief.
34. Great heat and burning along the alimentary canal.
35. Burning and twisting in the abdomen, until he had been to st., a few times, especially in the morning.
36. With the st., pinching and cutting in the abdomen ; after the st., shivering in the afternoon, towards evening.
37. Violent colic, nausea and abundant vomiting of ingesta.
38. Colic followed by D.
39. Cutting-sticking and burning in the groin ; on urinating violent cutting.
40. Cutting and contracting pain from the ureters down towards the penis ; at times the pains pass from without inwards ; pressure on the glans relieve the pain somewhat.
41. Violent pains in the bladder, with frequent urging to urinate ; excessive tenesmus of the bladder and rectum.
42. With urgency to urinate, a sticking pain in the forepart of the neck of the bladder. After constant urging to urinate, urine was passed in drops with extreme pain.
43. Passage of blood from the urethra ; discharge of blood and urine.
44. Before, during and after urinating fearful cutting pains in the urethra ; she must double herself and scream from pains.

45. Urging to urinate greater when standing, and still more when walking, than when sitting.
46. Painful efforts to pass urine and fœces.
47. Frequent and copious urinating.
48. Frequent, painful urination, constantly preceded by violent pains in the glans.
49. Painful urination the whole day, with pain in the kidneys.
50. The urine passed in a thin and divided stream with difficulty.
51. Involuntary dribbling of urine.
52. Retention of urine; urine and st. retained. Suppression of urine.
53. Urine deposits albumen, or contains it in solution.
54. Weakness and sinking of strength.

Remarks : The action of **cantharis** on the alimentary canal is always in association with that produced by it on the genito-urinary system. This will serve as a key for the use of **cantharis** in diseases of the digestive system. The drug has proved invaluable in dysentery, and that it will prove so in diarrhœa and constipation, we have every reason to believe. It is not easy to understand what was meant by the symptom—"passage of white tough mucus with the stool, like scrapings from the intestines, with streaks of blood." This was either pellicular exudation from the mucous surface of the intestines, or superficial sloughing of the same. It is a pity we cannot make out exactly what was meant, or rather what it actually was. **Cantharis** is capable of producing croupy inflammation of the skin and mucous membrane, and therefore it is likely to be of remedial use in such inflammatory condition of the colon. And we know from experience that it is of signal use in sloughing dysentery.

Cantharis has not, we believe, been used in the stage of full development of cholera, though the symptom "violent diarrhœa with burning in the anus," if associated with dysuria or burning in the urethra, whenever present, may legitimately call for it. It has proved exceedingly valuable in the stage of cholera where suppression of urine forms the predominant symptom, giving rise to uræmia and consequent delirium, coma, and even convulsions, especially in children.

gleanings from Contemporary Literature.**ON MODERN THEORIES AND TREATMENT OF PHTHISIS.****Delivered at the Royal College of Physicians, London,*

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MR. PRESIDENT AND GENTLEMEN.

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Tubercular infection is either primitive and local or general, but in all cases infectious. In those which seem obscure there is some part of the vascular system already the seat of infection, but the general infection is always due to a local primary one. The matter is conveyed by bloodvessels and lymphatics; it forms new foci in glands and organs, where the infection multiplies itself till the whole system is engaged. These foci or stations are determined by local congestions and injuries, producing a diminished resistance of the tissues. Some persons escape the contagion to which they are exposed, as the physiological activity of the tissue, and especially of the circulating powers, hinders the contagion from taking effect. Even when the entry of tubercular infection has occurred, it is limited to that spot of entrance for a time, it being necessary that the condition of the organism be such as to permit the contagion to fix itself and to multiply in it. If it does enter the system it is eliminated by the secretions, the skin and kidneys especially. Cruveilhier, Koch, and others acknowledge the tubercular habit or constitution, of which they consider that some elements are known and they confess to a predisposition to tuberculosis. Such are diminished respiratory capacity, lessened cardiac and arterial power and tension compared to the bulk of the tissues. Puberty and rapid growth, the lymphatic and scrofulous habit, incline to phthisis. This is probably caused by the incomplete drainage of any part by the lymphatics, by which a great vulnerability of the lymphatic system is induced. It is confessed that these abnormal conditions can be acquired by bad physical education, deprivation of fresh air, and exercise, &c.; but, again, it is acknowledged that it can be both hereditary and congenital. The difficulties of the therapeutics of such an affection are dwelt on, and I shall again have occasion to notice them; but will mention here that, according to this theory, in every node of tubercle the central part contains the contagion, while surrounding this there is a zone of dead tissue in which circulation has ceased. Across this zone the specific ferment can pass in the interstices between the cells; but the therapeutic agent cannot pass, and has already been diluted in the mass of the blood. The same observation has been applied to the thickening of tissues surrounding syphilis. But, granting that we have arrived at the fact that in all tubercle, or so-called tubercle, and in all the secondary structure changes of phthisis we can recognise a certain parasite, in what manner do those changes manifest themselves in the system?

Perhaps a division (made by others) may be followed with advantage—namely, septic acute changes and specific changes. In the former we must class infection from wounds, putrid matters, the exanthemata, erysipelas, diphtheria, typhoid, malaria; in the latter syphilis and tubercle, and perhaps rheumatism. Septicæmia is distinguished from all others by its

* Concluded from the last number.

short incubation period, and by its not having any elective seat in the system; for it pervades all tissues with rapidity. Typhoid, variola, and the exanthema, with diphtheria, seem to have selected tissues in which to germinate, as the intestine in typhoid and the nerve-centres in diphtheria. Rabies stands alone with a long incubation period and an acute final crisis, but in this it is resembled by rheumatism.

Taking, however, all diseases attributed to parasitic germs, excepting septicæmia, there seems to be a mode of evolution in common. They all have to find a nidus or station—a tissue of the body, in fact, selected by, and peculiar to, that particular germ in which it can, and does, mature and fructify. The incubation period, be it long or short, is just this time in which the seed is undergoing those changes which a grain of wheat does in the soil of the earth. That particular grain dies, but in dying multiplies itself indefinitely. The new germs are let loose into the circulation and lymphatics, for they are small enough to enter the smallest of these vessels, and then a fresh colony is formed in another side, perhaps in another organ. At the date of the first settlement of germs in phthisis there are febrile symptoms and inflammatory products, or so-called tubercle, in a localised part. During the incubation period there is a pause, be it diurnal or of days, or even a longer interval; and at the first evolution of new germs there is renewed pyrexia, and either extension locally of the first mischief detected in an organ, or a secondary nidus of disease set up at a distance. Taking the malarious disease in its common form of ague, the cold stage is that of first evolution of germs into the blood; they diminish in the hot, and die in the remission period. The pause is the incubation period, followed by similar phenomena in a cycle.

Now, applying this theory to phthisis as we see it, we have much that is plausible in this matter-of-fact way of interpreting its symptoms. The seed-sowing time, the period initiative of active symptoms, when the patient is in a subfebrile state, with few or no signs of local irritation in the lungs, is the time when he has received germs into the economy, and which he has failed to eliminate. The evolution period is that highly feverish state, with slight remissions, when the inflammatory or tubercular product is breaking up. At such time, say the theorists, the new crop of germs is being let loose into the system. At this period all the secretions are apt to be disordered, that of the skin and kidneys especially, and diarrhœa often sets in. An elimination is being attempted, and, perhaps, fails. Just then we often find a doubtful sound of crackle, with a little dulness of the apex or base of the opposite lung, and here is now a nidus station, or colony of the germs, which have been formed at the first station and been carried hither by the known channels of the circulation or lymphatics. The pauses or subsidence of symptoms in phthisis are very familiar to us, and we are asked to believe that they are the periods when the seed sown is again silently preparing a new crop in the soil of the tissues. The third period of local disease, when much structure has broken down and a pus-secreting surface is formed, is known to abound in these bacilli, which are abundantly found in the sputa and other secretions of the patients.

I come now, Sir, to the crucial question whether, granting that these parasites are found in all cases of phthisis, granting that their inoculation in animals will produce a like disease, are the clinical phenomena of phthisis sufficiently accounted for by the germ theory? and in the few observations which I shall make I must ask you to class me as an inquirer and not as an advocate, being well assured that you are yourselves precisely in that mental attitude of impartiality which is open to the reception of new truths, but repellent of obvious error. The story of phthisis is commonly this. In certain persons, whose constitution is predisposed, or

who have inherited a predisposition to a form of disease, and most commonly at a certain age, with or without actual cold taking or manifest cause, a slight wasting occurs with a subfebrile state followed by pulmonary symptoms, as cough and expectoration, and blood-spitting. A physical examination reveals incipient disease in a portion of lung. As regards heredity, this sequence of events is so common in some families that a whole generation will be carried off at about the same age. The sickness I am describing will take place without any exposure or direct contact with persons similarly diseased. Nay, it will occur to the members of the same family living at the greatest distances from each other, some in America, some in England. There is another form of disease called accidental, because it is not proved to be inherited from an ancestor, and seems to be due to causes of local origin, as taking of cold, pneumonia, &c., and this again without previous contact with persons similarly diseased.

Are we to believe that both varieties, the inherited and accidental, are instances of seeds, that is germs, introduced into the system from without, and there producing the characteristics, multiplication and fructification, which we have been studying? Or, if germs, then in the inherited form were they derived from the parent? This implies a long latent period of years during which the germ has been there but produced no effects on the system? Again, the introduction of such germs into the system in other than inherited cases should be a matter of proof and certainty before the theory can be received. A person falls into ill-health from depressing causes, as poor food, bad dwelling, anxiety, loss of sleep, and such like, and becomes phthisical, but where are the germs? The theorist will tell us that in such a state the individual we have supposed presents the exact soil suited for the reception and growth of such germs of disease. And so it is; but the field well ploughed and manured and ready for the seed-sowing will produce no grain unless the germs are introduced. The theorist will no doubt say, as regards the hereditary cases, that the seed was sown before birth; but if this be true, what a long period of incubation it has required. The introduction of the germs seems to me to be a difficulty yet unsolved. It is not sufficient to prove that germs introduced will bring forth fruit. This indeed seems clear from the evidence, but that such germs have been sown as an antecedent to all cases of phthisis has not been proved, and must be proved before we can accept the proposition in its entirety that phthisis has its origin in parasites.

In pursuing the clinical history of phthisis, we must, however, acknowledge that in its later stages the theory of the fructification and multiplication of germs harmonises well with what we observe at the bedside. The theory is that the germ has first a local position—say in the lung—that after a period of incubation it multiplies, and that parasites are carried by the blood and lymphatics to another and distant part where a colony, or station, or nidus is formed, a fresh deposit of morbid parasitic matter taking place with the same phenomena as in the first local irritation and general febrile disorder. Now the story of phthisis is well known to consist of exacerbations and remissions, and the history of secondary deposits of miliary tubercle, of secondary infections of the opposite lung, and of the small intestine and of meningitis, singularly corresponds with the theory we have described. In the latest stages of cavity-bronchiectasis, &c., the phenomena are often more septic than specific; yet, if we may adopt the germ theory, we have a ready solution of the clinical conditions. The presence of a peculiar germ appears to be proved, and its secondary results seem demonstrated; but its originating power, its being the sole and invariable cause of the disease, seems scarcely proved. Comparing the tubercular germs with those of other parasitic diseases, we may have some light thrown on the *modus operandi*. Take malarious fever. In the ex-

periments I have detailed it seems certain that malarious micrococci can be detected and cultivated and inoculated, with the invariable sequence of certain symptoms, the blood examined containing more bacilli in the invasion stage and less in the hot and sweating stages of ague, while in the remission period they nearly disappear. The poison is peculiar to certain localities, persons not visiting those places do not get the disease. It is proved to be non-contagious—that is, no contact of individuals will convey it from one to the other. The nature of the attacks and remissions so resemble phthisis that I have selected it first for comparison. If phthisis be contagious, why is not malarious fever or ague also?

I take, again, rheumatic fever, in which the bacilli are most marked in the fibrous structures and muscles, the endocardium, &c. Its symptoms also are acute pyrexia with profuse sweatings. It is one of the most heritable of diseases, and runs in families to a remarkable extent. What of the germs? Were they congenitally introduced; or were they acquired from outside? What of the latent or incubation period? A man will often have an interval of seven or ten years between the attacks. Are the germs there, but latent for all that time? Is it that they have not reached that part of the system capable of assisting in their multiplication? This can scarcely be, seeing that in some former attack a nidus may have already been formed in a joint or in the mitral valve. Again, has ever anyone supposed rheumatism to be contagious? In syphilis we certainly find a more close analogy to phthisis than in the other affections named. Granting the introduction into the system of a definite poison by an ascertained inoculation, we find a long latent period followed by characteristic symptoms—skin rashes with pyrexia, and deposits in distant organs: the brain, the tongue, the periosteum. The theory of successive developments of parasites will fit in here; or rather let us say that, parasitic or not, an infecting material first found in the hard chancre has passed through the blood and lymphatics and manifested itself after a long interval in distant parts. Its identity with the inoculated spot is further evidenced by its amenability to certain specific remedies, as mercury and iodine. We see in both syphilis and tubercle a selection of certain tissues, and we may contrast this with purely septic infections which seem to develop germs in all tissues and membranes.

But beyond all these analogies, and lying deeper in our pathology than any discovery of parasites, are other questions. Can all the systemic phenomena of such diseases be accounted for by accepting the proposed theory? Let us take phthisis tubercle, excluding miliary tuberculosis in its acute primary form. If asked what are the prominent systemic characters of phthisis, we should reply fever and waste. The characteristics of fever are disintegration of the living substance of the body, and increased and diminished constancy of bodily temperature. Fever is not merely a state but a process, and, as Burdon-Sanderson says, has had its beginning in the entrance into or action on the system of some affecting or infecting cause. The cause of waste is a consumption of albumen, which passes out of the system as urea, and which is derived either from blood-corpuscles, or from muscular detritus, or from both. It is probable that a breaking down of the blood-corpuscles is a part of the febrile process. The colouring-matter of the blood is the means by which oxygen is distributed to the tissues, and the destructions of it must impair every function of organic life. In fever the excessive nitrogen and carbonic acid passing out of the system is supplied by the waste of muscle and of blood corpuscles. The same authority remarks that the tissue origin of fever is the basis on which we hope eventually to construct an explanation of the process. Fever probably originates with living tissues, and is from first to last a disease of the protoplasm, to which all systemic disturbances are secondary. He adds that at bottom we are all humoralists and believe

in infection, and that fever is tacitly assumed to be the product of a material fever-producing cause contained in the blood or tissue juice, the morbid action of which on the organism is antecedent to all functional disturbances whatever. In applying these facts and theories to phthisis we may see how large a question is the pathology of that disease, and how inseparable are its phenomena from those produced by other affections accompanied by elevated temperatures and waste. That it has some analogies to purely zymotic disease is undoubted, but the question may fairly be asked whether in the absence of proof of the entrance or inoculation of any germ it is not possible to conceive blood changes which may originate the train of symptoms. The moment that the blood is overladen by nitrogenous material, its corpuscles destroyed, and the detritus of muscular waste poured into it, we are assured that the presence of bacilli is manifested. In all degradations of vital fluids, nay, of all organised structures, do we not observe the same law, the development of parasites? Those more evident to our senses, as all the parasitic worms, assail the enfeebled body and enfeebled tissues, so many parasites, and in the vegetable world innumerable lower growths, become manifest when the organisation of the tree or plant is impaired. May it not be so also in those blood changes which precede the development of tubercle? May it be possible that the bacillus is the consequence, and not the cause, of the disease? the lower organisation which replaces the healthy blood-corpuscle? In the present state of our pathology it is impossible to answer these questions, but thoughtful inquiry will consider them in weighing the evidence which time and experiment will shortly develop on all sides. For we cannot stop where we are, nor at once accept as a solution to all our difficulties the theory which has its avowed basis in experiment and not in clinical observation, and which is as yet rather the fruit of the laboratory than of the hospital.

In considering the whole modern history of researches into phthisis, its nature and its difficulties, we are struck at once with the return to Laennec's original doctrine of the specific character of tubercle. That there is a definite product, an entity with peculiar and distinguishable characters, with invariable results, and that the disease of phthisis is a pathological unity, have become more and more the doctrine of the day. Be tubercle what it may, it is now more defined than ever; and if we can assign to it an unvarying cause of production, an origin constant and unique, in a germ-producing bacillus, we have certainly receded from some late teaching. If tubercle, or those small masses seen on the lung and prone to cheesy degeneration, be only common products of ordinary inflammation, as some have taught, we must believe that ordinary pulmonic inflammation, if it affect the walls of the alveoli and the interlobular tissue, has its origin in the parasitic germ. Koch attributes miliary tubercle and all cheesy degenerative nodules to the bacilli. He has inoculated with them all, and found the same result.

Since Koch's observations have been published there have of course been many experimenters anxious to prove or to disprove them, and we have already numerous records of their experience. In Germany, Fränkel found bacilli in 120 cases of phthisis, which were all he examined, and Heron in sixty-two cases. Dr. Dreschfeld of Manchester has contributed most valuable observations. He found the tubercle bacilli in all cases (forty-six) of phthisis where the physical signs were well marked. He has also examined six cases of bronchitis and emphysema, one of bronchiectasis, and two of fibroid phthisis, without finding bacilli. Of catarrhal pneumonia he had three cases with the same result. In two well-marked cases of lung disease there were no bacilli. Taking cases of tubercular disease of organs other than the lung, Fränkel found bacilli in fifteen out of sixteen cases

in the secretion covering laryngeal ulcers, and Crudeli found them always in the stools of tubercular enteritis. Rosenstein also found bacilli in the urine of a patient who had tuberculous disease of the epididymis, the lungs being free from disease. Fränkel also in the pus of a scrofulous joint. We thus seem to have it proved that bacilli are present in all tuberculous disease, and absent in non-phthisical lung affections.

As regards the stage of lung disease in which they are most prevalent, observations show that it is rather in the later stages that they are in greatest quantity. Our evidence hitherto also seems to prove that their greater number is accompanied by a higher degree of pyrexia, and signifies a more acute form of disease. On this point further observations are necessary, and the same may be said of acute miliary tuberculosis, about which we have hitherto no evidence. My colleague, Dr. Williams, has examined the sputa in 130 cases at Brompton Hospital. Of these, 109 were cases of phthisis, cavities in eighty-one; nine were cases of early consolidation. Bacilli were found in all of them, excepting three. There were twenty-one cases examined of other lung affections—bronchitis, bronchiectasis, pleurisy, empyema, and pulmonary congestion from heart disease, but no bacilli were found in any of them. Of the 109 cases of phthisis, there was pyrexia in fifty-one, the temperature ranging from 100° to 105°. Taking the fact of Koch's discovery as sufficiently established, and that, bacilli being found in all cases of phthisis, they stand in the position of a causative agent, and taking also into due estimation that all persons exposed do not get the disease, we have to inquire whether there are not antecedent conditions—that is, conditions prior to the introduction of the germs—which favour their development. There is, we may assert, a state of health, or of constitution, or of lung, which is a main factor in the induction of disease. It is here that the old pathology meets the new, and we imagine that it will be found that in all instances there is a pre-existing state which prepares the way for such germs as shall be accidentally introduced. The consideration demands our earnest attention. The period to which we allude is as much a first stage period as is the manured and prepared bed in the garden to the crop which is to grow in it. It is probable, nay certain, that germs daily enter the air-passages and take no root. The two factors of heredity and inflammation are those which all recognise as difficulties in the way of accepting off-hand the bacillus theory. But they seem to be the agents which exactly prepare the way for the reception of infective germs. In the first lecture we dwelt on the evidence for the presence of inflammatory products in all cases of phthisis, and it is so proved that it cannot be omitted in any theory of the disease.

Let us examine what heredity and inflammation do and how they are supposed to act. Heredity may mean not only a germ conveyed by the parent or more remote ancestor, but may, and in fact often is, a weakness of constitution, a tendency to disease, an especial vulnerability of lungs, and proneness to their inflammation. As Dr. Green has remarked, the tendency to retention and accumulation of inflammatory products is a leading character of scrofulous inflammations. An inherited proclivity to phthisis favours congestion. It is also conceivable that a want of tone of the bloodvessels is inherited, with a general deficiency in the power of products of the circulation, which no doubt favours transudation of low vitality. On the whole, then, a want of resistance to such attacks is held to be the most likely preparation of a bed which will grow bacilli. A mere exposure of the bronchial membrane is not considered sufficient for their development, but their entrance to and impaction in the alveoli.

Another question which has been dwelt on by Dr. Green and others is the condition of the apex of the lung. The common localisation of tubercle

in the apex has been referred to a diminished range of movement tending to stagnation in the pulmonary capillaries, a state which is closely allied to congestion and the formation of inflammatory products. In this manner a nidus or bed is formed fit for the reception of germs, and ready to reproduce them. Thus the old pathology joins on to the new, and we carry the idea of inflammation as a necessary preparation for the reception of the bacilli. It is indeed essential to conceive some such preparation for the elaboration of the germ into an established disease of specific character, and it also accounts for the innumerable cases of exposure to contagion where no disease results, for we must uphold that clinical experience is against the contagious nature of phthisis, and that something more is required than the mere presence of the organisms. Again, we would say that the recognised observation that the walls of the alveoli are essentially engaged in true tubercular disease favours the bacillus theory, the germs being found in that position. We seem, then, to have advanced from one pathological view to another, and, if Koch's observations turn out to be correct, he has discovered that specific element of disease to which all advancing pathology pointed, and which the best observers were expecting. It is not a contradiction of their observations, but an addition, which is not out of harmony with their results, and may even account for phenomena for which all previous reasoning had failed to find an adequate cause. It is in these subtle causes which influence the constitution as heredity and sexual transmission of tendencies to disease, and even of particular forms of disease bearing the same name, that we shall find ground for referring the germ theory to some deeper line of argument than can be resolved by a chemical experiment. Whole families are liable in a peculiar degree to phthisis, to rheumatism, to typhoid, to diphtheria, or to scarlet fever poisons. They seem to have been born with a proclivity which others have not. Is phthisis always the result of contact with diseased persons? Is the seed always sown at a given time, and can we gather more than one kind of fruit from a definite germ? Again, is it not possible to account for the phenomena of phthisis in another way? Granted that a given cause has originated a local deposit in the lung, do we see more in the symptoms of irritative fever so initiated than can be accounted for by the local cause of impacted alveoli, with compressed and strangled walls, pressure on the nutritive and pulmonary vessels, and resulting necrosis? Only last year we should have said "No." Again, are we to class all diseases from germs as of one or two kinds, say, septic and non-septic? There is a vast difference between the infection from the spirilli of anthrax and the bacilli of tubercle, as we have seen both in the incubative and crisis periods, in the latency and intensity of the symptoms, yet some of the later symptoms of phthisis are very like septic poisoning.

The question of the contagious nature of phthisis is one which cannot be decided by experiments of inoculation alone. They go a long way towards establishing a likelihood, but must be backed by clinical evidence of the largest kind. In discussing the question we are met in the outset by the fact that other diseases in which infective germs are found are well known not to be contagious—that is, capable of being communicated by one individual to another. The malarial poison and rheumatism are illustrations, as is also pneumonia of the acute or croupous variety. In the latter, according to Crudeli and Koch, micrococci are found in the exudation in the alveoli of the lung, in the pia mater in cases of pneumonia with meningitis, in red hepatitis, and in the interalveolar tissue. The clinical evidence will have to prove that in a large number of cases, not to be accounted for in any other way, phthisis has been conveyed from one person to another; it would also be expected that the poison would be intensified by the grouping of large numbers of diseased persons together, as in

the Consumption Hospital. As a very remarkable outbreak of disease occurred in my own clinical practice at Brompton Hospital, I may with advantage quote it here. A few years since, in the old building at Brompton, an error was discovered in the ventilation. The system of Dr. Arnott had been adopted when the hospital was built, by which air was driven by a fan at the basement through various air-passages which permeated the building, in the walls and under the floors. There was no extracting power used, but the wards were furnished with the usual Arnott's ventilators opening into the chimneys. A serious outbreak of erysipelas occurred in several of my wards, which were in the terminal part of the system of air-passages—that is, in the portion furthest removed from the entrance of air at the basement. We had many cases and several deaths. This event led to an examination of the system, when it was found that really no air at all found its way into those wards by the shafts, the propelling power at the basement being quite insufficient. There had been several preceding but more slight outbreaks of erysipelas, and more than the usual amount of "hospital throats." The ventilation was immediately rectified, and the system of extraction substituted which now works so well both in the new hospital and the old one; and since then there has been no more erysipelas. Now we may ask why had we not an outbreak of phthisis among the sisters and attendants instead of an attack of erysipelas? The germ was evidently septic, and produced its customary effects; but the bacilli of phthisis must also have been present in great abundance in the unrenewed air, and ought to have produced the characteristic results. I may mention here that bacilli in fair numbers have been discovered in the air of the extracting shafts of the hospital, which carry off the used air from the wards and passages.

Regarding the experience of the hospital since it was established, the evidence has been most carefully collected by several observers—by my late colleagues, Dr. Cotton, Mr. Edwards, the late resident medical officer, and more lately and completely by my colleague Dr. Williams; and as this comprehends by far the largest experience of phthisis to be found in any country, I shall here condense it for our use. It is the more valuable as Crudeli has expressly quoted the evidence of the Brompton Hospital to prove the opposite. I think it can be shown that after an experience of thirty-six years during which the hospital has been established, not only has no infecting process been evidenced, but that the medical officers and nursing staff, and the officials and servants have been unusually free from phthisis. Three different forms of infection are possible: first, that by inhalation of the air breathed by phthisical patients, or of the germs set free by their secretions; secondly, infection by marriage, which partly includes the first, the husband and wife commonly occupying the same room and bed, but impregnation by one diseased parent may, through the ovum or placenta, affect the offspring; a third is stated to be by milk of diseased animals, or of the mother. The first will engage our brief attention now—namely, that from contact with phthisical persons, and breathing the same air. The hospital began with 90 beds, increased in 1856 to 200. At present there are 240 beds in use. The ventilation, which I have described, was very faulty in the earlier years, but has now for a long time been carried on by extraction of the used air, which has been proved to produce complete change of the whole air of any ward at least twice in one hour. The faulty system of Arnott was, however, adopted in one wing, that first built. Three-fourths of the cases are phthisis in all its stages. The others are pleurisy, empyema, bronchitis, asthma, and heart disease. In the old building the dispensary rooms were bad, and in direct communication with the out-patient department, where from two to three hundred patients attended daily, most of whom were consumptives. The residents in the

hospital comprise medical officer, lady superintendent, four clinical assistants (who reside for six months), sisters, nurses, and servants. All the resident medical officers are now alive, and all the matrons but one, who died in advanced age. About one hundred and fifty clinical assistants have held office. They work in the wards and spend much of their time in the post-mortem room. Eight of them are known to have had consumption, generally at long periods after leaving the hospital, but none had it while resident; one had hæmoptysis before coming into residence, and in only one instance was it clearly proved that the disease was contracted while in the hospital. The sisters sleep in rooms communicating with the wards and galleries, and have a system of ventilation common to the patients. The nurses sleep in rooms above the wards, but of course are all day in attendance on the sick. In the course of thirty-six years only one had consumption while in the hospital. She married a consumptive patient, and ultimately died in the hospital. Three died of phthisis some time after leaving the hospital, two of whom were attacked many years after. Since 1867 there have been one hundred and one nurses, of whom one died of phthisis some time after leaving. The gallery-maids scrub the wards daily. We have had thirty-two since 1867, but no case of phthisis occurred. Of porters, most of whom have to work in the dead-room, we have had twenty, none of whom had phthisis. Of dispensers we have had twenty-two. Among them three cases of phthisis, one of whom only was ill while in the hospital; the other two contracted the disease after leaving, one from intemperate habits. There have been twenty-nine physicians and assistant-physicians, of whom eight have died; one only died of consumption, which he had contracted before his appointment. There have been four chaplains, and nine persons in the secretary's office, but no phthisis among them.

Regarding the communicability of phthisis from husband to wife and *vice versa*, Dr. Hermann Weber's cases, published in 1874, give support to the opinion that the disease is communicable in this relation, and eminently from the husband to the wife. In the cases of thirty-nine diseased husbands, the wives of nine of them became consumptive after marriage, or taking second and third marriages into consideration that in fifty-one cases eighteen wives suffered from the disease. In comparing this with fifty-one marriages between healthy husbands and wives, we certainly do not find such a proportion of consumption among the wives. He found also that in twenty-nine marriages between consumptive wives and healthy husbands, only one husband became consumptive. He thinks that this disproportion can scarcely be explained by the ordinary means of intercourse. The wife, it is true, runs greater risk than the husband through nursing her husband much more closely, and so being more in the atmosphere of the sick room, but this does not explain the great preponderance of wives in the present case, for with scarcely an exception the husbands were in good health, not one being confined to the sick room. Dr. Weber considers that a more likely cause is to be found in impregnation and infection through the fœtus. And so far as his data go he found that wives who do not become pregnant are more likely to escape infection. He remarks on the great rapidity of the form of disease in the wives and its slowness or quiescent character in the husbands. The remarrying of consumptive widowers thus becomes a serious problem if these facts prove to be of general application. My colleague, Dr. Reginald Thomson, considers that he had seen fifteen instances of wives becoming infected through nursing consumptive husbands out of a total of 15,000 consumptives. He evidently inclines to the opinion that the symptoms of phthisis in these cases are rather due to septic than specific tubercular germs, the later phenomena being pyæmic in most instances. In these communicated cases the symp-

toms were acute, and the morbid appearances almost pyæmic. My own experience, which has not been inconsiderable, and has extended over thirty years of hospital and private practice, does not supply other than occasional instances of the apparent communicability of phthisis, either in the case of husband and wife or of attendant on the sick. In families whose members successively fell victims to the disease, the attack seemed rather due to the peculiar age at which persons closely related by blood begin to exhibit its symptoms. On the other hand, I have seen many instances in which the most assiduous personal nursing of the sick, living in the same room, sleeping in the same bed, and undergoing the same influences of air and lodging, of anxiety and harass as the sick, has failed to produce it. There have been waste of flesh and strength, loss of sleep and appetite, and all the evidence of depressed vital powers in numerous cases, but no phthisis. The apprehension of the disease has added to the risk, but the tried and trusty attendant has outlived the trial, and survived (often unwillingly survived) the object on which these attentions have been unselfishly lavished. This, too, has occurred again and again where an inherited taint has rendered the disease most probable to invade. But I confess that further and searching investigations are needed on this question, investigations which shall extend over this and other countries, which shall not have been dictated by already formed theories, and which shall stand the closest and most impartial scrutiny. As I shall presently notice, the result is of the gravest social importance, and is one on which the profession will often be called upon to decide in varied domestic problems, influencing the lives and happiness of families. In Southern Europe the opinion of the contagiousness of phthisis has long been held, and in Italy especially, where I have often witnessed the expense to which surviving relatives have been put after a death from phthisis in a lodging or hotel. I fear that the advanced views of Professor Crudeli in Rome will not tend to lessen this apprehension of contagion nor render the residence of consumptive invalids more agreeable in that city.

In approaching the subject of the rational treatment of phthisis, that is, its management, according to our latest knowledge of its causes and progress, we are met on all sides by problems and difficulties. Our first and most natural division of such a subject is into prevention and cure. But what have we got to treat? a specific disease blocking the lung with nodules? an inflammation? or a parasite? further consideration would lead us to the question of stages. If we have settled what is the cause, the true *materies morbi*, we shall have to regard it in its receptive or initiative stage, what used to be called the hopeful stage of phthisis, when cure was said to be possible; and secondarily, in its structural change stage, when structural mischief is established and parts of the lung are broken down. In the attempted division lie the difficulties of phthisis, yet in the present day especially they must not be put aside with impatience, nor handed over to empiricism, which is one of our dangers. With new theories there are always waiting men who say this is the cause of the disease, behold the cure! Yet this complex affection only still more shows its complexity when we come to apply theory of any kind to practice. We are, on approaching it closely and with impartial minds, struck with the fact that its phenomena are of mixed pathological import, and quite other than unique and constant. Let us take the first question. Is it a specific tubercle, or an inflammation, or a parasite? Judged by its pathological and clinical history, it is each and all of these at once. We find a disorder of local irritation and a pyrexial constitutional state; we find a period of quiet invasion, followed by one of much disturbance and proceeding to recognisable structural destruction—this is the story of inflammation of lung structure, and of the breaking up of the product involving death of surrounding tissues. Yes, but it is the

story also of a germ introduced from without, lodging in the lung as a nidus, fructifying and multiplying, and discharging bacilli into the blood and lymphatics. After a while we find perhaps a secondary centre of disease in the opposite lung. It is a second nidus or station of germs, says the parasitic theorist; it is the detritus of caseated material or a fresh miliary eruption, says the tubercle believer; it is a fresh inflammation-product centre, says a third. Anyhow, our patient is fevered and wasted, and physical evidence shows that he has one diseased spot, if not two, in the lungs. The treatment of such a state of things (I mean pyrexia, waste, and physical signs of a solid patch in a lung) used to be by local depletion and salines, and we have also seen the dulness over the lung diminish, and the patient relieved from cough and pain and pyrexia, by such means. Whether we were treating a tubercular deposit or an inflammation or a nidus of parasites, we were doing good to our patient. My own belief is that whatever was the primary cause of the lung irritation, we were procuring the absorption of purely inflammatory products in the lung. Practical men will probably agree with me. A study of its phenomena, then, will scarcely assist us in defining its cause, and if it be any of those insisted on by different schools, the practice does not, hitherto has not, varied with advantage to the patient. The believer in parasites will, however, tell his patient to inhale antiseptics, on the theory that their destruction will be accomplished in the lung and their multiplication prevented. However, even the theorist will acknowledge that there are other products in the lung besides bacilli, others even more removable. The introduction of remedies of sufficient power to kill parasitic germs through the blood and the diseased tissues has been of course, advocated. But it has been well proved that this same cause which has cut off a portion of lung by strangling its vessels, has also rendered it very impervious to remedies approaching it through the circulation.

We fall back, then, on consideration of prevention. If it were possible on the parasite theory to prevent the introduction of germs into the system we should have no phthisis. Sow no seed, and you will have no crops. I suppose that those of us who, like myself, have tried to amuse their leisure with a garden have found less trouble in getting seeds to grow than in exterminating weeds. You dig up, burn, destroy, and after a few years of this preventive work you will have a tolerably clear area, and with excessive care may get on with only ordinary weeding. But still you will find that your soil is peculiarly suited to the production of certain rapidly growing, wide-spreading weeds, which, like the tares in the wheat, choke the healthy plant. The seed-germs, you know, are in the air, sailing on feathered wings, or hidden in the soil till spring comes, growth time; or they are of insect production, and a bird of the air has borne them; or an unseen wind has dropped them on the appropriate spot where their reproduction is certain. Such as this is what farmers call "blight." You sleep, and rise, and your potatoes or hops are covered with germs. There seems to me to be a very close analogy in all this to the germ theory of phthisis. The weed or blight and the germ theory of disease are like living organisms seeking a nidus for multiplication. On the other hand, receptivity of soil is an essential requisite to reproduction. To destroy germs, or to prevent their access and to render the soil unfertile as regards the weed, are the two problems. In an extensive experiment on sweet peas I found that the snails ate up all the seed in the earth. I applied nitrate of soda, when the snails vanished, and a second sowing on the same spot immediately produced the flowering plants. I had destroyed the animal life, but rendered the soil fertile for the vegetable seed.

We have already noticed that all the theorists acknowledge a certain vulnerability of constitution which predisposes to the reception of the

disease and their fructification. This seems essential to the production of tubercle, of specific inflammation, of parasitic bacilli. It is heritable and peculiar to certain ages. A concentrated heredity will invite phthisis at an earlier age than it would otherwise be due, and in a more intense form, as where both parents were consumptive. This constitution or proclivity is a well-recognised and perfectly proved condition; and it stands apart from all theories of the nature and proximate cause of the tubercular disease, and must be considered in every argument on the subject. It forms the receptive soil, without which, in the vast majority of cases, the germs will not take root; for all of us are exposed to germ agents, but few of us get the disease. If then, we are to begin with prevention, we must counteract the constitution and prevent the vulnerability. The marriage of persons predisposed to phthisis or already phthical should be forbidden. Where consumption is already in a family, the marriage of cousins would precipitate the malady, and ought not to take place. All that is invigorating in residence, habits of living, and diet should be strictly enjoined, and the open-air life insisted on as far as is possible. A hardening process of the surface of the body should be practised by cold sponging and exercise in the fresh air; and sleeping chambers should be spacious and not overheated. But I need not here dwell on the recognised mode of dealing with those who are delicate but not diseased. If we adopt the parasitic theory—that is, that germs can be introduced from without by contact with a sick person—such contact should be forbidden, especially the occupancy of the same room or sleeping in the same bed with consumptive persons. I see no less stern an injunction than this to be possible to those who consistently believe in the germ theory. While we cultivate all that encourages the vitality and resistance power which we know to be hostile to the advance of disease, we are bound to protect those most exposed to its ravages. But if we seem to have it proved that we are exposed to a danger little suspected before from contact with the sick, there is a possible compensation to be found in the doctrine of the culture of germs by artificial means. In the experiments with the spirilli of anthrax it was found that by passing them through many animals, thus securing a repeated generation of the parasite, the intensity of the poison was greatly increased, so that an infinitesimal quantity sufficed for inoculation. But, again, it was found that by culture and reducing means applied to certain ferments, as those of splenic fever in the lower animals, the intensity of the poison could be reduced, as in the experiments of Büchner, who was able to mitigate the poison of the anthrax to the comparatively harmless “*lay bacillus*.” There is a hope, therefore, in the minds of some that it may be proved possible to reduce the power of tubercle parasites by passing them through lower animals, and so be able to inoculate man with a mild form of tuberculous disease, which, theoretically, might prove to be preventive of other attacks of the same kinds. The experiments on the inoculation of syphilis will be in the memory of all of us. The virus had not been reduced by culture, or by passing it through other animals, and it is the opinion of Hutchinson and others that syphilis is not transmissible beyond the third generation. It is a well-known theory of vaccinia that that disease is only variola modified by passing through the system of the cow. We dare not indulge fanciful speculations on the subject, but that there is a future possibly productive of great practical results few can doubt.

The prevention of contagion, by declining to group consumptive people together in large numbers, is one of great national importance. There is no country which has built so large a hospital for consumption as we have. I have stated my own convictions on the question of contagion by personal contact in the ordinary way; but I have always upheld that phthisis would be better treated in separate dwellings, if possible in the country, rather

than in cities, on dry soil, and on elevated localities. There can be no excuse for the grouping together of so many persons suffering from one disease and that, too, productive of copious discharges from the air-passages, except that of convenience. Convenience for treating numbers together implies economy of money and of skill, and of all the appliances for the care of the sick. While acknowledging the necessity, we should exercise the greatest care in ventilation, cleanliness, the frequent removal of sputa, and of what is not often sufficiently attended to—the renewal of underclothing of the sick. Dust should never be allowed to accumulate, and the air-passages of the building should be frequently examined and cleansed.

I have stated the evidence obtainable as to whether the Brompton Hospital has been a spreader of consumption, and I must leave each to form his own conclusions. In doing so two things are to be remembered:—First, that great cleanliness has been always practised; and next, that when the ventilation went wrong the outbreak of sickness which followed was septic, not tubercular. In treating the stage of phthisis in which lung disorganisation is taking place, and according to the new theory a number of material germs are set free and find their way into the blood and lymphatics, there can be no reason why a fair use of antiseptics should not be practised. The germ-destroying properties of many chemicals are now known; but we are yet in the infancy of efficient modes of applying them. Inhalations as now practised are only made use of for short periods; but a long continued exposure of the air-passages to various vapours capable of being inhaled should surely be had recourse to. Not only should inhalers be used which may alter the septic character of the secretions, but to give the system a fair trial, the patient should be placed in a chamber impregnated with certain vapours, as carbolic acid, sulphurous acid, iodoform, and such like, and allowed to remain for hours exposed to their influence. In the new building at Brompton we have had such chambers constructed, and I trust we may shortly hear details of the results. By all the later theorists the local treatment of the lung has been brought into prominence, and there are other considerations besides the use of antiseptic or germ-destroying local applications which need further investigation. Such are the conditions of altered pressure to which the lung may be subjected. The collapse of its cells may thus be obviated, and the expansion and increased vital energy of alveoli bordering on those already blocked or injured may be promoted. We seem to have been waiting too helplessly for something to guide our treatment before having recourse to methods of altering pressure and increasing the vitality of tissues, of correcting foul secretions or stimulating languid and devitalised products of diseased action, which the surgeon daily applies to outward wounds with advantage, and frequently with success. In the new Brompton Hospital there are air chambers to which diminished or increased pressure can be applied. The results hitherto published at other places have been limited and perhaps somewhat empirical, but no doubt time will develop correct opinions on this important question. We already know that the contraction and even ultimate closure of the cavities in the lung greatly depend on the condition of the surrounding lung tissues, and especially of the neighbouring alveoli. That which Dr. Ewart has called compensatory hypertrophy, and which supplies mechanical extension of the healthy parts of the lung, acts both by improving the general condition of the system by affording more respiratory space, and also by pressure on the cavity walls. The boundary zone of a cavity may be more or less consolidated by fibrous alterations, by pneumonic deposits, and by pleural thickening. It is impervious and tough and but little vascular. If a cavity were not so surrounded, its collapse and cure would in many instances follow a suspension of the morbid events of which it is the seat—purulent infective secretions, not unfrequently

charged with bacilli. The effects of altered atmospheric pressure may be found of the greatest use in furthering the processes of dwindling and contraction.

Let us very briefly consider this cavity stage of phthisis. The possibility of the healing may be regarded as proved. Hertler of Vienna, in 1880, had collected 780 cases in which cavity of the lung had become obsolescent, and in several of these complete cicatrization had taken place. There is no doubt that the physical signs of cavity often disappear, although it is likely that this is due rather to collapse than to obliteration. First, the reparative change appears to be governed by the cessation of morbid action and the disappearance of bacilli, and the lessened secretion in the cavity itself; secondly, by the facility with which its contents can be emptied into a neighbouring bronchus; thirdly, by the mechanical conditions of its situation, and the state of the surrounding tissues. Apex cavities are unfavourably placed for contraction, owing to the surrounding thickening and adhesion of the pleura, through which the resistance of the ribs is conveyed. They are also by position removed from the closing up influence of pressure from the surrounding alveoli becoming enlarged; so that compensatory hypertrophy is not available. Nevertheless, deducing these mechanical difficulties in the way of closure, there is no reason to doubt that morbid actions may be sufficiently arrested in a cavity to permit of its healing. If these conditions are due to bacilli, they are then more locally within reach than in the earlier stages, when they are embedded in a tubercular nodule or in the walls of the alveoli. If the conditions are those of simple chronic abscess, whose contents may become putrid by the access of septic germs from the atmosphere, they are again accessible to remedies of the antiseptic class directly applied. If an ordinary wound be capable of setting up septic actions by exposure to the atmosphere, surely the lung cavity is equally if not more exposed, and should be guarded and treated in a like manner to that in which a surgeon acts towards an external abscess. As a matter of fact, septic phenomena are by no means an infrequent sequence of lung cavities, and are shown in secondary and distant pyæmic deposits. Therefore we should strongly advocate the local medication of cavities in the lung by direct antiseptic, stimulant, and other treatment calculated to kill parasites and restore a healthy state of secretion.

The surgical treatment of certain cavities by tapping has been practised in this and other countries with a considerable amount of success. The ordinary apex cavity, with a free opening into a bronchus, and with moderate daily secretion, not of a fetid character, is not likely to be much benefited by tapping, as, for the mechanical reasons we have given, it is not easy for it to collapse and become closed, the adhesions and condition of the surrounding parts of the lung forbidding such results. On the other hand, cavities with a less free opening into a bronchus and situated near the middle or base of the lung possess characters which do not forbid their relief, nor even their closure. Their secretion is apt to accumulate from gravitation having to find its way upwards into a bronchus, and fetor ensues, the cavity being never fully emptied. The mechanical difficulty is here considerable, as the secretions must be projected upwards, and the surrounding tissue of the lung, generally indurated, cannot contract on its contents. In phthisis a large proportion of the expectoration comes from bronchial irritation, the lining membranes of the tubes, in the neighbourhood of such cavities, being irritated by the passage of fetid secretions over it. It is often found stripped of its epithelium, and even ulcerated in the neighbourhood of the cavity, conditions which can never be remedied so long as the bronchial tube is the only exit for foul discharges. It is most natural to apply surgical principles to such cases, and by a free drainage to carry off septic matters. I may briefly allude to the conditions

requisite to justify operation. The signs of cavity should be unmistakable and should all be present. And the existence of adhesions of the lung to the pleura should be proved at the point at which it is proposed to operate. In acute gangrenous cases, or hæmorrhagic cases where the lung is in a vascular spongy state, where little fibroid change has taken place, and adhesions of the pleura are not evident, the operation should not be performed; the trocar would not enter a defined cavity, but a broken up lung and hæmorrhage must occur, or the contents might escape into the pleura. But there are many cases met with in practice where tapping may prove highly beneficial and prolong life, by lessening copious suppurations, by altering the fetid character of the discharges and so relieving fever and preventing septic infection. I have witnessed several such cases, and there are a considerable number on record.

After the review which we have taken of the various forms and assumed causes of phthisis, we can have little hesitation in laying down one or two axioms to guide us in selecting the most suitable climate in which persons may reside who are either threatened with phthisis or inherit a proclivity to be counteracted. It should undoubtedly be of the bracing character, dry in soil and elevated. Starting from the supposition that a vulnerability is to be counteracted, which the best observers consider to consist in feeble circulation and tendency to stagnation and the pulmonary changes, and an undrained condition of the lymphatic system, which may give rise to exudations of low vitality, we ought to prescribe exercises and air, which give tone to the vessels. The whole state appears to be passive, a stagnation, a lowness, a want of contractile power in tissues, and this is not to be encouraged by placing its subject in relaxing heats, or permitting him to neglect exercise in fresh air of invigorating degrees. There is no doubt the plan has been overdone by exporting such persons to a rigorous climate, but there is a just medium from which the benefits of pure and bracing air may be obtained without exposure to severities, for which these delicate frames and feeble circulations are not adapted by either their nerve power or the tone of their bloodvessels. It is also to be remembered that hæmoptysis is more frequent, and often to a dangerous extent, on these Alpine heights; and it is evident that persons liable to such congestions should not reside there. The purity of air and constant change of a sea voyage are often preferable for invigorating purposes to a residence in winter in "upland valleys," where most of the day must be passed in poorly furnished apartments artificially heated by stoves.

In the stage of cavity, if it be single, and if febrile symptoms be absent, I have observed most benefit from a frequent change of locality, and from being much in the open air, if possible on horseback. The best reason for selecting a southern climate is undoubtedly that it affords facilities for open-air exercise. In searching for it, unfortunately, invalids have to travel far, for there is not much of a fixed and stable character to be found on this side of the Mediterranean. On reviewing the cases I have met with in practice, I find that those which survived longest were persons who travelled about in moderate climates and who, some of them, led a rough life occasionally in our colonies or in South America. A rule for our guidance, which I have always insisted on, I may be pardoned repeating here. Patients with a high temperature should not be advised or permitted to travel far, and those with much fever should not be moved at all. I care not whether the local disorder be inflammatory, or tubercular, or parasitic; that which is proceeding in the lung is an active condition of irritation, the blood is loaded with inflammatory products or bacilli, and rest is indicated before all things.

Let me say a word for those unblest by riches who are unable to travel for their health, who either have not the funds or decline to be a burden to

richer friends, or to spend the last penny which may be wrung from the necessities of wife or children in a pursuit of health in a distant land. Well, I have had a great deal to do with the poor in this country, and I may console many by saying how well I have found numbers of patients go on in London—in London under the unfavourable conditions of climate so well known to all of us. I believe I was of the first to note the great longevity of many cases of phthisis, and my statistics were gathered in the out-patient department of Brompton Hospital.

I had proposed to consider the use of nutrients in the treatment of phthisis, but time warns me that I must omit more than the bare mention of the fact that no parasitic theory can lessen the importance of the use of tonics and cod-liver oil. I must also apologise for the omission of a more detailed account of germicides. I would just remark that supposing we possessed a local remedy of sufficient power to ensure the destruction of such bacilli as are met with in the secretions, their rapid reproduction would soon overtake our treatment. I fear that in this direction we may have much empiricism and many disappointments.

Finally, to sum up the brief review which we have been able to make of these new doctrines, it would appear that while some facts, such as the presence of bacilli in all cases of phthisis and their absence in other affections of the lungs and air-passages, are fully proved, there are some assertions of those who hold that such appearances in the lungs and its secretions are the proximate and invariable cause of the disease, which we must for the present hold to be *sub judice*. Among these doubtful theories are those which concern the production of the parasites. Whether they be endogenous or introduced from without, whether they may not find their birth in certain blood changes which are the outcome of pyrexial action in the system, or whether they are the product of a like morbid condition in other animal bodies, and from them introduced into other organisms by contact or infection, must remain for the investigation of later pathology. We may safely relegate these interesting questions to the ardent students who are now everywhere carrying on new observations. And for ourselves knowing well that all pathology is progressive, and that we see but a portion of truth at any time, we content to await the result.—*The Lancet*, April 7 and 28, 1883.

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DID CHOLERA EXIST IN ANCIENT INDIA ?

Has cholera literally a home—a limited however wide an area on the surface of the globe—where it originates, has its birth and growth—and whence it spreads over the rest of the world? A determination of this question is of importance to all nations and races of men. An affirmative answer will necessarily impose serious responsibilities upon the inhabitants and the Government of the country which may be demonstrated to be the home of cholera. No less a journalist than Mr. Robert Knight has thrown out broad hints to that effect. No disease carries off its victims in such large numbers, and is so rapidly destructive of life as cholera. And as it apparently spreads by human intercourse, it becomes a legitimate international question whether the Government of the country reputed to be the home of cholera ought not to be and cannot be forced to adopt measures which may keep the disease in check, if not prevent it altogether.

Our readers must be well aware that the stigma of being the home of cholera has fallen upon India. Certain authors have gone so far as to give expression to this conviction of theirs in their very definition of the disease. Thus, we have Mr. Macnamara defining cholera as “a disease which is generated at all seasons of the year, among human beings inhabiting certain

parts of India, &c.” Dr. Aitken defines it as a “disease essentially specific, existing at all seasons of the year in certain parts of India (its perennial endemic area), &c.” Lebert, in *Ziemssen’s Cyclopædia*, calls the disease indifferently, cholera Indica or cholera Asiatica, and confidently asserts, “there is now no difference of opinion as to the nativity of this disease, justly named the Indian cholera.” Such definition, we need hardly point out, involves the assumption, that cholera had and still has its origin in certain parts of India only; that whenever in the wide world cases of cholera may occur, they may be traced to original cases occurring in certain parts of India; in other words, that the disease never occurs independently in any other part of the world, except in certain parts of India.

However important and even necessary in the interests of the world at large, and of India in particular, we do not think the question, where cholera had its first birth, can be determined with any approximation to accuracy. Admitting that India is the country where the disease is *now* most prevalent, and even admitting that India is the country whence *now* epidemics of the disease spread to other countries, we do not think it must necessarily follow that India is the country where the disease had its first genesis. Isolated cases of typhoid, typhus and scarlet fevers are occasionally making their appearance in India, and in course of time they may be as prevalent as, or even more prevalent than, they are now in Europe, thanks to the rapid introduction of the most artificial, so-called scientific, but really most unnatural, and therefore most insanitary city-arrangements of the latter country, and then it would be as legitimate and logical to charge India with being the home of typhus typhoid and scarlet fevers, as it has now become the fashion, without sufficient evidence, to stigmatize it as the home of cholera.

We would not endeavour to wipe off the stigma that has been cast upon our country. It is almost hopeless to do so. The difficulties in the way are so great. But we shall endeavour to find out if there has been sufficient evidence to justify the stigma. For this purpose we shall try to ascertain if cholera did exist in ancient India. It is not possible to draw the line between ancient and modern times. But we think we may safely fix that line at the beginning of the Christian era. For want of

any written history we have to turn to our ancient works on medicine, the oldest of which now extant is *Charaka Sanhitā*. In Chap. ii of the *Vimanasthana* of that work we find the following :

योहि मूर्त्तानामाहारत्रिकाराणां सौहित्यं गत्वा पश्चात् द्रवै
स्तृप्तिमापद्यते भूयस्तस्यामाशयगता वातपित्तश्लेष्माणोऽभ्यवहारे-
णातिमात्रप्रदीप्तमानाः सर्वे युगपत् प्रकोपमापद्यन्ते । ते प्रकुपिता
स्तमेवाहारराशिं अपरिच्यतमाविश्य कुक्ष्यैकदेशमाश्रिता विटम्ब-
यन्तः सहसावाप्युत्तराधराभ्यां मार्गाभ्यां प्रच्यावयन्तः पृथक्
पृथक् विकारानभिनिर्वर्त्तयन्ति अतिभोक्तुः ॥ इतिअलक्षकवि-
सूचिकाजनने कारणम् ।

तत्र वातः शूलानाहाङ्गमर्द्दमुखशोषभूर्च्छास्त्रमाग्निवैपस्थ-
शिरासङ्कोचनक्षान्नानि करोति ।

पित्तं पुनः ज्वरमतीक्षारमन्तर्द्दहं तृष्णामदभमप्रलीपान् ।
श्लेष्मात् छर्द्यरोचकाविपाकशीतण्डरालस्थगालगौरवाभिनि-
र्वर्त्तिकरः सम्पद्यते ॥

नतु खलु केवलमतिमात्रमेवाहारराशिमानमप्रदोषकरमिच्छ-
न्ति, अपितु खलु गुरुश्चशीतशुष्कद्विष्टविटम्बविदास्यशुचि
विरुद्धानामकाले अन्नधानानामुपसेवनम् कामक्रीधलोभमोहे-
र्ष्याद्वीथीकमनोद्वेगभयोपतप्तेन मनसा वा यदन्नमुपयुज्यते
तदथ्यासमेव प्रदूषयति ।

तं द्विविधमासप्रदोषमाचक्षते भिषजो विद्वेषिकाभलंसकंच ॥

तत्र विसूचिकाच्छूर्जं चाधश्च प्रहृत्ताभदोषां यथोक्तरूपां
विद्यात् ।

अन्नसकामसुप्तदेह्यामः ।

दुर्बलस्यस्रज्ज्वाग्नेर्वह्नुभेभ्यो वातश्चन्द्रपरीषवेगघारिणः स्थिर-
सुखदुर्बलधीतयुष्मान्सेविनः तदन्नमानमनिलमपीडितं ज्ञेय्या
च विरह्णमार्गमतिमत्तमलीनेमलसत्त्वान्न वह्निर्मुखीभवति । तत-
श्चर्द्यतीसारवर्ज्यानि आनमदोषलिङ्गानि अभिर्दयथति अति-
मालासि ।

दण्डालसकामाह ।

अतिमालमदुष्टाश्च दोषाः मदुष्टामवह्णमार्गाः तिर्यक् गच्छन्तः
कादाचित् केवलमेवास्त्रयरीरं दण्डवत् सन्मयन्ति । ततश्चमल-
सकामसाध्यं भ्रुवते ॥

चरुकासंहिता । विमानस्थान । अः २ ॥

“ A man, after having taken solid food to his full satisfaction, indulges in liquid food. Of such a man the wind, bile and phlegm seated in his stomach, agitated by excessive ingestion of food, all at once become irritated. Thus irritated they penetrate the mass of undigested food and taking shelter in a region of the abdominal cavity, arresting all movements (of the food), and suddenly causing discharges from the upper and lower outlets of the wind, separately give rise to their own respective disorders in the individual who (as before said) has over-indulged himself in food and drink. Thus—

“ *Wind* causes colic, rumbling, pains in the limbs, dryness of the mouth, faintings, vertigo, disorder of the digestive fire, contractions of tendons (cramps), dulness.

“ *Bile* causes fever, diarrhœa, burning within the body, thirst, intoxication (?), vertigo, delirium.

“ *Phlegm* causes vomiting, loss of appetite, indigestion, ague, languor, heaviness of the limbs.

“ But the authorities do not hold that it is the ingestion of excessive food alone that causes disorders of the stomach. The

ingestion of heavy food, of unoily food, of cold food, of undried food, of loathsome food, of obstructive (astringent) food, of food that causes burning, of unclean food, of prohibited food, as also partaking of food at unusual hours, or when affected by lust, anger, greedy desire, bewilderment, envy, shame, grief, anxiety, fear, causes disorders of the stomach.

“These disorders are of two classes, *Visuchiká* and *Alasaka*. *Visuchiká* should be known (as a disorder) in which, as already described, the undigested food passes upwards and downwards.

“And now we shall speak of *Alasaka* :

“When a man of weak constitution, of low digestive fire, full of phlegm, and who suppresses habitually the urgings of wind, urine and fæces, indulges in hard food, or heavy food, or excessive food, or unoily food, or cold food, or dry food,—such food (in the stomach of such a man) agitated by wind, and driven by phlegm into wrong channels where it lies absolutely inactive and is unable to come out; and then, with the exception of vomiting and purging, causes in excess the other symptoms of indigestion.

“And now I shall speak of *dannálāsaka* :

“And sometimes the excessively vitiated wind, bile and phlegm arrested in their channels by the excessively vitiated undigested food, and moving in crooked ways, makes the body rigid like a staff. Hence the disease has been pronounced incurable.”

CHARAKA SAMHITA, *Vimanasthana*, Chap. ii.

In point of antiquity SUSRUTA stands next to CHARAKA. It was, like the latter written and compiled and edited at a time when beef was an article of food among Hindus, and therefore it would appear to be older than the Puranas. We find the following in SUSRUTA :

अथातोविस्त्रुचिकामतिषेधमध्यायं व्याख्यास्यामः ॥

अजीर्णमासं विष्टब्धं विदग्धं च यदीरितम् ।

विस्त्रुच्यलसकौ तःभ्यां भवेच्चापि विलम्बिका ॥

रुचीक्षिरिव भालाणि तुदन् सन्तिष्ठतेऽनिलः ।

‘यस्याजीर्णेन सा वैद्वैच्यते तु विस्त्रुचिका ॥

न तां परिमिताहारा लभन्ते विदिताग्नाः ।
 सूढास्तामजिताम्नानो लभन्तेऽयनलोलुपाः ॥
 सूक्ष्मातिशारौ वमथुः पिपासा मूलं त्रभोद्वेष्टनजृम्भदाहाः ।
 वैवर्थाकम्भौ हृदये वज्रश्च भवन्ति तस्यां यिरसश्च भेदः ॥
 कुक्षिरानक्षतेऽत्यर्थं ताम्रत्यथ च शूजति ।
 निरंघ्रो भासतश्चापि कुक्ष्यावुपरि धावति ॥
 वातवर्च्चोनिरीधश्च कुक्षौ यस्य भृशं भवेत् ।
 तस्यालकमाचष्टे हिकीकारौ च यस्य तु ॥
 दुष्टन्तु भुक्तं कफभासताभ्यां प्रवर्त्तते नोर्द्धमधश्च यस्य ।
 विलम्बिकां तस्य विवर्जनीयामाचक्षते यास्त्रविदः पुराणाः ॥
 यः श्यावदन्तौष्ठनखोऽल्पसंज्ञश्चर्द्दार्द्दितोऽभ्यन्तर्यातनेत्रः ।
 क्षामस्वरः सर्वनिमुक्तसन्धिर्यायान्नरोऽसौ पुनरागमाय ॥
 सुश्रुत उत्तरतन्त्र ॥

“ And now I shall treat of the prevention of *Visuchiká*.

“ I have already spoken of two kinds of indigestion, *Vistabdha* and *Vidagdha*. From these arise *Visuchiká* and *Alasaka*, and also *Vilambiká*.

“ That form of indigestion, in which the wind torments the body as if with needles, is called by physicians *Visuchiká*. Those, who are moderate eaters and are versed in the shastras 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.

“ He, whose abdomen swells up, aches, and rumbles, in whose abdomen the pent up wind rolls about, and the fæces are excessively confined, and who has hiccough and eructations, is said to be suffering from *alasaka*.

“ He, whose ingesta being vitiated by phlegm and wind cannot find vent upwards and downwards, is said to suffer from *Vilambikā*, which, according to ancient authorities, is not amenable to treatment. The patient, whose teeth, lips and nails have become bluish, who is afflicted with nausea, whose eyes have sunk into their sockets, whose voice has become weak, whose joints have become as it were unhinged, such an one will depart this world to come back to it.”

SUSRUTA, *Uttaratantra*.

This is all that we have been able to find in the two most ancient Sanskrit works on Medicine. In a much later work, the treatise by VABHATAH, the date of which it is not possible to ascertain, but which was probably written subsequent to the birth of Christ, we have the same descriptions repeated in a slightly modified language; the author, as will be seen, follows more closely CHARAKA than SUSRUTA. Thus :

पीड्यमाना हि वाताद्या युगपत्तेन कोपितः ।
 अभेनान्नेन दुष्टेन तदेवाविश्य कुर्वते ॥
 विटम्बयन्तोऽलसकं व्यावयन्तो विसूचिकाम् ।
 अधरोत्तरमार्गाभ्यां सहसैवाजितात्मनः ॥
 प्रयाति नोर्द्धं नाधस्तात् आहारो न च पच्यते ।
 अंभाययेऽलसीभूतस्तेन सौऽलसकः स्मृतः ॥
 त्रिविधैर्वेदनाभेदैः वाय्वादिविद्यकोपितः ।
 सूचीभिरिव गात्राणि विध्यतीति विसूचिका ॥
 तत्र यूलम्बमानाश्चकम्पस्तम्बादयोऽनिलात् ।
 पित्तज्ज्वरातिशयान्तर्दीर्घदृग्मलपादयः ॥
 कफात् छर्द्यङ्गुस्तावाक्स्तम्भैवनादयः ।
 विधे पादुर्बलस्याल्पवक्त्रैर्वेगविधारिण्यः ॥

पीडितं मास्तेनाम् च्छेद्यया रक्षन्तरा ।
 अलसं क्षोभितं दोषैः धल्यत्वेनेव संस्थितम् ॥
 यूलादीन् कुर्वते तीव्रान् छर्द्यतीश्वरवर्जितान् ॥
 सोऽलसोऽत्यर्द्यदुष्टास्तु दोषा दुष्टाभवद्वशाः ।
 यान्तस्त्रिभ्यक् तनुं सर्वां युगपत् सन्मयन्ति चेत् ॥
 सद्दण्डालसको नाम तं त्यजेदायुकारिषण्णु ॥

वाभटः ।

“ In one who has no self-control, the wind, bile and phlegm, agitated and irritated by vitiated undigested food, penetrate such food and either arresting all movements (of the food) give rise to *alāsaka*, or suddenly causing discharges (of the food) through the upper and lower channels, give rise to *visuchikā*.

“ Inasmuch as the food does not pass either upwards or downwards nor is digested, but remains in the stomach in a state of inaction, hence the disease is called *alāsaka*.

“ Inasmuch as through the excessive irritation of wind, bile and phlegm, the limbs are tormented by various kinds of pains as if penetrated with needles, the disease is *visuchikā*.

“ From the *wind* proceed colic, vertigo, rumbling, shivering, dulness, &c.

“ From *bile* proceed fever, purging, internal burning, thirst, delirium, &c.

“ From *phlegm* proceed vomiting, heaviness of the limbs, loss of speech, spitting, &c.

“ Particularly in persons of weak constitution, of low digestive fire, and who habitually suppress the (natural) urgings, the food agitated by the wind, arrested in the middle of the abdomen by phlegm, and vitiated in various ways, remaining in a state of inaction and lodging like a dart, gives rise to excessive colic, &c., vomiting and purging excepted. This disease is called *alāsaka*.”

Very vague and wrong ideas, as to the evidence of ancient Hindu medical authorities regarding the existence of cholera in

India at the times they flourished, are still entertained by European writers on the disease." It is with a view to correct these wrong notions that we have given in full the passages we have been able to discover in the oldest Hindu works on medicine bearing on the subject. It will be seen that the disease described in the above passages which comes nearest to cholera of the present day is *Visuchiká*. But it will be equally clear to any one who has any knowledge of Sanskrit, that it is not true, as was imagined by Dr. Martin Haug, that in the above descriptions we have the different stages of cholera, *Visuchiká* standing for purging and vomiting, *Alasaka* for cramps, and *Filambiká* for collapse. The fact is, under the head of indigestion, the different forms which it assumes as separate diseases are described.

In CHARAKA we have indigestion first described as the several effects of the irritation of wind, bile and phlegm from the ingestion of excessive food, or of particular kinds of indigestible food, or of even wholesome food at unusual hours or when under the influence of the passions. And then we have these varieties of indigestion brought under two general classes, *Visuchiká* and *Alasaka*; in the former all the symptoms of indigestion before described prevailing, including purging and vomiting as the most prominent ones; in the latter all the aforesaid symptoms, with the absence of purging and vomiting as the characteristic. A more severe form of *Alasaka* is described as *Dandálasaka*, and said to be beyond the province of treatment. This *Dandálasaka* seems to us to be identical with the *Filambiká* of SUSRUTA.

While CHARAKA leaves us to infer what the symptoms of *Visuchiká* are or may be, SUSRUTA gives a collective view of these symptoms and even gives a reason for the use of the term *Visuchika* as applied to the disease, namely, that the wind torments the body as with needles. From the description given of *Alasaka* and *Dandálasaka* or *Filambiká* we are inclined to think the former to be tympanites, and the latter intussusception. *Visuchiká*, *Alasaka* and *Filambiká* are described as separate diseases, and not as stages of one and the same disease. VABHATAH has combined the descriptions of CHARAKA and SUSRUTA, following, as we have said, more closely the former than the latter. He has not offered any original observations of his own. Probably he had none to offer.

Both CHARAKA and SUSRUTA have chapters on Epidemic Diseases. But among the diseases mentioned by them as occurring epidemically, we do not find Visuchiká. So whatever Visuchiká was, it was never observed by these ancient authorities to break out in an epidemic form. It must therefore have occurred as ordinary diseases, in an isolated form. Now what *was* the disease? Both CHARAKA and SUSRUTA lay stress upon the upward and downward evacuations. SUSRUTA, who is more clear and precise, describes concomitant symptoms, most of which have singular⁴ resemblance to the symptoms of cholera. But the disease had its name (as we learn not from CHARAKA but from SUSRUTA,) neither from the upward and downward evacuations, nor from the concomitant symptoms, enumerated as such, but from a symptom which must have been a characteristic of the disease as observed by them, but which is, if at all, a rare symptom of cholera as observed in the present day, namely, pains in the body as if pricked with *needles*. The pains of cramps are never described by cholera patients of our own times as prickings with needles. Besides, cramps are enumerated by these authorities as a separate symptom of Visuchiká. Hence if Visuchiká was cholera, it was of quite a different type from what we observe now; and it used to occur in the days of CHARAKA and SUSRUTA as isolated cases, that is sporadically, and never with epidemic virulence.

Acknowledgment.

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CHAMOMILLA.

(Translated from the French of Dr. Jousset in L'Art Medical for March 1883.)

This plant is a very important medicament; we employ the field chamomilla, *matricaria parthenium*, belonging to *Senecioideæ*, a sub-family of *compositæ*; it is a close neighbour of the Roman chamomilla.

Chamomilla was traditionally employed in diseases of child-bed, in dysmenorrhœa, and in intermittent fever: its names of *matricaria* and *parthenium* recall to mind its properties. Hahnemann in his pathogenesis has extended and proved these indications.

Chamomilla produces moral symptoms which are principally characterised by an impressionability, such that the patients cannot suffer the least pain. Lamentations, cries, sobbings, rage, despair accompany all their sufferings.

Infants manifest this impressionability by weeping and tossing; they utter piteous cries when one refuse them what they wish to have; they constantly wish to be carried upon the arm, and to change place continually. This state of anxiety and of agitation is accompanied with tremblings, palpitations, flushes of heat, redness of the face, often unilateral, sweat of the face and of the palms; sometimes these sweats are cold.

Chamomilla produces impulses of anger, fear with trembling, ill humour, taciturnity and dulness. Transient delirium sometimes accompany febrile movements, as we shall see further on. Chamomilla produces a sort of stupefaction and torpor of the intellectual faculties.

Chamomilla produces even a sort of aphasia.

The diurnal somnolence, pushed to the point of falling asleep during eating, is coincident with insomnia more or less complete in the night.

Sleep is troubled with groans, cries, snorings, with cold or hot sweat of the forehead, fright, wakings, and often extremely lucid dreams.

Chamomilla produces real somnambulism.

The convulsive troubles of the motive sphere produced by chamomilla may correspond to four types:

1. *Eclampsia*, clonic convulsions of the muscles of the face and eyes; alternate rising and falling of the legs; coma and stertor; attack of general rigidity; alternation of redness and paleness of the face;

2. *Catalepsy*; attack of rigidity with the immobility of a statue.

3. Rhythmic movements of the head and of the limbs as in chorea.

4. Cramps.

Chamomilla produces rather a sensation of paralysis than a real one, as remarked by Hahnemann. This sensation is always accompanied by a drawing pain

Numbness in the limbs and in the extremities is often produced by *chamomilla*. *Chamomilla* produces an excessive susceptibility to pain with tendency to syncope.

The pains of *chamomilla* are especially of a tractive (drawing) nature, seated deep in the periosteum, the bones, and the joints; often the pains change place.

Circumscribed spots of insensibility.

Sensation of fatigue going up to fainting.

The syndromes of *chamomilla* are syncope, fainting and febrile movements. The febrile symptoms are sufficiently important, and the medicament was formerly employed in intermittent fever. The attack commences with shivering often accompanied with pain, with lumbago. It is followed by great heat with thirst and sleeplessness; it begins in the evening.

The coldness is icy, with chilliness as soon as the patient uncovers himself; it coincides very suddenly with redness and heat of the cheeks, and sometimes of one alone. Thirst may exist during chilliness.

The heat is very great with redness of both the cheeks, sometimes of one only. The heat is accompanied with a sensation of burning in the eyes. Delirium, stupor, contraction of the pupils, an unusual hunger sometimes accompanying the febrile heat; the thirst is very great.

The sweat is little marked; it is accompanied with thirst.

The vertigo of *chamomilla* is that of anæmia and not that of congestion; Hahnemann has expressly noted it. However, it is produced in the position of sitting and standing, and diminishes

on lying down ; it is accompanied by a sensation of fainting. The cephalalgia of chamomilla occupies all the head or is limited to the frontal or temporal regions ; it is lancinating, stunning and pulsative. The cephalalgia of chamomilla exists and is felt during *sleep* or on waking. Habitually it ceases on rising.

Chamomilla produces blepharitis with nocturnal agglutination of the eyelids.

Amblyopia and narrowing of the field of vision ; glittering before the eyes ; contraction of the pupils.

Chamomilla produces epistaxis.

The face is habitually red, the redness appears sometimes in one cheek only.

Chamomilla has a great action on the teeth. The toothache is excessive and is carried to exasperation ; it is often accompanied with inflammation, it is therefore due to alveolo-dental periostitis. The pains in the teeth are very great in the night ; they increase after meal and especially after hot beverages and coffee ; they diminish sometimes during eating ; they increase in a warm room.

Want of appetite is a very marked feature in the pathogenesis of chamomilla ; it is characterised by distaste, repugnance, and a sort of chilliness.

The food stops at the pit of the throat, with a sensation of fulness at the sight of food. Coffee is particularly distasteful and excites nausea and also vomiting.

The eructations are acid, and aggravate the pains which already exist.

The vomited matters are acid and consist of the ingesta ; the nausea which precedes the vomiting is accompanied by a feeling of fainting ; sometimes both pass away by eating. Paroxysms of cramp in the stomach with enormous sweat and cries of anxiety ; the face is usually red.

The symptoms produced by chamomilla in the abdomen are colic and diarrhœa ; the constipation is an exceptional symptom, and probably a secondary effect. The colic is excessively painful, and is accompanied by the development of large quantities of gas ; from which result tympanites and noisy borborygmi ; the colic of chamomilla is accompanied by anxiety and nausea. The diarrhœa is accompanied by griping which forces one to bend

double; the stools are pale or green, watery, and consist of undigested substances. However, painless diarrhoea has also been noted.

The emission of urine is accompanied by anxiety; the bladder is wanting in energy and the urine flows in a slender stream; at other times there is incontinence of urine and burning heat in the neck of the bladder and the urethral canal during emission of urine.

Chamomilla produces *metrorrhagia*, with uterine colic like labor-pains as in delivery, and expulsion of clots. These symptoms recall to mind *abortion* and *dysmenorrhœa* with very copious menses. Chamomilla produces *suppression of the menses* with colic like pains of labor, swelling of the abdomen, and pain in the pit of the stomach.

Chamomilla again produces pains which recall to mind *metritis*, pains in the kidneys which extend from the sacrum into the thighs; paralytic pains.

Chamomilla produces symptoms of acute catarrh, coryza with stuffing of the nose, hoarseness caused by a viscous mucus which rattles in the superior part of the trachea; dry cough, with difficult expectoration of viscid mucus, cough excited by tickling or by mucus detached in the trachea; cough with constriction of the larynx and suffocation; cough during sleep.

Chamomilla produces palpitation with anxiety, trembling and pains as if the heart was pressed down.

Faintings and syncope are the frequent symptoms produced by this medicament.

Chamomilla produces in the limbs drawing pains which extend from the root of the limb to its extremity, and are deep seated in the periosteum or in the bone. At the same time the limbs are readily the seat of numbness.

Chamomilla produces, moreover, cramps in the calves.

The symptoms produced by chamomilla, which we have just enumerated before you, permit us to place the indications of the medicament as applied to the treatment of diseases.

Before studying the particular cases to which chamomilla is suitable, we would say that it has a very decided action in the painful affections which present characters peculiar to the pain produced by them.

Puerperal fever demands very often for its treatment sulphate of quinine and aconite; however, chamomilla may be employed if the febrile movement presents the characters which we have described above, if there is diarrhœa, suppression of the lacteal secretion, and profuse lochia.

Chamomilla used to be administered in *intermittent fevers* before the discovery of Cinchona. It was indicated by quotidian paroxysms presenting three stages, by thirst during heat, in short, by the characters which we have described above.

In *hysteria* it is indicated by attacks of convulsion, extreme impressionability, tendency to syncope; it is principally to the treatment of extacy, catalepsy and lethargy that it has been applied.

Chamomilla is the most important medicament in the *accidents of dentition*; it is indicated by acute pains with agitation, unilateral redness of the face. By alternating chamomilla and belladonna, we may hope to prevent the consecutive *eclampsia*.

The *diarrhœa of dentition*, with colic, cries, with stools like stirred up eggs and spinach, indicates chamomilla; it is suitable also to the diarrhœa of adults when it is accompanied with colic and flatulence.

All the *neuralgias* may claim the usage of this medicament when the pains are excessive, when the patient can ill bear the pains, becomes despondent, and utters cries and sobs; benefit may in general be derived by alternating it with belladonna.

Odontalgia and otalgia, when the pains have the preceding characters, are often successfully modified by employing this medicament.

Gastralgia may be modified, according to the case, by chamomilla, belladonna or ignatia; the cases which are under the dependence of chamomilla are those in which the pains assume the neuralgic character above stated, and are accompanied with swelling, sweat and redness of the face.

Enteralgia, which presents the same characters, may be benefited by the same treatment.

Hepatic and nephritic colic may present characteristic pains; but we now prefer the use of hypodermic injections of morphia which rapidly calm the pains.

In *coryza*, chamomilla corresponds to a complication which I have only observed among females; it is an atrocious, exasperating pain, seated in the frontal and maxillary sinuses.

In cold, chamomilla corresponds to a capricious, concussive cough, causing a pain in the abdomen; the cough is excited by tickling in the pit of the throat and by deep inspirations.

As expressed by its common name of *matricaria*, chamomilla is indicated in several affections of the uterus. It has been prescribed empirically to facilitate delivery. It is indicated in *metrorrhagia*, whether during abortion, after delivery, or in simple *menorrhagia*. In order that chamomilla may be indicated in these cases, it is necessary that the element of pain should predominate. The blood is red and in clots. The patient has yawning, slight chills alternating with heat, redness of the face or of one cheek, alternating with pallor, anguish, agitation and diarrhœa.

I have prescribed chamomilla with success in the beginning of abortion, before the flow of blood, when there exist colic and nervous symptoms before described.

In *metritis*, especially *puerperal*, chamomilla is sometimes indicated by the element of pain.

Chamomilla is a traditional medicament in *dysmenorrhœa*. The excessive pains seated in the abdomen, the slight chills, the vomiting, the diarrhœa, the syncope individualise this medicament.

The affections of the breasts of nursing women, the inflammation of the breast, the chaps of the *nipples*, and even *phlegmon* of the breast, sometimes demand the employment of chamomilla as a medicament of the first period only, or alternated with belladonna. Empirically chamomilla has been prescribed internally and externally, not only in suppurating phlegmons of the breast, but even in those of other regions.

Chamomilla acts especially in high dilutions, from the 6th to the 30th. Richard Hughes himself, whom we cannot suspect of having any predilection for infinitesimals, has recognized this fact, and especially recommended the 12th dilution.

In infusion chamomilla has been employed with success in * dressing wounds which suppurate.

चरकसंहिता ।

रक्तस्थानम् ।

सप्तमोऽध्यायः ।

गात्रेष्वायस्यमानेषु तेषु रक्तं विभज्यते ।
 तङ्गालेषु विभक्तं हि मांसीभवति मर्द्दनात् ॥ ३२ ॥
 स्रोतःसु रङ्गो वायुर्यः सचापि प्रतिसार्यते ।
 मासते प्रगुणीभूते सुखं गात्रेषु जायते ॥ ३३ ॥
 कान्तवर्णत्वमङ्गानां सुविभक्तत्वमेव च ।
 मद्गुह्योच्छ्वासनिःश्वासचेष्टत्वमयने रक्षिः ॥ ३४ ॥

CHARAKA SANHITA.

CHAP. 7. NAVEGANDHARANIYA.

32. When the body becomes thus exercised, the blood is equally distributed, and the blood thus distributed becomes converted into muscle by rubbing.

33. And even the wind, that has become incarcerated in the vessels, is freely circulated. The wind, thus put in proper condition, gives rise to a sense of ease in the body.

34. The limbs acquire lovely complexion and become symmetrically developed. The acts of expiration and inspiration and the movements of the limbs become easy. And the appetite for food increases.

लाभं कर्म्मसामर्थ्यं स्वैर्यं क्लेशसहिष्णुता ।

दोषक्षयोऽग्निदृष्टिश्च व्यायामादुपजायते ॥ ३५ ॥

कमदङ्गता सदारोन्मथरीरबलपुष्टिदः ।

आरोन्मथलपुष्टिन्नः स एवाक्रमसेवितः ॥ ३६ ॥

स्वेदागमः श्वासदृष्टिर्गात्रायाश्चातिलाभवम् ।

हृद्दयानुपरोधश्च इति व्यायामलक्षणम् ॥ ३७ ॥

अमः लाभः क्षयशृष्णा रक्तपित्तं प्रतानकः ।

अतिव्यायामतः काशो ञ्चरञ्चर्दिश्च जायते ॥ ३८ ॥

अरोगी जीर्णभक्तश्च नरो व्यायाममाचरेत् ।

नातिपीडाकरो देहे बलवान् श्लेष्मके गदे ॥ ३९ ॥

35. Lightness, capacity for work, firmness, endurance, purification of the faults in the humors, and increased appetite are the result of exercise.

36. Exercise, gradually increased, gives rise to freedom from disease, increase of strength, and nutrition of the body. But if practised irregularly, it is destructive of health, strength, and nutrition.

37. Perspiration, increase of respiration, increased lightness of the body, and freedom from any impediment in the chest,—these are the signs of proper exercise.

38. Excessive exercise gives rise to lassitude of mind and body, exhaustion, thirst, hæmorrhages, epilepsy, cough, fever, vomiting.

39. One should practise gymnastics when free from disease, and when the food has undergone digestion. When the body is suffering from diseases of the phlegm, even violent exercise may not be very hurtful.

३५ दुःखसहिष्णुतेरितिद्वितीयः पाठः ।

- व्यायामोष्णशरीरत्वात् स्वेदाच्च प्रविलायिते ।
 श्लेष्मणि श्लेष्मका रोगा न भवन्ति शरीरिणः ॥ ४० ॥
- अजीर्णानस्वामरसो व्यायामेनाकुलीकृतः ।
 देहे विसर्पञ्जनयेद्रूपित्तमयान् गदान् ॥ ४१ ॥
- अतिव्यायामभारार्थकर्मभिश्चातिकथिताः ।
 क्रोधशोकमयायासैः क्लान्ता ये चापि मानवाः ॥ ४२ ॥
- वालट्टाः श्रवाताश्च ये चोच्चैर्बहुभाषकाः ।
 ते वर्जयेद्युर्व्यायामं तृषिताः क्षुधिताश्च ये ॥ ४३ ॥
- येतिव्यायामतो रोगा मानवानां भवन्ति हि ।
 दृढमांसरसक्षीरवस्त्रिभिक्षापुपाचरेत् ॥ ४४ ॥

40. Exercise, by developing heat and by causing perspiration, destroys phlegm and thus prevents diseases due to it.

41. But exercise, in persons whose food has not been digested, disturbs the chyme, and diseases of the blood and bile arise from its dispersion in the body.

42. Those, who have become enfeebled by excessive exercise, by carrying heavy weights, or by long journeys on foot; as also those, who have become exhausted by anger, grief, fear, exertion;

43. As also children and old people, and those who have excess of wind, and those who have to talk loud and long, as well as those who are thirsty and hungry; (all these) should avoid exercise.

44. The diseases, which arise from excessive exercise, should be treated with ghrita, juice of meat, milk, and injections.

व्यायामहास्यभाष्याध्वप्रात्यघर्म्मप्रजागरान् ।
नोचितानपि सेवेत बुद्धिमानतिमात्रतः ॥ ४५ ॥

एतानेवंविधांश्चान्यान् योऽतिमात्रं निषेवते ।
गजः सिंहमिवाकर्षणं सहस्रा स विनश्यति ॥ ४६ ॥

उचितादहिताङ्गीभान् क्रमयो विरमेन्नरः ।
हितं क्रमेण सेवेत क्रमश्चालोपदिश्यते ॥ ४७ ॥

45. Exercise, laughter, talking, walking, sexual intercourse, keeping nights,—these, though proper in themselves, should never exceed a certain limit.

46. He, who does these and other similar acts in excess, meets with sudden death, just like an elephant who attacks a lion.

47. The intelligent man should give up gradually any thing injurious that has become a habit, and should only gradually accustom himself to anything that is beneficial. Of this gradual process I shall speak below.

(To be continued.)

EDITOR'S NOTES.

SKIM MILK IN DIABETES.

Dr. Church, ("Experience with Diabetes" in *Medical Counselor* for April 1st) attaches a very high importance to the skim milk treatment of the disease. The quantity to be taken according to his advice is from seven to ten pints daily, with one of the following medicines: "uranium nitrat., phosphoric acid, helonias, plumbum, or any other remedy indicated by the totality of symptoms." He then advises the continuance of this treatment until the patient's health and the cure are firmly established, beyond the possibility of a relapse. But here is the difficulty. How to determine the fixed time for "the possibility of a relapse?"

NOVEL USE OF PEPSIN.

We learn from the *Medical Counselor* for April 1st, that the following extraordinary use of the solvent action of pepsin have been made by Dr. Hallmann and Rosenthal:

In a case of hæmaturia, the catheter having failed to empty the bladder, Dr. Hallmann injected into it an aqueous solution of sixteen grains of pepsin, and after a few hours "a dark, viscid, fœtid fluid escaped through the catheter."

In a very grave case of diphtheria, under the case of Dr. Rosenthal, the membranous exudation was rapidly dissolved by the local application of an acid concentrated solution of pepsin.

This local use of pepsin is altogether a novel one, and deserves further trial.

MORTALITY IN THE CAPITALS OF EUROPE.

The following figures show the ratio of mortality per thousand of population in the capitals of Europe in the first quarter of the current year:

London, 22·1; Berlin, 24·3; Brussels, 25·7; Paris, 27·3; Stockholm, 27·8; Vienna, 31·1; Madrid, 36·4; St. Petersburg, 40·6.

Thus London, with a population of nearly four millions, was the healthiest of all the capitals of Europe, notwithstanding that three epidemics—measles, scarlatina, and pertussis—occasioned in the period in question a number of deaths which was relatively considerable.

St. Petersburg was the unhealthiest, and the death-rate was swollen by typhoid fever and diphtheria which had prevailed in great intensity. In Berlin the death-rate was increased by croup, in Madrid by measles.

SYPHILIS IN ANIMALS.

Prof. Neumann of Vienna, with a view to ascertain the communicability of syphilis to animals, made experiments on three apes, two horses, a hare, a rabbit, a guinea-pig, a marten, a rat, and a cat, taking care to prevent putrefaction and ulceration by the use of clean instruments and by the performance of immediate inoculation from the patient to the animal. In these experiments the discharge from hard chancres, from syphilitic pappules, from soft chancres, was used. Sometimes the hard sore itself was cut out and at once inserted in the subcutaneous tissue of an animal. The result was either nil, or only local signs of an ordinary inflammation. The conclusion therefore arrived at by Prof. Neumann is that syphilis is a disease peculiar to man, and that the disease was not transmissible to the lower animals. Prof. Müller, of the Veterinary College, Vienna, had, however, seen dogs affected with condylomatous growths on the penis, which sometimes were transmitted to the female by intercourse.

CHARACTERISTICS OF ABIES NIGRA.

Dr. H. N. Guernsey gives the following characteristic symptoms of *Abies Nigra*, which, he says, if present in any case in association with other symptoms, such as belong to dysuria, constipation, dysmenorrhœa, leucorrhœa, &c., will cause them to disappear gradually after the characteristic has vanished :

1. Total loss of appetite in the morning, but great craving for food at noon and at night.

2. Sensation of an undigested hard-boiled egg in the stomach. It is not a sensation of weight or heaviness, but as of something hard, which hurts ; it may be three-cornered, or any shape, by sensation ; but it hurts *constantly*.

3. Continual distressing constriction just above the pit of the stomach, as if every thing were knotted up, or as if a hard lump of undigested food remained there.

4. A painful sensation as if something were lodged in the chest, mostly on the right side, and had to be coughed up, though no amount of coughing avails, but water-brash and increased distress, which after a time subsides to be again renewed, time after time, until *Abies nig.* comes to the rescue.

SUSPENSION OF VITALITY FROM THE HYPODERMIC INJECTION
OF MORPHIA AND ATROPINE.

We give the particulars of the following interesting case of prolonged suspension of vitality after the use of the hypodermic injection of morphia and atropine from the *Medical Times and Gaz.* of May 26.

A woman, aged 37, who had the left ovary removed on March 20, 1882, in the Liverpool Work House Hospital, had on the 24th a hypodermic injection of morphia and atropine, three-fifths of a grain of the former and one-fortieth of a grain of the latter, a little after 12 o'clock midday. At 1 p. m. She became livid, breathless, pulseless and insensible. A head nurse, in ignorance of the previous injection, injected into the arm of the comatose patient, five minims more of the same solution. By 4 p. m. she was as if dead, there was just a faint flicker in the cardiac region. Her bed was at once removed into the fresh air, and artificial respiration, galvanism, frictions and warmth were resorted to with vigor. Up to 5-20 p. m., only a spasmodic breath every quarter of an hour and a feeble beat of the heart were observed. At 6 p. m., the respirations became automatic, but only at the rate of 4 per minute; the pulse was irregular and difficult to feel. At 7 p. m., some coffee being poured into her mouth she suddenly fell back as if dead, respiration and circulation again stopping. On being turned over on her side, so that the head being out of the bed, and being slapped on the back, the coffee from her mouth and trachea was discharged. In an hour the respiratory movements were performed spontaneously at the old rate of 4 or 5 in a minute. At 9 p. m., the patient was just a little warmer, the pulse stronger and more regular. Shortly after 9, she opened her eyes, looked around her, astonished at the number of nurses around her bed; the pulse and the respiration became at once natural. She declared she had been in heaven, so delicious had her sensations been, and was inclined to be angry for having been disturbed. During the next two hours she was rather restless, but immediately fell into a sleep which lasted the whole night.

CLINICAL RECORD.

Cases Illustrative of Infantile Cholera.

BY BABU AKSHAYA KUMAR DATTA, L.M.S.

As regards the character of stools in infantile cholera, I described before, that they were usually "large in quantity, having an extremely fœtid and nauseating odor, at first bilious and somewhat fœulent, but gradually lose color and consistency and appear either perfectly colorless or resembling the urine of the child soaking through the bed-clothes." But it is not unfrequently that we meet with the choleraic stools.

Case 1. In February 1882, I was called to see an infant, four months old, suffering from "bloody flux." It was being treated by a *Kaviraj* as a case of genuine acute dysentery. I found the infant extremely emaciated, its eyes sunk deep in their sockets, voice almost inaudible; lips, mouth and tongue dry and coated with a white chalky substance. Body hot to the feel, temp. in the right axilla 101·F. although there was a little perspiration all over the trunk and face; abdomen tympanitic, features dry and pinched up, the whole body seemed to have dwindled into a shrivelled mass. On inquiry I learned that the infant was suffering for the last four days. The disease at first commenced with violent watery stools and vomiting. The guardian did not then notice any high or abnormal body-heat; on the second day of attack the stools diminished very little in quantity if not in frequency and consistency, but their character was altered, pure blood having been passed with the stools, with no mucus at all.—As said before, the infant was under the treatment of a *Kaviraj* for the last three days. The vomiting and the quantity as well as the number of stools had diminished a little, pure blood was no longer found with them, but they had assumed a sanious character. The stools were passed involuntarily, urine was scanty and high colored. Pulse feeble but quick and feverish. Beyond these changes no other improvement followed, on the contrary the infant was rapidly fading away. On examining a stool which the infant chanced to pass in my presence, I noticed its thin and sanguinolent character, having no mucus or fœulent matter, and the infant seemed to have felt no pain or griping in passing it.

I at once recognised the nature of the disease, and adopted the following treatment accordingly :

R. Tinct. Aconit. \mathfrak{m} i

Aqua destillata $\mathfrak{ʒ}$ i. Divide into 12 doses,

one dose every two hours.

Body to be sponged with cold water, a piece of rag moistened with cold water to be applied over the whole of the abdominal wall. Diet : plain barley water, mother's milk as little as possible.

On my visit the next day, I saw the patient perspiring a little, stools scanty and rather thick, entirely devoid of blood or blood stains. Temperature 100°F, abdomen quite in a normal state. The child took only four doses of the medicine prescribed on the previous day.

I discontinued the cold application over the abdomen, as it was no longer necessary, but ordered the same medicine to be taken, one dose every four hours.

On the third day to my utter astonishment I found the infant to be nearly all right; the extreme emaciated condition of the body gradually yielded to *China* ʒo.

Remarks.

It should be here observed that pure dysentery is but a very rare disease of infancy; its chief symptoms, namely, tenesmus, muco-sanguineous evacuations, tormina and abdominal tenderness, so common in adult life or in childhood, being almost entirely absent or occasionally but feebly manifested in infant life. Yet in our country it is oftener met with amongst infants than is generally seen in Europe or America, where it affects infants, especially during a severe epidemic of dysentery. In Bengal, even the white variety of dysentery is more usually met with than the purely sanguineous or the muco-sanguinolent one amongst infants. The case described above could not possibly be confounded with dysentery proper; for, at least, some of the main factors which constitute real dysentery, namely, the presence of mucus and muco-sanguineous matters with the stools, accompanied with straining and griping of the abdomen, were entirely absent in this case. Besides, the history of the case, the rapid emaciation, the nature and character of the stools and vomiting, &c., were the characteristic signs which could not leave the least shadow of doubt in the mind as to the true and unmistakable nature of the disease here diagnosed.

Case 2. It was in July 1882, I was sent for to see an infant five months old suffering from choleraic disease. On my coming in I saw the child in a perfectly collapsed state. It was at first put under

the treatment of an allopathic physician, who from the commencement diagnosed it as a case of remittent fever complicated with diarrhoea, and treated it as such, but to no purpose. The worst symptoms of cholera set in quickly but gradually, and the case was pronounced almost hopeless. On the evening of the third day of attack I saw the infant for the first time. It was very much emaciated, cold, and covered all over with clammy perspiration. Eyes sunk, lips pale and dry, hands and feet shrivelled, cold and blue, passed no water since morning. Thirst urgent, vomiting violent, the vomited matters consisted of thin mucus and water, abdomen tympanitic, pulse almost imperceptible at the wrist, respiration shallow and hard, and the infant was in a semi-comatose state, stools frequent and watery, and passed involuntarily.

Treatment — *Veratrum Alb.* 30 and *Ars.* 30 alternately, every hour, $\frac{1}{3}$ of a drop in water. At 12 o'clock in the night I again visited the child, which seemed to have improved a little. Had no urine. I directed the same medicines to be given alternately at two hours' interval. At 6 A. M. next morning, the child sunk again. I stopped *Veratrum* and *Arsenicum*, and ordered *Carb. veg.* 12, every half an hour. After three hours I revisited the infant, which was much in the same state as before.

I then gave the following prescription :

R. Tinct. Aconit. $\mathfrak{m}\text{i}$

Aqua destillata. $\mathfrak{z}\text{i}$.

To be made into 12 doses : 1st dose every half an hour.

Body to be wrapped up in a wet sheet. After three hours more, unmistakable signs of reaction began to appear. The infant awoke from the comatose condition, body became gradually hot, passed water twice, stools and vomiting diminished in quantity and frequency. I gave the child a little nourishment, and directed the medicine (*Acon.*) to be given every 3 hrs. The infant gradually rallied and recovered.

Case 3. It sometimes happens that, when an infant is passing into a state of convalescence from some acute febrile attack, or simple or inflammatory diarrhoea, it is all on a sudden taken ill with severe vomiting and purging without any apparent cause, which not unfrequently terminate in a fatal result, if proper and effective measures are not adopted quickly. As a rule, these cases are very abrupt in their course and termination.

In the month of September 1882, an infant, about a year old, who had lately recovered from an attack of remittent fever, became

suddenly attacked with infantile cholera. In the course of six hours the child had passed loose watery stools without number and vomited as often, which, as might easily be imagined, reduced the child to an almost hopeless condition. The parents simply informed me that the child had been exposed a little the previous night to the draught of the windows, which were allowed to remain open for certain hours. I at once began with Aconite.

R. Tinct. Aconit. mi

• Aqua. Destillata. $\text{ʒ}\text{i}$; mix, make 8 doses, one dose every half an hour, and a cold compress over the abdomen. After using three doses the medicine took wonderful effect, the number of stools was considerably reduced. As for the vomiting, although its fury had abated a little, it continued to trouble, and exhausted, the child.

For this I tried successively several drugs but with only temporary relief; at last I proscribed the following drug, two doses of which produced permanent good result:

R. Hydrarg. sub-chlor. gr. $\frac{1}{2}$

Sac. Lactis gr. v .

Rub thoroughly together for 20 minutes and divide into 10 powders, 1 powder for a dose to be placed dry on the tongue every hour.

The child then gradually improved under the influence of *China* 12, $\frac{1}{2}$ a drop, t. d.

We often meet with another class of cases of infantile cholera in which relapses are of frequent occurrence, that is, in which patients, after having apparently recovered from the most urgent and threatening symptoms, again fall back with the same symptoms returned with greater virulence. In these cases the prognosis as a rule is always unfavorable. We are really quite in the dark as regards the true cause of such relapses, but possibly they depend upon an inherent weakness in the vital constituents of the body.

Case 4. At the latter end of January of this year, I had to treat an infant, only three months old, suffering from cholera infantum: From its birth the infant was of a very delicate constitution and its mother had been suffering from chronic dyspepsia. On examining the mother's milk I found that it gave a slightly acid reaction. The infant for some days previous was suffering from indigestion and diarrhœa, with a slightly febrile attack in the evening. All on a

sudden the child was attacked with severe vomiting and purging. I was called in the evening; on examining the stools, I found them decidedly bilious, containing shreds of mucus, and a white flocculent matter, probably albuminous, the products of undigested milk. The temperature of the body was somewhat higher than normal.

Treatment: *Nux vomica* 30, $\frac{1}{4}$ drop in water, every hour. I stopped the mother's milk. After taking six doses, the infant seemed to have improved a good deal, vomiting and purging diminished in number and quantity. The stools became a little thicker, containing small quantities of yellowish fæculent matter. I ordered the same medicine to be continued every three hours. Next morning on visiting the child I found, to my utter dismay, all the violent symptoms returned with increased vigor; on enquiry I learned that the infant had taken to the breast of the mother on the previous night. *Nux vom.* 12, every two hours, and plain barley-water. But this did not avail, I saw the patient in the afternoon almost in a collapsed state, stools increased in number and quantity, and were of a purely watery character.

I at once prescribed *Aconite*, and this gave an admirable result. The patient kept well all the night and the day following when I stopped medicine; next day afternoon, there was fresh relapse of the disease. *Aconite*, *Arsenic*, *Veratrum*, *Carbo*, and *China*, were successively tried and the symptoms gradually yielded to *China*.

On my visiting the child next day I observed some other complications had begun to appear, namely, corneitis, thrush in the cavity of the mouth and tongue, bronchial catarrh, high temperature of the body and a tympanitic condition of the abdomen, stools frequent but less in quantity, bilious and slimy. I prescribed *China* and *Ipecac.* to be given alternately. On the day following I saw the case in consultation with my friend Babu Jadu Nath Mookerjee. After carefully weighing all the symptoms we prescribed *Calc. Carb.* 30 in alternation with *Borax* 30th. A little goat's milk diluted with water was ordered as diet, as the child was rapidly fading away. This mode of treatment gave excellent results for three consecutive days. But again there was a fresh relapse. Complications, one after another, began to manifest themselves, vitality seemed to be ebbing away, the infant became reduced to an almost dry and shrunken mass, sloughing of the cornea and mouth set in with high fever, and the infant ultimately succumbed to the effects of capillary bronchitis.

THERAPEUTICS OF CONSTIPATION, DIARRHŒA,
DYSENTERY, AND CHOLERA.

50. CAPSICUM.

Constipation :

1. Constipation as if there was too much heat in the abdomen.

Diarrhœa :

1. Immediately D., and shortly afterwards, ineffectual urging to st.
2. A drawing and turning over in the abdomen without and with diarrhœa.
3. Smarting, shooting pain in the anus, with the diarrhœaic st.
4. As soon as he has drunk something he feels as if D. would come on, but every time only a little is passed.

Dysentery :

1. Mucous D. with tenesmus.
2. St., immediately after eating, with redness of the cheeks.
3. After drinking he was obliged to go to st., though he is costive, but only a little mucus is passed.
4. Small sts., consisting of nothing but mucus.
5. Small sts., of bloody mucus.
6. After some flatulent colic in the hypogastrium, small frequent sts., which consist of mucus sometimes intermixed with blood, and cause tenesmus.
7. Dysentery, tenesmus and straggury; pain aggravates even from a current of air, even if warm. (Hg.)
8. Discharge of blood by the anus.
9. Along with cutting colic twisting round the navel, diarrhœaic evacuations of viscid mucus, sometimes mingled with black blood; after every st. tfirst, and after every drink, shuddering.

Aggravation :

1. After drinking, after eating.
2. (Of pains) By currents of air, even warm air.

Before St:

1. Cutting colic; flatulent colic.
2. Twisting pains about umbilicus.

During St :

1. Tenesmus, cutting and twisting.
2. Smarting and shooting pain in the anus.
3. Burning in lower part of rectum, with sensation of rawness and throbbing, and pains in the back. (Bell.)
4. Burning along the sacrum. (Bell.)

After St :

1. Tenesmus. Burning at anus.
2. Thirst, drinking causes shuddering.
3. Drawing pains in back.

Rectum and Anus :

1. Along with pressive pain in the bowels, he has urging to st., but he is costive.

2. Tenesmus.
3. Burning pain and itching in the anus.
4. Blind hæmorrhoids ; vascular knots at the anus, which cause severe pain during the evacuation.
5. Piles at the anus, which sometimes itch.

General Symptoms :

1. He is of contented disposition, is jocular and sings, and yet on the slightest cause he is disposed to get angry.
2. Home sickness with red cheeks and sleeplessness.
3. All the senses are more acute.
4. When coughing or moving the head and when walking, headache, as if the skull would burst.
5. Chaps on the lips ; fissured lips.
6. Viscid mucus in the mouth.
7. Watery insipid taste in the mouth, then heart-burn ; astringent, sourish taste ; sour taste ; taste in the mouth as from foul water ; insipid, qualmish, earthy taste.
8. Eruption of pimples on the inside of the cheeks, and on the tongue (aphthæ).
9. Eructation from the stomach only when walking, and at every eructation a stitch in the side ; when sitting, no eructations and hence no stitch.
10. Thirstlessness.
11. Longing for coffee. . Nausea with inclination to vomit, and spitting of saliva after drinking coffee.
12. After a meal, fulness and anxiety in the chest ; thereafter sour eructation or heart-burn ; finally thin st.
13. After a meal (at noon), immediately st., with redness of the cheeks.
14. Sensation as if the abdomen was distended almost to bursting, whereby the breathing is impeded to suffocation.
15. Aching pinching pain in the belly immediately after a meal like incarcerated flatulence. Much flatulence.
16. An aching tension in the abdomen, especially in the epigastric region, between the scrobiculus cordis and navel, which is particularly increased by movement, at the same time with an aching tension in the lower part of the back.
17. Strangury, tenesmus of the neck of the bladder ; he has urging to frequent, almost ineffectual urination.
18. Frequent urging to urinate chiefly when sitting, not when walking.
19. Purulent discharge from urethra. The gonorrhœa becomes yellow and thick.
20. Coldness of the scrotum and impotence.

Remarks : Dr. Bell extols **causticum** as “ one of the royal remedies for dysentery ;” if so, it is one of the most neglected remedies also. The stools of **capsicum** are dysenteric, and rarely, if at all, truly diarrhœaic. The evacuations, which have been recorded as diarrhœaic were in almost every instance slimy. Among the accompaniments

the burning at the anus during and after stool, and the strangury with burning during micturition are characteristic, and indicate the drug. The symptom, "after every stool thirst, and after every drink shuddering," is very characteristic and peculiar, and whenever met with, would unerringly point to **capsicum**, but the symptom is so very rarely met with, that if we have to depend upon it for the selection of **capsicum**, we shall have little occasion to use it.

In using **capsicum** we should bear in mind what Hahnemann has said regarding it, viz., that "the diseases curable by **capsicum** are rarely met with in persons of tense fibre."

51. CARBO ANIMALIS.

Constipation :

1. After 24 hours only a scanty st., hard and in small pieces.
2. St., scanty and light colored.
3. Scanty; delayed st., for several days.
4. Very hard st., preceded by shivering in the head as though dashed with cold water.
5. The first part of the st. was hard and difficult to pass, with a feeling as though it were too little and there would be a little more, which the rectum had not power enough to evacuate.
6. Hard crumbling st., which is passed only with great exertion as from an inactivity of the abdominal muscles, with oppression of breath in the evening.
7. At first a hard, then a soft st., with burning in the anus.
8. A portion of a tape worm passed with a hard st.
9. Frequent urging to st., which is passed with great difficulty ; is hard and streaked with blood.
10. Much urging to st., every time some st. is passed, though with great difficulty.

Diarrhœa :

1. D., preceded by griping in the abdomen, with burning in the anus.
2. Four sts. during the day, preceded by pain in the abdomen.
3. Soft st., preceded by dragging in the pubes.
4. Soft, green st., preceded and accompanied by pains in the abdomen.
5. Liquid sts., followed by straining.

Dysentery :

1. Soft st., with mucus like coagulated albumen.
2. Passage of blood during st.

Aggravation :

1. Evening ; night, after midnight.

Before St :

1. Griping in the abdomen.
2. A drawing from the anus through the pudendum.
3. Shivering in the head as though dashed with cold water.

During St :

1. Pain in the abdomen.

2. Burning in the anus.
3. Severe cutting in the hæmorrhoids.
4. Pains like needle pricks in the anus.
5. Tearing from the pudendum internally up into the abdomen.
6. Pain in the sacrum.

After St :

1. Straining.
2. Gripping.
3. Urging to urinate.
4. A great weakness and pain in the bowels as if they were screwed together.

Rectum and Anus :

1. Rumbling in the rectum.
2. Severe burning in the rectum, in the evening.
3. Frequent pressure on the rectum as for st., but only flatus passed, and the pressure returned again immediately. Frequent but ineffectual urging to st., in the lower part of the rectum.
4. Large hæmorrhoids appear with burning pain. Great swelling of the hæmorrhoidal vessels, which are the seat of burning pains when walking.
5. A sticky odourless moisture passes out of the rectum.
6. Painful contraction of the anus. Burning in the anus.
7. A boil appears on the anus.
8. Tearing transversely across the os pubes and then through the pudendum to the anus.
9. A bowel protruded, and was painful on walking, on motion and on touch.
10. Soreness of the anus, with moisture in it the whole evening.
11. A sticky odourless moisture exudes in great quantity behind the scrotum from the perinæum.
12. Pinching, biting pain on the perinæum.

General Symptoms :

1. Desire to be alone ; she is sad and reflective ; avoids all conversation.
2. Home sick, especially in the morning, when he felt abandoned.
3. Vertigo : it becomes black before her eyes. Vertigo, with nausea, on rising up after stooping. Vertigo, towards evening ; when she raised up her head all went round in a circle with her ; she must always sit in a stooping posture, and when she rose up she staggered to and fro ; she felt dull in the head as if all objects moved ; while lying all night long she felt nothing of it—but did so in the morning again on getting up.
4. Pain in the vertex, as if the skull had been split or torn asunder, so that she was obliged to hold the head with the hands from fear lest it should fall asunder, also at night, and especially in wet weather.
5. Epistaxis (in the morning when sitting).

6. Great looseness of the teeth, so that he cannot chew the softest food without pain.
7. Vesicles on the tongue, which are painful as if burnt.
8. Blisters in the mouth, which cause burning.
9. Aching in the throat only when swallowing.
10. Bitter, foul or sour taste in the mouth.
11. After eating, aching in the stomach, tightness of the chest, or palpitation of the heart.
12. Eructation, with the taste of food that had been long eaten.
13. Nausea and aversion to tobacco-smoking.
14. Audible rumbling in the abdomen and stomach.
15. Great distension of the abdomen. Flatulence.
16. Pain in the abdomen as if diarrhœa would come on.
17. After drinking (warm milk), rumbling and grumbling in the right hypogastrium sometimes above, sometimes below, with ineffectual desire to discharge flatus.
18. Gripping in the abdomen about the navel with a feeling as if stool would follow. Severe cutting in the abdomen, with frequent urging to stool, and even tenesmus, without passing anything more than wind; from morning till noon.
19. After the stool she had urging to pass urine (which smelt strongly), thereafter she became quite weak, and early drowsy, but after lying down she could not sleep, she jumped up again immediately, and after waking she had ringing in the ears as though she should faint.
20. Pain in the sacrum during stool with distension of the abdomen, extending up into the chest.
21. Increased passage of urine, with frequent urinating at night, when she passed very much more than she had drunk.

Remarks: The stool and rectal symptoms of *carbo animalis* point to it as likely to be a very good remedy in constipation, especially when associated with polyuria or even diabetes, when the urination is more frequent and more profuse at night. *Carbo an.* would deserve a trial even in intestinal obstruction. The pain in the sacrum during stool, with distension of the abdomen extending up to the chest, is a characteristic symptom, and whenever present would emphasize the selection of *carbo an.* The dysenteric symptoms are almost nil. The diarrhœaic symptoms are also scanty, and have not much of characteristic in them. But if the diarrhœaic stools are preceded by gripping in the abdomen and burning in the anus and are followed by straining, and if at the same time they are accompanied by some of the general symptoms characteristic of the drug, it may be useful in such cases.

Gleanings from Contemporary Literature.**MENINGITIS INFANTUM, MENINGITIS TUBERCULOSA,
HYDROCEPHALUS ACUTUS, AND
HYDROCEPHALOID.**

BY C. HERING.

“Miliary tubercles may be developed in the pia mater without a single symptom during life leading us to suspect their existence.”—*Huguenin in Ziemssen*, Vol. 12, p. 518.

But never without symptoms to indicate a medicine.—C. Hg.

The following repertorial arrangement of symptoms incidental to infantile brain troubles was intended by the author, in a more condensed form, to occupy a place in his *Analytical Therapeutics*, Vol. 11. The symptoms are chiefly, if not entirely, such as have stood the test of clinical experience. We submit them for publication in the exact form in which the author put them to paper, but doubtless he would have subjected them to a more careful revision and perhaps enriched the collection before giving it to the profession. The preceding the symptom stands for the tubercular form of the disease. C. B. KNERR.

[Remedies, whose names have been printed in small caps, as *BELLAD.*, are those whose symptoms have been repeatedly verified; those, whose names are in italics, have had their symptoms verified, but less often; those in ordinary roman are either wanting in this verification, or the verifications have been rare.—ED.]

Mind. Seems to be afraid of something; starts as in affright:
Opium.

Child whimpers; ready to cry at any little annoyance; sheds tears copiously: *Pulsat.*

Sudden change of disposition: *Bryon.*

Restlessness, agony: *Acon.*

Child screams out very sharply in its sleep: *Apis.*

Almost constant moaning: *Bellad., Helleb.*

Easily angry, striking about, unwilling to have anybody near them; getting the more angry the more kindly they are spoken to: *Helleb.*

Bites those who hold her: *Stramon.*

Delirium with jerking of the limbs: *Hyosc.*

Pronounces incoherent words now and then: *Stramon.*

Furious delirium and violent pains, after suppressed catarrh: *Bellad.*

Merry delirium: *Stramon.*

Mild delirium; severe shooting and tearing pains after catarrh:
Bryon.

Fearful, distressed: *Acon.*

Fear on awaking: *Zincum.*

Cross and peevish: *Cina.*

Peevish and fretful children: *Calc. phosph.*

Great irritability: *Aeth. cynap., Helleb.*

Child irritable, wishes to be alone: *Nux vom.*

Getting angry easily : *Helleb.*

Sharp, shrill screams during sleep or when awake : *Apis.*

Occasional screaming : *Gratiola.*

Frequent spells of screaming without apparent cause : *Calc. ostr.*

Often screaming and grasping with the hands : *Calc. phosph.*

Delirium and wild fancies : *Act. rac.*

Delirious : *Ignat.*

Picking at the bed clothes : *Cinu, Hyosc.*

Furious deliria with intervals of prostration : *Stramon.*

Delirium ; muttering and indistinct speech : *Hyosc.*

Does not take interest in anything : *Calc. phosph.*

Listless and apathetic ; does not want to do anything ; *does not want to talk ; hardly answers ; sinking back in apathy : *Phosph. ac.*

Apathetic mood : *Gelsem.*

(Screaming with trembling all over) : *Ignat.*

Great loquacity : *Stramon.*

Desire to escape from bed and room ; loud screams, frequent and deafening : *Stramon.*

Cries during sleep : *Zincum.*

Sopor interrupted by piercing shrieks : *Apis.*

Constantly agitated, moaned continually, occasionally a piercing cry, after cholera infantum : *Carbol. ac.*

Sensorium. Head heavy : *Cicuta virosa.*

Heaviness of the head : *Apocyn. cannab., Sulphur.*

Complete apathy : *Helleb.*

Stupor : *Helleb., Apocyn. cannab.*

Screams and howling with starts : *Helleb.*

Vertigo or stupor : *Gelsem.*

Loss of consciousness : *Hyosc.*

Child does not notice surrounding things at all ; stupor : *Stramon.*

Dizziness : *Bryon.*

Recognized no one, after cholera infantum : *Carbol. acid.*

Congestion to the brain, threatening meningitis : *Senna.*

Unconsciousness : *Gratiola.*

Head, Inner. Violent lancinating pains shoot through the head from one side to the other : *Bryon.*

Throbbing, hard aching pressing pains : *Bellad.*

Painful fulness, worse from shaking the head : *Glonoine.*

Great headache : *BELLAD.*

Intense pressing and throbbing in the vertex and occiput : *Actæa racem.*

Feeling as if the brain were too large and as if the top of the head would be forced off : *Actæa racem.*

After several days headache, convulsions : *Gratiola.*

At the commencement pain in occiput, with occasional sharp shrieks : *Apis.*

Great heat in the head : *Cuprum.*

Head, Outer. Cold clammy moisture on the head : *Carbol. acid.*

Profuse sweat about the head at night : *Silic.*

Profuse sweat on the head of a musk-like odor : *Apis.*, *Sulphur.*

Cool head, sweating : *Calc. ostr.*

Dry hot head : *Sulphur.*

Great heat of the head and whole body : *Bellad.*

Fontanelles wide open : *Calc. ostr.* and *Calc. phosph.*

Burning skin with sweat of head and forehead : *Stramon.*

The child often moves his trembling hand to the head : *Helleb.*

Constant relapsing of the head on raising the trunk : *Helleb.*

Child cannot hold up its head : *Aethus. cynap.*

Sutures opened, forehead projecting : *Apocyn. cannab.*

Child strikes head with fists, as though for temporary relief : *Arsen.*

Puts the hands up to the head, which she strikes now and then :
Stramon.

Bores the head backward into the pillow : *Bellad.*

Boring of occiput into the cushion ? *Cicuta.*

Fontanelles unusually large, slow to close : *Calc. ostr.*

Sweats heavily about the head : *Calc. ostr.*

Fontanelles still open or had reopened : *Calc. phosph.*

Skull soft, thin ; crackling noise like paper ; crepitation when
pressed, most on the occiput : *Calc. phosph.*

Cannot hold the head up, moves it from place to place ; it totters :
Calc. phosph.

Inability to hold the head up : *Cuprum, Apis.*

Hair is dry and brittle : *Kali carb.*

During a convulsion the head is jerked up from the pillow and
falls back again : *Stramon.*

Rolls head from side to side : *Zincum.*

Bending back and rolling of the head : *Apis.*

Head sinks involuntarily backwards as if too heavy : *Sulphur.*

Retraction of the head : *Carbol. ac.*

Rolling, tossing of head : *Ignat.*

Constant rolling of head day and night : *Helleb.*

Eyes. Injection of conjunctiva : *Stramon.*

Glittering of eyes : *Stramon.*

Rolling and squinting of eyes : *Bellad.*

Extreme squinting : *Apis, Helleb.*

Strabismus, right convergent, left divergent : *Stramon.*

Rolling of eyeballs without winking : *Apis.*

Eyes roll about in their sockets : *Bryon.*

Eyes at times closed, at others wide open : *Bryon.*

Eyes half open, with sopor : *Opium.*

Eyes half opened with the pupils turned sideways, or upwards and
convulsive movements of the lips : *Helleb.*

Eyes wide open, pupils dilated : *Apis.*

Strabismus : *Helleb.*

Distorted eyes, with diplopia : *Hyosc.*

Dilated pupils : *Helleb., Sulphur, Bellad., Apis.*

Power of vision entirely gone, with dilated pupils ; second stage :
Digit.

Eyes shut, pupils enlarged : *Gratiola.*

Contracted pupils : *Stramon.*

Wild, staring look : *Hyosc., Stramon.*

Pupils dilated and insensible to light : *Aethus. cynap.*

Gave no evidence of seeing when light was thrust towards eyes :
Apis.

Eyes insensible to the approach of objects : *Aethus. cynap.*

Sight of one eye totally lost, the other slightly sensible : *Apocyn.*
cannab.

Sparkling eyes, with red face : *Bellad.*

Injection of the sclerotica : *Bellad.*

Squinting, as it were, from pressure : *Calc. phosph.*

Eyeballs seem distended, protrude somewhat : *Calc. phosph.*

Pain in the eyes : *Act. rac.*

Swelling above the upper eyelids : *Kali carb.*

Rubs face and especially eyes a great deal, as though to relieve
itching : *Squilla.*

Iris insensible to light : *Opium.*

Diplopia : *Apis, Natrum mur.*

Eyes sensitive to light : *Zincum.*

Stupid look, taking no interest in anything ; keeps eyes shut :
Calc. phosph.

Alternate contraction and dilatation of pupils : *Carbol. ac.*

Convulsive motions of eyes and lids : *Iguat.*

Light offends her eyes : *Stramon.*

Eyes closed, on lifting the lids eyes stare upwards : *Cicuta.*

Ears. Suppressed otorrhœa : *Pulsat., Sulphur.*

Ears cold : *Calc. phosph.*

Hearing inordinately acute : *Opium.*

Loss of hearing : *Phosph.*

Eruptions behind the ears dried up : *Sulphur.*

No evidence of hearing : *Apis.*

Nose. Frequent rubbing of the nose : *Helleb.*

Nostrils dirty and dry : *Helleb.*

Dry nostrils : *Helleb.*

Suppressed coryza : *Pulsat.*

(Coryza running in a cool room, stopped in warm air and out of
doors) : *Calc. phosph.*

Point of nose cold : *Calc. phosph.*

Picking the nose : *Cina.*

Rubbing of the nose : *Helleb.*

Nose dry : *Zincum.*

Nose-bleed, left side : *Ferr. acet.*

Face. Redness or heat of the face : *Bellad.*

Red face with sparkling eyes ; in the beginning : *Bellad.*

Face red, almost brown-red : *Bryon. (later).*

Wrinkled forehead, covered with cold sweat : *Helleb.*

Forehead drawn in folds, and pale and bloated face : *Helleb.*

Very waxy, pale look of the face and body : *Arsen.*

Face pale and oldish looking : *Artem. vulg.*

Red face : *Hyosc.* ; crimson : *Bryon.*

Features expressive of great anguish : *Aethus. cynap.*

Pallor : *Arsen.*

Cold sweat on the face : *Calc. phosph.*

Face pale, sallow (yellowish) : *Calc. phosph.*

Hippocratic countenance : *Carb. veg.*

Dark red hue of the face : *Gelsem.*

Passes hand over the face as though trying to brush something off : *Nux vom.*

Rubs face and eyes : *Squilla.*

Flushes of heat : *Sulphur.*

Forehead covered with a cold and clammy sweat : *Veratr. album.*

Cold sweat on face, hands and feet : *Veratr. vir.*

Sudden change of color in the face : *Bryon.* (premonitory).

Frequent change of color in the face : *Sulphur.*

Sudden pale face after metastasis from bowels : *Ignat.*

Face bloated and highly congested : *Bellad.*

Lower Jaw. Dry lips, parched : *Bryon.*

More or less constant motion of the jaws as if chewing something :

BRYON., HELLEB.

Convulsive movement of the lips.

Moving the mouth constantly as if chewing.

Dropping of the lower jaw : *Helleb.*

Lockjaw : *Cuprum, Stramon.*

Swollen under-lip : *Calc. phosph.*

Teeth. Grinding of teeth : *Cuprum, Stramon.*

Grating of teeth : *Apis* ; after cholera infantum : *Carbol. ac.*

Gnashing of teeth : *Gratiola.*

During teething : *Calc. ostr., Calc. phosph., Gelsem.*

Difficult dentition : *Cuprum.*

Scorbutic gums : *Mercur.*

Child grasps at its gums continually, as though they were painful :
Silic.

Tongue. Dry, yellow or brown coated tongue : *Bryon.*

Tongue quite clean, but vomiting frequently : *Cina.*

Tongue dry and red ; previously black : *Helleb.*

Child regularly protrudes and retracts the tongue in fever : *Sulphur.*

Tongue was darted back and forth with great rapidity, like a snake : *Cupr. ac.*

Mouth. Salivation : *Mercur.*

Mouth very dry or very moist : *Aethus. cynap.*

Grayish ulcers on the mucous lining of cheeks, lips, gums, tongue and palate : *Mercur.*

Sour smell from the mouth : *Sulphur.*

Buccal cavity and lips covered with aphthæ, causing difficult deglutition ; aphthæ on the inner lips, surrounded by vesicles, which burn : *Merc. corr.*

Throat. Difficult swallowing, metastasis from bowels to brain : *Ignat.*

When water was put into his mouth, no effort of swallowing was made : *Apis.*

Dysphagia : *Stramon.*

- Trismus**, with great difficulty in swallowing even liquids : *Stramon.*
- Drinking. Eating.** Hasty, impetuous drinking and swallowing : *Bryon.*
- Thirst, with hasty swallowing of the liquid : *Bryon.*
- No thirst : *Pulsat.*
- Greedily swallows cold water : *Helleb.*
- No desire for anything but drink ; swallowing it greedily and in large quantities ; moving the mouth constantly as if chewing, both before and after drinking : *Helleb.*
- Desires cold water often, drinks but little at the time : *Arsen.*
- From time to time asks for water and drinks with avidity : *Stramon.*
- Children refuse mother's breast : *Calc. phosph.*
- Great thirst with a moist tongue : *Mercur.*
- Very thirsty, desires only cold water or ice : *Verat. alb.*
- Drinking and swallowing water eagerly in sopor : *Art. vulg.* Great hunger : *Sulphur.*
- Voracious appetite with gagging and vomiting : *Zincum.*
- Great inclination for salt meat or potatoes : *Calc. phosph.*
- After several days loss of appetite, etc., convulsions : *Gratiola.*
- Vomiting.** Bilious vomiting : *Digit.*
- Has all along vomited milk soon after taking breast or bottle : *Æthus. cyn.*
- Vomits frequently, although tongue clean : *Cina.*
- Constant nausea without relief : *Ipecac.*
- As soon after drinking as the water gets warm in the stomach it is vomited : *Phosphor.*
- Vomiting and gagging. *Zinc.*
- Abdomen.** Distended abdomen : *Bryon.*
- Distention of abdomen, with hiccory : *Cinchona.*
- Bloated abdomen : *Cina.*
- Child very sensitive to pressure on the lower abdomen and epigastric region : *Mercur.*
- Distention of abdomen : *Zincum.*
- Abdomen retracted : *Carbol. ac.*
- Stool.** Bowels constipated, passing little black balls : *Opium.*
- Constipation with hard and dry feces : *Zincum.*
- Drugs had produced no stool for several days : *Apis.*
- Bowels constipated, stools very dry and hard : *Carbol. ac.*
- Constipation : *Bryon.*
- Greenish and thin diarrhœa, involuntary : *Art. vulg.*
- White stools and bilious vomiting : *Digit.*
- Watery diarrhœa : *Hyosc.*
- Slimy or clay-colored stools, especially if such children suffer from worms : *Mercur.*
- If cholera infantum threatens to terminate in meningitis : *Opium.*
- Persistent green slimy diarrhœa with sopor : *Sulphur.*
- Green stools with hydrocephaloid : *Phosphor.*
- Copious white slimy stools : *Calc. ostr.*
- Child passes stools involuntarily : *Art. vulg.*
- Diarrhœa with much wind, during dentition : *Calc. phosph.*

Greenish, thin stools : Calc. phosph.

Offensive, painless stools or lientery : Cinchona.

Worms : Cina.

Frequent calls to stool : Nux vom.

Green-colored stools : Phosphor.

White stools, sometimes watery and gush out like water from a spout : Phosphor.

Stools dark-colored or black : Stramon.

Redness and excoriation around the anus : Sulphur.

Great prostration after a stool : Verat. alb.

After cholera infantum : Carbol. ac.

Sudden metastasis from bowels to brain during dentition : Ignat.

Unconscious discharge of fæces and urine : Gratiola.

Urine. Scanty urine : *Bryon.*, *Pulsat.*

Burning while passing urine : *Bryon.*

Scanty dark urine with sediment like coffee grounds : *Helleb.*

Scanty but frequent emissions of a milky urine : *Apis.*

Scanty urine, or quite profuse : *Apis.*

Urine suppressed : *Apoc. can.*

Milky looking urine : *Cina*, *Apis.*

Urine scanty or dark-colored, deposits a sediment looking like coffee grounds : *Helleb.*

Passes large quantities of colorless urine, especially during the night : *Phosph. ac.*

Urine has a putrid odor, deposits a clay-colored sediment which adheres to the vessel or the diaper : *Sepia.*

t. Red sediment on the diaper : *Lycop.*

Profuse urination, passes much urine : *Squilla.*

Involuntary discharge of urine : *Bellad.*

Scanty, turbid urine : *Zincum.*

Had passed no water in 48 hours, region of bladder showed very slight distension : *Apis.*

Urinary discharge suppressed : *Stramon.*

Frequent discharge of abundant urine, thick, like milk in color and consistency, of a disagreeable odor ; leaves a curd-like sediment in the vessel ; occurred as a crisis, after *Stramon.*

Sexual Organs, Male. Priapism : *Nux vom.*, *Phosphor.*

Larynx. After catarrhal fevers : *Cuprum.*

After suppressed catarrh : *Bellad.*, *Bryon.*

Breathing. Quick, moaning breathing : *Bryon.*

Labored breathing, occasionally with deep sighs : *Helleb.*

Cold breath : *Carb. veg.*

Child sighs and sobs frequently : *Ignat.*

A very heavy death rattle (after convulsions) : *Pulsat.*^{2c}

Occasional sighing : *Gratiola.*

Lungs. Oppression on the chest : *Cuprum.*

Pulse. Irregular slow pulse : *Apis.*

Feeble, not very quick ; soft and irregular : *Helleb.*, *Pulsat.*

Pulse very slow or irregular : *Digit.*

Throbbing of the carotids : *Hyosc.*, *Bellad.*

Very rapid pulse : Sulphur.
 Pulse very feeble : *Æthus. cyn.*
 Pulse very small and weak : *Verat. alb.*
 Very quick pulse : *Ver. vir.*
 Pulse irregular : *Carbol. ac.*
 Slow pulse : *Gratiola.*
 Pulse 130 : *Helleb.*

Outer Chest. Breast and neck are covered with a confluent eruption : *Stramon.*

Neck. Back. Reddish miliary granules on neck or breast : *Stramon.*
 Frequent torsion of the trunk, attempts to let herself hang over the sides of the bed : *Stramon.*

Limbs, Upper. Coldness of hands and a bluish appearance of the fingers : *Cuprum.*

Limbs, Lower. Coldness of limbs, especially the knees : *Carb. veg.*
 Cold and clammy sweat upon the thighs and legs, especially during the night : *Mercur.*

Coldness of feet and legs : *Phosphor.*
 Feet in constant motion : *Zincum.*

Limbs in General. Trembling of the limbs : *Apis.*

Constant involuntary motion of one leg and arm : *Apoc. can.*

Involuntary motions of the extremities : *Apoc. can.*

Convulsions of limbs, after erysipelas : *Cuprum.*

Spasms in the fingers and toes : *Cuprum.*

Involuntary throwing or whirling about of one arm and one leg : *Helleb.*

Jerking of the limbs : *Hyosc.*

Stiffening of the limbs : *Carbol. ac.*

Convulsive movements of upper and lower limbs ; keeps continually striking her feet against the foot of the bed ; frequent torsion of the trunk and putting the hands up to the head, which she strikes now and then : *Stramon.*

Motion. Rest. Position. The patient frequently moves his trembling hand to the head : *Helleb.*

Great restlessness : *Digit.*

Child cannot keep its feet still : *Zincum.*

Child desires to be kept still ; when it sits up or is held erect, attacked with nausea and a faint feeling : *Bryon.*

Will not stand any more, does not learn to walk : *Calc. Phosph.*

Uncertain, tottering gait : *Bryon.*

Lies upon the back, with low respiration : *Gratiola.*

Lying on his back ; boy, æt 4 : *Apis.*

Attempts to throw herself out of bed or hang over the sides : *Stramon.*

Nerves. Single parts convulsed, single muscles or single limbs : *Ignat.*

Child in a torpid condition, great depression of vital power : *Sepia.*

Left side had been entirely motionless for two days, moved right arm and leg occasionally : *Apis.*

Starting and jumping : *Bellad.*

- Inability to raise oneself alone : **HELLEB.**
 Starting frequently with screams and howling : **Helleb.**
 Great prostration : *Arsen.*
 Great depression of the vital powers : *Arsen.*
 Great prostration with inability to move the body : **Stramon.**
 Convulsions on the right side, paralysis on the left, while the left side is paralyzed, the right is in a state of clonic spasm :
Artem. vulg.
 Jerking of limbs : *Cicuta, Hyosc.*
 Partial convulsive movements : **Carbol. ac.**
 Convulsions and lockjaw after suppressed catarh : *Cuprum.*
 Nervous and restless : *Acon.*; with convulsions : *Apis.*
 Child very weak, cannot hold up its head. *Athusa.*
 Constant involuntary motion of one leg and arm : *Apoc. can.*
 Convulsions with great restlessness between the attacks, or every spasm announced by more restlessness : *Arg. nitr.*
 Constantly starting and jumping, in a drowsy state ; *Bellad.*
 Tries to bend body backward : *Bellad.*
 Great prostration and collapse : *Carb. veg.* ; child greatly debilitated : *Veratr. alb.*
 Convulsions and cramps : *Cuprum.*
 Spasms and cramps commence in limbs, most in fingers and toes :
Cuprum.
 Convulsions : *Gelesem.* ; with frothing at the mouth : **Hyosc.**
 Spasms renewed when feet are touched : **Nux vom.**
 Child gives evidence of occasional sinking spells, these come on with great regularity about the middle of the day : **Sulphur.**
 Child bends body far backward during a spasm ; opisthotonus :
Ver. vir.
 After several days of weakness, convulsions : **Gratiola.**
 Convulsion followed by sopor and occasional screaming : **Gratiola.**
- Sleep.** Snoring : **Opium.**
 Screams in its sleep : *Apis* ; soporous sleep with screaming spells :
Helleb.
 Coma with stupid drowsiness : *Apoc. can.*
 Lies in a drowsy or semi-comatose state : *Bellad.*
 Coma : lies in a sleepy or dreamy state and yet will drink large draughts of water without being entirely aroused : *Art. vulg.*
 Lies stretched out in a semi-comatose condition : *Eth. cynap.*
 Great restlessness at night ; child screams out sharply and shrilly during sleep, especially latter part of night : *Apis.*
 Drowsiness and stupor : *Gelesem.*
 Child sleeps badly, is particularly wakeful and restless after 3 A.M. :
Nux vom.
 Heavy, stupid sleep with a red face : *Opium.*
 Dull or drowsy, as though under the influence of narcotics : *Opium.*
 Stupid after waking : *Opium* ; soporous state with half open eyes :
Opium.
 Dull and inclined to sleep all the time ; no sooner roused than it wants to go to sleep again ; in the sleep, nothing wrong : **Phosphor.**

When awakening, afraid of the things near : *Stramon.*

Child sleeps almost all the time, although only in short naps :
Sulphur.

Cries out, starts and jumps during sleep : *Zincum.*

On awakening, gives evidences of fear : *Zincum.*

Soporose sleep with screaming and starting : *Helleb.*

Lying in a deep sopor : *Cuprum.*

Time. Daily aggravations at 3 A.M. : *Kali carb.*

After 3 A.M. sleepless : *Nux vom.*

Aggravations of all symptoms in the morning : *Nux vom.*

Aggravated as evening approaches : *Pulsat.*

Always worse in wane of day : *Calc. phosph.*

Temperature and Weather. After sunstroke : *Glonoine, Bellad.*

Child cannot bear to be covered, with coldness : *Camphor.*

Wishes to be fanned all the time : *Carb. veg.*

Child has a craving for fresh air, cannot bear warmth : *Pulsat.*

Chill. Fever. Sweat. In the first fever stage when there is very active inflammation with much heat, restlessness and distress : *Acon.*

Heat of whole body and head : *Bellad.*

Dry, hot skin over the whole body : *Acon., Bryon.*

Great heat and dry skin : *Acon.*

The heat seems to radiate from head : *Bellad.*

Feverishness : *Gelsem* ; great fever heat : *Apis.*

Fever : *Carbol. ac.*

Moderate fever : *Helleb.*

Body cold all over : *Art. vulg.*

Body cold : *Calc. phosph.*

Sweat on upper part of body : *Calc. ostr.*

Great coldness of the skin, and yet cannot bear to be covered :
Camphor.

General surface cold and damp, with sweat on forehead : *Veratr. alb.*

Cold sweat on face, hands and feet, skin shrivelled : *Veratr. vir.*

Attacks. Exacerbation every other day : *Cinchona.*

(Spasms return at the same hour every day) : *Ignat.*

Symptoms somewhat changeable ; child seems occasionally better, and then worse : *Pulsat.*

Locality and Direction. Convulsion on right, paralysis on left :
Art. vulg.

Tissues. Emaciation : *ARSEN.*

Swelling of the glands : *Mercur.*

With dropsy after scarlet fever : *Zincum.*

Suppressed hemorrhæa : *Pulsat.*

Children lose flesh : *Calc. phosph.*

After drain of fluids from the body : *Cinchona.*

Touch. Passive Motion. Injuries. After a blow, fall or other injury : *Arnica.*

Wants to be in motion almost constantly ; to be rocked or carried about : *Cina.*

Cannot bear to have its feet touched : *Kali carb.*

Spasms renewed when the feet are touched : *Nux vom.*

When pricked with a pin no sign of feeling : *Apis.*

Skin. After suppression of erysipelas, *nettle-rash*, scarlatina : *Apis.*

After exanthematic fevers : *Cuprum, Zincum.*

Suppression of an eruption preceding : *Sulphur.*

After erysipelas : *Cuprum.*

Stages and States. Prodromic stage : *Bellad., Bryon., Chamom., Ignat., Ipec., Pulsat., Zincum.*

t. Rhachitic, scrofulous diathesis : *Calc. ostr., Calc. phosph., Silic.*

Psoric diathesis : *Calc. ostr.*

Carbo-nitrogenoid dyscrasia : *Sulphur.*

t. Tubercles in the family : *Lycop., Spongia, Hippozænin.*

Weakly, anæmic children : *Ferr. ac.*

t. Tubercles in chest and abdomen : *Calc. ostr., Phosphor.*

Leucophlegmatic temperament : *Calc. ostr.*

After a child has had too much meat and highly seasoned food :
Nux vom.

Child of a gentle and yielding disposition : *Pulsat.*

Scrofulous or psoric dyscrasia has led to the disease and overshadows the little patient ; seems to prevent his convalescence :
Sulphur.

Hydrocephaloid after cholera infantum : *Carb. ac.*

Hydrocephaloid after metastasis from bowels to brain : *Ignat.*

Relationship. *Acon.* and *Bellad.* being insufficient : *Bryon.*

Bellad., Helleb., Arsen. ; futile in stage of exudation : *Art. vulg.*

Glonoin. after *Bryon.* was powerless.

Bellad. and *Bryon.* without relief, after erysipelas : *Cuprum.*

Compare *Apoc. can.* with *Helleb.*

Helleb. and *Zincum* in alternation after effusion. Seven cases.

After abuse of chloroform in convulsions : *Bell.*

Compare *Spongia* in the tubercular form.—*The North American Journal of Homœopathy*, May 1883.

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DID CHOLERA EXIST IN ANCIENT INDIA?

II.

THE investigation of the question, whether cholera existed in India in ancient times, is not, as has been supposed by a lay editor, irrelevant to the determination of the question, is India the home of cholera. The one question is but a particular case of the other. If it could be established that cholera did exist in India at a time when it was unknown, or when it did not exist, in other parts of the world, then the question of the birth place of the disease is settled beyond the possibility of a doubt. Even the simple establishment of the fact of the existence of the disease in ancient India, without any reference to its existence in other parts of the world, would show that India has been taking a prominent part in its generation and propagation. And conversely, if it can be shown that the disease did not exist in ancient India, or if its existence could be traced to those ancient times equally in India and in other countries, then we must cease to believe that India is the only home of cholera. In whatever light, therefore, we view it, the attempt to investigate the question of the existence of cholera in ancient India is not a vain one. In this belief we are continuing our researches.

Our readers will remember that under the name of *Visuchiká* a disease is described in both CHARAKA SANHITA' and SUSRUTA, which would appear to have had a singular resemblance to cholera in nearly all its symptoms. We pointed out, however, that one symptom was enumerated among the symptoms of *Visuchiká*, which was deemed characteristic by our ancient authorities, from which, in fact, the disease was named, but which, so far as modern experience goes, is never present as a symptom of cholera, namely, pains in the body as if pricked with needles. It is singular, however, that in CHARAKA SANHITA', that symptom is not to be found among the symptoms indirectly described as symptoms of the disease, though the disease is called *Visuchiká*. It is only in SUSRUTA that we have the symptom not only clearly described, but spoken of as giving name to the disease. The presence of this symptom in *Visuchiká* constitutes, in our opinion, an essential difference between it and the cholera of the present day.

Another most important difference is that *Visuchiká* is described as a form of indigestion only, and never as a disease which breaks out epidemically, though under the head of epidemics other diseases are described. But besides these obvious and important differences there are others which reveal themselves when we look closely into the description of *Visuchiká*. Leaving out of consideration the description of CHARAKA which is very meagre, we take that found in SUSRUTA. Now it is not a little singular that while discoloration of the body should have been described as a symptom, nothing is said about its temperature, though there can be no doubt that in a case of true cholera coldness of the surface is not only a constant, but a very obvious symptom. It is difficult to say whether this symptom was present in those attacked with *Visuchiká* and our authorities merely omitted to mention it, or whether the symptom was altogether absent in *Visuchiká* and therefore could be not given as one of its symptoms. It is not easy to reconcile its absence in *Visuchiká* with the presence in it of discoloration, if by discoloration was meant lividity or blueness of the countenance and skin generally. But all doubt as to the character of *Visuchiká* has been, we believe, removed by the mention of a symptom which is, if at all, a very rare symptom of cholera, namely, fever

(CHARAKA), shiverings (SUSRUTA). With shiverings there was of course chilliness and coldness, but this chilliness and coldness are essentially different from the coldness of cholera. It might be contended that by this fever CHARAKA might have meant the consecutive fever that follows cholera as a sequela, and that SUSRUTA' mentioned the preliminary symptom of the fever (shivering) without mentioning the whole fever itself. Such a description of the symptoms of a disease would be most slovenly, to say the least of it. Besides the order in which the symptoms are mentioned does not justify the contention; and there is no attempt observable to define and describe the stages of the disease. Then again, the consecutive fever, coming on after cholera, very seldom begins with shivering. We would last of all point to headache as another symptom which is mentioned as a symptom of *Visuchiká*, but which is scarcely present in cholera.

Thus a closer examination of the descriptions of *Visuchiká* as given in CHARAKA SANHITA' and SUSRUTA' shows that the disease had some symptoms which are either altogether absent or very rarely present in cholera, and had not others which are very prominent symptoms in the latter disease. We have not laid stress upon the fact that the *character* of the upward and downward discharges has not been even hinted at, as it may be taken as an omission, though for the constancy of that character as observed in the evacuations of cholera, if *Visuchiká* was cholera, it was a most singular omission. All things considered, we do not think, we would be justified in looking upon *Visuchiká* as a similar disease to cholera, far less the identical disease.

The same disease under the same name is described in the treatise by VABHATAH, a much later work than CHARAKA SANHITA or SUSRUTA. VABHATAH seems to have followed CHARAKA and SUSRUTA, without adding any original observations of his own. Later authors, such as MA'DHAVAKARA and BHA'VAMISRA, the authors of *Nidána* and *Bhávaprakása* respectively, have, in their descriptions of the disease, merely copied, almost *verbatim* from SUSRUTA. This fact shows either that these authors had not themselves seen the disease, or that the disease, if existent at the times and in the places in which they flourished, was of the same character as in the days of CHARAKA and SUSRUTA, and

had not certainly assumed epidemic virulence. We have not been able to ascertain the exact times when these authors flourished. If VA'BHATAH, or perhaps more properly, VA'GBHATAH be identical with VA'GBHATAH the author of a treatise on Rhetoric, who flourished at the time of one JAYASINHA, and if this JAYASINHA be a sovereign of Kashmir as described in *Rajatarangini*, then he flourished about 1170 of the Christian era. This much is certain that he is older than MADHAVAKAR the author of *Nidāna*, and CHAKRAPANI DATTA, a commentator of *Charaka Samhitā* and also author of several treatises on Medicine. Now CHAKRAPANI DATTA could not have flourished later than 1203 A. D. when the reign of the last King of Gauda ended, his father having been in charge of the Cooking Establishment of one of the Gaudya Kings. CHAKRAPANI alludes to both VA'GBHATAH and MA'DHAVAKARA. Hence these authors must have preceded him. And it is very probable that VA'GBHATAH, MADHAVAKARA and CHAKRAPANI DATTA flourished one after another between 1100 and 1200 A.D. It is in the treatise on Medicine by the last named author that we meet with the *treatment of Visuchikā*, and that treatment was most singular for a dreadful disease like cholera. CHAKRAPANI advises —

विश्वचिकायां वमितं विरितं सुलङ्घित्वा भगुं विदित्वा ।

पेयादिभिर्दोषनपाचनैश्च सभ्यक् क्षुधार्त्तं समुपक्रमेत ॥

Here we are distinctly enjoined to administer emetics and purgatives to a patient suffering from *Visuchikā*, and if it had been the dreaded disease we know cholera to be, a judicious Hindu physician like CHAKRAPANI DATTA would certainly never have adopted such a heroic and dangerous mode of treatment, though we are aware that even such a mode of treatment in cholera has its advocates in the present day. We may, therefore, be safe in concluding that down at least to 1200 A. D., when CHAKRA DATTA flourished, *Visuchikā* could only have been the mild disease it was in the days of CHARAKA and SUSRUTA.

Recent researches in Thibetan Literature having shown that literature to abound in allusions to the literature and to the events of our country, it struck us to see if in the medical works

of Thibet any notice or allusion may be found to diseases of India, and I was fortunate enough to find what I wanted. I had the advantage of long conversations with Lama Sharab Gyatsho, a venerable old Mongolian Buddhist priest in Darjiling, one not only deeply learned in the sacred literature of Thibet, but intimately acquainted with its medical writings, and who had followed medicine as a profession. From him I learned that Thibetan medical works are some of them translations of Sanskrit medical works and some of them original, and that in one of these entitled *Bdul rtsi sñiñ-po yan-lag brgyad-pa gsan-wa man-flag-gi rgyud chas bya-wa* (Amrita hridayāngāsta Guhyopadesa nāma Tantra) there is a chapter (56 of Part III) treating of the symptoms, cause and consequences, and treatment of a disease called *tshad-lkhru* (purging from heat), which is otherwise called *rgya-nal*, that is, a disease of India and China, and which is to be understood as a disease which does not occur in Thibet. We give the entire passage as far as the symptoms :

De nas yan Drañ-sroñ Rig-pa-ñi ye tse kyis ldi skad chas gsuñs so. Kye Drañ-sroñ ehhen-po ñon-chig !—

*Rgya-nad tshad lkhru, rgyu, rkyen dwye-wa dañ
Rtags, dañ behos thabs, ñam-pa bshi yis bstan.
Rgyu rkyen me drod mi-sñom s chhuñ-wa la ;
Drod rlañs ehhe-wañi yul-sar ehhu mañ lthuñs ;
Ssas tshod ma ssin sa rid siñ thog lbru ;
Behud med ssas kyis me drod phyir la bton.
Phyi yul drod rlañs tsha-was mehlin tshad skyed ;
Lus-kyi ehhu khams thur bskyoñ lkhru-war lgyur.
Dwye-wa rluñ mkhris khrag dañ bad kan bshi ;
De rtags sñiñ-ga rtsib-logs bsañlam ssug ;
Lus sñom khoñ-pa sbo shiñ ssas mi lju ;
Ma smiu ehhur lbyam smiu-pa de las ldog.
Rluñ gyur lbu-wa sgra behas bur-khu ldra ;
Chhur lkhru skabs su lgag-ehiñ goñ-bur lbyuñ ;
Gsser-shiñ kha skam-ba spu llañ-wa yin.
Mkhris gyur ser nag sño la dri-ma ehhe.
Bsañ-kha tsha-shiñ lus rñul skom dad ehhe
Khrag gyur khrag-tu lkhru-shiñ bsañ kha kladrul.
Bad gyur skam lbyar gñid chho yi-ga lchhu.*

With the aid of Lama Sharab Gyatsho and of Babu Sarat Chandra Das, a very learned and as yet the only Indian Scholar in Thibetan language and literature, we are able to give the following very nearly literal translation of the above passage:—

“And then by the sage Rippai ye *se* was said. Oh! great sage, listen, to the description of cause and effect, of distinction (diagnosis), signs, and treatment of *tshad-~~h~~khru* (purging from heat), *rgua-nad* (disease of India and China) (*i. e.* not of Thibet).

“*Cause and effect*: (The disease is due) to the variation and decrease of the digestive fire, to drinking of much water in countries or places where heat and emanations from the soil are great, to immoderate eating of bad meat, fruits and grains. The digestive fire is extinguished by innutritious food. Heat in the liver is produced by heat and emanations generated in the outer world. The watery portion of the body descends and produces watery stools.

“Differences caused by—Wind, bile, blood and phlegm.

“Their (general) signs or symptoms: Pains in the heart, sides, and anus; lassitude; indigestion from puffing of the stomach. In the immature (*first*) stage of the disease there are copious watery stools. In the mature stage, the stools are thicker than before.

“Particular symptoms:

(1) Caused by wind: stools are frothy and with noise, like the juice of sugar-cane; watery stools; at times scybalæ from stoppage of stools; pains in the body as if with needles (or nails); thirst; hairs stand on edge.

(2) Caused by bile: stools yellowish-black, bluish, with fœtid smell. Burning in the anus; sweat in the body; constant thirst.

(3) Caused by blood: bloody stools, gangrene of the anus (?)

(4) Caused by phlegm: dry, sticky stool, much drowsiness, loss of appetite.”

It is remarkable that in a Thibetan medical work a separate chapter should have been devoted to a disease which, from its nature and from its cause as supposed by the author, was called purging from heat, and which was said to be a disease peculiar to India and China. There is some rough resemblance between the description here given and the description of *Visuchiká* as given in CHARAKA and SUSRUTA, especially in the former, even

pains in the body as with needles (or nails) being mentioned as a symptom. But the resemblance is a very rough and superficial one indeed; a closer comparison will show that the difference between the two descriptions is very great. Thus, whereas in CHARAKA and SUSRUTA we have invariably vomiting as a symptom, it is altogether omitted in the Thibetan description. Besides, another important though not invariable symptom, cramps, is also not mentioned at all. Then again the particular symptoms ascribed to, or said to be caused by, wind, bile and phlegm do not correspond. In the Thibetan description in addition to wind bile and phlegm we have *blood* added as one of the humors and taking an active part in the causation of disorders. In the Indian description the symptoms ascribed to the humors may be taken together to constitute a single disorder. In the Thibetan description the symptoms said to be caused by the humors look like the symptoms of separate disorders, which might, for aught we know, have been meant to be varieties of the same species of disease. In the Indian description the character of the evacuations, as we have already said, is not given. In the Thibetan description the character of the stools, the only evacuations mentioned, is said to be *watery*, like the juice of the sugar-cane. In the Indian description *Visuchiká* is not described as consisting of different stages. In the Thibetan description two stages are mentioned, the immature and the mature; and singularly enough the stools are said to be *watery* in the immature, *thicker* in the mature stage. In the absence of what was meant by the immature and mature stages, we cannot definitely pronounce upon this peculiarity in the character of the stools. In the preliminary stage of cholera, where the onset is not sudden, the stools are of the ordinary diarrhœaic kind, consisting of thin fœcal matter, and therefore *thicker* than watery. Even when the onset is sudden, the very first stools are not watery. It is only very rarely that as the disease advances the stools become thicker in cholera, simply they then consist only of mucus. As a general rule, during the full development of the disease, which only can be called its *mature* stage, the stools get thinner. So the peculiarity of the stools mentioned as a characteristic of the disease described in the Thibetan work proves that it could not have been cholera.

From the Thibetan description it would however appear that though India had so early acquired the reputation of being a country where bowel complaint, in the shape of purging and other concomitant symptoms, was rife, it was not alone and singular in that respect. There was at least another country which could share with it that reputation, and that was China, a country much more Northern in its geographical position than India. It is not a little singular that the Thibetan author should ascribe the disease to heat and emanations from the soil. It must be evident, however, that at the time the Thibetan author wrote, bowel complaint had not assumed the form of cholera in India as we find it in the present day.

It is important in this connection to ascertain the date of the Thibetan work we have given the extract from. It is much easier to determine the dates of Thibetan than of Indian works, and our venerable friend, the old Lama, has kindly promised to give us very nearly the exact time when it was written. Meanwhile, from a rough calculation he has made, he tells us that that time could not be anterior to 1000 A. D., and was in all probability a couple of centuries later. This brings us to the time about which Chakra Datta flourished.

Thus then we have the testimony of Indian medical authors, singularly corroborated by that of Thibetan medical authors, to show that cholera in its present form did not exist in India down to 1200 of the Christian era. We hold it almost impossible that if it had existed it could have escaped the notice of those who were eminent practitioners of the healing art, and who were remarkable for their powers of observation. Bowel complaints there were in those times in India as in other countries, but they were mere forms of indigestion, and had neither all the symptoms nor the epidemic virulence of cholera.

Was *Visuchiká* the primitive parent of cholera? Is there evolution in disease as there is in animated nature? This is a question well worth a most careful and searching investigation; for if solved in the affirmative it will open an entirely new field for hygiene and therapeutics.

NOTES ON CHOLERA INFANTUM.

BY BABU BRAJENDRA NATH BANERJEA, L.M.S., Allahabad.

Since perusing Babu Akshoy Kumar Datta's "Notes on Infantile Cholera," I got ample opportunities to observe an unusually large number of cases of Cholera Infantum. I observed these cases more carefully this time because my previous experience of this dire disease did not tally with the observations and notes of Akshoy Babu, and of the authorities he has quoted in his excellent paper in the March number of the *Calcutta Journal of Medicine* of this year.

Akshoy Babu says, "strictly speaking the designation Cholera Infantum is a misnomer." Then further on, contradicting himself, he says that this disease is an "individual entity." In my humble opinion I hold cholera infantum a disease *per se*. It differs from true cholera in adults in one or two points only. I have never observed any cramps of the extremities in cholera infantum, but Eberle assures us he has seen cramps. Besides this, the color of the stools in this disease is not always rice-water color. With these exceptions the other symptoms are identical with those of true adult cholera.

I do not agree with Dr. Lewis Smith when he says that cholera infantum is always accompanied by great elevation of temperature. I have carefully noted the temperature of good many cases, and from my notes I find that only in one case there was some elevation of temp. (101·F) in the stage of invasion, but in this case the child was suffering from fever since a couple of days previous to the attack of cholera. In the rest of the cases I find there was absolutely *no* elevation of temperature. In describing the symptoms of this disease Akshoy Babu says that "the stools are *always* accompanied with severe colicky pains and cramps of the abdominal muscles. True infantile cholera *seldom* begins as a painless diarrhœa. The tendency to vomiting, with heat of the body, which invariably manifests from the beginning," &c. Again he says, "flatulence or rather a tympanitic condition of the abdomen is *always* present." The *italics* are mine. In my experience I have seldom seen in infantile cholera colicky pains, or abdominal spasms, in the beginning. I hold that it is generally a painless diarrhœa, and that in the invasive stage it is seldom or

never accompanied with elevation of temperature. The tympanitic condition is only sometimes (not always) present, and of course proves troublesome to deal with. The symptoms quoted above from Akshoy Babu's paper have been noticed by me in summer diarrhœa.

As in the case of adults so in the case of children this disease is divisible into three stages, viz.,—1. invasive stage, 2. collapsed stage, and 3 the stage of reaction. All cases, however, do not run into all these stages. Seldom have I lost a case of infantile cholera in the collapsed stage. Most of the fatal cases are seen in the stage of reaction. If the reaction is complete, or as Guernsey says there is even rise of temperature, i. e., if the temperature either gradually becomes normal or when all parts of body share equally the preternatural elevation of the heat, the chances of recovery in such cases are 99 to 100, but unfortunately complete reaction does not take place in the majority of cases, many children fall victims to this partial reaction. This fatal symptom has not been noticed even by eminent writers on diseases of children. Eberle, however, mentions this symptom but without pointing out its importance and fatal nature. In this partial reaction the hands and feet remain icy cold, while the chest, abdomen, and head become abnormally hot. This partial preternatural elevation of temperature is almost always fatal. In this stage death takes place either in a comatose or convulsive state.

Dr. Hughes says that cholera infantum "is a very dangerous disease. I cannot feel that we have any very effective remedies for it." My view of this disease is not so extremely gloomy. It is fatal, almost fatal when the reaction is partial, otherwise the prognosis is favorable. It is at best a very fatal disease no doubt.

From Akshoy Babu's Notes, it appears, that the disease he has described is not real *Cholera Infantum* but what West calls acute inflammatory diarrhœa or summer complaint. In a foot-note in his *Diseases of Children*, West says, "the essential identity of the disease (cholera infantum) with the infantile diarrhœa of our own and other temperate climates is conclusively established by Dr. Parker of New York, in a paper published in the *American Monthly* for May 1857." West, however, does not give his reasons for such a conclusion.

Churchill holds that cholera infantum is only another variety of diarrhœa, and his description of the disease differs greatly from that of West. Dewees, Eberle, Stewart and Condie describe this disease in their excellent treatises. Condie says that though the disease prevails to the greatest extent in July and August, yet cases of it frequently occur until late in November. I have seen a few cases of this disease even in January (1882). Of all authors Dr. Eberle's description of cholera infantum coincides mostly with my experience of this disease. Dr. Eberle has seen cramps of the muscles of abdomen and the extremities; though I have not noticed this in any of my cases. Though Churchill holds cholera infantum to be only another form of diarrhœa, yet nowhere does he say that this disease is identical with West's acute inflammatory diarrhœa or summer complaint of other writers. While describing the symptoms, neither Churchill nor Eberle anywhere mentions about the febrile temperature which Akshoy Babu says is invariably present. Eberle says that "if the disease do not terminate fatally during the first few days, rapid emaciation ensues, the hands and feet become cold and pale while the head and body are always preternaturally warm." In describing this symptom even such an observer as Eberle lays no stress on the importance and fatality of this symptom. Besides, this symptom is noticeable only in cases where collapse previously takes place. This preternatural partial elevation of temperature also is seen to occur more frequently in fatal cases and generally within 24 or 48 hours of the attacks. Eberle, Churchill, Dewees, Condie and other eminent writers do not, however, describe collapse and anuria as symptoms of this disease. West and others do not mention these two symptoms though they hold that cholera infantum is identical with summer complaint. Another symptom, "crystal-line eruptions upon the chest of an immensity of watery vesicles of a very minute size" has been noticed by Rush, Condie and Dewees. Eberle, however, has not noticed this symptom. I myself have not seen such a symptom in any of my cases. Dr. Dewees considers this symptom as invariably fatal.

Baehr, Raue, Ruddock, Jahr and other homeopathic authors have described cholera infantum as summer complaint or summer diarrhœa, which latter I hold to be quite distinct from cholera infantum. In the N.-W. Provinces summer complaint or acute

inflammatory diarrhœa is a common endemic disease mostly to be seen during the hot months, but more especially in the hot and close days of the rainy season. I believe all physicians practising in these provinces must have noticed the essential difference between these two somewhat similar complaints. The modes of death in these two complaints are, however, not different. The great and striking difference between the two diseases is the thermometric range. In the one, elevation of temperature from the commencement is an essential feature, whereas in the other, either normal or subnormal, it is the rule. In this latter the elevation of temperature only takes place during the stage of reaction.

I give below seriatim my reasons for holding cholera infantum as an "individual identity."

1. Cases of infantile cholera occur generally simultaneously with the outbreak of epidemic cholera among adults.

2. It occurs in all seasons. Summer complaints only in the summer months.

3. It is not ushered in with elevation of temperature. In the other, elevation of temperature is the rule.

4. All symptoms pertaining to adult cholera occur in this disease, with the exception perhaps of cramps. Eberle, however, has even seen cramps. In the other many cholera symptoms are wanting.

5. In its progress it passes into the three stages of which the adult cholera is divisible. In the other no such stages or degrees of development are noticeable.

6. Bloody stools, which occur in acute inflammatory diarrhœas, as described by West, never occur in cholera infantum.

7. Collapse, a symptom of this disease, never occurs in acute inflammatory diarrhœa in summer complaints.

8. Anuria, a symptom of this disease, is not mentioned or known to occur in summer complaints or acute inflammatory diarrhœa.

CAMPHOR.

(Translated from the French of Dr. Jousset in L'Art Medical
for June 1883.)

Camphor is a volatile oil which is found in several vegetables ; that which is employed in therapeutics is derived from the *Laurus Camphora* of Japan.

Camphor is an analogue of alcohol ; it is antiseptic and anti-parasitic ; poisonous in feeble doses to inferior organisms, it can replace phenic acid. The Raspail method rests upon its parasiticidal action.

The alternating effects of Camphor are very rapid, and an inverse reaction promptly succeeds its primary action.

Toxicology. Camphor-poisoning presents itself under two different forms :

1. In very strong doses, one observes an enormous resolution of the forces, obscuration of the senses and of the intelligence, a real and considerable lowering of the temperature, a diminution in the force and number of the cardiac and arterial pulsations, slackening of the respiration, syncope with precordial anxiety, profuse cold sweats, a mortal pallor ; dilatation of the pupils ; nausea, vomiting ; dysuria and suppression of urine ; sometimes convulsions, now tonic, now clonic, which alternate with coma.

Death, which is very rare, ordinarily comes on after the convulsions.

- Most frequently there is strong and rapid reaction which leads to recovery.

2. In moderate doses, it produces a sort of intoxication with hilarity, gay delirium with whimsical impulses. The patient finds himself very light, and presumes to fly in the air.

Lesions. Gastro-enteritis with ulceration of the stomach ; inflammation of the brain and its membranes ; inflammation of the ureters and of the urethra.

Pseudo-membranous inflammation of the back part of the throat has also been attributed to its action. Its topical action is antifermentiscible and insecticidal.

Camphor produces psychic symptoms analogous to those of coffee and alcohol ; it excessively excites all the senses, the imagination and the intelligence ; it produces gaiety, loquacity

and agitation. The impulses are sometimes bizarre; sometimes they tend to weepings and sadness without valid reasons.

Later, one observes obscuration of ideas, somnolence and a sort of lassitude.

Upon the *sensibility*, it acts like a local anæsthetic; when administered internally it sometimes produces fugitive pains.

The *motility* is most influenced; we observe paralytic feebleness seated especially in the lower extremities, and a general trembling. In strong doses, camphor produces convulsions resembling in certain cases eclampsia, in other cases assuming the character of tonic spasms.

Camphor acts upon the *skin*; it renders the skin pale and cold, and can bring on miliary eruptions with pruritus. Topically it has been said to produce erysipelas.

The *fever* brought on by camphor presents chilliness with shivering, strong heat with profuse sweat; but the pulse, however frequent it may be, remains small and feeble.

The *cephalic symptoms* are vertigo, giddiness with staggering, and cephalalgia: This last is accompanied with congestion and redness of the face, with heat; sometimes it presents itself in the form of beating in the occiput.

In the *eyes*, one observes conjunctivitis; pupils at first contracted, then dilated; the patient sees sparks, his vision is dim.

There are humming and ringing in the *ears*.

The *nose* presents coryza and epistaxis.

The *face*, at first pale, becomes congested by secondary action.

Camphor produces in the mouth a peppery and cold taste, which extends into the pharynx and even into the stomach. This sensation is promptly replaced by heat and dryness without thirst.

The saliva is viscid and abundant.

The frequent nauseas are rapidly replaced by vomitings, soon accompanied with violent efforts.

The pains in the region of the stomach are aggravated by pressure and are of a shooting character.

One observes a good deal of colic, borborygmi, sometimes diarrhœa, but more frequently constipation. Camphor generates lumbrici.

The *genito-urinary organs* are strongly influenced by camphor, which produces retention of urine, vesical tenesmus, dysuria, and

sometimes hæmaturia; consecutive to its action, diuresis is observed.

It is considered as a calmative of the venereal appetite; this is in general true; if administered to a patient suffering from impotency, it will excite in him the genescic sense.

In females it has been administered as an abortive; it brings on an augmentation of the menses.

In the *respiratory organs*, camphor produces cough with fits; coryza; it renders the respiration at first slow then frequent.

Its action upon the *heart* is analogous; it commences by depressing, ends by exciting it.

It produces shootings and crampy pains in the limbs; cramps in the calves.

The symptoms of camphor are aggravated by movement, by touch, by cold and in the external air.

Camphor has been given with advantage in *cholera* and in *affections of the genito-urinary organs*; it has been prescribed in poisoning by mussel and mushroom, and accessorially in *influenza, coryza, and neuralgias*. . •

We prescribe it in *cholera*, not because of its antiseptic action, but as an application of the law of similars. It is indicated especially in the beginning, when the collapse is pronounced, and before the appearance of the stools. • I have employed it with success in several such cases.

Some homœopaths have prescribed it indifferently in all cases, and have not obtained from it favorable results, they were wrong to forget other indications which in a great number of cases would cause one to prefer *arsenic, veratrum, cuprum*, and several other medicaments.

In *diarrhœa, tenesmus* and even *hæmaturia* it is usual to employ camphor; it is, in fact, an efficacious palliative, and it serves also as an antidote of cantharides.

Its action in poisoning by mussel and mushrooms, in which it combats collapse, coldness, tendency to syncope, is under the homœopathic law; we have seen it produce all these symptoms in the highest degree.

In coryza we may use the mother tincture by olfaction.

Finally, it has been given in *epidemic influenza, in whooping cough, and nervous palpitations*.

As it is very little soluble in water, we usually administer the mother tincture, two drops in a little sugar.

It is employed also externally in the form of camphorated oil for stings of wasps or of bees, and in the form of camphorated alcohol to combat some neuralgias.

Acknowledgment.

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चरकसंहिता ।

खनस्थानम् ।

सप्तमोऽध्यायः ।

अक्षेपापचये ताभ्यां क्रमः पादांशिको भवेत् ।

एकान्तरं ततश्चोर्द्धं ह्यन्तरं त्रयन्तरं तथा ॥ ४८ ॥

क्रमेणापचिता दोषाः क्रमेणोपचिता गुणाः ।

सन्तो यान्यद्युनर्भावमप्रकल्पया भवन्ति च ॥ ४९ ॥

CHARAKA SANHITA.

CHAP. 7. NAVEGA'NDHIA'RANIYA.

48. This gradual process consists in adding and diminishing by one-fourth of the quantity at intervals of one, two, and three days till the whole quantity of the injurious food is given up and an equal quantity of the salutary food is taken.*

49. Thus the injurious food by gradual reduction will be entirely given up, and the salutary food by gradual increase will become the habitual food.

* Suppose one takes a certain quantity of a particular kind of food which is either injurious or not quite salutary. To replace it by an equal quantity of other more salutary food, one should proceed this wise : he should commence by reducing the habituated food by one-fourth, and replacing it by an equal quantity of the more salutary food, then on the third day he should reduce the first kind to one-half, replacing the reduced quantity by an equal quantity of the other food, allowing two days to intervene between this and the next reduction, after which he should allow three days to intervene, after which one food would be entirely replaced by the other.

समपित्तानिलकफाः केचिज्जर्मादि भागवाः ।
 हृष्यन्ते वातलाः केचित् पित्तलाः श्लेष्मलाश्चथा ॥ ५० ॥
 तेषामनातुराः पूर्वं वातलाद्याः सदातुराः ।
 दोषानुश्रयिता ह्येषां देहप्रकृतिश्च्यते ॥ ५१ ॥
 विपरीतगुणश्लेषां स्वस्थवृत्तेर्विधिर्हितः ।
 समसर्वरसं सात्त्वं समधातोः प्रशस्यते ॥ ५२ ॥
 द्वे अघ्नः सप्त शिरसि खानि स्वैदुस्खानिच ।
 मलायनानि वाध्यन्ते दुष्टैर्मात्राधिकैर्भलैः ॥ ५३ ॥

50. Some men are born with equal proportions of bile, wind and phlegm; some with excess of wind; some with excess of bile; and some with excess of phlegm.

51. Of these the first are healthy; the rest are always out of health, inasmuch as their constitutions are in their nature or composition associated with the primary faults, that is inequality of the humors (which is the cause of disease).

52. Of these (that is of those who are thus born unhealthy) food of opposite qualities to their constitutions is advisable as tending to health. To those who are born with equilibrium of the humors, food of all the tastes in equal proportions is wholesome.

53. The outlets for the excretions are the two in the lower part of the trunk, the seven in the head, and all the outlets of the sweat. These outlets become obstructed by either perverted or excessive secretions.

५१ देहप्रकृतिश्च्यते । इति द्वितीयः पाठः ।

भलदृष्टिं पृथगेन लाघवात्मलसंचयम् ।

भलायनानां बुध्येत सङ्कोत्सर्गादतीव च ॥ ५४ ॥

तान् दोषलिङ्गैरदिस्थ व्याधीन् साध्यानुपाचरेत् ।

व्याधिहेतुप्रतिबन्धैर्मात्राकालौ विचारयन् ॥ ५५ ॥

विषमस्वस्थदृष्टानामेते रोगास्तथा परे ।

जायन्तेऽनातुरस्तस्मात् स्वस्थदृष्टतपरो भवेत् ॥ ५६ ॥

प्रादृशुक्रानभौ ज्ञेयौ शरदूर्जःसहौ पुनः ।

तपस्वच्च मधुश्चैव वसन्तः शोधनं प्रति ॥ ५७ ॥

54. Heaviness of these outlets is indicative of increased secretion ; lightness of deficient secretion ; deficient and excessive discharges are likewise indicative of deficient and excessive secretion respectively.

55. These disorders, when amenable to treatment, should be treated, after being diagnosed by the symptoms of the faults (of the humors) which are concerned in their production, with remedies, food, and general hygienic agencies, contrary to the diseases and their causes, having due regard to the quantity of the several elements, and to the time (or season) of the production of the disease and of the administration of the remedial agents.

56. These and other diseases arise from disregarding the laws of health. Hence those, who have not become affected by these diseases, should observe the laws of health.

57. The months of ashādha and srāvana form the prāvaṇa season ; the months of kártika and agraháyana form the sarat season ; the months of phálguna and chaitra form the vasanta. In these seasons the disorders of the humors that have been

माधवप्रथमे मासि नभस्यप्रथमे पुनः ।

सहस्यप्रथमे चैव वाहयेद्दोषसंचयम् ॥ ५८ ॥

स्निग्धस्निग्धरीराणामूर्द्धस्वाधश्च नित्यम् ।

वसिकर्म्म ततः कुर्यान्नसाः कर्म्मच बुद्धिमान् ॥ ५९ ॥

यथाक्रमं यथायोगमतं जडं प्रयोजयेत् ।

२सायनानि सिद्धानि वृष्ययोगांच कालवित् ॥ ६० ॥

रोगस्तथा न जायन्ते प्रकृतिस्थेषु धातुषु ।

धातवश्चाभिवर्द्धन्ते जरा मान्द्यमुपैति च ॥ ६१ ॥

accumulating in grishma, varshá and hemanta respectively are to be corrected.

58. In chaitra, srávana, and agraháyana the disorders of the humors are to be particularly corrected.

59 & 60. The intelligent physician should, after having prepared the patient by rubbing oil and causing him to perspire, give him emetics, purgatives, and enemas, and after that snuffs, in due order and due combination.* And then he should administer the most approved drugs and strengthening mixtures.

61. The humors being thus restored to their normal condition diseases are never generated in the system. The purified humors have their quantum normally increased, and the decay of advancing age is prevented.

६१ जरा चान्त्यमुपैति च ॥ २ ॥

* The vomiting should be effected in chaitra, purging in agraháyana, enema in srávana.

विधिरैष विकाराणामनुत्पत्तौ निदर्शितः ।

निजानामितरेषां तु पृथगेवोपदिश्यते ॥ ६३ ॥

ये भूतविषवायुग्निसंहरादिसम्भवाः ।

नृत्थामागन्तवो रोगाः प्रज्ञा तेष्वपराध्यति ॥ ६३ ॥

ईर्ष्याशोकभयक्रोधमानद्वेषादयश्च ये ।

मनोविकारास्तोष्यक्ताः सर्वे प्रज्ञापरावजाः ॥ ६४ ॥

त्यागः प्रज्ञापराधानामिन्द्रियोपशमः स्मृतिः ।

देयकालालविज्ञानं सदृत्तस्यानुवर्त्तनम् ॥ ६५ ॥

आगन्तूनामनुत्पत्तावेष भार्गो निदर्शितः ।

प्राज्ञः प्रागेव तत् कुर्व्याद्वितं विद्याद्यदात्मनः ॥ ६६ ॥

62. Thus have we shown the measures for the prevention of idiopathic diseases. We should now separately point out the measures which may be adopted for the prevention of other, that is, *ágantuk*, or accidental, diseases.

63. In those accidental diseases which are caused by evil spirits, poison, wind, fire, fighting, &c., the understanding is in fault.

64. Envy, grief, fear, anger, arrogance, malice, &c.,—these abnormal conditions of the mind are also said to originate in faulty understanding.

65, 66. The avoidance of the faults of the understanding, the control of the passions, the recollection of the past, knowledge of the place (one resides in), knowledge of the times, knowledge of self, imitation of the well-behaved,—these are the preventives of accidental diseases.

The wise should, as a preventive of disease, do whatever is beneficial for health.

आतोपदेशः प्रज्ञानां प्रतिपत्तिश्च कारणम् ।
विकारायामनुत्पत्तावुत्पन्नानाञ्च शान्तये ॥ ६७ ॥

पापदत्तवचःसत्त्वाः सूचकाः कलहप्रियाः ।
मर्मोपहासिनो लुब्धाः परद्विद्विषः यथाः ॥ ६८ ॥

परापवादरतयश्चपला रिपुसेविनः ।
निर्धृणाश्चक्रधर्माः परिवर्ज्या नराधमाः ॥ ६९ ॥

67. The advice of reliable persons and the acquisition of correct knowledge lead to the prevention of diseases as well as to their cure.

68, 69. Those who are vicious in act, speech, and mind; those who act as informers; those who are fond of quarrel; those who direct their shafts of ridicule to the inmost soul; those who are covetous; those who are envious of the prosperity of others; those who are dishonest; those who are fond of reviling others; those who are fickle; those who are sensual; those who are devoid of mercy (or shame, modesty); those who have forsaken their religion;—such wretches should be abandoned.

(To be continued.)

EDITOR'S NOTES.

FATAL SHOCK FROM SUPPOSED SNAKE-BITE.

We learn from the *Scientific American* for June 23, that Dr. C. R. Francis has recorded the following case in *Medical Press* (April):—The patient awakened from his sleep by something creeping over his naked legs, immediately jumped to the conclusion that it was a cobra, went into a state of collapse and died, though it was discovered, even before death, that the supposed cobra was a harmless lizard. This case affords a strong proof of the influence of the imagination over the functions of life.

DIAGNOSIS OF SPURIOUS CARDIAC MURMURS.

The following Dr. Rosenbach's simple method of differential diagnosis to distinguish spurious from real cardiac murmurs:—

Firm pressure is made with the tip of the finger in an intercostal space at the point of maximum intensity of the murmur. In this way the portion of lung in which the murmur is produced is pushed away from the heart, and the heart itself is also pressed back, and is prevented from transmitting its pulsations to the lung with force sufficient to give rise to a murmur. The spurious extra-cardiac murmurs are thus greatly weakened or entirely suppressed, while no effect is produced upon the true cardiac murmurs.—*Practitioner*. March 1883.

LABOR AND FOOD.

The *Scientific American* for June estimates the amount of work done by the heart in one day in propelling the blood as equal to the work of a steam engine in raising 125 tons one foot high, or one ton 125 feet high. After several hours' hard labour if the man be weighed he will be found to have lost two or three pounds in comparison to his weight previous to the hard labour. To compensate for this loss about 8½ pounds of food and drink are used up daily. "The energy stored up in 8½ pounds of food ought to raise 3400 tons one foot high. Most of this energy, however, is expended in keeping the body warm and its functions active. About one-tenth can be spent in our bodily movements or in work. The profit, then, on the process is about 10 per cent. This is enough to raise 340 tons one foot high each day."

INFANT MORTALITY UNDER THE TWO SYSTEMS OF TREATMENT.

We take the following from the June number of *Monthly Homœopathic Review*, showing the relative success of Allopathic and Homœopathic treatment in diseases of children. The allopathic statistics are taken from the report of Dr. Otto Seifert of Julius Hospital, Wuerzburg; the homœopathic from Dr. A. B. Norton's report of Child's Hospital, Five Point's House of Industry, New York. The comparative results speak for themselves.

Mortality under each Treatment.

No.	DISEASE.	Allopathic.	Homœopathic.
I.	Morbilli	10.344%	1.185%
II.	Scarlatina	5.264%	1.851%
III.	Diphtheritis	50%	3.125%
IV.	Cholera	62.5%	0
V.	Meningitis, cerebro-spinal epidemic	50%	37.5%
VI.	Spasmus glottidis	100%	0
VII.	Pertussis	16.666%	0
VIII.	Bronchitis	30.769%	1.639%
IX.	Pneumonitis	35.714%	0
X.	Phthisis pulmonalis	67.441%	68.292%
XI.	Pleuritis	40%	0

FEVER REMEDIES.

Dr. Cowperthwaite gives the following indications of the principal fever remedies :

Aconite. Restlessness, anxious tossing about, full hard and frequent pulse.

Gelseminum. Either chilliness with languid aching in back and limbs and a sense of fatigue, or, if fever be present, instead of the anxiety and restlessness of aconite, a drowsy languid condition, the patient desiring to be quiet and let alone, with great prostration of the whole system, the pulse being full and quick, but not very hard.

Belladonna. Flushed face, throbbing carotids, hard, full and bounding pulse, with a tendency to delirium.

Veratrum viride. It is often used in pneumonia. There is a loud strong beating of the heart, giving a full, hard, frequent and incompressible pulse, while at the same time the respiration becomes

difficult, slow and laboured, often in pneumonia, falling from 40 to 16 per minute.

Baptisia. It is especially useful in the first stages of adynamic fevers. Its indications are: Face flushed, dusky red and hot, with a besotted expression; dulness and confusion of mind; the head feeling large and heavy; sordes on the teeth; tongue dry and brown down to the centre, pulse full and rapid but soft and easily compressed.—*St. Louis Clinical Review*, April 1883.

THE ACTION OF DRUGS ON THE SECRETION OF MILK.

The following conclusions arrived at by Stumpf after a number of experiments on the above subject are given in the *Practitioner* for June from *Deut. Archiv für Klin. Med.*, vol. xxx, p. 201:—

(1) *Alterations in the quantity of milk:*—Iodide of potassium diminishes it considerably; alcohol, morphia, and lead do not alter it; salicylic acid appears slightly to increase it; but pilocarpin does not.

(2) *Alteration in the quality of milk:*—Iodide of potassium causes disturbance of the glandular functions, and thus produces irregularity in the qualitative relation of the constituents of milk; alcohol and alcoholic liquors only increase the relative proportion of fat, and are to be discarded as dietetic agents for promoting secretion of milk; lead, opium, and pilocarpin do not alter the quality of the milk; salicylic acid appears slightly to increase the quantity of sugar.

(3) *Passing of drugs into the milk:*—Iodine passes quickly into milk, and in man disappears as soon as its administration is stopped; but it continues for a long time in the milk of herbivora. The quantity of the iodine which appears in milk is not a definite fraction of the amount administered, but varies considerably—these variations being due to differences in the individual. Iodised milk therefore cannot be used in therapeutics. Iodine in milk is not present in solution as iodide of potassium, but is combined with casein. Alcohol does not appear in the milk of herbivora. Lead when administered in small quantities only appears in traces in the milk, and continues to appear for some time after the administration has been stopped. Salicylic acid passes only into the milk in small quantities, even when large doses are given. Somewhat larger quantities appear in human milk than in the milk of herbivora.

THE TOOTHACHE MARTYR'S SOLILOQUY.

To have it out or not—that is the question,
 Whether 'tis better for the jaws to suffer
 The pangs and torments of an aching tooth,
 Or to take steel against a host of troubles,
 And, by extracting, end them? To pull—to tug—
 No more; and by a tug to say we end
 The toothache, and a thousand natural ills
 The jaw is heir to—'tis a consummation
 Devoutly to be wished. To pull—to tug—
 To tug! perchance to break—ay, there's the rub;
 For, in the wrench, what agonies may come
 When we have half dislodged the stubborn foe,
 Must give us pause. There's the respect
 That makes an aching tooth of so long life;
 For who would bear the whips and stings of pain,
 The old wife's nostrum, dentists' contumely,
 The pangs of hope deferred, kind sleep's delay,
 When he himself might his quietus make
 For one poor shilling? Who would fardels bear,
 To groan and sink beneath a load of pain,
 But that the dread of something lodged within,
 The linen-twisted forceps, from whose pangs
 No jaw at ease returns, puzzles the will
 And makes it rather bear the ills it has
 Than fly to other that it knows not of?
 Thus dentists do make cowards of us all;
 And thus the native hue of resolution
 Is sicklied o'er with the pale cast of fear;
 And many a one, whose courage seeks the door
 With this regard, his footsteps turns away,
 Scared at the name of dentist.—

Student's Journal and Hospital Gazette, quoted in *Monthly
 Homeopathic Review*, May 1883.

CLINICAL RECORD.

A Case of Cholera.

BY BABU HEM CHANDRA RAI CHAUDHURI, L.M.S.

Giri, a maid servant, aged 20, was attacked with cholera on the morning of 10th December 1881. She had diarrhoeic stools during early morning and thinking this had resulted from indigestion took her usual bath at about 9 A. M. The last stool with which she passed urine was before 9 A. M. After bathing up to 11 A. M., she had three watery stools. *Tinct. Camphor* \mathcal{Q} , 3 drops.

I saw her at 11.20 A. M. when she had another stool. The stools were of typical rice-water character; and painless. Had taken *Tinct. Camph.* once. Ordered to continue it.

11.30 A. M. Another stool of the same kind.

12.15 P. M. Nausea, thirst, feeling of chilliness, pulse normal.

12.45 P. M. Another stool of the same kind but fetid. *Camphor* continued.

12.50 P. M. She vomited a quantity of clear liquid, smelling of *Camphor*.

2.15 P. M. Another stool of the same kind but copious. *Camphor* continued.

3.15 P. M. Pulse quick, head a little warm, hands and feet cold, intense thirst.

4 P. M. Watery stool, little yellowish but containing abundant flakes of mucus.

6.30 P. M. Watery stool, yellowish.

7.30 P. M. Yellowish, watery stool with much mucus.

7.45 P. M. Excessive thirst and restlessness. *Acon.* \mathcal{Q} , 1-16 of a drop.

8.15 P. M. Another stool of the same kind. *Acon.* \mathcal{Q} , 1-16 of a drop.

8.55 P. M. One stool.

9.30 P. M. Another stool, very copious, dark yellow. *Verat.* 6.

10.15 P. M. Hands and feet warm, but very thirsty.

1 A. M. One stool, and passed urine with the stool, she wanted water and her father gave the last dose of *Verat.* 6.

11th 6.30 A. M. Doing well. Pulse normal, skin warm, little feverish. After this she passed urine many times, and was nearly well in the course of the day.

Remarks.

In this case Camphor succeeded so as far as to make the stools yellow, but the patient became decidedly worse in other respects. Aconite hardly did anything. Veratrum brought the patient round, though the stools were painless throughout.

A Case of Malarious Remittent Fever with enlarged Liver.

BY BABU MADIAB CHANDRA BANERJEA, L.M.S.

Pyári, a spare looking and ill-nourished child, aged one year, was placed under my treatment for remittent fever on June 10th, 1883.

The child got fever while at Mirzapur in the N.-W. Provinces, about 15 days ago. The father of the child reported that the fever was almost continuous. A superficial abscess had formed in the hepatic region, which had burst of itself, and left a sinus. There was discharge of fœtid pus from the right ear.

At the time (morning) I saw him first, the temperature was high, pulse quick, sonorous rhonchi in both sides of the chest, tongue coated and dry, liver considerably enlarged so much so as to fill almost the whole abdomen. Stool soft, clay-colored generally on alternate days, rarely daily. Features rather shrunken, and pallid.

Knowing that the result of old school treatment in these cases was very unsatisfactory, I advised the father of the child to have recourse to homœopathy. On his agreeing to my proposition, I gave the child *Acon.* 6, 2 globules to be given three times in the course of the day.

21st. The child was much the same as respects the fever. The discharge from the sinus was ichorous. *Merc. s.* 6, 2 globules twice daily for two days.

23rd. No change. *Cham.* 6, 2 globules thrice daily for two days.

25th. Fever persistent, cough increased and the patient became frothy, but the sinus was healed, and the discharge from the right ear was considerably less. Sonorous rhonchi were heard throughout the chest. *Bryo.* 6, 2 globules thrice daily.

26th. Cough less, but fever no better. *Bryo.* continued.

27th. Called in Dr. Sircar to see the case with me. Dr. Sircar advised me to discontinue all medicine for a time, and to administer *Calc. c.* 30, when the temp. will have come down. I watched the patient morning and evening, and to my surprise I found two days after, on the morning of the 29th, the temperature was normal.

Calc. c. 30, 2 globules were given twice daily. There was slight return of fever in the evening.

30th. Morning. Child free from fever. *Calc. c.* continued. Some fever in the evening, but considerably less than on the previous day.

1st and 2nd July. No medicine.

3rd July. *Calc. c.* repeated. No more fever, but stools still clay-colored.

As advised by Dr. Sircar, I gave no more medicine; but the child steadily improved, there was no more return of fever, the bowels moved daily, the color of the stools became natural, appetite increased so that the child could take one and half a seer of milk every day, whereas before he could scarcely take half a seer. The liver gradually became reduced in size. The child became quite playful, and in the course of a fortnight from the commencement of *Calc. c.* he was all right.

A Case of Sinus in the Left Axilla, cured by Hep. Sulph.

BY BABU MADHAB CHUNDER BANERJEA, L.M.S.

Sital Chandra Kundu, aged 22 years, of dark complexion and much reduced in health, came to me on the morning of the 13th June for treatment. He had an abscess in the left axilla, about three months ago. The abscess had burst of itself, resulting in a sinus, which has ever since been discharging pus copiously.

At the time he came to me, he was in strong fever, and the discharge from the sinus was ichorous and profuse. I gave him *Acon.* 6, thrice daily, and instructed him to wash the sinus with lukewarm water and apply *glee* to its mouth.

The patient came to me after three days, having got rid of his fever after one day's use of *Aconite*. The discharge from the sinus was however no better. I therefore ordered *Hep. sulph.* 6, $\frac{1}{2}$ a drop to be taken twice a day. He presented himself again on the 20th June with great improvement of the sinus, the discharge having become healthy pus and much less in quantity. The mouth of the sinus was also considerably reduced in size. In a week more he was all right.

Remarks.

Under the old school treatment, cases like these seldom get well without operation, which has to be repeated several times; and in fact it was because the patient was threatened with an operation by an allopathic doctor, and was told that one operation might not be sufficient for the healing of the sinus, that he had come to me. The result of homœopathic treatment to him no less than to me, a mere beginner in the new system, has been eminently satisfactory.

THERAPEUTICS OF CONSTIPATION, DIARRHŒA,
DYSENTERY, AND CHOLERA.

52. CARBO VEGETABILIS.

Constipation :

1. A few, hard, unconnected masses of fœces, passed with burning in the anus.
2. Great urging to st., whereby only a scanty and hard one is passed.
3. Hard st., passed much later than usual and with much effort.
4. After a hard, scanty st., a pinching shooting in the left hypogastrium and incomplete call to st., like a pressure on the rectum, all day.
5. St., tenacious, scanty, not cohering properly, with inactivity of the rectum.

Diarrhœa :

1. On trying to have a motion, after much labor-like pain and effort, some fœces consisting of soft pieces.
2. At night, a viscid, musty smelling fluid escapes in considerable quantity from the anus.
3. Fermentation in the abdomen, followed by diarrhœaic st., with passage of most offensive flatus.
4. With colicky forcing towards the sacrum, thence to the abdomen, discharge of very offensive, and then moist flatus.
5. An acrid biting moisture escapes from the rectum.
6. Acrid st., with furred tongue.
7. St., thinner than usual, with urging thereto.
8. Discharge of flatus with burning in the anus, and sensation as if a st. were coming.
9. After breakfast, call to st., which though not hard is only passed with much straining.
10. Gripping about the navel, extending into the stomach, she was obliged to lie down, unable to stand erect on account of the pain, and could not sleep at night, with constant chilliness ; on the second night diarrhœa, which was worse at night.
11. Sts., burning, light-colored, foetid, watery, putrid, cadaverous smelling, involuntary. (Hg.)
12. Cholera Asiatica, stage of collapse. (Hg.)
13. Intestinal ulcers, with profuse sts., resembling washings of flesh, smelling like carrion. (Hg.)
14. Pappy st., which causes burning in the rectum.

Dysentery :

1. In the first week during st., there comes first mucus, then followed hard and then soft fœces, afterwards cutting pain in the abdomen.
2. St., with discharge of much mucus. Discharge of much mucus from the rectum for several days.
3. The st. is enveloped with yellowish, thread-like mucus which, in the latter portion of the st., is quite bloody.

4. With every st., discharge of blood.
5. The latter portion of the st. is colored with blood.
6. Discharge of pure blood from the rectum, with tearing pain for days (in a young woman who never had the like before).

Aggravation :

1. Night.
2. After long continued or severe acute disease (Bell).
3. After loss of fluids (Bell.)
4. From chilling the stomach with ice cream or ice water when over heated. (Bell.)
5. After food ; after rancid food, especially shellfish. (Bell).
6. In hot weather. (Bell).
7. After exposure to great heat of the sun or of fire. (Bell).

Before St :

1. Drawing pain through the abdomen transversely across.
2. Violent labour-like pains in hypogastrium to front and back.
3. Great urging.
4. Colic.

During St :

1. Pinching in the abdomen.
2. Burning and cutting in the anus.
3. Pricking in the rectum as with needles.
4. Fœtid flatus.
5. Bleeding from anus. (Hg.)

After St :

1. Burning in the rectum.
2. Repeated pain in the abdomen towards the sacrum and bladder, almost as after taking rhubarb.
3. Forcing in the abdomen.
4. Squeezing pain in the abdomen.
5. A pinching shooting in the left hypogastrium and incomplete call to st., like a pressure on the rectum all day.
6. Complete emptiness in the abdomen, particularly noticed when walking.
7. The abdomen is swollen like an induration.
8. Dragging or griping colic.
9. Bleeding from anus (Hg).
10. Tremulous weakness, exhaustion.

Rectum and Anus :

1. Aching pain in the abdomen, with urging to st., and discharge of hot flatus, which relieves.
2. Aching pain in the anus.
3. The urging to st. goes off with loud discharge of flatus.
4. Discharge of flatus with burning in the anus, and relief as if a stool were coming.
5. Itching smartings at the anus ; after rubbing burning.
6. Ineffectual urging to st.
7. Rush of blood to the anus.

8. At night, moisture on the perinæum, from the anus to the scrotum, with itching and excoriation.
9. Swollen, painful hæmorrhoidal veins (blind hæmorrhoids).
10. Excoriation of the anus, and perinæum generally.

General Symptoms :

1. Vertigo so that he must hold on to something. On walking, vertigo and staggering. Vertigo when stooping, as if the head wagged to and fro ; in bed, after waking from sleep ; only when sitting, as if the head swayed to and fro.
2. Headache as from contraction of integuments of the head.
3. Great paleness of the face ; grayish yellow color of the face.
4. Severe epistaxis, that can scarcely be stopped.
5. The gums feel sore. The gums are detached from the teeth and sensitive. Recession of the gums from some of the lower incisors. Frequent bleeding of the teeth and gums.
6. The tongue is furred white ; covered with brownish yellow mucus. The tip of the tongue is hot and dry.
7. He had a difficulty in speaking just as if the tongue were difficult to move.
8. Dryness in the mouth without thirst.
9. Frequent empty eructations, with or without short pinching in the abdomen. Sweet, or bitter and scraping eructations. Sour eructation after taking milk.
10. Waterbrash ; constant heart-burn ; acidity always rose up into the mouth ; something hot and acrid rose up in the gullet.
11. Salt or bitter taste in the mouth. Bitter taste before and after eating. Flat, watery, offensive taste.
12. Anorexia and frequent eructations (with confusion of head).
13. In the morning, an hour after waking, nausea, and as if qualmish in the stomach.
14. Frequent inclination to vomit and yet he did not vomit. Constant nausea, without appetite and without st.
15. Repugnance to butter. A small quantity of wine heats him. Longing for coffee, acids, sweet and salt things. Aversion to meat and fat things ; to milk, which causes flatulence.
16. After a moderate dinner, repeated hiccup.
17. After eating but little, distension and fulness of the abdomen and rumbling in the bowels.
18. A scraping sensation in the stomach up into the throat like heart-burn.
19. In the evening, pain in the scrobiculus cordis, which was painful to the touch ; at the same time nausea, and she commenced to have loathing when she only thought of eating. Throbbing and pressure in the scrobiculus cordis.
20. Pain in the abdomen as after a chill ; it increases before the discharge of flatus and persists thereafter.
21. Cutting in the abdomen, which darts through the bowels like lightning.
22. Constantly distended abdomen. Day and night as if over loaded with food, and as if full and pressed in the abdomen,

- with eructation.
23. In the left epigastrium, under the short ribs, going towards the back, a squeezing pain from imprisoned flatulence. Squeezing pain in the abdomen, in the hypogastrium.
 24. Aching pain in abdomen, with rumbling and discharge of inodorous moist, warm flatus, whereupon the bellyache ceases.
 25. After partaking of a small quantity of harmless food, violent pinching about the umbilical region, which is quickly removed by eructation and the discharge of some flatus.
 26. Deep seated burning pains in the abdomen generally in the bends of the colon (Bell).
 27. Flatulent colic, with discharge of inodorous flatus.
 28. Audible rumbling round about in the bowels followed by great discharge of flatus.
 29. Flatus of a fœtid smell.
 30. Incontinence of urine, wetting the bed at night. Urine almost suppressed, dark-coloured, thick, with stale odour. (Hg.)
 31. Urine reddish, turbid or dark colored; dark red, as if mixed with blood. Red sediment. Urine much more scanty.
 32. She always felt as if the blood rose into her chest, and at the same time she was cold in her body.
 33. Pain in the chest as from displaced flatulence. Tightness of the chest and short breathing, as from flatulence pressing upwards. Feeling of oppression in the chest which goes off immediately after eructation.
 34. Breath quite cold; as also throat, mouth, and teeth.
 35. Icy cold hands and feet. Frequently wakes up in the night with coldness of the lower extremities and knees.
 36. Exhaustion. Very frequent but only momentary attacks of fainting, causing him to sink down, also accompanied by vertigo—followed by cutting in the abdomen and by griping in the bowels as if diarrhœa would ensue—but yet only an ordinary st. was passed.
 37. At night vivid but unremembered dreams.
 38. Great anxiety and sensation of heat though she was cold all over to the touch. Weak, depressed pulse.
 39. All day long, much heat, but always attended by cold feet.
 40. Anxious as if oppressed for several days. Restlessness.
 41. Peevish, wrathful; child wishes to vent itself in rage, strikes kicks and bites. (Hg.)
 42. Severe cramps in the leg, and sole of the foot; the toes are drawn crooked.

Remarks : *Carbo veg.*, notwithstanding its prominent symptoms of constipation, has been used more for diarrhœa than for constipation, though Hahnemann vouches for its curative action in the latter with insufficient stool. It has been found eminently successful in diarrhœa, when associated with great development of flatulence. It is not easy

to discover the seat of the flatulence generated under the action of vegetable charcoal. Dr. Hughes thinks it is more in the stomach than in the intestines. But when we have passage of the gas both upwards and downwards, and when the gas passed by the anus is both fœtid and inodorous, it is very likely that the mucous membrane of the whole alimentary canal is engaged in the morbid process. The fœtidity of the gas is probably due to deficient action of the liver.

We have found **carbo veg.** eminently serviceable in hæmorrhage from the rectum, and in cases of cholera where the stools are either purely bloody, or profuse, papæscnt and pink colored. It may be doubted whether these are true cases of cholera or not, 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.

The power of **carbo veg.** over the collapse of cholera has been questioned, and by no less an authority than Dr. Richard Hughes. But the testimony in this direction is all but unanimous. It appears rather strange that Dr. Hughes, who himself describes the **carbo adynamia** as "non-febrile, therein contrasted with that of arsenic and attended by evidences (such as blueness and coldness) of defective circulation and imperfect oxydation of the blood," should fail to see its resemblance to the **adynamia** of cholera. It is, however, not in every case of collapse of cholera that **carbo veg.** will restore vitality to the patient. It is beneficial 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 where with coldness of the extremities there is abnormal heat of the chest and of the head, a condition which we have pointed out as one of the utmost gravity, and which hitherto has resisted almost all our remedial agents. **Carbo veg.** is specially useful after **Arsenicum**, more particularly where the latter drug has been abused, as it generally is, in cholera.

In dysentery **carbo veg.** is useful in the condition when sloughing has taken place, when the discharges from the bowels have become very offensive, when there is tympanitic distension of the abdomen, and the patient's vital powers are ebbing fast away.

Cleanings from Contemporary Literature.

CLINICAL ASPECTS OF KOCH'S DISCOVERY.

By J. S. MITCHELL, M.D.

It would be presumptuous to speculate on the practical results likely to obtain from Koch's discovery of the bacillus of tuberculosis, if it were not one of a series of well studied observations, rather than an isolated fact whose clinical bearing could not be at once discovered. The *Lancet*, speaking of it, says, the pathological importance of the discovery of the proximate cause of this frightful scourge of the human race cannot be over-estimated, nor is it possible to foretell the practical results to which it may lead. With greater caution, the *Record* suggests that we must know more about "Koch's Bugs" before we accept the practical conclusion that we may avoid the disease by disinfecting the sputa and taking care not to inhale the phthisical breath.

The London *Times* and *Gazette* ridicules the mode of procedure in the discovery and cultivation of the bacilli.

Far be it from me to lightly treat of experiments and investigations like those of Lister, Pasteur, Koch, Cheyne, Wood, Formad and Hueter, and the many other able men who have entered this field. Time may yet show that these discoveries, though not as yet conclusive, are the beginning of the end, the lead that will open up the true fissure vein of etiology. As the success of the great Napoleon was summed up in the single word, *Audas*; so the advancement of medicine may be attributed to the one word, *Research*. The varieties of microbes may turn out gradational morphological forms of the same organism, and hence account for the value of different agents, one being efficacious only at one stage, and another at a subsequent one. Just as much of pathological new formation may be referred merely to a former well-known condition, chemically or otherwise altered by the morbid process.

It would seem wise to advise some who indulge in flippant strictures concerning men like Koch, Tyndall and Pasteur, to wait until they have themselves acquired a world-wide reputation for original research, and also to note the modesty with which great investigators abstain from assuming too much for their discoveries and the dignity with which they check the extravagant lengths to which their oft times over-zealous followers incline. Moreover since, as Wagner justly remarks, etiology is now the weakest chapter of pathology, we ought, as physicians, to bid God-speed to labors that tend to strengthen this branch of medicine. At the same time we should be more content with our progress, be satisfied that disease is a ghost of Banquo and will not down at our bidding. Let us avoid the unscientific course of pushing facts in support of a theory too far, as, indeed, some of these very distinguished men wisely do. To found a new system of medicine upon a single antiseptic, is like opposing a whole phalanx with a solitary bayonet, yet this is what Déclat seeks to do, though Cheyne, whose history of antiseptic surgery is most complete, says of his work on Carbolic acid, it contains no new observations of any value, and his claim of priority is absolutely without foundation. As the origin of evil ever perplexes the theologian, the cause of disease will doubtless long perplex the physician. It is hard for us when we are battling to save human life to philosophize thus, but science is ever calm, ever judicial.

We propose to consider the discovery of Koch in the light of what has gone before; the lamp of experience is our torch. We first submit this

brief *resumé* of his investigations. By staining sections of tuberculous tissue with Methyl-blue, and then with Vesuvin, he has been able to see in all true tubercles a minute bacillus. It is rod-shaped and from one-fourth to one-half the length of a red globule. It closely resembles the bacillus lepræ (which we shall presently see is asserted not to exist). These bacilli seem to make their way first into the wandering cells. By infiltrating, surrounding and irritating them, the gray tubercles develop. The tubercles form about the bacillus as gnats about the insect poison. The bacilli were cultivated, and early and later generations injected into peritoneal cavities produced tubercles, while the culture fluid did not. As further evidence, he says, bacilli are always found in sputa of phthisis, and not in that of bronchitis. He explains the gradual development of phthisis by the slow and peculiar development of these organisms.

He has not, like Pasteur with chicken cholera germs and Bacillus anthracis, cultivated milder generations which would produce a modified tuberculosis, though that may yet be done.

The practical conclusions are that we can possibly diminish the frequency and severity of the disease by means of this knowledge. How? Obviously by the use of germicides, and possibly by vaccination, if we can get a mild generation. *Tolle causam.* We judge of these points by comparison.

The history of microbes has been as carefully studied in diphtheria as in any affection since Oertel and Hueter pointed out their existence. But what advantage in a clinical way has accrued? A review of the treatment of this disease for the last eight years, with all our knowledge of special microbes, shows that it has availed nothing in untangling the confused web of therapeutics, and that the greatest diversity of opinion still exists among those whose treatment aims at removing the cause. Of the 142 authors on this subject, 26 give most credit to Pilocarpin; I may add only because it is among the latest, though the reviewer announces this agent a failure; 12 think Potassium chlorate the best; 10 the Volatile oils; 5 the Salts of iron; 13 the Mercurials, &c. As regards germicides for local application the same difference of view obtains. Carbolic, Sulphurous and Salicylic acids, Alcohol, Eucalyptol, Chlorate of potassium, &c., in turn being extolled. Could we expect other results when Wood and Formad demonstrate that of thirty-two animals inoculated subcutaneously and in the mucus membrane of the mouth with diphtheritic matter, only one showed exudation and six died, but of those that died in every case the internal organs were tuberculous, while of four cases injected with pus, two showed pseudo-membranous exudations. Trendelenburg showed that Ammonia would do the same thing; so will Cantharides. Moreover, according to Bastian, bacteria can be produced in germless tissue by introducing germless irritants under the skin. These investigations appear direct proofs that the organisms are a consequence rather than a cause of disease. Hence diphtheria is a result of intense inflammation from any irritant, not a specific process induced by bacteria.

Experience with the bacilli of tuberculosis will very probably have much the same history as have diphtheritic microbes. Indeed, already Koch strikes a practical objection to his views. At the Congress for Internal Medicine lately held at Wiesbaden, he explains as follows, on his theory, the existence of hereditary phthisis. The development of micro-organisms is greatly influenced by their nutritive media. Human bodies do not offer equally good native ground for pathogenetic bacteria. Some persons inherit a system well calculated for the development of tubercular bacilli; others do not. But he fails to tell us whence comes this inherited system, and the problem of the etiology of phthisis is therefore unsolved. We incline to re-affirm the doctrine of Laennec, though it seems a step backward, not as to pathological detail, but as to the non-development of

phthisis from pneumonia, bronchitis or other inflammation of respiratory organs; in other words, to assert its absolutely specific though still unknown nature. I make this affirmation, too, solely from clinical experience. The thirty years' winter-cough ends as it began, while the bronchitis of the elected phthisical subject leads straight on to death, only halting to determine whether the route shall be by fast train or freight, a fibrous or catarrhal form of phthisis. Just as the bacilli of diphtheria may fall in successive showers upon the unprepared mucus surface absolutely harmless, so may the bacilli tuberculosis upon the non-susceptible mucous membrane of the respiratory organs.

The next practical question is, whether it is probable anything can ever be done by vaccination of tubercular virus. Dr. Carpenter foresees from Pasteur's experiments a series of discoveries of surpassing importance—an appropriate vaccine for measles, scarlet fever and other acute diseases in the human subject, and when this was uttered, he would doubtless have included phthisis, had he then known of Koch's discovery. Universal vaccination! Heaven forbid! A paper lately read before the New York Academy of Science entitled "Prevention of Tubercular Disease in Man and Animals," takes the ground that we may diminish the disease by vaccination. But Carpenter's and Miller's utopian dreams are somewhat dispelled by the experiments undertaken through the patronage of the Hungarian government. Dr. Aladar von Roszkahegyi (lecturer on Public Health at Buda-Pesth University) gives an admirable *resumé* of them in the *Practitioner* for February and March. Six hundred sheep and cattle were used. Half the animals were vaccinated and revaccinated with the attenuated anthrax-virus, and then the whole number, vaccinated and unvaccinated, were inoculated with the virulent anthrax material. The conclusions were that vaccination was by its means a dangerless operation. Of the total 317 sheep, 18 (or 5.687) died of anthrax after the two protective inoculations. One died of another disease, while in twelve inflammatory infiltration occurred at the point of injection, spreading over the whole thigh and leading to the formation of abscesses as large as the fist, also fistulæ and sinuses, in consequence of which the animals became lame in the hindlegs. While on the other hand, only one (0.37 per cent.) died during this time of anthrax, and none of other diseases. How significant these facts!

Again, after the protective inoculation, the deaths from other diseases, catarrh, distoma, strongylus and pericarditis, occurred exclusively among the vaccinated animals. It follows from this, says the doctor, that the fatal issue of other severe but latent diseases is accelerated by a protective vaccination. This is a toothsome nut for the anti-vaccinators to crack.

In view of these facts, Dr. Collins makes an amusing computation. According to the report of the English Registrar-General, the total number of zymotic diseases is 29. If five per cent. should succumb, as shown above, for one disease— 29×5 equals 145; that is, not only would we all be sacrificed while being vaccinated, but 45 would have to die twice over in order to protect the people. It amounts, in fact, to being killed to save one's life. With the new bacilli now rapidly being corralled and classified, we may reasonably hope to die several times. Are we on the road to Ponce de Leon's Fountain, or are we ready to ask whether a vaccinated life is worth living. This is not more ludicrous than Lister's example of the extreme to which the germ theory might be carried when he sounded the note of warning at the International Congress. There is a tendency, he says, to regard the languid degeneration of tissue in feeble (strumous) constitutions as of an infective origin. This is an exaggerated view and may seriously affect one's practice. If, for instance, he continues, I really believe the degenerated tissue affected with a parasite, I ought to cut away

the whole of the diseased structures ; *i. e.*, this is tantamount to saying the whole body should be cut up and the pieces buried, or otherwise deprived of bacteria. Another mode of being killed to save one's life. Dr. Roszahegyi also says the protection from vaccination is not a certain one ; also that the general employment of protective inoculation would spread anthrax microzymes in inconceivable quantities throughout the country. Therefore he states that the immediate general application of Pasteur's method would be precipitate, and that it should least of all be recommended and disseminated by the authority of the State. The significance of this report is patent. Again, may I not justly venture to direct attention to the controversy going on in regard to the arm to arm and cow-pox vaccination as protection against variola, and to the doubts concerning the quality of the lymph of the shops. Suppose a batch of our cultivated bacilli, which we are innocently using for vaccination, should get wild again.

With this showing, are we not right in at least assuming that the use both of germicides and vaccination for banishing parasitic diseases, is surrounded with uncertainty and doubt, and that at least for some time to come, we can hope for but little practical result from Koch's discovery.

We now turn our attention for a moment to the germ theory, in general, as the main etiological factor in disease. Strengthened by the recent investigations of Pasteur and Koch it is still brilliant, attractive and dominant. Let us see if we can join those who have already rendered the verdict not proven. Jacobi says, we can regard the bacteria epidemic as only a calamity, and Grimshaw sagely remarks that if all the terrible powers attributed to bacteria were true, they would soon have the world to themselves, having eaten up or decomposed all other organized beings. We offer some points that throw doubt upon the theory.

The latest investigation of Koch on the bacilli of tuberculosis show that acids, even Nitric and Sulphuric, do not destroy the ectoderm, while alkaline solutions become diffused throughout the parasites and destroy them. Acid, Alkaline or Phenol, are offered for our choice as germicides. At the International Congress, Listerism, the practical outgrowth of the germ theory, received a rude shock, not as some too prematurely assume, its downfall. Carbolic acid poisoning inducing fatal kidney disease has occurred, as well as antiseptic suppuration.

Tyndal and Dr. Downs both demonstrate by experiment that light is fatal to bacteria, *i. e.*, that the solar rays are a real germicide. Hence we may do wrong to exclude light, and in any event, we are in the dark as to the real value of our antiseptic, for the sunlight, not the drug, may be the efficient agent. Therefore, do we doubt.

Again, the etiological relations of the bacillus lepræ have been generally admitted since 1870, and now comes Dr. Schmidt who says, that from an examination of three fatal cases of leprosy, he fails to discover the so-called bacillus lepræ. Drs. Curtis, Fenger and Hyde, of Chicago, also failed to find them in specimens of leprosy tissue sent by Dr. Schmidt. Still, Wood and Formad say if certain distinctive points are observed, mistakes in recognizing micrococci and other bacteria are entirely out of the question. Yet it is just possible, in view of Schmidt's statements, that we may not have any bacteria terma and micrococci in diphtheria, nor, indeed, a bacillus in phthisis. New research would seem to be needed to establish even the existence of microbes.

Further, Cheyne's experiments show that if you lower the tone of the germless healthy animal with phosphorus, micrococci enter the system and are found in quantity in the internal organs. *Ubi inflammatio, ibi micrococci.* We must have congenial soil for microbes ; and whence this congenial soil ? This last fact is pregnant with significance. Whatever form of disease

produces debility, it may be followed by development of microzymes, but the etiology of the debility is as obscure as ever. The history of medicine also leads us to judge that before long not only the theory but its corollaries may be abandoned. The main idea that the bacteria enter as such, develop and cause symptoms, may share the fate of the humoral pathology, the doctrine of solidity, consensus and revulsion of the mechanical and chemical origin of disease, with the other views which we have seen rise and fall in the not very distant past, not because these systems fell by the wayside, but because we seek in them a purely physical cause, which is to be removed by physical means. When you corral the spiritus morbi as you can the materies morbi, then, and not till then, will homœopaths send up their pœans over the solution of etiology.

Compare, finally, our advantage with the advocates of crude medication on a germ theory.

In this contest regarding the etiology of disease and the therapeutic conflict that follows, Homœopathy is the medical Hermes, soaring above the strife bearing good tidings to its followers. Homœopathy is not a theory, but a principle founded upon experience. We cure by changing the morbid process by whose external picture the symptoms can always be recognized. Compare the length of time this law has held sway with the era of other therapeutic systems. It stands stronger to-day than ever, and its votaries are constantly increasing. In this age of keen analysis and rigorous criticism, it gives place to no new claimant. We may bid God-speed to etiological and pathological investigations, but downfall after downfall of therapeutic systems based upon them, teach us to be chary about accepting any conclusions until tried through long experience. Hahnemann gives us early a wealth of clinical experience that was confirmatory. The polychrests will do for us to-day what they did for him, while we see our old school confreres take up one new favorite after another as each has had a brief reign. Not alone from isolated clinical cases are its truths confirmed, but from grand general results. Extravagant as are the following claims, I am sure every careful prescriber and observer will sustain me in them.

In phthisis we prolong life in most cases far beyond any other method of treatment, not through a miserable existence, but in comfort unknown to other therapeutic means. Syphilis, that prince of disease producers, if we may credit the syphilographers, and I fully do, we have greatly shorn of its terrors. An experience of nearly twenty years has never given me a tertiary symptom, and in cases treated from the start not even an iritis. A primary sore, never phagedenic, eruptions sometimes extensive, moderate alopecia with usually a quick, new growth, mucus patches most stubborn of all the lesions, an increased tendency to neuralgia and rheumatism, of mild grade usually, is all the train there is to be from the Hunterian chancre in good homœopathic hands. Did any physician of our school, whose hair is silvered by age, ever know of a case of chronic articular rheumatism in those who have been brought up on Homœopathy? Did you ever know an inveterate neuralgia, unless the doctor fell from grace and gave crude Quinine continuously, or hypodermic injections? Is not puerperal fever almost unknown with us? Disappointing as is sometimes our treatment in individual cases, we may console ourselves with these grand results whose list is by no means complete.—*Transactions of the American Institute of Homœopathy for 1882, p. 235.*

PROFESSOR KOCH'S BACTERIA IN TUBERCLES
A GREAT FALLACY.

BY ROLLIN R. GREGG, M.D. .

You have all heard much in the last few years of bacteria in diphtheria, splenic fever, chicken cholera, typhoid fever, etc., and now comes the claim by Prof. Koch, of Berlin, heralded to the world through the *London Times* by Prof. Tyndall, that he, Koch, has discovered bacteria in tubercles. But it seems to me that notwithstanding the high scientific standing of these men and their positive assertions, we lesser mortals have the right to investigate these matters in our own way, and if need be, to call in question the possibly hasty conclusions of such great scientists, in the best interests of that very science to which they are such ardent devotees. Indeed, as physicians who have to deal practically with human life, it is our duty to investigate this subject most thoroughly for ourselves, and not accept every, or any, mere theory, unless it be first demonstrated to be true, and to be relied upon to the extent of being safely carried into practice.

As many of you must know I have myself given some attention to bacteria the last few years; and I assert positively here, as I have repeatedly done elsewhere, that the three classified forms of so-called bacteria in disease are never, in any case, anything else than the three forms of coagulating fibrin, which develop in every disease and in every locality where congestion and inflammation manifest themselves as results of morbid causes.

But before we can fully and properly understand this question of the assumed bacteria in tubercles, in all its bearings, and have a rational basis upon which to found a correct judgment, we must first digress to a consideration of assumed bacteria in other diseases.

In the hope of aiding some, or possibly many, to a better understanding of the claims and fallacies of the bacterists, I have in numerous papers, and in other ways, called and recalled the attention of the profession to that well-known fact in pathology, established fifty years ago or more, namely, that in every inflammatory condition, whether acute or chronic, and wherever located, fibrin in a fluid condition is poured out into and around the inflamed part, and there coagulates, or organizes, first into granules, and then these granules, or many of them, join together into threads or fibrils, and lastly these fibrils contract into spirals, if their ends are left free from attachments so they can. These are *facts* which no amount of sophistry can explain away, and which scientific men must not longer neglect, or, certainly, will not be allowed to longer ignore. Well, you may ask, what has all this to do with bacteria in tubercles? We shall see.

These granules of fibrin are of the same size and exactly the same form as the alleged micrococci or spherical bacteria of disease—both standing "upon the very borders of the visible" under the highest magnifying power.

The fibrils of fibrin are precisely like the assumed *bacterium termo*, or rod-like bacteria of disease, and demean themselves the same under similar conditions.

And the spirals of fibrin are also precisely like the so-called spiral bacteria of disease, and they too act similarly under all similar circumstances.

We have all heard of the chaplets of bacteria, or the beadlike construction of many of them, and this is precisely the way that these fibrils of fibrin must first organize, and also disorganize under retrograde metamorphosis. That is to say, the fibrin of inflammatory blood is much slower of coagulation than that of healthy blood, consequently its granules are slower in completing their firm union into homogeneous fibrils, and must therefore

show their granular structure, or bead-like unions, longer and more distinctly than the organizing fibrin of health. Then, when a rotting diphtheritic membrane is disintegrating, these granular unions would necessarily be the first points to show evidences of parting; hence, here again, we would have the bead-like appearances, and all in perfect accord even in this respect with what they tell us of bacteria.

As to proportionate numbers, moreover, there is a similarity throughout. The bacterists tell us the micrococci are far in excess of the other forms of bacteria; indeed, almost infinitely so. And so it is and must necessarily be with granules of fibrin as compared with its fibrils. Hundreds of granules of fibrin join together to form a fibril, so the former must be hundreds of times in excess of the latter. And the spirals of fibrin are much less in numbers than the fibrils (as spiral bacteria are said to be far less than the rod-like), for the reason that the fibrils readily secure attachments of their ends in or upon any living part, which hold them straight; while it would only be the few fibrils that did not secure such attachments that would contract upon themselves, under their firmer organization, and thus be curled into the spiral form.

Again, in color, the granules and fibrils of fibrin are the same as bacteria. Prof. Cohn says the bacteria are white, and we all know that coagulated fibrin is white. And still again, the two correspond fully in places of abode, for whenever bacteria are said to be found in disease, whether in fluids or solids, on surfaces or infiltrated into the substance of tissues, in tubercles or within tubercular cells, then also are found granules and fibrils of fibrin under inflammatory conditions.

So, look where we may, institute the most careful scrutiny we possibly can with reference to these two sets of forms or bodies, the comparisons and similarities between them are complete, and as exact as the most rigid scientific requirements could demand. In size, in form, in color, in habitation or location for development, in demeanor, in everything, the two are, I repeat, precisely alike and undistinguishable from one another by any methods of observation known to science. And here we come to the strangest and most unaccountable fact in all this field of research, or, for that matter, in all the range of science.

Notwithstanding these similarities are so exact throughout between the respective forms of these two sets of organisms, not a scientist, not a microscopist, not a pathologist, the world over, has ever, so far as I can learn, called attention to the *facts*, when discussing bacteria, and told us that there were these forms of fibrin, swarming in hundreds of thousands, in every instance, and in the very places, where the bacterists claim their parasites to develop and multiply in such enormous numbers. Throughout all the recorded discussions and the entire literature of the subject not a word from them is to be found telling us that forms of fibrin in great numbers are present under all such circumstances, or even hinting at their existence.

What kind of science is this? A world full of scientific men, many of them of the highest order, but not one of them stops to think and apply to the solution of their great mystery, one of the most simple and best known of physiological and pathological facts, namely, the various steps that extravasated fibrin *must* go through, in every instance of its exudation and organization in all forms of inflammatory disease. Instead of this, they go on mystifying the mystery, until they have made the world stand aghast with fear and trembling as to who shall be the next victims to those terrible destroyers, "bacteria," or vegetable parasites, which cannot develop, and could not live a day within the precincts and under the dominion of animal life. And which exist there only in the imagination of a body of men led entirely astray by a mere theory that is utterly with-

out foundation in any fact pertaining to any disease of the human or animal body.

Why, do not these men know that clots of the healthiest blood ever drawn from man or beast furnish their assumed micrococci (granules of fibrin) by the million, in the first step of its forming into a clot, that, in the next step, these granules mostly join together in threads or fibrils, which are their rod-like bacteria, or *bacterium termo*, and that when the clot begins to shrink, these fibrils contract and curl upon themselves, thus giving us the spiral bacteria, or exactly what are so-called in diphtheritic membranes?

And now comes Prof. Koch with his claim of having discovered bacteria in tubercles, to still further frighten us out of this world and into the next, at the idea that we nearly all must, or may, have something gnawing away at our vitals, which nobody but a scientific theorist or visionary is enabled to see, or has the ability to comprehend. But let us maintain our senses a little longer, and see if we also cannot discern some of the beauties of this wonderful creature, and tell what he is made of, and how he looks. It seems to me we may be able to do so, if we do not go insane just yet over this new bacteria craze. At least, let us try.

Every tubercle has fibrin, in a fluid state, extravasated from the blood into and around it, during the process of its organization; and there the said fibrin coagulates into granules and fibrils to furnish Prof. Koch with his "bugs," as they are already facetiously called; that is, with his bacteria in the organizing stage of tubercles. This assertion of fibrin being extravasated into and around tubercles is no mere guess-work. It is a great scientific fact, and an absolute necessity in nature's watchful and unceasing conservative care over us, of which, however, Prof. Koch seems to know nothing, or, at least, which he fails to make the slightest allowance for.

The fibrin exuded into the tissues around tubercles becomes condensed and organizes (under the inflammation that softens the tubercles) into the firm and impervious wall that outlines and divides its putrid contents off from the surrounding healthy tissues. But for this provision the poisonous pus of a softened tubercle would diffuse itself in every direction through the healthy lung tissues around it, lighting up inflammation and causing suppuration everywhere, until, as a final result, an entire lung would be destroyed by even the smallest tubercle softening therein and diffusing its poison as stated. Instead of this being allowed, however, that impervious fibrinous wall limits the destructive process of each tubercle to the size of that tubercle, and recovery of the lung would be as complete from it, as any part of the surface of the body recovers from a boil, were it not for the tuberculous taint left behind in the system, which so readily and almost universally leads on to the formation of numerous successive tubercles, until life is destroyed. It is but rarely, if ever, that a single tubercle kills, but large numbers of them forming simultaneously, as in acute or sub-acute cases, or many of them in succession as in chronic cases.

This walling-in process, against the poisonous pus of tubercle spreading into healthy lung tissue, goes so far that, when a tubercle is located at a distance from bronchi of sufficient size to carry off the putrid matter, with suppuration pointing towards said bronchi, as it always does, the pouring out of fibrin precedes the suppurative action in that direction, and said fibrin organizes as suppuration advances, until a channel, walled in all around from healthy tissue, or the fistulous canal, is formed, through which said pus can be safely conducted to said bronchi, and from there gotten rid of by cough and expectoration, to the least possible injury of the remaining healthy parts of the lung.

The fibrin extravasated into the tubercle and upon its immediate surface, and there organizing, is what gives us the fibrous stage of all tubercles

that have such a stage. Then, when the tubercle softens, the organized fibrin in it softens with the rest; that is, undergoes retrograde metamorphosis, or breaks down in the exact inverse order of its original construction, by separating into fibrils, and these fibrils breaking up into segments, or the so-called rod-like bacteria, while the segments separate into their original granules, or the assumed micrococci, and furnish Koch with all the bugs he wants in supplanting tubercles upon which to climb into eminence in the scientific world.

So much for bacteria in general in tubercles. Now we come to another and more specific point that may seem to many difficult to surmount. Prof. Tyndall quotes Koch on the following point: "It was, he says, in the highest degree impressive to observe in the centre of the tubercle-cell the minute organism which had created it." And the editor of the *New York Medical Record* says, in speaking of Koch's "minute bacillus" of tubercles: "It is rod-shaped, and from one-fourth to one-half the length of a red blood-corpuscle." These are specific and positive assertions as to the form, size and nature of the bodies which Koch claims to have seen, and let it be understood that no question is here raised as to his having seen such bodies. He has undoubtedly given us the facts correctly upon that point, but it is his assumption as to the nature of these objects that is disputed, and to understand this we must again digress to other matters.

Many times during the last twenty years have I asserted that every tubercular cell is nothing but a decolorized red blood-corpuscle, and with this paper I submit a sheet illustrating this fact. The causes of this change of the natural healthy cells of the blood to the most deadly of all morbid cells that prey upon organized life, is as far removed from bacteria as heaven is from that place to which I expect to "be speedily consigned for having written this paper.

It is the circulation of the colored blood-corpuses in the too watery blood of the consumptive that decolorizes many of them, that is, the older and the weaker of them, just as other organic structures of color are bleached when having to exist in a medium that is too watery for their nature. Then they, these decolorized blood-corpuses, are deposited or congested in the capillaries, and fibrin is poured out around them where it coagulates to inclose the mass, and the whole becomes an organized tubercle. In many, if not in all cases, in the first stage of the disease other blood-corpuses, not decolorized before their deposit, become also congested along with those that are, and many times independently of them, under the strong congestive tendencies of some tuberculous subjects, after which such corpuses are also decolorized by the chronic or sub-acute inflammation which they excite, have fibrin extravasted and organized around them, and they, too, then become tubercular corpuses, and constitute in mass a tubercle.

Here, then, is the simple story of the immediate cause of the organization of all tubercles, wherever found in animal life, and with which bacteria has no more to do in any case than they have to do with the creation of healthy blood-corpuses in the first instance, or than we had with the creation of the world. The remote causes of tubercles, that is, the cause of the too watery condition of the blood of the consumptive, the cause of the marked chronic congestive and inflammatory tendencies of such subjects, etc., etc., are too complex for consideration here; although it is believed that they are all known, and that bacteria have nothing whatever to do with them either.

A little further explanation of facts and then we will be prepared to understand Prof. Koch's bacteria *within* the tubercle-cell, as well as those distributed through the tubercular mass outside of the individual cells, which has already been explained.

We all know the fact that fibrin is held in perfect solution in the serum of the blood, and also that it passes through the walls of the capillaries, while thus held in solution, without the slightest apparent hindrance, or as readily as it would through a sieve. And we further know that the serum and whatever is in solution in it, fibrin and all, passes just as readily through the walls of the blood-corpuscles inwardly to mingle with their contents as it does through the capillary walls. Indeed, that the liquid contents of the blood-corpuscles are the same as the serum of the blood, with hæmatin added thereto, to give them their color. And still again all know, or ought to, that wherever blood stagnates under congestion, and especially so under inflammation, the fibrin in the serum commences at once to coagulate into granules which soon unite to form fibrils. Lehmann says this coagulation of the fibrin "goes on *within* the vessels of the living body as soon as the blood ceases to circulate."

Well, then, what happens to the fibrin held in solution in the serum which is retained in the congested vessels, must also happen to the fibrin held in solution in the serum retained within the walls of the blood-corpuscles; that is, it must be coagulated first into granules, which soon join together into minute fibrils within the corpuscles. There can be no other possible result, because wherever fibrin stagnates, and especially when brought under inflammatory action, as in all softened tubercles, there it universally coagulates.

Then all tubercular corpuscles being simply decolorized blood-corpuscles and nothing else, which hold within them fibrin in solution, this must be coagulated in the way above pointed out, and thus furnish Dr. Koch with his bacteria here, too, the same as throughout the mass of tubercle outside the special cells.

You will remember the point in this connection already given by the editor of the *New York Medical Record*, that the tubercular bacteria of Koch "is rod-shaped, and from one-fourth to one-half the length of a red blood-corpuscle," which would be the exact condition of the fibrils of fibrin coagulated within the blood-corpuscles as first described.

And here is all there is of this much vaunted discovery, which has led, or is rapidly leading, to a new bacteria craze, that, unless stopped, must still further divert the minds of physicians from disease as it really is in nature, and from their true duty in healing the afflicted, by creating bugbears that they know nothing of, or how to combat, and which only leaves them helpless, in the midst of doubts and fears, which have no foundation whatever in fact.—*Transactions of the American Institute of Homœopathy* for 1882, p. 649.



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DRUGGING, NOT THE BE-ALL AND END-ALL
OF THERAPEUTICS.

IN the mind of the laity, and unfortunately of the profession to a large extent, drugging has become synonymous with treatment of disease. A doctor is called in, not for advice, but for medicine. He must give or prescribe some medicine to be taken internally. If he should happen to think that a change in the mode of living would be competent to bring about the desired recovery, if in consequence he should content himself with advising about diet, &c., and abstain from inflicting foreign substances upon the system, he is sure to lose favor with his patients, and must expect his dismissal sooner or later.

As in the majority of instances, if not in all, it is necessity, the necessity of earning a livelihood, which impels a man to take to the medical profession, the result of abstaining from drugging must be obvious. The practitioner, who begins by taking conscience and reason as his guides in the management of his charge, soon discovers his mistake and loses no time in rectifying it. If patients cannot be satisfied without being drugged, drugging he practises in right earnest and we may say with a vengeance. And just as a man, who continually talks

lie, at last believes them himself, so the practitioner, who drugs his patients unnecessarily and against his better reason, will gradually come to believe in the absolute necessity of drugging in every instance and for every change of symptom. It is thus that the laity and the profession have been acting and reacting upon each other. And things have come to such a pass that it has well nigh become impossible to even inaugurate reform in the matter. The promulgation of homœopathy was hailed as the beginning of reform in this direction, but it has far from fulfilled yet the sanguine expectations that were entertained.

With some patients it is almost a passion, we had almost said mania, to take some medicine or other, for real or imaginary illness. We had a patient who had great respect for our knowledge and skill, but who had greater respect not only for medicines that we prescribed but for any medicine. We remember one day when we asked him to discontinue all medicine for a day, he remarked that that he could not do; if we gave him medicine, well and good; if not, he would take Bryonia, which had done him good once on a time! Sometimes, with almost absolute scepticism about the utility of medicine, we find associated the most absurd hankering after medicine. Patients are met with who will tell us they have no faith in any medicine, and still who will never be satisfied till something is prescribed.

The fact is, that the state of knowledge about health and its conditions, about diseases and their causation and course, about medicines and their modes of action, is so imperfect and crude that it is no wonder that the error about treatment here spoken of should be so universal. But the error must be corrected. The fact must be proclaimed in the interests of patients themselves that drugging is only one mode of treatment, that it alone is not always sufficient, that it has to be aided and supplemented by other measures, that it may not always be necessary, that sometimes it is not only unnecessary but positively injurious, that where it fails or proves injurious other measures may and do prove beneficial. If both patient and physician would attentively watch the progress of cases of illness under treatment it would not be very difficult for them to discover that drugging, on which so much stress is laid, forms but a very small part of treatment.

We have said that the promulgation of homœopathy has not been followed by the result that was so much desired by its founder, namely, the minimization of drugging. On the contrary, under the most mischievously mistaken notion that homœopathic infinitesimals can do no harm, homœopathic practitioners, especially when they are laymen, drug their patients as much as, if not more than, practitioners of the old school do. The apparent simplicity of the rule of selection has much to answer for this passion for prescribing. It is a psychological phenomenon requiring explanation that men should think so lightly of the doctor's business, should deem it almost the easiest thing of all in the world. For men, even intelligent men, who would not venture to dabble in anything else, would not scruple to dabble in medicine. To think of the necessity of training or education for the purpose is out of the question. For all other business, even for the mending of shoes, training is necessary, but not for the mending of a diseased human organism. Perhaps the imperfection of the healing art as compared with other arts, the consequent repeated failures of doctors and their intolerance and conceit notwithstanding, their resistance to reformation of their art, and the occasional success of untrained men or quacks, have led people to believe that the doctor's art may be practised with ease by any body and every body. It is not difficult to institute a comparison which would not be favorable to the regular practitioner. Regularly trained doctors cure and so-called quacks cure, doctors fail to cure and so do quacks, patients die under quacks as they do under doctors; where then is the difference?

Whatever the causes which have led to this strange conceit amongst laymen, there is no doubt that homœopathy, by the very simplicity of its rule of selection, has intensified the conceit. The judicious caution and patience enjoined by the great founder is forgotten or ignored. There is no waiting for and watching the course of the disease under the action of a dose of medicine given. Every manifestation of a new symptom however trivial is looked upon as an indication for change of medicine, and in the course of a few hours half a dozen to a dozen medicines are given to the great detriment of the patient. The homœopaths in this way show that they hardly have any confidence in the powers of their own medicines. For if the infinitesimals are not

really inert as they are represented to be, how is it they are so reckless in their use of them? If they are potent for good when appropriate, would they not be equally potent for evil when inappropriate?

We have had unmistakable and frequent proofs that homœopathic medicines when wrongly selected, or when too frequently repeated even if appropriate, lead to serious mischief, mischief which is sometimes irreparable. Infinitesimal medicines, selected on the principle of similars, are sometimes worse in point of evil than medicines selected on the contrary principle in large doses. Drugs, in the attenuated state, appear to us to have a more penetrating and pervading action than drugs in massive doses. The organism can react more strongly against the latter than against the former. When the similarity is not complete, or when the similarity being complete the dose is too large or too frequently repeated, it may bring on the very disease we are endeavouring to combat or give rise to serious aggravation of it. We have seen several instances of pneumonia being brought about by the injudicious exhibition of *bryonia* for capillary bronchitis, of coma of cerebral congestion being deepened by the administration of infinitesimal *opium*, of cholera converted into cholera by homœopathic *arsenic* and *veratrum*, of hysteric fits being rendered more frequent by *ignatia*, and so on. We have seen new complaints being developed when none existed. Thus we have seen tympanites brought on in cholera by *cuprum* and *veratrum* pushed to excess, intense thirst and restlessness by *arsenic*, a typhoid state by *rhus* and *bryonia*, and so on. The fact is, homœopathic infinitesimals are not the innocent things they are generally believed to be; they are truly very powerful, not only in removing disease when appropriate and exhibited in appropriate doses, but also in developing aggravations of existing disease and in bringing on new ones, when inappropriate or administered too frequently or in wrong doses. Indeed, it cannot be too seriously impressed upon the mind of the profession and the community, that homœopathic practice requires more knowledge, more skill, more patience, more caution, more humility and more courage than the ordinary old school practice.

That the infinitesimals are not harmless is further proved by the fact that most of the drugs mentioned in the *Chronic Diseases* were proved in attenuated doses. Some of these drugs such as

Silicea, Carbo vegetabilis, Graphites, Lycopodium, &c., could only be proved in a state of attenuation, they being inert in the crude state. We are aware of the scepticism prevailing with a large section of the homœopathic school in regard to these drugs, but the greatest sceptics do not hesitate to use these drugs in their practice, and they are loud too in their laudation of their efficacy. We are therefore justified, by all the facts we have adduced, in believing that homœopathic infinitesimals may and do prove injurious in the various ways we have mentioned. Indeed, in the hands of impatient doctors and ignorant laymen, homœopathy has degenerated into the most mischievous system of drugging imaginable. And we cannot too emphatically raise our protest against such a state of things. The protest has been raised by the purists or the hahnemannians, but these men have gone so much in the opposite extreme, so much reduced infinitesimals into veritable shadows, forgetting and even ignoring Hahnemann's plain directions for the preparation of medicines, adopting the most extravagant and absurd methods in their stead, and even going the length of literally recommending moon-shine as a remedial agent, that their protestations have not only fallen flat upon the thinking portion of the school, but are justly looked upon with suspicion.

If the true character of drug-action, physiological, pathogenetic and therapeutic, is understood, and if their powers of doing evil when they cannot do good is admitted, then the experienced and conscientious physician will have little difficulty in seeing that the diseased organism which has not been benefited by a long continued drug-treatment becomes absolutely rebellious to all such treatment, and that the only hope of recovery in such cases lies in the discontinuance of all drugs. Such not unoften turns out to be the case. To the astonishment of the routine practitioner recoveries take place in the most unexpected manner after patients, who had lost all hope of recovery under regular treatment, had been liberated from the thralldom of such treatment and been left literally to nature, all drugs being discontinued, and food and drink being allowed him according to his cravings. Sometimes recoveries take place from simple change of climate, or even from change of diet.

Of the remarkable effects of change of climate we shall just give a single instance. The Editor of this Journal, when a medical

student, was a frequent sufferer from dissection wounds. On one occasion his constitution suffered severely. The lymphatics of the arms and legs became affected, being swollen and painful. Fever, which was at first high, settled down into a slow chronic form. Loss of strength and emaciation indicated the rapid failure of health. Months elapsed without any hope of recovery from medicine. He had very nearly despaired of ever being able to resume his professional studies, when a lay friend insisted upon taking him to his native village in the district of Burdwan which was at that time a sanitarium, and not as now a pestiferous place reeking with malaria. The East Indian Railway had then opened up to Raniganj. With difficulty he descended from the second story of his house where he had been for about four or five months. Taking a carriage went to the Howrah Station, and with difficulty got into the Evening train. He used to get fever every evening which used to last the whole night. Before the train had passed Pandua the fever left, and he passed the night as he had not done for months. About a couple of hours before dawn alighted at Burdwan, and no conveyance being available, he had to walk about half a mile, this he could do without any inconvenience, as the pains in the lymphatics which had troubled him so long had nearly disappeared. And after resting a couple of hours he walked again, and this time about eight miles, after which he bathed in a pellucid natural stream, the first time in cold water after some months, felt wonderfully invigorated by the bath, and then after tiffin walked again about eight miles to reach his destination! From that day there was no more return of fever, the lymphatics were no more painful, the appetite returned and with it strength and health.

We shall give one instance of recovery from a very chronic disease, diarrhœa, from simple change of diet. The patient, a distinguished person, a high official, had been suffering from diarrhœa and attendant dyspeptic symptoms for a long time. He had tried the old school treatment with but slight and temporary relief. At last he thought of homœopathy. At the commencement of treatment he derived some benefit, but it was not lasting. Medicine after medicine was tried according to the closest indications, but all in vain. We could see that the system of the patient had been so long and so much subjected to drug-irritation that nothing short of absolute discontinuance of

all drugs could enable the system to regain its normal condition. But the patient could not bear the thought of cessation of medicine. Circumstances enabled him to try the benefit of a change to his native country, whence we received the following communication :—

“ I think you will be interested in hearing about me and how I have got on. The voyage did not improve my condition and I arrived at home much the same as when I left India, the diarrhoea about as troublesome. I saw my old friend Dr. H— a day or two after my arrival and arranged with him for a consultation with Sir J—. Dr. H—said at once that he thought I did not require medicine but only diet. In consultation Sir J— took the same view, and the result was that I was put on a pure milk diet, not a bit of bread even, but a quarter pint of fresh cold milk every hour ; no medicine of any kind. In a couple of days I found a change, and before a week was over I was suffering rather from constipation. I was not allowed any change for a fortnight when I was allowed to have the milk thickened at meal times and a little biscuit. After a time I was to try an egg, and after a month a little boiled fish. I rapidly increased in weight. I had some warm sea-baths, but after these I got indigestion, and Sir J— put me back on the milk and farinaceous food again. I could not have imagined that milk could have had the effect it had. They say I shall be quite well before I have to leave in October. So you see I did not go to the homœopath, and allopaths abjured medicine of any kind, and only prescribed milk. Wonders will never cease !”

In the first case change of climate was effectual not only alone but in spite of inevitable irregularities. In the second case change of climate did nothing, but change of diet acted most marvellously. Wonders will not only not cease but multiply, if we but open our eyes to observe them. The greatest of all wonders is, that these facts of daily occurrence, so opposed to our settled convictions and preconceived ideas, are not allowed to have any influence over them. Cases like those cited above suggest a number of questions which demand solution in the interests of the patient-world, and therefore in the true interests of medicine as a profession, and as a science and art. Ought the treatment of every disease to be commenced with the adminis-

tration of drugs? Are all diseases amenable to drug-treatment? Are there not limits to drug-treatment? Is it possible to cure disease without drug-treatment? Is there any difference between cures without drugs and cures brought about by drugs?

In order to be able to answer these questions it is necessary in the first place that we should be thoroughly acquainted with the laws and conditions of health, and the causes by which it is deranged; this knowledge will very often enable us to remove disease by removing their causes, without administering a particle of drug. In the second place it is necessary to be acquainted with the natural course and progress of diseases; whereby we may often be able to spare our patients unnecessary medication, for where we know that a disease must run a certain course, our endeavours should be rather to wait and watch, than to drug, except for very urgent symptoms. And in the third place it is necessary that we should have a long and honest experience with the results of all sorts of treatment in vogue in the world; we do not say the practitioner should master and practise all sorts of treatment that are prevalent; this would be impracticable, and an attempt to do it would not bring competency in any. What we insist upon is that the conscientious physician should keep his eyes wide open, and observe what happens under other treatment than his own. Our readers may be surprised to see that we lay stress upon *honest* experience. We do so advisedly. For we are cognizant of the sad fact that an experience may be long but the observer having been a prejudiced man, that experience cannot be profitably turned to the uses of a scientific investigation. In the matter of treatment of disease, prejudice plays such a prominent part in the mind of the practitioner that an unbiased experience can seldom be claimed by any member of our profession. And yet it must be evident to all that without such experience satisfactory answers cannot be returned to the questions we have put before our readers.

THE ACTION OF DRUGS UPON THE EYE.*

BY DR. HUGHES.

We have now completed our survey of the principal drugs which act upon the eye; and it remains that we consider them together, for purposes of grouping, of comparison, and of discrimination. We shall best do this, I think, by studying them in relation to the several tissues of the organ, and to the morbid states to which these are liable. The *catalogue raisonnée* you will see† on the board behind me gives the classification I would

* The Lectures, delivered by Dr. Hughes on this subject at the London School of Homœopathy in 1880, and published in the *British Journal of Homœopathy* (Oct. 1882—July 1883), are admirable and deserve a careful study by all homœopathic physicians. We give here the conclusion, containing a resumé of the Lectures.—*Ed., Cal. J. Med.*

† The following is the list to which reference is made:—

<i>Conjunctiva.</i>	Sulphur.	Lithium.
Argentum nitricum.	—	Tabacum.
Arsenicum.	Thuja.	<i>Lens.</i>
Belladonna.	<i>Iris.</i>	Santonine.
Chloral.	Belladonna.	Sulphur.
Digitalis.	Clematis.	—
Euphrasia.	(Euphrasia.)	Causticum.
Hepar.	Kali bichromicum.	Calcarea.
Kali bichromicum.	Mercurius.	Magnesia carbonica.
Mercurius.	Physostigma.	Phosphorus.
Pulsatilla.	Terebinthina	Sepia.
Rhus.	Sulphur.	Silica.
Sulphur.	—	<i>Muscles.</i>
—	Bryonia.	Actæa.
Graphites.	Thuja.	Physostigma.
Guaræa.	<i>Choroid.</i>	Rhus.
Ratanhia.	Aurum.	Ruta.
Silica.	Digitalis.	—
Staphisagria.	Gelsemium.	Jaborandi.
Zincum.	Ipecacuanha.	Natrum muriaticum.
<i>Cornea.</i>	Phosphorus.	Senega.
Apis.	(Rhus.)	<i>Nerves.</i>
Arsenicum.	Santonine.	Aconite.
Aurum.	—	Agaricus.
Calcarea.	Kali iodatum.	Argentum nitricum.
Cannabis.	<i>Retina and Optic Nerve.</i>	Belladonna.
Euphrasia.	Acidum picricum.	Conium.
Hepar.	Belladonna.	Gelsemium.
Kali bichromicum.	Mercurius.	Lilium.
Mercurius corrosivus.	Phosphorus.	Spigelia.
Sulphur.	Plumbum.	—
<i>Sclera.</i>	Santonine.	Causticum.
Aconite.	Strychnia.	Colocynth.
Kali bichromicum.	—	Prunus spinosa.
Spigelia.	Kali iodatum.	Senega.

suggest. The medicines below the line in each group are such as I have not discussed in my lectures, but which should be mentioned in connection with the therapeutics of each region.

1. *Conjunctiva*.—As acting upon the mucous membrane of the ball and lids, with its glandular involutions, we have a list of twelve principal and six secondary medicines. Of these, eight correspond to catarrhal conjunctivitis of the ball—*Arsenicum*, *Belladonna*, *Chloral*, *Euphrasia*, *Kali bichromicum*, *Mercurius*, *Sulphur*, and *Guaræa*. When acute, *Euphrasia*, *Belladonna*, *Sulphur*, *Chloral*, and *Guaræa* are suitable, *Euphrasia* when much lachrymation is present (especially if it is acrid); *Belladonna* when the membrane is rather dry and burning; *Sulphur* when, with a slighter degree of the *Belladonna* symptoms, there is also itching, and when the subject is unhealthy; *Guaræa*, in the presence of chemosis. The distinctive place of *Chloral* is hardly yet ascertained; it must be borne in mind as a possible alternative to any of these. *Arsenicum*, *Kali bichromicum* and *Mercurius* belong rather to chronic conjunctivitis. The discharges of the first are characteristically thin; but practically it is the remedy for almost every case of chronic inflammation of the ocular conjunctiva, *Kali bichromicum* and *Mercurial* preparations taking its place when that of the lids is more affected. The former is suitable when there is granulation of the membrane, leading to pannus; the latter when the Meibomian glands are more affected, thickening the eyelids, and causing profuse muco-purulent discharge. Under these last circumstances *Hepar sulphuris* also comes into action, its discharges being somewhat thicker; and *Digitalis* may find place. *Hepar* is also effective in inflammation of the palpebral margins (blepharitis ciliaris), where it finds an ally in *Graphites* when the symptoms are of a more passive character. *Pulsatilla* corresponds to the previously mentioned sphere of *Hepar*—its discharges being thick and bland; but is of especial use when the Meibomian inflammation is concentrated in a single gland, constituting hordeolum, or “stye.” *Staphisagria* reinforces it here when this affection tends to recurrent. When the prolongation of the conjunctiva into the lachrymal sac is inflamed (dacryo-cystitis), *Silica* has proved very effective; and in stillicidium, from obstruction of the lachrymal ducts, cure has been wrought by *Graphites*, by *Sulphur*, and by *Mercurius corrosivus*.

In true purulent ophthalmia, while some benefit is got from *Hepar sulphuris*, from *Mercurius*, and from *Pulsatilla*, the most effective remedy is *Argentum nitricum*. In strumous ophthalmia any of the conjunctival remedies hitherto mentioned may find place, according to their respective indications but when the phlyctenular character of this affection is very marked, they all yield to *Rhus*.

Batanhia and *Zincum* correspond to that curious affection of the conjunctiva known as pterygium.

2. *Cornea*.—The drugs that act on the cornea are fewer in number, but their sphere is well-defined. *Apis* corresponds to its simple inflammation. *Mercurius corrosivus* and *Arsenicum* are suitable when the mischief is ulcerative, the choice between the two being determined by the lesser degree of inflammatory action which characterises the latter; and *Hepar sulphuris* where suppuration occurs. *Euphrasia* and *Kali bichromicum* are in place when the morbid process begins in the conjunctiva, and invades the cornea only secondarily. *Aurum* and *Calcareo* are suitable to a more chronic and interstitial keratitis, the former in both the syphilitic and the strumous forms of the complaint, the latter in the strumous only, where also *Sulphur* may do something. Several of these medicines, but chiefly *Calcareo* are of avail to remove opacities of the membrane; and here we have also the aid of *Cannabis*.

3. *Sclera*.—For the affections of the sclerotic coat of the eye our dependence must be placed on the four medicines from our list which you see before you, and perhaps on *Thuja*, which is considered by Drs. Allen and Norton as exerting upon this membrane a more marked action than any other drug. *Aconite* is suitable in primary scleritis from exposure to cold, when the pain is diffused, and *Spigelia*, under like circumstances, when it is darting and shooting like neuralgia. *Kali brochromicum* is of great service when the conjunctiva is involved, and the cornea threatened. *Sulphur* (in the lower triturations) suits cases of a more passive and lingering character.

4. *Iris*.—It is of the iris as a part susceptible of inflammation that we have now to speak: as a contractile curtain it must be considered among the muscles of the eye. The only drug which has proved its power of inflaming it is *Physostigma*, as we have seen reason to put *Mercury* out of court in this respect; but the other members of my group have attained unquestioned credit in the cure of iritis. *Belladonna* seems effective in its simple form, such as may come on from traumatism. In rheumatic iritis, if the effusion be serous only, *Mercurius* may suffice, though *Euphrasia* and *Terebinthina* must not be forgotten, and *Physostigma* may prove the best remedy of all. In the syphilitic form, our chief reliance must be placed on *Clematis* and *Kali bichromicum*, though *Thuja* may be useful (as stated by Dr. Norton) in removing the deposits of lymph. *Bryonia* and *Sulphur* find place, if anywhere, in the rheumatic form, the first in the painful stage, the second to wind up the case satisfactorily.

5. *Choroid*.—For simple choroidal congestions, *Digitalis*, *Ipecacuanha*, *Phosphorus* and *Santonine* claim consideration. Their

differential indications are hardly known, but the choice of the third would be determined by the constitutional condition. For serous choroiditis, *Gelsemium* seems *facile princeps*, and for the plastic (disseminate) form, *Aurum* and *Kali iodatum*. *Rhus* is reported very effective when choroiditis becomes suppurative, and constitutes the affection known as panophthalmitis.

6. *Retina and optic nerve.*—For simple retinal congestion, as from over-use of the eyes, we need not go farther than *Santonine*. In retinitis simplex, and optic neuritis before exudation has taken place, *Belladonna* is the great remedy; later, *Mercurius* and *Picric acid* are indicated. In albuminuric retinitis, our reliance should be placed on *Mercurius* (best in the form of the corrosive sublimate) and *Plumbum*; in syphilitic, on *Kali iodatum*. *Strychnia* corresponds to retinal hyperæsthesia, *Lithia* and *Tabacum* to the opposite condition.

7. *Lens.*—The choice of remedies for cataract must depend rather upon the general condition and the anamnesis than on any differences in the opacity itself. The indications thereby afforded for *Calcarea*, *Sepia*, *Silica* and *Sulphur* are obvious enough; and in their absence, the other remedies mentioned may be tried in order.

8. *Muscles.*—Of the medicines classed as acting on the muscles of the eye, *Physostigma* and *Jaborandi* would correspond to their irritable condition, *Actea* to their involvement in rheumatism, *Rhus* and *Senega* to their paralysis. *Ruta* and *Natrum muriaticum* are most effective in asthenopia.

8. *Nerves.*—The sensory nerves of the eyes are affected by *Aconite*, *Colocynth*, *Prunus* and *Spigelia* in the direction of neuralgia, by *Belladonna* and *Conium* in that of hyperæsthesia. Its motor nerves are excited to spasm by *Agaricus* and *Lilium*, depressed to paralysis by *Argentum*, *Conium*, *Gelsemium*, *Causticum* and *Senega*.

चरकसंहिता ।

द्वन्द्वस्थानम् ।

सप्तमोऽध्यायः ।

बुद्धिर्विद्यावयः शीलस्यैर्व्यङ्मृतिसमाधिभिः ।

दृष्टोपसेविनो वृद्धाः स्वभावज्ञा गतव्यथाः ॥ ७० ॥

सुसुखाः सर्वभूतानां प्रयान्ताः शंसितव्रताः ।

सेव्याः सन्मार्गवक्ताः पुण्यश्रवणदर्शनाः ॥ ७१ ॥

आहाराचारचेटासु सुखार्थी प्रेत्य चेह च ।

परं प्रयत्नमातिष्ठेद् बुद्धिमान् हितसेवने ॥ ७२ ॥

CHARAKA SAṅHITA.

CHAP. 7. NAVEGA'NDHARANIYA.

70, 71. Those who have become old in understanding, in knowledge, in age, in good conduct, in firmness, in memory, in meditation; and those who always live in the company of such men; those who are acquainted with nature; those who remain undisturbed in pain, distress; those who are agreeable to all creatures; those who are of a calm, composed spirit; those who have finished their vows; those who teach good ways; those whom it is holy to see and hear of;—such persons should be followed.

72. The intelligent man, who wishes happiness in this world and in the next, should be particularly careful in adopting whatever is salutary in diet, in customs, in exercise.

न नक्तं दधि भुञ्जीत न चाप्यदतयर्कैरम् ।
 नामुद्गसूपं नाक्षौद्रं गोणुं नामलकैर्विना ॥ ७३ ॥
 अलक्ष्मीदोषधुक्तत्वान्नक्तं तु दधि वर्जितम् ।
 श्लेष्मलं स्यात् ससर्पिष्कं दधि मासतसूदनम् ॥ ७४ ॥
 न च सन्दूपयेत् पित्तं आहारं च विपाचयेत् ।
 शर्करासंयुतं दद्यात् तृष्यादाहनिवारणम् ॥ ७५ ॥
 सुद्गन्धेन संयुक्तं दद्याद्भ्रतानिलापचम् ।
 घृत्सं चाल्पदोषं च क्षौद्रधुक्तं भवेद्दधि ॥ ७६ ॥
 रक्तपित्तकरं रुचं घालीयुक्तं तु तत्प्रणुत् ।
 उष्याभात्रावयेद्दोषान् घालीयुक्तं तु निर्वरेत् ॥ ७७ ॥

73 (For instance) one should not take curdled milk at night ; and even not without ghrita, sugar, mudga-soup, honey, not when warm, and not without (the extract of) emblic myrobalan.

74. From its bringing on misfortune* curdled milk is avoided at night. Abounding with phlegm, curdled milk, with ghrita, destroys wind.

75. And does not cause any fault in bile, and (moreover) assists in digestion. Mixed with sugar it alleviates thirst and burning.

76. With mudga-soup it destroys diseases from predominance of blood and wind. With honey it becomes well-flavored, and becomes less injurious (as respects its powers of causing excess of phlegm).

77. The injurious effects of warm curd, as manifested in producing disorders from predominance of bile and blood, and

* Not a medical reason certainly.

ज्वरासृक्पित्तवीर्यैर्गुणैश्चैव ।
 प्राप्नुयात् कामक्षाद्योगां विधिं हित्वा दधिप्रियः ॥ ७८ ॥

तत्र श्लोकाः ॥

वेगा वेगसमुत्थाच्च रोगा शोषाच्च भेषजम् ।

येषां वेगा विघातार्थाच्च यदर्थं यद्विनाहितम् ॥ ७९ ॥

उचिते चाहिते वर्ज्ये सेव्ये चानुचिते क्रमः ।

यथाप्रकृति चाहारो भलायनेगदौषधम् ॥ ८० ॥

भविष्यतामनुत्पत्तौ रोगाणामौषधञ्च यत् ।

वर्ज्याःसेव्याश्च पुराणा धीमतात्मसुखार्थिणा ॥ ८१ ॥

dryness, are corrected by mixing it with (extract of) emblic myrobalan. Other injurious effects are corrected by the same means.

78. Persons, who disregarding these directions, will still be fond of curd (i. e., take it without the precautions given), will be subject to fever, disorders from excess of blood and bile, erysipelas, leprosy, anæmia, vertigo, acute jaundice.

Summary.

79. The urgings, the disorders from their suppression, and their remedies; the urgings that ought to be suppressed; the exercises salutary and insalutary;

80. The gradual process by which accustomed injurious food may be given up, and unaccustomed salutary food may be taken, the foods suited to the various constitutions; remedies for obstructions to the outlets of the secretions;

81. Remedies for the prevention of diseases; the persons who are to be avoided, and those who are to be followed by him who wishes his own happiness.

विधिना दधि वेव्यञ्चयेन यथासदलिखः ।

नवेगान्-धारणोऽध्याये सर्वमेवावदन्मुनिः ॥ ८२ ॥

इति अग्निवेद्यज्ञतेतन्त्रे चरकप्रतिसंस्कृते ।

नवेगान्चारणीयोऽध्यायः ॥

82. The directions for using curd ;—these have been treated of by A'treya in this chapter, called navegandhāranīya.

Acknowledgment.

Elementary Treatise on Physics. Experimental and Applied.

In Mārāt'hi. By Bālāji Prabhākar Modak. Lecturer in Physical Sciences. Rājārām College, Kolhāpur.

A Manual of Elementary Chemistry Theoretical and Practical,
Vol. I & Vol. II, Part I. In Mārāt'hi. By the same Author.

EDITOR'S NOTES.

THE PATHOLOGY OF BRONCHIAL ASTHMA.

Professor Riegel, of Giessen, after a series of experiments, comes to the following conclusion as to its pathology.

The irritation of the vagus causes the phenomena of asthma, not by acting peripherally—that is, through the branches to the bronchi—but by influencing the central extremity of the nerve, that is, the medulla, and so (reflexly) the muscles of respiration. When the central end of the divided vagus of the left side was faradised, and the other vagus cut, the same asthmatic phenomena were produced; the reflex, therefore, did not occur through the bronchial nerves but by the respiratory nerves to the diaphragm and intercostals. That this was the case was completely proved by section of the phrenic before irritation of the vagus, for the phenomena of asthma were then entirely absent. An altogether unexpected result was thus reached, namely, that asthmatic phenomena may be produced reflexly through the vagus, and that the principal portion of the effect is a sudden inspiratory depression of the diaphragm followed by its continued tonic contraction. Spasm of the diaphragm may explain some of the phenomena of the seizure, but it certainly will not explain all. For himself, he still holds that there may be vaso-motor disturbance and hyperæmia of the bronchi, along with spasm. Still, spasm there is, and the present investigation shows that it is chiefly a spasm of the diaphragm.

DIAMOND IN INFANTILE LEUCORRHEA.

The following case is recorded by Dr. Stephen P. Burdick in the *American Homœopath* for June. It will be seen no reason has been assigned for the exhibition of the strange medicine.

Miss K. W., aged seven years, the daughter and granddaughter of a physician, has suffered from leucorrhœa from about her tenth month. There was no known cause, as the mother is an exceptionally healthy woman, never having had leucorrhœa, at any time in her life. The father also enjoyed very good health, at and for many years previous to the birth of this child.

This little girl was treated by both her grandfather and father for years, with only temporary results; and the flow was more profuse

and of a darker color at the time I assumed charge, than it had been at any time previous. The principal remedies which had been used were sulphur, sepia, calcarea carb., lycopodium, natrum mur., graphitis, and silicea.

These remedies had been given in varying potencies, at long intervals, and I therefore concluded that mere routine prescription would necessarily fail. Beside the facts stated, there were no guiding symptoms.

I now gave diamond 6, three grains every three hours, in a few days the discharge diminished and in a week ceased entirely. This was followed by diamond 15, one powder night and morning, for two weeks. Six or seven months have past and there has been no return of the disorder, although it had previously persisted for more than six years.

REMEDIES IN CHRONIC BRIGHT'S DISEASE.

Dr. Geo. M. Ockford, in the *New York Medical Times* for July, notes the following remedies with their special indications in Chronic Bright's disease :

Ailanthus in threatening uræmia, when the face is of a dusky-red color ; the urine is suppressed, and stupor or delirium is present.

Apis mellifica is to be thought of in those suddenly developed dropsics, attended with puffiness under the eyes, a shining and white skin ; soreness of the abdominal walls and constriction about the throat.

Arsenicum in periodical headaches, burning pains, pale, waxy skin ; asthmatic attacks ; anasarca ; debility and restlessness.

Aurum met. is serviceable in syphilitic complications.

Cannabis sativa is often of benefit in catarrh of the bronchi, attended with profuse expectoration.

Colchicum and *benzoic acid* are to be thought of in gouty complication.

Digitalis will often relieve the marked irregularity of the heart's action.

Euonymus relieves headaches accompanied by albuminous urine and dyspeptic and bilious symptoms.

Helonias is called for when there is languor, with heaviness and weakness of the renal regions ; the patient dreads the least exertion, but feels better when employed ; a feeling of inability to accomplish easily performed labor ; at the same time, the urine is profuse, clear and albuminous.

Kalmia latifolia will frequently relieve those neuralgic and rheumatic pains which appear to be in the bones of the lower extremities.

Lycopodium. The patient feels very debilitated while at rest, and yet is averse to exercise; there is wakefulness at night, with sleepiness in the daytime.

Mercurius corr. may be employed in cases presenting a bluish, pale face, with puffiness of the face and feet, and offensive catarrhal secretions.

Nitric acid is indicated by an excessive slimy secretion from the mouth and throat, and a dry, dark and dirty-looking skin.

Phosphorus is useful in nervous exhaustion, with a weak, empty feeling at the pit of the stomach; dimness of sight, and painless, watery diarrhoea.

Plumbum met. is one of our best remedies. Workers in lead suffer from Bright's disease, and we may hope to relieve cases presenting rapidly progressing emaciation and debility; colicky pains; obstinate constipation, and when the urine is loaded with albumen.

Sulphur is always useful, either given as an intercurrent remedy, or to meet certain constitutional symptoms present.

Tartar emetic relieves dyspnoea due to an excessive accumulation of mucus in the chest.

Uranium nitrate is indicated when there is present frequent and troublesome urination, especially at night.

These are but a few of the remedies applicable to the treatment of Bright's disease. Its complex character requires individualization of every case, and a consideration of every diseased condition that accompanies it, in order to prescribe a remedy that shall be in accord with our therapeutic law of "*similia*."

USES OF THE SALTS OF LIME.

Dr. A. C. Cowperthwaite, in an article on 'the salts of lime,' writes thus of their physiological actions:

"The *carbonate* excites in a moderate degree the functions of secretion and absorption, resulting in a condition of irritation which extends to all the organs and systems of the body, impairing their nutrition, favoring a deposit of earthy salts, profoundly altering the composition of the blood, in a manner that causes its effects to simulate the three great disorders of nutrition, scrofula, tuberculosis and rachitis, in which conditions we find its chief sphere of usefulness.

The *Phosphate* is not so far-reaching in its pathogenetic power. Its presence in great excess, or its entire withdrawal from the system, causes defective nutrition, which results in imperfect cell-development, and consequent decay or destruction of tissue, especially in the osseous and glandular systems, so that, while it may be useful in the dyscrasias above referred to, its action does not mark out these conditions with the great similarity of the *carbonate*, save in rickets, where it seems to exceed, by virtue of its nutrient power, the action of the latter.”

He then defines their individual peculiarities which help in their selection. “The *calc. carb.* patient presents a picture which is unmistakable in its meaning. A pale, leucophlegmatic person, with light complexion, blue eyes, blonde hair, and fair skin—fair, fat and flabby. This may not only indicate a tendency to scrofulous or tubercular disease, but it also indicates the temperament in which *calcareia* is of most benefit; and where we find a patient corresponding to the above description, we are very apt to find subjective symptoms calling for this remedy.

“*Calc. phos.* does not present such a picture. In this drug the patient is now thin and withered, though with some tendency to flabbiness. The skin, instead of being pale, is more a dark brown or yellow; the patient, in short, presents what might be called a phosphatic diathesis. In such the bones are brittle, or, on the contrary, are inclined to bend or curve; the spine easily becomes curved, and the fontanelles remain wide open, or reopen after closing. Bones are affected at the sutures or sympathises, and this tendency of *calc. phos.* to cause irritation in sutures, may afford a reason why it often assists in forming a callus after fracture, which is a sort of artificial suture. Thus we have this remedy highly recommended in the non-union of fractures. In *calc. carb.*, if the bone is diseased, it mostly involves the whole epiphysis, and the tendency is toward softening; the bones become curved, thus causing the limbs to be deformed and crooked, like the *phosphate*. In the *carbonate* there is more a tardy first development of bone, and the fontanelles do not close, associated with which we always have lymphatic enlargements, which is not the case with the *phosphate*.

“As might be expected, both of these salts retard the processes of dentition, the *carbonate* affecting the first dentition, and the *phosphate* the second dentition. Both are said to be of benefit in hip joint disease—the *carbonate* in the second stage, and the *phosphate* in the third stage, where it is claimed that it puts a stop to the further

destruction of bone, stops suppuration, and promotes new organization. *Calc. carb.* is of most use in diseases of infancy and childhood, particularly in enlargements and indurations of the submaxillary, cervical, or mesenteric glands, tendency to hydrocephalus, etc. *Calc. phos.* is more useful in diseases of youth and middle age, and especially of old age, or in children who appear old from disease. It is said to be particularly useful in the complaints of children who grow too fast, especially school girls at or near puberty."

HEALTH ALPHABET.

Our readers will no doubt be thankful to the Ladies' Sanitary Association, of London, for giving the following simple rules for keeping health :

- A—s soon as you are up shake blanket and sheet ;
- B—etter be without shoes than sit with wet feet ;
- C—hildren, if healthy, are active, not still ;
- D—amp beds and damp clothes will both make you ill ;
- E—at slowly and always chew your food well ;
- F—reshen the air in the house where you dwell ;
- G—arments must never be made too tight ;
- H—omes should be healthy, airy, and light ;
- I—f you wish to be well, as you do I've no doubt.
- J—ust open the windows before you go out ;
- K—eep the rooms always tidy and clean ;
- L—et dust on the furniture never be seen ;
- M—uch illness is caused by the want of pure air.
- N—ow, to open the windows be ever your care ;
- O—ld rags and old rubbish should never be kept ;
- P—eople should see that their floors are well swept ;
- Q—uick movements in children are healthy and right ;
- R—emember the young cannot thrive without light ;
- S—ee that the cistern is clean to the brim ;
- T—ake care that your dress is all tidy and trim ;
- U—se your nose to find if there be a bad drain ;
- V—ery sad are the fevers that come in its train ;
- W—alk as much as you can without feeling fatigue ;
- X—erxes could walk full many a league.
- Y—our health is your wealth, which your wisdom must keep ;
- Z—eal will help a good cause, and the good you will reap.

CLINICAL RECORD.

A Case of Abscess in the Abdominal Parietes.

UNDER CARE OF DR. M. L. SIRCAR.

Patient, a child aged 4 years and 9 months. On the 23rd June 1883, a swelling was noticed in the left lumbar region on a level with the umbilicus; it was painful and prevented him from walking and even from standing erect. Fever made its appearance on the 27th, and daily increasing, an Assistant Surgeon was called on the 30th. This gentleman promised to cure the patient in 3 days. He gave no medicine, but applied Bellad. liniment and over it a poultice. By the 2nd July the swelling and pain and fever all increased; another practitioner was called in, who rightly suspected the swelling to be an abscess, and ordered Quinine mixture internally, and Belladonna plaster externally. On the 5th July this last gentleman called again, and finding no abatement of the fever nor of the swelling, gave up all hopes of resolution, and adopted measures for encouraging suppuration. On the 6th a third practitioner was called in. This gentleman suspected suppuration of the spleen; he applied a large Belladonna plaster over the swelling, and gave fever mixture during fever, and quinine mixture during remission. He called again on the 8th and continued what he had ordered on the 6th.

I was sent for on the 10th. I found the child suffering from intense fever and a painful swelling on the left side of the abdomen. The swelling extended from the left floating ribs to the pubes, the whole region between these parts being hard, red and exceedingly tender. The spleen could not be felt owing to the tenderness. I gave *Merc. s.* 6., three times a day. Diet, plain sago.

12th July. Fever less; but swelling no better. Cont. med. and diet.

14th. Fever still less. Pain less; the swelling seems less red and somewhat reduced in size. Cont. medicine. To have *Chapaties* (hand-made bread) from to-morrow.

16th. Much better; fever considerably less. Swelling going down and much less painful. To have medicine only twice a day. Diet same.

19th. Very much better. Patient quite cheerful. To have medicine only once a day. Diet same.

22nd. No more fever. Swelling much reduced in size, though the hardness still continues. Child quite cheerful. No medicine for two days.

25th. Child improving rapidly. No more fever, hardness in the swelling less. No medicine. Diet same.

29th. Child can stand supported. No medicine. Same diet (chapaties) for some time yet.

I saw the child again on the 29th of this month (August) and found him all right. In the sitting posture a slight depression in the abdominal parietes was observed about 2 inches to the left of the umbilicus. This nearly disappeared when he stood up. When the part was pressed a small irregular knotty swelling was felt rather deep below the skin, but it was not painful. Is this a lymphatic gland, and did the inflammation originate in it and spread to the surrounding tissues? The effect of *Mercurius* in causing resolution of an inflammation that threatened suppuration and invaded such an extensive area of the abdominal parietes was marvellous. There cannot be the slightest question that it saved the child from the knife and the consequences of a huge abscess? The administration of *Hepar sulphuris*, as was advised by a homoeopathic practitioner, would in all probability have helped the suppurative process and entailed more suffering.

I would draw particular attention to one point in the treatment of this case, and that is the withholding of rice till the inflammation had wholly subsided. A long experience has convinced me that rice-diet is generally very injurious in inflammatory disorders, especially when the inflammation threatens or assumes a suppurative character.

A Case of Remittent Fever.

UNDER CARE OF DR. M. L. SIRCAR.

Birendra Kisor, aged 10, son of a medical friend, was attacked with fever on the 18th June, after an unusually long walk of about 6 miles and exposure to sun and rain. On the 19th had epistaxis to which he is occasionally subject. His father gave him *Aco.* 1 one dose in the afternoon, and another after evening. On the 20th in addition to the fever he complained of great painfulness of the limbs. A dose of *Rhus tox.* 30 was given. On the 21st the pain was less, and no medicine was given. On the 22nd the child complained of headache and palpitation of the heart. The eyes were blood-shot.

The temp. was not taken, but the fever was high. A dose of *Bell.* 6 was given at 9 P. M.

23rd June. Saw him in the afternoon. Heard that he had a stool, not solid, in the morning, blackish and tenacious. As there was not much fever, gave him no med.

24th. Morning: Fever slight. No medicine.

Evening (6 P. M.): Heat much increased; sleepy; solitary crepitations in the left lung; painfulness of the whole body. *Bryo.* 6.

25th. Evening (7.40 P. M.): Temp. at 10.40 A. M. was 102.8, pulse 104, Respiration 48. From 1 to 4 P. M. temp. was 103. Just now temp. is 104, pulse 104, respiration 48. Complains of much pain in the ears. Stopped *Bryo.* Ordered *Merc. s.* 6.

26th. 6½ A. M. Temp. 100.4. To have one dose of *Merc.* At 11.15 A. M. temp. was 102, pulse 104, respiration 48. At 1 P. M. temp. fell to 101.8, but at 4 P. M. it was 102, at 7, 103; at 9 P. M. it rose to 104 at which it remained till 2 in the morning.

27th. At 7 A. M. the temp. was 101.4. At 11 A. M. the temp. was 102.2, pulse 104, respiration 48. No medicine. At 1 P. M. temp. was 102.8; at 4.15, it was 102, and the forehead, neck and chest were then perspiring. At 7 P. M. temp. was 103, pulse 100, respiration 44.

28th. 7 A. M. Temp. was 99.8. It rose to 102 at 1 P. M., declined to 100 at 4 P. M., but rose again to 102, when the pulse was 86, and respiration 44. At 9 P. M. temp. was 103.6. No medicine.

29th. 7 A. M. Temp. 103.8, pulse 104, still I gave no medicine. The temp. gradually declined to 100 at 5.30 P. M., when the pulse was 76, respiration 36. On minute inquiry I learned that the chill in the beginning of the fever commenced in the chest whence it spread to the rest of the body, that the urine is passed more frequently and more copiously at night than in the day, that the patient loses breath when talking, and that the pain in the ears was continuing. There are two medicines covering the chill symptom, *Cicuta* and *Spigelia*. I preferred *Spig.* because it covered the other symptoms and also because the fever has been all along commencing from early morning.

30th. 7 A. M. Temp. 98.4, pulse 88, respiration 32. *Spigelia* 6 one dose. At 11 A. M. when temp. was 98, he had another dose of the medicine. The temp. rose to 101 at 5 P. M. and remained at this point till 7 P. M. when the pulse was 80 and respiration 44. I was now told that there was a persistent sweetish taste in the mouth ever since the 24th. I ordered *Sulph.* 30 to be given when the temp. would get below 100.

1st July. 7 A. M. At 11 last night when the temp. had come down to 99.4, a dose of *Sulph.* 30 was given. The temp. now is 98, pulse 84, respiration 48, but no more sweetish taste. At 10.30 A. M. the temp. was subnormal, pulse 64, respiration 36, skin quite cool. No medicine. At 4 P. M. temp. became normal, but afterwards rose to 101 at 9 P. M.

2nd. At 7 A. M. temp. was 96; at 9, 97; at 10.30, 87, pulse 60, respiration 28. At 8.30 A. M. he had a good copious natural stool, after 8 days, the last stool having been passed on the 23rd of last month. From this time forward the boy steadily improved, the temperature continuing subnormal till the 4th when I gave him rice.

Remarks.

In this case *Bryonia*, though clearly indicated by the painfulness of the body and the state of the left lung, did no good. *Mercurius* removed the lung-symptom, but the fever, which at first seemed to show a tendency to decrease, increased afterwards, and did not come down permanently till *Spigelia* was administered. I should here mention that the peculiarity of the commencement of the chill as to locality whence it spreads to the rest of the body, often affords valuable help in the selection of the right remedy in intermittent fevers. *Sulphur*, selected by the peculiarity in the taste which was persisting for sometime, completed the cure. This case furnishes a good proof that pathology has not yet advanced sufficiently far to help, without symptomatic indications, in the selection of the appropriate remedy.

THERAPEUTICS OF CONSTIPATION, DIARRHŒA,
DYSENTERY, AND CHOLERA.

53. CARBONEUM SULPHURATUM. (Carbon Bisulphide).

Constipation :

1. St. drier than usual. Insufficient hard st.
2. Three days without an evacuation or urging to st.
3. Constipation, with belching, with herpes. (IIg.)

Diarrhœa :

1. D. at night of a yellow, frothy, sour-smelling fluid, with colic-like pain in the abdomen, especially in the umbilical region, with which the navel was drawn inward; with tenesmus which soon disappeared without returning.
2. Sudden diarrhœa set in after dinner, with colic; this was twice repeated during the afternoon.
3. Watery D. Very watery st., as after a purge.
4. Transient, offensive D., alternating with constipation.
5. Diarrhœaic st., after breakfast.
6. Immediately on waking in the morning, was obliged to go to st., and had a copious, thin, yellowish evacuation, with subsequent burning at the anus as if from acidity.
7. St., at first solid, then soft, followed by rumbling in the abdomen, as if another st. would occur.
8. St. soft, having the peculiar odour of the drug.
9. Soft pasty st., preceded by colic soon after breakfast.
10. Two sts., the first in part pasty in part crumbly, the last one thin fluid.
11. Stools always pappy and scanty.
12. A pappy st., escaped involuntarily when making water in the afternoon.
13. Insufficient, soft, liquid st., preceded by slight colic.
14. St., at first solid, afterwards liquid, with burning in the anus.
15. St., scanty, small, and even if fluid, still evacuated with difficulty, in consequence of the inactivity of the bowel, in the evening.
16. Urging to st., which was pappy and accompanied and followed by a feeling of weakness and tremulousness.
17. Slight cutting in the lower abdomen followed by partly softish, partly crumbly st., after drinking coffee.

Dysentery :

1. Slimy diarrhœa in the afternoon.
2. St., with mucus and discharge of cherry-red blood.
3. Having been three days without an evacuation, on going to st. in the morning, after breakfast, without any special call, had a soft st., with considerable discharge of cherry-red blood.
4. Considerable discharge of blood with the pappy sts.

Aggravation :

1. Morning. Night.
2. After breakfast, after dinner.
3. During urination.

Before St :

1. Gripping colic.
2. Slight cutting in the lower abdomen.

During St :

1. Colic.
2. Discharge of blood.

After St :

1. Relief of colic.
2. Pinching, sticking pain in the cœcum.
3. Burning at the anus.
4. Rumbling in the abdomen.
5. Feeling of weakness and tremulousness.
6. Pressure in the stomach followed by headache and cramp-like sticking in both ears.
7. Sensation of discomfort by paroxysms.

Rectum and Anus :

1. Burning and itching in the rectum.
2. Transient stitches in the rectum.
3. Violent burning and itching in the anterior commissura ani, which is found sore to the touch, in afternoon, after a st.
4. Urging to st., urgent desire for st., at noon.
5. Urging to st., which was pappy and accompanied and followed by a feeling of weakness and tremulousness.

General Symptoms :

1. Raging delirium, he fell on his father and tried to bite him.
2. Confusion of the head. Vertigo. *Long lasting ringing in the ears*, with or without deafness.
3. Burning in the mouth, pharynx and tongue.
4. Salivation. Saliva glutinous ; watery, sweetish.
5. Taste extremely repulsive, acrid and scraping, swallowing caused burning in the throat and along the œsophagus.
6. Sweetish, offensive, pasty, metallic, saltish, sourish or bitter taste.
7. Hunger, though with aversion to the food set before him ; it, however, had real relish.
8. Great thirst especially for beer. Desire for drinks.
9. Eructation with nausea, copious eructation of wind and discharge of flatus, eructation of bitter or acid, corrosive, fluid, or empty.
10. Heartburn the whole day, especially after smoking ; severe heartburn, exciting cough ; heartburn, especially in the forenoon and at every eructation.
11. Nausea, with pressive frontal headache, with collection of water in the mouth.
12. Vomiting green and bilious, with nausea, cold sweat and prostration.

13. Pressure in the stomach half an hour after breakfast, followed by eructations of wind and alleviation.
14. Gripping pain in the umbilical region, with urging to st., followed by nausea and accumulation of water in the mouth.
15. Distension of the abdomen after eating.
16. Sensation of discomfort and slight nausea in the abdomen, followed by a soft fecal st.
17. Paroxysmal sticking pains in the small lobe of the liver precede the st.
18. Sensation of discomfort in the abdomen by paroxysms also returning after a stool.
19. Gripping, with rumbling and rolling in the intestines, as though diarrhœa would follow.
20. Extraordinary discharge of wind both upwards and downwards; noisy passage of flatus.
21. Severe cutting colic followed by urgent st., in the evening after eating a very little salad.
22. Violent stitch-like crampy pain in bladder and neck of bladder, at midnight when making water, after taking a glass of wine, extending forwards in the urethra and accompanied by a similar pain in the anus and rectum; this pain is hardly bearable while continues.
23. Involuntary passage of urine. Urine smells of sulphur. Increase of carbonates and sulphates in urine.

Remarks : **Carbon bisulphide** has a genuine and powerful action on the alimentary canal. It deserves a trial in diarrhœa. It analogizes with **aloe** in having diarrhœic stool immediately after waking in the morning, and in having insecurity of the sphincter ani as evidenced by involuntary passage of stool while urinating. In causing development of gas in the alimentary canal it equals, if it does not surpass, **carbo v.**, **china**, and **Lycopodium**. Under its action gas seems to be generated in all parts of the alimentary canal. It differs from the above-mentioned three drugs in having *sour-smelling* stools. A great peculiarity of this drug is the long-lasting ringing in the ears, with or without deafness, which it causes both when taken internally and when inhaled. Mr. T. Wilson has cured with it a case of chronic tinnitus aurium, and a friend of ours has cured a case of chronic deafness attended with ringing in the ears. The presence of this symptom with excessive discharge of flatus upwards and downwards in cases of diarrhœa with frothy, sour-smelling stools, would unerringly point to **carbon bisulph.** as the appropriate remedy.

54. CASTOREUM.

Constipation :

1. Solid st., with burning and urging ; followed by burning in the anus.
2. St., first part solid, the rest soft.
3. St., seldom and hard.

Diarrhœa :

1. D., in the evening with chilliness and yawning.
2. Two sts., in succession, in the evening, with dragging in the groin, preceded by griping in the abdomen.
3. Passage of whitish water, with burning in the anus, without tenesmus, several times in succession ; with the last passage, sensation as if the tendons in the bend of the knee were drawn, which disappeared after rising from sitting.
4. Sts. contain pus ; patient is compelled to sit bent double ; feels gagged when lying down (Hg).
5. Violent rolling about the whole abdomen as if she would have an evacuation at night, followed by evacuation of semifluid fœces of an intolerable odour, with much offensive flatulence.

Dysentery :

1. St., consisting of pieces of clotted blood though without pain in the abdomen.
2. Evacuation, with bloody mucus, though without pain.
3. St. consisting of greenish mucus, which seemed to burn.
4. Passage of burning mucus preceded by twinges in the abdomen.

Aggravation :

1. Forenoon. Evening. Night.

Amelioration :

1. Morning. Bending double.

Before St :

1. Griping. Twinging and movings in the abdomen.
2. Painful sticking in the anus forward to the pudenda.
3. Violent rolling about the whole abdomen.
4. Cutting pain in the whole abdomen with audible and painful rumbling.

During St :

1. Chilliness and yawning.
2. Dragging in the groin.
3. Burning in the anus, urging.
4. Emission of fetid flatulence.

After St :

1. Burning in the anus.
2. Passage of flatus.

Rectum and Anus :

1. She must hurry to st., she had scarcely time to get ready, in the morning.

2. She was driven to st. with great haste and afterwards it seemed like a violent sticking from the anus forward to the pudenda, which was very painful.

General Symptoms :

1. Melancholy, depressed, despondent, apprehensive; moody.
2. During menstruation, she was very fretful, discontented with everything; she was even averse to speaking.
3. Offensive odour from the mouth, not dispelled by washing the mouth with water.
4. Uprising of water into the mouth, during and after violent pain in the abdomen.
5. Bitterness of mouth in the morning, disappearing after some time.
6. Thirst during menstruation. Thirst so violent, that she could not drink enough water, after dinner.
7. Great thirst and frequent urinating.
8. Eructation of bitter or sour fluid; empty or tasting of the food.
9. Transient nausea, with profuse spitting; continual nausea, relieved after eructation.
10. Food relished well but nausea followed and lasted an hour.
11. Prostration after dinner, and an annoying sensation in the stomach, as if it were full, as though she had eaten too much.
12. Cutting pain in the stomach and both hypochondria, disappearing after continued motion.
13. Distension of the abdomen with inclination to st., followed by passage of flatus with tearing headache.
14. Painful distension of the abdomen, relieved by applications of warm cloth.
15. Twingings in the abdomen with desire for st., but only flatulence passes.
16. Pressure in the lower abdomen as if to st., but more followed.
17. Dragging in both groins, with aching in the abdomen and inclination to st., which afterwards results during menstruation.
18. Frequent urinating, little at a time.

Remarks : *Castoreum* would well repay a careful study in the treatment of diarrhœa and dysentery. It is likely to be useful in females who are fretful and averse to speaking during menstruation.

Gleanings from Contemporary Literature.

MORBUS COXARIUS OR HIP JOINT DISEASE.

BY PROF. E. C. FRANKLIN, M. D., ANN ARBOR, MICH.

Morbus coxarius, or hip joint disease, is one of the most intractable, deceptive, and insidious diseases that affect the joints. It has some peculiarities unlike diseases of the articulations in other parts of the body, and, therefore, it should not be accepted as the type of joint affections. These are largely due to the peculiar formation of the bones for moving the hip joint, together with other conditions of which I shall speak hereafter. In order for a more perfect understanding of this intricate subject, I shall consider, first, the anatomical relations and anatomical structure of this joint.

ANATOMY OF THE HIP JOINT.—The anatomy of the hip joint in early life is somewhat peculiar, and demands at my hands careful consideration in order to show the extreme susceptibility in certain cases to hip joint diseases, both on account of its anatomical as well as its physiological characteristics. First, let me point out the anatomical relations of the acetabulum to the bones in juxtaposition. The acetabulum is a deep cavity, formed by the union of the ilium, ischium and pubis, and receives into its deep cavity the globular head of the femur by an articulation termed *inarthrodial*, or ball and socket joint. It is lined with cartilage throughout, except at the fundus, or lower part, which is cushioned with fat. This cartilage is divided into three parts corresponding with the union of the bones forming the joint; these three lines radiate from near the centre of the cavity like the arms of the letter Y. Along these lines enlargement by growth takes place, so that there are six lines which are endowed with distinct and separate activities, the physiological, vital and assimilative; these functions during growth are in a continual state of hyperæmia, with plastic effusions thrown out for the purpose of preserving, building up, and nourishing these important structures. During fetal life, from the period of the formation of these bones at the end of the fourth month to birth, the osseous nuclei are in a state of great activity, preparing these structures for the ordinary purposes of locomotion, which are tardy in formation and rarely attain their maximum of development till near their second, and sometimes their third, year. Besides the cartilage there is a synovial membrane lining it not unlike the synovial tissue of other joints. The globular head of the femur is likewise covered with cartilage, which is cancellous in structure, quite vascular and, like the cartilage covering the cavity, is in a continual state of hyperæmia and activity, building up and developing the head which is very different in the new-born child from the fully formed bone. The head, in proportion to the neck and trochanters, is large, and the peculiarities of relationship are very important and of great value to the practitioner in the proper understanding of the

changes that are continually going on within this joint, and which act as a constant predisposition to derangements and disorders of function. The head and neck of the femur is formed, developed, and fully perfected *within* the cavity of the acetabulum and within the synovial membrane, which incloses both the epiphysis and diaphysis of the femoral neck. This shows the *great tendency to diseases within* this joint, and is very different from the structural arrangement of the knee and ankle joints, for in the ankle joint the epiphysal seams tie outside of the joint. Thus any injury, morbid action, or inflammatory condition from any cause, which rouses up abnormal excitement in these epiphysal junctions during their period of activities, sets up a disease *within* the joint, not readily discernable except from close study and a knowledge of the existence of these continually predisposing causes.

Besides these conditions, ever ready to take on morbid action, there are five other important ligaments which are interested not only in the formative processes of joint-growth, but which may become interested in the morbid conditions that are set up within the articulation. These are the capsular, the ileo-femoral, the ligamentum teres, the cotyloid, and the transverse. Viewing these structures as a whole it is easy to see how readily diseases may develop *within* the acetabulum, and how long they may continue in other joints of less causation force when the epiphysal junctions are *outside* the articulation. To my mind, it is perfectly clear that hip joint disease, like diseases of the spine that take place between the vertebral cartilages and the bone, from the slightest causes that interfere with activity and growth, are dependent upon a derangement of function and structural growth in the bone and epiphysal junctions, and is at once reflected as a joint disease.

If we compare the head and neck of the femur of a newly-born child with that of an adult, we will find that the upper extremity of the femur about the region of the trochanters, is larger than in the adult, the neck is almost entirely wanting, the head is out of proportion to the trochanters and shaft, and altogether it seems like an abnormal femur. It is in the final restoration of the bone, during its growth and development, that diseases of the bone and its structures within the capsule of the joint take place.—I am next led to investigate the pathology of hip joint disease, and to describe the changes as they occur in the incipency of the disease, its increase, and final disintegration.

PATHOLOGY.—The diagnostic signs of hip disease are divided into separate stages in accordance with the disturbance of function, its impairment of structure, and, finally, its disintegration of tissue. As I have said before, the hip joint is unlike any other articulation of the body, and, therefore, cannot logically be singled out as a type of the diseases of other joints. The acetabulum is the means of communication through which attachment is made between the largest and strongest limb in the body to the trunk itself. The depression lies deep, and on that account it is almost impossible, in the early stages of hip joint disease, to detect fluctuation,

structural changes, variation of size or shape, etc., etc., such as are more distinguishable in the more superficial parts of the body. The origin of hip joint disease has been attributed to various causes, such as derangement of ligamentum teres, either by increased vascular action, traumatism producing its partial or complete rupture, in inflammation of the Haversian glands, the cartilages of the joint, an affection of the synovial membrane, or a disease of the bone, or a rupture of some of the minute blood vessels that afford nutrition to the joint. Mr. Barwell is of the opinion that hip joint disease begins, like other joint diseases, either in the synovial membrane or in the bone, and is opposed to the theory that it originates in the ligaments or cartilages. He asks: "Who has not heard of a hip joint disease beginning in the round one?" The reason of this preference for, I had almost said, superstition about the ligamentum teres, lies in the fact that it carries the blood vessels, which convey nutrition to the epiphysal head; therefore, an epiphysitis, a very common event, must, of necessity, produce hyperemia of the vessels in the ligament, which is soon followed by inflammation and softening of the whole structure. In the event of primary affection of the round ligament, examination of the bone will not disclose any lesion of bony structure, while, on the contrary, inflammation and degeneration of the head of the femur is always associated with partial, or entire, disintegration of the ligamentum teres. Between these two alternatives, the position must be taken whether the origin of hip joint disease lies in the bone or in the synovial membrane. Mr. Barwell inclines to the opinion that the bones, from their peculiar relations, are exceedingly apt "to pass from health to disease," as has been already shown while discussing the anatomical conditions of the bones of the joint and their epiphysal junctions.

It will be remembered that the synovial membrane of the hip joint, unlike that of the knee or elbow joints, is particularly well protected against external violence and alternations of temperature, a frequent cause of morbus coxarius in delicate children and those of strumous habits; yet it is undoubtedly true that under certain conditions, such as traumatism and excessive fatigue, it has occasionally occurred in youth, from ten to fifteen years of age.

ETIOLOGY.—Almost all surgical authorities argue that hip joint disease is the legacy of a contaminated constitution; that it is especially strumous in its origin, and rarely occurs in strong, robust systems. The phenomena accompanying hip joint disease vary according to the structures attacked and the activity of the muscular contractions that connect the thigh to the pelvis, which cause the head of the femur to press unduly against the acetabulum at its upper and inner surface, which in time, produces an erosion of the surfaces in constant contact, whether they be cartilaginous, synovial or epiphysal. This is the beginning of the pathological processes that are so frequently seen occupying the upper segment of the cotyloid cavity and the corresponding portion of the head of the femur, and which is produced by the neuro-muscular movements above referred to. The

cavity of the acetabulum is prolonged upwards and inwards by the continued muscular pressure, and the accompanying ulceration proves that the disease has invaded the bony structure; ulcerative absorption ensues, and there is produced "an osteophytic growth of bone forming a rough lip to the new cavity, according to the law of increased growth and induration beyond the focus of suppurative inflammation."

Pain in the knee, one of the trophic symptoms of hip disease, has been referred to various causes, such as irritation of the obturator nerve; to a continuity of the inflammation along the aponeurosis of the rectus muscle; to propagation of the inflammation along the medullary canal to the lower end of the bone; to spasms of psoas and iliacus internus muscles, and finally, to sympathetic action kept up between the two extremities of the bone by the irritation of nerve trunks passing in close contiguity and supplying both articulations. It will be remembered that the sciatic gives off a branch to the hip, and two or three small twigs to the knee joint. The anterior crural also gives off branches to both of these joints, but the obturator is believed to be, above all the others, the principal factor in the production of this peculiar phenomenon.

Barwell, from frequent observations, has pointed out this significant fact, that there are "two sorts of knee pain: one is situated in a nerve, therefore, is connected with inflamed synovial membrane of the hip; the other pain, with osteitis of the head of the femur. Both may be somewhat early in reference to other symptoms, but the latter form, if hip disease commences in the thigh bone, is very early; it occasionally antedates all other symptoms, save perhaps, a slight limp."

Fixation of the thigh upon the pelvis is another of the very early symptoms of hip disease, and is caused by continued contraction of those muscles immediately connected with the capsule of the joint. This fixedness, slight at first, increases gradually, flexion and abduction being prominent in the beginning, which continues for a greater or less length of time, when abduction changes into adduction, the flexed position remaining. These changes in the position of the limb have been referred to distention of the capsule which determines the stage of the disease. Thus in the stage of flexion and abduction, the progress of disease is less advanced than in that of flexion and adduction, the first representing the beginning of the first stage of the disease, or the obtuse angle lengthening; the second, the termination of the first stage, or the acute angle shortening.

* The lengthening of the limb is the effect of two conditions: abduction of the hip, and the necessity of maintaining a certain parallelism of the limbs while the angle of the abduction remains the same. The posture of the patient created by the abduction necessitates, of course, abduction of the sound limb to an extent nearly equal to the former which causes the lumbar spine to be curved to the affected, or abducted, side.

The causation of the shortening is also produced by a fixed position of the limb which makes an acute angle with the transverse pelvic axis. This

* Barwell on hip joint disease.

posture is caused by the pelvis being raised on the diseased side carrying with it the acetabulum, and, as a consequence, lifting up the pelvic plane and giving the limb the *appearance* of shortening. This elevation of the limb produces an abnormal projection of the trochanter, and can be *distinctly* seen in lean persons. These conditions continuing, the constant pressure exercised against the two planes favors ulcerative action, which, in time, leads to destruction of structure and dislocation of the caput femoris, partial or total.

Besides the causes before mentioned that produce hip joint disease, Mr. Barwell recognizes another, and, as he claims, a potent causation force in its development, viz: Congenital phimosis. A statistical table is given wherein he shows the "condition of the prepuce in one hundred cases of hip disease in boys under ten years of age."

In the *first degree* there were thirty-nine cases wherein the opening in the prepuce was of the size of a pin hole, so that on retraction no part of the glans, or only a minute portion of the urethral lips, could be seen. In the *second degree* there were twenty-seven cases in which all or a considerable portion of (but nothing beyond) the urethral orifice could be uncovered. In the *third degree* there were seventeen cases in which the prepuce, when retracted, uncovered some small portion of the glans. In the *fourth degree* there were eleven cases in which the elongated prepuce projected more than a quarter of an inch beyond the glans, but was capable of being entirely retracted. In the *fifth degree* there were only six cases in which the structures were normal. This is exceedingly interesting as proving the causation forces of hip disease, and it is further more stated that in the "Evelina Hospital," England, which is largely patronised by Jews, few children are afflicted with hip disease. Mr. Barwell argues that the relation existing between hip disease and phimosed children, or, rather, the influences that create it, are there; "that phimosed children have facile, frequent, and often long continued priapism; that this condition, unnatural in the infant, must produce, after a time, a certain irritability or irritation of the lumbar spinal cord; that from this part the various nerves of the pelvis and lower limb are given off; that the influence of spinal irritation on the trophic nerves is well-known, and that just at the particular period large trophic changes are in progress about the hip joint."

The fact that hip disease occurs among female children almost if not as frequently as in the male, largely affects the conclusions drawn by Mr. Barwell of the nervous influence existing between these two conditions, and I am not inclined to place too great reliance upon the correctness of his observations, though future statistics may add largely to the correctness of his views. I have frequently treated cases of hip disease in female children produced by vaginal irritation through the presence of ascarides in the rectum, or by abnormalities existing in the genital organs.

A very interesting case of hip joint disease and hyperæsthesia of the spine I have at present under treatment in the Homœopathic Hospital of the University, which proves the relation of genital diseases to spine and

hip joint disorders. The patient is an estimable lady whose parents died of consumption when she was quite young ; she has been in feeble health since, and grew but little until fifteen years of age. Six years ago had spinal fever, and has had more or less pain in the back with frequent headache since. Spine exquisitely sensitive ; she cannot lean against the back of a chair ; even her clothes lying in contact with the spine are sometimes insupportable. Has had her back and neck blistered and plastered under old-school treatment. Headache begins in lower part of neck, and runs up to the occiput, and grew particularly severe after the attack of spinal fever. Excitement brings on, and also increases, the headache. During these attacks of pain the head would be drawn backwards. Sensation as of a tight band around chest, with difficulty of breathing, palpitation, etc. Has taken Morphine, all kinds of local treatment, electric baths, etc., etc., ad nauseam. For two years left hip has been weak, painful and abducted. The foot of affected side turns under while walking ; is easily fatigued ; pain in the knee joint, with a semi-paralytic condition of limb. Has been in the University Hospital (allopathic) for several weeks, with no benefit. Examination of genital organs shows atresia vaginae, a thick, dense structure expanding across the vagina like a fan and attached to the neck of uterus and extending oblique downwards, with a hole upon the anterior rectal plane about the size of a pea. Incised, lacerated, and stretched this membrane, and put in a vaginal dilator supported by a T bandage, and gave internally Gelsemium 3rd every three hours, with local applications of Hypericum. One week to-day patient is better. (Will report this case fully after treatment is finished.)

SYMPTOMS.

There are three stages, or periods of inflammatory action, corresponding with three stages of inflammation as they occur in other parts of the system.

First, the stage of *vascular excitement*, before the period of effusion has taken place.

Second, the stage of *effusion*, and before the period of disintegration.

Third, the stage of *true inflammation* with all its attendant changes and phenomena.

FIRST STAGE.—Symptoms are not clearly defined and are reflective or trophic ; there is awkwardness of gait ; perhaps a trifling pain referred to the knee ; shuffling walk ; dragging of the foot with limping gait ; easily fatigued ; when standing, patient rests weight of the limb upon the toes ; stiffness of the joint, first observed in the morning when the patient first moves the limb ; improves from exercise, after which he stands upon the sound leg for the purpose of relieving the affected one ; reflex pains increase with increase of the disease ; is affected by weather ; neuralgia frequently sets in, which comes on in violent paroxysms.

If the patient is examined at the latter part of this stage in a nude state, standing directly in front of you, his back towards you, the sound leg will

make a solid column to bear the weight of the body, and to avoid concussion upon the diseased structures within the joint, the leg will be slightly flexed and a little abducted, but the feet do not lose their parallelism; the nates on the affected side is a little flattened, drops a little, and the gluteo-femoral crease is slightly enlarged from disease; there is more or less rigidity of the iliacus internus, psoas magnus, or the abductors of the thigh. To make this examination to detect the muscular rigidity, the patient should be placed upon his back upon a firm, flat table, with the pelvis and trunk upon the same plane; now lift the thighs gently till the vertebræ touch this plane throughout its entire extent, then draw a line from one anterior spinous process to the other, and another from the centre of the sternum, bisecting the umbilicus to the centre of the pubis; now bring down the limbs, first, the suspected one to the plane of the table, and if the popliteal space touches the plane perfectly, there is no disease within the joint; if on the contrary, the pelvis tilts upwards when this motion is being made, there is disease considerably advanced within the joint. This arching of the spine is therefore an important symptom. The lines made upon the body will also show marked deviation while these movements are being made. Abduction, adduction and rotation of the limb will also become symptoms of some value, for with these motions the pelvis will be observed to move with the limb when carried beyond a certain point. Atrophy of the limb will be developed which can be detected by comparing the limbs together.

SECOND STAGE.—In this stage all the phenomena of inflammation will be increased; the parts are swollen; the peculiar position of the limb, to relieve pressure within, gives the foot an *erect* look; the leg and thigh are more flexed; the obliteration of the gluteo-femoral crease more marked, and the entire limb is more prominently abducted; the tilting of the pelvis to escape pressure within the joint gives the appearance of “apparent lengthening;” reflex pains increase in severity as the disease progresses; pains now begin to be referred to the joint; joint becomes very sensitive; tumefaction of the internal and external surfaces of the hip; pressing upon the great trochanter aggravates pain; so does concussion upon the heel; spasmodic action of the ligaments of the hip and leg also exists.

Physical signs are a change in the shape and size of the nates; wasting of the glands; posterior fold of buttock flattened; gluteo-femoral crease changed from transverse to perpendicular shape; body supported by sound limb; constitutional disturbance prominent with feverishness and thirst; crying of the child at night during sleep from spasmodic contraction of the abductors which brings the diseased surfaces together with a thud.

THIRD STAGE.—Symptoms of the second stage are intensely aggravated; parts increase in swelling by pressure of pus upon the inflamed and highly sensitive structures; percussion gives fluctuation; rupture of the capsule takes place, or the acetabulum is perforated and the imprisoned contents escape into the surrounding tissues; then pain is relieved and all the characters of the limb are changed; the limb is now adducted, inverted

and flexed at the hip only ; the pelvis is raised upon the affected side and projects backwards, and the gluteal fold is higher than upon the sound side, and the general position of the limb is the reverse of its position in the second stage.

DIFFERENTIATION OF SYMPTOMS IN THE 1st, 2d AND 3d STAGES.

In the first stage there is a certain limping movement, sometimes intermittent, and often persistent ; tenderness of the joint, with intermittent pains in the knee joint, in the thigh, or over the *dorsum ilii* ; there is also a fixedness of the joint, the child seeming rather to drag than lift the foot ; the body being slowly inclined to the sound side ; a peculiarity of this limping is this : there is considerable lameness in the morning, which seems to improve under exercise during the middle of the day, and gets worse towards evening when the painfulness becomes quite marked.

SECOND STAGE.

THIRD STAGE.

Limb apparently lengthened.	Limb, first, apparently, second, actually shorter.
Limb abducted, everted and flexed in both joints.	Limb adducted, inverted and flexed in the hip joint only.
Foot touches the ground with sole.	Foot touches with ball only.
Toes everted as in fracture of the neck of the femur.	Toes inverted as in posterior superior luxation.
Pelvis lower on diseased side.	Pelvis raised on diseased side.
Pelvis projected forward.	Pelvis projected backward.
Pelvis angle of inclination acute.	Pelvis angle of inclination almost right.
Nates low and flat.	Nates high and round.
Linea glutea inclined toward affected side.	Linea glutea deviates from affected side.
Pain most intense.	Pain greatly diminished.
Fluctuation positive.	Fluctuation removed.
Wasting of the limb, known by measurement only.	Wasting of the limb detected by the eye.
Pain and tenderness at its height.	Pain and tenderness much less marked.
Temperature increases from 100° to 102°.	Temperature decreases and falls below 101°.
Swelling about the hip joint and perinæum.	Swelling diminished about the hip and perinæum.

If the disease is not cured in the first stage by appropriate treatment, every effort should be made to overcome it in the first half of the second stage and before the period of effusion, for it is seldom that a patient is cured in the latter part of the second, or in the early part of the third stage without operation.

A large number of cases of hip disease, by careful and persistent treatment, do get well without dislocation or diastasis, even after the shortening has continued for a long time. This recovery, however, is not permanent, for in a few weeks, by inattention or through indifference to treatment,

the child will relapse, the old pain return, fever set in, abscesses will break out anew, from which the child may either recover under proper treatment, or gradually sink away, a victim to the dreaded ravages of inflammatory action and its disintegrating processes. Therefore, I place much stress upon a continuation of treatment, till both local disease and constitutional cachexy shall have entirely subsided for a number of months.

TREATMENT.—The treatment of this disease is medical, mechanical and operative. In the first stage of the disease, cures are often effected by combining with the indicated remedies absolute rest, continued long enough to overcome the local trouble without deranging the health, as in almost all of these cases the general condition is largely at fault, and imprisoned rest, long continued, will have a serious effect upon the constitution. It is seldom, however, in hospital practice that these cases come under the care of the practitioner till the beginning of the second stage, or even at its termination in effusion and consequent disintegration. In civil practice better results follow the treatment of hip disease, for the reason that they soon fall under the notice of the practitioner; it is in the earlier stages that these diseases are the more easily cured. The proper guide for the medical attendant to follow is the increased or diminished pain and thigh stiffness. If this gradually improves, the cure is to continue rest, and internal and local treatment; but if the contrary condition obtains, and the system seems to suffer under the restraint, a more indulgent method of treatment must be permitted, such as taking the patient out for a ride daily, or a lounge placed in the garden, if the weather permits, where the child can get better and purer air; in fine, everything should be done in a hygienic, dietetic and climatic way that will arouse the latent forces of the system to a more healthful poise. As a rule, the first stage is the period for rest, local and general medication, and the second stage for these and well adopted extension.

I have divided the remedies for hip disease as they have reference to one or other of the three stages. The most important for the *first* stage are Aconite, Belladonna, Calc. carb., Lachesis, Mercurius, Phytolacca, Rhus tox.

For the *second* stage, Arsenic, Bry., Colocynth, Iodium, Kali. iod., Mercur., Phosph., Rhus., Staph., Silica, Stram., Hepar sulph., Sulph.

For the *third* stage, Arsen., Calc. phos., Carbo veg., China, Colocynth, Kali carb., Lycopodium, Phosph., Silica, Sulph.

Aconite in the beginning of the disease, with full pulse, hurried, or intermittent; great restlessness with thirst; dryness of the mouth; the pain follows the tract of the cervical nerve; tearing, drawing pains; in the formative stage it frequently breaks up the disease, so that no other remedy is required.

Belladonna. Burning, stinging pain in the joint; the child shrinks from the mildest pressure; sudden appearance and disappearance of pains in the knee; thigh and leg feel weak and lame, with tensive pain and pressure in the joint; weakness and stiffness in the articulation, with in-

disposition to walk, owing to increased pain ; swelling and sensation of heat over the hip joint ; pains worse in the afternoon and evening, and when in a warm room ; tendency to congestion in neighbouring or distal parts, drowsiness, or inability to go to sleep ; disposition to glandular swellings.

Calc. carb. In the first stage, when there exist marked scrofula or cachexia ; in cases where the disease moves along slowly ; the pains are fixed rather than shifting ; increase at the slightest movement and diminish when at rest ; numbness in the hip and thigh ; limping gait ; walking on the tips of the toes ; worse at nights and mornings, from change in the weather ; better by warmth of the room and in bed ; in children of large head, open fontanelles, pale, waxy complexion ; abdomen hard and bloated, with inclination to diarrhoea.

Lachesis, in any stage, if the aggravation occur every afternoon with regularity ; an aggravation of general malaise after sleep ; a notable offensiveness of the alvine discharges, even of a natural consistence ; previous abuse of mercurial preparations ; lacerating pains in the hip ; a sensation of drawing in the lower limbs ; pain and tension in the leg as if it were too short ; lacerating pains in the bones of the leg ; swelling of the hip joint ; great weariness in walking ; in the last stage, after discharge has taken place when the sinuses look of a dark bluish color.

Mercurius. In the first and second stage ; worse at nights ; restlessness and inclination to sweat ; tearing pain in the hip joint, worse during motion ; limbs feel stiff when walking ; involuntary twitching of the limbs ; pain in right thigh as if bruised ; sweats much from slight exertion ; pain always worse when warm in bed ; cachectic system ; can be given with advantage after Belladonna ; cramp-like condition of the toes.

Phytolacca. Sharp, cutting, drawing pains in hip ; leg drawn up, cannot touch the floor ; heavy, dragging pains from hip to knee ; hip disease after Mercury, or in syphilitic children.

Illus tox. In first and second stages ; pain in hip joint on pressing upon the trochanter ; pain in the knee, and worse at night, or from over-exertion ; involuntary limping ; spasmodic pains in the limb when stepping out ; worse from cold or damp weather ; stiffness and lameness in the joint when quiet, disappearing after moderate motion ; pain in the joints, worse on entering a room from the open air ; sensitiveness to cold, open air ; evening fever with diarrhoea ; bruised and drawing pains in the thigh.

Arsenic. In the second stage, when the child is emaciated, restless and exhausted ; constant thirst for small quantities of water during febrile action ; pain back of great trochanter extending down the thigh posteriorly ; pain somewhat relieved by flexing the knee ; in irritations of the alimentary canal, with general depression ; derangements of the nervous system ; debility with general sinking of strength ; lancinating pains in the hips, thighs and groins.

Bryonia. Stitching in the hip joint, like needles piercing the part ; drawing in the lower limbs ; lancinating pains from the hip to the knee ;

lacerations in the thighs on movement; in chronic inflammations of the joint structures; great stiffness in all the joints, in the forenoon, rather than the afternoon; pains aggravated in a warm room and when sitting down; aggravation from evening till midnight.

Colocynth. Pain in the joint as if screwed in a vice; lancinating pains from the hip to the knee; in the stage of irritation of the structures of the joint.

Iodum. Sharp, tearing, intermittent pains in the acetabulum, increased by movement of the joint.

Mercur. See first stage.

Calc. carb. In protracted, chronic cases in the second stage; pains increased on slightest movement; pain less when sitting or at rest; pain as from suppuration within the joint; numbness in hip and thigh; limping gait, or walking on the tip of the toes; worse at nights and mornings; worse from cold; better by warmth and drawing up the limbs in cachectic, scrofulous children; the disease resulting from an injury in a scrofulous system.

Calc. phos. in the third stage to limit suppuration and the destruction of bone, and to promote new organizations; stinging, itching, burning pains in small spots; sore pain in the hip joints; in scrofulous and cachectic children.

Hepar. sulph. in the third stage, in strumous patients, where the suppurative process has not been arrested by Mercury,* or where suppuration seems inevitable; to hasten the formation of abscesses; buttock and posterior thighs painful when sitting; caries of the hip joint.

Carbo. veg. in excessive prostration in the third stage; the ulcers have a livid appearance and emit a fetid color, icthyorous, offensive, blackish, discharge; great prostration of the whole system.

Kali Carb. in the third stage with crampy, tearing pains in the hip; a feeling of bruised pain in the joint; twitchings of the muscles of the thigh; dull pain in the side of the knee when walking and especially when extending the limb; great tendency to start, especially when touched.

Phosph. in the third stage, fistulous ulcers, with callous edges, secreting a thin, foul pus; wounds and areolæ livid and blue, and bleeding at the slightest touch; hectic fever.

Silica, in the third stage, with suppuration and caries of the bones; fistulous openings discharge a thin, fetid pus with bony fragments forcing their way out; pale, earthy complexion; glandular swellings; every little sore is apt to suppurate and form new sinus.

Sulphur, in all stages in psoric persons, or persons of cachectic constitutions.

If the patient does not endure well the recumbent or sitting position, splints may be employed that, while they will permit motion, at the same time keep up extension. The most important of these are splints of Davis, Thomas, Taylor, Sayre, Knight, and Schaffer, or Barwell's. Attention must be given to dietetic and hygienic influences, sea bathing, sunlight and fresh air.

A considerable difficulty as to the best means to be employed encounters the surgeon on every side ; for, to put the child in the recumbent position at the very beginning of the trouble, with only a slight hyperæmia of the structures of the joint, may have a tendency to increase rather than to diminish the affection. If the thigh fixity is slight and there exists but little pain in the joint on movement, with limited range of motion, I prefer that the limb shall be kept perfectly quiet by entire disuse of the joint, rather than the recumbent position with extension, especially if the constitution shows positive signs of cachexia. If, on the contrary, the thigh fixity is almost perfect, with pain on movement, recumbency with extension should be insisted on, at least for a time, while the indicated remedies are being employed internally, and local remedies applied externally, in accordance with their pathogenesis, the thigh, to a great extent, being immobilized. As a rule, the vigor of treatment will be largely influenced by the character of the pains ; if the pain in the joint is slight, motion not much impaired, a considerable amount of latitude may be permitted ; but if, on the contrary, the symptoms indicate progress in the disease, with increased health impairment, more positive treatment must be enforced ; and here I will remark that the habit of applying counter irritants to the joint for the purpose of derivative action is not only pernicious in principle, but injurious in practice. I have seen more children unpleasantly affected by these irritations, setons, blisters, etc. etc., a hundred times over, than any good that may be derived under the most skillful attention. The great remedial agents, under all circumstances, are rest of the joint and internal remedies as they are best indicated.

Resection should only be employed during the third stage and when the bone is diseased or dead, or when proper treatment in the early stages has been neglected. The operation has not yet received the entire sanction of the profession. I believe that a thorough knowledge of the various stages of the disease, with a close study of its pathology, etiology, and a recognition of its early symptoms will enable medical men to treat this formidable disease without recourse to the terrible alternative of resection. But when caries of the joint and the danger of perforation of the acetabulum is impending, I believe that the operation is not only justifiable, but absolutely imperative.

The operation by Prof. Sayre, which I think preferable to either the T or V shaped methods of other authors, is thus performed : After administering an anæsthetic, place the patient on the sound side, and hold the point of a strong scalpel perpendicular to the skin at a spot midway between the anterior inferior spine of the ilium and the top of the great trochanter, and push it down to the bone, then make a semicircular sweep over the ilium, keeping its point firmly in contact with the bone and across the top of the great trochanter, midway between its centre and the posterior border down to about the level of the trochanter minor. This incision should divide thoroughly, not only the soft parts, but the *periosteum*, and if it is not entirely divided by the first incision, it should be repeated till

complete separation of this structure is accomplished. Now let the assistant draw the soft parts aside by means of retractors or his fingers, when the operator will make a second incision *across* the bone transversely at a point an inch or a half below the top of the trochanter major, or if the disease has involved that portion of the bone, on a level with the lesser trochanter. Extend this transverse incision as far as possible around the bone taking care to *divide the periosteum freely*. At the junction of these two incisions, one *curved*, the other *transverse*, and both *through the periosteum*, introduce a periosteal elevator and cautiously peel off the periosteum from either side with its attachments as high up as the digital fossa; at this point the rotators of the thigh are firmly inserted, which should be cautiously divided with the scalpel, keeping it close to the bone for fear of dividing a branch of the internal circumflex which lies very close to them. Lift off the periosteum (after dividing these tendons) as far as can be safely done, then slightly adduct the leg and lift the head of the femur carefully from the acetabulum: till the finger can be inserted behind it for the purpose of guiding the saw in the division of the bone. Only uncover so much of the bone as you wish to remove by the saw, which should be done either by the chain or finger saw.

If, after a portion of the bone is removed, it seems that the disease extends further on, luxate the femur a little more, slipping the bone through the periosteum until you have reached the furthest point of disease then remove with a saw as before. If the involucrum has sufficient vitality, it may be permitted to remain; if otherwise, it must be removed.

Next, the surgeon's attention should be given to the condition of the acetabulum; if found diseased, all dead bone should be removed by the gouge, forceps or chisel; the greatest caution must be observed lest injury be done to the internal layer of periosteum. Caries of the floor of the acetabulum can never recover while the head of the femur is lying against it. After completing the operation, clean the wound thoroughly and introduce dressings of lint or prepared oakum wet with Hypericum lotion to fill up the chasm. Close the upper part of the wound with interrupted sutures, and put in a drainage tube; apply absorbent cotton and place the patient in the wire cuirass, well-padded; make extension to the limbs, and dress the wound once a day, or less frequently, according to circumstances. After the dressings are in place, apply the elastic rubber roller gently from below upward in order to approximate as much as possible the deep divided structures, and in all future dressings attention should be given principally to drainage and absorption of the discharges. A layer of lint saturated with carbolic acid and alcohol or glycerine for disinfecting purposes.

The child should be removed carefully from the cuirass at least once a week, and free motion given to all the joints in order to preserve unction, and to prevent ankylosis. After two or more months, according to circumstances, the patient may be transferred either to the long or short splint, and the case treated medically, according to indications.

In cases where the operation has not been considered advisable from various circumstances, and the patient has passed through the two first stages, the suppuration and destruction of structures that attach to the third stage, with discharge of the contents of the joint and sinuses that pass in various directions to the joint, with fixation of the bones of articulation, all that can be done is to guide the disease in its course, relieving pain, preventing pus formations, and giving our remedies to meet the constitutional and local manifestations, keeping the limb in the most favorable position for ankylosis. I have seen the greatest amount of good accomplished in these cases by homœopathic medication, and the many valuable remedies we have, to meet and counteract these unfortunate and painful conditions, proclaim the beneficent action of our medicines and the value of our practice in a disease that thwarts the best directed efforts of the old-school of medicine under the most favorable circumstances. I have succeeded in a number of cases in limiting the further progress of the disease, fixing the limb in the *adversed* position for future locomotion and curing all the effects of inflammatory action by well directed homœopathic medication and local applications. Therefore, I advise my homœopathic brethren to stick close to their principles, ignore the derivatives of the allopathic school and select well their remedies from those I have given them ; persist in giving the indicated treatment, and I can assure them they will have reason to be thankful, and their little patients will bless them for the benefits received at their hands.—*The Medical Counselor*, June 15, & July 1 & 15, 1883.



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THE WEIR MITCHELL METHOD OF TREATMENT
IN CERTAIN DISEASES AND DISEASED
CONDITIONS.

IN our last number we cited two examples of recovery from positive disease, brought about in one case by the influence of climate alone, and in the other by change of diet alone, in both the common condition was the cessation of all drug-treatment which was absolutely useless. It may be contended, and we are quite willing to admit, that the drug-treatment adopted in the cases cited was not appropriate, that if appropriate drugs had been used, recoveries could have been brought about by them. But it must be equally admitted that there was no ordinary difficulty in the selection of drugs, as the cases baffled the most painstaking and conscientious physicians. And it must also be admitted that in cases where drug-treatment had failed, other treatment may effect recoveries in the most marvellous manner. Such being the case to stick to drugs when they or the prescriber prove incompetent to do anything, and to think of nothing else, is madness or inexcusable perversity when it is remembered that the function of the physician is ^{to} heal the sick and not merely to drug them.

It is, therefore, the paramount duty of the physician to inquire what other modes of treatment there are or may be, besides drug-treatment, which may conduce to recovery from disease. We have already seen change of diet and change of climate to be beneficial in removing disease. But they are not always sufficient, either alone or together. Hydropathy is one of the methods of treatment which has in some hopeless cases brought the patient from the verge of death to life. Electropathy, or faradization, is being brought to the notice of the profession, and in some instances it must be admitted to have achieved success. The difficulty of proper selection of cases, and the indiscriminate trial of all cases, have been in the way of the acceptance of these really powerful methods of influencing diseased conditions. Very recently Dr. Weir Mitchell of Philadelphia has hit upon a method of treatment which has proved very efficacious in his hands as well as in those of other physicians in America and England. This method combines Shampooing, or as the French call it, *Massage*, with Faradization. It enjoins other conditions which are no less essential to its success; these are *seclusion and rest, diet and regimen*.

With long suffering the patient, especially if a female, loses strength of Will, becomes more and more sensitive to pains and abnormal sensations; this leads to irritability of temper, brooding over disease, and hypochondriasis. Drugs, when they are powerless to heal, augment the nervous irritability, and render the patient more and more helpless and hopeless. Strange as it may appear, this state of things is aggravated by the "injudicious sympathy" of friends and relations. In the mirror of this sympathy the patient sees his or her miserable condition, a hundredfold, a thousandfold magnified, and the last vestige of Will vanishes, making room for inconsolable grief and absolute despondency. The whole atmosphere around the patient is one of gloom, unmitigated by a single ray of hope, rather deepened by clouds in the countenances of her own near and dear ones. No wonder that under such circumstances the vital powers should become more and more paralysed so as to reduce the chances of recovery from little to less, and from less to lesser still.

It is, therefore, with the sagacity of a true physician that Dr. Weir Mitchell requires as the first condition of his treatment that

the patient should be separated "from the moral and physical surroundings which have become part of her life of sickness," and made to pass "from a life of irregular hours, and endless drugging, from hurtful sympathy and over-zealous care, to an atmosphere of quiet, to order and control, to the system and care of a thorough nurse, to an absence of drugs, and simple diet;" and when this is done, a change will have been made which will prove, of itself, beneficial, and enormously aid in the treatment which is to follow. It is easy to see that this separation of the patient from her moral and physical surroundings, means separation from her home, from her parents, from her favorite and sympathising nurse, and involves a strain upon the mind which it is not easy to bear, and to which it is very difficult to get the patient and her relations and friends to give their consent. But this separation is the first and most essential step for the success of the method, and no compromise should be entered into. "If it be found impossible," says Dr. W. S. Playfair, who has brought this method to the notice of the Profession in England, "from domestic reasons, to secure the removal of the patient from her house, it should, at least, be made an absolute *sine qua non* that she should be placed in a separate room with her (new) nurse, and that she should not be visited by any one except her medical attendant."

The separation having been effected, or at least seclusion having been secured, the next point attended to is *diet*. This consists, before *massage* is commenced, of milk alone, given at intervals of three hours. The quantity to be given at each feeding should be regulated according to the state of the bowels, being smaller (an ounce or two) if the bowels are relaxed and larger (three to four ounces) if the bowels are regular or costive. It is astonishing how under this simple milk diet the dyspeptic symptoms, if present as they generally are, will disappear, and the patient will have sharpened appetite to be able to consume eight to ten ounces of milk at each feeding. The stomach being fairly settled the next points attended to are *massage* and *faradisation*. The object intended to be attained by both these procedures is the exercise of the muscles without the expenditure of nerve-force on the part of the patient.

Massage or shampooing is an oriental practice which is not merely a luxury, but a necessity as well, to indolent wealthy

folks who consider exercise in any shape, even walking a few steps, as beneath the dignity of their rank and position! These people are not only indolent but epicures and gluttons. Their indolence would soon put an end to their epicurean habits and gluttony, were it not for the practice of shampooing whereby their servants do the work of exercising their muscles for themselves. What is found beneficial for the indolent may prove beneficial for the sick, and the result has justified the expectation. Dr. Mitchell enjoins shampooing of the muscles of the trunk and of the extremities, at first for half an hour or less twice daily, but very soon for not less than an hour and half night and morning. "It is surprising," says Dr. Playfair, "how soon the patient comes positively to enjoy a manipulation that for the first few days is very trying. Soon all local tenderness disappears, and a pleasant sense of exhaustion, followed by refreshing sleep, is alone experienced. In two of my cases the abdomen, especially in the ovarian regions, was so tender that the patient at first shrank from the slightest touch, but in a very short time she could be freely handled and kneaded in every part."

To be beneficial the massage must be properly done, and the best test of this is the ability to digest and assimilate food by the patient. "If," says Dr. Playfair, "after a week's massage the patient is not taking well the large amount of food administered to her, and perfectly assimilating it, her massage is undoubtedly being badly done." It is extremely difficult, in this country in particular, to procure good nurses who can be trusted with the class of cases under consideration, nurses who shall have intelligence, tact, kindness, good manners and firmness to be able to bring thoroughly under their influence patients who have become irritable and despondent from long suffering. And much more difficult is it to have nurses who can act as good *masseuses*. The great drawback of this mode of treatment, in this country, will be the procuration of suitable nurses. The professional rubbers here are all males, but males are out of the question when we have to deal with female patients, to whose cases the treatment is especially applicable. In order to carry out the treatment at all, we must have nurses especially trained for the purpose.

Faradisation, or the employment of the intermittent current, differs in its action from shampooing in that it causes the muscles

to contract by their own inherent power called forth by the stimulus of electricity, but the result is very nearly the same, namely, the free establishment of the circulation through the mass of the muscles and thereby throughout the whole system. Faradisation has proved especially useful in cases where there is hysterical paralysis and consequent atrophy of extensive groups of muscles. The method of procedure is to use the poles armed with wet sponges, which are then placed on the muscles to be operated on at about three or four inches apart, and slowly moved until the muscle is freely contracted. The operation is begun in the feet and continued over the whole body with the exception of the head. In our opinion the faradisation should not be resorted to where massage may be sufficient, and if absolutely necessary, should be administered only by the medical attendant, and should not be done more than once in twenty-four hours. The muscles should only be gently and not violently acted upon. Unlike shampooing, the electric stimulus if too intense or too long continued may destroy muscular irritability altogether.

Along with massage and faradisation the diet is increased and varied, and soon almost an incredible quantity of food is consumed and digested, the patient improving in a most remarkable manner. But as concrete facts are more impressive than abstract reasoning, we make no apology to quote in full the following cases published by Dr. Palfair in the *Lancet* for May 28 and June 11, 1881. It will be seen that *Case 2.* was one of pure hysteria of an aggravated form in which there was neither extreme nervous prostration, nor excessive emaciation, nor much dyspepsia. The cure was brought about more by isolation and moral pressure, than by massage, electricity and diet which merely acted as secondary agents. The case illustrates "the extreme value of a determined effort to break through habits of a morbid character, and the importance of trying to make a weakened will exert itself."

CASE 1.—Early in October of last year I was asked to see a lady thirty-two years of age, with the following history: She had been married at the age of twenty-two, and since the birth of her last child had suffered much from various uterine troubles, described to me by

her medical attendant as "ulceration, perimetritis, and endometritis." Shortly after the death of her husband, in 1876, these culminated in a pelvic abscess, which opened first through the bladder and afterwards through the vagina. Paralysis of the bladder immediately followed the appearance of pus in the urine, and from that time the urine was never spontaneously voided, and the catheter was always used. Soon after this she began to lose power in the right leg and then in the left, until they both became completely paralysed, so that she could not even move her toes, and lay on her back with her legs slightly drawn up, the muscles being much wasted. Towards the end of 1877, after some pain in the back of her neck and twitching of the muscles, she began to lose power in her left arm and in her neck, so that she lay absolutely immobile in bed, the only part of her body she was able to move at all being her right arm. Up to this time the pelvic abscess had continued to discharge through the vagina, and occasionally through the bladder, but it now ceased to do so, and there were no further symptoms referable to the uterine organs. Her general condition, however, remained unaltered, in spite of the most judicious medical treatment. She was seen, from time to time, by several of our most eminent consultants, all of whom recognised the probable hysterical character of her illness, but none of the remedies employed had any beneficial effect. There was almost total anorexia, the amount of food consumed was absurdly small, and the necessary consequence of this inability to take food, combined with four years in bed with paralysis of the greater part of the body, and the habitual use of chloral to induce sleep, had reduced a naturally fine woman to a mere shadow. In October, 1880, her medical attendant was good enough to bring her to London for the purpose of giving a fair trial to the Weir Mitchell method of treatment, with the ready co-operation of herself and her friends, and she was conveyed on a couch slung from the roof of a saloon carriage, so as to avoid any jolt or jar, since the slightest movement caused much suffering. Two days after her arrival my friend Dr. Buzzard saw her with me, and, after a careful and prolonged electrical examination, came to the conclusion that contractility existed in all the affected muscles, and that the paralysis was purely functional. I could find no evidence in the pelvis of the abscess, the uterus being perfectly mobile, and apparently healthy. After a few days' rest the treatment was commenced on October 16th, the patient being isolated in lodgings with a nurse of my own choosing; this was the only difficulty I had with her, since she naturally felt acutely the separation from the faithful attendant who had nursed her during her long illness. Her friends agreed not

to have communication with her of any sort. It is needless to give the details of the treatment in this and the following cases. A mere abstract will suffice to indicate the rapid and satisfactory progress made.

October 16th.—Twenty-two ounces of milk were taken, in divided doses, in twenty-four hours; on the 17th, fifty ounces of milk; on the 18th, the same quantity of milk repeated; massage for half an hour; on the 19th, milk as before; bread-and-butter and egg; massage for an hour and a half; twenty minims of dialysed iron twice daily; on the 21st, a mutton chop in addition to the above; massage an hour and fifty minutes. To-day she passed water for the first time for four years, and the catheter was never again used. Chloral discontinued, and she slept naturally all night long. On the 23rd porridge and a gill of cream were added to her former diet; massage three hours daily, and electricity for half an hour, and this was continued until the end of the treatment. Maltine was now given twice daily.

30th.—She is now consuming three full meals daily of fish, meat, vegetables, cream, and fruit, besides two quarts of milk and two glasses of burgundy. Considerable muscular power is returning in her limbs, which she can now move freely in bed.

Nov. 6th.—Sat in a chair for an hour. The massage and electricity are being gradually discontinued, and the amount of food lessened.

Nov. 17th.—Walked downstairs, and went out for a drive, and henceforth she went out daily in a bath chair. She has increased enormously in size, and looks an entirely different person from the wasted invalid of a few weeks ago.

On Nov. 26th she went to Brighton quite convalescent, and on Dec. 11th came up of her own accord to see me, drove in a hansom to my house, and returned the same afternoon. She has since remained perfectly strong and well, and has resumed the duties of life and society.

A somewhat curious phenomenon in this case, which I am unable to account for, was the formation on the anterior surface of the legs, extending from below the patellæ half way down the tibiæ, of two large sacs of thin fluid, containing, I should say, each a pint or more, freely fluctuating, and quite painless. I left them alone, and they have spontaneously disappeared.

Case 2.—Mrs. , aged twenty-six, was sent to me from one of our colonies with the following history. She had had bad labours, followed by bearing-down, backache, and other uterine symptoms, and had been subjected by various medical men to much local treatment, including

the use of pessaries, constant cauterisation, and the like, most of which had, I believe, a very prejudicial effect on her. I may say that I was unable to detect any uterine disease requiring topical treatment although such may no doubt have previously existed. I extract from the full report sent to me by her last medical attendant the following curious account of the nervous phenomena she exhibited. "Her lower limbs are partially paralysed, or, at all events, not under the proper control of her will. She is able to walk a short distance with a very uncertain gait, but the knees, after a few paces, suddenly give way, and she falls to the ground. When sitting quietly her hands are frequently affected with slight spasms, and her lips and eyelids are subject to occasional nervous twitches. Each menstrual period is preceded by violent hysterical attacks. In these seizures the body is violently convulsed, and the exhaustion which has followed has been so marked that I have occasionally failed to detect the pulse. These attacks are also brought on at other than the menstrual periods by any slight unusual exertion." When the patient presented herself in my consulting-room, although supported by her husband, she fell down on the floor six times, in the manner above described, in walking the length of the room, and this was the only way, I was informed, that she had been able to walk for some two years. She was very pale and anæmic, but fairly well nourished. I soon satisfied myself of the hysterical character of these symptoms, but had great difficulty in inducing the patient to submit to my proposed treatment, especially as to separation from her husband, who had got into the way of constantly nursing and tending her, with a result most injurious to her health. Within twenty-four hours of the treatment being commenced she had a violent outburst of hysterical excitement, which, however, soon subsided on my proposing to dismiss the nurse and give up charge of the case. For ten days everything went on well, food was taken freely, and there was a perceptible increase in size and weight. When, however, faradisation was commenced, it led to a second paroxysm of excitement, the patient writing piteous letters to her husband declaring that she was going mad, and that the agony produced by the electricity was perfectly unbearable. Under my advice he had the good sense to write and tell her that I was perfectly prepared to stop the treatment the instant she expressed a desire that it should be so, but that, as it had been begun, he would not take on himself the responsibility of doing so, and that the decision must be made by her. I then informed the patient that as the object of the electricity was to give strength to her weakened limbs, the

moment I was satisfied, by her walking downstairs without falling, that the desired result had been gained, it would, as a matter of course be stopped. This lady was lodging rather more than a mile from my house, and, to my very great surprise, the next morning after the scene I have narrated, she was shown into my consulting-room, having of her own free will got up and dressed, sent for her husband, and walked without assistance the whole way without once falling. She has since left town apparently quite cured, and I heard from her a few days ago that she was about to start for a prolonged continental tour.

CASE 3.—This case is a typical instance of the kind of nerve debility and exhaustion that may be associated with old-standing uterine disease. It was placed under my care by Dr. George Kidd of Dublin, whose account of the case I prefer giving to my own, having his permission to do so. She had long been under his care and that of Dr. McClintock, and the fact that she had been treated by obstetricians so eminent is of itself sufficient proof that all had been done for her that the most advanced science could suggest. I may premise that the patient was a single lady forty-five years of age, that she had never been strong, but had not been completely laid up until 1872, since which time she had been confined to her bed or couch. Dr. Kidd wrote to me as follows:—“Miss has been a complete invalid for many years. She suffers from excessive pain during menstruation, and from constant pain in the left side and back, extending down the left thigh and leg, with loss of muscular power in that side. Some years ago I discovered a fibrous tumour growing from the left side of uterus, subperitoneal, and with a pedicle long enough to allow of free movements. Mr. Spencer Wells cut down on this tumour, and removed it, but without removing either the menstrual pain or the pain in the side. The tumour has grown again in the same situation, and is nearly as large as before, probably one inch and a half in diameter. All the mucous membranes are delicate, and she suffers occasionally from vaginitis and endometritis, and also much from piles and prolapse of the rectum. Miss is of a highly nervous and hyperæsthetic temperament, which is probably exaggerated by the isolated life she has been leading and by the frequent use of hypodermic injections of morphia to relieve pain.” I may supplement this account with an extract from a letter from the patient herself, which graphically describes the state of her nervous system. “I can hardly tell you what a deep sufferer and how prostrate I have been. For years I have led a completely sedentary life, always lying; it is the

position I am easiest in. My back aches sorely. I am peculiarly sensitive to pain. I spend very restless nights. The pain is often then very bad. I have always a sense of great weariness." I found this lady, as might have been anticipated, pale, anæmic, very wasted, and with her nutrition at the lowest ebb. She had no appetite, and consumed hardly any food, a snipe or the wing of a pigeon constituting, with half a cupful of bread-and-milk, all she took in twenty-four hours. Moreover, she had the morphia crave strongly developed, her maid giving her hypodermic injections of four minims of the pharmacopœial solution ten times, sometimes much oftener, daily, equivalent at the least to six grains of solid morphia; besides which she took draughts of chloral and morphia twice daily. I found the fibroid as described by Dr. Kidd, apparently growing from the posterior wall of the uterus, supported by a Hodge, which seemed to give her some comfort. It will be admitted that here was a case sufficiently bad to test the value of the treatment thoroughly, and, inasmuch as there was a distinct uterine lesion which could not be removed, I undertook it with considerable misgiving. I was, however, encouraged to do so on reflecting that there was nothing *per se* in such a fibroid to cause much suffering, many women having similar outgrowths which in no way affect them, and I hoped that if I could succeed in improving the vital energies and in breaking off the vicious habit of morphia taking, much good might be done. I accordingly isolated her with a nurse, having sent away her maid who had attended her during all her illness. During the first fortnight, or rather more, things went on very badly. It was reported to me that it was quite impossible to administer to her the food that was ordered, the stomach being unable to bear it; the sleeplessness was aggravated rather than lessened, and she was in the lowest state of mental depression, constantly crying and declaring that she could not possibly bear the treatment. On trying to stop the hypodermic injections, violent vomiting supervened, which lasted the whole of one night, but which was immediately relieved when the morphia was again given. At this juncture I was nearly in as great despondency as the patient, and feared that the treatment must be abandoned. On reflecting on a result so different from that which I had observed in other cases, I came to the conclusion that the fault lay chiefly with the nurse, who, although an amiable and willing woman, had neither the intelligence nor the tact necessary for such a case, and who yielded in everything to the wishes and fancies of the patient. I therefore determined to change her, and secured the services of the nurse who had managed my first case, on

whose judgment and skill I could thoroughly rely. From that moment everything went on as well as could be wished; nothing more was heard of the food disagreeing, and within ten days my patient was taking three full meals a day, besides her milk and soup, with relish and appetite. She slept all night long, and began rapidly to put on flesh. As a matter of fact, I believe that the first nurse, who had no experience as a masseuse, entirely mismanaged the shampooing, giving practically no muscular exercise, and, as a matter of course, the increased amount of food could not be assimilated. It was quite surprising to note how at the end of a week, with her new nurse, the patient had lost her depression, and had become comparatively bright and very hopeful. The hypodermic injections were gradually lessened in number and quantity; in a night all sedatives were entirely discontinued, and nothing of the kind has been since touched, nor has she any craving for them. It was very curious to watch this patient's progress. From leading a life of complete isolation for so many years she had fallen into a chronic state of dread and alarm, and could not at first bear the idea of meeting any stranger, and was indeed, somewhat like a prisoner brought into the world after a lengthy imprisonment. Every step in advance was a matter of apprehension to her, and it required much encouragement and persuasion to induce her first to leave her room and walk downstairs, then to go out, and so on; but by degrees all difficulties were overcome. I eventually induced her to remove into one of our largest hotels for the express purpose of bringing her into contact with the life and bustle of such an establishment, and soon she was able to sit in the public room, to dine at the table-d'hôte, to go out for daily drives, and to go to church. She now looks twenty years younger than when the treatment was commenced, and her friends declare her to be almost unrecognisable, which is indeed the fact. For the last month of her treatment she never mentioned her uterine symptoms, and I purposefully refrained from inquiring about them. She has now left, accompanied only by a maid, for a trip across the Atlantic, with the object of visiting the Falls of Niagara. Perhaps I cannot better contrast this patient's present and past condition than by again quoting from a letter of her own written as she was leaving town. "I find it impossible to get people to understand the treatment I have lately undergone, but the results have been quite marvellous and speak for themselves. My brother, whom I saw for the first time yesterday, said I am a miracle. I *really* do not know myself, and, although I sometimes have a frightened feeling, I have *much* more self-control, and the aspects of my life have completely changed for me."

Hitherto the method has been tried in cases of females only, and has proved eminently successful. But we do not see any reason why it may not be tried and prove equally successful in the cases of males also. Invalidism and hypochondriasis are not peculiar to the female sex. They are met with, though perhaps less frequently, in the other sex. The cases published by Dr. Weir Mitchell, Playfair, and others show that the method has succeeded even where the neurasthenia and the dyspepsia have depended upon permanent organic lesions in the uterus. In some cases with the improvement of the general health the organic lesions disappeared, in some cases they did not; but in all the power of digesting and assimilating food marvellously improved, giving rise to most unexpected improvement in the general health which was no small boon to patients who had to be subjected to grave operative procedures afterwards. Hence we venture to express a hope that in cases of pure dyspepsia, or of dyspepsia dependent upon other lesions than those of the uterus and occurring in males also, where drug-treatment has been of no avail, massage may prove beneficial either alone, or may pave the way for further drug-treatment.

Strange as it may appear this method of treatment, recommended by an eminent member of orthodoxy in America, advocated by an eminent member of orthodoxy in England, and found so eminently successful in very serious cases where drug-treatment was worse than useless, has been condemned by some eminent members of orthodoxy in England as savouring of quackery! Accustomed to persecution from orthodoxy for our belief in and adhesion to the Hahnemannian system of medicine, we are not much surprised at this new phase of the mischievous conservatism of the old school. Dr. Playfair has well rebutted the charge of quackery that has been brought against Dr. Weir Mitchell's method of treatment. "To my mind," says he, "quackery does not consist in the thing that is done, so much as in the spirit in which it is done. The most time-honored and orthodox remedies may be employed in such a manner, and by men boasting of the highest qualifications, as to be fairly chargeable with this taint. That we should be debarred from the use of such potent therapeutic agents as shampooing, massage, or systematic muscular exercise, whichever we may choose to call it, or electricity, or hydro-therapeutics, and the like, because in unworthy hands they have been

abused, seems to me almost worse than an absurdity. The true scientific position is, I submit, that we should endeavour to rescue such means of treatment from abuse, and lay down rational rules for their employment. It is with such views, and in such a spirit, that I have endeavoured to deal with these distressing and hitherto intractable cases, and I venture to hope that the large majority of the profession will agree with me, that not only are we fully justified in resorting to such treatment, but that the eminent American physician, who first introduced and systematised it, has done a signal service in teaching us how to deal successfully and scientifically with a class of cases which has hitherto been entirely beyond our skill, and which brings untold misery not only on the sufferers, but on all connected with them." Dr. Playfair ought to take a lesson from this opposition of some of his professional brethren, and ought to see in its light the nature and character of similar opposition to other innovations and reforms in the therapeutic art.

चरकसंहिता ।

देवस्थानम् ।

अष्टमोऽध्यायः ।

अथात इन्द्रियोपक्रमणीयमध्यायं व्याख्यास्यामः ।

इतिह स्माह भगवानात्रेयः ॥ १ ॥

इह खलु पञ्चेन्द्रियाणि पञ्चेन्द्रियद्रव्याणि पञ्चेन्द्रियाधिष्ठा-
नानि पञ्चेन्द्रियार्थाः पञ्चेन्द्रियबुद्ध्यो भवन्तीत्युक्तमिन्द्रियाधि-
कारे ॥ २ ॥

अतीन्द्रियं पुनर्भनः । सत्वसंज्ञकश्चेत इत्यहुरेके ॥ ३ ॥

CHARAKA SANHITA.

CHAPTER VIII.

1. And now I shall treat of the chapter, called Indriyopakra-
maniyam (i. e. functions of the senses), thus said the venerable
A'treya.

2. In this chap. we treat of five senses ; five substances out
of which they have been formed (that is, their five material
causes) ; five organs in which they are located ; five (different)
objects (of which they convey knowledge) ; five sensations (or
rather perceptions or cognitions of the five kinds of objects).
Thus has been said (by philosophers) on the subject of the senses.

3. The mind (is not a sense) but beyond all senses.* Another
name for mind is sattva (existence, excellence). Some philo-
sophers call it chetas (instrument of consciousness).

* The mind cannot recognize external objects except through the senses.
In the language of Hindu Philosophers the mind is not the cause of external
perceptions.

तदर्थाभिसम्पदावस्तचेष्टचेष्टामत्यवभूतमिन्द्रियाणाम् ॥ ४ ॥

स्वार्थेन्द्रियार्थसङ्कल्पव्यभिचरणाञ्चानेकमेकस्मिन् पुरुषे सत्त्वं
रजसमःसत्वगुणयोगाञ्च ॥ ५ ॥

न चानेकत्वं नानेकां ह्येककालमनेकेषु प्रवर्त्तते ॥ ६ ॥

तस्मान्नैककालां सर्वेन्द्रियप्रवृत्तिः ॥ ७ ॥

यद्गुणश्चाभीक्ष्णं पुरुषमनुवर्त्तते सत्त्वं, तत्सत्त्वमेवोपदिशन्ति
व्यपयो वाचुल्यानुश्रयात् ॥ ८ ॥

मनःपुरःसराणीन्द्रियाणि अथैप्रहणसमर्थानि भवन्ति ॥ ९ ॥

4. The actions of the mind are dependent upon (determined by) the presence of its objects (pleasure, pain, &c.) and the conscious exertion of the soul. The mind is the cause of the action of the senses.

5. From the variety of its objects, and of the objects of the senses, and of its actions, and from its connection (relation) with sattva, rajas and tamas,* the mind may be (thought) more than one in one individual.

6. But in reality it is not more than one. For that, which is more than one, may be engaged in more than one object at one and the same time.

7. Hence all the senses cannot act at one and the same time.

8. With whatever quality (sattva, rajas, or tamas) the mind constantly follows a person, the same quality, from its predominance, is said by the rishis to be characteristic of the person.

9. The senses are capable of a knowledge of objects from their connection with mind.

* Sattva (goodness, purity), Rajas (passion, foulness), Tamas (darkness, ignorance.)

तत्र चक्षुः श्रोत्रं घ्राणं रसनं स्पर्शमिति पञ्चेन्द्रियाणि ॥ १० ॥

पञ्चेन्द्रियद्रव्याणि खं वायुर्व्योतिरापो भूरिति ॥ ११ ॥

पञ्चेन्द्रियाधिष्ठानान्यधिष्ठी कर्णौ नासिके जिह्वा त्वक्
चेति ॥ १२ ॥

पञ्चेन्द्रियार्थाः शब्दस्पर्शरूपरसगन्धाः ॥ १३ ॥

पञ्चेन्द्रियवृद्धयश्चक्षुर्बुध्नादिकाः । ताः पुनरिन्द्रियेन्द्रियार्थ-
सत्त्वात्मसन्निकर्षजाः ॥ १४ ॥

10. The five senses are those of vision, hearing, smelling, taste, and touch.

11. The five substances of the senses are sky (ether), air, light, water, earth.

12. The five organs of the senses are the two eyes, the two ears, the two nostrils, the tongue, and the skin.

13. The five objects of the senses are sound, touch, taste, form, smell.

14. The five sense-perceptions are those of sight, &c.

These perceptions are produced by the contact of the senses with objects, (of the mind with the senses,) and of the mind with the soul.

(To be continued.)

EDITOR'S NOTES.

ORTHODOX OPPOSITION TO HOMŒOPATHY IN AUSTRIA.

Dr. Schmidt having left a sum of £ 2500 some years ago to found a chair of Homœopathy at the Vienna Medical College, the minister of Public Instruction invited Prof. Siedelmann to report upon the *technical* value of Homœopathy. What is meant by the expression *technical* value of a system of medicine the transcendental German mind alone can understand. Prof. Siedelmann has been equal to the occasion, and out of the depths of his inner consciousness has excogitated views which he has embodied in a lengthy treatise and according to which the teaching of Homœopathy at the scientific institution in question would be unworthy of the present state of medical knowledge. In these views the great pathologist Prof. Rokitansky has fully concurred with his colleague. Homœopathy, therefore, may well despair of its future in Austria.

NEW THEORY OF ALBUMINURIA.

M. Semmola of Naples considers albuminuria to be a cause, not a consequence, of renal disease, depending upon a general morbid alteration of nutrition, for the albumen is not only passed by the kidneys but by all the secretory organs. The renal lesions are, according to him, due to mechanical irritation set up by the constant passage of albumen through the tubules of the kidneys. By introducing albumen into the blood vessels, M. Semmola was able to induce artificial Bright's disease. He found that the more nearly the albuminoids introduced into the blood-vessels approached the characters of serum-albumen, the less was the irritation produced by them on the kidneys, and *vice versa*. Thus whereas the white of egg was the most active in inducing albuminuria, serum-albumen was the least so.

REMEDIES FOR ACUTE NASAL CATARRH.

Dr. A. E. Small has found the following remedies valuable according to their indications in the treatment of acute nasal catarrh :

Aconitum nap. in all cases of coryza attended with sensation of heat in the onset, and an uncomfortable sense of fulness in the nares, and headache.

Ammonium carb. in nasal catarrh, characterized by troublesome stoppage of the nares at night, especially when the pituitary surface has been dry.

Allium cepa for that variety of coryza attended with burning ex-coriating water from the nose and profuse watery discharge from the eyes.

Arsenicum album. When there is a profuse discharge of hot watery mucus from the nose, which seemingly scalds the adjacent portion of the upper lip and the interior portion of the nostrils, we have known two or three doses (four globules each) of the third decimal attenuation of arsenicum album, at intervals of three hours, to effect a speedy cure.

Among the remedial measures that afford protection against contracting cold, a daily dose of the third trituration of *Baryta carb.* has been found one of the best prophylactics.

DISEASES OF MONKEYS.

Mr. J. B. Sutton, Senior Demonstrator of Anatomy, Middlesex Hospital, made post mortem examination of the viscera of 93 out of 110 quadrumana that died in the Zoological Gardens in Regent's Park, and found the causes of death as follows :

Tubercle, 3 deaths ; bronchitis, 22 ; lobar pneumonia, 3 ; lobular pneumonia, 7 ; septic pneumonia, 1 ; empyema, 2 ; abscess of lung, 1 ; œdema of lung, 1 ; atelectasis, 10 ; scrofula, 3 ; intussusception, 1 ; leucocythemia, 1 ; typhoid fever, 4 ; the total being 59.

So that 34 deaths remain unexplained, no lesion sufficient to cause death having been met with. "The species," says Mr. Sutton, "which gave most trouble in this respect are the little marmosets and squirrel monkeys," in only 2 out of 25 of which was it possible to assign a satisfactory cause of death.

Mr. Sutton draws attention to three points which are revealed by his necropsies :—1. Infrequency of tubercle, 2. Remarkable absence of tumors, 3. Absence of kidney disease of any description.

These statistics, while they disprove the prevalent notion that monkeys kept in confinement die chiefly of tubercle, show that the quadrumanous lung under such circumstances is very susceptible to morbid influences, for out of 93 deaths 50 were caused by some disease or other of the lungs.

THE SANGUINARIA HEADACHE.

Dr. Winterburn, the learned Editor of the *American Homœopath*, has given the following differential characteristics of Sanguinaria headache in his Journal for June 1883 :—

The pain commences in the back part of the head, and rising upwards spreads over the head and finally settles in the brow above the right eye. There is great intolerance to light and noise. The patient is obliged to remain in a dark room and lie perfectly still. There is nausea and vomiting accompanied sometimes with chilliness. If there are flashes of heat through the body, or if the palms of the hands and the soles of the feet burn, or if the urine is scanty and dark at first, becomes later profuse and clear, Sanguinaria is the more specifically indicated.

This headache differs from that calling for *Rhus radicans*, that while both begin in the occiput and spread over the head, the *Rhus* headache stiffens the muscles of the nape of the neck, is better while moving about, and is caused by exposure to damp and cold; this does not effect the neck, is better when the patient keeps quiet, and is brought on by gastric disturbance. The *Iris hemicrania*, which is also mainly on the right side and of gastric origin, is accompanied with blurring of the eyes, is worse when at rest, and recurs periodically, often on the same day of the week. In *Sanguinaria* the vomited matters are bitter, but in *Iris* they are intensely sour. The *Cereus hemicrania* is also right-sided, compels the patient to avoid all noise, light or exertion, but it is rarely connected with any gastric disturbance, it is usually caused by mental excitement or worry, and is often associated with cardiac complications. Right-sidedness also characterizes the *Pulsatilla cephalalgia*, but this usually begins in the afternoon and is always worse during the night, whereas the *Sanguinaria* headache begins in the morning, increases through the day and is better at night. The *Pulsatilla* pain is relieved in the open air, and generally arises from uterine disturbance.

The *Chelidonium* and *Sanguinaria hemicranie* are very similar. Both extend from the occiput to the forehead over the right eye; both are aggravated by moving about; both are periodical; and both cause great irritability, In *Chelidonium* the patient is better from eating, in *Sanguinaria* worse; in *Chelidonium* the patient is low-spirited, in *Sanguinaria* cross; in *Chelidonium* the food taste natural, in *Sanguinaria* bitter; in both there is a disrelish for nitrogenous food, but the *Chelidonium* patient longs for acids.

Sanguinaria is of value in the neuralgiæ of the trigemini when the pain is shooting and burning in character, and pressure over the pain gives relief. It is of value in various myalgic pains when accompanied by distension of the temporal veins, and Dr. Hale suggests it as a remedy in sanguineous apoplexia.

SAVING OF LIFE BY THE FORCIBLE DILATATION OF THE PYLORUS.

The following summary given, in the *Lancet* for Aug. 18, 1883, of a case of Prof. Pietro Loreta of Bologna, will, we have no doubt, be read with intense interest as showing the triumph of surgery in a disease which is looked up as strictly within the province of the physician and out of that of the surgeon:—

Nicola C , aged forty-seven, had suffered for the greater part of twenty years from imperfect digestion, distension of the stomach, sense of weight, and occasional vomiting. In 1878 he was admitted into the Bologna Medical Clinique, and treated for ulcer of the stomach. Relief ensued, but only for a short time. Eructation, a burning feeling in the throat, vomiting of undigested food, sometimes mixed with blood, increasing emaciation, and pallor of the skin and mucous membranes were noted. The man subsisted on a little milk. The distended stomach gave a clear note on percussion from the fifth rib to the umbilicus. Microscopic examination of the fluid drawn by pump from the stomach yielded no evidence of organic lesion. On palpating the emptied stomach, a tumour could be felt in the pyloric region, with smooth and elastic surface, but not very well defined limits. As the patient was steadily sinking, Professor Loreta, on Sept. 14th, 1882, operated, in the presence of numerous colleagues; Dr. Alfonso Poggi administered chloroform. The stomach was washed out with an alkaline solution. The incision into the abdominal wall was commenced a little to the right of the linea alba, and extended outwards and downwards for six inches; the lower angle was an inch and a quarter from the ninth right costal cartilage. In the incision were included the oblique and transverse muscles, and also a part of the rectus. On reaching the peritoneum, the Professor stopped to tie some arteries and to wait the complete arrest of bleeding from the edges of the wound. The peritoneum was then opened. The omentum was extensively adherent by old inflammatory exudations. These were separated very slowly and carefully from the abdominal wall and from the surface of the stomach. This viscus was then drawn out through the wound, and the operator felt the pylorus much enlarged and of fibrous hardness. In the space between the two curves of the stomach, and at a distance of an inch and a quarter from the pylorus, an opening was made into the viscus with a stout pair of scissors through a transverse fold previously raised. The opening into the stomach was extended two inches and a half, and T-shaped forceps were used to arrest bleeding from the edges. The right index-finger was then passed into the stomach towards the

pylorus, which was completely closed. The finger failed to pass into the duodenum, in spite of considerable pressure and combined lateral and rotatory movements. The left index-finger was then introduced into the stomach and used to fix the pylorus, while strong and renewed pressure was exerted to push the first phalanx of the right index into the narrow and contracted pylorus, which was then drawn forwards to the external wound. Along the right index-finger the left one was also introduced into the pylorus, but these attempts failed to pull one finger from the other in spite of much force, sustained as long as possible ("moltissima forza, nel sostenerla quanto piu a lungo potessi"). After resting, the operator resumed his efforts and dilated the pylorus, though he only succeeded in doing so very slowly, and by employing very great force. The dilatation was continued to about three inches (eight centimetres). The stomach wound was then sutured with carbolised silk, the viscus replaced in the abdominal cavity, and the external wound closed with seven silver sutures. The patient was returned to bed thirty-three minutes after the commencement of the operation. On regaining consciousness the patient complained only of thirst and of a slight burning sensation at the wound. Small pieces of ice were given from time to time. In the afternoon the patient complained of weakness and hunger, and relished the yolk of an egg beaten up with Marsala wine, given in teaspoonfuls every half hour. The temperature throughout the day was 98°, pulse 72, respiration 26. The same kind of diet was continued. The third day after the operation the bowels acted after an enema, the fourth day some broth and light paste were allowed, the fifth day some chicken, the sixth day bread was added to the diet. On that day the bowels acted spontaneously. The wound was first dressed on the eighth day, and five sutures removed. The incision had healed by the first intention. The two remaining sutures were removed on the eleventh day. The thirteenth day after the operation the patient's diet consisted of coffee and milk, bread, roast chicken, roast beef, eggs, and wine. He was out of bed for two hours and a half on the sixteenth day, and rapidly gained flesh and strength. Two days before the operation the man weighed 122 lb., and gained about 33 lb. in six weeks. He continued to enjoy perfect health when presented to the Bolognese Academy after the lapse of five months. Professor Loreta subsequently performed a similar operation in another case, and with equally good result, but in this instance he experienced much less difficulty in dilating the pylorus.

CLINICAL RECORD.

A Case of Opacity of the Cornea.

BY BABU MADHAB CHANDRA BANERJEA, L.M.S.

Patient, a Hindu female, about 25 years old. She had, it appears, Keratitis of both eyes when 9 years old, of which she was cured by ~~home~~ homoeopathic treatment, after failure of the best ordinary (allopathic) treatment continued for five months. She had suffered from hysteria for 4 years up to the 17th year of her age. The hysteria disappeared after the birth of her first child. She has altogether borne five children. After the cure of her Keratitis her eyes were perfectly free from disease, till a fortnight before I saw her in the beginning of July, when the eyes became similarly affected. The left eye was first attacked, then the right. The eyes were red, and there was a sensation of sand in them. There was considerable photophobia, and lachrymation especially when opening the eyes. There was diffuse opacity in both the corneæ. The general health was bad.

Treatment : I gave her *Sulph.* 12, twice a day, for 4 days. There being no improvement I gave no medicine for 4 days. Then I gave *Merc. s.* 6, twice a day, for 4 days with the same result, and therefore again stopped medicine for 4 days. Finding the eyes no better, the photophobia and the lachrymation continuing, and the opacity remaining as before, I hit upon *Calc. c.* 12, which also I gave her twice daily. Under this medicine she improved, and was all right in the course of a month.

A Case of Synovitis.

BY BABU MADHAB CHANDRA BANERJEA, L.M.S.

On May 17th, I saw a Hindu female, age 40, suffering from synovitis of the right knee-joint. The fever was intense, the pain, heat and swelling of the joint were very great. The distension of the joint was so great and the fluctuation so evident that I was sent for to open what was believed to be an abscess. I gave *Acco.* 6, twice daily.

May 20th. She had taken the *Acco.* regularly till yesterday. The fever was less, but the swelling was the same, and the pain was especially severe at night. *Acco.* 6 and *Bell.* 6 were ordered to be taken alternately, two doses of each medicine daily.

May 25th. The *Aco.* and the *Bell.* had been taken regularly for four days, with no effect upon the swelling, though the fever was much less. *Bryo. 6*, three times a day.

June 1st. The patient is in the same state. No improvement whatever has taken place in the knee-joint. Ordered *Bryo. 2*, three times daily.

June 8th. She had taken *Bryo. 2* for 4 days, and as she derived considerable benefit, with relief of pain and diminution of the swelling, it was stopped for 4 days. I now ordered the medicine to be taken twice a day only for 4 days, then to discontinue it for 4 days, and to go on in this way for a fortnight.

June 27th. The improvement under *Bryo. 2* was very great, but after a time it became stationary. There was still some swelling and also some pain at night, which continued in spite of *Bryonia*. I therefore ordered *Sulph. 12*, twice daily, no medicine for three days, and in this way to go on for a fortnight, at the end of which she was nearly all right, the slight enlargement of the joint being still seen, though the pain is entirely gone.

Remarks.

It will be seen that *Aconite*, though it did good to the fever, had no effect upon the real disease; and that while *Bryonia 6* was entirely powerless, *Bryonia 2* had a remarkable influence in controlling and very nearly curing the disease. But even *Bryonia* had a limit to its action, and had therefore had to be supplemented by *Sulphur*.

**THERAPEUTICS OF CONSTIPATION, DIARRHŒA,
DYSENTERY, AND CHOLERA.**

55. CAUSTICUM.

Constipation :

1. Very solid stool, though without any difficulty.
2. The st. was crumbly, then the rectum contracted, and only a soft st., was passed, which was thin in form like a goose quill.
3. Passage of a round worm with a hard st.
4. *The st. passes better when standing.*
5. Immediate urging to st., after dinner, the st. was hard and passed with pressure.
6. Hard, nodular (knotty), difficult st.
7. ° Tough st., shining like grease.
8. ° Light-colored white st.

Diarrhœa :

1. D. easily from taking cold in the abdomen.
2. D. with twinging and burning in the anus.
3. Watery D. with stomach ache.
4. Soft, fluid or semifluid st.
5. Soft st., with passage of flatus.
6. Cutting colic in the morning, followed by three soft sts., and the whole day a sensation in the abdomen as of diarrhœa.
7. Cutting colic and diarrhœa during menses.
8. Sensation as if flatulence would be emitted, during which fœces are passed.

Dysentery :

1. Bloody st., with burning and sore sensation in the rectum.
2. St. with white mucus.
3. Painless passage of blood with a soft st.
4. Mucus and clear blood are passed with a nodular difficult st., without any trace of hæmorrhoids.

Aggravation :

1. From taking cold in the abdomen.
2. Evening. Night.
3. After dinner.
4. During menses.

Before St :

Twisting, writhing pain in the abdomen.

During St :

1. Vertigo.
2. Sticking in the rectum.
3. Severe burning in the anus.
4. Vertigo.

After St :

1. Burning in the anus and rectum, with depressed pulse and palpitations.
2. Biting in the anus.
3. Vertigo.

4. Nausea. Salt water-brash.
5. Pressure in the rectum.
6. Dyspnœa, anxiety in the chest ; anxiety, heat in the face, and inclination to sweat.
7. Tremulous weakness.
8. Discharge of prostatic juice.
9. Distension and pinching in both hypochondria, especially the right, felt at every step one makes.

Rectum and Anus :

1. Hæmorrhoids impeding the st. Swollen hæmorrhoids, with itching-sticking and much moisture.
2. Hard hæmorrhoids, stinging burning, extremely painful when touched, when walking, when standing or sitting ; relieved after a stool.
3. Sensation of something hard in the rectum, like a kernel of fruit.
4. Cramp in the rectum, which made it impossible to walk ; she was obliged to sit still.
5. Spasmodic drawing pain in the rectum after coition.
6. Dragging in the rectum, as if there were some fæces in it which should be expelled.
7. Pressure in the rectum and anus, worse after the st.
8. Frequent sudden pressing piercing pain in the rectum.
9. Itching and sticking in the rectum and also itching in the genitals ; crawling in the rectum.
10. Sore painfulness of the hæmorrhoids increased, so as to unendurable on walking or reflecting.
11. Stitch in the anus. Sore pain in the anus with moisture.
12. Pain in the perineum with pulsation in it.
13. Urging to st. though the anus is spasmodically contracted so that no st. passes ; the pressure however continues.
14. Urging to st. with rumbling in the abdomen.
15. Frequent urging to st. without passing more than flatulence.
16. Frequent ineffectual urging to st. with much pain, anxiety and redness of the face.
17. Urging to st. with anxious apprehension lest something evil should happen.
18. Large, painful pustule, near the anus, discharging pus and blood, accompanied by great physical depression.

General Symptoms :

1. Child cries at every trifle.
2. Excessively sympathising ; she weeps and sobs, whenever she hears of the bad treatment of others.
3. Extreme, anxious fearfulness. Full of frightful ideas in the evening.
4. Weakness of memory. Pronounces wrongs, and confounds letters and syllables (as cluent foryza for fluent coryza).
5. Dwells on thoughts of death, with uneasiness and great solicitude.

6. Vertigo, on looking fixedly at a point, on looking up, on stooping; relieved in the open air.
7. Face has a very sickly look; very yellow.
8. Dryness of mouth, generally without, sometimes with thirst.
9. Dry tongue, with thirst.
10. Distortion of the tongue and mouth when talking. °Stuttering, difficult speech.
11. Taste, viscid, glutinous; greasy; putrid; offensive; bitter, only for a short time; the taste of the food remains a long while in the mouth after eating.
12. Excessive hunger which causes headache, relieved by eating.
13. He eats with too much haste. After eating, it seems as though the food remained stuck in the throat, causing frequent inclination to swallow.
14. Appetite, though nausea while eating.
15. He was able to eat smoked meat, fresh meat nauseated him even to vomiting.
16. Aversion to sweets.
17. Much thirst, several mornings; great thirst for something cold from forenoon till 3 P. M.
18. Eructations tasting of the ingesta; frequent, loud explosive; suppressed, they rise only to the middle of the throat; with a sour taste; burning hot, afternoon and evening; with choking in the œsophagus, arresting breathing, disappearing after repeated eructations.
19. Water-brash, salty.
20. Heartburn.
21. Nausea, when beginning to eat, during and after eating.
22. Sour vomiting, followed by frequent sour eructations; vomiting of clotted blood.
23. Pains in the stomach, relieved by lying down; pinching drawing in the pit of the stomach, on deep breathing.
24. Great distension of the abd., so that she was obliged to loosen the clothes, with frequent passage of loud flatus.
25. Rumbling in the abd. after eating when the stomach is over-distended.
26. Frequent passage of offensive flatus.
27. Pain in the abd. as if it were constricted by a string, when breathing.
28. Gripping, pinching, cutting, twisting in the abd.
29. Involuntary passage of urine while coughing or blowing the nose.
30. The urine passes at night, in sleep.
31. Urine becomes turbid and cloudy on standing. Much tenacious mucus in the urine.
32. Very weak, and soon exhausted after a slight effort.
33. At night he can get no quiet position; he cannot lie still a moment.

Remarks : The symptoms enumerated above point to **causticum** as a remedy for constipation, diarrhœa and dysentery. We have Hahnemann's testimony to its use in *chronic* constipation, though there is nothing to prevent its use in acute cases as well, if the other symptoms correspond. Properly speaking, constipation is more a chronic than an acute ailment. Though unsupported by pathogenesis, Hahnemann has spoken of it as useful when the stools are "tough, shining like grease," or "light-colored and white." Dr. Bayes has corroborated the use of **causticum** in constipation when "the evacuation is very solid, is expelled with great difficulty and straining, and presents a shining appearance, as if greased." Another characteristic is that the stools are passed more easily when standing.

In diarrhœa when the fœces pass with sensation as though flatulence passed, **causticum** would be useful. Hahnemann has noted involuntary urination during sneezing, coughing and *walking*. Dr. Hughes says he has found it curative in a similar condition of the anus. **Causticum** would be a good remedy for diarrhœa when it could be traced to effects of cold in the abdomen; also when the patient can ill bear fresh meat, though he can take smoked meat without any inconvenience.

In patients with fistula in ano, whether suffering from constipation or diarrhœa, **causticum** would prove beneficial.

56. CHAMOMILLA.

Constipation :

1. Pain in the abd., as if caused by costiveness of the motion, the evacuation of which is delayed.
2. Constipation from inaction of the rectum, so that the excrements can only be pressed out by the efforts of the abdominal muscles.
3. Hard stool. Stool, regular and easy while taking the drug, but on discontinuing it, becomes hard as before.

Diarrhœa :

1. *Nocturnal D.*, with pains in the abd., so that he must bend double.
2. *Watery D.*, with (and without) cutting in the abd.
3. *Painless, green, watery D.*, consisting of fœces and mucus.
4. Hot diarrhœaic st., smelling like rotten eggs.
5. Undigested sts.
6. Discharge of *light yellow* fœces, with sharp griping colic.
7. *White*, slimy diarrhœa, with belly-ache.
8. Excrements covered with mucus, and with mucus between the lumps of fœces.
9. ° D., corrosive; sour.

Aggravation :

1. Night.
2. ° During dentition.
3. ° From cold.
4. ° From anger and chagrin.

Amelioration

From bending—double (colic).

Before St :

Sharp, pinching in abd.

During St :

Sharp, pinching pain, or cutting in abd.; belly-ache.

After St :

Shooting pain in rectum.

Rectum and Anus :

1. Blind hæmorrhoids or tendency thereto. Bleeding hæmorrhoids.
2. Itching in the anus.

General Symptoms :

1. Extreme restlessness, anxious agonised tossing about, with tearing pains in the abd., followed by obtuseness of the senses and intolerable headache.
2. The child makes itself stiff and bends backwards, stamps with its feet on the nurse's arms, cries in an uncontrollable manner, and throws every thing away; wants this and that, but when offered refuses it or knocks it away.
3. The child can only be quieted by carrying it in the arms.
4. Disposed to anger, quarrelsomeness, and disputation; speaks unwillingly, in disjointed phrases, curtly.
5. Vertigo after a meal; when talking; when walking; after drinking coffee.
6. Stammers; makes mistakes in speaking and writing, leaving out whole words.
7. Headache felt even when asleep; compounded of heaviness and bruised feeling.
8. Burning heat of the face, burning in the eyes, burning breath, as if fire was issuing out.
9. Great sensitiveness to all smells.
10. Repeated attacks of redness of one cheek; red rash on the cheeks.
11. Ulcerated nostrils. Scabby ulceration on the border of the lip. Lower lip cracks in the middle.
12. Toothache particularly severe after warm drinks. When occurring intermittently, it darts hither and thither, extends to the eyes, and is aggravated by cold water. Swelling of gums.
13. On and beneath the tongue vesicles with shooting pain.
14. Red tongue; furred, yellow tongue; tongue coated dirty-white; tongue slimy.
15. Tongue dry, with thirst for water, anorexia, flying heat, perspiration on face and palpitation of heart, followed by unnatural hunger.
16. Sore throat, as from a plug in the throat, on swallowing; with swelling of the parotid gland.
17. Ptyalism. Teeth covered with mucus.

18. Taste slimy; bitter; sour, bread tastes sour; everything tastes like old rancid fat; what he hawks up tastes putrid.
19. Putrid smell from the mouth after dinner, like fœtid breath.
20. Has no appetite, relishes nothing, food will not go down.
21. During supper, food seems to go no further than pit of throat and to stick there, with sensation of fullness, sickness, and eructation.
22. Shudders when food is placed before him; notwithstanding this loathing, the food tastes all right.
23. Eructations sour; existing pains aggravated by eructation.
24. During meal, faintness; drowsiness. After meal, nausea; fullness in stomach; anxiety, tearing in the back; distended abdomen.
25. Regurgitation of food during eructation.
26. Sour vomiting; vomiting of food, at first from fullness of abd., afterwards from intolerable nausea.
27. Flatulent colic; flatulence presses now here now there with great force, as if it would bore through the abdominal muscles, with loud rumbling; it presses especially on the inguinal rings; when the colic subsides very little flatus is passed, and then scarcely any is felt in the abd.
28. Hard, distended abd.
29. A forcing towards the inguinal ring, as if that part were now too weak to resist, as if a hernia would come.
30. Involuntary discharge of urine.
31. Excoriation on border of prepuce. Acrid, smarting, watery, yellow leucorrhœa.
32. Metrorrhagia, even in old persons.
33. During sleep, moaning; starting up, crying out, tossing about and talking; snoring.
34. Convulsive, single twitches when on the point of falling asleep.
35. Infantile convulsions, the legs are moved up and down alternately, grasps at something with the hands, draws the mouth to and fro, staring and distortion of the eyes and face, lies as if unconscious, has rattling in the chest with cough, yawns and stretches much.
36. Internal and external heat, with shivering.
37. Greater weakness when resting than when moving.
38. The pains occur chiefly in the night and are intolerable.

Remarks: According to Hahnemann "all the constipation symptoms are secondary action, *i. e.*, reaction of the organism against the efforts of the camomille to produce diarrhœa in its primary action." It is difficult to understand what is here meant by our great master. If the constipation symptoms follow so soon as from 1 to 4 hours after its exhibition, why should they be looked upon as its secondary action? If it was secondary action it should have followed the primary but instead of that, as Hahnemann's own proving shows, it preceded.

Hahnemann probably saw the force of this view of the subject, and hence he looked upon the constipation symptoms as due to reaction of the organism against the *efforts* of the drug to produce diarrhœa. He was probably deceived into this view by *chamomilla* producing diarrhœa in the majority of instances without being preceded by constipation; but he should have remembered that the diarrhœaic symptoms were but very rarely followed by constipation. The fact seems to us to be that it is the dose and its repetition which may cause either constipation or diarrhœa. And hence it might be useful equally in constipation and diarrhœa. The following case of Dr. Casal, of Menton, recorded in the *Homœopathic Treatment of Constipation* by Dr. Bernard of Belgium (edited by Dr. Strong of America) shows the value of the drug in constipation, and we have no doubt it would prove, if well selected, as useful in adults as it has been in infants:

“An infant eight months old, a strong vigorous boy of wealthy parents, has been constipated since birth; he goes to stool every five to six days, and sometimes longer intervals. The stools are yellow, large, formed, and without any pathological mark unless it be the size; injections have to be freely used. When there is a repletion of the rectum, there is a slight bloating of the abdomen with flatulency, and some restlessness at night, but this malaise disappears after an evacuation. I sent four medicines, to be taken in order, beginning with a vial of *Chamomilla* 30. This remedy seemed less indicated than the others (*Nux vom.*, *Lycopodium*, *Hydrastis*), but thinking that there might be a latent cause, due to dentition, and that *chamomilla* acts upon the ganglionic nervous system, and has among its symptoms: ‘constipation as from inertia of the rectum, flatulent colic with bloated abdomen and collection of gas in the hypochondria,’ I ordered this remedy to be taken first; two globules in the evening and two next morning; on the same day towards evening, there was an enormous stool but not so thick, on the next day a normal stool for an infant, that is to say very soft; since then the stools occur daily, and are natural; sometimes there are several stools a day.” Dr. Casal has since stated that a midwife who was a witness to this cure, often employs *chamomilla* in the treatment of accidental constipation of infants, and has never been disappointed!

Chamomilla is one of the most precious remedies we have in the treatment of infantile diarrhœa, especially during dentition. It is peculiarly fitted, by its power of irritating the nervous system to the height of distraction, to calm and soothe homœopathically infantile irritability, manifesting itself in unconsolable peevishness or culminating in convulsions. The child can only be quieted by being carried about in the arms, and the convulsions being confined to single limbs or parts of limbs, are genuine symptoms and will help in its selection. Excoriation of the anus by the passage of acrid diarrhœaic stools, though not pathogenically observed, has been clinically verified, and may be looked upon as analogous to excoriations of the nostrils, prepuce, and vagina, by their morbid discharges. The *sour* stools have also had clinical verification. We need hardly say that it would be a mistake

to look upon **chamomilla**, as the only remedy of disorders of the alimentary or of other systems during dentition. When the fever runs high it may have to be alternated with or superseded by **aconitum**, when cerebral hyperæmia is threatened or has supervened it will often have to give way to or be alternated with **belladonna**. Even in diarrhœa **mercurius**, **ipêcacuanha**, and other remedies may have to be thought of. Though the pathogenetic symptoms do not justify its use, yet it may be used with advantage, in genuine dysentery occurring during dentition. If it does not succeed in effecting a cure, it may, by quieting the nervous irritability, help other indicated remedies to do so. In our use of the drug, it would be well to remember Hahnemann's observation, that "it is unsuited for persons who bear pain calmly and patiently," an observation to which he has attached great importance.

The eminent success of **chamomilla** in the treatment of infantile diarrhœa and of disorders of dentition generally, has caused it to be looked upon as a remedy more fitted for infantile than for adult life, and therefore to be overlooked in the treatment of the bowel complaints of adults. But disease may give rise very nearly to the same degree of irritability in adults as it often does in infants. Besides, the presence of some of the symptoms enumerated under the head **general** may bring a case closer still with the range of the drug, and thus render it amenable to its curative action.

Excerpts from Contemporary Literature.**PHOSPHORUS AS A FOOD AND AS A DRUG.**

BY EDUARDO FORNIAS, M.D., PHILADELPHIA, PA.

(Read before the Hering Club, April, 1883.)

GENTLEMEN: I present this evening for your consideration and discussion an analytical study of PHOSPHORUS, a tissue remedy of vast importance and peculiar action.

To analyze this drug well we have to consider, first, its source and office in nature, so that we may as nearly as possible appreciate the performance of its high duty in the animal economy, and especially in the reactions of the mind with the brain.

Phosphorus plays an important role in the scheme of nature. It is contained in the primitive and volcanic rocks combined with lime, and when these, by a gradual decay in the course of ages, disintegrate and crumble into the soil, the plants, with their thousand rootlets, draw out the phosphorus and with it build up their organizations. Here it is stored to serve later as food for the higher animals and man. From Dalton and other physiologists we learn the following lessons:

Phosphorus is found in nearly every animal and vegetable substance used as aliment. Flesh, eggs, milk, wheat, rye, oats, barley, maize, rice, potatoes, beets, turnips, carrots, peas, and beans, all furnish it in abundance. Even the juicy fruits, such as the apple, pear, plum, and cherry, contain it.

In the body, as well as in food, it occurs in different combinations, each in its place performing some important duty; namely: 1. Earthy phosphates (calcium and magnesium). 2. Alkaline phosphates (sodium and potassium). 3. In the form of a peculiar compound with fatty matters, called "protagon," which, by the way, is the only organic combination that contains it. This is also named "licithine," from the yolk of egg, in which protagon was discovered.

For the sake of convenience, I will consider these combinations separately.

The phosphate of lime, which, next to water, is the most important of the inorganic constituents of the body, preponderates in the solid tissues. In the enamel of the teeth, which is the hardest, it is most abundant; next comes the dentine, which is a softer tissue; and then the bones, in which it forms more than one-half of the entire osseous mass. It is also present in the milk, blood, bile, and urine; but of these only the first contains it in notable amount, and there it is plainly subservient to the ossification of the growing bones of the young infant, for whom the milk is used as food.

Although calcium phosphate is insoluble in simple alkaline, watery liquids, still, in the milk and blood-plasma, fluids which have an alkaline reaction, it is held in solution by its union with their albuminous ingredients. This explains its presence there in a liquid form. In the urine, on

the other hand, it is held in solution by the presence of the acid sodium biphosphate. Accordingly, whenever the urine is rendered alkaline by the addition of soda or potassa, or its acid reaction is absent or very much diminished, the earthy phosphates are precipitated in the form of a white, turbid sediment.

This acid sodium biphosphate gives the urine its acid reaction to test-paper, although it contains no free acid. It is found in the blood; and by the action of the uric acid produced in the system, which unites with a part of its sodium, it forms sodium urate, leaving an acid sodium phosphate. You can see, by this, the indirect manner in which the uric acid, produced from the decomposition of animal substances, although not appearing in a free form by itself, is the cause of the acid reaction of the urine, and this reaction will vary in intensity with the amount of uric acid discharged.

The bile derives its phosphate of lime, as well as its lecithine and sodium phosphate, from other parts of the system by means of the blood, where they exist ready formed. The only salts produced in the glandular tissue of the liver, and discharged with the bile, are sodium glycocholate and taurocholate.

The earthy phosphates, both calcium and magnesium (of which latter salt I will soon speak), after forming for a time a constituent part of the body, are discharged with the excretions, but very slowly and in small amounts—never in correspondence with the amount taken up daily. Their principal abode, as already stated, is in the osteogenetic tissue, from the decomposition of which the urine receives a proportionate large amount of the salts. The average amounts of both earthy phosphates expelled with the urine is accordingly about one gram per day, the magnesium salt being rather the more abundant. The calcium phosphate, by itself, is found in the feces in a slightly larger quantity than in the urine; but this may be only the residue derived from the undigested portion of the food. In the perspiration we can discover only traces of it.

If we compare the small proportion daily excreted with the large quantity in the body, it is evidently to be regarded as one of the more permanent constituents of the frame. It is comparatively inactive in the process of internal metamorphosis, but serves for the most part as a physical ingredient of the solid tissues.

By the preponderance of phosphates in food we can estimate their relative importance, especially the value of calcium phosphate, which, when combined with the carbonate of its class, is most useful in the process of alimantation. It is upon their combined agency that the solidity of the skeleton depends. But there is still another important and peculiar property of phosphate of lime; namely, to make carbonic acid more soluble in the blood. Its administration, whether in separate form or in aliment, to a growing animal is thus peculiarly indicated. An insufficient quantity of this salt in the blood may give rise to every kind of deformity in the skeleton; for not only is it useful because it is itself appropriated by the

system, but also because when present, for instance, in the milk, which, by subsequent assimilation, becomes blood, it has the property of enabling that fluid to take up more carbonic acid. Now, when carbonic acid in its turn is in excess, it dissolves carbonate of lime. Hence, the quantity of carbonate of lime held in solution in the blood is increased, and is thus from time to time more easily and plentifully deposited in bone. It is a well-known fact that chalk, or carbonate of lime, is insoluble in distilled water; but in proportion as this becomes saturated with carbonic acid a larger quantity of the chalk is taken up—a property never to be lost sight of when it is wished to strengthen a growing child.

The magnesium phosphate accompanies the calcium phosphate everywhere. While the former occurs in larger quantity in the muscles, and is nearly twice as abundant in the substance of the brain, the latter preponderates in the bones, the blood, and the milk.

It may not be out of the way to state here that the magnesium phosphate and carbonate, traces of which latter salt occur in the blood, appear to be intimately related with the corresponding salts of lime, physiologically as well as chemically.

I enter now into the consideration of a no less important group of phosphates, namely: the alkaline, sodium and potassium phosphates, which are also taken with the food, as they exist widely in both animal and vegetable matters. These are the soluble phosphates which circulate with the blood, and are finally excreted with perspiration, mucus, and urine. On account of being so soluble they never disturb in any way the transparency of the urine, nor appear as a precipitate. In solution they have a mild alkaline reaction; but we should not forget that in the urine a portion of the alkaline sodium phosphate is replaced by the acid sodium biphosphate, which gives to this fluid its acid reaction. I have already given the manner in which this change is supposed to take place. It is in the form of one or other of these salts that most of the phosphoric acid is expelled with the urine. They occur universally in all the solids and fluids of the body, and their most important office is to assist in producing the necessary alkalinity of the blood and secretions.

As the alkalinity of the blood is due in great measure to the alkaline phosphates; and as the plasma, which has been invariably found alkaline in reaction, is, of all the internal fluids, the most essential, since it affords the materials of nutrition to the entire organism; and, moreover, as the experiments of Bernard have shown that this reaction is indispensable to life, we can well appreciate the importance of these inorganic proximate principles. Without a due proportion of them, diseased conditions may arise and the body become incapable of supporting life. It is the alkaline condition of the plasma which enables the blood to absorb from the various tissues the carbonic acid produced in their substance and return it to the centre of the circulation for elimination by the lungs.

These phosphates favor the alkaline reaction which is so essential to many of the vital processes going on in the interior, and in all the animal

fluids which are contained in the circulatory system or in the closed cavities of the body. An acid reaction, on the other hand, is present only in a very few of the organic fluids which are either employed in the process of digestion or are discharged externally.

An important fact in physiology, then—one worth mentioning—is that an alkaline condition is characteristic of the internal fluids, while the products of excretion, on the contrary, present universally an acid reaction.

Another practical lesson which I may be allowed to cite, as it has an important bearing on alimentation, is, that as the alkaline carbonates also contribute to the alkalinity of the blood, a preponderance of vegetable food, especially of acid fruits and of vegetables containing salts of malic, tartaric, and other acids, effects the increase of alkaline carbonates, and, consequently, the reaction of the excretions. While, on the other hand, the phosphates abound in muscular flesh and in animal tissues generally; hence, especially in carnivorous animals, whereas carbonates abound in the herbivorous.

The alkaline phosphates are taken in with the food, the alkaline carbonates partly thus, but in the main they are formed within the body by the decomposition of salts contained in fruits and vegetables eaten. But, in animals fed upon animal and vegetable food, both kinds of salt are found in nearly equal proportions. Hence by increasing or diminishing either kind of food, we can make the phosphates or carbonates preponderate as required.

The alkaline and earthy phosphates differ from each other in the average amount of the daily discharge during health, as well as in the condition which influences their excretion. The daily excretion of the former is over four times larger than that of the latter (4.5 grams to 1). While the alkaline phosphates of the urine are increased in quantity during undue exercise of the mind, the earthy phosphates are diminished; so the total amount of both kinds is not materially altered. The earthy phosphates, on the other hand, are increased by refraining from mental labor. Exercise increases the alkaline, but not the earthy, phosphates. The urine derives a large amount of phosphate of lime from decomposition of osseous tissue. The decomposition of other tissues, also, but especially of the brain and nerve substance, furnishes large supplies of phosphorus to the urine. So, when we wish to determine the waste of animal tissue, we must go to this accessible channel in search of evidence. Indeed, it was from the urine that Brandt, in 1669, first obtained phosphorus.

The third form in which phosphorus occurs, in both animal and vegetable substances, is protogan, a peculiar compound with fatty matters. As said before, it is the only organic combination in the body which contains phosphorus. It is not only abundantly found in the nervous tissue, but also in the blood, bile, and spermatic fluid. In the blood it exists in the globules and plasma; in the latter in the proportion of 0.4 part per thousand. Taking into account the watery ingredients of the brain, protogan is about equally abundant in the white and in the gray substance;

but, of the solid matters alone, it constitutes a little less than 10 per cent. in the white substance, and rather more than 17 per cent. in the gray. In the yolk of eggs, in cereals and leguminous seeds, it is found in large quantity.

Now, considering its very wide distribution, it is evident that a considerable quantity must be introduced into the system with the nutriment and assimilated by the tissues, particularly by the nerves and nervous centres. But, as no known organic combination of phosphorus is discharged with the excretions, it is supposed to pass out of the body as a part of the phosphates which appear in the urine and perspiration. This fact has led physiologists to believe that, as there is a constant consumption of oxygen by the animal body, when phosphorus is introduced in the system as an ingredient of organic materials, it is converted by oxidation into phosphoric acid, which in turn unites with alkaline bases to form neutral or acid phosphates. In this way a certain portion of the super-abundant acid is produced, which gives rise to the acid reaction of the excreted fluids.

From the preceding general remarks you will perceive the important part played by phosphorus in the animal economy. Now let us see to what its deficiency may lead.

It is a well-known fact, that in the process of ossification, or of progressive consolidation of the frame-work, which begins in foetal life and ends with childhood, cartilage is replaced chiefly by phosphate of lime, which gives the skeleton its natural stiffness and consistency. But, when assimilation is imperfect, ossification becomes imperfect; and the bones, instead of increasing in rigidity in proportion to the weight of the body and to muscular action, gradually bend and become deformed. Hence comes rachitis.

A similar condition takes place occasionally when the bony structure, after its formation, becomes softened by alteration of its texture and composition. A new element, composed mainly of gelatine and deficient in calcareous matters, now occupies the place of the lost materials, and a progressive yielding and deformity of the bony fabric is the result. This is called osteomalacia.

Again mental exertion, especially if excessive, and all other circumstances producing nervous exhaustion, furnish large supplies of phosphates to the urine, indicating a waste of brain and nerve substance.

Edmond Kirby says: "Phosphorus is, in common with iron, sulphur, lime, and other inorganic constituents, a very important alimentary principle, and whenever the food supply is deficient in this element, or when it is not in proportion to the needs of the economy, deterioration of nervous tissue and nervous force is an inevitable consequence. These inorganic principles enter into the composition of the organs by which the conversion of latent into active force is effected, and it follows that the functional power of the cerebro-spinal system, and of the nerves of organic life, which preside over the functions of nutrition and secretion, is thrown into disorder when the organs themselves are ill nourished," "Every part of the

organism is constantly undergoing physiological decay and repair, and this molecular change is a necessary and inevitable condition of life. When the balance is lost, and the destructive process from any cause more than counterbalances the constructive process, whether it be owing to a deficient supply of new material or to excessive activity of function, the result is the same, the organism falls into decay, and its functions are thrown into disorder. As, therefore, it is essential to the condition which we call health, that waste be duly compensated by the appropriation of new materials, it follows that if this process fail in any particular, we have ill-health as an inevitable consequence; not only are the functions of the body enfeebled or perverted, but organic deterioration takes place, and finally functional activity is completely arrested."

Phosphorus is food in precisely the same sense that common salt is food; and it is a notable physiological fact, that those alimentary substances which are richest in this inorganic principle best sustain brain work, renovate nerve tissue, and so restore nervous energy when enfeebled from any cause. By the addition of a minute quantity of phosphorus to our food, we increase its nutritive value and brain-sustaining power. The greater the functional activity of brain and nerves the greater the disintegration of nerve tissues, which is always in proportion to the expenditure of nervous energy. It would appear that there is an especial relation between the oxidation of phosphorus, the disintegration of tissue, and the amount of force expended.

The evolution of nervous force is dependent upon alimentation; it is increased or diminished in proportion as this process is perfectly or imperfectly performed. And Dr. Flint of New York observes: "When new organic matter is appropriated by the tissues to supply the place of that which has become effete, the mineral substances are deposited with them; and the organic principles, as they become effete, or are transformed into excrementitious substances and discharged from the body, are always thrown off in connection with the mineral substances which enter into their composition. This constant discharge of phosphorus and of inorganic principles, forming as they do an essential part of the organism, necessitates their introduction with the food, in order to maintain the normal constitution of the parts. As these principles are as necessary to the constitution of the body as any other, they must be considered as belonging to the class of alimentary substances." This conclusion is inevitable if alimentation be regarded as the supply of material for the regeneration of the organism.

In inflammatory diseases of the brain, there is reason to believe that an unusually rapid disintegration of tissue takes place, a marked increase of the alkaline phosphates in the urine being always present. In proof of this may be cited the fact well-known to brain-workers, as well as to physicians, that laborious mental work, especially if coupled with worry and anxiety, is constantly accompanied with an increased excretion of the phosphorous compounds. "Unless this excessive waste (says Kirby again) be compensated, as often no doubt it instinctively is, by an increased consump-

tion of food rich in phosphorus, and by periods of enforced repose, the nervous centres lose power, vitality is lowered, and more or less nervous exhaustion and physical prostration is experienced, a state so familiar to hard-working professional and literary men, who know it to be only recovered from by a lengthened period of rest, a cessation from mental labor, long and sound sleep, and nutritious food."

"Additional evidence," says Carpenter, "for the belief that the functional activity of the nervous tissue involves disintegration of its tissue by the agency of oxygen is found in the increase of alkaline phosphates in the urine when there has been any unusual demand upon the nervous power."

"No other of the soft tissues contain any large amount of phosphorus; and the marked increase in these deposits, which has been continually observed to accompany long-continued wear of mind (whether by intellectual exertion or by the excitement of the feelings) and which even follows any temporary strain upon its powers, may fairly be attributed to this cause."

"The most satisfactory proof is to be found in cases in which there is a periodical demand upon the mental powers; as, for example, among clergymen. When the demand is severe, and especially when there is that state of excitability of the nervous system which is frequently co-existent with a diminution of its vigor, a large quantity of the alkaline phosphates appears in the urine. And in cases in which constant and severe intellectual exertion has impaired the nutrition of the brain, and has consequently weakened the mental power, any premature attempt to renew its activity, causes a new and excessive phosphatic discharge in the urine."

The disease known as spermatorrhœa affords us the opportunity of observing the physiological effects of dephosphorized blood, and furnishes us with conclusive evidence that excessive waste of phosphorus is highly injurious to physical and mental vigor. The spermatic fluid is rich in phosphorus, and its excessive emission from the system, in whatever manner effected, is highly pernicious. Deprived of their proper pabulum, the nervous centres are enfeebled, and the ultimate effects in the economy are precisely those resulting from overwork and excessive mental strain. The primal cause in both is the same and its characteristic is loss of nerve power. Cerebral and spinal paresis, neuralgia, epilepsy, melancholia, etc., are but various manifestations of the same condition, and, if these be neglected, structural changes, softening and paralysis, follow. That the phenomena of disease present in seminal waste so closely resemble those induced by severe mental toil, is very remarkable; but it is borne out by our daily experience in practice, although in the former the effects are usually more pronounced, more lasting, and more difficult to cure than those arising from the latter. Premature failure of intellectual power, loss of memory, impotence, "nervousness," depression, irritability, and despondency, are expressions of nervous derangements common to both. We conclude, therefore, that the essential elements of disease in both cases is the same, and blood which is dephosphorized is incapable of maintaining in a state of healthy functional activity the great centres of nervous force.

In connection with this subject, it may be well to mention that persons who indulge in sexual excesses (which are always attended with great nervous excitement and overwrought emotions, superadded to a material loss) not only lose mental and physical power earlier in life than others, but frequently suffer from loss of nerve power, and are peculiarly liable to diseases affecting the organs of respiration and circulation—phthisis, heart disease, etc.

It is unnecessary to go any further, to show that when, from any cause, phosphorus is deficient in the organism, the nervous system falls into a condition of denutrition, a state highly detrimental to bodily health and mental vigor, and prone to disease.

Now, how far this excessive elimination, with its consequences can be combated by feeding with phosphorus in another way than the natural, I am not prepared to say; but it seems to me that ordinary food cannot furnish sufficient to repair the damage. And still when we consider that if too long continued or taken in excess, it acts deleteriously on the very tissues which it stimulates and feeds, we should refrain from such a use of it. But here a question may arise. Is there not an intermediate position which may be taken so that we can restore the tissues and yet avoid impairment of nervous vitality, gastric, hepatic and other derangements?

Is this not the case with sodium chloride, which next to calcium phosphate is the most abundant of the mineral constituents of the animal body? When taken in excess, does it not beget a scorbutic dyscrasia and other disorganizations? Still, how can we disregard the instinctive demand of the system for a substance, which takes such an active part in the phenomena of nutrition, especially its property of regulating the process of endosmosis and exosmosis?

And, again, is not iron like phosphorus, a constant and necessary constituent of the body? Is it not amply supplied to the system by means of ordinary food, especially by green vegetables, which contain it as an ingredient of their coloring matter? Does not the hæmoglobine, when robbed of its iron, cease to exert its regular influence upon the economy? Does not the blood again become a reparative fluid when fed upon it? If moderately given, does it not promote the formation of blood-disks of which it forms a part? If too long continued, or if taken in excess, does it not so affect the blood as to cause anæmia?

That phosphorus answers as food to the tissues of which it forms a part, experiments on animals seem to have fully demonstrated. In the process of ossification, for instance, when given in doses too small to affect the stomach and liver, its formative powers even surpass normal limits. Thus in the growing animal, instead of spongy tissue, a dense solid tissue was formed; while in the adult, the spongy tissue thickened and the compact became still more dense and after a time new bony tissue was deposited on the inside of the shaft, increasing till the bone actually became solid. The chemical composition of the bony tissue was found normal.

These experiments were conducted by Dr. Wegner on rabbits with doses ranging from 100th to 400th of a grain. From his statement we infer that

large doses would be required to produce alterations of a morbid kind in the osteogenetic tissue or even elsewhere. But if the above results are applicable to man, why not reduce or discontinue the drug in order to bring the ossificatory process within proper bounds?

I cannot indorse his assumption that the influence of phosphorus on the osteogenetic tissue is of a local character. He asserts that the necrosis of the jaw caused by the fumes of phosphorus, is a direct action on the denuded bone, from dental caries or injury to the gums; channels through which he supposes it reaches the jaw. He also found that under the influence of phosphorus, callus after fractures or resection becomes more dense and the formation of new osseous tissue is favored. Some surgeons speak highly of the administration of phosphorus then. The process is a physiological one.

It has been, and I think is yet given by the old school, in comparatively large doses, either to stimulate the brain and fit it for unusual exertions, thus obviating physical and mental exhaustion or depression, or to rouse the nervous system into activity in cases of great nervous prostration, occurring in typhoid fevers and other adynamic conditions. This is a perilous practice unworthy of our consideration.

But as the object of my paper in the present field, is mainly directed to show the important part which phosphorus plays in the animal economy as an inorganic constituent of its tissue and fluids, and as I have shown this at some length, I will now turn your attention to its physiological action, as a more profitable field for our therapeutical purposes.

GENERAL ANALYSIS.

The action of phosphorus is manifold and peculiar. Both vegetable and blood life suffer from its disorganizing and destructive action.

At first in the animal we observe a transient erethism, which easily passes into apathy and torpor, and may terminate in paralysis, from destruction of the nerve-force and softening of the centres. The blood is altered qualitatively, and carries elements of disorder to the parenchymatous organs and gives rise to ecchymoses and hæmorrhages.* The latter are said to be due to fatty degeneration of the arterial walls. The changes which phosphorus causes in blood are various. The blood darkens in color even to black and liquefies, losing its coagulating power. There is also alteration in its corpuscular elements. The blood-disks decrease in consistency and in circumference; and the white corpuscles increase in number. According to Rummel the blood-disks separate into hæmatine and globuline, the former dissolving or floating as a purple coagulum in the plasma, the latter retaining its form. These changes will explain the sanguineous effusions which this drug causes.

But phosphorus also spends a large share of its action in other regions; namely, in the osteogenetic tissue (especially of the jaw), in the lungs, liver,

* The petechiæ upon the arms are noteworthy. According to Orfila, the petechiæ caused by phosphorus are red, containing a somewhat bright-red, fluid blood; whilst those caused by arsenic are black or blue.

heart, etc. In the first region it invades the gums; then the teeth and subsequently the maxilla; causing caries and necrosis. In other osseous tissues also this drug may induce inflammation and suppuration with a simultaneous formation of callus. According to various authorities, it reaches the osteogenetic tissues by means of the blood, where it is supposed to be held in solution.

In the lung tissue it causes sanguineous infiltration and even hepatization. Many of the symptoms exhibited by the proverbs point sharply to a progressive action in the upper respiratory tract; namely, from larynx to trachea and bronchi; finally the pulmonary vesicles are involved.

Other drugs, as Bryonia or Tart. emetic, may dispute the place with phosphorus, when this progressive course stops short of the lungs; but as Dr. Hale so well asserts, catarrhal pneumonia in children complicates cases which begin with simple bronchitis and by the symptoms then present we will be compelled to give the preference to phosphorus.

Certain it is that no remedy surpasses phosphorus in specific relation to inflammation of the pulmonary tissue, when there is a tendency in the disease to deviate from its regular course and to assume the typhoid depression which is so characteristic of this drug.

Dr. Hale, of England, maintains also that the more the vesicular structure is involved; and the more the sputa assume a plastic character, the greater will be the necessity for the administration of phosphorus. If, however, the attack has had a catarrhal origin, the morbid process extending from the bronchial mucous membranes into the air-cells, the remedy that best fulfils the indications, is tartar emetic.

Let it be understood, however, that these are the remedies which have the closest elective affinity to the disease in question, but the choice, as in all other cases, depends upon the totality of the symptoms.

According to Hughes this remedy in pulmonary phthisis keeps down hyperæmia of the lungs, quiets cough and often moderates diarrhoea. He gives it no power to modify the true tubercular dyscrasia.

Hirschel asserts that in croup it will prevent paralysis and narcosis from carbonized blood.

The liver, heart and kidneys are also notably affected by phosphorus. In all of these organs it produces fatty degeneration. The liver especially is markedly altered in its structure. Hughes refers the neuritic and hæmatic phenomena to the suspensions of the functions of the liver and kidneys from metamorphosis of their secreting cells.

Phosphorus poisoning soon induces jaundice, with pain and tenderness over the liver, diarrhoea and later with clay-colored stools. At first the liver is apparently enlarged, but afterwards it becomes considerably lessened. It closely resembles yellow atrophy. When there is jaundice the urine contains biliary acid and coloring matter, with leucine and tyrosine. Post-mortem examination reveals this viscus either enlarged, with its cells in a state of advanced fatty degeneration, or contracted from destruction of its cells. Ebslein maintains that the jaundice is not due to destruction

of the liver-cells, but to catarrh of the small biliary ducts, causing obstruction and leading to absorption of bile. The ductus communis choledocus has sometimes been found occluded by a tenacious plug of mucus, thus greatly assisting the obstruction of the smaller ducts in the production of jaundice.

The presence of biliary acids in the urine, when jaundice occurs, says Ringer, certainly supports the view that the jaundice depends upon absorption from obstruction of the ducts, rather than from suppressed secretion owing to the destruction of the liver cells.

Fatty liver, according to Addison, gives rise to changes in the color of the skin, which if constant, would prove of great value in diagnosis. The skin is pale, anæmic, semitransparent, and waxy, and at the same time soft and smooth like satin. The paleness may be clear or of a dirty-yellow hue. It may be present in any locality, but most distinctly marked in the skin of the face. Such cutaneous changes are not infrequently observed in tuberculous females in whom fatty liver is usually present.

The kidneys are similarly affected, the epithelium being swollen, granular, fatty or broken up. Under the microscope, the single urinary canaliculi were found full of large fatty drops. It is in the cortical portion that this fatty metamorphosis is most marked. The urine is generally scanty, albuminous and sometimes bloody. Dr. Hughes thinks that the renal affection may be secondary to that of the liver.

The cardiac and voluntary muscles as well as other structures are involved in this fatty change. Wegner has traced this degenerative process in the arterial system, down to the microscopic arterioles.

“According to Bamberger the structural change in the heart is a deposition of fatty granules in the primitive fibres, so that the whole muscular texture is lost and the sarcolemma is filled up with closely standing fat-molecules. The heart becomes pale, yellow, very friable, and can easily be torn. The extension of the fatty degeneration goes *pari passu* with the weakness of the heart.”

The intensity of the degenerative action of phosphorus on muscular tissue, reveals it at once as the remedy for fatty degeneration of the cardiac muscles.

No agent, says Meyhoffer, has a more vitalizing effect on the heart and circulation than phosphorus when fatty degeneration is the proximate cause of its impaired condition.

According to Buchner, phosphorus is the very antipode of the versatile Arsenicum, the latter affecting the left heart, the former the right; or in other words, Arsenicum causes arterial stagnation and phosphorus venous stagnation, with or without disturbance of the lesser circulation.

In the gastro-intestinal tract its action is not less marked. It sets up a general inflammation of the glandular structures of the stomach and intestines; hence the mucous membranes are found thickened and whitish. The epithelium is granular or fatty and much degenerated or even broken up. This glandular affection has been called by Virchow *gastro-adenitis*.

Hughes asserts that when it becomes oxidized in the stomach and hypophosphorous acid is formed, it causes, like corrosive poisons, gastro-enteritis.

Moderate doses cause an abnormal excitement of the sexual functions; but this irritation is soon followed by debility—an irritable weakness such as is found after venereal excesses and masturbation.

SPECIAL ANALYSIS.

I will not fatigue you with a systematic outline of drug phenomena, nor with their delicate shades of difference, as I have only endeavoured to draw from the great mass of accumulated symptoms contained in our *Materia Medica* salient points, useful in the study of the drug under consideration. Its unique effect is deducible from an examination of its nervous phenomena.

It begets a typhoid-like depression, which is always preceded by a nervous and vascular irritation; but the transition from one condition to the other is always easy. This peculiar erethism gives at the start a distinctive feature to phosphorus, and, as Dr. Farrington so well asserts, never do its symptoms point to an increase of animal power or to a genuine stimulation of function, but rather to that irritability which is called irritable weakness.

The vascular irritation may be general or partial. When partial the head and chest are affected and the resulting phenomena accompany nearly all other symptoms.

When the mind is entangled in this transient erethism, the fancy is exalted, thought is over-active, and memory too acute; but this condition easily runs into apathy with lessened ability to mental work and with a weak feeling of the head; even then we find oftentimes trembling and jerking of the muscles, as if irritability had not entirely abated. If study or reflection is persisted in, body and mind become exceedingly irritable. In such a condition there is great susceptibility to all external impressions; to light, sound, odors and touch. The over-sensitiveness is so great that even electric changes, as in thunderstorms, distress him and aggravate all existing symptoms. He is excitable, easily angered and vehement, but from all this he suffers afterward. The least unpleasant impression dispirits him. As further evidence of this peculiar erethism we have lascivious mania, venereal orgasm, peurile hallucinations and delirium; all precursory of depression. The delirium may be transporting, but usually it passes into apathy and even coma. The indifference is sometimes so marked that he neglects his own children; the sluggishness such that he dislikes to talk, and answers slowly or not at all.

These symptoms, using Dr. Farrington's own words, "show an excitement it is true, but it is an erethism which is quickly followed by a mental prostration that warns us of impending cerebral paralysis and demonstrates how certainly is excitement followed by weakness in the phosphorus patient."

Among the sleep symptoms we notice restlessness at night and constant dreaming ; sleeplessness ; frequent walking in the night with chilliness or from feeling too hot, but in the morning he feels tired, as if he had not slept enough, or after rising as if paralyzed and bruised. Symptoms which seem to explain also the versatile quality of this drug.

In the head symptoms we find again evidence of this irritable asthenia. The pains are generally of a drawing character, with exaltation of the sensorium and subsequent depression. On one side we notice fulness, with stoppage of the ears and tinnitus, or orgasm of blood, heat and buzzing in the head ; on the other, a decided sensation of weakness, aggravated by thinking, music, stooping or hard stepping. The loud resonance of all sounds, as well as the throbbing, roaring and buzzing, seem to be the result of this exaltation of the brain.

"The head symptoms," says Dunham, "display the characteristics of the action of phosphorus upon the organism. Exaltation intermingled with and followed by depression, not merely of the vegetative system, but also and especially of the nervous energy, until finally we have in the tumultuous orgasms the quasi-congestion and yet the apparent anemia of the cerebral mass, a complete picture of the effect of *quæri passu* exhaustion ; of both organic and nervous exhaustion ; such for example, as follows the too free exercise of the intellectual and sexual functions, or of both combined."

In the sexual symptoms of phosphorus we find once more the corroboration of its peculiar behavior. The excitement is transient and followed by a long-lasting depression, with absence of desire, or imperfect erections, too rapid ejaculation of semen and frequent involuntary emissions with, as observed before, an irritable weakness.

As unerring signs of this irritability, Dr. Farrington reminded us also, of the characteristics of the phosphorus paralysis ; such as, fornication, numbness, trembling, muscular contraction, and increased heat in the affected parts.

We can easily see, that when we are acquainted with this versatility of phosphorus, we have the key for its distinction from other erethistic remedies ; and by applying also a knowledge of its other characteristics we will clearly appreciate its range of usefulness.—*The Hahnemannian Monthly*, August 1883.



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CHOLERA IN OTHER COUNTRIES THAN
INDIA DOWN TO A. D. 1200.

So far as we have been able to lay our hands on the medical writings of India that have come down to us, we have seen that cholera in its present form cannot be proved to have existed in this country down to A. D. 1200. Whether the disease did exist in India in olden times to the end of the twelfth century of the Christian Era, but somehow or other escaped the observation of the most observant physicians that ever flourished in the world, is a problem which cannot be solved by the aid of available data. And therefore we must say that those who look upon India as the home of cholera must admit that that assertion must be considered as unproven down to the end of A. D. 1200.

In this connection it behoves us to examine whether the disease could be traced back in ancient times to other countries. And in doing so it will be a relief to find that we stand upon more solid historic ground than we have been hitherto treading. For it is not a little remarkable that in all other countries than India we have more or less authentic history; whereas India itself, which was in all probability the cradle of the early civilization of the world, has properly speaking no history of its own down to very recent times.

We will here just allude in passing to the three days' pestilence with which the Israelites were visited during David's time, about one thousand years before Christ, as a punishment of the sin he committed in taking the census of his people, as one which has been supposed by some to have been cholera. We cannot say that we have substantial ground for this supposition. In the first place, we have no symptoms given of the pestilence in the Hebrew Scriptures which have come down to us as authentic; the only information we are furnished by them is: "So the Lord sent a pestilence upon Israel from morning even unto the time appointed: and there died of the people from Dan even to Beersheba seventy thousand men" (2 Sam. xxiv, 15); the same thing is repeated in another place: "So the Lord sent pestilence upon Israel: and there fell of Israel seventy thousand men" (1 Chron. xxi, 14). In the second place, the description given in Josephus of the disease on which the supposition has been based can scarcely justify it. Josephus says that "the prophet had no sooner received and reported David's answers, but the Israelites were seized with a most unaccountable distemper, that was still attended with certain death, and accompanied with accidents that baffled all the doctors either to find a remedy or reason; but they died, in short, one upon the neck of another, no one knew how. *Some went with gripes and torments that despatched them in a trice; some with incurable faintness and languors, in despite of the physicians; others with vertigo, dimness of sight, suffocations, &c.*" Most of these symptoms form indeed the concomitant symptoms of cholera, but where are *the* symptoms which characterize the disease, the discharges upwards and downwards? It is in the highest degree improbable that the narrator should have left out the characteristic symptoms, and it is equally if not more improbable that all the cases should have been cases of *cholera sicca*.

We have no information as to how David took the census of his people. If he did so by the rude method of gathering them together in different centres, this massing of human beings, attended as we know it to be in our day with cholera, might have given rise to the disease in those days. But this is mere supposition, and on the evidence before us we would not be justified in looking upon the above pestilence as one of cholera. We shall, therefore, confine our attention to the writings of Greek, Roman

and Arabian physicians, as being almost the only ones whose works have come down to us having any value from a historical or medical point of view. And first of all we approach HIPPOCRATES whom, from the present undecided state of Hindu chronology, we must still call the Father of Medicine. HIPPOCRATES flourished between 460 and 357 B. C., having lived 104 years. The collection of writings which pass by his name are not all genuine, and singularly enough the book (V) of *Epidemics*, in which cases are narrated, as those of cholera, has been pronounced by M. Littré and other critics to belong to the category of "not genuine." Nevertheless there can be no question that HIPPOCRATES was acquainted with a disease which had most of its symptoms resembling cholera, and that the very term itself was probably invented by him. In the "Aphorisms," which are undoubtedly genuine, "cholera" occurs associated with chronic diarrhoea, dysentery, lenteria, &c., as being diseases to which persons past youth and before old age are subject.

Now though the cases narrated in Book V. of the *Epidemics* might not have been the cases recorded by HIPPOCRATES himself, yet from the fact of their having been inserted in writings purporting to be his, it must be evident that the disease must have been known in those times, otherwise the compiler and editor, whoever he might have been, could not have ventured to assign them the place he did. We have therefore no hesitation in reproducing them here in order that our readers might compare them with the description of *Visuchiká* given by CHARAKA and SUSRUTA.

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.—"Eutyohides 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 affections and intermittents."

Our readers will at once see that the symptoms narrated in the above cases resemble more closely the symptoms of modern cholera, than as we have seen in our previous numbers the symptoms of *Visuchiká* described by CHARAKA and SUSRUTA, do. In the first of these Hippocratic cases (for so we must call them) "failure of the voice, darkness and hollowness of the eyes, and coldness of the surface," are mentioned as among the most prominent symptoms, symptoms which we know to be characteristic of true cholera, whereas they are not at all mentioned under the symptoms of *Visuchiká*. In the second case retention (suppression?) of urine is mentioned, a symptom which is very frequently, if not invariably found in the modern disease, whereas no such thing is mentioned even as a possible symptom of *Visuchiká*. It would require a stretch of the imagination to see in *Visuchiká* as we have it described any but the remotest resemblance to cholera, whereas the merest comparison will show that the Greek cholera very nearly resembled the genuine cholera in all but its epidemic virulence. The fact, that the character of the stools is not at all given, and that the vomiting in the second case was bilious, need not have much weight against the supposition, inasmuch as the vomiting in cholera may be bilious throughout, or may become bilious afterwards, and the character of the stool might not have been deemed necessary to be mentioned.

To the homœopathic physician the first Hippocratic case is of interest inasmuch as there we have hellebore mentioned as the drug which cured the patient, a drug which is one of our sheet anchors in cholera of the present day.

In the *Appendix* to "Regimen in Acute Diseases", the genuineness of which has also been questioned, we have the following

description of a disease called *dry cholera*: "In dry cholera the belly is distended with wind, there is rumbling in the bowels, pain in the sides and loins, no dejections, but, on the contrary, the bowels are constipated. In such a case you should guard against vomiting, but endeavour to get the bowels opened. As quickly as possible give a clyster of hot water with plenty of oil in it, and having rubbed the patient with unguents put him into hot water, laying him down in the basin, and pouring the hot water upon him by degrees; and if, when heated in the bath, the bowels be moved, he will be freed from the complaint." As has been well remarked by Dr. John Macpherson, "the above account does not describe any known form of cholera." In what is known as the dry cholera of the present day, a form of the disease exceedingly rare, and occurring as one in ten thousand, when the epidemic virulence is at its height, the vital energies succumb so readily and rapidly to the heavy dose of poison inhaled or ingested, that death occurs without any evacuation taking place, though there are no signs of tympanites or flatulent colic as here described. The dry cholera of Hippocrates has its analogue in the *alaska* of the ancient Hindu physicians.

Leaving aside the dry cholera as having no resemblance to any form of cholera known to us, there can be no doubt, as Dr. Macpherson has very justly said, "that cholera in its sporadic form was common enough in the days of Hippocrates," that is, in Greece and probably in the adjoining islands, upwards of three centuries before the Christian era. We are told that it reigned chiefly in summer, though we are not told whether it did so with epidemic severity or not. We are further told that the disease, for the most part, was occasioned by unwholesome food, such as pork improperly boiled, pot-herbs, summer fruits, &c.," which, as we know, are powerful exciting causes of the disease in the present day. Last year in June the Municipality of Darjiling, we were told, had to interdict the sale of pork, one clear case of cholera having been traced to its use.

(To be continued.)

NOTES ON INFANTILE CHOLERA OR CHOLERA
INFANTUM.

BY BABU AKSAYA KUMAR DATTA, L.M.S.

I am glad to see that my "Notes of Infantile Cholera," which appeared in the March number of the *Calcutta Journal of Medicine*, have been read with an amount of interest by a brother of the Profession, so as to elicit his opinion on the subject treated therein, and to give rise to fresh discussions, by means of which some advance is possible in scientific matters. But nothing could be further from my intention or more repugnant to my mind than to carry on war about a question in which a particular name only was involved. In that case I simply should have rest contented with exclaiming,

—Oh, be some other name ?
What's in a name ? that which we call a rose
By any other name would smell as sweet."

But here the question at issue is something more than a mere name. I am constrained to say that Babu Brajendra Nath's criticism of my *Notes* has been the result partly of a want of close personal observation on his part and partly of his want of familiarity with the works of the best modern specialists on the subject under discussion. Having premised thus much, I shall now enter into some of the questions raised by my friend in his "Notes on Cholera Infantum," published in the July number of this *Journal*. Babu Brajendra Nath has charged me *with contradicting myself*, because I have said, that "strictly speaking cholera infantum is a misnomer," and again, that, "this disease constitutes an individual entity." I wonder, how my friend has charged me thus, and how upon an erroneous conception of my meaning, he has founded his reasons to prove that cholera infantum is a disease *per se*, an 'individual entity.' If he could spare a little thought on the word *misnomer*, he could have as well spared a good deal of trouble at an attempt alike gratuitous and futile.

Babu Brajendra Nath says that, "cases of infantile cholera occur generally simultaneously with the outbreak of epidemic cholera among adults. It occurs in all seasons, summer complaints only in the summer months."

While discussing the etiology of infantile cholera I mentioned among various other predisposing causes of this disease, that *epidemic influences* were certainly considered as one of them. But it ought to be remembered that this disease (cholera infantum) is at best the "offspring of the sun." In hot countries it is not unlikely that it may occur sporadically in all seasons, yet as a rule it is mostly favored by the heat of summer, that is, during the months of June, July and August, and does not necessarily **GENERALLY** depend upon an epidemic of Asiatic cholera, as my friend asserts. Guernsey says, "the intense heat of summer appears to exert a powerful influence in promoting the disease" (infantile cholera). In the tabular statement prepared from the records of the board of health of Philadelphia by Dr. Pemberton Dudley, and published in Volume VII. of the *Hahnemannian Monthly*, the disease appeared year after year about the middle of June and disappeared about the middle of September, rising to its height during the hottest days and the mortality being apparently regulated day by day by the temperature.* "It is universally agreed," says Duncan, "that the disease (infantile cholera) is most frequent and fatal in the months of July and August, that it is much less so in January and September, and that in May and October it is seldom met with" (*Diseases of Infants and Children*, Vol. I. 2nd Edition, p. 402). Dr. Day, in his very recent work (*On the Diseases of Children*, p. 165, published by Churchill and Son, 1881), describes a case of infantile cholera in a female infant seen by himself on July 10th 1868, which he attributes to the infant's exposure to the sun on the day previous to the attack.

Meigs and Pepper are of opinion that cholera infantum is characterised by the occurrence almost solely during the summer months! * * * * "In the two months of July and August, when the mean monthly temperature is between 75° and 80°, the mortality from cholera infantum rises to between two and four hundred, and even over; whilst during the cool months, as January, February, November and December, when the mean monthly temperature is between 30° and 40° generally, only one, two, three, or none at all are reported." * * The season at which

* Guernsey's *Obstetrics*, 2nd Edition (p. 792).

it is most prevalent they consider is one of the means to its diagnosis. They further remark that "this disease (cholera infantum) is not so common as simple and inflammatory diarrhoea, most cases of which have been hitherto improperly grouped under the common name of summer complaint." (*Diseases of Children*).

Dr. Lewis Smith says that cholera infantum prevails mainly in the cities and in the summer months.* The term "summer complaints" is a conventional name of a very vague meaning, for under this designation is included a large number of diarrhoeal maladies of infants and children whether inflammatory or non-inflammatory, which generally occur during the summer months.

Then with regard to the elevation of temperature in this disease Babu Brojendra Nath remarks, that "it is not ushered in with elevation of temperature." He further says, "I do not agree with Dr. Lewis Smith when he says, that cholera infantum is always accompanied by great elevation of temperature." * * * "In the invasive stage it is seldom or never accompanied with elevation of temperature. * * * Neither Churchill nor Eberle anywhere mentions about the febrile temperature which, Aksaya Babu says, is invariably present." The number of cases, however, which fell under my own observation, has almost convinced me beyond doubt that a more or less febrile heat in this disease is almost a rule, and this symptom alone has not unfrequently led inexperienced practitioners to a wrong diagnosis. I have further observed that this febrile excitement accompanied by nausea or vomiting, and a slight looseness of the bowels in infants, during summer months especially, is usually a precursor of an impending choleraic attack.

Although authorities may differ as regards this symptom yet the majority of them agree upon this point. In speaking of this symptom Meigs and Pepper observe: "the temperature remains for a time normal (not subnormal), rises slightly above the natural point, or in some few cases becomes quite high." They further observe: "though rare in Europe in comparison with its frequency in this country (America) it is easy to recognise from the descriptions the identity of some of the cases, called by Billard follicular enteritis, by Barrier pyretic and febrile follicular

* *Diseases of Infancy and Childhood.*

diacrisis, by Rilliet and Barthez in their second edition, choleric gastro-intestinal catarrh, and by Copland the choleraic fever of infants, with the true cholera infantum of America.**

Guernsey remarks: "the pulse rises rapidly in frequency as the disease advances, gradually becoming more and more feeble and thread-like, while the temperature of the body rises gradually and in some instances the little patient becomes exceedingly hot."† In the diagnosis of this disease, Duncan says that it may be recognised by "the season at which it is most prevalent, the profuse serous or at least fluid evacuations, the frequent and severe vomiting, the early exhaustion of the muscular strength, the rapid pulse with absence of or a very moderate febrile heat" &c.‡ Then again Babu Brajendra Nath does not agree with me when I say that "the stools are always accompanied with severe colicky pains and cramps of the abdominal muscles." True infantile cholera seldom begins as a painless diarrhœa. One, with an opportunity to see cases of infantile cholera during the invasive stage, cannot possibly form a different opinion from that of mine, with many positive evidences before him, coupled with the objective symptoms, namely, retraction of the thigh over the abdomen, a more or less crampy and contracted state of the abdominal muscles, resembling clonic spasms which are transitory, having alternating prolonged intervals of flaccidity, "stools being squirted from the anus as if from a syringe," with shrieks and cries attendant on their passage. But all this is sooner or later followed by a complete relaxation of the abdominal muscles which can easily be pinched up into folds. Then gradually with the development of the disease a more or less tumefied condition of the abdomen takes place. Duncan, in defining cholera infantum, mentions that "cholera infantum is manifest by sudden muscular debility, occasional nausea, spasmodic griping pains in the bowels, &c."§ He also says that "the abdomen is not tender to the touch usually. At a more or less advanced stage it becomes tympanitic and tense." Guernsey observes that "in some cases there is more or less tormina and tenesmus." Dr. Day also remarks that

* *Diseases of Children*, p. 442.

† *Obstetrics*, article *Cholera infantum*.

‡ *Diseases of Infants and Children*, vol. i, article *cholera infantum*.

§ *Diseases of Infants and Children*, vol. i.

“at first there are evidences of pain and griping sensations in the stomach and bowels” (*Diseases of Children*). I have never seen cramps of the extremities in this disease as in cholera of the adult. In a very few cases I have occasionally noticed stools mixed up with blood just as bloody stools are sometimes met with in cholera of adults. But this I must admit is of a very rare occurrence. With regard to this symptom both Guernsey and Duncan have quoted from an authority of the old school in their prognosis of this disease, namely, “when the discharges consist merely of serous fluid and are copious and frequent, when they consist of small quantities of deep green matter mixed with much mucus and blood; when accompanied by straining, &c., &c., and when with these symptoms the abdomen is tense and tympanitic, the symptoms are exceedingly bad.”

Lastly, my friend Brajendra Nath says, “seldom have I lost a case of infantile cholera in the collapse stage.” I on my part hold what is just the reverse. I always look upon the collapse stage of cholera infantum, as the most dangerous of all, just as the algid stage of malignant cholera is, and most of the cases that I have lost were always in the stage of collapse. The reaction stage of cholera infantum does not seem to me so gloomy or dangerous as my friend represents it to be, namely, that “most of the fatal cases are seen in the stage of reaction.” Most of the authorities, I have cited already, namely, Meigs and Pepper, Lewis Smith, Duncan, Day, and Guernsey, have laid great stress upon this stage of collapse in infantile cholera as being the most fatal. I would only take up space should I quote them here. I simply refer them to the reader. If the patient recovers fortunately from the collapse stage, he either gradually but ultimately gets cured, or may die of prolonged obstinate diarrhoea, simple or inflammatory (entéro-colitis), after suffering for days or weeks together. “In favorable cases,” Meigs and Pepper observe, “the diarrhoea usually persists for several days after the disappearance of the choleraic phenomena and very frequently runs on into a simple or inflammatory diarrhoea which follows the law of these disorders” (*Diseases of Children*). Of the reaction stage in this disease I cannot do better than quote the following passage from Dr. Lewis Smith: “If the urgent symptoms be relieved, still the disease may continue as an ordinary intestinal inflammation, which in

hot weather, is formidable and often fatal. If the stools become more consistent and less frequent, without the occurrence of cerebral symptoms, while the limbs are warm and pulse good, we may confidently express the opinion that there is no present danger" (*Diseases of Infancy and Childhood*). With all this weight of authority on the fatality of cholera infantum in the collapse stage especially, he must be an eminently fortunate physician who can make bold to say, "seldom have I lost a case of infantile cholera in the collapse stage." From his description of the disease one might possibly be led to question whether the cases of Babu Brajendra Nath were really cases of genuine cholera infantum. Babu Brajendra Nath's cholera infantum is not unfrequently met with in Lower Bengal, during cholera seasons, especially when the latter disease prevails epidemically. This disease is identical with *cholera morbus* or *simple cholera* in adults (Aitken), but it is only during cholera epidemics that it becomes extremely difficult to distinguish it from true malignant cholera from which it then only differs in one or two symptoms as Brajendra Babu has pointed out. The *violent watery diarrhoea* of Dr. Goodeve,* which prevails in England among infants independent of cholera epidemics, bears some analogy to Brajendra Babu's cholera infantum. Whereas by a really genuine cholera infantum we ought to understand a disease which is peculiar to infant life, whose analogue is not met with in the adult, depending as it does upon a number of causes that are especially incident to infancy and childhood. In its etiology and pathology, in its progress and development, in many of its symptoms, by affecting the whole system in its entirety, as is evidenced by the development of a more or less febrile heat, in its modes of termination as well as in the nature of its sequelae, it differs from true malignant cholera. The name *cholera infantum* is given to this disease chiefly from the violence of its symptoms which closely resemble those of Asiatic cholera. I have already sufficiently indicated the different shades of distinction that exist between these two diseases. It is recognised more by seeing the patient actually at the bedside than from any elaborate description of the disease as given usually in systematic treatises on diseases of

* Goodeve's *Hints on Diseases of Children in India*.

children. For the purpose of diagnosis I wish only to mention here a few peculiarities of cholera infantum.

1. The age and season in which it usually occurs.
2. In its invasive stage it is attended with a febrile heat and spasmodic contraction of the abdominal muscles, vomiting and copious watery stools, restlessness and excessive thirst.
3. The stools are seldom rice-colored, but generally watery, yellowish or greenish, very large in quantity, occasionally tinged or mixed with blood or mucus. They bear an offensive odor of a peculiar fetidity, which is seldom met with in any other disease unless it be inflammatory diarrhoea of children.
4. In a given time the vomitings and stools are larger in number and quantity than in any other diseases of children, not even in cholera.
5. The danger in this disease increases with the number and quantity of the vomitings and alvine evacuations, whereas in cholera the contrary generally holds good.
6. It usually runs a rapid yet gradual course, the fatal symptoms, such as collapse, suppression of urine, &c., are not so sudden or abrupt as in cholera, but rapid and gradual.
7. Fatal cases of this disease generally terminate in convulsions or spasms, occasionally in coma.
8. The stage of reaction is not usually so dangerous as the stage of collapse. It is moreover not so well marked or conspicuous as that of malignant cholera. The recovery may be prolonged or endangered by the supervention of some other disease, namely, diarrhoea, simple or inflammatory.

In conclusion, I wish to remark that although in my description of infantile cholera I have not claimed any hard and fast adherence to set rules or principles, or followed in the wake of any particular author, but have chiefly been led by the results of my close personal observation at the bedside, yet the sum total of the experience of the best modern authorities on the subject, does not materially differ from that of my own. If in discussing the symptoms of this disease I have ever had occasion to make use of such terms as, *always*, *seldom*, or *invariably*, &c., I did not mean by them to indicate facts of absolute truthfulness or of universal constancy. Such expressions are not uncommon in medical literature, where their true signification is not ordinarily

accepted without much allowance on the part of the reader ; for, in matters of detail, individual observations must vary, especially where great difference exists between the circumstances under which such observations are carried on. I do not know upon what authority, save his own, Babu Brajendra Nath was justified in his rather dogmatic assertion, that the disease which I have described is *not cholera infantum*, but what West calls acute inflammatory diarrhœa or summer complaint. I, however, must here refrain from entering into any discussion of inflammatory diarrhœa (entero-colitis) in infants and children. It is at least a very large question by itself, and has but little bearing on the subject under discussion.

EDITOR'S NOTES.

SUCCESSFUL CÆSARIAN OPERATION.

We learn from the *Lancet* (Sept. 15) that Dr. del Chiappa performed, on the 16th June, the Cæsarian operation on G. B., a primipara, aged thirty-three, suffering from rickets. There was great narrowing of the antero-posterior pelvic axis and consequently natural delivery was impossible. "Through an incision in the linea alba a living female child was extracted from the uterus, which was left to itself and not sutured. The wound in the abdominal wall was closed by superficial and deep sutures and dressed with adhesive plasters and charpie. The temperature varied little from the normal standard throughout, only reaching 102° one day. On the fifteenth day (July 1st) the wound was completely healed and the patient got up. The child continued to thrive."

LIQUID OXYGEN AND NITROGEN.

We are slowly learning more of the liquid and solid states of the elementary and compound bodies formerly known as permanent gases. According to the latest researches oxygen, when cooled to 136° C. (213° F.) below zero liquefies to a colourless transparent liquid at the very moderate pressure of 23 atmospheres, or thereabouts. Nitrogen at the same temperature does not liquefy at a pressure of 150 atmospheres, but yields a colourless liquid with distinct meniscus, when the pressure is cautiously allowed to fall to a point not lower than 50 atmospheres. It is now well known that ozone, under quite moderate limits of pressure and temperature, is a liquid of intensely blue colour, which gives a vapour which can only be compared in colour with the brightest blue sky. In this condition ozone is a most potent body, decomposing with explosion upon slight provocation into common oxygen. Pure alcohol is a white solid at about—130° C. (—202° F.). At a very slightly higher temperature it is viscous, like oil.—*Lancet*, Sept. 15.

ALCOHOL IN CHOLERA.

To those orthodox physicians who are reckless in their use of alcohol in cholera we would recommend the following from Dr. Richardson, himself an eminent member of orthodoxy. "Years

before I held the views respecting alcohol which I now hold, I had learned by what I had observed, first, that no good whatever follows the use of alcohol in cholera, and, secondly, that the local stimulation it causes excites vomiting, induces a febrile excitement, and favors after prostration. It was difficult to keep alcohol drinkers from taking it freely, and it was too easy to detect that these persons were they who died most frequently and rapidly. How any authority could recommend such a vile admixture as brandy-punch for the indiscriminate use of people falling ill with cholera I am utterly at a loss to understand, nor can I either from the practical or physical side see at any moment, a place for alcohol in the treatment."

LOCALIZATION OF MOTOR AREAS IN THE BRAIN.

MM. Charcot and Pitres have, from their recent researches on the subject, come to the following conclusions (*Med. Times and Gaz.* Aug. 25) :—

1. Cortical lesions capable of giving rise to total permanent hemiplegia are always situated in the motor area, and they occupy the whole or, at any rate, a good part of the surface of this motor area.
2. Lasting paralysis of the arm and leg on one side, the face being unaffected, is due to lesion of the upper half of the cortical motor area of the opposite hemisphere.
3. Paralysis of the face and arm on the same side, the leg being unaffected, denotes a lesion of the lower half of the cortical motor area of the opposite hemisphere.
4. The cortical motor centre which governs voluntary movements of the face is situated at the lower end of the opposite ascending frontal convolution.
5. The cortical centre governing movements of the arm is situated at the middle third of the ascending frontal convolution, or perhaps a little above this.
6. The paracentral lobe is the seat of the centre for movements of the leg; and
7. Destructive lesions, even when very extensive, if situated in the non-motor area, never give rise to secondary degenerations, whilst destructive lesions of the motor area are always accompanied after the lapse of a certain period of time by descending changes in the pyramidal tract.

COPPER AS AN ANTIDOTE TO CHOLERA.

The following from the *British Medical Journal* for Sept. 1 will be interesting :—

At a recent meeting of the Academie des Sciences, M. Bailly drew attention to M. Burq's assertion that those persons whose

organism is thoroughly submitted to the influence of copper, are as inaccessible to the attacks of cholera as those vaccinated are to small-pox. The following methods, according to M. Burq, are all equally efficacious, the habit of wearing copper bracelets, or bands which encircle the waist, or materials which have been steeped in copper solution, or the administration of black oxide of copper in the form of pills. At a recent meeting of the Academy of Medicine, M. Bailly furnished personal evidence which invalidated M. Burq's statement concerning the therapeutic value of copper in treating cholera. M. Bailly practises at Chambly, very near manufactories where spoons and forks are made with a copper alloy known as *alferide*. All hands employed exhibit symptoms of the influence of copper; nevertheless, the ravages made in 1866 by an epidemic of cholera are subversive of M. Burq's hypothesis. During an epidemic of typhoid fever, fifty-six people were attacked; of these, twenty-six were impregnated with copper. Four of the twenty-six died; no other deaths were recorded. M. Bailly mentioned a fatal case of "charbon," consequent on a fly-sting; also deaths from diphtheria. All the sufferers exhibited symptoms of copper-impregnation. Summer diarrhoea, also choleraic diarrhoea, attack those among the work people who are thoroughly impregnated.

FATAL CASE OF CHOREA IN A BOY, AGED TEN YEARS.

The following case was read before the last annual meeting of the *British Medical Association* by Dr. Martin Oxley, Senior physician to the Liverpool Infirmary for children. It will be seen that the case is most imperfectly reported. The previous history of the case is not given beyond the simple fact that the boy had twitchings three weeks before admission. The date of admission is not given. It is not stated what the treatment was from the date of admission to February 1st. It is simply stated that the patient used to take 20 grs. of chloral at a dose, but it is not stated how many doses used to be given daily. The post mortem examination was not properly performed. The brain was opened but not the spinal cord, where the lesion, which determined the choreaic movements, was most probably seated. The congestion of the brain was undoubtedly due to the large quantities of chloral that were administered. It is altogether doubtful whether the fatal termination of the case was due to the nature of the disease, or to the treatment adopted, which was evidently most heroic.

"B. C. aged 10, was admitted into the Liverpool Infirmary for Children in January 1883. He began to have twitchings three weeks before admission. On admission, he had pretty constant though not violent twitchings, mostly on the left side. After admission, he had constant though not violent jactitations. On January 29th, the choreic movements became very violent after the house-surgeon had taken a little blood from his finger for investigation into its condition. He was very violent at night, contorting and swearing. The movements continued very violent for two days, and then grew less so. On February 1st, he was much quieter, taking twenty grains of chloral at a dose. On the 5th, he had no violent jactitations, and was able to answer questions. The patient became exhausted, and died unexpectedly. The heart-sounds were free from *bruit* from first to last.

"*Post mortem Examination.*—The surface of the body had numerous bruises, especially over the prominent parts, as the elbows, knees, etc., and there was slight abrasion of the skin over the sacrum. The body was somewhat emaciated. The lungs were healthy. The left side of the heart was firmly contracted; the right side contained a fibrinous clot. Both aortic and pulmonary valves were competent. The aortic valve had a fringe of vegetations about the size of pins' heads (wart-like). The mitral valve had similar vegetations on its ventricular surface near the edge of the valve. The kidneys and spleen were normal. The brain was somewhat congested on its surface; no gross lesion could be detected in its substance, nor were the ventricles at all distended."

THE INDUCED CURRENT IN ASTHMA.

The application of the induced electric current in the treatment of asthma originated in Germany. Dr. Yeo drew attention to this mode of treatment in the *Lancet* for Nov. 13, 1880. "The current," says he, "must be the induced one (the constant current being of no use) and it must be of good strength, so that it can be felt. It should be applied to the throat in the situation of the great nerve trunks, the vagus or sympathetic, each pole being applied just below the angle of the jaw, and in front of the sterno-mastoid, and must be felt as passing through the soft palate from one side of the throat to the other." The following case, read at the last annual meeting of the British Medical Association by Dr. Peter Eade, Senior Physician to the Norfolk and Norwich Hospital, illustrates the utility of this mode of treatment as well as the haphazard way in which cases are

treated by old school physicians. Asthma is much better treated homœopathically, but still cases prove rebellious, and in these, the induced current would be worth trying.

CASE.—S. C., aged 49, married, a joiner, was admitted to the Norfolk and Norwich Hospital for "asthma," with much expectoration, for which he had been treated, for several weeks before admission, by one of our best Norfolk surgeons.

His statement was : that he had been ill for seven months ; that this was his first attack ; and that his family was not subject to asthma. His complaints were : of cough, with thick mucous expectoration ; of noisy whoezing ; and of great shortness of breath, which latter was always much worse at night, and prevented lying down or sleep.

On examination, the chest was found to be resonant, full of wheezing *râles*, with some small amount of moist *râles* at the base of the lungs ; and the expiration was markedly prolonged and dyspnoœal. No other diseased signs were observed, except a constantly flushed face. The heart was normal. The liver was not enlarged. The urine was free from albumen, although the phosphates were in considerable excess. The temperature was subnormal (but it may be mentioned that, during the progress of the case, it not unfrequently rose to 99°, or even a little higher).

This patient remained in the hospital for about ten weeks, and the case and its treatment may be well summed up as follows.

On February 21st, he was put upon mineral acids, with a view to check the excessive discharge of phosphatic salts in the urine ; and, in a day or two, a nightly dose of chloral and bromide of potassium was added.

On March 7th, he was treated with full doses of compound sulphuric ether and an aromatic, on account of faintness and great respiratory distress.

On March 10th, as he was still unrelieved, he was ordered to take repeated doses of chloral, with iodide and bromide of potassium ; and he was also ordered to inhale steam medicated with carbolic acid and tincture of conium.

On March 20th, the symptoms were unchanged. He was now ordered to smoke stramonium cigarettes.

On March 28th, a mixture of lobelia, ipecacuanha, and chlorodyne was tried.

On April 4th, thinking that, possibly, a gouty diathesis might be keeping up his asthma and copious bronchial secretion, I put him

upon the ordinary white magnesian mixture, with colchicum. Still he did not improve.

On April 14th, dilute phosphoric acid was tried.

On April 21st, all medicines were omitted, and he was ordered to inhale the fumes of nitre-paper every night. From this he distinctly derived a little benefit, and it was the first form of treatment from which he appeared to have obtained any advantage.

On April 24th, remembering Dr. Burney Yeo's paper on this subject, I had him galvanised, for several minutes, through the upper part of the neck and throat, according to the method therein advised; and this process was repeated daily (with the exception of two days) until May 5th, when he left the hospital.

The effect of this treatment was immediate and decided. He was distinctly better after the very first time of being galvanised, and he steadily and rapidly improved from that day—so that, by May 5th, a period of eleven days, the wheezing was nearly gone, the expectoration had become very slight, and, in fact, he was nearly convalescent. It is worthy of mention that, on the two days when the galvanising process was omitted, his asthmatic symptoms were distinctly worse.

I saw this patient several weeks after this date, when he told me that he felt quite well and comfortable.

CLINICAL RECORD.

A Case of chronic Fever, Diarrhoea, Dysentery, Hysteria, Tumour in the abdomen, Lumbar Abscess, Worms and Piles.

BY BABU GRISH CHANDRA DATTA, L.M.S.

Patient, a female, aged 30 years, of a very delicate constitution, and dyspeptic from her infancy. She was subject to worms and scabies; the latter troubled her much now and then. In August 1881 when she was 29 years old she was mother of nine children, of which the first four were still born, while the remaining five were of a very delicate constitution and were always sickly. When she was 19 years old, she had a severe fall, a few months after birth of her first child, on her right side; and the right side of her loin was much affected. The shock was so great that she was insensible for sometime. The pain in her right lumbar region troubled her sometimes very severely and sometimes mildly; but it has not entirely left her up to this day. In 1879 she gave birth to a daughter; she lost much blood at this confinement, and became very weak. She was treated for this by a Kaviraj under whom she recovered her health in so far as to be able to resume her domestic works. On the 7th July 1881 she lost her second beloved son, aged four years. Since then she was perfectly unmindful of all her domestic affairs and was like one gone mad. This sudden grief and depression not only acted upon her mind but upon her body as well; her appetite failed, she could not take her usual food at regular hours, and she began to lose flesh. On the night of the 18th August she had a smart attack of ague with severe pain all over her body; she was treated by an Asst. Surgeon; she temporarily got rid of the fever by Quinine mixture in the course of five days, but the pain in her right shoulder and waist did not leave her. After the 25th August 1881 she took rice, but without relish. Two days after, the fever relapsed with a very severe pain in the right lumbar region; the fever was of the remittent type. She was placed under the treatment of Babu—, who diagnosed that the pain was due to some affection of the kidney. He prescribed cinchona mixture internally, and bran poultice to be applied to the affected part. His treatment was continued for sometime; but there was no relief, on the contrary she became very much prostrated. She was afterwards placed under the joint treatment of two old and experienced practitioners. They, after consultation, prescribed aconite, bella-

donna, and a blister over the affected part. She was not at all relieved by their treatment; but all the symptoms of fever of low remittent type made their appearance.

On the 5th September 1881 Dr.—, the 1st Surgeon of the Medical College Hospital was called in. He said the pain might be due to some affection of the cæcum, and that the spleen was somewhat full and there was some gurgling sound on pressure on the affected side of the abdomen. He prescribed mixtures and liniments, but they were of no avail. On the 6th inst. she became very restless from the pain which was somewhat relieved by poppy head fomentations. All on a sudden that very day she passed a copious watery stool and became more restless than before and began to sink. Stimulants were given without any benefit. Then a Kaviraj was called in, who administered musk and other stimulants which revived her after 36 hours. She was placed under his sole treatment from the 6th to the 24th September. On the 24th September hysteric symptoms, such as faintings, difficulty of breathing, dryness of throat, &c., made their appearance, and three more Kavirajes were consulted. She was placed under the treatment of two of them. As she was not relieved at all by their treatment, and as she became very much exhausted from the continuance of the fits I was called on the 7th October. I saw that the patient was in a precarious state, getting fainting hysteric fits at intervals of a few minutes, and was suffering from low remittent fever, diarrhoea, &c. Considering the circumstances of the case and the previous history, I gave her a dose of *Ignatia* 6, to relieve her of the fits which had exhausted her much in co-operation with the low type of fever. The medicine acted like a charm. She was relieved of the fits and the most predominant sufferings which would have produced fatal results in a very short time.

8th October 1881—I learned that she used to have irregular, watery menses, but that they were now suppressed. She was bed-ridden and emaciated and was suffering from continued fever with burning sensation in the palms of the hands, in the soles of the feet and in the eyes; complexion pale, three or four thin stools in 24 hours, consisting fæces with mucus and tinge of blood; stools were of changeable colour; griping before and during stools and much tenesmus; constant scanty leucorrhœal discharge with putrid smell; palpitation of the heart (functional); constant hysteric fits, faintings, difficulty of breathing, (no fits after *ignatia*); piles throbbing, without bleeding; tongue furred, pale and flabby; no appetite, constant nausea with occasional vomiting, sensation of heaviness in the right lumbar region, which was very

slightly painful on pressure. On examination I found a hard cartilaginous mass about the size of an ordinary water melon; it was moveable. She could not turn on her bed without assistance and was lying constantly on her back. Spleen and liver were not perceptibly enlarged, but the hypochondria were somewhat full. Slight occasional cough without any discoverable lesion in her lungs. Heart weak, free from any organic disease. Bed sores, greenish urine, slight headache. Pulse very weak.

Treatment. After the fits were relieved by *Ignatia* I prescribed *Sulphur* 30, which played a most important part in the cure of this case. The dysenteric diarrhoea which was brought on by fatty food was relieved by *Pulsatilla* 6 and 30. In the course of the treatment she had intermittent pulse and functional palpitation of the heart; they were relieved and cured by *Digitalis* 6. Afterwards I again gave her two doses of *Sulphur* 30 at an interval of five days. Three days after the administration of the 2nd dose itch like eruptions appeared throughout her body and the fever and diarrhoea subsided entirely. The leucorrhœal discharge, transparent and white, the yellowness of her face and her chlorotic and cachectic appearance were all removed by *Natrum Muriaicum* 30, one dose being given every 3rd day. After five or six doses of the medicine she much improved in her general condition and was fairly progressing, when an abscess suddenly appeared in the posterior lumbar region. *Belladonna* and *Mercurius* were given to prevent suppuration, but they failed to do so. At last suppuration commenced and *Hepar sulphur* 6 was administered every 6 hours. Under its action it became fit for operation. The patient's father suggested to have it operated by a European surgeon, and Dr. C—was sent for. Suspecting communication of the abscess with the tumor, he opened it with an aspirator. After the operation it was found that there was no such communication, as I had predicted. About half a *poah* of very healthy pus came out through the aspirator, and the wound was dressed at first with carbolic oil and afterwards with calendula lotion. *Silecea* 30 was given for internal use. Afterwards the 3rd trituration of *Silecea* dissolved in water was injected into the abscess.

Four days after the operation and the treatment as mentioned above, I found that the discharge of pus was not free. According to her father's suggestion Dr. C—was again sent for, who agreeing with me enlarged the opening. The wound was dressed with calendula lotion for two days and afterwards with 3rd trituration of *Silecea*. There was now no fever nor diarrhoea. Milk and

barley were given as food. On the fourth day of my treatment after the second operation, the father of the patient who had little faith in Homœopathy, though he saw the evidently superior efficacy of the Homœopathic medicines in this case, requested me to treat her now allopathically with Dr. C—as the case, he thought, was then a purely surgical one. When I refused to do this she was placed under the treatment of Dr. C—and Baboo Nitya Lal Haldar, M.B., from 15th to 27th November 1881. I should mention here that she was better in all respects when she was taken away from my hands and placed under their treatment. They prescribed stimulating tonics, brandy and broth, and carbolic oil and boracic ointment dressing. She gradually became worse and all those former symptoms, from which she was free before the commencement of this treatment, again made their appearance with greater virulence than before. I was again called on the afternoon of the 27th of November, and I found that all those eruptions on her body, of which I spoke before, have entirely disappeared. She was passing frequent scanty bloody mucous stools, and was so very weak and the tongue was so dry that she could not speak. Her pulse was very weak, frequent and small, almost imperceptible: breathing was difficult and frequent. There were also frequent fainting fits. I thought that these had been brought on from the suppression of those itch-like eruptions, after the breaking out of which she was relieved of all her sufferings. I at once prescribed *Sulphur* 200, which gradually revived her in the course of 6 hours. Four days after she was decidedly better in all respects but the stools did not improve. I waited for two days more to watch the effects of sulphur on the stools which were rather bad. When I found that it did not do so much good as I expected from it, I gave a dose of *Merc. sol.* 30 for the following symptoms; increased pain before and during stools with violent tenesmus, the pains increased a little after stool, and sometimes they extended to the back; hot sweat on her forehead during stool, frequent discharge of bloody green mucus, like stirred eggs, and aggravation at night. Two doses of the medicine at an interval of 6 hours relieved her sufferings. She passed a healthy stool twenty-four hours after the administration of the 2nd dose. Now she was better in all respects except that the sinus still existed, which was dressed by Baboo Nitya Lal Haldar, with solution of 3rd trituration of *Silicea* and boracic acid ointment, and with graduated compress, pad and bandage. She was under my sole treatment from 28th November to the whole of December 1881. During this period she was better in all respects from the internal use of

Silecea 30, excepting that there was slight discharge from the sinus. The tumor became reduced very much in size, about three-fourths of what it was. Babu Nitya Lal Haldar assisted me very kindly in dressing the case according to my directions. Afterwards I left the case in his hands with the following instructions: *Silecea* 30 and *Calc. carb.* 30 to be given every fourth or fifth day alternately, and *Silecea* 3rd trit. dissolved in water to be injected once a day, and boracic acid ointment dressing to the wound with graduated compress, pad and bandage. Nitya Babu attended from January to the middle of April 1882 when the sinus healed up entirely. The tumor still existed and it was then about the size of a duck's egg. One dose of *Calc. carb.* 200 was given. Fifteen days after the 1st dose of the medicine I examined it and found that it was half of the size last seen. Another dose was repeated, and I examined her after a month and I could not find any trace of it. I forgot to mention; that her menses appeared after the 2nd operation. It was rather scanty but normal in colour and duration. This was about the 10th November. It again appeared about the 11th December, and it was regular in time, quantity, colour and duration.

THERAPEUTICS OF CONSTIPATION, DIARRHŒA,
DYSENTERY, AND CHOLERA.

57. CHELIDONIUM MAJUS.

Constipation :

1. Hard, very much delayed st.
2. Hard st., with great pain.
3. St. hard, nodular, difficult to pass, with smarting pain in the anus.
4. St. *whitish-red* instead of the usual grayish-brown, harder than usual.
5. St. very hard and *dark-brown*.
6. St. delayed and scanty ; st. delayed, color whiter.
7. St. passed in small hard lumps like sheep-dung.

Diarrhœa :

1. D., without pain ; the rumbling continues.
2. Diarrhœic sts. every night ; in the afternoon.
3. Several small slenderly-formed sts., preceded not followed by slight griping.
4. Profuse watery *whitish* sts., with nausea during the night, with two more sts. in the morning.
5. St., the second time after dinner, quite unusual.
6. *Dark-yellow* st. (evening).
7. *Light-colored*, ribbon-shaped sts., without colic, at unusual hours.
8. Thin *pasty* sts., *light-grey* or *bright-yellow*.
9. Thin, watery, dark-yellow st.
10. Sts. *darker colored* ; *brown* and watery ; *light-red*, painful ; *whitish red*.
11. Urging to st., followed by three watery sts. in quick succession, followed by relief of the colic.

Dysentery :

1. Slimy diarrhœa.
2. Copious, liquid, bright yellow st., with much mucus, without pain.
3. St. mixed with some blood. Some blood followed the st.
4. Thin, yellow, mucous sts., with some blood at the close.

Aggravation :

1. Night. Afternoon.
2. After dinner.

Before St :

1. Urging to stool.
2. Griping ; sudden cuttings in the abd. ; rumbling in the abd. above navel, passing downward.
3. Nausea.
4. Frequent dragging in the rectum.

During St :

1. Nausea.

2. Pain in rectum (hard.st.).
3. Rumbling in abd.
4. Anus feels swollen. Anus feels constricted, allowing the st. to pass with difficulty.

After St :

1. Pinching in abd. extending to back and up to the chest, disappearing after passage of offensive flatus.
2. Rumbling.
3. Discharge of blood.
4. Relief of colic.
5. Soreness of the arvc.
6. Spasmodic constriction of the anus.

Rectum and Anus :

1. Burning and cutting in the rectum, with constriction of the anus, alternating with itching in the anus.
2. Itching and crawling in the rectum, anus and perinæum. The crawling extends to the glans penis, to the toes and tip of the nose.
3. The pains in the anus are relieved by standing bent over.

General Symptoms :

1. Sadness, even to weeping, and despondency about the present and future.
2. Remarkable serenity of mind.
3. Jaundice. Remarkably yellow color of the face, especially of the forehead, nose and cheeks, of the conjunctiva, and hands.
4. Tongue slimy, thickly coated yellow, with red margin, showing the imprint of the teeth. Also white coated tongue.
5. Bitter water collects in the mouth.
6. Bitter taste in the mouth, but a natural taste while eating and drinking: Metallic, sour taste.
7. Increased appetite.
8. Diminished appetite (from diminution of acidity of the gastric fluids).
9. Longing for vinegar, acids, sour wine.
10. Aversion to cheese (alkalines), to coffee, to cold things, to boiled food especially meat.
11. Whilst taking the medicine inclination for warm drinks; after the proving had ceased continued thirst for cold water.
12. Milk tastes pleasanter and agrees better than before.
13. Sourish, saltish-bitter, or intensely bitter eructations. Eructations relieve especially the nausea.
14. Frequent hiccough.
15. Vomiting of tough mucus, without relief of the headache; of curdled milk after a fit of coughing; of potatoes eaten the evening before, with a sharp acid taste.
16. Gnawing and clawing and other pains and sensations in the stomach, passing off after eating.
17. Pain in the hepatic region, and under the right scapula.

- Pains transversely across the umbilicus, as if the abd. were constricted by a string.
18. Constant gurgling and rumbling in the abd. Passage of large quantities of flatulence.
 19. The urine has excess of uric acid salts, and only traces of chlorides.
 20. Urine profuse, watery; or reddish; darker brownish or greenish; foamy; turbid as soon as passed; of a sharp acid smell; dark-yellow, staining the diapper dark-yellow.
 21. Great drowsiness even when walking. Great weariness and sleepiness.

Remarks: *Chelidonium* would be found useful in constipation with the characteristic hard, nodular stools. In *Bryonia* the stools are hard and large, in *chelid.* they are hard but passed in small lumps like sheep-dung.

In diarrhœa with dark or bright yellow stools, indicative of irritation of the liver as evidenced also by jaundice, urinary and other symptoms, *chelid.* would prove a highly efficacious remedy. Buchmann has contrasted *chelid.* and *bryo.* in respect of the color and odor of the stools thus: "After *bryo.* the stool is at first dark brown, greenish, acrid, bilious. After *chelid.* there are in the case of one prover, greenish evacuations, and brown one only where bright ones have preceded. Besides, the strong bad odor of *bryo.* stools are wanting in those after *chelid.*" One remarkable effect is the diminution of the acid in the stomach, and the increase of acid,—uric acid and uric acid salts,—and diminution of the chlorides in the urine. This accounts for the longing for acids caused by the drug. Aversion to alkaline food such as cheese, and to boiled food, especially meat, and desire for hot drinks are also remarkable.

In the dog *chelid.* has helped the generation of ascarides and its rectal and other symptoms in the human subject tempt us to believe it might be useful in worms.

58: CHINA:

Constipation:

1. Constipation, with accumulation of fœces in the rectum, heat in the head, and dizziness.
2. St. evacuated only with great pressure and after long urging, and then it causes pain.
3. St. harder than usual, in the evening.
4. He is obliged to press out the stool with great force, although it is not hard but pasty; this is followed by ineffectual urging to st., with pain.
5. Great discharge of flatus, together with a drawing in the abd. during a hard st. which is passed with difficulty.

Diarrhœa:

1. D. of undigested fœces.
2. D., with burning pain in the anus.

3. Three soft stools, with biting-burning in the anus, and colic before and after every st.
4. St. after eating.
5. Soft st. with dark urine.
6. Nodular, *yellow*, soft st., in the morning.
7. Bilious sts.
8. D.; it is as if the excrement contained undigested food; it comes away in separate pieces, and when it is passed, there still remains a desire to go to st., but no more passes.
9. *White* st. and dark urine.
10. D. with pain and distension of the abd.

Aggravation :

1. After eating.
2. From fruits.
3. After loss of vital fluids.

Before St :

1. Colic.
2. Long urging (constipation).

During St :

1. Great discharge of flatus, with drawing pain in abd.
2. Burning in anus.
3. Sensation in anus as from an acrid matter.
4. Shooting drawing in rectum.
5. Colic.

After St :

1. Colic.
2. Shooting drawing in rectum.
3. Crawling in the rectum as from thread worm.

Rectum and Anus :

1. Continued burning pain in the rectum, after the siesta.
2. Contractive pain in the rectum especially when sitting.
3. Crawling in the rectum and anus as from ascarides, and discharge of many of them.
4. Bleeding hæmorrhoids.
5. Painful sensation in the hæmorrhoidal tumors.
6. Piercing stitches in the rectum and anus, when not at st.

General Symptoms :

1. An over anxious concern about trifles.
2. Discontented; thinks himself unfortunate, and fancies he is opposed and tormented by every body.
3. Disinclination for bodily and mental exertion.
4. Vertigo; the head tends to sink backwards.
5. Pale, earthy complexion.
6. Hippocratic face (pointed nose, hollow eyes with blue rings), indifference, insensibility; he wants to know nothing about those around, nothing about things he most liked.
7. Puffy, red face.
8. Ringing in the ears.
9. Lips dry, chapped and blackish.
10. Much saliva in the mouth, with nausea.

11. Tongue thickly furred, especially in the afternoon ; furred yellow, or dirty white.
12. Constant bitter taste in the mouth ; tobacco tastes bitter when smoking.
13. Salt taste in the mouth ; all things tasted uncommonly salt, afterwards bitter.
14. Sour taste ; sweetish taste ; first sweetish, then sour taste.
15. Aversion to coffee ; to beer ; to water, with inclination for beer.
16. Great longing for wine, for sour cherries, for sour things in general.
17. Indifference to food and drink ; appetite and relish return when beginning to eat.
18. Canine hunger, with nausea and inclination to vomit.
19. Bitter, sour eructations ; eructations tasting of the ingesta.
20. After eating, nausea, distension of abd., stool, drowsiness, exhaustion, hard pressure in the stomach.
21. Milk readily deranges the stomach.
22. After drinking shivering or chilliness ; griping as from a purgative.
23. Flatulent distension of the abd. Discharge of extremely fetid flatus.
24. Fermentation in the abd. from eating fruit.
25. Pinching shooting pains in the abd.
26. Scanty, dark-colored urine, with brick-red sediment.
27. Inability to sleep almost all night long on account of many ideas and reflections, each of which engages him only for a short time, but is always supplanted by another. Starts up when about to fall asleep.
28. Drowsiness by day.
29. Snoring and whining in sleep, in children.
30. Oppression of all parts of the body, as if the clothes were too tight. He is sore all, in the joints, the bones and the periosteum.

Remarks : Hahnemann has remarked that "the costiveness of china is secondary action or reaction of the organism to the great tendency of this medicine to excite diarrhœa in its primary action." Hence it would be useful in constipation with the characteristic stools, which follows diarrhœa, especially if attended with heat in the head and dizziness.

In exhausting diarrhœa with tympanites or flatulent distension of the abdomen, especially when produced by the eating of fruits, and when occurring in children, undigested matter passing with the stools, china has proved highly useful. The china stools are yellowish or whitish. Bell distinguishes china from *carbo veg.*, by what he calls "the fact, that with the former the stools are often entirely in the night, being absent during the day, even in severe cases, unless they occur after meals, which is also an additional distinction."

Pathogenesis does not substantiate the "fact" of the nocturnal character of the **china** stools, whereas under **carbo veg.** we have stools at night. Our own clinical experience also does not bear out Dr. Bell's assertion. We have found **china** to be useful for the characteristic diarrhœa whether the stools occur in the night or in the day. The only distinction we have been able to find out between it and **carbo veg.** seems to be that **china** is more appropriate for children, **carbo veg.** for adults; in the former the stools are yellowish or whitish, in the latter brownish. Lienteria or diarrhœa consisting of undigested matter, is a characteristic of **china**, whereas this has not been observed in **carbo**.

The pathogenesis of **china**, so far as we have it, has not produced dysenteric stools. Dr. Hoyne nevertheless asserts that it "proves curative in dysentery characterised by excessive prostration, and dark, bloody discharges of a very offensive odor, worse at night," and quotes the following case of Dr. C. Wesselhœft in corroboration: "Mrs J., aged fifty, white hair and pale complexion. She was attacked during catamenia by colic, diarrhœa, and high febrile excitement; discharges brown. Prescribed *Acon.* and *Puls.* without benefit. Next day had four brown discharges tinged with blood in the night; high fever in paroxysms; little thirst; colic and marked prostration. **China** 30, every six hours, cured in two days." Was this a case of true dysentery?

In employing **china** we may do well to remember Hahnemann's observation that "Bark will hardly ever be found curative when there are not present disturbances of the night's rest similar to those the medicine causes in the health;" though of course we must say we need not be deterred from using it when this condition does not prevail.

Gleanings from Contemporary Literature.

THE RELATION OF SYMPTOMATOLOGY TO THE HOMŒOPATHIC MATERIA MEDICA.

Read before the Michigan Homœopathic Medical Society, Session of 1883.

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The subject of *Materia Medica*, to the homœopath, has always been one of absorbing interest, and the thoroughness and perseverance with which homœopaths have cultivated the study, and have made it one of real practical value to the sick, furnish the reason why homœopathy has gained the strong foothold it holds, for *materia medica applied*, becomes the science of therapeutics; and so long as people will be sick, therapeutics are to them of supreme importance.

For many years homœopathic *materia medica*, in its general plan, was a seemingly simple, easily understood affair; it consisted exclusively of an array of symptoms gained from provings, arranged as seemed suited to the convenience and taste of the prover or reporter, and necessitated, in its *applied* form, as therapeutics, nothing save close study of the records obtained, a successful hunting for "symptoms" in the patient, and a mechanical "covering" of these symptoms by corresponding drug-symptoms in order to find the presumed homœopathic remedy to the case to be prescribed for. The plan was sufficiently satisfactory in that it insured from the internal administration of remedies curative effects infinitely superior to those had by any other method of prescribing; the result was a general feeling of satisfaction and of confidence on part of the profession that there had been attained the highest degree possible of perfection in the art of prescribing. In the course of time, the progressive spirit of thinking and observing men led to close criticism of hitherto abundantly satisfactory methods; accidents, advancements in collateral sciences, enlarged clinical experience, and that restless inquiry so characteristic of this century, exposed weakness where strength only had been presumed to exist; it was found on one hand that brilliant cures reported lost much of their merit upon a critical examination, frequently showing remarkable errors in diagnosis, or exposing a surprising ignorance, on part of the reporter, of important facts concerning the nature of certain pathological conditions; on the other hand, claims were made that symptomatology, so-called, is not utilized in a manner calculated to develop its highest usefulness.

At the present time, no subject of discussion before the profession has received at the hands of its members so large a measure of careful attention as the possibility of re-constructing the entire *materia medica* so as to increase its usefulness by simplifying its study, of systematizing its teaching, and of adopting it to varied just and unjust, practical and impracticable demands made upon it by the driving, hurried practitioner of to-day.

And, while turning with a feeling akin to sadness from the quiet assurance of the past to the strife and unrest of the present, we have reason to feel grateful for this earnest demand for something better, more reliable, more perfect than we have had or now have ; quiet and content are often apathy or death itself ; while unrest, and even impetuous fretfulness, betoken life ; if heated discussions are not always pleasant, they are none the less preferable to complacency and lazy self-contentment. Undismayed by the agitations of the present, the lover of true and intelligent homœopathy may face the future in the assurance that all will end well if we act with due charity toward all, with perfect devotion to medical truth, and with due care not to either be so orthodox as to remain centuries in the rear of the advance guard, or so hopelessly "progressive" as to drift with the swift current of an unreasoning and blind desire for innovations far away from safe moorings into the sea of uncertainties and of mere empiricism.

The necessity of a thorough reconstruction of our materia medica, so far as such a reconstruction may increase the clearness, reliability, and general usefulness of our materia medica, is not questioned by many. The difficulty of accomplishing the urgent task is recognized by all, and none have as yet been able to either formulate a method which would insure perfect success, or even to suggest a line of action which is not open to objections. United effort, it is to be hoped, will eventually, and soon, accomplish what seems beyond the power of one man, or beyond work of one life-time.

All suggestions for improvement made, and all differences of opinion so far expressed are based upon differing conceptions of the nature, importance and value of *symptoms* ; in fact, nine-tenths of the trouble to be encountered lies in differing views of, and concerning, the very aim and place in the materia medica of drug-symptomatology. I allow myself the pleasure of calling your attention to a few stray thoughts concerning "drug-symptoms" and symptomatology. First of all, I desire to state in the most emphatic manner possible that without symptomatology there can not exist a practical, reliable, scientific materia medica. Symptomatology, or the written record of drug-provings upon the healthy, is the grand, and the only *safe*, foundation upon which we may rear an harmonious, satisfactory superstructure. I wish, however, to state with equal emphasis, that symptomatology is the foundation *only*, is not by any means the homœopathic materia medica itself, but merely a part thereof, and that it [symptomatology] *ALONE* can never furnish a satisfactory basis for scientific therapeutics. In other words, and they shall be as plain as I can make them, I desire to state that symptomatology is an all-important portion of materia medica, but it is only a *part*, not all-embracing ; and further, that therapeutics, or applied materia medica, must of necessity take in something more than a mere knowledge of drug-symptoms as they stand. To express the same thought in still other language, I beg leave to assert that a medical student may commit to memory every proving ever made, and, upon becoming a practitioner, may yet find himself utterly unable to examine a complicated case, and, from his knowledge of symptomatology *alone*, to determine what remedy will act curatively in the case.

Symptoms, as recorded, serve a double purpose. First, the recorded symptom is an isolated fact, or, if not yet clinically verified, it is an isolated *assertion*, possessing a certain current value which does not go beyond the statement made by the prover. A prover affirms that bryonia has produced in his case a certain headache; other provers give the same experience; the symptom therefore is presumed likely to be reliable; or rather, we accept it as probable that bryonia does cause a certain headache, as a drug-effect, because a number of creditable experimenters says so. Trusting upon our law of cure, we employ bryonia to cure a similar headache, and, if successful, we say that this one particular symptom has been clinically verified, and may be considered reliable. Every symptom, thus obtained, is of great value; and it must be apparent to all, that a "reconstructed" materia medica must be based upon a reconstructed symptomatology every symptom of which must have been amply verified before finding a place in the frame of the new work.

It requires no great effort or brilliancy to see how necessary such a verification of symptoms is. A superficial examination is quite sufficient to show how small the number of fully verified symptoms in our works on symptomatology, and how enormous the array of drug-effects for the correctness of which we have no voucher save the unsupported statement of the prover himself. And, even the verifications must not be made by one or two men only, but, before admitting a certain symptom to a position in the materia medica of the future, there must exist *abundant* evidence of its reliability, secured by a large amount of reliable clinical evidence.

A glance at the sources of our symptomatology is sufficient to show the necessity of the great caution which must be exercised in discriminating between symptoms. The materia medica pura contains the first record in our possession of reliable drug-provings, and is in every respect one of the most trustworthy works of its kind. The provings were made under the immediate supervision of Hahnemann, and the provers, with hardly an exception, were in every respect as cautious and painstaking as they were enthusiastic. The "chronic diseases" emanate from the same grand old worker, but what a difference between the two works! Errors, even of importance, crept into the earlier work; but they are exceptional and, perhaps, unavoidable; even the sharp eye of Roth,—at one time one of the most critical, fruitful and able of writers,—could only detect an occasional flaw in it. The later work is accepted only as authoritative by those to whom the name alone of Hahnemann is a certificate of infallibility, and by those who are ignorant of the history of the work, or who have never given it thorough study. Yet, every symptom of the "chronic diseases" is religiously incorporated in our works on symptomatology, and, bearing the seal of Hahnemann, passes for pure gold, when it is apt to be brass, and of poor quality at that. Houtatt's so-called South-American provings contain internal evidence of worthlessness, but are preserved as if they were precious gems. A very fair proportion of symptoms furnished and of provings made from 1830 to 1840 were made by men utterly unfit to

be trusted with such important work ; their acceptance by the profession can only be explained upon the presumption that with the unbounded enthusiasm of young converts men were more ready to accept as facts startling assertions and everything bearing upon its surface the assurance of zeal for the cause, than they were conscious of the necessity of close analysis and criticism. In those days men like Stapf, Gross, Griesselich, and others, giants in intellectual strength, were *almost* carried away by this blind rush of unskilled workmanship, and their occasional notes of warning could scarcely be heard above the tumult. Yet, nearly every symptom furnished by irresponsible provers was tenderly preserved, and forms even now part and parcel of our *materia medica*. To rid ourselves of this accumulated trash will prove a task of no small dimensions, unless we agree to throw over-board everything of this sort, even at the danger of losing one kernel of wheat to each ton of chaff.

The manner in which symptoms are obtained frequently should stand in the way of their acceptance. All symptoms obtained by taking light doses of very high potencies should be treated most cautiously. It is likely that a high potency may do excellent service in the sick-room, but Swan's proving of *Lachesis* with the 71,000th, or that of the students of Fahnenmann Colloge of Philadelphia, made, many years ago, with, I believe, the 41,000th, presumes such exceptionally sensitive organisms on part of the provers that they should, at least, occupy a corner of their own in our symptomatology. Yet, several of our works on this topic seem to have been written with the sole view of bringing to the front the symptoms thus obtained.

Another easy method of "proving" consists in reporting certain symptoms obtained by accident from giving to patients certain remedies for remedial purposes, and in usually small amounts. It appears almost incredible that symptoms (?) thus obtained should be recognized, or should be given a serious thought ; yet, abundance of this sort of material has entered into the construction of our much-talked of scientific *materia medica*.

Other equally reprehensible methods have been used to enlarge our wealth of drug-symptoms, and other items enter into the subject of determining the absolute value or reliability of recorded symptoms.

To avoid blunders, and to secure immunity from dangerous mistakes, it would be well to expunge from our pathogenic drug-records every symptom not now verified by clinical experience. This done, there will still be left an immense amount of material, and we shall have the consolation of knowing that we have greatly lessened the danger of risking a human life upon the chance that our prescription is based upon the production of some unstable, ignorant, and irresponsible creature utterly unworthy of the slightest credence. I would urge the fairness of such a course, because it would not discriminate against provings made with high attenuations ; if the latter have yielded *verifical* symptoms, the low-dilutionist is bound to treat them considerably and to accept them as reliable.

In this manner, then, we would secure a record of positively trustworthy symptoms, each of them having a certain absolute value *per se*. This done,

we are prepared to consider what to do with these symptoms, and how to utilize them.

Human beings of average intelligence are inclined to trace *cause* from certain known effects, to ascertain *why* certain effects are produced, and to inquire *how* they are brought about; by this process of reasoning we ascertain the most valuable scientific facts, and to it we are indebted for nearly all the advances made in the different departments of science.

Drug-provings are no exception, and I maintain that the final, and most important, use of drug-provings lies in our ability by them to ascertain, at least to approximate, the *manner* in which certain drugs affect the human organism, and, consequently, the reason why certain drugs may act curatively in certain specified diseases.

A vague consciousness of this fact has long existed in the profession, and has given rise to varied attempts, frequently futile, to construct a system of materia medica which shall embody, and develop to its full extent, the fact thus briefly stated. Physiology and pathology, of necessity, constitute our greatest helps in a struggle toward the consummation of this aim, and hence, those who are opposed to efforts in this direction, or who have no intelligent conception of the real importance of this work, have seen fit to stigmatize workers in this direction by accusing them of wearing the "physiological livery." To do this, constitutes a "fatal error." The truest friends of homœopathy, upon careful study of the subject, will be forced to admit that a consummation of this project must add wonderfully to our strength as prescribers, since by furnishing a *modus operandi* of drug-action it will give to the student the key which shall unlock to him the door to that great mystery which otherwise perplexes and confuses him, and will make a delightful study of what now is a mere bit of drudgery.

Our knowledge of physiology and pathology now is not sufficient to clearly account for *many* of the effects produced by drugs upon the human organism. Nevertheless, this limited knowledge has been sufficient to give excellent results, as is seen in the notes on "physiological action" which are becoming quite a common feature in our recent works on materia medica, and which, from the aid afforded by them in the study of remedies, are so keenly appreciated by the profession.

The objections urged against the attempt to utilize physiology in the study of materia medica are based, first, upon our as yet very imperfect knowledge of physiology and, especially, pathology, and, second, upon the fear that success would so modify the method of *applying* materia medica as to do away with the *conscious* need of strictly individualizing. The latter, if looked at superficially, seems plausible, but is, in fact, quite groundless. Even exclusive symptomatologists, from sheer force of habit, and *in spite of themselves*, do unconsciously utilize their knowledge of physiology and pathology. Who can study mercury and not be impressed with its action upon the glandular system; or nux vomica, and not recognize its close relation to the spine? And, in prescribing for derangements of the glandular system, who does not instinctively turn to mercury, or

think of *nux vomica* in affections of the spinal cord, or of *belladonna* in active congestion of the arterial system, or of *bryonia* in diseases of the serous membrane? This instantaneously connecting certain remedies with certain systems, organs, or structures is not simply the result of the practitioner's experience by the bedside, and is not a species of empirical knowledge, but is developed by the medical student of average intelligence and of thoughtful habit even while listening to lectures which often are a mere rehash of works on symptomatology.

It is very frequently asserted that symptomatology is pathology itself. *This statement is made to clear exclusive symptomatologists of the charge of ignorance of pathology. Symptomatology is by no means pathology, save in the very widest possible sense of the term, aided by a vigorous stretch of an active imagination. The most complete knowledge of symptomatology does not enable its possessor to form a clear conception of the science of disease, or to understand the scope and practical importance of such knowledge.

The strongest and boldest claim put forth in behalf of symptomatology, practically applied, is to maintain that the exclusive symptomatologist alone individualizes closely and systematically. The very boldness of this claim has led to its acceptance by a large number of the profession, especially by those whose practice is not strictly in accordance with the tenets of pure homœopathy, or whose modesty leads them to readily accept assertions of superiority made by men who claim a particular measure of purity of practice, and especially favorable results as coming from it. This claim, that exclusive symptomatologists are particularly pure in practice, and especially sensible in the application of the homœopathic law of cure, is by no means based upon facts; in truth, it can easily be proved that their much-talked-of method of individualizing is only too often little more than an idle pretense.

Within the last month Dr. Wm. A. Allen, New York, has published a little work, a "Repertory of Intermittent Fever." Dr. Allen is an exclusive symptomatologist, at least his little book justifies this belief, and, in his preface, gives explicit directions concerning the method to be employed in what these gentlemen, with a sarcasm the bitterness of which they seem not to realize, call "studying" the case. The directions, in brief, are as follows: The patient is carefully examined with a view of ascertaining all the symptoms of the case, nothing more. The symptoms thus obtained are arranged under appropriate headings, and it is ascertained what remedy covers each symptom. The remedy which covers the largest number of symptoms is considered the homœopathic remedy, and is administered with assurance of an immediate cure of the pathological symptoms. This method, so fondly held up to us as the grand embodiment of all there is true and scientific in homœopathy has, at least, the merits of simplicity. Any young man possessed of sufficient knowledge to read and to write, of books on symptomatology, of pen and ink, and of abundant leisure, is capable of thus performing miraculous cures; the process is evidently entirely me-

chanical, clerical, and a young student, if he is given sufficient time, can do as good work as his more hurried preceptor. This for its *advantages*.

Among the *drawbacks* connected with this method we may mention the fact that the remedy thus chosen is not even claimed to represent all, or the totality, of symptoms. If of fifteen symptoms thus ascertained nux covers six symptoms, arsenic five, bryonia four, and sulphur one symptom, nux is given as the curative remedy, although it covers *not* a totality, but only a small portion, of the symptoms of the case. Another, and infinitely more serious, objection is the fact that no discrimination is made in the *value* of the symptoms afforded, nor, in most instances, of the *reliability* of symptoms furnished by the patient. The merest chance-symptom, perhaps wholly due to an excited imagination, stands on a par with the most important, characteristic, or even pathognomonic symptom found; each symptom counts *one*, and is valued as such by these high priests of *pure* homœopathy.

There is not present a single observing practitioner who is not conscious of the urgent necessity, in eliciting symptoms from the sick, of shrewdly discriminating between them as to their validity and reliability; nor is there within hearing one experienced physician who is not aware of the great difference in the value and importance of symptoms actually experienced by the patient. In every prescription made by the skillful prescriber certain symptoms are deemed of particular importance in the selection of the homœopathic remedy, while others, by no means overlooked or deliberately ignored, are placed into the second, third, or fourth rank. It often occurs that a single marked symptom, in the hands of the thoughtful prescriber, will outweigh a dozen symptoms equally obstrusive, but by experience known to be of minor importance.

The question of pathology, in connection with the selection of remedies, plays a far more important role than is realized by many of those who are loudest in ridiculing the very idea of utilizing pathology in the selection of the homœopathic remedy.

A physician is consulted by a patient for a sharp, lancinating pain in the big toe, accompanied with soreness of the member, all greatly aggravated by motion. The exclusive symptomatologist, if faithful to his pretensions, would find that a certain number of remedies have these symptoms, and, if assured of the perfect general health of the patient, would find it next to impossible to differentiate between them, unless, perhaps, the wisdom of the learned medical man discovers, after a long and patient study of the case, that the unfortunate owner of the aching bigtoe, in his childhood, or at any other earlier period of life, had had a breaking-out, which either disappeared with a shocking absence of formality, or was accidentally or purposely suppressed; in such a case, a dose of sulphur. 1,000,000 would probably be deemed the simillimum. The *less* scientific medical man would probably consult his pathology, and inquire into the nature of the affection which has produced the symptoms above given. If it is ascertained that a bruise is responsible for the ache, arnica would probably be selected; if of

a purely inflammatory nature, aconite might be given ; thus bryonia, belladonna, hamamelis, and others, would occur to the prescriber, as the local symptoms were proved to the result of rheumatic, neuralgic, or other, causes. Indeed, I am persuaded that even the exclusive symptomatologist would fall from grace by sacrificing his preconceived notions and, conforming to the dictates of common sense, would readily ask before prescribing whether, or not, the patient had stubbed his toe, had dropped the axe upon it, or could furnish any other evidence as to the cause of the affliction.

Physical examinations, for the purpose of selecting treatment, would be a mere, idle farce were we to depend upon symptomatology *only* in the selection of our remedy. Why examine the chest of a patient to determine whether, or not, tubercular deposits are existing in the lung-tissue, if the result obtained are useless in the selection of the true remedy ? Why examine the heart or the excreta, or take measurements, if all these things are of no service in bringing about the recovery of the patient ? It may safely be presumed that few adherents of exclusive symptomatology dispense with these varied means of obtaining a correct diagnosis ; yet, if symptomatology is pathology, or if the symptoms alone are sufficient to positively indicate the treatment needed, why bother the patient, and take a fee for what, after all, is to them but the idle trick of a mountebank ?

Carried out to its legitimate conclusions, this method of prescribing for the sick by symptoms alone, is absurd in its conception, and often saddening in its results. A few years ago, an eminent homœopath, still living, and one who has written eloquently concerning the folly of those who look beyond the confines of symptomatology for aid in treating the sick, reported in one of our journals a cure which to him possessed superior merit. The report states that he was called to see a patient presumed to be dying, from what particular cause, deponent sayeth not, as such a matter is too insignificant for notice. Owing to the carelessness, I presume, of the great being who sends all things, good and evil, sickness included, the case was not clear-cut ; there was so remarkable an absence of well-defined symptoms that the Dr. could not see the "remedy." At last the patient remarked that it seemed as if every breath would be the last. The remedy was found at once ; it was apium virus, which, owing to the desperate condition of the patient, was administered, I believe, in the 40,000th attenuation, nothing lower having the power to reach the case. One dose only was directed to be given. On the next morning the patient was found worse. Having had, during the night, a second dose of this powerful preparation of apis, the aggravated condition of the sick one was attributed to the second dose of the remedy administered in disobedience to the directions of the physician. No more medicine was given ; the patient, after many days of great suffering, commenced to improve, and, after six weeks' illness, was discharged from medical care. This model-case, held up for our imitation by an eminent writer, is not only a fine illustration of the effects of prescribing upon exclusive symptomatology, but suggests the very point I

desire to impress upon your consideration. The prescriber, in his report, states most emphatically that the one symptom given led to, and justified, the selection of the remedy. I will not enlarge upon the folly of the teaching which permits a human being to suffer for long, weary weeks without one intelligent effort to give relief, or upon the boldness of attributing eventual recovery of the patient from a presumed dangerous disease to the administration of the smallest possible fraction of the 40,000th attenuation of apis; I will merely state that, for years, I have not had an acute case under my charge for six weeks at a time, and that I should consider myself a disgrace to my chosen profession did I permit a patient of mine to suffer day after day, night after night, week after week, administering absolutely nothing save an occasional powder of sugar of milk, leaving the patient and friends to believe that everything within the reach of medical science was done to give the patient relief from suffering. I desire, however, to ask you under what conditions a sick one might feel as if every breath would be the last? Such a sensation might be caused by inflammatory conditions of the pleura or of the parenchyma of lungs; of substance and of coverings of the heart; of rheumatic or neuralgic conditions of any of the muscles of the chest; in hysteria; in affections of the pneumogastric nerve; in varied affections of the diaphragm, and in several other disease-conditions. Each one of these conditions varies not only in the cause and in the organs affected, but also in the very structures implicated. Now, while the curative sphere of apis embraces the cellular tissues, and serous membranes and skin, its sphere of action is not universal, and cannot possibly cover the entire range of pathological conditions suggested above, embracing structures and organs upon which it practically has no effect whatever; hence, the above crack prescription was a bit of blind, idle guesswork, and deserves severest criticism in place of praise and imitation. I cite this case for a specific purpose: to show the insufficiency of symptomatology alone either as the *fullness* of materia medica, or as a safe system upon which *alone* to base the treatment of at least those who are really seriously ill.

The TRUE homœopathic materia medica rests upon a symptomatology embracing the *verified* effects of cases of poisoning and of carefully conducted provings made with different attenuations; all these are to be interpreted in the light of the best physiological and pathological knowledge to be had at this day; we shall thus be enabled to at least *approximate* the cause of certain important drug-effects and the reason *why* certain remedies should act curatively in certain pathological conditions. A materia medica thus constructed will furnish to the student much needed light, will prove of absorbing interest, and, by uniformity of method in teaching, will enable him to take the proving of any drug, to analyze it intelligently and critically, and to draw from it correct conclusions as to the probable value, in the sickroom, of the drug the proving of which he has been studying.

Applying those principles to therapeutics and to the art of selecting the remedy in a stated case, we must throw aside for ever the notion of arriv-

ing at a reliable choice by a mere mechanical calculation based upon a superficial and hap-hazard enumeration of symptoms, half of them of no value whatever, but must carefully study the pathological and pathogenic importance of disease-symptoms and of drug-symptoms respectively ; must studiously note the organs and structures affected, so as to select remedies which have the power to act upon such structures ; and to go further, must pay due attention even to a corresponding similarity between the various stages of the pathological disease and of the drug disease. By so doing we shall be enabled to fully exhaust the magnificent resources of a *reliable* symptomatology, shall approach a truly scientific materia medica, and build up a brilliant system of therapeutics ; and, by vastly increasing our resources, and by rendering them infinitely more reliable than they now are, we shall honor our profession and ourselves.—*The Medical Counselor, Sept. 1, 1883.*



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WHAT TO OBSERVE IN CHOLERA.

THE general impression is that cholera is the easiest disease to diagnose and understand. So far as diagnosis is concerned for purposes of distinguishing it from other allied diseases, perhaps the impression is correct. But so far, as diagnosis is concerned for distinguishing its varieties, and individualizing its cases, for purposes of treatment, it is one of the most difficult diseases to deal with. The main symptoms, purging, vomiting, anuria and collapse, are so prominent, that it does not require an educated eye to tell whether a case is one of cholera or not. And these symptoms appear to be so similar in all the cases that to the uneducated, and even to the educated eye, cases of cholera look very like one another. But nothing can be further from the fact. Not only do different epidemics and outbreaks differ from one another, but even in the same outbreak there are marked differences between one case and another.

Such being the case it becomes a serious question with the profession whether different remedies are not called for in different outbreaks and even in different cases in the same outbreak. To the orthodox physician who treats disease on general principles this differentiation of outbreaks and cases may be thought to be hardly of any importance. But to the physician who treats disease on

the homœopathic principle this differentiation is absolutely necessary. We have, in order to facilitate this differentiation, jotted down the following notes relative to the points to which the attention of the physician ought to be directed in cases of cholera. We believe that whatever the views we hold regarding the treatment of the disease, such scrutinization of the minutiae of its symptoms will lead to the elucidation of its nature and causation, and may thus lead to its proper treatment.

We think the physician would be better able to observe if he keeps in view the stages which the disease in its typical form presents. These stages, as pointed out in this journal (1869), may be considered to be five in number as under :

1. Stage of Incubation, of Invasion, or of Preliminary Symptoms.
2. Stage of full development.
3. Stage of Collapse.
4. Stage of Reaction.
5. Stage of Sequelæ.

We need hardly add that every case of cholera does not run its course through all these stages. Thus in the virulent forms the first stage may be entirely wanting, or more properly speaking may so rapidly pass into the second as to be indistinguishable. And in more virulent forms still the second and third stages may be one in which death would successfully preclude the formation of the fourth and fifth stages.

The Preliminary Stage may be said to extend from the first departure from health to the time when the evacuations, ceasing to consist of the natural contents of the hollow viscera from which they proceed, become watery. The evacuations are invariably described as rice-water like. Though they generally resemble this stuff, they do not do so invariably. Rice-water has some consistency and is whitish. The evacuations in some cases can hardly be distinguished from ordinary water.

The Stage of Full Development commences with the commencement of watery stool and vomiting, and may be said to extend till the pulse becomes extinct or nearly so at the wrist, when Collapse is generally said to set in. It is in the Stage of Collapse that the greatest number of deaths takes place. It is much

easier to say when this stage ends, which is either in reaction or death, than when it begins. Collapse is the highest degree of vital prostration, only short of, but verging towards, actual dissolution. More or less of it is present from the very beginning of the second stage or the stage of full development. But as death cannot take place so long as there is pulse at the wrist, we have assigned its beginning at the time when the pulse has disappeared or is about to disappear from the wrist.

The Stage of Reaction begins with the reappearance of the pulse at the wrist. Reaction may terminate in a gradual return to health, by the restoration of the various secretions, the bile, the urine, &c. Or it may be imperfect, lapsing in collapse again. Or it may be abnormal, giving place to the Stage of Sequelæ, in which the whole system, or some particular organs, from some 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 suffer from congestion or even positive inflammation, which, if not judiciously managed, will often lead to a fatal result.

Such are the various stages which a typical case of cholera will generally pass through. There are symptoms peculiar to each stage which it is essential for the successful treatment of the disease to observe with care.

I. In the first or Preliminary Stage the physician should direct his attention to the following points :

1. In taking the history of a case the physician should not remain satisfied till he has come to the very first departure from health preliminary to the actual commencement of the characteristic symptoms of the disease. For how long this departure from health has been going on, and what its nature ?

2. In the next place, the physician should trace the cause of this departure from health, and this may be done either to some irregularity in food, or other irregularities, such as night-keeping, exposure to cold or heat or both, mental anxiety, attendance on cholera patients, using water from tanks or other sources in which cholera dejections have been thrown. As a general rule people of this country are most careless and uncleanly in their habits. Not the slightest concern is felt about the proper dis-

posal of the dejecta of cholera patients. They are allowed to go about anywhere and everywhere, mixing with food and drink, without exciting alarm or even suspicion about the disastrous consequences that might and indeed that do follow in this way. This is sometimes the manner in which, after the breaking out of one case in a house, several cases follow in rapid succession. The neighbouring tanks and even streams are sure to be polluted by this reckless disposal of the evacuations of cholera, and it is thus that the disease may spread from house to house and from village to village. It is our conviction that the dust of the streets may be thus contaminated, and may thus help in its propagation and spread.

3. The physician would find it important to note what was the very first symptom which ushered in the disease, whether it was vomiting or purging. If vomiting, what was the stuff thrown up? If the ingesta, in what state, absolutely undigested, or partially digested? Whether the vomited matter contained acid or bile or both? If purging be the first symptom, what was its character? Did it contain undigested food? Was it *fæulent* at all, or was it from the beginning watery? Was it bilious? Was it offensive? Was it preceded, attended, and followed by pains in the abdomen, colic and gripes?

4. When did the first vomiting or first stool take place, that is, in what part of the day or the night? It is generally believed that when cholera begins after midnight, it proves the most severe. Experience has not substantiated this view. But experience ought to be multiplied in order to institute a comparison between cases occurring in different periods of the day, as to their number, severity and fatality.

II. In the Stage of Full Development the following inquiries should be instituted :

1. When did the patient begin to feel loss of strength? Before or after the vomiting and purging? When did the voice begin to change, before or after the evacuations?

2. Are there cramps at all? If so when did they begin, and where? Generally, it will be found that the lower extremities are the first to suffer from cramps, then the upper, then the muscles of the abdomen and chest, and then the muscles of the face. But the physician should not be satisfied with this general rule. He

should note the precise order of the development of the cramps. He should note where they prove the severest. He should note whether the flexors or the extensors or both flexors and extensors are affected by cramps. He should particularly watch if the diaphragm and other respiratory muscles are the seat of the cramps. The heart may be the seat of cramps, and life may be extinct when they are severe or prolonged.

3. The character of the evacuations as to their quantity, color, consistency, smell, frequency, and composition should be carefully noted. The force with which they are ejected differs in different cases. Sometimes there is simply oozing out of fluid, sometimes the gush is like that of a torrent, sometimes the fluid is spirted out, sometimes comes out like a shot. Sometimes there is an alternation of oozing and gushing or spirting, &c. It should also be noticed whether the stools are passed voluntarily or involuntarily, consciously or unconsciously.

4. It is in this stage that the variety of the disease should be ascertained. Thus if the downward evacuations are predominant we have the diarrhœic variety; if the irritability of the stomach is most distressing, manifested by nausea, continued retching and vomiting, we have the gastric variety. We have seen cases in which there has been no nausea or vomiting from the beginning to the end. It remains to be seen if there are cases with vomiting only, purging being entirely absent. The gastro-enteric variety is marked by both vomiting and purging being equally frequent. In the spasmodic variety the cramps are the most distressing symptom, and are generally out of proportion to the evacuations, though sometimes they may seem to be in direct ratio to them. The inflammatory variety is characterized by a full, bounding, but not incompressible pulse, heat of the abdomen and sometimes of the general surface. When the prostration is quite out of proportion to the evacuations, when the countenance at once becomes livid or blue, the pulse rapidly fails, the voice becomes a whisper, the perspiration is profuse and clammy and seems to take the place of the evacuations, in other words, when the second and third stages mingle together and the latter predominates over the former, we have a most difficult variety to deal with, which we may call the asphyctic or the syncopal variety, according as death results from asphyxia or syncope. There is

what is called a dry variety, *Cholera Sicca*, in which collapse is said to have taken place without any evacuation, leading on, unless checked, to death.

5. In this, as in the other stages, the presence of thirst and its character should be particularly inquired after. As a general rule thirst is present, but we have seen cases, and of the most deadly description too, in which thirst has been entirely absent. When thirst is present, we should notice whether the patient wants water at frequent or at long intervals, whether he is satisfied with small quantities of water and wants it again, or whether the thirst is insatiable with any quantity.

6. We should note what effect the drinking of water has upon the existing symptoms, whether the water drunk is immediately rejected and thus tends to increase the vomiting; also whether it provokes the purging. Or whether the water taken has a soothing effect upon the stomach.

7. The mode in which the water drunk passes into the stomach, whether noiselessly or with a gurgling noise, should be noted. Also whether the water seems to be arrested in the middle of the œsophagus.

8. The patient's condition as to restlessness or comparative repose should be noted. Whether there is continual tossing about, or at intervals only. Whether there is stupor, interrupted by groans and (in children) by shrieks and cries. The cause of this restlessness should be ascertained, the patient's own version being taken, though that version may not always be correct. Very often the patient complains of excessive burning of the body generally, and of the stomach in particular, and this burning is then the cause of his restlessness. But restlessness may arise from no apparent cause. The patient tosses about because he cannot help doing it.

9. The mental condition should be carefully noted, whether he is calm and resigned, or tormented with fear of death, or with some sort of anguish he cannot express.

III. In the Algid Stage or Stage of Collapse the same observations as above ought to be made, with particular reference to the following:

1. The condition of the respiratory organs. The number and character of the respiration should be noted. As a general rule

the respiration will be found to be quick and labored. Sometimes it may be slow and sobbing.

2. The condition of the circulatory apparatus. Is there any pulse at the wrist, if not at the brachial, or at the axillary artery? The heart should be ausculted, to determine the force of the impulse and the distinction between the systolic and diastolic sounds. It is of the utmost consequence to ascertain if the collapse is due to paresis of the heart or spasm of the pulmonary capillaries and arteriöles:

3. The presence or absence of perspiration, and its character and locality when present, should be observed. The temperature of the surface all over the body should be carefully examined.

IV. The Stage of Reaction should be most narrowly watched. The choleraic symptoms may develop anew, but in normal reaction this is short-lived and indicative of returning vitality. It should be the duty of the physician to interfere as little as possible in this stage. The lamentable consequence of interference very often is the development of severe and grave sequelæ. It is natural for the stool and vomiting, if they have been persisting, or if they have returned with returning vitality, to gradually assume the bilious character, and we have seen the most hopeful cases transformed into hopeless ones by treating them as bilious diarrhœa and vomiting with drugs which have these symptoms in their pathogeneses. The physician therefore should note—

1. If the stools and the vomitings refuse to become bilious. If they do so for a long time, it is then that he should interfere.

2. If the reaction has a tendency to fall back into collapse and in what way, whether from deficient oxygenation of the blood, or from failure of the heart, or from the condition of the blood itself.

3. If the reaction has a tendency to become abnormally violent, leading to implication of important organs in congestive, inflammatory, or other morbid processes, and thus ushering in—

V. The Stage of Sequelæ. Two things are necessary to be borne in mind in the treatment of this stage. First, that there is more or less congestion in almost all the organs in every case of cholera, after reaction has set in; secondly, that this congestion is with an impoverished and poisoned blood. The blood is impoverished, having become deficient in water and in some of its

essential salts; it is poisoned, having become surcharged with certain constituents which require elimination, but which, owing to the paralysed and congested condition of the organs by which they are eliminated, have not been eliminated by them since the full development of the disease. Bearing this in mind the physician should make particular inquiries as to which of the organs are most affected. As a general rule he will find that the brain, the kidneys, the stomach, the colon, the small intestines, the liver, the lungs, the buccal cavity, the eyes, the skin, the reproductive organs are affected, and that the frequency with which they are affected will be in the order in which they have been named. We would draw the attention of the practitioner to the following remarks which we made about the sequelæ in this journal in 1869 :

The most frequent and the most formidable sequelæ are the affections of the brain and the kidneys. It is generally supposed that the cerebral derangements are consequent upon and secondary to suppression of the urinary secretion. We believe, however, that the brain and the kidneys suffer primarily and simultaneously in the first instance, and that subsequently they react upon each other. The re-establishment of the renal secretion, which opens out a safety-valve for the elimination of the urea and other deleterious products of tissue-waste, very often succeeds in relieving the cerebral organs: Hence it is that after the subsidence of the violent symptoms, the purging, the vomiting, and the collapse, the first thing that is most anxiously and with just concern looked for, is the appearance of the urine. Nevertheless it is not invariably that the restoration of the functions of the kidneys is followed by clearance of the cerebral symptoms, which may go on increasing to the extent of culminating in death, in spite of copious emissions of urine. This proves one of three things, either that the brain has been independently affected, or that its derangements have proceeded so far as not to yield to depurating processes going on in the blood, or that the urine secreted is simply the water exuded from the blood, and does not contain its proper constituents.

Next in order of frequency (under ordinary allopathic treatment) though not the next in point of gravity, are the derangements of the digestive apparatus. Hiccough, retching, bilious

vomiting and diarrhoea, tympanites, even gastritis, enteritis, and dysentery, these are the various forms which these derangements assume. Considering the rapidity with which the digestive organs, which have been the focus as it were of the disease, resume their normal state and functions, we are strongly inclined to believe that the gastro-enteric derangements which follow the reaction of cholera are chiefly due to the treatment adopted; and we are confirmed in this view by the fact that these derangements are rare occurrences under homœopathic treatment.

We have next to direct our attention to fever of an adynamic type which not unfrequently sets in after reaction, which, in fact, is an exaggerated form of reaction, being only an expression of an abnormal excitement of the circulatory system. This fever may be *sui generis*, or an accompaniment of congestion of the viscera. The latter, however, may be present without there being any fever associated with it, and *vice versa*. Nevertheless, in treating this fever, it is necessary to institute a searching examination of all the organs, in order to detect any congestive or inflammatory process that may be going on in them.

Asthenia, though not a very frequent, is nevertheless almost invariably a fatal, sequela of cholera. It seems to be a continued imperfect reaction. It is indicative of a most profound depression of the nervous system. The patient, in spite of the food that he takes and apparently digests, not only does not improve, but day by day loses ground, becomes weaker and thinner, till at last he dies as if of inanition. In the course of this, abscesses form in various parts of the body, the corneæ become ulcerated and ultimately slough out. The first sign of asthenia in a cholera patient is a congestive condition of the conjunctivæ associated with want of lustre in the corneæ, the lower margins of which will be found, on close inspection, to have become whitish, and either already invaded by an ulcer or about to be so. In females, in addition to this state of the eyes, there is very often hæmorrhage from the uterus. The parotid glands seem to be the first to suffer from the suppurative process set up in the economy. Bed sores as a rule are formed on the nates. They also form over the scapulæ. In the worst cases, these parts become sloughing and even gangrenous. The mucous membrane of the oral cavity becomes red and ulcerated. The gums be-

come spongy and swollen, and blood may ooze out, and even hæmorrhage take place from them. Cancrum oris is not unfrequently met with, and most especially in cases where calomel has been largely used.

In the treatment of cholera, in all its stages, but especially in the stage of sequelæ, the practitioner should bear in mind one circumstance which has an important bearing upon the disease, and therefore necessarily upon the management of it. This is the probable complication of the disease with the existence of worms in the intestinal canal. This is a most troublesome, and often, especially in young children, a most dangerous complication. In Bengal this is a most frequent complication too. Of late years helminthiasis figures largely in the statistics of disease of this country. It would seem that hardly any native of Bengal is free from intestinal parasites. A single dose of santonine would, we are sure, expel at least half a dozen of lumbrici from any one's bowels. We do not know to what particular cause to attribute this. We believe it is due to bad drinking water aided by the immoderate use of sweet-meats. It is a notorious fact that water in Lower Bengal, whether of tanks or of streams, has sensibly deteriorated.

OURSSELVES.

A state of arrears is the worst disease of journalism. Once in it, it is almost impossible to get out of it. It not only prevents the discussion of current topics, but it precludes the possibility of even discussing old topics with any degree of fulness, for the simple reason that there is scarcely an old topic which is not continued into the present, at least, which has not bearings with current topics. Besides, the necessity of keeping old time produces a strained and semi-paralysed condition of the editor's mind which unfits him for the due performance of his functions.

To escape from the unpleasant state of things described above we have determined to keep in abeyance for the present our promise or rather profession of regular monthly appearance. The journal will be issued in numbers as now of 40 pages each, and

the subscription will be for twelve numbers instead of for twelve months. The month of issue will be indicated on the title and the first pages only. While no promise is given of monthly appearance, we shall not cease to endeavour to secure such appearance. With more help from the public in the shape of subscriptions, with more co-operation from our colleagues in the shape of subscriptions as well as contributions to its pages, and with more promptness in the payment of subscriptions already due, the regularity of appearance of the journal will not be an impossibility.

It is a matter of congratulation that the number of regularly trained medical men recognizing the truth in homœopathy has been steadily increasing. The reformed system is being so appreciated by the public that several homœopathic practitioners are in the enjoyment of very good and lucrative practice. And yet it is sad to observe that so very few recognise the obligation they owe to the profession. "I hold every man," said Bacon very justly, "a debtor to his profession, from the which, as men of course do seeke to receive countenance and proffit, so ought they, of duty, to endeayour themselves by way of amend, to be a help and ornament thereto." The best way by which a medical man can be a help and an ornament to his profession is to publish, for the benefit thereof, his own experiences of disease and treatment.

The modern invention of periodical literature has afforded the greatest possible facility for such publication. There is, therefore, no excuse for any one to withhold, from the profession and the public, the knowledge he has acquired in his own sphere for the relief of man's estate. Such a procedure would not only be selfish, but criminal in the highest degree. There is another thing which we are compelled to notice in this connection, and that is the extreme reluctance shown in paying subscriptions. The moment a man, professional or lay, takes to homœopathy he thinks he has become one of a privileged class which ought to be exempted from all payments for homœopathic publications in this country. We think it is enough to remind these gentlemen that the burden which ought to be borne by many should not be laid on the shoulders of one.

NOTES ON CHOLERA INFANTUM.

BY BABU BRAJENDRA NATH BANERJEA, L.M.S.

I am sorry to see Babu Akhoy Kumar Dutt has criticised my paper without having carefully read it. I wrote (*Cal. Journ. of Medicine*, p. 275, No. 7, Vol. xi): "Of all authors Dr. Eberle's description of cholera infantum coincides mostly with my experience of this disease." This simple sentence should have spared my friend the trouble of writing a second paper in which he has rather displayed his knowledge of books than produced any valuable personal observations. I plainly told my friend that my experience of this disease did not tally with his notes and those of the authorities he quoted in his paper.

Akhoy Babu says, "if in discussing the symptoms of this disease I have ever had occasion to make use of such terms as *always, seldom or invariably &c., &c.*, I did not mean by them to indicate facts of absolute truthfulness or of universal constancy." And yet I have been judged harshly simply because I could not agree with him in the expression conveyed by these terms. I knew before that in dealing with scientific subjects exact expressions are always used and needed "to indicate facts of *absolute truthfulness or of universal constancy.*" How could any body know that my learned friend was neither truthful nor exact in his expressions? If Akhoy Babu had intimated this in his paper I would have been the last person to criticise him. He tried to parade his own knowledge in his paper but practically it was a paper compiled from various authors. If he were a little more careful reader and writer, he would have found out the mistakes contained in his dogmatic assertions. I shall now show from the very quotations which Akhoy Babu has used against me that there is scarcely any unanimity of opinion in all points among the authors on this subject. Thus for example, Lewis Smith says that the disease is accompanied by *great elevation* of temperature; Meigs and Pepper observe, "the temperature remains for a time *normal*—rises *slightly above the natural point* or in some few cases quite high;" Guernsey says, "the temperature of the body rises gradually and in some instances the little patient becomes exceedingly hot;" Duncan says that the disease is recognised " * * with *absence* of, or a *very moderate* febrile

heat." Then again as to Akhoy Babu's assertion that flatulence or rather a tympanitic condition of the abdomen is *always* present from the *beginning*, his quoted authorities also differ. Duncan says, "the abdomen is not tender to the touch usually. At a more or less *advanced stage* it becomes tympanitic and tense." Guernsey observes, that in *some cases* there is more or less tormina and tenesmus, but he nowhere mentions that tympanitic condition is present from the beginning. So also Meigs and Pepper, Day, Smith, West, Goodeve, Lewis Smith, Copland, Tanner and other writers are silent on this point.

Then again with the exception of Eberle and Guernsey, most if not all of the authors are silent on the unequal preternatural rise of temperature in the reaction stage of the disease. No author mentions that this symptom is a very fatal one. It will be apparent to the readers of the journal that my paper was not based on what others have written, but simply on what I had observed at the bedside. I do not see any reason why any observing physician should blindly submit to the dicta of authors. If it is a sin to express one's own independent opinions formed from facts observed at the bedside, then I confess I have committed a great and unpardonable sin in not following blindly in the footsteps of authors and book-makers.

Akhoy Babu wants to know "on what authority, save his own, Babu Brajendra Nath was justified in his rather dogmatic assertion that the disease which I (i. e. Babu Akhoy) have described is *not cholera infantum* but what West calls acute inflammatory diarrhœa or summer complaint." I asserted this on the authority of West than whom there is no better authority on diseases of children in the English spoken countries in the world. Parker of New York is another of my authorities—not to mention Dewes, Rush, Baehr, Raue, Jahr, &c., &c.

Then again Akhoy Babu says that cholera infantum is to be diagnosed in the season when it usually occurs. Dr. Pemberton Dudley says that the disease appears year after year about the middle of June and disappears about the middle of September. Duncan says, "that the disease is most frequent and fatal in the months of July and August and is much less so in January and September." Meigs and Pepper say, "in the two months of July and August when the mean monthly temperature is between 75

and 80 the mortality from cholera infantum rises to between two and four hundred and even over; whilst during the *cool months* of *January* and *February*, *November* and *December* when the mean monthly temperature is between 30 and 40, generally one, two, three or more at all reported." Lewis Smith says that the disease prevails *only in the summer months*. West and other writers agree with Smith. Condie says that though the disease prevails to the greatest extent in July or August yet cases of it *frequently* occur until late in *November*. All the *italics* are mine. It is thus apparent that the authors who have written on this disease are not unanimous on all the important points connected with it.

Akhey Babu says, "that nothing could be further from my (his) intention or more repugnant to my. (his) mind than to carry on war about a question in which a particular *name* only was involved." But should not in medical science every disease be correctly named? Formerly Typhoid and Typhus were grouped under one heading and thus caused a good deal of harm to suffering humanity. Careful researches showed how very different were the symptoms, duration and treatment of the two diseases. Right nomenclature of diseases is of the first importance. Hence it is, I tried to show from observations of an unusually large number of cases that what is generally known and described in the text books as cholera infantum is not the real disease which should be known by this distinctive name. Formerly and even now the name cholera infantum is given to a disease which resembles cholera in the severity of its symptoms. But now it is high time that this name should not be used to designate any disease indiscriminately. I have endeavoured to prove in my paper that there is really such a disease as cholera infantum identical in almost all respects with the true adult cholera. The name should therefore not be used to designate another disease which resembles cholera only in the severity of symptoms. I could not suppress laughter when I read the following lines of my learned friend Akhey Babu, "Babu Brajendra Nath's cholera infantum is not unfrequently met with in Lower Bengal during cholera seasons, especially when the latter disease prevails epidemically." Then again, "whereas by a really genuine cholera infantum we ought to understand a disease which is peculiar to infant life, whose analogue is not met with in the adult, depend-

ing as it does upon a number of causes," &c., &c. Now according to my learned friend's own unimpeachable and reliable testimony a disease in infant life does prevail during cholera epidemics which is identical with my cholera infantum (which is again a near analogue to adult cholera), but still for the sake of Lewis Smith, Meigs and Pepper, and other learned authors we must not call a spade; a spade!

Acknowledgment.

A Primer on Hygiene or Elementary Lessons on the Laws of Health with special Application to the Climate of India. By Bhoobun Mohun Sircar, Licentiate in Medicine and Surgery.

স্বাস্থ্যবিধি-বিধি। বঙ্গবিদ্যালয়সমূহের নিমিত্ত। ডাক্তার শ্রীভুবনমোহন সরকার প্রণীত। Calcutta 88-5, Mooktarām Babu's Street 1882.

গৃহ-চিকিৎসা। ১ম ভাগ। সচিব-চিকিৎসা-সূত্র। "Similia Similibus Curantur." সমঃ সমং শময়তি। শ্রীবল্লভ কুমার দত্ত প্রণীত।

Family Guide. Epitome of Domestic Medicine. Illustrated with 17 Woodcuts. Second Edition. By B. K. Datta. Calcutta 1879.

বিশ্বচিকিৎসা বিজয়। সদৃশ চিকিৎসা প্রণালী অনুসারে বিশ্বচিকিৎসা চিকিৎসা, চিকিৎসিত রোগীর বিবরণ, ব্যবস্থাকোষ, ভারত ইহতে ব্রিটন পর্যন্ত বিশ্বচিকিৎসা গতির মানচিত্র ইত্যাদি জ্ঞাতব্য বিবরণক গৃহ। "Similia Similibus Curantur." সমঃ সমং শময়তি। শ্রীবল্লভ কুমার দত্ত কর্তৃক সম্পাদিত।

The Homœopathic Treatment of Cholera. With Cases, Repertory and a Map illustrating the routes of Cholera from India to Britain. Edited by Basanta Kumar Datta. Calcutta 1879.

TREATMENT OF MEASLES.

(Translated from the French of Dr. Jousset in L'Art Medical for July 1868.)

Measles is a disease very common in our country, and is accompanied by a mortality very notable, at least in Paris. It is a prejudice to regard it as a disease which is always benign.

Measles is an eruptive fever characterized by catarrhal inflammation of the mucous membrane of the respiratory passages, and by an eruption of red pappules irregularly festooned, and separated in some points by parts of healthy skin. This eruption terminates by furfuraceous desquamation. From the point of view of treatment we have to study the *common form* and its complications; the *brôncho-pneumonic* variety; and the *malignant form*.

[The majority of English medical authors use the terms rubeola and morbilli indifferently for measles. The term rubeola was first brought into use for a disease, which though sometimes confounded with measles and sometimes with scarlatina, has now been admitted to be a distinct disease. This is roetheln, rubeola notha, epidemic roseola, or German measles of English authors. We think that as the term rubeola for designating this disease was invented by German physicians, as the disease itself was first described by them as distinct from measles, and as it has now been admitted to be an independent specific disease, the term should be restricted, as has been very properly done by Aitken, to designate the disease in question, and should never be used as a synonym for measles. The following constitute the difference between the two diseases. In measles the incubation-stage lasts about eight days, in roetheln it is twelve days. In measles the rash appears as a general rule on the fourth day, though it may come out as early as the first day, and as late as the eighth. In roetheln or rubeola the rash generally appears on the second day, and may come out on the first or at the latest on the fourth day, and lasts longer than that of measles, extending to eight or ten days, and never disappearing before four days. The complications and sequelaë in measles are both numerous and grave. In roetheln there are hardly any complications: there may be a slight sore throat, and even slight albuminuria, which

are wanting in measles, and nothing like what we have in scarlatina. The evidence of the distinctness of these diseases is afforded by the fact that neither affords a protection for the other. Hence though midway between measles and scarlatina, and partaking in a mild form of the characters of both, roetheln is in reality an independent, specific eruptive fever.—Ed.]

PROPHYLAXIS.

The predisposition to measles is almost universal in the human species, and its prophylaxis is very powerless. We have but little help from it in grave epidemics, or when it attacks patients already diseased, and among whom it will become very probably fatal.

The first and principal agent of prophylaxis, is *isolation*. This means is absolutely certain if it is complete and if it has been employed in time, the measles never developing spontaneously in our race.

Two medicaments have been used as prophylactics in measles, *pulsatilla* and *aconite*. We administer, every second day, during the whole duration of the epidemic, a dose of the 6th or 12th dilution. Hartmann says he has derived great success from *pulsatilla*. I have never derived any benefit either from *pulsatilla* or from *aconite* between brother and sister. In boarding-schools, I have had some success from *aconite*, mother tincture, one drop daily.

Infants, who have taken the medicine, have had but an incomplete measles, the fever being wanting in some, the eruption in others. This is an experience which requires to be extended.

I. *Treatment of the Common Form.*

The principal indication in the common form of measles is to extricate the patient from the fever and from catarrhal bronchitis. *Aconite* is the medicament which is almost always suited in cases where it is indicated by frequent pulse, heat, thirst, redness of the face, anxiety, and by that dry and incessant cough which is so frequently encountered in measles.

In cases where the febrile movement is moderate, the coryza violent, the thirst nil, *pulsatilla* should be prescribed in preference to *aconite*. The otalgia and the rheumatoid pains in the limbs more particularly indicate this medicament.

Aconite should be prescribed in mother tincture in doses of five to twenty drops in 24 hours, according to the age of the patient. It should not be forgotten that infants bear very well strong doses of *aconite*. [It is not often that *Aconite* succeeds in reducing the intensity of the fever. It succeeds best when there is much restlessness. When this restlessness is wanting, when in place of it there is a soporous or at least an apathetic condition, when the eruption is so abundant if not confluent as to give the face and the rest of the body an appearance of diffuse redness, *Aconite* failing, *Belladonna* will be found to be exceedingly beneficial. After each dose of *Belladonna*, which may be given every 3 or 4 hours, the temperature will markedly decline and the patient will be rapidly restored to health.—ED.]

Pulsatilla has almost always been administered from the 3rd to the 6th dilution.

The complications of the common form of measles, besides broncho-pneumonia, to which we shall return, are: *convulsions*, *excessive intensity of cough*, *otalgia*, *epistaxis*, *diarrhœa*, *diphtheria*, *gangrene*.

(a) *Convulsions* are rarely observed; this is a complication of the first day. The convulsions continue with the shiverings. This accident has a certain gravity. *Belladonna* is the principal medicament. If the paroxysm is prolonged, it should be necessary to replace *belladonna* by *æthusa*.

Chloroform by inhalations, or *chloral* by injections, administered as in eclampsia, ought not to be neglected if the convulsions are intense.

(b) *Cough* constitutes a complication when it becomes incessant. This is the malignant cough of authors. This cough is very difficult to allay: *Aconite* generally suffices to diminish this cough; but when, notwithstanding the frequency of its doses, it does not produce any effect, *coffea* in the 3rd dilution, or even in doses of some drops of the mother tincture, ought to be administered every two hours. A great irritability with cries, excessive impressionability, grinding of the teeth, and very mild convulsions, indicate this medicament.

If *coffea* fails, we ought to try *viola odorata*.

(c.) *Otalgia*. *Belladonna* and *Pulsatilla*, alternated every half hour; glycerole of *belladonna* (one gramme of mother tincture

to 5 grammes of glycerine), introduced into the ear constitutes the best treatment of this complication.

(d.) *Epistaxis*. This complication sufficiently frequent, sometimes acquires a degree of intensity which renders it dangerous. *Aconite* has appeared to me to favor epistaxis, accordingly it ought to expedite its suppression; should it fail, it should be replaced by *Ipecacuanha*, 1st decimal trituration, 25 centigrammes in 200 grammes of water, one spoonful every hour. This medicament is very sure. If the hæmorrhage becomes very strong or resists the administration of *Ipecacuanha*; we should not hesitate to plug the nasal fossæ.

(e.) *Diarrhœa* is a complication which comes on at the termination of the eruptive period. *Ipecac.*, 1st trituration, is generally the principal medicament. If the colicky pains are very strong, *Veratrum* 3 should be given by preference.

(f. g.) *Diphtheria* and *gangrene* of the mouth and of the vulva complicate only the malignant form of the disease. *Cyanide of mercury* and *lachesis* are principally indicated in the treatment of the first complication; *arsenic* and *lachesis* in the treatment of the second. The third triturations are the preferable doses.

II. *Broncho-pneumonic Variety of the Common Form.*

Ipecac. and *bryonia* constitute the basis of treatment of the bronchitis of measles. The 12th and 6th dilutions are the preferable doses; nevertheless if they are inefficacious, we ought to descend to the ponderable doses, 1st decimal trituration for *ipeac.*, and mother tincture for *bryonia*. In my practice I adhere to the medium dilutions, and when the treatment becomes inefficacious, I address myself to other medicaments of broncho-pneumonia, and in particular to *pulsatilla* 6, which appears to me to be particularly appropriate in the grave bronchitis of measles. White coating of the tongue, nausea, mucous vomiting, diarrhœa precisionize the choice of this medicament.

The catarrh of measles is intense and obstinate. It is very fatal when it is treated by allopaths. With our medicaments, on the contrary; cure is the rule. I shall therefore advise the physician to be confident and persevering in the employment of indicated remedies. I have seen cases of the broncho-pneumonia of measles continuing in the acute state for more than a month,

and cured by ipecacuanha, bryonia, pulsatilla, or any other of the medicaments for this disease.

It should not be lost sight of that the broncho-pneumonia of measles sometimes becomes transformed into phthisis pulmonalis. And then, when the fever declines, it is necessary to combat the persisting lesions and the cough with *silecea*, *sulphur*, *calcareæ carbonica*, *iodium*, and other medicaments of chronic bronchitis. The milk regimen and hygiene of incipient phthisis ought to be applied from the very beginning.

III. *Malignant Form.*

Arsenicum is the principal medicament. It ought to be alternated with *lachesis*, which corresponds to the malignity and the livid exanthem which characterise malignant measles.

We have previously indicated the treatment of diphtheria and gangrene which so often complicate malignant measles.

We advise the exhibition of *sulphur* 30, two doses daily, four days every week for two months during convalescence, in order to prevent the development of scrofulous affections which develop so frequently in the course of the first year. After measles, hygiene ought to take a considerable account of the pernicious influence of measles in the development of scrofula.

Measles does not demand, during the period of desquamation, as great precautions as scarlatina; and, in general, we allow our patients to go out after three weeks.

TREATMENT OF VARIOLA OR SMALL-POX.

(Translated from the French of Dr. Jousset in *L'Art Medical* for Sep. 1883.)

Variola is an eruptive fever characterized by umbilicated pustules. It presents for study a *benign form*, a *common form*, a *malignant form*, and an *anomalous form*,—the varioleide or variola modified by vaccine.

The *prophylaxis* of variola rests almost entirely upon the peculiarity which the eruptive fevers have of never attacking but once the same individual.

Inoculation, which was attempted to be rendered as benign as possible, was the means generally employed before the discovery of vaccination. This method had two inconveniences: the first was that it sometimes developed variola very grave and even fatal; the second was that it created around each inoculated patient a focus of small-pox.

Vaccination has none of these inconveniences. It ought therefore to be applied upon a large scale.

Infants ought to be vaccinated at the second month, unless the danger of contagion obliges physicians to vaccinate earlier.

Vaccine preserves from small-pox from the 9th day of its inoculation.

Re-vaccination ought to be practised every five years, and more frequently in times of epidemics.

The first triturations of vaccine have been administered under the name of *vaccinium* as prophylactic treatment; the results announced by certain physicians have need to be confirmed by fresh experience.

[It is unquestionable that *vaccination* does act as an effective prophylactic; but vaccination with the humanized virus is attended, and nowadays would seem to be more generally attended, with disastrous consequences. We have known instances in which the health of the child after vaccination has completely broken down, suffering from fever, diarrhœa and general marasmus. Oftentimes the system becomes invaded with positive syphilitic symptoms, resulting in local lesions of a destructive character. Under these circumstances, vaccination direct from the calf ought to be preferred.

In the case of persons already exposed to the contagion of small-pox, vaccination can hardly be of any use unless it is performed at least eight or nine days before any symptoms of actual illness make their appearance, in other words, as Mr. Marson has shown, within three days of the infection. In these cases the exhibition of the vaccine virus internally, or *internal vaccination*, as it has been called, has been said to have been attended with the most happy results. The lymph has been administered either pure, as by Dr. Landell, or in attenuations (3rd) as by Dr. Kaczkowski. Though Dr. Jousset seems to doubt the efficacy of this internal vaccination, others such as Drs. Rummel, Pulte and Bayes have borne testimony to its utility.—ED.]

Curative Treatment.

I. *Common Form.*—There are four principal medicaments, aconite, rhus toxicodendron, opium and tartar emetic.

(a.) *Aconite.*—This medicament is indicated by the violence of the febrile movement in the first stage and by insufficiency of suppuration in the third.

Shuddering chills in the beginning, increased temperature, large and frequent pulse, redness of the face, general sweats, agitation and anxiety, such are the symptoms which indicate *aconite* during the first stage of variola.

Aconite is suitable also at the stage of suppuration; we have seen in fact that the medicament was very important in the purulent diathesis. Now the febrile movement, the state of the vital energies and the suppurated pustules recall to mind the purulent diathesis. *Aconite* ought to be prescribed in mother tincture, a gramme in 24 hours, or in trituration, 25 centigrammes of the first decimal in 24 hours.

(b.) *Rhus toxicodendron.*—This medicament is indicated during the period of suppuration, at the moment of the swelling of the face. The violence of the febrile movement, the considerable prostration, the co-existence of chill and heat, abundant salivation, swelling of the face indicate this medicament. This medicament has been prescribed from the 3rd. to the 6th dilution.

(c.) *Opium.*—This was the favorite medicament of Sydenham. It is indicated by the violence of the fever and frequent drowsiness. The first triturations are preferable.

(d.) *Tartarus emeticus.*—This medicament is indicated at the beginning of the eruption; the eruption on the skin and that in the mouth, spinal pains, and vomitings testify to its homoeopathicity. Somnolence, as in opium, is an indication for tartar emetic.

(e.) *Saracenia.*—This medicament has never given a real success. The natural cure of the varioloide on the 8th day of the disease has given rise to this illusion.

II. *Malignant Form: Hemorrhagic Variety.*

(a.) *Hæmorrhagic variola* is almost always fatal. *Phosphorus*, *læchesis* and *secale cornutum* are the principal indicated medicines.

Phosphorus is indicated by multiple hæmorrhages, by pronounced collapse and by a relatively accelerated pulse. I am indebted to it for good success.

Lachesis and *secale*, which correspond to multiple hæmorrhages and to failure of the vital energies, have not had any success in the great epidemic of Geneva, described by Dufresne.

[In the hæmorrhagic variety *Humamelis* and *Sulphur* should not be forgotten. With the former Dr. Hale obtained benefit in a case of varioloid in which purpuric symptoms had supervened. The latter is strongly recommended by Dr. Teste.—Ed.]

(b.) *Non-hæmorrhagic variety.*—*Arsenicum* is the principal medicament. It is indicated by great weakness, with coldness of the extremities, swelling of the face, great anxiety and dyspnoea; pulse feeble, small, rapid, and irregular; and cold and viscid sweat; agitation (restlessness) and a sensation of internal burning.

Lachesis is necessary, when the collapse is more advanced, when the state of syncope, cold and viscid sweats are more pronounced.

Muriatic and *phosphoric acids* are suitable when there is intense and involuntary diarrhoea.

Carbo Vegetabilis.—After arsenic and lachesis in confirmed collapse.

Hygiene.—The hygienic care of the patient has a great value in the treatment of variola. The very elevated temperature of the room of the patients, the numerous blankets with which they were covered to favor the eruption were pernicious practices, and Sydenham has owed a part of his reputation as physician by their suppression. He defended the practice of keeping patients well covered, but he caused their beds to be changed every day, and to maintain a moderate temperature in their chambers.

J.-P. Tessier has gone even further than Sydenham: He has caused to be lifted and taken out of their beds to expose them before an open window all variolous patients who have the power of walking or who can keep themselves seated. I have seen, in the garden of the hospital, variolous patients walking supported by two nurses. This method of aeration of variolous patients gives excellent results; it diminishes hyperthermy, and combats the cutaneous asphyxia which is the invariable cause of death in confluent small-pox.

[J.-P. Tessier did not go beyond, but only followed Sydenham. Of the management of the pre-eruptive stage, or period of separation as he called it, Sydenham thus spoke: "We must take especial care, lest the ebullition rise too high. This it may do under the weight of blankets, under the over heated state of the air in the apartment of the patient, or under the use of heating medicines or cordials. All these must more particularly be guarded against when the patient is in the prime of life, when he has raised the natural heat of his blood by generous liquors, and, lastly, when the season of the year is early, i. e., spring or the beginning of summer." Of the management in the eruptive stage he thus speaks: "Moreover, if the season be summer, and the weather be hot, even for that time of the year, and if the pustules be few, I for one see no good in keeping the patient continually stifled in his bed. I let him better get up for a few hours every day, provided only that the places he goes to and the clothes he puts on, ensure him against any harm in the way either of cold or heat. Give your patient a holiday from his bed, and his ailment will run its course in a shorter time and with less trouble than if he had continually been nailed down to it."—ED.]

We are not partisans of applications of mercurial ointments and of the mask with plaster of Vigo for the purpose of aborting the development of pustules in the face and thus of preventing the cicatrices which follow confluent small-pox. This method prevents the regular development of the eruption and it appears to me to have several times determined the death of the patient.

The *opening and cauterization of pustules*, which are seated on the free borders of the eyelids or upon the conjunctiva, is, on the contrary, a commendable practice, because it prevents extremely grave blepharitis and ophthalmias, which frequently terminate in the destruction of the eye.

In these latter years a most phantastic means has been extolled, the treatment of variola in *absolute darkness*. Physicians, who have employed this method, pretend that the eruption is extinguished before passing into suppuration, and that cases the most grave terminate happily. These facts require to be verified. But it must not be forgotten that in order to succeed the darkness must be absolute, and that the light of a single lamp is even too much.

EDITOR'S NOTES.

LATE TYING OF THE UMBILICAL CORD.

Dr. Alcorn in his resumé of the experience of various writers on this subject proves that children whose cords are left uncut until after the placenta has been expelled, thrive much better than those in whom it is cut before—*New York Medical Times*, Nov. 1883.

HYDROCHLORATE OF PILOCARPINE IN HICCOUGH.

Dr. Ruhdorfer had a severe case of hiccough, and having failed to cure it by known remedies, he resorted to the injection of a solution of hydro-chlorate of pilocarpine, 3 centigrammes in a gramme of water. The hiccough was cured as if by magic and has not returned since.—*British Medical Journal*, Nov. 17, 1883.

PRACTICAL MALTHUSIANISM.

According to the tribal laws of Australasian aborigenes for the occupation of hunting grounds, the families are limited to two children. So after the birth of the second child the male parent is made to undergo an operation by which a permanent opening is established in the inferior wall of the urethra just anterior to the scrotum and through which the semen escapes without finding its way to the vagina. How did these savages come to such a practical knowledge of physiology?

HOW TO STOP HICCOUGH MECHANICALLY.

Dr. W. C. Shaw, of Cincinnati, writes: Place the tips of the fingers of both hands in position of complete supination against the abdominal muscles, at the lower and outer junction of the epigastric, with the hypochondriac region. With the finger-tips in this position, firm and very gradual pressure is to be made backward and upward against the diaphragm. This pressure should be continued for some little time after the diaphragm has ceased its spasmodic contractions, when the fingers should be very gradually withdrawn.—*New York Medical Times*, Nov. 1883.

SIGN OF DEATH,

Dr. Larcher of Paris thinks the following to be the most certain and earliest reliable sign of death.

It consists in the prosence of a blackish, at first not perceptible, spot on the sclerotic, which grows darker and darker. It is first seen on the outside of the pupil, then shows itself nearer and nearer the inner corner, draws closer to the centre of the organ, and at last unites and forms an elliptical segment on the lower convexity of the eye. This is said to signify the change from rigor mortis to putrefaction; it is "the sign of death, the herald of decay."

DISINFECTANTS.

Dr. Koch, by his numerous experiments, found Carbolic acid when dissolved in water, oil or alcohol to be of no efficacy against the micrococci or bacilli. Sulphurous acid was found to be powerless against spores. Bacilli or micrococci when exposed to the fumes in a box, were killed within twenty minutes, but were very little influenced or not at all, when exposed to the fumes in a room at the usual temperature. Chloride of Zinc showed itself just as harmless. Only the following remedies are of some value as disinfectants: corrosive sublimate, chlorine, bromine, iodine. Bromine in form of vapour is more rapid in its action than chlorine or iodine.—*New York Medical Times*, Sept. 1883.

THE ANATOMY OF HÆMORRHOIDS.

At a meeting of the pathological Society of London, held Nov. 6, Mr. Reckel said that there are two views with regard to the structure of hæmorrhoids; according to the one they were varices, according to the other they were vascular growths (angiomata). He having examined about thirty specimens comes to the conclusion that as a rule a pile consisted of a layer of mucous membrane enclosing some submucous tissue in which lay enlarged veins with thickened walls; in one specimen only did arteries contribute in any sensible degree to the bulk of the pile, and in one case also the pile contained some muscular tissue. The epithelium on a pile ceased, at a certain point, to be columnar, and became squamous; the transition was not gradual but quite sudden.—*British Medical Journal*, Nov. 10, 1883.

ADMINISTRATION OF QUININE.

Dr. Young, in his "Notes on the Administration of Quinine", suggests the following in *the Practitioner* for October.

I. Never to give quinine in antipyretic doses in cases where the bowels are confined and the secretion of urine is scanty.

II. In cases where it is being administered and an increase of dose is desirable, this may be safely done if the skin, bowels, and kidneys maintain their normal functional activity.

III. In many cases of remittent and intermittent fevers, the combination of the drug with chloride of ammonium or a salt of potash or soda is likely to be more easily tolerated as well as more useful than if it be administered in a pure form.

IV. During the administration of quinine, should a headache come on or increase in intensity, the case requires the most careful attention.

CONTAGIOUSNESS OF CHOLERA.

"A SURGEON-MAJOR in the Indian army writes to us," says the *Brit. Med. Journ.* for Oct. 27, "with regard to Dr. Koch's report on cholera, that he is aware of the details of an instance in which a native swallowed for a consideration, on successive days, some of the matter vomited by a patient suffering from well-marked Asiatic cholera, and, subsequently, a quantity of the rice-water stools just discharged by a patient suffering from Asiatic cholera. In neither case were any bad results perceptible. The statement is startling in more than one respect, but our correspondent vouches for the fact, which is well known to other medical officers of the army besides himself." It is a pity, it is not stated who this native was, whether a servant in a hospital attending on cholera patients, or any ordinary man. If the former, he was probably hardened against the disease, by constantly handling and thus being inoculated with the germ of the disease. If the latter, was it courage that prevented the system from succumbing?

PELIOSIS RHEUMATICA OR PURPURA RHEUMATICA.

According to Dr. McCall Anderson, the disease is generally met with in young persons under thirty and in those who have apparently been previously in good health. The disease is characterised by pains in the joints, with swelling and slight fever. After a few days a crop of hæmorrhagic spots comes out, and they pass through the same stages as in a black eye. The disease is often kept up, owing

to the development of successive crops of spots, each crop being accompanied by a recurrence of the fever and joint-affection. The whole duration of the disease may be from weeks to months, or rarely even years. Sometimes the spots may be mistaken for scurvy; but the previous diet of the patient, together with the state of the gums and the absence of anæmic pallor, will help one to diagnose the affection. Sometimes the disease is complicated with the development of bullæ, and a case illustrating this complication has been noted. The extravasations of blood are sometimes preceded by little solid elevations, or papules, so that the disease seems to correspond with the eruption described by Willan as "lichen lividus."

RESULTS OF THE FRENCH CHOLERA MISSION TO EGYPT.

The discharges were found to consist of epithelial granulations, with well-marked granular disintegration of the cells. Microbes were found in the intestines in great abundance and variety in only *prolonged* cases; in rapid cases, microbes could hardly be tinted; the microbes found were the bacteria and micrococci, even the long bacteria resembling the microbe of tuberculosis, only a little shorter, and the microbe of glanders, which last, Prof. Koch believes, is the specific microbe of cholera. The blood was black and ill-coagulated, the red globules falling to the bottom, and the clear serum above badly coagulated. Under the microscope the red corpuscles were spread out and not in rouleaux, the white corpuscles granular and increased in number. The serum of the blood was slightly *acid* in reaction. Dogs, fowls, turkeys, quails, cats, rats, mice, and a monkey were made to swallow the dejections, the blood and organs of cholera patients, but without any result. Pigs were fed with the rice-water stools, but they continued to be as well as ever.

Thus it will be seen that the results of the French mission are not in accord with those of the German.

ACTION OF ALKALIES ON THE SECRETION OF BILE.

In a number of experiments made by Lewaschew and Klikowitsch on dogs, the mineral waters Vichy, Carlsbad and Essensbowksy and several other artificial alkaline solutions were used. All of them increased the quantity of bile and rendered them more fluid and watery. Just after the introduction of any one of them there was transient diminution followed by a marked increase in the quantity

of bile. This action has the beneficial influence of clearing the gall bladder of any stagnant bile.

The bicarbonate of sodium had a quicker, powerful and more lasting effect than the sulphate or any other alkaline solution. The amount of action also materially depends on the weakness of the solution, up to a certain point of which it acts more powerfully than strong solutions.

Vichy, which contains the smallest quantity of sodium bicarbonate, acted more powerfully than either Carlsbad or Essentowksy. The temperature of the water has very marked effect also upon the secretion of bile. The action of Carlsbad or Essentowksy had much the same effect as that of simple hot water. A very powerful effect can be produced by any mineral water or artificial solution of salt if taken in smaller quantity and used after heating.—*Practitioner*, Oct. 1883.

CHRONIC OTORRHOEA FOLLOWED BY THROMBOSIS OF THE LATERAL SINUS.

The *British Medical Journal* for Nov. 24, 1883, gives the following interesting case, from which the danger of sudden stoppage of otorrhoeal discharge will be evident:

Elizabeth B., aged 16, had had discharge of pus from both the ears from an attack of scarlatina since she was nine months old. The discharge from the left ear suddenly ceased, followed by great pain. On examination the membrane tympani was found congested, with no visible perforation. Later on the membrana tympani was found bulging and therefore it was perforated. Notwithstanding all efforts to lessen the pain it continued, and at last the patient died from a sudden attack of rigor.

Post mortem examination showed nothing abnormal in the brain, except at the left lobe of the cerebellum where it was in contact with the lateral sinus. The left lateral sinus was almost filled with clot, and there was an exudation of semi-purulent fluid from the cut end of the jugular vein, which was of a dark reddish brown color. On opening the roof of the tympanic cavity, it was found filled with foetid pus and the membrana tympani appeared to be wholly destroyed. A polypus about the size of a pea was found projecting into the meatus from the inner wall of the tympanum. The mastoid cells were in a state of caries, and filled with foetid pus.

CROUP AND DIPHTHERIA.

These diseases have been thus compared by Dr. J. R. Marshall, of Dublin :

MEMBRANOUS CROUP.

1. Is a sthenic or acute inflammation of the mucous lining of the bronchia.
2. Is ushered in with violent functional and constitutional disturbances, such as cough, fever, hoarseness, with dyspnoea.
3. Duration is comparatively short, runs a rapid course—from five hours to two or three days.
4. Is not contagious or epidemic.
5. Is peculiar to children under ten years of age.
6. No fetor of breath.
7. Breathing short, with slight expansion of chest, and livid countenance.
8. There is no ulceration of mouth or throat.
9. Termination in resolution (recovery), or in death by apnoea.

DIPHTHERIA.

1. Is an asthenic or subacute inflammation of the mucous lining of the fauces, larynx, pharynx and nares.
2. Comes stealthily, less violent, without cough or dyspnoea.
3. Duration is comparatively long, runs from five to twenty days.
4. Is epidemic, and by many authors considered contagious.
5. Is common with all ages and sexes.
6. Always a bad fetor of breath.
7. Breathing longer and deeper, with greater expansion of chest and less lividity.
8. There is often extensive ulceration, which may cause septicæmia and entire arrest of assimilation and nutrition, and failure of the heart's action as a consequence.
9. Termination in resolution (recovery), or in death by asthenia.

DR. HALE ON AMYL NITRITE IN CHOLERA.

This powerful excitator of the cardiac nerve centres has been found of great value in fainting, nervous shock, collapse from *angina pectoris* or threatened cardiac paralysis. There is no reason why it should not be of invaluable service in the collapse of cholera, when *samphor* and other remedies fail to excite the vital forces.

During the inhalation of *amyl* I have seen the pulse return to the pulseless wrist, the heart's action restored—after the ear could not detect its sounds; the warmth return to icy extremities, and the color to the Hippocratic countenance.

I do not claim that it will restore the patient who has sunken into the cholera collapse, but I believe it will revive him and keep him

alive while more radical remedies act. By restoring the circulation, it restores the powers of the absorbent system, without which no medicinal agent can enter the blood or reach the centres of organic life.

To substantiate this recommendation, I will give you the experience of Dr. N. K. Morris, of Denver, in a letter to me of recent date.

"Dear Dr.—In reading your article on *Amyl Nitrite* in Therapeutics, there is no mention of its use in the collapse or coldness of Cholera Infantum. I have recently used it in two cases with the most surprising results.

The first case, child of eclectic doctor, who, with two physicians of his school had given the child up to die, the mother requesting that I should be called, found the child cold as a corpse from head to feet, pulseless, eyes glazed, respiration 60 per minute and intermittent, a clammy sweat on body, and odor of death; bowels, thin watery stool every 20 to 30 minutes; had been in the condition of coldness for three days, with only temporary warmth under stimulants. They had been giving Fowler's solution and stimulants, etc. Gave *arsen.*, 3x trit., 2 grs. every 30 minutes, and *amyl nit.* by inhalation. In 20 minutes there were signs of returning warmth, and in an hour the surface was in a perfect glow, which remained for three hours. When the coldness began to return, a few breaths of *amyl* soon restored the warmth of the surface. At one time we allowed the coldness to continue, when it became as severe as at first, but the *amyl* soon restored the heat; this lasted for three days, the last day only using the *amyl* once in 5 or 6 hours. The second case was one of acute collapse, where the child had been sick only for 12 hours. I found the pulse imperceptible with every symptom of death. In less than 20 minutes there was a complete reaction under *amyl* and ultimate recovery."—*New York Medical Times*, October 1883.

DEATH FROM CHOLERA OF DR. THUILLIER, PRESIDENT OF THE
FRENCH CHOLERA MISSION TO EGYPT.

M. Roux, one of the four members of the French cholera mission to Egypt, thus writes to the *Lancet* (Oct. 29) of the death from cholera of Dr. Thuillier, president of the mission. For more than fifteen days before the attack, Dr. Thuillier had not seen a single case of cholera. Hence if the attack was due to contagion, the stage of incubation must have occupied this length of time.

"Thuillier and Nocard went on Friday, the 14th, to Tanta, to examine some oxen that died from the cattle-plague; they returned

on Saturday, and on Monday, the 17th, they went to the lazarret reserved for animals at the slaughter-yard, to get some bullock's blood for experiment. Thuillier had a loose stool in the morning; he was, however, lively and in good spirits, and took a bath in the sea, and in the evening we took a drive together. At dinner he ate with a good appetite, and went to bed about half-past ten. He soon fell asleep. About three o'clock in the morning he had another stool, and not feeling very well, he entered his companion's room, saying, "I feel very ill," and then fell prostrate on the floor. Strauss and I carried him to his bed: his face was pale and covered with sweat; his hands were cold, like those of a man in an attack of syncope. We first thought he was suffering from simple indigestion. He soon recovered, took a small draught of opium, and went to sleep. I slept in the same room with him. At five o'clock he had a copious watery stool. I put him to bed. He vomited his dinner undigested, just as he had taken it the day before. Feeling somewhat relieved, he fell asleep again, after having taken another dose of opium. At seven o'clock he appeared to me to be worse; he complained of feeling cold, and had another motion. Strauss and I were obliged to hold him up to prevent his fainting. From this moment everything passed involuntarily; and, in spite of the most energetic treatment, at eight o'clock he was already moribund, with cramps of the muscles of the legs, of the thighs, and of the diaphragm, with alteration of the countenance; nothing, in fact, being wanting to complete the picture of cholera of the most terrible description. We employed strong frictions. All the French and Italian doctors were present. Iced champagne was given freely, and subcutaneous injections of ether were resorted to. In short, everything that could be devised was done to prevent a fatal issue. The respiration became oppressed, but thanks to the vigorous rubbing, the temperature of the body was kept up. About noon there was a slight change for the better; the pulse at the wrist could be felt. At two o'clock the respiration was more laboured; the motions still passed involuntarily; the pulse had disappeared. The respiration and the circulation were kept up only by the injections of ether and by champagne. The features were altered, but not quite choleraic, and notwithstanding all our exertions, he expired on Wednesday morning, the 19th, in a state of asphyxia, which lasted more than twenty-four hours."

THE SIGNIFICANCE OF HÆMORRHAGE DURING THE EARLY MONTHS
OF PREGNANCY.

According to Dr. Grandin (*Am. Journ. Obstetrics*, Sep.) the causes of hæmorrhage during the early months of pregnancy are: Menstruation; erosion of the cervix; diathetic diseases, such as scurvy and hæmaphilia; partial separation of the secundines; congestion at the menstrual epoch; frequent and violent sexual intercourse, particularly at the time when the menses might return; cancer; fibroids; polypi; endometritis existing at the time of conception; cystic disease of the chorion; and (in the multipara) laceration of the cervix. Menstruation may recur two or three times after conception. The flow, however, must be limited in amount, else the freshly attached ovum would run great risk of being washed out in the current. Cases of menstruation, throughout the course of pregnancy, must be looked upon with suspicion, as far as the inference that the blood comes from the uterine cavity is concerned. There are other causes which will explain satisfactorily the occurrence. In case of erosion of the cervix the discharge is usually reddish-white or reddish-yellow in color, although it may assume the magnitude of an alarming hæmorrhage. The cervix exposed by the speculum, a reddish spot of varying size will be seen, from which the blood oozes. The application of nitrate of silver (3j-3j) here suffices for a cure. It is a function of the uterus to receive and give exit to blood every four weeks, possibly itself add to it; and, this being its habit, it is but natural for it to endeavour to keep on fulfilling the function, even though containing an impregnated ovum. Since, however, the cervix, as well as the body, becomes congested, it may fairly be presumed that the hæmorrhage comes from the cervical canal alone, particularly in cases where the gestation has advanced to nearly the fourth month. Sexual intercourse is a frequent cause of hæmorrhage during gestation, especially among the newly married. Coition attracts blood to the genitals, and brings into play a greater amount of congestion than is normally present. Sometimes the penis impinging on the cervix shocks the uterus, and leads to a partial separation of the secundines, and the consequent hæmorrhage. Epithelioma, fibroids, and polypi cause hæmorrhage the same as during the non-gravid state. If there is sufficient bleeding to endanger the mother, the indicated treatment is the same as if pregnancy did not exist. Endometritis, existing at the time of conception, gives rise to irregular discharges, varying in color from red to yellowish-red and white. These generally occur toward the end of the third month. An examination will not show the cause of the trouble. We can only

diagnose the endometritis from the previous history of the patient. Cystic disease of the chorion may cause hæmorrhage. Symptomatic of this affection is a larger uterus than corresponds to the date of gestation, an increase in the early subjective accompaniments of pregnancy, and, at about the third month, at times before, the occurrence of a reddish, watery discharge, containing portions of the degenerated villi. This last point establishes the diagnosis with certainty. When the hæmorrhage is profuse, it is probable that there is no longer a living embryo, and thus the indication for treatment is to empty the uterus. Laceration of the cervix may give rise to hæmorrhage.

CLINICAL RECORD.

A Case of Cholera.

REPORTED BY BABU HEM CHANDRA RAI CHAUDHURI, L.M.S.

A Hindoo lady, aged 60, went on pilgrimage to the different shrines of the North West and while returning to Calcutta, halted at the Mokamah station on the morning of Saturday, the 7th April 1883. At this place cholera was then fearfully raging with epidemic virulence. Perhaps she contracted the disease here, because from the very evening she began to feel unwell and had two or three motions, which though loose were still not of such a character as to arouse suspicion. In the train she had one more stool and arrived home on the morning of the 8th April quite exhausted, and had to go to stool, just after her arrival. Even with this stool she passed water; she had another stool after this and did not pass urine. Without telling anything about her complaint to any member of the family, and thinking it to be nothing serious, she bathed. After bathing the disease took a more serious turn and had a stool at 8 A. M. profuse and watery, no urine was passed with the stool. *Camphor* \mathcal{Q} was given.

9 A. M. one stool, watery. *Camphor* \mathcal{Q} .

At 10-30 A. M. she had another stool of tolerably large quantity. I saw her at this time. Pulse fair, and vomited a little watery mucus. *Camphor* \mathcal{Q} was continued.

At 11-15 A. M. Stool like rice-water as before.

11-30 A. M. Stool copious and of the same character. *Camphor*. A little water was vomited after 2 or 3 minutes.

12 M. One stool and vomited once. Two more copious stools at an interval of five minutes, pulse weak. *Veratrum* 6.

12-45 P. M. One stool and vomited once, slight cramps in the legs and feet. *Veratrum* 6.

1 P. M. One copious stool about half a powah. The stools are all painless. Pulse weak. *Veratrum* 6.

1-45 P. M. A small quantity of water was given to drink, but it was immediately after vomited.

2-50 P. M. A copious stool about half a seer. Pulse thready. *Veratrum* 6.

4-30 P. M. Pulse almost imperceptible at the wrist. *Acco.* \mathcal{Q} .

Then she had frequent small stools. Head and body warm but the extremities were cold. Dr. Sircar, who came to see her about

this time, advised the application of cold water to the head and chest.

5 P. M. *Aco Q.* was repeated; the stools though not perceptibly less in number were in very small quantity. Burning of the body and very great thirst; to take ice *ad libitum*; apply cold water on the head and body and heat to the extremities.

7 P. M. Symptoms all the same. *Ars.* 12.

9 P. M. The same as before. The cramps are very slight, now and then. *Ars.* 12.

1 A. M. The symptoms same as before, with slight difficulty of respiration. *Acid Hydrocyanic G.*

3 A. M. Same as before. The difficulty of respiration still continuing. *Acid Hydrocyanic G.*

4 A. M. A copious stool. The symptoms are worse, formerly she could speak a little but now almost no voice is heard. Little drowsy.

5 A. M. Another copious stool, and in the interval had several frequent stools. *Ars.* 6.

5-30. The stools are very small in quantity but not so frequent. Other symptoms are all the same.

9th April 6 A. M. Removed to the river side.

8 A. M. Patient seems better; pulse distinctly perceptible at the wrist. Much retching and little vomiting; burning and thirst as before. Had no stool. Ice was given. *No medicine.*

During the whole day she continued in this state. Dr. Sircar saw her in the evening, and approved of the discontinuance of medicine. Had one stool immediately after we came away and once in the night; consistency thicker and of a slight yellowish color. Diet, *Sago water.*

10th April. The same as on the previous day, no stool. Brought out a large round worm from the mouth. To have *Cina* 30. Diet, *Sago water and Gandhal soup.*

11th April. Burning of the body less, passed water yester-night. During the day time also passed water twice, profuse in quantity. Doing well. Diet, *Sago water and Gandhal soup.*

After a few days she was brought back home from the river side.

Remarks.

In this case the medicines prescribed evidently did no good. The recovery of the patient was due most probably to her removal to the river side. We have had instances in which such removal, and even removal from one house to another, was followed by amelioration in the condition of the patient and ultimate recovery.

A Case of Sciatic Neuritis.

UNDER CARE OF DR. M. L. SIRCAR.

This was a good case, and the patient has furnished us with the following clear account of it :

“ On Friday the 5th August last, I felt a little pain in my left knee joint. I took it to be an ordinary pain from cold or constipation of the bowels. On the following day the pain increased a little, I applied hot water fomentation to the part and wrapped it round with a piece of flannel. This gave me no relief. On the next day the pain went on increasing, I could not walk easily. I repeated the fomentation, but it did me no good. On the following day it made me restless. I could not walk, I was obliged to confine myself to bed, and in the lying posture I felt comfortable. I had recourse to a Native Kabiraj's treatment, he prescribed *mash* oil and old ghee mixed with fowl egg and rock salt to be rubbed over the part affected. I continued the process for a week but got no relief, on the contrary the pain became so violent and acute, that it made me restless and even in the lying posture I could not get relief. I had then to seek for other medical aid, and placed myself under the treatment of two allopathic doctors, who treated me for 11 days. They first prescribed castor oil, hot water fomentation, and liniments to be rubbed on the part affected. I applied the same for a week but it did me no good. They then directed me to apply a mustard plaster to the part affected, but no relief ensued. The pain gradually increased and spread from knee-joint up to the waist and down to the ankle, it was so tormenting, that life became burdensome to me. I found no rest on any side even in the lying posture. Both external and internal applications having failed, they had recourse to *Morphia* and *Atropine* injections under the skin of the buttock, the relief was temporary and did not last long.

“ In utter hopelessness and despondency I had recourse to your treatment in which I had very little, or in fact, no faith before. You were pleased to prescribe on the 23rd August last *Rhus Tox.* 6, but it gave me no relief. On the same evening you changed the medicine and gave *Coloc.* 6, it gave some relief but it did not last long. The same medicine was continued the next day, but in fact it did make no change for the better.

“ On the 25th August you gave me *Aco.* 6, it had no effect.

“ On the 26th, in the evening, when the pain was at its highest pitch you were pleased to prescribe *Sulph.* 12. The moment a dose was taken in, it worked like miracle. I felt as if the hell-fire that was burning within me was extinguished at once by a heavy shower.”

Remarks.

To the above statement we have to add the following to complete the description of the case: Previous to the attack the patient had exposed himself much to the sun and rain, having to superintend the building of his house, often in the sitting posture with the thigh bent upon the leg. The pain commenced in the popliteal region, which became painful on pressure especially in the middle. The pain in the course of a few days, while under allopathic treatment, spread along the course of the sciatic nerve at first downwards to the ankle and then upwards to the point of its exit at the buttock. The nerve was painful along its whole course to the ankle, but more particularly at the popliteal region where it is superficial. The pain was continuous day and night, but used to be worse in the evening, depriving him of sleep till midnight or even beyond. Notwithstanding all this suffering there was no fever. No history of syphilis.

Sulphur was prescribed, because the pain was aggravated in the sitting posture, or more properly when the patient sat on the tuberosities of the ischia. It had to be continued for some days, for it was found that discontinuance of it would bring back the pain, though in a very mild degree.

A Case of Choleraic Diarrhœa in a Child.

REPORTED BY BABU JADU NATH MUKERJI.

H—, 3 years old, the child of a Kaviraj, began to pass loose stools from 4 P. M. of 24th Nov., while he was playing lustily, without any apparent illness.

I first called to see the child at about 1 o'clock in the morning. I found him sleeping soundly and was told that he had several stools up to this hour. The last stools were watery, containing flocculi, as in cholera. After the three first watery stools he had 2 drops of *Camphor* given to him, since when the stools have become scanty, though of the same character. Several thread worms were observed with the stools. Pulse was full and excited. No urine since evening. Ordered to have another dose of *Camphor* if necessary, and a dose of *Cina* after that.

25th Nov. 8 A. M. Had three or four stools since I saw him last, they were painless, and consisted of serum and shreds of epithelium. Had one dose of *Cin.* 6. Temp. 96.5, although the pulse was quicker and fuller than natural. Retching at times preceded by cough. Ordered *China* 30, to be repeated if necessary.

11 A. M. Saw him with Dr. Sircar; the father said that since he took *China* 30, there was no regular motion but some oozing of mucus from the anus occasionally. The cough and retching continue as before, made water once in the morning. Dr. Sircar suggested *Ipecac.* 6, should the retching persist.

Evening 6 P. M. Involuntary oozing from the anus continues, retching less. Had 2 doses of *Ipecac.*

26th. Morning. Stools greenish, retching few and far between. Temp. continued subnormal throughout yesterday, now it is normal, *Ricinus* 3.

Evening. Had 2 doses of *Ricinus* without any perceptible benefit; tip of the nose red. *Calc. c.* 6.

27th. Morning. Report came this morning that he had no stool since he took *Calc. c.* 6. one dose—no more redness of the nose visible.

From this day we ceased our attendance and the child required no further medication.

Remarks.

Redness of the tip of the nose associated with greenish stools, and the fact that the child had grown rather rapidly, led us to the selection of *Calcareæ*, in preference to all others, and the result justified the propriety of the selection.

A Case of Cholera.

REPORTED BY BABU JADU NATH MUKERJI.

Nibarani, a female, aged about 22, has been suffering from indigestion and looseness of the bowels since the birth of her last child, which is only a month old. She was first attacked with choleraic symptoms, on the evening of the 5th December 1883. Had two very large motions from evening up to midnight, when she became so much exhausted and alarmed, that an amateur homœopath in the neighbourhood was sent for, who finding the patient very much depressed and suffering from predominant cramps, ordered *Cuprum* 6, of which she took three doses before I was called in.

6th Dec. I saw her at about 5 A. M. in the morning and learned that the last dose of *Cuprum* made her worse, so much so that her parents thought her to be dying. In fact I found her in a condition bordering on collapse, with a cold clammy skin, sunken eyes and a pulse barely perceptible at the wrist. She had besides some cramps which were not violent, there was great exhaustion though not much thirst;

features indicative of anxiety, with blue nails and shrivelled fingers. On further enquiry I learned that her depression was great from the very commencement of the attack, and it was quite out of proportion to the number of stools she had. Has had no more stools since midnight although she vomitted once after the last dose of *Cuprum*. Ordered *Camphor* every half hour until the skin becomes warm.

Dr. Sircar came to see her at about 7½ A. M., soon after I left the patient's house. Finding no change for the better in the condition of the patient, on the other hand there having occurred vomiting after the 2nd dose of *Campher* before his own eyes, he ordered *Veratrum* 6.

10½ A. M. Saw the patient with Dr. Sircar. The report was that she had two more watery motions since last report and taken 2 doses of *Veratrum*, altogether. Pulse at the wrist quite distinct and fair. Repeat medicine if there be more motions.

Evening—4 P. M. No more stools since we saw her last, but she had cramps now and then, which made her fingers keep wide apart. Ordered *Secale* 30, after consultation with Dr. Sircar.

6 P. M. Called with Dr. Sircar and found the cramps very much less. Repeat another dose of the same medicine.

10 P. M. I saw her once more at this late hour in the evening and found her decidedly better in every respect. Has had a stool just now, which consisted of shreds of mucus and looked white but thicker in consistence. Repeat another dose of *Secale*.

7th. Morning. Kept very well during the night, no stool, no cramps, she only complains of burning pain in the vertex. Also some retching, and thirst. No urine yet. Ordered *Canth.* 6.

Evening. Is getting on nicely, no stool, nor urine yet. Had 2 doses of *Canth.* during the day. Ordered to have another dose at 6 P. M.

8th. Morning. Passed a good, large quantity of urine at 3 A. M. this morning, constant fermentation in the abdomen with discharge of foetid flatus but no stool. Ordered *Chin.* 30, and sago water as her food.

Evening. Had 3 doses of *China*. The flatulence seems not to trouble her any more. Omit medicine.

9th. Morning. Made water freely at night after an interval of 24 hours. No stool, complains of soreness at the corner of the eyes from constant lachrymation. Ordered *Nat. m.* 6, every 4 hours up to 3 doses.

10th. Report came that she was all right and required no further attendance on our part.

**THERAPEUTICS OF CONSTIPATION, DIARRHŒA,
DYSENTERY, AND CHOLERA.****59. CHININUM SULPHURICUM. (Sulphate of Quinine.)****Constipation :**

1. St. hard, crumbly.
2. St. at first hard, afterwards thin.
3. St. with exertion and pain.
4. St. difficult, fæces of ordinary consistency.
5. St. not very hard but difficult to pass, always with a peculiar sensation extending from the right hand to the shoulder.
6. St. a little sluggish, and rather incomplete in amount.
7. Defæcation, attempted at a later hour than usual, is very incomplete and difficult ; the peristaltic action difficult and the sphincter contraction too great.
8. After breakfast, imperfect defæcation, painful spasmodic resistance of the inner sphincter, afterwards marked protrusion, with difficulty of manual reduction and irritability; better by applying cold water, then oil, and sitting on cushion.
9. Obstinate constipation.
10. No st., with distension of the abdomen.

Diarrhœa :

1. D., with violent colic-like pains across the abdomen.
2. D., with drawing and cutting in the intestines.
3. St. at first mushy, then like diarrhœa, preceded by excessively offensive flatus.
4. Repeated sts., thinner and lighter color than usual.
5. St., after exertion of the body, postponed by circumstances ; soft, except the very first ; came away suddenly, partially arrested by a cramp-like pain of the sphincter, concluding as this generally subsided, followed by painless prolapse of mucous membrane, &c., like piles on right side, requiring replacement.
6. After breakfast, good st., yellow, soft, with yellow-tinted clear mucus, considerable protrusion of right rectal fold.
7. St., at first solid then liquid.
8. Colic, immediately after rising, followed by st., at first mushy, like diarrhœa, with cadaverous odour, with gradual relief of the colic.
9. Wandering pains and cutting in the ilium, followed by D.

Aggravation :

1. Morning, forenoon, afternoon, evening.
2. After food.

Before St :

1. Urging.
2. Colic, relieved by st.

During St :

1. Peculiar sensation extending from the right hand to the shoulder.

2. Protrusion of rectum.
3. Cramp-like contraction of sphincter.

After St :

1. Protrusion of mucous membrane of anus.
2. Considerable soreness in front of anus.
3. Protrusion of right rectal fold.

Rectum and Anus :

1. Stool with protrusion of rectum ; rectal activity deficient ; sitting, felt the mucous fold spontaneously retracted.
2. Slight tenesmus.
3. Commotion in rectum, pressure of flats in the evening.
4. Itching in the rectum.
5. Increased hæmorrhoidal trouble.
6. Discharge of bright blood from the anus, without previous pain in the back.
7. After breakfast st. soft but impeded by painful contraction of inner sphincter which feels like a firm rim, comparable with rigid os.
8. Twice, when standing, sudden crampy or cutting stitch at the inner sphincter ani.
8. Whilst walking, stitching to right of anus like a straw, itching and irritable at the same spot afterwards.
9. After stool considerable soreness in front of anus, better by oiling and sitting quietly with bunch of clothing under peræneum.
10. Urging to st. without subsequent evacuation.
11. Urging to st. with passage of very difficult, small, soft st.
12. Urging to st. with slight griping in the abdomen followed by a natural st.

General Symptoms :

1. Sensation as though he were intoxicated, his mental powers were perfect.
2. Despondency.
3. Recurrence of feeling of impending evil.
4. Memory " all muddled."
5. Vertigo. Whirling in the head, like a " mill wheel."
6. Very severe headache, worse towards evening, with violent palpitation of the arteries of the head as if the head would be torn asunder, with glowing heat of the face, vertigo, at times ringing and roaring in the ears.
7. Ringing in the ears, especially noticed in the left, seldom in the right.
8. Sensation of coryza in the nose with sneezing.
9. Face pale and suffering, with excessive thirst and nausea.
10. Mouth very pale ; lips and extremities livid and cool.
11. Tongue flabby, whitish, coated with yellowish white or yellow fur.
12. Greatly increased secretion of saliva.
13. Dryness of mouth and fauces,
14. Stale and disagreeable flavor of mouth.

15. Taste, pasty, flat and bad ; bitter.
16. Speech difficult.
17. Hunger with eructation. Ravenous hunger.
18. Anorexia. Thirst, eructation and nausea with **great appetite.**
19. Constant thirst with decided distension of the abdomen.
20. Eructation tasting of food. Bitter eructation.
21. Hiccough and retching.
22. Pyrosis. Heartburn.
23. Nausea. Nausea and eructations, sometimes empty and sometimes bitter, without being followed by vomiting.
24. Nausea and vomiting during a meal.
25. Frequent vomiting of an insipid taste.
26. Feeling of hollowness of stomach and desire for sugar.
27. After eating, pressure in the stomach, followed by cutting in the upper and middle umbilical region.
28. Even the slightest food causes pressure in the stomach and return of the usual symptoms.
29. Sudden cutting and twisting in the epigastric and umbilical regions, transversely across the abdomen.
30. Pain in the region of the liver, shortly before going to bed.
31. Colicky pains to the left of and above umbilicus ; propagated to sigmoid flexure and rectum, immediately.
32. A-rasping pain in the abdomen from the umbilicus up to the chest, with dragging downwards towards the genitals, when traces of menstruation appeared and was quite copious.
33. Abdomen distended with passage of flatus upwards and downwards or without passage of flatus.
34. Commotion in the abdomen as if from diarrhoea, with passage of much flatus only or followed by soft st.
35. Emission of nonfœtid flatus ; subsequently some fœtid wind ; while moving about, emission of still more fœtid flatus.
36. Sonorous eructation of decidedly fœtid wind after micturition.
37. Colic, in transverse, descending and sigmoid colon, quite sharp, when walking about ; relieved by emission of flatus.
38. Colicky pain in transverse colon slight, going to rectum as if for st.
39. Secretion of urine increased ; urine deposited a large quantity of orange colored crystals, shown under microscope to be right-angled prisms with rhomboidal fragments.
40. Deposit of urate and purpate of ammonia with phosphate. Brick-dust sediment in urine.
41. Hæmorrhage of the urinary passages, in a boy and girl, whenever the drug was administered.
42. Not having defecated, felt as if a firm mass pressed from within against sacrum, hips and lower lumbar portions of back, relieved by st.
43. Peculiar sensation in the right hand as if some drops of fluid passed thence to the shoulder ; this sensation was not especially painful, during every st.

44. Emaciation. Trembling, convulsions, general weakness especially of the feet.

Remarks: Sulphate of Quinine, according to smallness or largeness of dose, causes constipation or diarrhœa. Hence it may be used beneficially in both these affections. A characteristic of the stools, under the influence of this drug, is that whether hard or soft they are passed with difficulty, there being deficiency of rectal peristalsis, with a crampy contraction of the sphincter ani internus.

Chin. Sulph. has been used indiscriminately in all intermittent complaints, and we are not surprised that it should have been used in intermittent bowel-complaints. The following case of intermittent dysentery is given by Hempel in his *Materia Medica* from *Frank's Magazine* which has quoted it from the *Medizinischen Correspondenzblatt*:

"A child was attacked every afternoon at four o'clock with violent pains in the abdomen, followed by heat and from six to eight bloody evacuations, after which it fell asleep exhausted and in profuse perspiration. The intermittent character of the paroxysms induced the medical attendant to prescribe quinine, which was administered endermically, the child refusing to take the medicine by the mouth. The attacks ceased at once."

Chin. Sulph. would be found useful in piles, and in hæmorrhage from the anus when the blood discharged is bright red. It is likely to be useful in prolapsus of the mucous membrane of the anus, and in prolapsus of the rectum, especially when the prolapsus is from the right side.

60. CICUTA VIROSA.

Constipation:

1. Costiveness.

Diarrhœa:

1. St. softer than usual with burning in anus.
2. Thin st., at 2 and 5 A. M. with violent urging to urinate, which could not be withstood.
3. Sudden urging to st. without warning, he was scarcely able to retain it, together with bruised pain in the back, and general loss of strength, the st. was passed suddenly and was followed by urging with great desire to urinate.

Dysentery:

1. St., almost hourly, consisting of black offensive mucus in small portions, with urging.
2. Thin slimy st., with profuse urine, at 7 and 8 P. M.

Aggravation:

At 2 and 5 A. M.

Before St.:

1. Sudden urging with bruised pain in the back and general loss of strength.

During St.:

1. Urging to urinate. Profuse urine.
2. Protrusion of rectum, with thin stool.

3. Itching internally in the rectum, just above the anus ; after rubbing burning pain, the pain always causes shuddering.
4. Burning in the anus.

After St :

1. Urging to st., with great desire to urinate.

Rectum and Anus :

1. Sensation as of liquid in the rectum.
2. Itching internally in the rectum just above the anus ; after rubbing there is burning pain, a pain that caused a shudder through him every time it came after walking, when standing still and when at stool.
3. Swelling on the right side of the anus, as from hæmorrhoidal tumors under the skin, whereby the orifice is contracted, with annoyance during st.

General Symptoms :

1. Absence of thought, difficulty of recollecting himself, deprivation of the senses.
2. Vertigo. Staggering. He fell to the ground.
3. Pressive stupefying headache ; externally on the forehead, more when at rest.
4. First contracted, then dilated pupils. Pupils dilated and fixed. Staring look, almost without winking ; it seems as though a gray fog were before the eyes ; or as if every thing looks like a black cloth.
5. Cadaverous paleness. Face red.
6. Dry feeling in the mouth. Inability to swallow. Lock-jaw.
7. Frequent and loud-sounding hiccup. Nausea while eating.
8. Constant hunger and desire for food even when he has just been eating.
9. Great longing for coals ; he swallowed them.
10. Great thirst (during convulsions).
11. Vomiting without relaxation of lock-jaw.
12. Immediately after eating bellyache and drowsiness.
13. Vomiting of blood.
14. Burning pressure in the stomach.
15. Throbbing in the scrobiculus cordis, which is swollen as large as a fist.
16. Great accumulation of flatulence with constant anxiety and crossness. Much flatus is discharged.
17. Grumbling and rumbling in the abdomen.
18. Retention of urine. Involuntary discharge of urine. Frequent call to urinate. Violent spirting out of the urine.
19. Tossing of the limbs to and fro.
20. Spasmodic distortions of limbs which threw him a distance of two feet. General convulsion ; frightful distortion of limbs and the whole body ; head and back turned backward as in opisthotonus.
21. She lies a corpse with closed jaws. They all lay prostrated with weakness without consciousness, and immovable like blocks or corpses.

22. A kind of cramp in the cervical muscles ; when he looks round, he cannot immediately turn the head back again ; the cervical muscles do not yield, and if he should effect his object by force it would give him great pain.
23. Tightness of the chest, so that she could hardly draw her breath, all day long.
24. Sensation in the right groin as if an ulcer would burst (when sitting.)
25. Frequent involuntary twitching and jerking in the arms and fingers (lower extremities and head).
26. Violent tonic spasms of the pectoral muscles and distortion of the eyes, alternate with vomiting.
27. Congestion of brain or chest after vomiting ceases. (Bell.)
28. Drowsiness, so that his eyes always closed.
29. Catalepsy ; the limbs hang down loosely as in a corpse, without breathing.
30. Anxiety ; he was violently affected by sad stories. Moaning, whining and howling.

Remarks : Though the stool symptoms are few they are characteristic. In cases with sudden urging followed by sudden expulsion of stool accompanied and followed by uncontrollable urging to urine, with bruised pain in the back and general loss of strength, *cicuta* is likely to be useful, especially if along with these symptoms there is the whimsical longing for coal.

In cholera when the spasms of the respiratory muscles cause such tightness of the chest that the patient can scarcely breathe, *cicuta* has often afforded marked relief when *cuprum* has failed.

In infantile diarrhoea or cholera with the characteristic convulsions, *cicuta* is invaluable.

"Up-turned eyes" in convulsion, is looked upon as a characteristic symptom of *cicuta*. We have failed to find this in the pathogenesis of the drug. We have "distorted eyes" during convulsion, but this is not necessarily "up-turned eyes," though the latter may form one phase of the former.

61. CINA.

Diarrhoea :

1. °Watery D.
2. Fæcal and bilious diarrhoea.
3. °White, involuntary, diarrhoeaic sts.
4. °D. alternating with constipation.
5. Papescent st.
6. Cutting pinching in the abdomen, that does not cease until he has been to st.

Dysentery :

1. °Greenish, slimy.
2. °White, mucous, like little pieces of popped (parched) corn.
3. °Reddish mucus ; bloody.

Aggravation :

1. During dentition.

2. Complaints arising from *ascarides* and *lumbrici*.
3. In children.

Before St :

Cutting pinching in the abdomen.

Rectum and Anus :

1. A voluptuous itching on the anterior part of the anus, which compels him to scratch.
2. During discharge of flatus single stitches in the lower part of the rectum.

General Symptoms :

1. When walking in the open air stupefying, internal headache, especially in the sinuiput, afterwards also in the occiput.
2. Pupils dilated or contracted.
3. Pulsation of the superciliary muscles, a kind of convulsion.
4. White and bluish round the mouth. Face pale and cold; puffy, bluish.
5. The child often bores so long in his nose that blood comes from it.
6. Grinding of the teeth.
7. Dryness and roughness of the palate, with sick qualmsiness.
8. Inability to swallow; drinks roll about in the mouth for a long time.
9. Greater hunger shortly after a meal. Thirst.
10. When fasting empty eructation; after food, eructation with the taste of the food.
11. Several *lumbrici* come up through the child's mouth.
12. Nausea, with empty feeling in the head. Repeated, violent vomiting of mucus, or yellow water.
13. Frequent hiccough.
14. Transversely across the epigastrium, in the region of the *scrobiculus cordis*, a pinching or cramp-like pressure after a meal.
15. In the *scrobiculus cordis* a pain that hinders respiration.
16. Boring pain above the navel, going off by pressure. Painful twisting about the navel.
17. Cutting in the small intestines.
18. Labour-like, frequently recurring pains in the abdomen, as if the *catamenia* were about to come on.
19. Flatus explodes with little noise and goes quietly about in the bowels.
20. Feeling of emptiness in the abdomen with silent discharge of flatus.
21. Frequent urging to pass water, with copious discharge of urine. Turbid urine. White, jelly-like urine. Nocturnal enuresis. Involuntary emission of urine.
22. Twitchings and distortions of the limbs. Convulsions, with consciousness (*eclampsia*).
23. Awakes with piteous weeping, groaning and hiccup, with restless movements. Tossing about during sleep.
24. The child is very lachrymose and complaining.

25. Inconstant restlessness.
26. Longs for many different things. Refuses everything offered to him, even what he used to like best.
27. Cannot be quieted by any persuasion, insensible to caresses.

Remarks : *Cina* is perhaps the most proved remedy in worms, and complaints arising from worms. Its utility in infinitesimal doses shows that though worms can only be developed in the intestines from ova introduced from without, their development is only possible if the ova find a fitting nidus, in some peculiarly morbid condition of the intestinal secretions. The discovery of the efficacy of infinitesimal doses has proved a particular blessing in helminthiasis. The danger of the expulsion of worms by large doses of anthelmintic remedies or rather poisons must be known to every practitioner who had had recourse to them. By the exhibition of infinitesimal doses of the properly indicated remedy we so modify the secretions of the intestines as to render them unfit for the parasites to live in. They consequently die and are generally quietly expelled. We say generally, because *sometimes* even under the influence of infinitesimal *Cina*, living worms are expelled. In cholera, when complicated with worms, we have found, especially in children, the exhibition of the crude drug or of its alkaloid (santonin) attended with considerable danger, as much from the action of the drug itself on the general system as from its irritative action on the parasites which move about in the intestines with greater activity and cause more irritative and sympathetic mischief. In such cases the exhibition of infinitesimal *Cina* has been infinitely more beneficial, though even then the existing mischief is sometimes aggravated. We would caution against the too frequent repetition of the drug.

Though *Cina* has been found useful in worms and in complaints depending upon them, it must not be supposed they are not useful otherwise. Not to speak of the wonderful control it exerts upon whooping cough, when the characters of the cough resemble those of the cough of *Cina*, it has been found highly beneficial in even disorders of the bowels, when not arising from the presence of worms. On this point we have the following testimony from Dr. W. T. Laird, Editor of *Bell's Homœopathic Therapeutics of Diarrhœa, Dysentery, &c.*

"During the past six months, it has been the fortune of the writer to have several cases of dysentery, with a very peculiar stool, which may be described as a *little blood mixed with green and white mucus—the latter looking exactly like small pieces of parched corn*. There were seldom more than five or six stools per diem, but slight tenesmus; very moderate fever and scarcely any constitutional disturbance. All of these cases occurred in children during dentition. In the majority of them there were no well marked concomitants. A few presented symptoms indicative of verminous irritation. But in every case having this peculiar stool, *Cina* 30 effected a rapid and permanent cure, even when there was not the slightest indication of worms. The italicized symptom is a clinical observation, which is given for future verification."—*W. T. Laird.*

62. CISTUS.

Diarrhoea :

1. All night till day break, very thin sts. squirting out, of a grayish-yellow color ; until noon three more discharges.
2. Thin stools and hot.
3. Towards evening violent urging to st. ; stool pappy.

Dysentery :

Chronic Dysentery (Dr. Comstock.)

Aggravation :

1. After eating fruit.
2. After drinking coffee.
3. In the morning. From the last part of the night till day break.

Before St :

Violent urging.

General Symptoms :

1. Immediately after taking a dose, the tongue grew cool, then the breath through the mouth and nose gave decidedly cool feeling in the larynx and in the windpipe ; much saliva in the mouth which is also cool ; more mental calmness than usual, some sleepiness.
2. Dryness of the tongue and roof of the mouth. Gums scorbutic, swollen, separating from the teeth.
3. Cold air causes pain in the throat.
4. The patient is constantly obliged to swallow saliva to relieve an unbearable dryness especially in the throat, especially during the night. Eating relieves the dryness.
5. Glands on the throat swollen.
6. Fauces inflamed and dry, without feeling dry ; tough, gum-like, thick, tasteless phlegm, brought up by hawking.
7. Inclination for acid food.
8. Eructation with feeling as though it would relieve. Frequent nausea.
9. Immediately after eating pain in the stomach.
10. Before and after eating a cold feeling in the stomach ; cold eructations.
11. Flatulence and uncomfortableness in the intestines ; discharge of wind as when air bubbles rise in water.
12. Very restless at night ; pain from flatulency ; he could move the wind with his hands and hear it.
13. Scrofulous swelling and suppuration of cervical glands.

Remarks : **Cistus Can.** has hot stools and aggravation in the morning like **Sulph.** It has some peculiar symptoms which are entirely wanting in other drugs, namely, a cool feeling in the tongue, larynx and wind pipe, and in the stomach, the eructations even being cold. "It has long been esteemed," says Dr. Hale, "as a popular remedy in scrofula." Indeed, according to the same authority, "it has cured *scrofulous abscesses* located on the neck, shoulders, hips, and other portions of the body." It is therefore very likely to prove an

useful remedy for diarrhoea and dysentery in scrofulous patients, especially when the characteristic symptoms above noted are present. Its action seems to be exerted on the glandular structures imbedded in mucous membranes, and it would therefore be remedial in diarrhoea and dysentery depending upon their lesions.

63. CLEMATIS.

Constipation :

1. Continued constipation for several days.
2. The st. continued constipated until the seventeenth day, after which he had two or three sts. without urging.
3. St. became at first less frequent and harder.
4. Hard st. after much urging.

Diarrhoea :

1. Frequent st., which always became thinner and thinner, without colic.
2. Pasty stool, with burning in the rectum.
3. Very copious, thin, pasty st.
4. Liquid sts.
5. St. easy, with sensation of heat, followed by burning in the rectum.
6. Violent urging to st., immediately after eating, st. profuse and thin, with painful burning in the anus.
7. Urgent desire for st. which was pasty and accompanied by much flatulence.

Dysentery :

Blood with the st.

Aggravation :

1. Forenoon.
2. After eating.

Before St :

1. Urging.

During St :

1. Burning in the anus and swelling of the hæmorrhoids.
2. Emission of flatus.
3. Burning in the rectum.
4. Sensation of heat.

After St :

1. Burning and itching in the anus.
2. Burning in the rectum.
3. Prostration.

Rectum and Anus :

1. Sudden sensation of warmth in the rectum, followed by urging to st.
2. Itching in the rectum and genitals.
3. Itching in the anus.
4. The hæmorrhoids were swollen and covered with slimy mucus.
5. Violent itching in the hæmorrhoids, and slight discharge of mucus from them.

6. Frequent and violent urging to st. without result.

General Symptoms :

1. Lassitude and drowsiness after a meal, accompanied by violent beating of the arteries.
2. Uneasy dreams. Voluptuous dreams. Sickly, yellow look.
3. Morbid paleness of the face.
4. Mouth and tongue very dry. Tongue coated white.
5. Much saliva in the mouth. The expectorated saliva is mixed with blood.
6. Bitter taste in the mouth.
7. Sour taste in the tip of tongue.
8. Ravenous appetite. Diminished appetite.
9. Does not relish the accustomed cigar.
10. Thirst, with longing for ice which does not refresh him.
11. Empty tasteless eructations.
12. Nausea without vomiting.
13. Nausea after eating while smoking.
14. Smoking cigars, to which he was accustomed, caused nausea and vomiting.
15. Distension of stomach and abdomen. Rumbling in the abdomen.
16. Gripping in the abdomen with rolling and rumbling.
17. Swelling of inguinal glands.
18. Long continued contraction and constriction in the urethra, the urine could only pass by drops as in spasmodic stricture.
19. Urine dark red without sediment ; urine hot.
20. Urine turbid, milky, streaked with floating flocks of mucus, with very thick froth.
21. Urine depositing a large quantity of crystals of "urate of soda."
22. Swelling of the testicles.
23. Sensitiveness of the right spermatic cord, with drawing up of the right testicle.
24. Weakness ; disinclination for work and desire for rest.

Remarks : *Clematis* has not yet been used in bowel complaints. In Hahnemann's compilation of its pathogenetic symptoms in his *Chronic Diseases* the symptoms of the drug relating to the stool hardly figure at all. Subsequent provings have, however, developed some symptoms which show that the drug has an action upon the lower portion of the alimentary canal so as to cause both constipation and diarrhœa, and if not veritable dysentery, at least, discharge of blood with the stool. It has like *Aloe* and *Ars.* "burning with sensation of heat in the anus and rectum." But it is easily distinguished from these drugs by other symptoms which characterize them and are wanting in its pathogenesis. *Clematis* is likely to be useful in patients who have had syphilis or gonorrhœa or both, and who have had their systems saturated with mercury.

64. COBALTUM.

Constipation :

1. Small, dry, hard and lumpy st.
2. St. scanty and hard.
3. No passage for two days.
4. St. quite hard and natural, which has not been the case before.

Diarrhœa :

1. A profuse st., watery, spouting.
2. St. at 9 a. m. and 9 p. m.; the former small and hard, the latter small, soft and painless.
3. Soft diarrhœaic st. with tenesmus and colic.
4. Large st., soft, thin, with much tenesmus, and severe colicky pain in lower part of abdomen during st., as if the bowels would protrude, and aching pain in the sphincter ani which continued after st.
5. St. with stinging pain during and after, for sometime.
6. Colic on waking, then watery st., with tenesmus.

Before St :

1. Pressure towards the anus.
2. Cutting pain in abdomen and pressing in rectum.
3. Severe cutting colic.

During St :

1. Burning in rectum.
2. Tenesmus and colic.
3. Aching pain in the sphincter ani.
4. Stinging pain.
5. Sensation of scratching in rectum.
6. Feeling as if head grew large with dizziness and weakness.

After St :

1. Burning in rectum.
2. Tenesmus, colic.
3. Aching pain in the sphincter ani.
4. Stinging pain.
5. Pain in head (continued.)
6. Colic better after watery stool.

Rectum and Anus :

1. Pressing in the rectum.
2. Constant dropping of blood from the anus, none with the st., had often had some bloody marks on his faces.
3. Pressure towards the anus, increasing till st.
4. Urgent desire for st. with slight cutting in abdomen; while walking desire worse than when standing still.

General Symptoms :

1. All mental excitement greatly increases the suffering.
2. Peeling of the lips and soreness, they bleed easily.
3. Tongue coated white with cracks across the middle.
4. Constant secretion of water in mouth and swallowing.
5. Flat taste in mouth, and rising of sour water which has an acrid feeling in throat.

6. Bad taste in the mouth with belching of wind.
7. Rising of hot, bitter water.
8. Sour stomach with headache, as if it would burst; in evening after supper, had to lie down; 11 p. m. increases in severity; an hour after watery diarrhœa with tenesmus; sour taste, with nausea, remained till sleep.
9. Pain in stomach, with colic in abdomen and sensation as if diarrhœa would come on.
10. Severe pain in stomach as if from hunger, before dinner, which continues till dinner, and is partially relieved by eating.
11. Feeling, as if diarrhœa would come on, with rumbling of bowels.
12. Strange but not unpleasant sensation in the bowels as after diarrhœa, all the time since the st. became more hard and natural.
13. Passes urine often and in small quantities; had to rise in the night to urinate.
14. Urine frequent, scanty, with flocculent sediment and strong pungent smell. Greasy pellicle on the urine.
15. Trembling of the limbs.
16. Unrefreshing sleep. Sleep disturbed by lewd dreams and emissions.

Remarks: Cobaltum may be used for constipation with small, dry, hard, lumpy stool, and for diarrhœa with profuse watery stool which spouts out of the anus, by paying especial attention to the general symptoms, some of which are characteristic, such as the increase of the physical sufferings from mental excitement, peeling and bleeding of the lips, greasy pellicle on the urine, sleep disturbed by lewd dreams and emissions, &c.

65. COCA.

Constipation:

1. St. delayed.
2. Evacuations not so regular, drier, than usual, partly in small lumps, and inodorous.
3. Though the evacuation was soft enough, and well formed, there was difficulty in voiding it.
4. Expulsion with more than usual difficulty, of small lumps of fœces (after magnesia).
5. After breakfast, st., rather less than usual and dark; after dinner, somewhat scanty st., but not dark. Natural st., after dinner but dark.
6. Fœces darker and rather less than usual and in small pieces.
7. St. after breakfast, scanty, dry, in small lumps, like walnuts; same after natural desire with considerable effort; latter portion like walnuts; scanty, difficult; at first in small pieces; with the straining slight pain, apparently in right spermatic cord or testis.

8. Quantity of fæces reduced in bulk about one third, drier, more constant, in smaller lumps, ejected with little effort, and without any smell; the paper used is never stained; usual morning st. does not take place; vain endeavours to effect it; later, more constipated, less regular.
9. Constipation is of so frequent recurrence that, from its prominent character in the disease of coca chewers, it has been called *Opilacion*.
10. The fæces lose by degrees their stercoral odour, but the peculiar odour of the coca is to be detected in them.
11. Urging to st. followed by hard, scanty st., with sensation as if the sphincter was paralyzed.
12. No desire for st., at the usual time in the morning; no evacuation the whole day, notwithstanding every effort; awoke at 11 o'clock at night, with great urging to st., followed by an abundant, firm evacuation.

Diarrhoea :

1. Tea-spoonful mushy D., 2 P. M.
2. Large diarrhæic sts., without pain any where, also frequent urination of large quantities.
3. A motion rather more abundant and looser than usual and having more smell. Offensive watery D.
4. A stool of moderate quantity with urging, looser, more smell than usual and a soreness in the anus while passing it; later, more natural, indicating a quicker and more perfect digestion, almost inodorous, remaining so.
5. Soft st. voided with difficulty; looser st.; smell more; sensation of looseness in the bowels, as if D. were about to set in, with very slight gripings.
6. St. thinner than usual, followed by continued urging.
7. Very pressing motion with urging, almost as abundant, as usually after breakfast.
8. Had urging to st. at 3 P. M., but evacuated only a slight quantity of clear watery mucus, with a few brownish small flocks swimming in it.

Aggravation :

1. After breakfast. After dinner.

Before St :

1. Urging.

During St :

1. Sensation as if the sphincter was paralyzed.
2. Soreness in the anus.
3. Straining.
4. Urging.
4. When pressing at st., pain in the forehead.

After St :

1. Urging.

Rectum and Anus :

1. Urging to st.
2. Plagued the whole day with desire for st., and sulphuretted

hydrogen flatulency.

General Symptoms :

1. Confusion of brain; vertigo in forehead, disposition to sleep, want of appetite, low spirited.
2. Severe pain deep in the left side of the forehead, like a pressing asunder, on coughing or on pressing at st.
3. Paleness of the face.
4. Tongue coated. Vesicle towards the tips of the tongue at the right side.
5. Cocaine causes a numb feeling on the tongue.
6. Dryness of mouth on waking.
7. Slimy, saltish or bitter taste.
8. Voracious appetite.
9. Longing for food, although the abdomen was somewhat distended in the epigastric region, as from an overloaded stomach.
10. Want of appetite; weak digestion with headache.
11. Great satiety without longing for nourishment.
12. Eructation, nausea and vomiting of slimy water.
13. Feeling of emptiness in the stomach, as if from want of food.
14. Bilious affections appear with their numerous tormenting sufferings common under a tropical sky: obstinate constipation, jaundice, headache, debility and emaciation.
15. Intense pains in region of liver; biliary affections; gall stones, frequent and severe.
16. Abdomen distended, tense and tympanitic.
17. Rumbling in the abdomen with passage of flatus or tasteless, inodorous eructations.
18. Constant urging of flatulence without passage of any.
19. Passage of flatus and urging to st.
20. Profuse passage of odourless flatus, relieving the colic and the rumbling in the abdomen.
21. Cutting drawing, and gnawing pain in the small intestines, with rumbling, commencing in the early morning, reaching its greatest severity at 9, and lasting till about 11 o'clock, relieved by rapid walking and after eating something but returning after half an hour; the pain was relieved by repeated pressure in the mesogastric region.
22. Colic aggravated after taking coffee but relieved after taking cold beer.
23. Desire to urinate frequently with increased flow of urine. Octahedral crystals of oxalate of lime, in urine. Profuse secretion of urine of a foul odor. An unbroken film all over the surface of the urine, iridescent in certain lights, with an appearance of fissures in it, mapping it out, and a flocculent, pale sediment floating at the bottom.
24. Edematous swelling, afterwards ascites.
25. Great lightness while climbing a mountain, without any respiratory trouble.

26. Difficulty in breathing with palpitation of the heart, and a not unpleasant weariness of the whole body, as after a great exertion, continuing even in bed. Shortness of breath and oppression on ascending a height; this continued for three or four days, but on the fifth and sixth days, there was no oppression and no shortness of breath, even on rapid walking or ascending a height.
27. Pulse much accelerated (from 70 to 134), beats of the heart nearly quadrupled. Or, a slower and smaller pulse, with increased arterial tension.
28. Chronic sleeplessness in old chewers, and a leadenskin. Sleeplessness, but with desire to work the whole night.

Remarks : **Coca** causes both constipation and diarrhœa, no doubt according to the dose and its repetition. Long continued use of it causes torpidity of the liver, constipation, headache, jaundice and emaciation. Hence it will be useful in these conditions. The characteristic of the diarrhœa it causes is that the stools are large, painless, either offensive, or inodorous, at least with less of the odor of fœces, and are attended with frequent and copious urination with an iridescent film on the surface of the urine marked with fissures. "Want of breath and air," and aversion to exertion of any kind, with either a very accelerated or a very slow pulse and heart-beat, would form additional indications for the remedy. The following case reported by Dr. N. Williams in the *Am. Journ. of Hom. Mat. Med.* for July 1869 (quoted in Hempel and Arndt's *Materia Medica*), shows some of the virtues of this drug. "Patient, a lady aged 24, had been sick for three years, the removal of a scirrhus growth from the breast being followed by a complete nervous prostration, amounting to an impossibility to make any exertion. Three drops of the tincture of **COCA** were dissolved in half a glassful of water and a spoonful of the solution given. 'It was not ten minutes before she wanted to know if it would hurt her to work a little. An occasional repetition of the dose not only relieved the peculiar lassitude effectually, but caused a general improvement in her health, especially of a fixed constipated habit which had made the use of injections necessary.'"

Excerpts from Contemporary Literature.**MASSAGE AND INTERVASCULAR CHANGES.**

BY GEORGE H. TAYLOR, M.D., NEW YORK.

The student in physiology is surprised at the vast amount of mechanical transition of fluid that is required for the maintenance of function and the supply of the outgoing energies of the organism. The fluids daily entering the digestive cavity from the blood has been estimated to equal in weight the whole fluid of the body, nearly all of which is re-absorbed to continue the same unceasing work. This will afford some intimation of the amount of transfer of fluid required to maintain the activities of the muscles, nerves, secreting organs, heat making, etc.

For the muscle cells, as well as those of all vital parts, are not supported by the blood directly; this fluid remains within the vascular walls, while only its plasma, bearing both nutritive material and oxygen, transudes through these walls to come into immediate contact with the vital cell-walls. The cells are thereby enabled to appropriate such material, according to its special function and purpose, as may be required for their use. The support of the vital cell, both as respects digested matter or peptone and oxygen, appear to be determined, not by the exterior supply, but the interior activity which alone can attract the supply.

On the other hand, the products of cell change pass freely from the cell interior coincidentally with their production. The transfer of matter attends all development of energy, whether in the form of heat, muscular power, or both. So that materials are constantly changing place, passing into and from the intervascular space from two sources—the blood vessels and the vital tissues—the mechanical being an indispensable preliminary to the vital operation.

The transfer of matter between two important points involves, of necessity, an intermediate space, which is represented above as containing fluid in motion, or rather fluid bearing different, even antagonistic chemical ingredients, whose destiny is determined by their chemical nature in opposite directions. A portion is drawn to the acting vital structures, while another portion tends in the direction of the venous capillaries. This latter, in good health, is composed largely of carbonic acid in solution, and water, because these form the bulk of the products of those changes whereby energy is evolved. These are taken by the venous side of the circulation and are immediately conveyed through the lungs to the atmosphere. Other portions are re-submitted to the vital chemistry; only a comparatively small portion, consisting of perfected nitrogenized waste, with saline matter, being conveyed through the kidneys from the system, while a large amount, not having completed the chemical changes whereby energy in some form is dissociated, and after obscure changes in the liver, is re-

turned to the nutritive system by being again submitted to the digestive process.

It is not intended to convey the impression that the intervascular fluid normally occupies a distinct space set apart for its use, but that the transit of matter involved in all nutritive acts, which is from the interior of the capillary blood vessels to the interior of the vital cell, implies its passage through the two intervening walls, and in most cases intervening connective tissue and adventitious substance. During this passage the complex contents of this fluid are liberated from the vital control of both the cell and the blood, and are exposed to influences either of a medical or morbid character that may by art or by accident be brought to bear upon them.

Any mechanical change of place, in either the blood vessels on the one side or the cell-contents on the other, of necessity involves the corresponding changes of place and of matter in the intervascular fluid; being situated between the two, it is exposed to influences from the two sides. This fluid is, therefore, an extensive arena for the physical side of physiological activities, and it consequently offers an opening through which additional energy of a physical description may be introduced, whenever such increase may be deemed subservient to physiological interests.

The proper nutritive support of the vital cell demands contact with successive portions of the fluid bearing the materials it requires—peptone, sugar, salines, etc.—only secured by its motion. Equally essential is the motion of the fluid which bears away the spent material, exhausted of its energy. So that during active nutrition, whether the outcome be heat, dynamic or nervous power, there is mechanical transition of what constitutes intervascular fluid; that is, of all fluid intervening between the blood vessels and the vital cells.

These changes of place are clearly referable to muscular action. The intervascular fluid may be considered as enmeshed in the muscular and connective fibres, somewhat as fluid is contained in a sponge, which on being squeezed is displaced, thus giving place to fresh supplies. The muscles at every contractile act cause minute currents to circulate about the vital cell and every distinct and individual fibre, thus constantly refreshing them with new nutritious matter, to be appropriated in accordance with the interior needs.

The blood currents, as we have seen, are, in fact, urged forward by the same muscular acts, and their onflow appear to assist in some way the conditions for the qualitative separation of the complex ingredients of that fluid.

The medical importance of this intermediate point in nutritive operations may now be more fully appreciated, since it is on *physical* relations at this point, both mechanical and chemical, that the quality of vital operations depend; it is here that impediments highly inimical to health may exist, and it is here that the physical side of vital function may be easily reinforced as to perfect the vital product. The fact of the existence of intervascular fluid, and especially of its pathological importance, is a

matter of every-day experience, whenever a local swelling appears on any part of the body.

Whatever be the special nature of the abnormal local increase of substance, the cause is arrest of the onflow of the blood in the vessels. There may be local mechanical injury to the capillaries, or mechanical destruction from accumulated corpuscles, or the cause may be found in the abnormal chemical quality of the effused fluid. In either case, this fluid distends the tissues, increasing the intervascular fluid to abnormal proportions, instead of returning to the venous side of the circulating vessels.

The mechanical requirement is obvious. It consists in the need of reinforcing the activities which cause the onflow, not only within the capillaries, as has been previously explained, but also exterior to them.

The entire relevancy of motion supplied to the intervascular fluid from adequate exterior source, will be easily understood, for the usual impulse derived from the action of the muscles is unavailable. The local affection enforces suspension of muscular contraction; the muscle cells themselves participate in the local affection and are in no condition for work. The morbidly incited nerves proceeding from the affected part involve the whole nervous system in sympathetic irritability, which it is injurious to increase by direct impressions. Besides, as we shall hereafter understand more clearly, if these obstacles were absent, it would be injurious to the part, under the circumstances, for the local muscles to act.

Hence, the need for exterior assistance. This is usually afforded by means which will increase and at the same time dilute the contents of the capillaries. Contact of the exterior skin with pure moisture, as the application of a poultice or a wet compress, is very useful in this direction, as universal experience testifies. Endosmosis, or the imbibition of water, adds to the capillary contents, and thereby increases the onflow, and at same time serves to detach the adhering and obstructive corpuscles.

The good effects of local wet applications, as poultices, etc., are, however, quite restricted. Their effects are entirely superficial, and they are, therefore, inoperative for the relief of the deeper seated local affections; they are not only inefficacious for vital stimulation or incentive, but serve rather to repress interior cell changes through which heat and energy are evolved, and the wasting materials are oxidized to the proper degree for exit, and they are, therefore, powerless to improve the quality of the intervascular fluid, or to fit it for re-entrance into the circulation. This effect of restraining tissue change, especially those of the nerves, produces, however, the agreeable consequence of mitigating pain, for which effect exterior wet applications are justifiably employed.

The mechanical aid supplied in the muscular power of another person, as an operator, properly directed, is quite sufficient to comply with the medical requirements for dispelling swellings composed of intervascular fluids. The mechanical impulse thus imparted is not only equivalent to that supplied by the muscles of the part in health, but has the advantage of being entirely adjustable to the individual case whatever be the emer-

gency. The local irritation and probable injury of the local muscles may be entirely obviated, while the mechanical impulse, if need be, may be carried to a much greater and all-sufficient extent.

True remedial effects are, however, to be secured only by compliance with certain inflexible conditions. The non-recognition of these is failure, especially in difficult cases. These conditions involve on the part of the physician and operator a correct knowledge of the physical state of the tissues, and of the relations of the power transmitted, to their deteriorated condition.

• This matter is so obvious that it might be left to the control of common sense, if, unfortunately, that useful commodity were not so often lost sight of the moment one begins to think of remedies. The operator left without this guide feels impelled to expend a great deal of unnecessary force in the direction in which it will certainly do the most injury—on parts least capable of withstanding mechanical impressions.

So important are the principles involved in the application of massage for the relief and cure of local affections, especially those denoted by the fluid accumulations which constitute swellings, that a brief summary will here be subjoined, somewhat anticipating what will appear more fully in connection with description of processes.

1. It is practically futile to attempt to displace or urge forward local accumulations of interstitial fluid, whether held by the tissues or contained by the local capillaries, till the *obstacles* to such outflow are removed. A free channel must first be provided in the intended direction, or no actual progress is possible. The forces which control the circulation of the blood in its vessels must first be incited to effective activity, for through that channel only can the local accumulation be drawn away. Otherwise local massage will certainly be injurious and not in the least degree helpful.

2. Localized manifestations of disease, the usual attendant of intervascular effusions, produce pain, and, therefore, increased nutritive activity of cerebro-spinal centres, communicating with the local affection through the nerves. This fact supplies the caution against further inciting the affected part by direct mechanical impressions. It also further implies the need of repressing the undue nutritive activity of nerve centres coincident with pain, by judicious counter-impressions, diverting nutritive support to other uses. The general muscles are the counterpoise nature furnishes against excessive innervation.

3. Any considerable increase of intervascular fluid distends, thins, strains and weakens all the tissues entering into the composition of the part thus affected, and, therefore, diminishes the resistance these can offer to mechanical impressions. Under these circumstances, such mechanical impressions as would be well adapted to the need of unaffected parts would be liable to inflict serious injury on parts diseased, and must be greatly modified to become so adapted.

The practical basis for securing remedial effects, extending to each of the conditions named, is sufficiently broad. If massage be first applied to the

sound parts, quite beyond the seat of local disease, it will be found not only agreeable, but that its remedial influence extends quite through the suffering part, and in a curative manner. By this procedure the stagnant fluids are drawn from the distended part, and relaxation succeeds tension of fibres. The sensory activities diminish, and very soon gentle applications of massages—always being careful that the sensations are agreeably impressed—become strengthening to the vital fibres of all kinds, and the local health rapidly returns. Especially is this realized, when the chemical activities next to be described have made some progress.

EFFECT ON HEAT, OXIDATION AND ELIMINATION OF MUSCULAR ACTION.

All manifestations of muscular and nervous power are accompanied by the production of heat, and also by corresponding discharge of oxidized products, principally carbonic acid and water, from the body. These phenomena bear not only an intimate, but an inseparable connection—they rise and fall together, in amount and degree.

The approximate evidence of these statements lies directly within everyone's personal observation, and consists in increase of functions accessory to heat production proportionate to the muscular and nervous energy liberated. For, on taking vigorous exercise, as running, climbing, etc., does not the respiration become more rapid and deep? And on sudden exposure to cold, do we not also deeply inspire, holding the inspired air, for a moment under increased pressure? Even when sitting at our mental tasks, do we not often find ourselves instinctively stimulating and reinforcing our thinking powers in a very similar way?

Heat production appears also to be the concomitant of the subordinate functions. The heat of the digestive organs rises during these periods of activity, and this is likewise proved of special secreting glands, as those of the mouth; the heat of the head rises a half degree during cerebral activity, and in spinal hyperæsthesia the feeling of increase of heat is scarcely less troublesome than that of heightened sensibility. Says Foster: "All the internal work of the body, all mechanical labor and internal muscular mechanism, with their accompanying friction, all the molecular labor of the nervous and other tissues, is converted into heat before it leaves the body;" showing conclusively that deficiency of heat is accompanied by deficiency of these changes in matter from which other forms of energy are evolved. This energy comes from the use by and among the tissues of oxygen. "Irritable living muscular substance, like all living protoplasm, is always respiring." "There will always be, in fact, a stream of oxygen from the blood to the muscle, and of carbonic acid from the muscle to the blood." "All available evidence goes to show that oxidation takes place in the tissues, and not in the adjoining blood."

As Liebig expresses the physical side of vital action, "The phenomena of life are always manifested by organized matter passing from a higher and more complex to lower and simpler forms." The corollary of this

statement, that the rate of consumption of oxygen and the expenditure of energy rise and fall together, is apparent.

DEFICIENT MUSCULAR POWER AND DEFICIENT HEAT.

Chronic affections of every kind and degree are characterized by both deficient muscular power and deficient heat. The invalid has both an inaptitude and positive inability for exertion; at the same time, suffers want of heat, and especially from its unequal distribution. The local sensations of heat, as in the head, spine, or other region of excessive sensibility, does not in the least conflict with the general truth of the statement, that deficient heat production is the constant concomitant of defective muscular energy.

These statements are in accord with those of leading physiologists. Foster says: "The muscles are the thermogenic tissues of the body;" "The waste of heat, and consequently its production, rise and fall with exercise." "As much as five times the amount of heat is produced in vigorous exercise as at rest;" "It is probable that even during rest the muscle-cell is quietly evolving heat, and employing nutritive supplies for that special use, that, in action, would be largely converted into the form of motion-energy." Whenever heat production is increased, respiratory motions are also increased.

The general principle that the vital system is an extensive arena for chemical activity, in which oxidation, or the use by the vital system of oxygen, is coincident and co-equal with function, or the evolution of energy, leads to the consideration of the results and products of this chemical activity.

On the one hand, we have the evolution of muscular and nervous energy and heat; on the other, new forms of the wasting tissues, and the changed products of digested food in chemical union with oxygen. These pass freely from the lungs, kidneys, skin and alimentary canal.

The proportions these bear to each other in health, in comparison with the deviations consequent on disease, are fraught with instruction as to the requirements of the system in the latter condition.

At each respiratory act, four or five per cent. of the twenty-one per cent., of oxygen contained in respired air, disappears, and is replaced by carbonic acid. The blood circulating freely through all the tissues, is the carrier of oxygen to the tissues, and also the carbonic acid from them to be returned by the lungs to the atmosphere.

The amount of oxygen disappearing, and of carbonic acid produced, depends, in health, strictly on chemical changes superinduced by vital action in the tissues. Thus, *enforced* respiration, that is, made deeper and quicker by the will, in the absence of increased losses by heat, muscular and nervous power, *fails to increase the amount of oxygen taken up by the blood.* Any excess beyond legitimate use for tissue change, is returned in the expired air, and is not retained by the blood or by the tissues of the

body. To increase the amount of oxidation in health, *it is, therefore, necessary to increase in the tissues the need of oxidation.* It is one of the practical, but too often unrecognized, functions of medicine, to incite various physiological activities, which result in increasing the relative, often the actual use by the system of oxygen; normal oxidation in health bears a necessary strict relation to the ingesta.

DEFINITE PROPORTIONS.

The products of vito-chemical change constantly passing from the organism, equal in health to the whole of the ingesta with oxygen added, are necessarily the same for equal amounts, of energy coincidently developed. That is to say, carbonic acid, water and other perfected products passing from the body are associated with definite amounts of energy also simultaneously liberated, whether such liberated energy takes the form of heat, muscular or dynamic power or nervous power, and whether the expenditure be within the organism, or in part exterior to it. Such results would at least accord with the analogies of chemistry in the inorganic as well as the non-vital organic world. No reason has been assigned for the existence of other laws of development of energy within the organism, than those we are familiar with exterior to it. It is, therefore, doubtful if the evolution of vital power, in either its muscular or nervous phases, can result from a variety of chemical operations; on the contrary everything points to the probability of uniformity.

But we all know that a great variety of combinations and separations may occur in the same substances, including nutritive matter, according to the circumstances in which these are placed. It follows that corresponding variations are possible in the vital organism, according as the matters submitted to it are fully, or only partly, subjected to its control. While the chemical products of the vital cell, arising in connection with the development of mild energy, are probably uniform fully reduced organic substance, that is, carbonic acid, water and urea, other products will, of necessity, arise from insufficient oxidation of intervascular substances, which fail to reach completion, and, therefore, fail to become disengaged from the system:

PHYSIOLOGICAL OXIDES, PATHOLOGICAL SUB-OXIDES.

There is much evidence pointing to the conclusion that the oxidizing function is progressive, and that the completed stage, occurring simultaneously with discharge of energy in some of its forms, may be preceded by inferior stages of the process, in which the appetency for oxygen or nutritive supplies is not fully satisfied, and in which the control of vitality over organized matter is incomplete. This class of material circulates with the blood and is an abundant constituent of the intervascular fluid. It is of every possible variety of chemical quality, that may possibly pass into the system through the digestive boundaries, or that may spontaneously arise through defect of vital processes, all alike waiting for use by the vital

system, that is to become oxidized. These matters may for convenience of study be classed under one common designation of *sub-oxides*:

The fact of progressive oxidation, and therefore of the existence of sub-oxides, is amply provided for in the animal organism from the lowest to the highest. The consideration of this fact is replete with therapeutic suggestion.

The provision referred to consists in such organs as the liver and the spleen. The function of the latter appears to be determined as that of providing against injurious consequences of irregular ingestion and the necessary perturbations that might arise from extreme alternations of nutritive supplies to which all are exposed. While one function of the liver is conceded to be that of withdrawing sub-oxides in all their degrees and qualities from the system, and to cast them reduced by its wonderful chemistry to something of uniformity, into the digestive organs, through which this whole class of materials, in connection with fresh supplies of ingesta, are re-submitted to the chemistry of the whole organism.

Pathology has doubtless intimate connection with injurious quantities and qualities of sub-oxidized matter, and the disturbing consequences of which this is the initial cause. Excess in quantity of sub-oxides remove them proportionately further from vital control; and they, of necessity, assume erratic chemical forms, probably less amenable to the ordinary or physiological reducing agency. The oxygen supplied is inadequate in amount to the requirements; and the usual and necessary physiological incentive to the completion of the oxidizing act becomes too weak to fully secure the physiological end.

The special chemical nature of sub-oxides, and the variety of spontaneous forms assumed, we can only know through the effects arising therefrom and variously classified as symptoms and diseases. The consequences in local blood stasis, in its varied locations and aspects, have already been noticed. To these, which may be considered the mechanical side of pathology, may now be added that of *quality*, or the *chemical* side of pathology, both of which are necessary constituents of every deviation, both of physiology and pathology. The physician, in other words, has to deal both with processes and products arising from defective processes.

Those disturbances and deviations from health, which are called chronic diseases, plainly denote in various ways the presence of sub-oxides. Sometimes the fact is conspicuous in the secretions, the general character of which throughout the system is shown by the coating on the tongue, indicating unreduced albumenoids returning to the digestive organs; nearly always by a comparatively dry skin and diminished quantity of urine, and the presence therein of a large amount of *extractives*—matters which have failed of complete reduction; sometimes it is accumulation in and consequent distension of local capillaries, with stasis and excessive intervascular effusion, followed by degeneration of this fluid and possibly of the tissues in contact. This latter consequence being possible, indeed probable in any tissue of the body and in any of its parts, is consequently a very common

consequence, and often serves to give special form and name to the disease, although having a common source with other and perhaps widely different local and technical forms in incompletely vito-chemical products.

Greater obscurity, perhaps mystery, is encountered, when it becomes evident that important interior organs are suffering, as the liver, or the digestive apparatus, or the glandular system; but the view of causes above given will seem to remove much of the obscurity, especially when the therapeutic indication derived from this view of pathology is practically carried out. The consequence to the central nervous system of sub-oxidation is often more serious than to any other department of physiology, more particularly as the functional returns to sub-oxidation are not so clearly seen. The medical prescriber, in these cases, following prevailing views, is almost certain to inflict damage in his futile attempts to allay symptoms, in opposition to causes in full play; for acting upon the delicate nerve-centres, whether by means of drugs or mechanical methods, is eminently adapted to increase instead of diminishing the local difficulty. This tissue is dependent on the muscles for nutritive support in disease as in health.

Even ordinary medical practice, philosophically considered, affords ample corroboration of the view of primary pathology here presented. For what are so-called *stimulants*, the constant recourse in failing health, if not incentives to oxidation? The favorite remedies included under the class of *tonics*, in a similar way promote temporary increase of irritability, which during the effect cause a more vigorous and rapid aeration of the blood. Alterations are simply temporary substitutes for the deficient oxygen, as may be seen from their general chemical characteristics. Other drugs, especially those of the more decided and potential chemical attributes, as the alkalies, incite by their pressure more pronounced chemical aptitudes, even of the normal and physiological form, but hardly add to the capacity for health. Even the *sedatives*, in an indirect way, confirm the principle now illustrated. They partially inhibit physiological activities, excepting the respiratory, and allow time for oxidation to acquire temporary ascendancy.

The reasonableness of these views become the more apparent when it is considered that nature has a uniform method of compassing her intentions in the physiological economy; this is by the use of oxygen, alike for rendering the potential energy in food, actual in heat and mechanical power, and for removing the *débris* of material from which energy has been dissociated, together with such impediments and obstructions, mechanical and physical, as constantly find their way to the intervascular fluid.

The chronic invalid is chiefly occupied by his sensations, and seldom inquires whether there be causes upon which they depend; he demands of the physician immediate suppression of pain, and other evidences of whatever may have produced the effects he desires abated, the physician is too apt in his endeavor to gratify his patient, to neglect the real affection, the incompletely changed matter from which energy should be liberated,

and prescribes remedies quite incapable of reaching the radical source of the disease, so far as this depends on suboxidation. The consequence is that his labors are too often devoted to the impossible task of removing effects, whose causes continue indefinitely unabated. This is the result of failing to discriminate the relative value of radical and palliative remedies.

HOW DUE INCREASE OF OXIDATION IS SECURED.

In health the motion communicated by the action of muscles to intervascular fluids, secures the removal of oxidable constituents. In chronic diseases, this becomes insufficient. There is less muscular action, and more oxidable matter. It may now be reduced by the motion derived from exterior sources, as the muscles of another person by massage.

The relevancy of the means may be readily understood. In ordinary chemistry it is well known that its operations occur only at insensible distances, that is, by contact of the elements engaging therein having mutual affinity. So long as separate, no union is possible. Motion causes successive moving atoms to come in contact; oxygen derived from respiration with oxidable material awaiting this only feasible avenue of exit from the system. Elective affinities are, in physiology, consummated only when the matters engaging therein are, through the circulation of the blood and the action of the muscles, brought in contact in the intervascular fluid. By repeated experiments of different physiological inquirers it appears that little or no oxidation occurs in the blood, the oxygen being retained as oxy-hæmoglobuline in the blood-cells, and this element is free to exercise its reducing functions only after reaching the intervascular fluid.

For rapid therapeutic effects, proportionate energy of contact is necessary. There should be supplied, not only motion with pressure, but such rapidity as is proportionate to the end sought. While a certain feeble rate of motion, which brings the materials into proximity, may result in the production of injurious sub-oxides, a more energetic motion causing actual collision with a degree of pressure will secure completed results, carbonic acid and water, which have only to be produced, to be at once quite removed both from the organic and chemical arenas. To increase the rate of motion communicated, is to proportionally increase the number of changing atoms and molecules brought into collision in a given time, and consequently, the therapeutic effect.

This view of the function of motion in determining physio-chemical affinities, is well supported by scientific authorities. Says Liebig: "It is evident that impulses of motion are capable of producing attractions in organic bodies." "Mere mechanical motions suffice to modify the force of affinity in chemical combinations." "Motion is the cause of molecular arrangement." "If atoms are made to change their places or mode of arrangements by an impulse from without, another compound is formed." "Motion is the cause of molecular arrangements." "Motion (like heat) may be capable of producing alterations in organic forms." The efficacy of increased oxidation in removing erratic product of incomplete oxidation

is recognized in the following: "In many diseases substances are produced which are incapable of assimilation. By the mere deprivation of food, these substances are removed, leaving not a trace behind; their elements have entered into combination with oxygen of the air." Such deprivation, is evidently equivalent to proportional increase of oxygen. Lehman, in relation to this subject, remarks: "When once the fact is universally admitted that the first thing to be considered in many diseases is to furnish a copious supply of oxygen to the blood, which has been loaded with imperfectly decomposed substances, and to remove as speedily as possible the carbonic acid which has accumulated in it, these observations (on the nature and effects of respiration) will have afforded us true remedial agents, which exceed almost every other in the certainty of their action."—*New York Medical Times*, June 1883.

MASSAGE AS COUNTERPOISE.

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One of the most unequivocal as well as satisfactory uses of massage is its application to portions of the organism, while other portions are excluded. The consequences as relates to the circulation of the blood are double; this fluid is increased in the part to which the massage is applied, and therefore diminished in other portions of the circuit of the circulation. The latter effect is soon evidenced to the critical observer in the diminished rapidity and force of the pulse, and other evidences of lessened arterial tension.

The good effects derivable from this recourse to the immediate tissues to which the massage is applied has been previously discussed. It is to the effects on the remaining portions of the body, especially favorable in cases of any local blood stasis, such as fullness or congestion of the head, spine, chest, digestive apparatus and appendages, that attention should be particularly directed. It is scarcely necessary to premise that in a circuitous flow, like that of the blood throughout the body, an impulse supplied at any given point is effective throughout its whole course, as proved by the mechanical function of the heart, in impelling forward the general circulation of the blood. Now, mechanical aid applied anywhere is equivalent to the extent of the impulse afforded as an additional though perhaps minute heart, in overcoming local blood stasis, and in removing local hyperæmia.

Another powerful influence in removing local hyperæmia of central organs, whatever its form or special symptoms, arises from the effect of the mechanical diversion of blood into parts of the body previously receiving an insufficient amount. When general or local massage has caused the superficial capillaries, and those of the large muscular masses of the limbs to receive more blood, a heavy drain upon its general mass is doubtless produced. Any distension of local capillary vessels is consequently diminished; the capillary walls, previously strained and weakened, are encourag-

ed to contract to their normal size, and are enabled to urge forward the inflowing stream, thus preventing recurrence of stasis and hyperæmia. In this way, a cause operating at a distance is quite capable of removing local hyperæmia in any part of the course of the circulation.

What renders massage specially valuable as a remedy for the condition indicated, is the fact that it renders these effects permanent. The increased flow to, and localization of blood in the part subjected to massage, does not end the effect, which is not merely an improved distribution of the blood, but one of increased use and disposal of it. For increased nutritive changes are superinduced, involving oxidation and the production of water, carbonic acid and salines, which are constantly diminishing the volume of the blood, and as constantly compensated from the digestive organs. These changes, so long as they are in operation, powerfully oppose local hyperæmia, which nearly always depends on obstructions arising from defective chemical action assuming some form of sub-oxidation.

The transfer of increased quantity of blood from congested or hyperæmic central parts to the more exterior and muscular parts in the way described, will be recognized as a physical act, and the result of causes mainly physical, and might for the sake of distinction be denominated *physical revulsion*. It is an aid on the mechanical side of physiology, with special reference to immediate rather than ulterior purposes.

Physical revulsion requires the pathological state for its full demonstration by massage. For while local increase of blood is readily secured by mechanical causes, yet when all parts are healthy, there is no opportunity to raise local nutritive activity as when this is defective, in which case there are no differences of status to be removed. Besides, in chronic affections, the system is in general more susceptible to impressions by reason of increased irritability, and therefore responds readily and thoroughly to those derived from mechanical causes.

The reason for the necessity for general massage to precede the local, as stated in a preceding paragraph, is now made clear. All massage causes increased blood-flow to the part to which it is applied, and it should not therefore, at the peril of increasing the localized affection, be first applied directly to the part distended by hyperæmia. But by applying the massage to remote, and to contiguous parts, the local hyperæmia is removed, at least so far as to diminish local tension, subjecting the material of blood to useful employment elsewhere; in fact, need for blood is caused at other points, thus producing physical counterpoise in the distribution of the blood.

After securing a desirable degree of this mechanical distributive effect, massage may be applied to advantage directly, but tentatively, to the local disease, however severe its manifestation. All injurious or unpleasant effects at the suffering locality are in this way completely obviated; the gentle mechanical compression and inter-cell friction communicated by the hand of the operator now only assists the desired normal contraction of the distended capillaries and other tissues, and enables them to perform

their natural and desired functions of urging forward and maintaining continuous removal of the local fluid.

The power of massage to remove the failures of local function which are the conspicuous evidences of chronic disease, is direct, easily demonstrated, and so complete when intelligently applied as to leave scarcely anything to be desired. It is applicable in all forms of chronic disease, however diverse the local symptoms—as well to obscure internal affections, as to the most conspicuous external fault. The effects are permanent, because restorative of the automatic activities, which alone constitute health. In this respect, massage is in extreme contrast with those temporary incentives to action, which are so much sought in various kinds of ways, and are quite deficient in the quality of self-perpetuation that is essential to a real remedy.

At first view, it may be considered that massage is in some sort a substitute for and an equivalent to other remedies of external application that have always been in vogue; that, in fact, whatever removes localized impediments in the circulation, and whatever increases the amount of blood retained in such parts of the body as shall operate to oppose hyperæmia of some other part, bears a relation to and favorable comparison with massage. This, however, is a too restricted view of the subject and omits the most important and fundamental principles involved, for it wholly leaves out the fact of the destruction of local impediments, chemical and physical, by the oxidation that is superinduced by massage, and for which other local applications furnish no equivalent. It also omits the coincident local heat production, by and in the part suffering from previous deficiency, through the actual and necessary interchanges of matter by which heat is developed, and upon which the organism naturally depends for its heat supply. Massage is a process for superinducing the self-sustaining processes of health, in place of the counterfeit and transient appearances for which an attempted substitute in the form of heat is employed.

AGENCY OF HEAT.

The most immediate and conspicuous evidence of the restorative as well as the revulsive effects of local massage, is the local increase of heat in the parts in which heat was previously deficient. The skin and the extremities become not only thoroughly warmed to the natural degree, but in a short time are capable of maintaining their warmth. This is complete evidence that due nutritive changes are proceeding in the muscles and in the intervascular fluids; of the liberation of water and carbonic acid from materials drawn from the blood; and of a uniform circulation, and the consequent absence of regions of local hyperæmia and undue and uncontrolled local capillary distension and its consequences. It is almost instinctively understood that both muscular and nervous energy arise in the system from essentially the same conditions as those in which heat is liberated. The inference hence arises, that to raise the local heat is virtually to increase the vital manifestations in its correlated forms of muscular and nervous energy.

The heat that arises from normal, that is from completed chemical changes (wherein no excess of sub-oxides arise), is rapidly diffused through-

out the system, and doubtless aids the equal distribution of the blood in the several parts, while excessive production is rendered impossible by the rapid increase of its loss through the skin, synchronously with its production. The benefit of heat production, or rather of the process from which heat arises, therefore inures to the system at large.

But if the normal products of oxidation, water, *carbonic acid*, and salines, fail to be produced, then the chemical products reach only some inferior, sub-oxidized stage. In this case, the heat arising from the chemical changes is retained with the sub-oxides. These sub-oxides have a great tendency to accumulate at some weak point, where also in consequence local excess of heat will appear. This is inflammation, or, if diffused, it becomes fever. In either case, the remedial indications are sufficiently apparent, and these are to increase oxidation, which cools the body by converting sub-oxides to the completed forms, in which only can they be dismissed from the body. All anti-fever and anti-inflammatory remedies, of necessity, in some way promote this result, that is, facilitate oxidation and therefore heat elimination; hence it is found in practice that for local excess of heat, in chronic affections, massage is unequalled as a remedy.

The organic economy is wonderfully constituted as regards the simplicity of the means it employs to correct aberrations of function. For while local excess of heat is removed by diffusing the circulation of the blood and by increasing local oxidation so as to attain the eliminatory point, its local deficiency is also renewed, by causing a greater inflow of this fluid, and by causing local interior increase of heat production, for both of which opposite conditions massage is equally effective.

THERAPEUTIC USE AND ABUSE OF HEAT.

The physiological effects naturally flowing from suitable exercise—that is health—it has been shown, are attainable by the disabled in the form of massage, which, under the circumstances, is its substitute. These effects are also persistently sought in applications of *heat*; the superficial effects being, to a limited extent, apparently identical.

For heat applied to the surface of the body is a ready and therefore a popular way of securing mechanical revulsion and some of its immediate consequences. Heat causes dilation of the superficial capillaries, and therefore increases their sectional area, and consequently the quantity of blood required to fill them. This blood, of course, flows from the deeper seated vessels, whose contents are thereby diminished. So far, the same effects are produced as by exercise, and as is attainable by massage, viz., an equable distribution of the blood, restoration of surface heat, and increase of moisture of the skin, and, it may be added, the relief of pain.

Hence the popularity of the numerous ways in vogue for communicating heat to the body or its parts, by means of baths, partial and complete, of hot water, hot vapor, and hot air, as well as by local irrigations of hot water.

It is perfectly germane to our subject to inquire as to the physiological effects of this imported heat, to enable us to judge of its propriety under

different circumstances, and also to discriminate between the immediate effects of the mechanical and sensorial impression, and the ultimate consequences of hot applications.

It is not an abuse of a hackneyed phrase to say that it is *natural* for the living body to lose heat ; in other words, to receive at its surface a constant impression of cold. This impression places the system under stress to evolve the form of energy which by laws of the organism has a necessary connection with both muscular and nervous power, and practically correlates with these.

The living body maintains an average temperature of 40 to 45 degrees above that of surrounding things. It consequently parts with its heat to objects in contact, and radiates it into space, and thus constantly maintains its uniform heat of about 99 degrees. All this heat is produced, set at liberty, interiorly ; and the vital activities are in healthful operation only when this heat producing process is going on. The dissociation of energy from nutritive material depends on this process.

Transpiration from the surface, carrying heat off rapidly in the form of watery vapor, which contains a vast amount of latent heat, is the compensation nature supplies when the cooling is otherwise insufficient. This mode of regulating the bodily heat is always operative and sets at defiance the otherwise embarrassing consequences of vicissitudes of heat to which all are incessantly exposed. When external heat rises, and the body parts with too little, the increased vaporization from the surface contributes to the loss and increases it to the requisite amount.

And so all fluctuations of heat losses are attended by corresponding and equal fluctuations of its production.

And since heat production within the living system is dependent on changes of matter involving the use by the system of oxygen, it follows that similar variations occur in the use by the system of oxygen, and in the chemico-vital changes involved in its use, as in heat production, which, as we have seen, is indissolubly connected with vital energies.

Another consideration completes the view of the organic relations of heat necessary to a proper understanding of present divisions of our subject. Oxidation, to which heat-loss is the natural and indispensable incentive, is progressive in the living body. All the phenomena of life, whether physiological or pathological, imply this fact ; and this conclusion is the uniform result of philosophical inquiry ; and what is still more to the purpose, all therapeutics worthy the name bears the same testimony ; but therapeutics makes this all-important addition : The *degree* of oxidation attained in the living body is in the ratio to the incentive. The principal incentive is *cold*, at least the ordinary and necessary, and in general, involuntary losses of heat, irrespective of sensations. The other subordinate incentive is *motion* : the ordinary activities of life, which appropriate to the uses of the will a fraction of the energy otherwise diffused and lost as heat.

It is plain that imperfect results here should be expected when the causes are inadequate to the production of those more perfect. When the ordinary

and natural incentives to oxidation are feeble, as when cold is mainly withdrawn and motion is repressed, then oxidation should not reach its completed stage. The chemical act only arrives at some inferior stage of the process, from lack of the incentive necessary to carry it further.

Every hot application, as a bath—local or general—is therefore the withdrawal of the ordinary natural incentive to oxidation, and also equally so the diminution of the energy ordinarily arising from the vito-chemical activities in which oxidation participates. Such uses of heat annul pain, because they annul power, of which pain is but a form. They postpone those activities through which alone energy is possible. To the extent to which heat is supplied from without, it cannot be produced within, and its correlative of nervous power is repressed while such artificial substitute for heat production lasts. But the artificial supply of heat is the furthest possible from its natural production in its effects. The one represses the removal of waste and favors the accumulation of sub-oxides, the perpetual threat of disease, while the other removes not only the cause of disease, but even the well-developed morbid phenomena in whatever form.

Without abating anything from the full force of the physiological principles above stated, it may be remarked that acute attacks, especially those in which pain is pre-eminent, permit of modification of their application. The circumstances often justify a resort to heat.

The morbid affection in these cases is, in its nature, transient and self-limited, and repetitions of the application of heat are not expected or demanded; the diminished oxidation caused by it is compensated for by concomitant chemical activity throughout the system, and the desired abatement of pain is soon and permanently secured.

These circumstances are, in chronic affections, completely reversed. The system is laboring under embarrassing repression; from the muscles, which do not spontaneously demand nutrition and oxygen, the difficulty extends to the respiratory organs, which fail to take up oxygen, and reacts on the digestive powers, for whose products the demand by the system is feeble, and the predominance of sub-oxides is well marked. In all the local manifestations which are popularly regarded as the disease.

All actual (as distinguished from factitious) cures of chronic infirmities must, from the nature of the case, proceed in the line of development—*increase*—as distinguished from the palliation resulting from repression. The essential feature of such disease may be expressed by the phrase, *failure of putting things to use*. The aliment and the oxygen introduced fail to become completely employed, and afford an obstructive and probably noxious residuum; and the tendency of the organism, under the repressive style of remedies, is toward progressively diminishing capability for using the materials from which the energy available for the individual may be developed. The inevitable consequences under this system of repression, even though widely employed, are easily foretold. The obnoxious sub-oxides are resolved into impediments of function at vital points, and disorder and disorganization extend to the whole body.

The remedial use of hot applications appears to be due to popular errors, diligently fostered by unqualified medical advisers.

One of these errors is the assumption that the sweating is a sort of purifying process, forcing effete and obstructive matters from the body that might otherwise prove injurious. The truth is quite at variance with this assumption; for perspiration, however abundant, is only the appearance at the surface of completely formed products of waste, to the preparing and perfecting of which the process contributes nothing whatever. These go to the surface in excess only when this mode of cooling is made imperative by surplus heat. The actual process of removing waste is interior, and consists in oxidation, which the added heat instead of increasing actually diminishes. The well-known tendency to take cold after sweating is abundant evidence of diminished oxidation.

Another error is, that the suspension of pain, which is enforced by diminished evolution of energy, is the cure for pain. This error is most deceptive and ruinous in its ultimate effects; it only postpones what reappears when the cause of suspension is removed, and thus imposes a constant struggle, without substantial compensation.

The effect of hot applications as a remedy may be summarized as follows:

1. Heat supplied to the body from exterior sources deprives the organism of the power of dissevering energy in the form of heat and its associate forms, from the materials supplied to it for that purpose, because it removes the principal incentive to that action. It contravenes a primary and important principle of physiology. It represses the transformation of tissue, which accompanies all manifestations of vitality; diminishes the use by the system of oxygen, and therefore the removal of the waste of the vital processes in all its forms; these effects being exactly the reverse of those effected by massage, for which the heat applications are an ostensible substitute.

2. Keeping in view the primary fact that *supplied* heat is a physiological repressive, it may, nevertheless, be properly available as a temporary medical recourse, for its limited repressive effects. Its continued employment will, however, be found to be in decided opposition to the requirements of chronic cases, since heat administered is not in any sense a substitute for heat produced, but is in direct antagonism with its processes. It affords not the least correction or control of what is the essential disease, as distinguished from the consciousness.

3. The revulsive effects and the pain-suspending effects, for which the local and the general applications of heat are chiefly employed, not only contribute nothing to the automatic self-perpetuation of ordinary healthful physiological action, but actually diminish that power. This is also the reverse of what is most desired, and of the real object to be attained in chronic affections.

4. The repression of physiological oxidation, which is the positive effect of providing the heat from exterior sources, that needs to be derived from interior sources is liable to increase the sub-oxides of the body to an

unmanageable extent. The obstruction to normal activities at any constitutional or acquired weak point is so insidious that its cause remains obscure, and is usually referred to some incidental circumstance, instead of the actual source of injury. Effects can never be actually obviated without removing the cause; the seeming and factitious should be shunned.

5. Experience points to another phase of the evil consequences of inordinate recourse to heat, as not only possible, but of frequent occurrence. The repressive effect of heat, it will be noticed, is exclusively on the physical side of physiology, the mechanical and the chemical phases of vital activity. While the more obscure and immaterial functions of the nerves are not primarily incited, their relative value in the organic whole is palpably increased. This is because the counterpoise which muscular action always affords against inordinate nerve nutrition is practically withdrawn by heat. The muscles become proportionately less active, and the nerves therefore become more active, from defective counterpoise. Spinal sensory activities under these circumstances easily attain unwholesome proportions, and the chronic invalid is consumed by nervous complications.

FUNCTIONAL COUNTERPOISE.

The transfer to the extremities, the muscles and the skin of an increased amount of blood by means of hot applications and local irritants, is essentially a physical process, and has very little control of functional activities. Such transfer, however agreeable the immediate effect, is incapable of more than temporary improvement of the vital and working conditions, either of the parts securing the accession of nutritive support or in those from which it is drawn. For whatever control we may secure by the methods referred to, of distribution of the circulation, all nutrition, whether of separate regions and parts of the body, or of its functions, is ultimately amenable to the *law of use*. Every part and every instrument of power constituting the organism receives blood in the ratio to which it employs what the blood brings to it for nutritive purposes, and fails to receive blood to evolve heat and muscular and nervous power which are the natural attributes of the part when these fail of being applied to use; that is, when the loss of heat is prevented by external heat, and when the muscles are idle.

It follows that the mechanical aspect of revulsion, so far from being the primary and controlling, is in reality but a subordinate one; that instead of being regarded as a therapeutic cause, it is only an effect, incidental to functional action.

Massage, which deals in physiological uses as distinct from the mechanical effects usually sought, touches a phase of therapeutics so little cultivated as to be practically unknown to the ordinary medical prescriber. This relates to the functional uses to which nutrition may be applied at the will of the prescriber, as contrasted with the too frequent endeavour he makes to forcibly repress a too excitable function. A little reflection—still better, a little patient experimenting—would soon demonstrate that the simple

need is to turn a portion of the too abundant stream into a neighbouring exhausted channel ; then there must be equable and uniform flow.

Massage determines the functional uses to which nutrition should be applied. It regulates the relations to each other of diverse and distinct functions ; it moderates the one in excess, and increases the one defective, and in this way re-establishes the harmonious relations which are essential to health. It secures proper distribution of nutritive support by simply applying such support to the desired use. It does not stop at the impracticable point of forcing increased nutritive material upon unwilling organs, trusting to them without incentive to do the rest ; nor does it expect to diminish the activity of a habitually excited function, without in some practical and permanent way withdrawing the incentive on which such morbid manifestations depend.

Energy assumes forms in the body in accordance with circumstances which control its dissociation from its connection with matter. Since all parts and all functions draw support from the same common reservoir of blood-supply, it is obvious that such energy assumes form and character in the tissue, and in accordance with the needs imposed upon it. Energy there is practically transformable. And while energy must, by the constitution of the organism, appear as heat energy, muscle energy and nerve energy, the proportionate amount which actually appears in either of these forms is subject to the greatest variation, according to the control which may at the time influence the direction which it may take and the form it may assume. It is this control of the form and the rate of manifestation that is one of the functions of medicine, and practically the most important, since it is here that are found the beginnings of all pathological manifestations.

Scarcely any law of the vital economy is more susceptible of practical proof than the one now referred to.

This law of distribution of energy in accordance with the respective demands of function, is operative to even extreme degrees, so that intense incitation of one may practically, for a limited period, exclude another. This happens when intense cerebral incitation suspends muscular power, as in case of extreme emotion ; or when the same cause suspends the control by the capillaries of their contents, or produces irregularity of the heart's action, etc.

REPRESSION OF NERVOUS ACTIVITY.

In a similar way, control of nervous manifestations is attainable by adequate incitation of muscular nutrition. To attain the demonstration of this principle in its extreme degree, it is necessary to supply incitement to the muscles out of the ordinary manner, by withdrawing the will. The exercise of the will invites nutrition of nerve centres ; and when the muscles and nerves act as in health, synchronously, nutritive support is equally distributed between the two functions. But, if the muscles be incited through exterior supply of motion instead of incitation proceeding from

nerve centres, then the muscles receive the whole of the nutritive result, and the nerve-centres so little that their functions may thus be practically suspended.

It has before been shown that massage supplies to the muscle cell all the physical conditions for the chemical and nutritive changes to which it is in its nature and purposes adapted; and that this is done in accordance with the ordinary conditions for muscular support, only substituting mechanical energy from exterior sources of supply, for that ordinarily arising from the muscle itself, under the ordinary incitement arising in the nerve-centres.

It will be observed that in this way—that is, by the supply of all incitative as well as all the physical conditions for muscular activity—the agency of the nerve in muscular function is entirely omitted. Neither the will nor reflex action are brought into play, and the nerve-centres from which these spring are therefore inoperative, and in practical suspension. The blood supply to these centres is, therefore, diminished proportionately to this diminution of the demand; but on the other hand it is supplied to the muscles in proportion to the artificially exaggerated demand. The energy that would have been divided between the nerve-centres and muscular substance is wholly appropriated by the muscles, and appears under these circumstances chiefly as heat.

There is scarcely any principle in physiology more susceptible of satisfactory demonstration than the one above stated, and scarcely one of greater therapeutic importance.

The extreme degree of functional revulsion is complete suspension of all nerve-power, sensorial and reflex. To attain this, it is necessary to supply a more thorough massage than can be supplied by the unaided hands of an operator. This result may, however, be easily commanded, through apparatus devised and adapted to this purpose. In this way a practically unlimited control over nervous manifestations of power, both normal and morbid, is easily and certainly attained. Both reflex and sensory power can be thus completely suspended.

Lesser degrees of control of the nervous activity are just what is therapeutically required in a vast variety of cases of chronic diseases. Nothing more is wanting than cultivation of muscle dissociated from nervous activity, to maintain the effects thus secured. This is a therapeutic process, having a more rare and complete result than is often attainable in medical practice.

This principle of nutritive revulsion and counterpoise finds its special therapeutic field in all cases of neuralgia wherever located; in chorea, hysteria, epilepsy, and in all spasmodic affections. The same principle is of equally successful application in the less fixed forms of nervous disorder, as in sleeplessness and irritable nerves, however manifested.—*New York Medical Times*, July 1883.

