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Original Communications.

THE QUININE TREATMENT OF WHOOPING COUGH.

By FRANCIS W. CAMPBELL, M.A., M.D., L.R.C.P. L.

Professor of the Theory and Practice of Medicine, Medical Faculty of Bishops' College.

[Read before the Canada Medical Association, Quebec, Aug. 18, 1886.]

I do not propose to enter upon a description of whooping cough, its history, etiology or sequelæ, but simply to make a few remarks upon a plan of treating the disease, which I have followed for the past seven years, and which has yielded me well nigh complete success. Although not usually a fatal disease, yet it is so prolonged, seldom lasting less than two months, and often continuing four to six months, with symptoms so distressing, especially to those whose duties bring them continually in contact with the little patients, that any plan of treating it with a more than usual amount of success, must be deserving of our best attention. It may, I think, be asserted with truth, that generally the family physician does not realize the torture which parents experience when the distressing spasms seize their children. The physician is too apt to look upon the disease as one that must run its course; and beyond giving an expectorant mixture, possibly containing some antispasmodic, and ordering some form of counter-irritation, is content to let time do most of the work. That under such treatment patients will get well, is doubtless true, but they do so, leaving behind a constitution sorely tried, sometimes all

but completely wrecked. I, of course, am aware of the many remedies which have been suggested for the treatment of whooping cough. Thus I have tried hyosciamus, belladonna, the bromides, antimony, chloral, salicylic acid, and a host of others. I have used emetics of alum, ipecac, and sulphate of copper. But all have failed, as a rule, to give more than temporary relief. I have not been conscious of the disease being in any way cut short. In 1879, it so happened, that in my own family I had one of the worst cases of the disease it has ever been my lot to meet with. I tried several remedies without the slightest benefit. I consulted all the standard authorities within my reach, but got little information to satisfy me. I devoted some nights to hunting up articles on whooping cough in a variety of journals within my reach, but I did not meet with any satisfaction till I came across a paper in the Canada Medical Record for July, 1873, by Dr. Dawson, Professor of Diseases of children in the University of New York, on the treatment of whooping cough by quinine. In this paper it is stated that Dr. Binz, of the University of Bonn, was, in 1870, the first person to direct attention to this plan of treatment, and to state that it had yielded him invaluable results. He considered whooping cough to be a neurosis of the pneumogastric nerve, caused by infectious and irritating mucus, that has accumulated in the pharynx and larynx. By experiment he found that quinine destroyed, even when highly diluted, all structures found in normal mucus, and he presumed (and he says correctly) that it would do the same on the mucus of pertussis. In the American Journal of the Medical Sciences of 1871, there is a paper by Dr. Let-

zerich, of Germany, in which he advances a theory regarding whooping cough, which would seem to indicate quinine as scientific treatment for the disease. In this paper he says he has discovered a fungoid growth which vegetates in the epithelium of the air passages, and by its irritation causes the convulsive attacks of coughing. He says that the expectorated mucus of whooping cough patients contains masses of brownish red spores with occasional threads of mycelium. These spores he introduced into the trachea of rabbits, and in a short time they became affected with a noisy and violent cough identical with that of whooping cough. These rabbits were killed, and the mucus in the air passages examined, and it was found to contain precisely the same spores, as he found in the sputa of human subjects with pertussis. Writing of the quinine treatment, Dr. Dawson says: "If the Fungus theory of Dr. Letzerich be correct, I can readily account for the destructive influence of quinine on fungoid development. Its power consists in removing the cause of local irritation, which gives rise to reflex phenomena, evidenced by the whoop. For my part I consider pertussis an affection of the mucus membrane of the pharynx and larynx, and the "whooping" as simply reflex. I do not consider the rapid cure affected by quinine due to the simple destruction of the fungus, but also to its nauseating bitter taste. In whooping cough there is an abnormal secretion of thick tenacious mucus from the mucus membrane of the pharynx, which may or may not excite a paroxysm, but which certainly aggravates and prolongs it. This is proved by the fact that the moment this mucus is removed by either coughing or vomiting the paroxysm ceases. The effect of the quinine in solution, when swallowed is instantly, from its bitter taste, to excite a free secretion of thin mucus from the bucal mucus membrane and salivary glands. This softens and renders easy of dislodgement the thick tenacious mucus lodged in the pharynx. The frequent use of this quinine keeps up this action, and in a short time there is no accumulation of the thick tenacious mucus, so that with each act of coughing the mucus is readily loosened and expectorated. Now as to the method of administering the drug. I would wish to direct very particular attention to this portion of my paper, because in Professor Peppers' late work, just completed, in the article on Pertussis it is said: "Quinine may be given in solution, combined with simple syrup, liquorice

also disguises the taste admirably for children." I am sorry to see in so recent an article, and in so able a work, advice so pernicious and so calculated to bring discredit on the quinine treatment. Let me state most emphatically that if good results are desired, the quinine must not be disguised in any shape or form, nor must anything be given for several minutes afterwards, having this object in view. If there is one point on which all advocates of this treatment are agreed it is that it must be given pure and alone. Wherever I have found apparent failure attend the use of this drug, it has been when parents have disregarded my express instructions on this point.

The directions for the quinine treatment may be tabulated as follows:

1. Give the quinine (sulphate preferable) dissolved by and in pure water. For children under three years from gr. ii. to gr. viii., and for older children and adults from gr. x to gr. xl, to the ounce of water.

2. Give not less than one teaspoonful every hour, or at longest every 2 hours, during the day, and several times during the night.

3. Give nothing with or afterwards for at least five minutes to destroy the taste or wash out the mouth.

4. Continue to give it although the first few doses may be vomited; repeat it at once.

5. Be sure that the quinine is pure and that it is thoroughly dissolved.

I have now the notes of over one hundred cases of whooping cough treated by quinine. This embraces all the cases which have come under my care, since 1879, and I have yet to meet with a failure. Some have been longer than others in yielding, but as a rule within a week, the effect is most evident, and, as a rule, you can procure a perfect cure in at most a month. In conclusion allow me to give you brief notes of three cases. One, my first case, that of my own child; the last two within the last three months.

E. W. C. attacked with a harsh cough January 26, 1879. On February 2, the true character of the disease was manifest, the following day the paroxysms were intense and frequent. Feb. 4. Got his first dose of quinine at 9 a.m. During the following night the paroxysms were less numerous and decidedly less severe. Feb. 6. Passed an excellent night, although he coughed several times. From this to February 27, he steadily improved, and by the first of March was quite convalescent.

On the 14th of May this year I was asked to see three children in the family of Mr. W. O., who all had had whooping cough, well marked, for a week. From the description given by the mother, on my visit, they were all rather severe cases. The disease had been contracted from the child of their next door neighbor, who had already had it for over a month, and the doctor of this child was treating it on the "do nothing plan." I placed them on quinine, and within 48 hours the relief in the words of the mother was "wonderful." On the 1st of the present month of August, I was asked to visit at St. Johns, 26 miles from Montreal, a little girl 8 years old, the child of Capt. D., formerly of the Royal Canadian Rifles. She had had whooping cough since the middle of July, and had wasted to almost a shadow. The mother described the paroxysms as "frightful." They occurred every couple of hours during the day, and at night were so incessant, that for at least two weeks the child had positively hardly got any sleep. I ordered her one grain of quinine every two hours. On the 7th of August, there being no perceptible improvement, I was again requested to see her. They begged me to give her something else, something that would relieve her, at once, for they thought she could not live many days if the paroxysms continued as they had been. The child certainly was the worst wreck from whooping cough I had ever seen. My faith in quinine was however firm. I therefore simply doubled the dose of quinine, giving her 2 grains every 2 hours during the day, and at least twice during the night. On the 12th of August I again saw her, and the report then was, the first dose of the stronger medicine showed a beneficial result, in a slight diminution in the intensity of the paroxysm. On the night of the 11th of August, the child went to bed at 7 o'clock and slept without waking and without a paroxysm till 5 a.m., when she had had a slight one. I saw her at 6 p.m., and during the day she had had only three slight attacks since 5 a.m. The effect of the medicine was in the words of the mother "wonderful." As might be anticipated from the quantity of the drug taken, the child complained of some headache, and slight noise in the ears. I ordered the medicine to be continued at intervals of 4 hours. In some, in fact in most cases, difficulty is experienced in getting the child to take the medicine. If the child is young, I simply insist upon the medicine being given forcibly and although at first this is done reluctantly by the

mother, she so soon sees the resulting benefit to the child, that she willingly perseveres; when the child is old enough to realize the benefit it is receiving, I do not unfrequently find them ask for the bitter medicine.

So little is found in works on practice concerning this method of treating whooping cough, that I felt the meeting of our Dominion Association was a good place to direct the attention of the profession to it. In conclusion, I may say that within a year or two, the last being in the Philadelphia Medical Reporter of the 31st of July, several short papers have appeared advising the injection of quinine in solution by means of an ordinary syringe against the posterior wall of the pharynx. A Dr. Kohtonetz in the *Deutsch Med. Zeitung* of June 17th, 1886, advises the following solution to be used in this way or in the form of spray, for a child 3 or 4 years old.

℞ Quinine Sulphates	gr. lxiv.
Acid Sulphuric	gtt. xxxii.
Aquæ destillated	℥ vi.

I see no advantage in its being employed in this way, and its application in this manner is certainly attended with even much greater difficulty than giving it in solution in the ordinary way.

CLINICAL LECTURE.

Delivered at the Montreal General Hospital, March 2nd, 1886.

By FRANCIS W. CAMPBELL, A.M., M.D., L.R.C.P.L.
Dean of and Professor of the Theory and Practice of Medicine in the Medical Faculty of Bishop's College.

SCIATICA.

The patient now before you, gentlemen, came to the out-door room about five days ago, in much the same condition as you see him now. Body slightly flexed on the thigh, and the leg upon the thigh, and complained of severe pain, in the lumbar muscles and especially along the course of the sciatic nerve. He was ordered five grains of iodide of potash thrice daily, and directed to return yesterday. This he did, and I had his case taken for me by Mr. Vidal. His name is Patrick O'Connor, and his age 47. In his family history we do not find any hereditary tendency to any particular disease. He has been in Canada for thirty-six years, and has always worked as a laborer—being much exposed to extremes of heat and cold—but he has never specially worked with wet feet. His health has been uniformly good, until

his present attack, which came on five weeks ago, quite suddenly. He went to bed in apparent health, and awoke during the night with a violent shooting pain; partly in the small of his back, but most violent over the right sacro-ischiatic notch (from which emerges the sciatic nerve), and extending down the posterior, and outer part of the right thigh. He tried several household remedies, but without success, and for three weeks he informs me, he has neither gone to bed, or taken his clothes off. This is because the pain is considerably aggravated upon his lying down. He also complains of some loss of sensation in the leg, and on testing this point yesterday I concluded that to a certain extent sensation was dulled. He says the leg feels numb and heavy and has a feeling of stiffness. The pain, although constant, has paroxysm of intensity, when it is of a lancinating or tearing character, and in these paroxysms changes its position frequently. Yesterday I gave him Potash Iodide ʒ ii. Pot. Bi. C. ʒ iv. Vin. Colchici. ʒ ij. Aque ʒ vi. ʒ ij. ter in die. The conclusion I have come to is that this patient is suffering now from a form of sciatica; although at first it seems to have been accompanied by decided lumbago. This, however, is not an unusual occurrence, very often an attack of lumbago precedes the sciatica, and the pain gradually works its way till it settles in the sciatic nerve. The disease is a neurosis—but constitutional predisposition has less to do with it than with any other form. It is caused by cold and dampness, by sitting on anything that compresses the nerve—excessive walking, and constipation. The sufferings in this disease are sometimes very great and it is very rebellious to treatment.

Treatment. If the cause is known it must be removed. Constipation will require active purgation. In cases where the attack has commenced with lumbago, the Turkish bath is especially useful. The hypodermic injection of morphine 1-6 to $\frac{1}{4}$ of a grain with the 1-120 to the 1-100 of solution of atropia has been found very serviceable. The deep injection in chronic cases of five to ten minims of chloroform is highly spoken of. The needle should be inserted, where the pain is most severe. Ether may be used but is less effective. Galvanism is advised, apply one electrode near the exit of the nerve from the pelvis and the other below. A powerful current must be used. The application of the hot hammer or button is often very successful. Blisters along course of the

nerve and the raw surface dressed with morphia. The warm pack is advised. It should be worn all night. In chronic cases with a rheumatic history iodide of potash, guaiacum and turpentine should be given. [This patient made a rapid recovery and was subsequently presented to the class.]

Correspondence.

LETTER FROM BERLIN.

Editors CANADA MEDICAL RECORD.

SIRS,—The University of Berlin still controls the teaching of medicine in that city, although special hospitals and specialists have arisen from whom the student may derive valuable additions to his knowledge.

With these occasional exceptions, however, the professors in the University and their assistants form the principal means by which the hospital advantages of the German Capital are made available. There are accordingly few courses which the student of medicine or surgery does not take as a *bona fide* matriculant of the University, and if he wishes to be properly accredited it is the usual course to pursue. He will attend the regular professional lectures and the subsidiary classes of the assistants in whatever branch or branches he may decide to learn. And the first thing that will strike him will be the difficulty of getting precise information regarding the men and things he will be the most curious about. The German student probably knows as much as the English or American, but he concentrates it upon one or two objects. He knows, for example, a great deal about methods in surgery, but he is ignorant about the hour at which Leyden lectures on medicine or whether Henoeh discourses about children on Wednesdays or Saturdays. It may seem a trivial matter, but there appears to be no central office of enquiry, no notices in a porter's lodge—no reliable indication of the time, place and immediate whereabouts of the various lectures, demonstrations, etc., whereby a stranger may regulate his search for information in medical Berlin. Nor is there much use in enquiring of the students that are everywhere to be found about the hospitals and University buildings. They would doubtless tell you, with their proverbial politeness, if they knew, but the truth is they simply don't know. Fortunately few Americans will visit Berlin without finding a sufficiently communicative soul in some fellow-

student of his own country, but in any event I would advise everyone who thinks of visiting the city to take with him that useful book "Berlin as a Medical Centre;" and, although I was informed by a native Berlin bookseller (who will shortly publish a similar work of his own), that Dr. Bigelow's book is "full of errors," yet much time and labor will be saved by the perusal of some such guide. Most of the German professors and their assistants speak English, but I would strongly urge upon students visiting Germany the necessity of learning enough German before leaving home to enable them to carry on ordinary conversation and to read the language fairly well. Having made this advance the visit will be infinitely more profitable and satisfactory than if he knows nothing of the language.

In pleasing contrast with the hospitals and schools of instruction of London and other medical centres, the visitor will not be obliged to spend such a large share of his time in going from one place to another widely separated from it. The methods of transit are also convenient, clean and rapid, a very noted difference from those of the English metropolis. As I mentioned in my letter from London, it is a hardship and a great loss of time to have to transport oneself from, say, Mr. Treves' Clinic at the London Hospital, in the east end of the city, some five miles to listen to a teacher, or to see an operation in the Soho Square Hospital, or shortly afterwards to make a pilgrimage to Guy's or St. Thomas'. With, perhaps, the exception of Koch's department (the Hygienische Institut in the Klosterstrasse), the buildings of medical interest are all within a few minutes walk of the *Charité*, the great hospital of some 1,500 beds, where all the medical and many surgical cases are treated.

The medical visitor to Berlin, be he transient or otherwise, should have his head-quarters near this extensive collection of buildings. He will find that he must rise early, if he wishes to make the most of his time, because several lectures and demonstrations begin as early as seven o'clock; at eight o'clock everything is in full swing, and by two p.m. the *dies medicus* is far spent. The origin of this early rising I could not trace, but I think it is preferable to our later hours. How the careless, beer-drinking and café-loving German feels like rising with the lark I cannot understand. Certain it is that he spends little time over his breakfast, that shadowy repast composed of a cup of coffee, rolls and butter, and is on hand while the

English student would be debating the momentous question; "to rise or not to rise?"

The major portion of American visitors to the German capital will like to see and hear all the men whose names are equally well-known in America as in their own land. Now, as ten years ago, Virchow is still the most prominent figure—*primus inter pares*—in the University group, and one looks with some wonder at the enthusiastic old (and yet, as far as energy and vivacity are concerned, one of the youngest) gentleman whose lectures on pathology still attract pupils from all parts of the world.

I would strongly advise the visitors to Berlin to make an early start and see how students are taught to make *post mortems* at the *Charité*. The supply of material, as one might expect from a hospital of this size, is practically unlimited, and it is judiciously utilized. Two of Virchow's assistants are almost constantly in attendance, and the student is taught practical pathology as he is instructed in practical anatomy in our dissecting rooms.

It will be seen at once the very great advantage in the way of teaching possessed by a concentration of material, such as we find in the *Charité*, over the scattered hospital system prevalent in London, New York and other medical centres. See the number and variety of illustrations possible in the lectures of Prof. Virchow, for example. He can draw not only from the *Charité*, but from any or all of the clinics connected with the University, and the result is that one of his lectures which I heard him deliver upon that comparatively rare disease—trichinosis—was profusely illustrated both by fresh and microscopical sections and preparations from patients lately dead in the hospital. So, too, with all the clinics, surgical and medical. The plan of centralization, doubtless a part of that military system which everywhere obtrudes itself upon the stranger, whatever disadvantages it may have for the patient, and however unsuitable to England and Canada, will commend itself to him who has tried both plans.

Schroeder's quarters are the *Universitat Frauen Klinik*, a beautiful modern building of brick—and they are well worth a visit. I suspect that the female patients are treated something after the *vile corpus* style of our forefathers. Prof. Schroeder gave a very lucid and well delivered lecture upon dislocations of the uterus, taking for his text a patient upon the table. The woman was examined in turn by some half dozen students called from the auditorium

and then each was questioned by the lecturer. A very good thing for the students doubtless, but it struck me as being unjustifiable to keep a patient under chloroform for an hour just to demonstrate the existence of a uterine retroflexion to a class of students.

The anæsthetic preferred here is almost universally chloroform or a mixture of chloroform and ether, or of ether, chloroform and alcohol in varying proportions.

The apparatus for administration is usually an extremely simple one, and I must say that I saw, during the short time I was able to give to operative performances, no ill or even disagreeable results from its administration.

Those who are interested in chemistry or in its applications to pharmacology and other departments of scientific medicine should not forget that the veteran teacher and scientist, the renowned Hofmann, still lectures and carries on original work with his old-time fire and enthusiasm at the chemical laboratory, No. 35 Georgen Strasse. His laboratory is well worth a visit, as a place where much of the world's knowledge of chemistry in all its important branches has been, is, and will probably long continue to be acquired. Those who are interested in operative surgery will find in Bergmanns Klinik enough to satisfy the most exacting. I may be forgiven the expression when I say that every stranger feels as if he were in a human slaughter-house when he has been half an hour in the professor's large and handsome operating theatre. I have myself seen on its floor at one time as many as five patients in the different stages of primary chloroformization, operation, and having their surgical wounds dressed by assistants, or of having some minor detail of an operation attended to by the first or second assistant. Again, one sometimes gets the impression that here the male patients, too, are treated as material "*in a pathological condition.*" I do not wish it to be supposed that there is any evidence of carelessness; indeed I have every reason to think that the results are quite equal to those obtained in our best English hospitals. Some form of antiseptic treatment is believed in and is universally employed. The antiseptic in which most faith is reposed is mercuric chloride with iodoform as an adjunct and carbolic acid for immersion of instruments. I might add here that Leiter of Vienna manufactures blunt instruments (forceps, for example) covered with vulcanite, so that they can be

immersed in the corrosive solution without injury.

I heard Henoch (a comparatively young man) give one of these lectures on children for which he is famous. The subject was *trismus neonatorum*, a very uncommon affection with us, and yet there seemed to be no trouble in getting subjects from the *Charité*.

Of all the members of the Berlin Medical Faculty the weakest lecturer is Koch. He may be described as a young man with a rapid, uncultivated delivery, doomed to lecture on a subject notoriously unpopular with students—hygiene—and yet the hygienic institute has a museum better fitted up for teaching purposes, as far as I know, than any other in the world. The models of life-saving and accident preventing appliances for workshops and factories alone fill three large rooms, and the taking of his class through them and explaining all these varied apparatus would be more likely to teach them the value and scope of a knowledge of sanitary science than all the learned but somniferous lectures he could deliver. Quite different is it with his world renowned laboratory, where the study of bacteriology is pursued. Here the cultivation of micro organisms and the study of their behavior under various influences are carried on by the aid of his assistants and as many students as can be accommodated. The work in this new department is one of the most important that can occupy the attention of the scientific student, and there is no place in the world where it can be more thoroughly and more satisfactorily performed than here.

In the department of medicine Leyden is perhaps the best man to listen to, and I would advise anyone interested in ophthalmology to attend the Augen Klinik of Prof. Schweigger. I fear that I shall no longer be able to meet that popular superstition—that the eye can be turned out upon the cheek, suffer some operative interference and then be returned to its normal position in the orbit—with a stern denial, because I have myself seen it done. Those who do not interest themselves in the reply to the question; "what shall be done with a lost eye?"—are perhaps not aware that optic neurotomy, followed by replacement of the ball, is one of the plans devised to prevent the dangers of sympathetic ophthalmia in the sound eye, and the inconvenience of a glass eye after the useless organ has been removed. The internal rectus is severed, the conjunctive cut through sufficiently to allow of the division of the optic nerve close to the fora-

men, the globe is turned out, the nerve a second time cut flush with the eye ball, and the latter returned to its place. The divided muscle is sutured, the conjunctival wound sewed up, the palpebra stitched together, and, if the operation is a success, the patient is eventually able to command movements in the sightless globe just as formerly.

This by no means completes the list of the Faculty, but it comprises nearly all those whom I was able to see and hear with my own eyes and ears, and that, as I promised you, is all I shall speak about. The other members of the Faculty, most of whom have their lecture rooms in the *Charité* can be heard and seen during the session, and their names will of course occur to the reader of these notes, but owing to the lectures and demonstrations taking place in some Kliniks at the same hour it is extremely difficult to see every one in a comparatively short time.

The absence of any adequate inspection of meat at *our* public abattoirs, and the crying necessity for it, render doubly interesting a visit which I paid to the Central Viehof in Berlin, where things are conducted in a style and upon a scale worthy of a civilized people. Here all (or nearly all) the meat sold for food in Berlin and the surrounding country undergoes a strict macro—and microscopical examination by competent veterinary surgeons. That the inspection of food may be carried on with as little inconvenience and loss as possible the wholesale markets are situated in the Viehof grounds and half the market value of animals condemned by the inspectors is paid the owner by the Government. The loss of the other half will doubtless have a salutary effect upon that too large class of careless, ignorant and wilfully culpable stock raisers and butchers who expose for sale diseased animals. Every animal destined for the market is examined before and after death. Having passed the first examination and been killed the meat is now carefully examined a second time, and divided as to quality into first, second and third class. Suspected portions are put aside to be subsequently examined by competent microscopists. *Every hog is microscopically examined*, peices being taken from the ham, neck and the central tendon of the diaphragm, the commonest seats of the trichinia. Of course to make this examination thorough and valuable a large staff is requisite. In the inspection department there are about 25 veterinary surgeons, 100 microscopists and sub-inspectors, and the supervising patholo-

gist, whose decision in cases of doubt is final. We were shown a large number of samples of diseased meat, and came away feeling that the man who eats uninspected meat often eats "trash," and that it is safer in countries like the Province of Quebec to be strictly vegetarian in one's habits. This is a subject upon which the veterinary and medical profession might well join hands, and I am sure the medical man who follows the courses of the magnificent Thierartznei Schule will see what advances the veterinary art has made in Germany. I met many Canadian students in Berlin and to several of them, taking special University courses, I am deeply indebted for acting as my cicerones while in the pursuit of information relative to things medical in Berlin. Dr. J. J. Gardner is steadfastly pursuing his study of ophthalmology; Dr. Ruttan in Hoffman's laboratory; Dr. McConnell studies the doings of micro-organisms in Prof. Koch's laboratory, while Mr. Clements, well known in Montreal, is a student of veterinary medicine and surgery in the fine school I have just referred to.

My next letter, I hope, will be written in or at least about Vienna.

C. A. W.

BERLIN, July 12, 1886.

A VISIT TO PASTEUR'S INSTITUTE, PARIS.

Editors MEDICAL RECORD.

The universal interest which at the present time attaches to the methods discovered by Mr. Pasteur, and now practised by his institute in Paris, for preventing the development of hydrophobia, makes a visit to his institution a great privilege, and one not less gratifying, than that of seeing the work done in the excellent hospitals of Paris or viewing the magnificent architecture of its public buildings and the profuse evidence of the sculptors' skill in their ornamentations and in the numerous statues, arch de triomphe and columns; or its unrivalled art galleries, palaces, boulevards, and opera house. I learned from Dr. Rodier, who is the Canadian representative there, that, owing to the number of patients coming for treatment, new and larger apartments had been opened a day or two before, on Rue Vacquelin. We proceeded there in the morning.

"The inoculations take place at 11 a.m. About one hundred are now inoculated daily. The crowd of men, women and children in the waiting-room represented various nationalities, as

evidenced by their costumes, appearance and conversation. Many of them had their limbs bandaged and their arms in slings. Several Russians were there who had been bitten by mad wolves. M. Pasteur was to be seen walking around among the patients and conversing with them freely. He dresses very plainly, and wears a smoking cap; he is below medium height, and appears about 65 years of age; he is partially paralyzed on one side and walks with a limp. His demeanor is humble and unassuming, but in his countenance is seen intense earnestness, together with an anxious expression, and all his thoughts seem concentrated, and at all times, on the great problems in connection with *disease germs*, or *bacteria*, and at the present time more especially with those of diphtheria and hydrophobia.

"Each patient has a number, and they are called into the operating room in rotation. The inoculation is made with a hypodermic needle in the side. The virus is prepared by mingling with broth a portion of the spinal cord of a rabbit which has died of hydrophobia, and from a half to one cubic centimetre is injected beneath the skin, according to the age of the patient. Each of the eight assistants has his separate duty in the various processes. The injections are made by Dr. Crancher. The operation in most of the cases did not seem to produce any pain, although some of the children cried lustily.

"Each patient is inoculated once daily for ten days. If they are too severely injured to come to the operating room they are placed in the hospital, and the inoculation given there.

"The next day we visited the laboratory on Rue d'Ulin. Shortly after entering the gate, near the porter's lodge, we met the eminent scientist coming from the Ecole Normale, where I received an introduction. On the way to the laboratory he made inquiries regarding the recent smallpox epidemic in Montreal, wondering at the great mortality. When informed that the deaths occurred almost altogether among those who had opposed or neglected vaccination, he was astounded that such opposition could exist, and exclaimed, *Est il possible? c'est terrible!*' Recognizing the fact that to oppose vaccination meant ignorance of the absolute protection afforded by it, he seemed indignant that the anti-vaccinationists should be allowed thus to influence the people, and suggested that they be more fully instructed as to its benefit.

"Coming to the laboratory we observed a notice at the door, stating that visitors to obtain admission must present letters from the consuls of their respective countries. M. Pasteur brought us up to the portions of the laboratory where his assistants were working, and they gave us full explanation of the methods of preparing the material for inoculation. We saw there physicians from all parts of the world, studying Pasteur's methods.

"The virus of hydrophobia resides chiefly in the brain, spinal cord and nerves. And it was found by M. Pasteur that animals inoculated direct in the brain developed the disease in a shorter time than if inoculated beneath the skin. He found, also, that by successively inoculating monkeys one from the other, that the power of the virus decreased, and if rabbits were used it increased in virulence, and the period of inoculation became in a corresponding degree shorter, until after a great number of transfers, extending over several years, it was reduced to seven days. It was ascertained, also, that by drying the virus it became gradually attenuated, or at least produced a milder affection (he believes the result to be due rather to a lessening of the amount of the active principle than to diminished virulence) so that, at will, inoculation material of different degrees of virulence could be prepared.

"Four rabbits are inoculated daily in the vascular surface of the brain. They are secured to a board and chloroform given, the top of the head is shaved and a slit made in the scalp, a circular portion of the cranium, about $\frac{1}{2}$ inch in diameter is removed by a trephine, which is worked by a crank, with cogged wheels, it is so graduated that when pressed firmly down upon the skull it cuts through the bony part only leaving the membranes intact. The piece is lifted out with a tenaculum. The inoculating material is injected beneath the dura mater by means of a hypodermic syringe with a needle bent at right angles. The wound is then cleansed with a solution of carbolic acid applied with antiseptic blotting paper, and the scalp wound closed with sutures. They are then placed in cages, long rows of which may be seen on tables in the lowest flat of the laboratory. They invariably die on or about the tenth day, and in the cages one can observe at any one time the different stages of the disease as it affects rabbits. The wound heals in a couple of days and the rabbit appears well until from the 4th to the 6th day when paralysis gradually set, in.

They stop feeding and lie stretched out on their sides in the cage, becoming emaciated until paralysis is complete. A portion of the spinal cord of those dying on the tenth day is used to inoculate fresh rabbits, and other portions are hung in jars containing potash or other desiccating chemical material. After being in these jars for ten days, it becomes very much attenuated, and is used for the first inoculation of the patients; and each day a solution made from a piece of spinal cord mixed with broth and of increasing virulence is employed, that which remained in the drying jars for 9 days is used for the 2nd injection, that of 8 days for the 3rd and so on until the tenth day the strongest virus is used. Then the person or animal becomes insusceptible to the action of the most rapid virus."

M. Pasteur stated that he had not yet been able to discover the *germ* of hydrophobia, but believed he would yet succeed in isolating it. He spoke of the impracticability of his methods, seeing that the process was so complicated and required specialists to propagate the virus and to be in constant attendance. In order to maintain a uniform standard in the degree of virulence of the inoculation material, experiments on animals have to be made constantly. He thought, that in the great centres of each country a laboratory maintained by the Government should be established, and funds be raised, either by subscription or by public grant, to send by rail or otherwise those who could not afford the expenses of travelling to these centres as soon as it is ascertained that they have been bitten by a rabid animal.

Before allowing any patients to be inoculated Pasteur makes full enquiries, through local physicians, and veterinary surgeons, as to whether they have really been bitten by a rabid animal or not, requiring the patient also to bring certificates from them. If the evidence is only partial that such has been its case he allows the patient the benefit of the doubt. The patients do not seem to suffer anything from the operations, appearing to be in perfect health.

The system will doubtless be improved upon after further investigation, but I have no doubt of its effectiveness even as at present practised. Rabbits or dogs receiving the ten inoculations are quite insusceptible to the infection from animals dying of genuine hydrophobia, and this test, as I was told, applied to one or two of the rabbits which are daily inoculated in the laboratory. Over a thousand

cases have already been treated, and of these only seven succumbed to the disease, not including the Russians (8) who died from the bites of rabid wolves. France is recognizing the honour Pasteur has conferred by his great cleverness, by the efforts now being made to establish a permanent Institution on a larger scale. The Municipal Council of Paris has granted 2500 metres of land on Rue Vacquelin as a site, and national, municipal and private subscriptions, as well as donations from foreign governments, are pouring in to be devoted to the erection of this Institute. For the purpose of establishing a laboratory at any point, a rabbit is inoculated at M. Pasteur's laboratory. As animals will live ten days there is time to reach distant countries, when healthy rabbits are inoculated. The process must be repeated daily in order to propagate and have in constant readiness a continuous supply of the proper degree of virulence.

J. B. McC.

Progress of Science.

INGLUVIN.

A very learned name for a remedy is Ingluvin. It is the essential principle of the gizzard, and bears the same relation to poultry that pepsin does to the higher animals. The honor of its discovery and utilization, in its crude state, remotely dates with the Chinese gastronomer, as well as to the Caucasian chemist, in its refined condition. From time immemorial the inhabitants of the Celestial Empire have used the gizzard of chickens and ducks in nearly all made dishes. Their writers have recommended the practice as a sovereign treatment of dyspepsia, weak stomach and vomiting. A favorite prescription of Chinese physicians for chronic indigestion is to cut up and digest chicken gizzards in hot water until they are reduced to a pulp, and then add some spices. A tablespoonful or two of the resulting paste is taken at each meal until the patient has entirely recovered. From China the practice passed to other parts of Asia, and was adopted here and there among the Mediterranean people. Strange to say it was never learned by the great nations of Europe until the latter part of the present century. On the other hand, the organic chemists of Europe discovered, about 1850, a powerful nitrogenous radical in the gizzard. Experiments thereafter showed it to possess many of the qualities of pepsin. These experiments led to its isolation. Numberless experiments have proven it to be a very valuable addition to therapeutics. Where pepsin refuses to act, and where, in severe cases, it has even been rejected by the stomach, Ingluvin effected relief rapidly and with the greatest ease.

In four recent cases of poisoning by root beer (Brooklyn, June, 1886), Doctor George Everson, jr., a well known physician of that city, reports that after pepsin and all similar compounds had been rejected by the stomachs of his patients, Ingluvin stayed the retching and enabled them to retain and digest food.

Dr. Lassing reports a similiar experience in several cases of acute dyspepsia.

A priori, it would seem as if Ingluvin should be more efficient and potent than pepsin in many cases of physical disorder.

Our poultry are chiefly granivores, and have no beak nor other buccal apparatus for crushing the hard grain and seeds on which they so largely feed. The food is swallowed when apprehended, and passes directly into the crop or gizzard. This seems to act both mechanically and chemically. Its interior walls are covered by a dense, hard cutulous membrane, surrounded by muscles of the most powerful type. Along with the food is always a small amount of sand and gravel. The organ acts apparently by bruising and cracking, rather, than is commonly believed, by trituration. The motion of the ingluvial muscles is accompanied by a slow but continuous exudation, from the walls of the crop, of a strong organic fluid, of which Ingluvin in the chief constituent. The hull of the grain or the shell of the seed is broken by the pressure of the walls and the gravel, and their interior is exposed to the chemical action of the Ingluvin. By the time it reaches the stomach it is ready for the gastric juices. From this point on, digestion proceeds as with the higher animals. As the gallinacæ have very small salivary glands, and as the fluids secreted by these resemble the secretion of the parotid rather than that of the sublingual and submaxillary glands of the human being, it would seem as if Ingluvin played a double part, exercising the functions of the ptyalin of the saliva as well as the pepsin of the stomach. Ingluvin is prepared by the farseeing chemists, Wm. R. Warner & Co., of Philadelphia. It is made from selected gizzards, and is so carefully extracted as to be free from all foreign organic bodies. It is already known and appreciated by the medical profession. The AMERICAN ANALYST bespeaks for it the same appreciation by its readers. We extract the following:

Prof. Roberts Bartholow, M.A., M.D., LL. D., in his late work on "Materia Medica and Therapeutics," says:—INGLUVIN. This is a preparation from the gizzard of the domestic chicken—*ventriculus callosus gallinaceus*. Dose, gr. v.— D j.

Ingluvin has the remarkable property of arresting certain kinds of vomiting—notably the vomiting of pregnancy. It is a stomachic tonic and relieves indigestion, flatulence and dyspepsia.

The author's experience is confirmatory of the statements which have been put forth regarding the exceptional power of this agent to arrest the vomiting of pregnancy. It can be administered in inflammatory conditions of the mucous membrane,

as it has no irritant effect. Under ordinary circumstances, and when the object of its administration is to promote the digestive function, it should be administered after meals. When the object is to arrest the vomiting of pregnancy, it should be given before meals.—*From the American Analyst, August 1st, 1886.*

REMARKS ON INCONTINENCE OF URINE IN CHILDREN.

BY WILLIAM H. DAY, M.D.

Physician to the Samaritan Hospital for Diseases of Women and Children.

There is scarcely any disease occurring among children more annoying and troublesome than incontinence of urine. It is particularly vexatious to parents, and is often regarded by them as an incurable infirmity. After their patience has been long tried, they abandon one remedy after another, and look forward to puberty, when, they are told, the disease may depart never to return. Failure in treatment is frequently owing (1) to an erroneous diagnosis of the cause of the affection; (2) to the inefficiency with which the treatment is carried on; (3) to its being discontinued too soon; hence, in hospital practice, where patients can be watched, we meet with better results than in private practice.

Among the causes of enuresis, the following may be enumerated: If the urine be excessively acid, or loaded with urates, the bladder becomes overstimulated and readily discharges its contents. If the bowels be habitually constive, or there be worms in the intestines, vesical irritation may ensue; or, if the child be guilty of masturbation, there will be no chance of cure till the habit is corrected. Weakness of the muscular coat of the bladder from general debility or anemia is a very common cause; the bladder, not being able to tolerate any quantity of urine, readily excites the motor apparatus. I have known a troublesome case follow typhoid in a boy, ten years of age. If the disease be owing to a long prepuce, causing phimosis, it should be removed. Sometimes no cause can be ascertained. Children, two or three years of age, frequently wet the bed either from laziness or from lack of control over the bladder. It is important to remember that, even though the secretions are in perfect order, the incontinence may continue, and thus a habit may be formed which the poorer classes and stern people occasionally endeavor to correct by punishment. In some idle and dirty children such a course may be of benefit, but in others, who are nervous and timid, there is the possibility of increasing the evil we desire to remove. I make no allusion to those cases of enuresis associated with diseases of the bladder or brain.

Enuresis is sometimes seen in connection with chronic albuminuria, and is occasionally so persistent as to require special treatment. The following is a good illustration:

CASE I.—G. M., aged nine, was sent to me from the country, April 4, 1885. His bed was wet both

night and day. Before he was six years of age he had measles and whooping-cough; then, after a short interval, scarlet fever, followed by dropsy. A year after his recovery from the dropsy he could only pass his urine in drops. "He would stand up and cry, and say he wanted, and could not." He suffered in this way for two months, and then he would pass urine every ten minutes, but without pain. Some time before he left his home in the country he was tested for stone in the bladder, as he frequently had pain, and blood was occasionally present in the urine. The urine, on admission into the hospital, was highly albuminous (one-tenth part), of specific gravity 1020, pale, cloudy, and of acid reaction. A few casts were seen under the microscope. There was no fever, nor cardiac disturbance. He was confined to bed, and, as he had pain across the lumbar region, he lay during a part of the day on his abdomen, to lessen local congestion. He was ordered a milk diet, and a mixture of belladonna, nux vomica, and tincture of perchloride of iron three times a day. Four days after admission, he ceased to wet himself in the daytime, and on the 10th, 11th, and 12th he was dry at night. The bowels were kept open, and the albumen diminished. On the 30th, it was reported that he had not wetted the bed since the 14th. He passed a much less quantity of urine, but it was still albuminous. He went home, after staying in the hospital for six weeks, wonderfully relieved, his urine only containing a trace of albumen, and no blood-corpuses. In November, I heard that the frequency in micturition had returned, that he was worse in cold weather, and that the urine was very albuminous. I have mentioned this case merely to show that the treatment, which mainly consisted in a milk-diet and attention to hygienic conditions, had for a time a very salutary effect.

CASE II.—E. F., aged seven, was admitted into the Samaritan Hospital under my care November 3, 1884. The patient was a twin, highly nervous and excitable, with mitral disease, probably congenital. She never had scarlet fever or rheumatic fever. She first began to ail fifteen months before admission, wanting to pass urine frequently. She wetted the bed every night; the urine was pale, copious, and contained phosphates, specific gravity 1020, acid. A solution of nitrate of silver was applied to the neck of the bladder (two scruples to one ounce), and for a few days it seemed to be of benefit. A mixture of tincture of belladonna and tincture of perchloride of iron was ordered three times a day, but no good result followed, and on December 1st I began to employ Stohrer's smallest induction apparatus (interrupted current) with one closed cell, for ten minutes daily, one sponge being placed over the sacrum, and the other over the pubes. An improvement almost immediately set in, and the patient left the hospital cured on January 10, 1885. She was readmitted into hospital on September 30, 1885, suffering from general debility and pain over the cardiac region, but she had no return of the enuresis while she re-

mained in the hospital for six weeks. This is the second case I have recently seen associated with heart-disease.

CASE III.—G. R., aged seven, was admitted into the Samaritan Hospital under my care November 27, 1884. For upwards of eighteen months he had wetted the bed at night, and frequently during the day. The mother fancied that he had been tampered with by some boys of his own age. The urine was very pale, of acid reaction, and contained a few phosphates. He was ordered a milk-diet, and meat, once a day. Faradization was used daily for ten minutes. He took a mixture of tincture of belladonna and tincture of perchloride of iron three times a day, and left the hospital cured on January 9th, having wetted his bed only five times since his admission, and some of these nights very slightly.

CASE IV.—A. H., aged eight, a pale and irritable boy, was born in South America, a healthy baby. He had incontinence of urine from birth. When brought to me on December 13, 1884, he wetted himself both night and day, and was invariably wet after being in bed ten minutes. He passed large quantities of high-colored offensive urine, containing much uric acid. When the urine had become normal, he was ordered tincture of belladonna, and tincture of perchloride of iron, in five-minim doses three times a day. On January 12th, the appetite had improved, but the enuresis was the same. Stohrer's apparatus was now used for ten minutes daily, the sponges being placed over the sacrum and pubes. The iron and belladonna mixture was continued. On the 18th of February the report states that he had passed several nights without wetting his bed; but, as the urine contained phosphates, and the boy seemed very weak, he was ordered ten minims of dilute phosphoric acid, with two minims of liquor strychnia, three times a day. On March the 9th, the urine being normal, fifteen minims of the tincture of belladonna were given twice a day. The use of the battery was discontinued. From the 17th to the 21st, he was not wet at night, but was wet on the nights of the 22nd, 23rd, 25th, 26th, 27th, 30th, and 31st. From April 1st to the 12th, the bed was dry at night; on the 13th it was slightly wet, and, therefore, the tincture of belladonna was increased to forty-five minims daily. He invariably awoke to pass urine, whereas formerly he wetted the bed without knowing it. On April 19th, he went to Brighton, and stayed a month there. He had a sea-bath morning and evening, and was out the greater part of the day. For seventeen consecutive nights he did not wet the bed. During this time he took two drachms of the belladonna mixture twice a day, being equal to one drachm of the tincture daily. The use of battery was discontinued. It was noticed that his pupils became very large, and when he attempted to read he saw a mist before his eyes. On September 1st, it was reported that he had perfect control over his bladder in the day time, and had not wet

the bed oftener than once a week, and then but slightly. He has had no return up to the present date, January 25, 1886.

CASE V.—A young lady, aged nine, was brought to me by her mother in September, 1885, suffering from enuresis of nearly a year's duration. All treatment had failed to relieve her. The use of the battery was ordered every night for ten minutes, and a mixture of belladonna and iron three times a day. These measures were continued for six weeks when the patient was well, and she so remained for three weeks afterwards, when the symptoms returned slightly, "but not nearly in the same degree." The battery got out of order, and the patient living in a remote Irish district, there was a difficulty in getting it repaired. If the use of the battery be resumed regularly, the cure will be complete.

REMARKS.—It seems impossible to lay down a plan of treatment for general adoption; the peculiarities of constitution and habits of life must be taken into consideration, and haphazard treatment guarded against. The cases recorded were cured or relieved by the combined influence of electricity, iron, belladonna. Cases two and three are good examples of the utility of faradization. Case four is a very important one; the symptoms dated from birth, and resisted various methods of treatment. The successful issue is in great measure attributable to the constant care which the mother took in feeding the child, and rigorously attending to my instructions. Those cases that date from birth or have lasted upwards of a year, are invariably intractable, and often incurable, especially if the child be of nervous parentage or delicate when born, or pass large quantities of urine. With respect to the utility of faradism there can be no question; it requires to be used regularly, and to be continued for a considerable time; but it sometimes fails altogether. When the nervous system is weak, and there is generally debility the sphincter loses its power, and urine escapes by night and day without the child's knowledge. It is in such cases as these that iron and nux vomica are of service.

If there be excess of muscular action, and the child have frequent inclination, and without power of control, belladonna is an admirable remedy. It occupies a prominent place as a therapeutic agent, and sometimes, when combined with iron even in small doses, it seems to do good; but it should not be given up in obstinate cases till either soreness of throat is produced or dilatation of the pupils takes place. In my hands it has often failed when administered in any form or dose. It certainly tends to lessen irritability of the bladder, and should always have a fair trial.

Cold sponging in the morning is very serviceable in cases of enuresis that appear to have their origin in general debility. It braces up the nervous system, and is a powerful tonic. The slight sensation of chilliness soon passes away, without leaving any depression, if vigorous friction

with a towel be employed for a few minutes. In a case under my care about three years ago, the cure was attributed to this simple measure when one remedy after another had failed. The vital functions are brought into a healthier state, the skin acts better, and the appetite and digestion improve. However delicate a child may be, free sponging in tepid water, followed by a good rubbing, is of great value. The water may be used at a temperature of 90° at first, and as the child becomes stronger, may be lowered to 70°.

Now, a word as to diet. Milk is an important non-irritating article of food, and should be mainly relied upon in these cases; but the quantity given at one time should be restricted, especially on going to bed. Farinaceous puddings, containing eggs, are admissible. When the urine is turbid and acid, or the child is rheumatic, milk ought to take the place of nitrogenous food. A child under my care at the present time, with a "large white kidney," is troubled with frequency of micturition when allowed a little beef-tea, while when adhering to the milk she only passes urine twice, or at most three times in the twenty-four hours. In states marked by anemia and general debility, however, animal food is an essential article of diet.—*The British Medical Journal*.

CHRONIC CYSTITIS.

A paper read before the Academy of Medicine, March 29, 1886.

By P. S. CONNER, M.D.,

Professor of Anatomy and Clinical Surgery, Medical College of Ohio.

In a state of health the bladder admirably performs its physiological function, that of holding the gradually formed urine until such time as micturition may be convenient and proper. Neither in the viscus itself, its contained fluid, or the canal through which it is discharged, is there a source of irritation. But let there be a long continued altered state of the inflowing fluid, a tumor of the bladder wall, a retained foreign body in the cavity, or an obstacle to the ready outflow of the urine through the urethra, and, sooner or later, in greater or less degree, there will be developed a state of chronic inflammation with associated changes in the chemical constitution of the fluid. In any case, therefore, the diagnosis being established, before any method of treatment is instituted determination must, if possible, be made of the exciting cause; the removal of which, if ascertained and capable of being taken away, should be effected at the earliest moment. If the primary trouble is in the kidney therapeutic or operative measures must be adopted accordingly. If there is a foreign body in the bladder it must be extracted. If there is an urethral stricture it must be dilated, divulsed or divided. Such stricture makes trouble in two ways, by causing alterations in the urine, dammed back in the bladder, never completely evacuated, and as a result decomposing and becoming an active irri-

tant to the mucous membrane; and further by affecting the circulations in a bladder wall compelled to abnormal action because of the undue resistance that it has to overcome in forcing the stream through a more or less contracted, unyielding and inelastic tube. Because of the ready removal of the condition which produces the cystitis associated with stone or stricture, such cases of chronic inflammation of the bladder, if they have not existed so long as to have become complicated with lesions of the kidney, can be cured with comparative ease.

It stands to reason that if the inflammation is excited, maintained or aggravated by the irritant character of the urine, just in proportion as such is lessened will the morbid state be diminished; and this can be effected in no slight degree by increasing the amount of urine passing through the bladder. To such flushing of the cavity, distributing and carrying away the sedimentary mucus and pus, is due the favorable effects of the administration of large quantities of water, either any ordinary soft water or that obtained in a state of great purity from certain springs.

Some of the infusions owe a part at least of their reputations to the good effect of the cleansing of the bladder by the increased amount of urine passing through. For like reasons, washing out the bladder by injection acts beneficially, provided it is properly done, and with a suitable fluid. The instruments must be clean, in the fullest surgical sense of the word, the fluid warm and such as to arrest and prevent decomposition. Theoretically the weak sublimate solution is the best that can be employed, but practically it is found not infrequently to be badly borne, even when of strength of not more than one part in 6, 7 or 8,000. As good a solution as can be used is, in many cases, that of boracic acid of strength of 3 ss—3 j to the pint of water. Care must always be taken not to throw in the fluid too rapidly or too strongly, and if a single current catheter is used not to over-distend the bladder.

In elderly men an existing cystitis, if neither stone nor stricture is present, almost always depends upon enlargement of the prostate, in a small proportion of cases confined to the third lobe. Such enlargement acts as a stricture does, producing the same condition of the urine and of the bladder wall. In the earlier stages and the milder degrees the indications for treatment are very clear. Systematically, at regular intervals, the bladder must be completely emptied, and that with the least possible effort to the patient—in other words, catheterization should be made and natural evacuation altogether suspended: suspended, not abandoned, for not infrequently after steady use of the catheter for many months or years patients may without resulting ill effects permanently lay aside the instrument. As a rule though, the subject of prostatic hypertrophy in amount sufficient to produce notable effects upon the bladder and the urine should make up his mind to uniformly employ the catheter

during the rest of his lifetime; the soft instrument preferably, and always properly disinfected. In very many cases the chemical changes in the urine are due to bacteria, carried in on the catheter; and it is because of the germs thus introduced that the frequent use of the instrument has long been recognized as likely to be, if not certain to be, followed by putrefactive changes in the urine and an aggravation of the symptoms.

In the older and severer cases, when the general hypertrophy of the prostate is marked, the basfond of the bladder consequently deep, the residual urine in decided amount and alkaline in reaction, catheterization and antiseptic irrigation are the essentials of treatment; attention to which, together with due regulation of the general habits of life, will ordinarily keep the patient in a state of comparative comfort. Even when the muscular coat has been so enfeebled as to permit of over-distension and of long retention with its usually associated and resulting incontinence, the same method of treatment steadily maintained for months will, if there has not been too much damage done the kidney, produce marked improvement in the local and general state. But oftentimes the bladder, instead of being over tolerant, is excessively intolerant of fluid, the presence of a very moderate quantity of which is sufficient to excite a spasmodic painful, imperious desire to urinate. This condition may be associated with and dependent upon prostatic hypertrophy, very apt to be of the ball valve variety or complicated, as it often is, with urethral stricture, upon bladder tumor, or upon tubercular disease of the prostate or the seminal vesicles.

The intensity of the irritability of the bladder is many times markedly affected by the habits and mental state of the individual. In these cases the plan of treatment already indicated may be sufficient to so greatly lessen the severity of the symptoms as to render the patient unwilling to have anything else done. When there is decided difficulty in the introduction of the catheter, either because of the size and direction of the canal, or because of an over-sensitiveness of its lining membrane, permanent retention of the instrument has been advised. In my judgment such advice is not good, for even if a soft catheter is employed, (and it certainly is to be preferred) it will soon become encrusted, it will be almost certain to increase the irritation, and it will be very difficult if not impossible, to keep it aseptic. In many cases, indeed in the very ones in which a sonde a demeure would seem to be most indicated, no soft instrument can be introduced.

It is in these cases of severe character, and often of irritable nature, that operative interference is so strongly called for, and is capable of accomplishing so much. Open out the contracted urethra by sound or knife, and the pre-existing bladder inflammation will generally rapidly diminish, perhaps altogether disappear.

If there is prostatic enlargement what can be

done? Only a few years ago, comparatively, it was hoped that in parenchymatous injections of the enlarged gland we should find a means of producing shrinkage, but extended experience has proved its utter valuelessness. Prostatotomy and prostatectomy, either internal or external, have much to commend them. I am becoming more and more convinced that in all the severer forms of chronic cystitis in the male, either perineal section or suprapubic cystotomy should be made. By a comparatively slight operation, the opening of the membranous urethra, we may readily get at the prostate, recognize the position of, and so be able to remove by knife, punch or snare, a bar or ball obstructing the neck, and in the majority of instances be able with the finger to sweep a part or the whole of the mucous wall of the bladder, thus locating any tumor that may be present. Through such perineal opening any existing prostatic or vesical calculi may be removed. Further, and more importantly, thorough and complete drainage of the bladder may be secured, a full-sized tube being easily introduced, comfortably well borne, and readily removed; no such objections resting against its protracted use as we have seen lie against a permanently-retained catheter passed through the unopened urethra.

Experience has shown that the pressure of a drainage tube thus employed causes a dilatation of the neck and prostatic portion of the canal that may be expected to be permanent, and which will permit, after some weeks or months, of the removal of the tube and the allowing of healing of the wound. By drawing off the urine as fast as it comes into the bladder there is secured to that organ the rest which above all things else is the essential element in the treatment of any surgical affection. If the cystitis depends (as it probably does much oftener than is commonly supposed) upon a vesical tumor, the perineal operation permits of the determination of the location, size and nature of the neoplasm; of its removal, if practicable; and, under all circumstances, of the cleansing and draining of the cavity.

In those distressing cases, met with usually in young subjects, of cystitis dependent upon local tuberculous deposits, where the symptoms of stone are so strongly simulated, perineal section with dilatation of the prostatic urethra or division of the gland, gives more relief, and that more speedily, than anything else that can be done. Guyon and his followers of the French school urge that the opening into the bladder should be supra-pubic; and there are unquestionably advantages in such operation over the perineal one, with, however, associated disadvantages, so that extended experience alone will suffice to clearly indicate which should be regarded as preferable in the ordinary run of cases. In any and all forms and grades of chronic cystitis the prime indications of treatment are to remove the cause and give the organ rest; and just in proportion as these indications can be fulfilled will relief be afforded and a cure effected.—*Cincinnati Clinic.*

BLEEDING FROM THE NOSE OR EPISTAXIS.

This hæmorrhage may arise from two conditions of constitution. (1). It may arise in the young, plethoric, full-blooded subject, caused by vascular excitement owing to determination of blood to the head. It may also be vicarious, as when the menses are irregular in young full-blooded females (epistaxis helps to relieve the vascular tension), and also it may occur in woman at the change of life. (2). It may also be passive, arising from a low, debilitated condition of the constitution; and as a rule this form comes on in older subjects from a passive draining of venous blood owing to some obstruction of the circulation such as disease of the heart or liver would induce, or to a morbidly thin state of the blood with general relaxation of the blood vessels, which is found in scurvy, purpura, and in the last stages of fever. Druitt mentions that from 15 to 25 is the commonest age for *active* epistaxis and from 45 to 55 for the *passive* form.

Treatment.—In cases of bleeding from the nose in young plethoric subjects, such hæmorrhage seems to do them a great deal of good, and gives great relief if they suffer from congestive headaches in hot weather, and this epistaxis may be looked on as very salutary, being merely nature's method to relieve the vascular tension of the blood. However, if it does not soon stop of its own accord, steps must be taken to stop it by therapeutic means. Some simple plans have been recommended:—(1) The hands to be held perpendicularly over the head. (2) A cold key to be placed under the clothes on the spine so as to act by reflex action. (3) Cold to be applied to the forehead and the patient to lie motionless on his back, for when the nose bleeds the patient generally leans over a basin with the head down. This position obviously favors its continuance. 4. Ether spray to be pumped on the outside of the nose at each side. A piece of ice applied to the back of the neck or the roof of the mouth will generally stop it. 5 Snuffing up the nostrils powdered alum, tannic acid or gallic acid or powdered nutmeg or cobweb so as to entangle the fibrin. A small plug of cotton wool may be introduced and left in the bleeding nostril, and the patient, cautioned not to blow the nose, as this will only disturb the natural clot, if forming. Wetting the cotton wool or strips of lint with strong alum water or dilute tincture of the perchloride of iron or dipping it in powder of tannin or matico, then introducing it up the nostril, will at times prove effective. (6) A wooden paper clip fastened across the bridge of the nose so as to compress the *alæ* together has also been pressed into service in such cases with a satisfactory effect. Pressure on the facial artery as it passes over the lower jaw has also been recommended. (7) Washing out the nostril with a continual flow of very cold or iced water. When the patient is directed to breathe through the mouth the soft palate is so raised up behind as to effectively close the posterior nares, and the water injected into one

nostril passes through the other nostril and escapes at the opposite anterior nares. This will frequently stop epistaxis. When everything has failed, and the bleeding still continues, plugging the posterior nares must be carried out. Some surgeons state that it is hardly ever necessary to plug the posterior nares, for they say if long, narrow strips of lint saturated in some styptic fluid are passed through the anterior nares, and by gentle manipulation by means of a probe or director, the nostril can be effectively packed as if the posterior nares were plugged. The plan is certainly much easier, and not at all so unpleasant to the patient, and well deserves a trial. Plugging the posterior nares can be either done by means of a catheter or by Belocq's canula. A plug of lint must be made about the size of the first joint of the surgeon's thumb; to the centre of this must be attached three long strings. If the catheter is used, a hole must be made in the end of it, through which is passed a loop of twine and tied; the catheter is then oiled and heated and gently introduced through the anterior nares of the bleeding nostril, and when it arrives at the posterior nares it must be gently urged onwards; the patient is then requested to open the mouth widely, and the end of the catheter with the twine attached will in all probability be seen beyond the soft palate; the loop of twine is to be seized with the forceps, to which are attached the *two* strings of the plug. The catheter is now withdrawn, carrying with it the two strings attached to the plug through the bleeding nostril. These strings must now be pulled tightly, and the plug with the other string attached is quickly carried through the mouth and guided with the index finger of the left hand until it is firmly wedged in the posterior nares. If bleeding goes on, strips of lint may be inserted in the nostril between the two strings, and by their means permanently retained there. The third string through the mouth may be fastened on the side of the cheek with a strip of plaster. The plug need not be kept in this position longer than thirty-six or forty-eight hours, by which time it generally gets very foetid, and can be easily dislodged by pulling gently on the string that passes through the mouth. If Belocq's spring canula is used, precisely the same steps are taken as regards passing the canula and fixing the ends of the twine on the end of the spring canula, and drawing it back through the nares. So much for the local treatment of epistaxis. But it must be in some instances treated by constitutional means as well, and, in fact, no surgeon in serious epistaxis should be satisfied to depend on the local treatment alone. Hazeline, an American fluid preparation, has been strongly recommended—ten drops in half a wine-glass full of water to be taken three times a day. Ergotine, ten drops to be injected under the skin, has also been found most useful. Mixtures containing gallic and tannic acids with ergot, aromatic sulphuric acid, and acid infusion of roses are also

recommended where the blood is thin and deficient in fibrin. Preparations of iron, such as the muriated tincture, are indicated in low, debilitated subjects; the system should be toned up by nourishing albuminous diet, as the longer the debility lasts the more frequent will the attacks of epistaxis appear.

Bleeding from the Mouth, the result of Disease.—This form of hæmorrhage—unless when arising from ulceration—is in most cases from the gums, as in scurvy. The quantity at one time is never very large, but, if continuous, treatment must be adopted to stop it.

Treatment.—Mouth washes must be ordered containing astringent substances, viz., borax, tannic, and gallic acid, tincture of colchicum wine, myrrh. Alum made up with glycerine and rose water makes an excellent wash for such cases. The constitutional treatment, however, must not be lost sight of.

SHOULD POULTICES EVER BE USED AFTER AN ABSCESS OR WHITLOW HAS BEEN OPENED, OR TO AID THE SEPARATION OF SLOUGHS?

By CHAS. B. NANCREDE, M.D.,

Professor of General and Orthopædic Surgery in the Philadelphia Polyclinic, Surgeon to the Episcopal Hospital, Senior Surgeon to St. Christopher's Hospital.

Our reply to the above question is a most emphatic negative. Before an abscess or whitlow has reached the stage when either the patient consents to incision, or the surgeon is willing to lay it open, undoubtedly poultices serve a useful purpose. We are willing to go further, and admit that in the case of a felon, where sloughs have to be separated, or in a wound where the same process has to be gone through with, poultices will *hasten* the separation of dead tissue, but—and this is a most important "but"—*will the whole duration of the case be lessened, and will the minimum of danger result?* Most assuredly not. We cannot help thinking, for scientific reasons, that the vulgar belief has some truth in it, that prolonged poulticing causes death of the bone in some cases of whitlow. Let any unprejudiced surgeon compare the appearances presented by a poulticed felon, and one treated after the method I advocate, and I feel convinced that half my position will be readily conceded.

A few words as to the anatomy of the distal segments of the fingers will render more clear the truth of my pathological deduction. The distal phalanges have, in reality, *no distinct periosteum* as such, the whole fibro-fatty tissue of the finger pulp serving the purpose of a scaffolding for the support of the nutrient blood-vessels. Hence inflammation of this tissue so often ends in death of the bone, for it too commonly results in more or less sloughing of the pulp, *i.e.*, the periosteum dies and the bone with it.

It is not my present purpose to dwell upon the proper treatment of whitlow, only upon the best dressing after an incision has been made into one ; but I would beg my readers to impress upon their minds the above anatomical fact, which will induce them, I believe, to freely incise a commencing whitlow *whether pus has already formed or not*, merely to save the vitality of a tissue upon which depends the life of the bone.

What, now, must be the effect of a poultice on such an inflamed tissue? The only chance of its regaining vitality sufficient to preserve the life of the phalanx is to have diminished the amount of congestion and the quantity of the inflammatory exudates, which are strangulating the blood supply. Again, we will not stop to argue whether the stable connective-tissue cells of the part proliferate, or whether only migrated white blood cells, or both, form the exudate, since the *mechanical* effect is the same. Heat and moisture in such a pathological condition tend to still more relax and therefore render, on hydrostatic principles, more sluggish the blood current, and nature is compelled, in the attempt to relieve this, to favor the egress of white blood-cells in larger and larger quantities. If the chief outflow of these takes place directly from the incision, well and good, but how if the migrating cells crowd into the already over-filled interstices of the pulp ; can anything but further strangulation of the tissue and harm accrue? We have heretofore entirely ignored the rôle that micro-organisms play in suppuration and sloughing, but it cannot fail to be seen that, if modern views are correct, the heat and moisture of the nasty, dirty relic of barbarism, called a poultice, must present the most favorable condition for their development.

A glance at the condition of the circulation in the surrounding undoubtedly healthy parts will convince any unprejudiced person that at least I have some grounds for my crusade against poultices.

To a less degree, so far as strangulation of tissue goes, my remarks apply to a confused and sloughing wound. My opponents will say what have you better to offer us, to replace this easy, time-honored method of dressing? Simply some form of antiseptic dressing. It would be certainly difficult for me to recall when I have willingly employed a poultice for a suppurating cavity.

My preference for a whitlow is free incision soaking in a mercuric bichloride solution, dusting freely with iodoform and dressing with absorbent cotton impregnated with the same drug. This usually need only be removed on the third day after, unless pain and tension be complained of. For an abscess, free incision, with counter-incision, if necessary, at the most dependant portion, the introduction through both orifices of a *large* drainage tube, the thorough and repeated syringing out of the cavity with mercuric bichloride solution, and the same iodoform and cotton. For a contused and therefore a future sloughing wound, antiseptic irrigation should be used, with appropriate incision,

if there seems to be much risk of inflammatory swelling ; if not, merely iodoform and cotton.

To what cases can this method be applied? To all such as warrant conservative treatment. Within the last seven weeks I have treated eight severe confused and lacerated wounds of the upper and lower extremities, with perfect success, except in one instance, where spreading gangrene set in and necessitated a successful thigh amputation. Two of these cases were severe compound fractures, produced, one by a cart the other by a railroad train, while five were *very* severe "bumpér crushes," *i.e.*, received by the limb being caught between the bumpers of cars, either while being coupled or when the motion of the train was checked. The damage done by such accidents rarely admits of conservative treatment, and I certainly have not met, in as many years, with so large a number of fortunate cases, affording such admirable results. As my experience goes back to the simple cerate, poultice and bran-dressing period, I am competent to judge of the very different results attained by antiseptic methods. But can these effects be achieved only by the dressing suggested? By no manner of means. Only let Lister's *principles* be put in force ; and Lister's own dressing, or a dozen modifications of it may be adopted. My personal preference is for the dressing suggested, on account of its simplicity, cheapness and efficacy.

Those who follow my advice will at first be disappointed by the primary tardiness of the cure. The sloughs separate only very slowly. But what matters it, if there be next to no pain, fever, or suppuration. So long as the wound is aseptic your patient is safe, and when the slough does separate, instead of macerated, soggy œdematous tissues, slow to take on healthy action, you will have a healthy wound which rapidly cicatrizes. Your patient will not be emaciated, have been unable to eat, with a coated tongue, and a disordered gastro-intestinal tract—quite the reverse.

Finally, do not continue the iodoform too long, as, after a certain point, it inhibits the healing process ; and when you see the granulations becoming either over-florid, or pale œdematous, resort to the use of powdered boric acid. When the sore becomes a superficial one I commonly use zinc or resin cerates, having first washed the sore with the bichloride, or some other antiseptic solution, and powdered it freely over with boric acid.

Of course, after bad crushes suppuration will at times occur in the damaged intermuscular planes without any direct communication with the wound. This will cause a sharp rise of temperature, pulse, etc., but being aseptic, as soon as the pus is evacuated all these symptoms will subside in the course of twenty four hours, or less.

NURSING.

FOMENTATIONS.—Fomentations have almost the same action as poultices. They are often used alternately with poultices. They have the advantage

of being lighter, and therefore are better borne on tender surfaces. They are made by pouring boiling water over flannel, and then ringing the flannel out, shaking it up and applying it. They are to be covered with oiled silk, and fastened on with bandages. If wrung as dry as possible, there is very little danger of scalding or blistering, no matter how hot the flannel is.

The wringing can be done in an ordinary towel, but it is easier to do it by means of a roller towel. The flannel is placed in the centre of the roller towel in a basin, and boiling water is poured over it. Sticks are passed through each end of the towel, the centre is raised, the sticks twisted in opposite directions, and so the flannel is wrung out.

An ordinary towel will also do. It is spread over a basin, the flannel is placed upon it, and boiling water is poured in. The towel is then folded over the flannel, it is lifted out of the basin, and the two ends are twisted in opposite directions until the flannel is squeezed dry.

The flannel is shaken up in order to let the air into its substance and folds. Air being a bad conductor of heat, this causes the fomentation to retain its heat much longer than it would otherwise have done.

If poppy heads have been boiled in the water it will be more anodyne.

Spongio-piline, being porous at one side and water-proof at the other, does excellently for fomentations.

Twenty or thirty drops of turpentine, sprinkled on either the flannel or spongio-piline, is a good counter-irritant. It is often used when the abdomen is distended with air.

As fomentations rapidly become cool they must be frequently changed. When they are finally removed, the skin must be dried and covered with flannel, to prevent catching cold.

Dry heat is applied when warmth is necessary, and it is desired to avoid the relaxation of the tissues caused by moisture. Flannel, heated before the fire or in an oven, is used; also sand or bran, sewn in flannel bags and heated in an oven. Camomile flowers can also be used, and are lighter than sand. A flat tile, heated and wrapped in flannel, retains the heat for a long time.

One of the commonest ways of using dry heat is to apply tins, jars, or bottles of hot water to the feet. They ought to be wrapped in flannel, to prevent the skin being injured. Too great heat ought not to be applied to the unconscious or paralyzed.

BLISTERS.—Cantharides, or Spanish fly, is the general basis of blistering preparations. (The name Spanish fly, is misleading, the insect in question being really a beetle, and a native of Hungary.) When applied to the skin, it causes tingling, smarting and a sensation of heat; soon the true skin becomes congested, and an oozing takes place. The minute drops of serum enlarge

and coalesce, forming different sized blebs. The outer skin or epidermis, is, of course, raised up by the fluid.

As a rule, blisters are employed as counter-irritants, and for this purpose redness and a minimum amount of vesication should never be employed, unless for some special object, as the contents of the vesicles is very similar in composition to blood, and it is found in practice to be as weakening as though the same amount of blood had been withdrawn.

The effect of counter-irritation may be shortly explained. It effects the nerve-endings, and through them causes an impression to be brought by the nerve-fibres to some portion of the brain. This causes another impression to be carried by other nerve-fibres, either to the spot where the counter-irritant was applied, or to some other portion of the body which receives nerves from that part of the brain.

Thus we find that the irritating the skin may have an effect on the brain. This is seen in some cases of coma, where consciousness is aroused by blisters applied to different parts of the body in rapid succession, and for a short time each, "flying blisters."

We also find that it may have an effect on some other part of the body. Thus a blister in one situation may ease pain in another. And, fortunately, we have a simple rule which helps to show where to make these applications. The nerve that supplies a joint or muscle also supplies the skin over it, so a superficial application generally affects the tissues beneath.

The common preparation of cantharides is a thick plaster. A piece the required size may be cut off a sheet, or some may be spread on sticking plaster, a margin of the latter being left to fasten the blister to the skin.

Blistering fluid is convenient, clean, and efficient. It is painted on with a camel's-hair pencil. The amount put on and the delicacy of the skin will regulate the effect.

A small blister can be readily made by putting some cotton wool into a silver thimble and pouring on it a few drops of strong solution of ammonia. The thimble is then inverted on the skin, and kept there for ten minutes. By this time a blister will have risen. Counter-irritant by mustard, iodide, or croton-oil liniment may often take the place of blistering.

The dressing of a blister deserves careful attention, as careless or ignorant handling may cause severe suffering. Unless specially directed to the contrary, a blister should not be opened, but be covered with a layer of soft cotton wool until the effused serum is absorbed. Even if the blebs are too large to admit of absorption, it is important to preserve the covering until the true skin has had time to form a new epidermis. The nerve endings (a touch to which causes such exquisite pain) are thus protected and the risk of ulceration is lessened.

THE DIETARY IN ACUTE DISEASES.

By J. MILNER FOTHERGILL, M.D.

Ed. Hon. M. D. Rush, Physician to the City of London Hospital for diseases of the chest.

Strange as it may seem, the present method of feeding persons acutely ill is nearly as irrational as if Majendie had never existed, and physiology remained an unborn science. Fashion has ruled the roost. Veal broth had given way to calves'-foot jelly when my acquaintance with sick persons commenced. The French committee had pronounced against gelatine as a food, but that did not weigh much with the public. If a sick man died without having been duly supplied with gelatine in the form of this jelly, loud and deep were the indignant comments of his neighbors. Then came a distinct improvement in the form of milk and seltzer water introduced from Germany. This being fluid-food, slaked the thirst, and soothed the dry fauces in pyrexia. It sat lightly on the stomach, and was agreeable to the palate. But after all the actual nutriment supplied by it was (practically) confined to the milk sugar. Clinical observations have been borne out by experiments to the effect that the digestive ferments are greatly impaired in illness. As to the absorption of fat in febrile states much doubt rests upon the subject. Being already in a fine emulsion some of the fat globules may find their way into the mouths of the lacteals of the intestinal villi, and so may afford some nutriment to the system. But of the digestion of the caseine it is even more doubtful if any go on.

Firm curdling is common, and this firm curd appears in the stools as hard white lumps. Consequently at the London Fever Hospital a strict watch is kept over the stools, and when pieces of white curd are detected means are taken to obviate this firm curdling. The two plans that suggest themselves are: (1), some mechanical agent like biscuit powder which will lessen the cohesion of the curdled mass; and (2), some stronger alkali than seltzer water, Vichy or Vals, or other water well charged with alkalis may be added to the milk in equal quantities; or another plan is to stir in some light carbonate of magnesia or prepared chalk. By such means the acidity is neutralised and a curd formed which is disintegrated by the liberation of the carbonic acid. Sir William Roberts, M. D., pointed out in his address before the British Medical Association at Cardiff, in July last, that the gas of champagne lightens up the mass of food in the stomach and so aids digestion. This disintegration of the milk curd is most desirable in any morbid condition.

But in pyrexial states it is very doubtful if the digestion of albuminoids is desirable even if practically attainable. During pyrexial states there is acute and active hystolysis. That is well known. Its nitrogenized tissues melt down under a sustained high temperature by a process of acute fatty degeneration. When convalescence sets in then

tissue repair is active; and the keen appetite and capable digestion provide liberal supplies of albuminoid matter for the swift histogenesis then taking place. But while the hystolytic process is afoot tissue repair is impossible. In his opening address to the medical society of London (session 1885-86, Dr. Ord, the president, made reference to some experiments he had performed which went to show that the arrest of the normal histogenetic processes in pyrexial states is one factor in the increased heat production. To attempt, then to supply the albuminoids to the body in conditions of high temperature is to achieve no good end, and only to increase the risks and dangers which belong to a state of blood highly charged with excrementitious matter of nitrogenised character—in other words, the typhoid condition or uræmia.

Where there is little or no pyrexia present then the caseine of milk may be both digested and be useful. Beef tea containing some of the meat fibre, too, is useful. Part, if not all, of the meat fibre ought to be beaten to a paste or a pulp and then returned to the infusion; by which means a distinct food-value is given to the beef tea. In acute gastric disturbance, in conditions of debility, as after hemorrhage, such forms of albumenoids are excellent; and supply the tissue needs until more solid food can be taken.

But in acute pyrexial states only fluid foods can be taken. The thirst causes a demand for fluids on the one hand, while fluid forms of food are best tolerated by the stomach. What should these fluid foods consist of? In the first place comes milk (with its soluble milk-sugar), which may be given with seltzer or other water, or as whey, or with water; in the latter case it is well to add some soluble carbo-hydrate, as any food consisting of predigested starch. Also a malt extract prepared as follows: reduce to consistency, by the addition of a little water, until the fluidity is such that it will readily mix with some aerated water. This forms a most excellent food containing soluble carbo-hydrates of the most digestible character.

Cereal matter which has been well-baked or malted is *par excellence* the food for pyrexial states. A certain conversion of the insoluble starch into soluble matters as dextrine (and maltose in malted preparations) has thus been brought about. Baked and malted preparations are now on the market in any quantity. Where prepared food contains malt it possesses diastase which can further carry on the starch conversion into or towards maltose in the presence of warmth and moisture. Such predigested and self-digestible food of farinaceous character can be used in various ways. It can be added to milk and increases its nutritive value. It is invaluable as an addition to beef tea, chicken broth and mutton broth, giving the beverage a distinct food value. It can be added to any soup which is best prepared from fish. It can be used with home-made lemonade, or apple water, lending to them a nutritive value.

Further such soluble carbo-hydrates (prepared according to the directions supplied with each "Food") form a fluid vehicle in which wine or spirits can be given pleasantly, when some stimulant is indicated.

Preparations of predigested starch are of unspeakable value in acute pyrexial states when the natural digestive powers are greatly impaired.—*Journal of Reconstructives.*

THE TREATMENT OF CHRONIC HEART DISEASE.

The observations of Dr. Schott, of Nauheim (*Berliner Klin. Wochensch.*, 1885, Nos. 33-36), since 1871, extend over 300 cases, and the clinical histories of a fair proportion of these are followed up. It will be remembered that Stokes was the first to advocate a life of active exercise in chronic heart disease. Indeed Stokes went so far as to say that, for a man with well-compensated valvular lesion, the greatest misfortune that could happen to him was to have his cardiac trouble discovered by a medical man. This was because a number of restrictions were, as a rule, imposed upon his usual mode of life, all tending to a debilitating illness. The consequences was that the heart-muscle, like the other muscles of body, lost strength, and dilatation of the heart supervened earlier than would otherwise have been the case. Stokes's doctrine of the positive value to the heart of a life of activity has received more attention on the Continent than amongst his own countrymen. In Germany, especially, it has been developed into a complete system of treatment, on various lines. Oertel, as is well known, prefers hill-climbing to any other method, care being taken to ward off any threatening dyspnoea by repeated stoppages, and by making a few deep voluntary respirations before proceeding. This mode of exertion is selected partly also from a desire to unload the venous system, and the right side of the heart in particular, by diminishing the volume of the blood generally; and the excessive perspiration induced by mountain expeditions does this gradually and effectually, the supply of liquid being duly restricted by removal of the excess of water from the blood.

Dr. Schott makes great use of stimulating baths, together with the systematic exercise of the various muscles of the body at home by the aid of an assistant; but the bath is made apparently the chief element of the treatment. An artificial Nauheim bath (apart from carbonic acid) may be rudely imitated by adding to softish water 1 to 1½ per cent. of common salt, and as much per mille of chloride of calcium, the temperature being 93° F. Very weak patients have the water a little warmer, but not beyond 96° F.; and in all cases the bath should be a short one, a second chill being avoided. The baths are gradually made stronger, cooler, and the patient remains longer, according as he improves. The full strength is from 2

to 3 per cent. of chloride of sodium, and from ½ to 1 per cent. of chloride of calcium, with carbonic acid. The last named may be supplied artificially by adding equal parts by weight of bicarbonate of soda and hydrochloric acid, the full strength being 1 kilogramme of each in a bath of 250 litres. But much smaller quantities suffice at first.

The exercises consist of various movements of the limbs and trunk, each movement being opposed by an assistant, who gives way as the patient exerts his strength. The greatest care is taken that the patient breathes easily the whole time. The details may be found in Dr. Schott's original article (*Berlin Klin. Wochensch.*, Nos. 33-36, 1885), reprinted as a pamphlet by Schumacher, of Berlin.

The therapeutic results have already been summarized in these columns. Suffice it to say, that diminution of the cardiac dullness during a course of baths can be actually demonstrated, and, as a rule, the improvement in the patient's condition is immediate and striking.

No alteration is made in the solid food, but Dr. Schott has for years restricted the fluid supply whenever high arterial pressure existed. Finally, mountain tours are recommended where there is obesity, but in moderation.

This system of baths and exercise is a rival to Oertel's mountaineering system, and possesses certain advantages in that it can be adopted at home, and can be regulated to a nicety to suit the patient. But Dr. Schott's observations lack the scientific precision of Prof. Oertel's. It is earnestly to be hoped that a more active life may be ordered by medical men generally in the treatment of heart disease. It is to be feared that a merely passive existence is still widely recommended to any unfortunate patients with (mitral) valvular lesion and dyspnoea.

TREATMENT OF THE HYSTERICAL ATTACK.

Dr. Albert Ruault gives a simple method which he had found very efficacious in controlling an hysterical fit. It consists in making firm and constant pressure over the supraorbital nerve at its point of emergence from the supraorbital foramen. The head is held securely between the palms of the hands, while pressure is made over the nerve on each side with the thumbs. The writer says that the patients under this treatment first contract the facial muscles with an expression of pain, cry out, and then take several quick successive inspirations. The breath is held for a few seconds and, then, with a long expiration, the muscles relax and the attack is ended. The pressure of the thumb should now be relaxed; otherwise it may have the opposite effect and excite another convulsion. Pressure over any nerve-trunk at the point where it becomes superficial will have the same effect; but the supraorbital nerves are chosen because of their convenient situation.—*France Medical.*

TREATMENT OF PIGMENT SPOTS OF THE SKIN.

According to Unna, borax and the bichloride of mercury are the medicaments most generally employed for the removal of pigment spots; the first is slow and mild in its action, rarely occasioning eczema; the second acts more energetically and rapidly.

If we desire to have the speediest possible effect, it is necessary to have recourse to mercury, not in the form prescribed by Hebra, which is inconvenient, but a solution of the sublimate in collodion (one half to one part). The danger will thus be avoided of provoking redness, desquamation, and sometimes even a bullous eruption.

These energetic treatments have one inconvenience; we cannot exactly measure the effect. On this account, it is preferable to employ the mercury and bismuth ointment proposed by Hebra. A piece of muslin coated with the ointment will enable us to obtain a more prompt effect than with feeble solutions, besides being much more convenient of application.

Small pieces of muslin, about the dimensions of the groups of freckles of chloasmic spots, should be smeared with the ointment, and after first removing the greasy matter from the surface with cologne or alcohol, they should be applied to the affected parts. The application should be made upon the patient's retiring at night, and washed off the next morning. Bandaging or collodion is unnecessary.

The author prescribes for use during the day a bismuth ointment, which has the advantage of masking the brown spots.

The following is the formula of the ointment:

℞ Oxide of bismuth,
Kaolin.....aa 5 grams
Vaseline20-40 "

M.

The ointment should be applied only to the pigmented spots, allowed to dry and not be removed for some time.

He also employs the following formula:

℞ Oxide of Bismuth,
Rice powder.....aa 2 grams
Ung. Glycerine..... 10 "
Eau de rose..... 20 gutt.

M.

By alternating the mercurial and bismuth applications, the pigment patches rapidly disappear without redness or desquamation, if the pigment be not so deeply situated in the derma that the remedies cannot reach it without destroying the papillary layer, as is the case in certain chronic chloasmas.

The following is Hebra's formula:

℞ Subnitrate of bismuth,
White precipitate..... aa 2 gr. 50
Lard.....50 grams.

M.

To be spread upon a piece of lint, and applied during the night to the pigmented patch.

Kaposi employs the following ointment in the same manner:

℞ Salicylic acid..... 2 grams
Emollient ointment.....40 grams

M.

Or,

℞ Boracic acid,
White wax.....aa 5 gram
Paraffin 10 " s
Oil of almonds..... 30 "

M.

Frictions with the ordinary mercurial ointments sometimes succeed well.—*Jour. de Med. de Paris*, No. XV., 1886, *Jour. Cutan. and Vener. Dis.*, July, 1886.

MEMORIZING DOSES.

Dr. G. A. Wiggins, of Philadelphia (*Med. World*, August, 1886), gives some general rules with their exceptions, which are thoroughly reliable:

1. The dose of all infusions is 1 to 2 ozs., except infusion of digitalis, which is 2 to 4 drs.

2. Dose of all poisonous tinctures is 5 to 20 minims, except tincture of aconite, which is 1 to 5.

3. Dose of all wines is from 1/2 to 1 fl. dr., except wine of opium, which is 5 to 15 minims.

Of all poisonous solid extracts you can give 1/2 gr., except extracts of calabar bean, which is 1/8 to 1/4 gr.

5. Dose of all dilute acids is from 5 to 20 minims, except dilute hydrocyanic acid, which is 2 to 8 minims.

6. Dose of all aquæ is from 1 to 2 ozs., except aqua lauro-cerasus and aqua ammonia, which are 10 to 30 minims.

7. Of all syrups you can give 1 drachm.

8. Dose of all mixtures if from 1/2 to 1 fl. oz.

9. Dose of all spirits is from 1/2 to 1 fl. dr.

10. Dose of all essential oils is from 1 to 5 minims.

EFFICIENT SEDATIVE COUGH MIXTURE.

When Dr. H. C. Wood recommends anything, it is a guarantee of its merit. Hence we take the following from the *Therapeutic Gazette*:

℞ Potassi citratis, ʒj.
Sucalimonis, ʒij.
Syr. ipecac, ʒss.
Syr. simplicis, q. s. ad. ʒvj.

M. Sig.—A tablespoonful from four to six times a day.

When there is much cough or irritability of the bowels, paregoric may be added.

DERMATOLOGY.

RINGWORM. (Dr. Henry Brown, Manchester.—*British Medical Journal*). The subjoined formula for the local treatment of ringworm is suggested by Dr. Payne's lecture on the treatment of that epiphytic disease. In sending it I am simply handing down a form received from others, and used in the out-patient practice of the Manchester infirmary, many years before the publication of the British Pharmacopœia. When the acidum sulphurosum was made official, it was used for a time instead, but we had to revert to the old form made up of materials fully recognized and explained in Squire's Companion. The form is: R. Sodæ hyposulphitis dr. j; solve in aquæ fl. oz. viij; et adde acidi hydrochlorici fl. dr. j; for outward use only. The use of this lotion, as water-dressing covered with oiled silk, and accompanied by daily washing in soft soap and water, has proved as perfectly satisfactory, as Dr. Payne says the principle of the treatment of ringworm is perfectly simple. It fulfils Dr. Payne's conditions, and kills the fungus. I presume the sulphurous acid gas acts beyond the limits of the aqueous solution.

URTICARIA. (*Lond. Med. Record*). Pilocarpine. In the case of a woman aged 53, suffering from widely spread urticaria, which had invaded the pharynx and caused intolerable itching, M. Piogey at first tried emetics, quinia, belladonna, and hypodermic injections of morphia, without decided benefit. He then injected two-thirds of a grain of pilocarpine, after which considerable improvement took place. Three injections effected a complete cure, and the eruption did not reappear.

REMEDIES FOR SKIN DISEASES IN THE FORM OF SPRAY. (*Jour. of Cut. and Ven. Diseases*). Dr. Hardaway highly recommends spray as a vehicle in the treatment of affections of the skin. His usual habit is to prescribe a solution of definite strength, from which the bottle of an ordinary handball apparatus is filled, and the patient is then directed to throw the fine spray on the parts affected. Any substance that is "sprayable" either in its liquid form (diluted or pure) or in a state of solution, may thus be employed; e. g., carbolic acid, sulphate of zinc, lotions of grindelia robusta, thymol, liq. picis alkalinus, and fluid cosmoline, (medicated or not). In the case of the fluid cosmoline, the tube of the atomizer should be large. The spray finds its greatest range of usefulness in diseases affecting large areas, and in that class of disorders accompanied by itching and a more or less unbroken cuticle; viz., pruritus, urticari, papular eczema, and the like. In generalized pruritus he had good results from spraying on a lotion of the following sort: carbolic acid three to four drachms; glycerine one ounce; water, one pint. After the bottle of the atomizer has been filled, he sometimes directs the patient to add from five to ten drops of the oil of peppermint. The atomizer-bottle should be thoroughly shaken before the bulb is compressed, in order to diffuse the peppermint through the mixture; otherwise it would float on top.

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MONTREAL SEPTEMBER, 1886.

COLLEGE OF PHYSICIANS AND SURGEONS, PROVINCE OF QUEBEC.

On the 28th of this month (September) a committee, named at the first meeting of the new Board of Governors held in July last, to take into consideration and put into shape the proposed amendments to the Medical Act, met in Quebec. This committee was composed of the following governors: Drs. Hingston, George Ross, T. A. Rodger, F. W. Campbell, J. L. Leprohon and E. P. Lachapelle, of Montreal, and Drs. Lemieux, Belleau and de St. George, of Quebec. All were present except Drs. Hingston and de St. George. Their sitting was very protracted, extending over twelve hours, but their work was so well and thoroughly done, that when, on the following day, their report was presented to the governors of the College at their regular semi-annual meeting in Quebec, and discussed clause by clause, it was practically adopted without alteration. The changes which have been made and which, if assented to by the Legislature, will come into force after the 1st of January, 1888, are very sweeping in their character. First of all, our already really very hard preliminary examination is increased by the addition as obligatory subjects of Philosophy—(as taught by the books in use in the French and English schools) Physics and Elementary Chemistry. Only one examination will be held each year, and it will take place early in July. The fee will be \$10, and either total or partial failure means loss of it all. No money will be returned. Those who fail *partially* will have a supplementary examination in September. A fee of \$10 must be paid for this examination. Botany is cut out of the Medical Curriculum demanded by the College. Most likely, however, the Universities will con-

tinue it as before. A Central Examining Board will be formed, and will meet early in April. Laval University desired that this Board should meet in July, as being the time most convenient for her. She, however, has consented to so arrange her course as to terminate in March, and the time for the Central Board to meet will suit every one. The total cast of the Diploma of Membership will then be \$50.00, this including the fees for both the Primary and Final examinations. This Board will only meet once every year. The second most important alteration is in the method of electing the Governors. The old plan of proxies is done away with, and each judicial district will, commencing with the next tri-annual election, be conducted by each district in the manner reported upon by a previous committee, and which was published in the Record for July last. The Universities will have, as at present, each two representatives. The city of Montreal and the City of Quebec 4 each. One representative from the Judicial Districts of Montreal, Quebec, Gaspé, Saguenay and Chicoutimi, Rimouski, Montmagny, Beauce, Kamouraska, Terebonne, Joliette, Richelieu, Bedford, St. Hyacinthe, Iberville, Beauharnois, Ottawa and Arthabaska; 2 for the city and district of Three Rivers; and 3 for the district of St. Francis—making in all forty Governors, as at present. Arrangements are made for reciprocal registration with all Provinces having a Central Examining Board.

The semi-annual meeting on the 29th was largely attended. Dr. Hingston, the newly-elected president, presided, and by his excellent chairmanship much expedited the business of the College. Several graduates took their license in course. A resolution was passed unanimously congratulating Dr. Hingston on his election as an Honorary member of the British Medical Association.

OFFICERS OF THE INTERNATIONAL MEDICAL CONGRESS.

The Executive Committee of the International Congress have finally elected the following officers for the Washington Congress of 1887:

President.—N. S. Davis of Chicago.

Vice-Presidents.—W. O. Baldwin of Montgomery, Ala.; Wm. Brodie of Detroit; W. W. Dawson of Cincinnati; E. M. Moore of Rochester, N.Y.; J. A. Grant, Ottawa, Canada; T. G. Richardson of New Orleans; L. A. Sayre of New York; J. M. Tonor of Washington; the President of the American Medical Association; the Surgeon-Gen-

eral United States Army; Surgeon-General United States Navy; Supervising Surgeon-General Marine Hospital Service.

Secretary-General.—J. B. S. Hamilton, U. S., Marine Hospital Service.

Treasurer.—E. S. F. Arnold of New York.

Chairman Finance Committee.—Richard J. Danglison, Philadelphia.

Chairmen of Sections were also elected, but we have not room for their names.

We must confess that as a whole, these names do not appear to be as representative as we would wish. We, however, hope that now all past differences will be forgotten, and that all will work loyally to make the Congress a great success.

THE ORIGIN OF SCARLET FEVER.

Dr. Cameron, of London, England, claims to have discovered the fact that a vesicular disease on the teats and udder of cows is capable of producing, through milk, scarlet fever in the human being. The London *Lancet* says of this discovery: "We have no hesitation in expressing our belief that we are at last brought face to face with the origin of the disease." The British Government have taken the matter up, and it will be fully investigated. It would indeed seem as if we were on the eve of a discovery, only second in its importance, to vaccination.

TORONTO ITEMS.

A new and handsome operating-room has been built in the Toronto General Hospital. It is said to be capable of giving accommodation to about six hundred students.

The Ontario Medical Council is about to erect in Toronto a handsome building for its occupation. When we realize the folly of our perambulating system for our College of Physicians and Surgeons, we may hope to emulate the example of our Ontario brethren. But we fear that time is a long way off. Indications do not show any tendency in that direction now. Just the opposite, if one judges by the temper displayed by our Quebec friends, when it was suggested at the special meeting of the College held in July last, to locate permanently in Montreal.

The profession in Toronto and Ontario generally seem pleased at the information which has reached them, that the new British Medical Act takes away from old country graduates and licen-

trates, the right which they have heretofore possessed of insisting upon registration, without the further examination demanded by the Ontario Medical Council.

The meeting of the American Health Association in Toronto early in October, is a most important event, and we are glad to hear that everything points to a most successful gathering. We hope that Montreal will be well represented.

The Toronto Medical Schools are busy preparing for their winter's work, and the prospect of large classes is excellent. Toronto is working strongly to become the centre of medical education for the Dominion. Some claim it is so already. In our opinion one Montreal School is, by her hospital monopoly, doing much to assist her sister city to attain this end. Montreal must wake up—increase her hospital staffs—and thus her clinical instructors or will soon be compelled to take a back seat.

PERSONAL.

Drs. Hingston, Armstrong, Wood, McConuell, Major and Cameron, of Montreal, who have been in Europe for several months, have all returned during the last few weeks in time to look after their patients, who about the first week in September returned in large numbers from the seaside resorts.

Dr. Blackader, of Montreal, has left for Europe, intending to pass a few months there.

Dr. Ralph Leslie, of Toronto, has been decorated with the order of Leopold by the King of Belgium for his services on the Upper Congo.

Dr. Roseburgh, of Hamilton, was at the meeting of the British Medical Association last month.

Dr. Roddick, Montreal, sailed by the *Parisian* for Liverpool, on the 9th of September, for a hurried visit. He returns early in October.

Dr. Hingston, of Montreal, has been elected an Honorary member of the British Medical Association.

REVIEWS.

Clinical Notes on Uterine Surgery. By J. MARION SIMS, A.B., M.D., late Surgeon to the Woman's Hospital, N.Y., &c., &c., &c.

It is with mingled feelings of sorrow and respect for the ever-lamented and gifted author that one

takes up "Clinical Notes" upon a branch of the profession in which he was, without question, the foremost exponent of his day. In fact, his brilliant genius may be fairly said to have broken the shackles of superstition which seemed to have attracted the minds of surgeons upon the subject of gynaecology up to his day. As was to be expected, the "Notes" are full of originality and invention, and the author was too great and noble a man to hide any mistakes in working out the great problems to which he was so devoted. The one story of the invention of his speculum is full of instruction, and shows the value of noting with care every fact that comes under our observation.

On menstruation we again see the character of our author, drawing valuable deductions from careful observation. His remarks upon "menorrhagia from fibroid engorgement of the cervix" shows the happy results attainable by the same method. Sponge tents are brought before us with much interest, inasmuch as, after years of experimenting with various forms of tents, the profession has once more, almost unanimously, decided the sponge tents, properly and carefully prepared, as the best, not only for dilating the uterine canal, but also as valuable therapeutic agents in suitable cases. The chapter on uterine polypi is very instructive, and as the writer details the great advances made in gynaecology the story is most instructive and pleasing. The chapter on menorrhagia from uterine fibroids, while interesting, yet fails to give the best and safest of all modes of treatment, in extirpation of the uterine appendages as first performed by Dr. Trenholme, of Montreal, in Jan., 1876.

The chapter on inversion of the uterus gives all that was known at the time, and we notice that the credit of reduction of that organ by pressing in the angles or cornuæ lately given to Nœggerath, had its origin in the inventive genius of our author.

The chapter upon dysmenorrhœa is most instructive, and the author's views as to the mechanical causes of this disease are clearly and forcibly illustrated. The extent to which he carries divisions of the cervix would be considered rather heroic in the present day. Notwithstanding, the fear of creating cases for Emmet's operation, yet we think many cases would be benefited by it.

The chapter on abnormalities of the os tincae is very interesting and instructive on account of the rather ultra mechanical views of the author as to terseness.

When treating of the abnormal conditions met with in the cervix uteri, he says that, "if the cervix projects into the vagina a full half inch it is very likely to be associated with the sterile state; if an inch the case is almost necessarily sterile; if it should be still more elongated, say one and a half or two inches, it becomes absolutely so; and if it does not project into the vagina at all, it is equally sterile. Here remarks from such a master are worthy of attention by every gynæcologist, yet cases have come under my own care where the latter condition obtained and the lady was a mother of several children.

Dr. Sims' remarks upon the importance of the cervix uteri being of proper size, form and density are clearly stated, and will be illustrated by cases in his practice. The elongated conoid cervix is specially dealt with as a factor in sterility.

When speaking of uterine displacements as causing sterility many important points are discussed with which every gynæcologist and general practitioner would do well to refresh their memories. The way Dr. Sims illustrates his subject by cases in practice is of all possible ways of teaching the most happy and instructive—not only do we follow with eagerness the actings of his own untrammelled mind, but are taught for ourselves to thus act independently. He asks: "how am I to impress upon minds the truth of my views but by giving them the facts and circumstances that have gradually led my own convictions where I myself find them, without any prejudices or preconceived opinions on the subject?"

When discussing anteversions, the value of shortening the anterior wall of the vagina in special cases is illustrated by cases, in which the success he attained warrants further work in the same line.

Retroversions are treated in a way to discourage the abuse of pessaries, while, at the same time, value of these instruments in suitable cases and with proper precautions are insisted upon.

It is very instructive to note the frank way the author speaks of the origin of his operations for procedentia uteri, and at the same time gives his reasons for the adoption of each. Dr. Sims says: "It is always interesting to watch the slow degrees by which true principles of treatment are established. The idea of narrowing the vagina for the cure of procedentia was first suggested by Marshall Hall, but I do not know that the operation ever succeeded. Then I carried out the principle

by cutting away the whole of the redundant portion of the anterior wall of the vagina. This I afterwards modified by simply denuding a large oval surface on the anterior wall and uniting its lateral edges by silver sutures. This was further modified by making a V-shaped scarification and producing a veritable fold in the wall of the vagina. Then I made the V trowel shaped, by turning its upper ends inwards across the axis of the vagina, etc. This was afterward modified by Emmet, who simply narrowed the vaginal outlet at the anterior cul de-sac, and found this to answer the purpose."

Sec. VI. begins with the statement that "the vagina must be capable of receiving and of retaining the spermatic fluid." This assertion, which of course commends itself to our judgment, is enforced by reference to conditions that operate to prevent its accomplishment.

These conditions are illustrated by cases in the author's usual happy way, which enables the reader to gain a closer apprehension of the points brought out than is possible by any other method. The story of his treatment of vaginismus and the steps that led to his method of dealing with this trouble read like a romance, only every point is full of deep interest and instruction. The author's views of treatment for non-retention of the semen in the vagina as a cause of sterility are worthy of attention, and the more so as this is too much overlooked.

Sec. VII. "For conception, semen with living spermatozoa should be deposited in the vagina at the proper time." This, though a well-known fact, is illustrated in the author's peculiarly happy and lucid way in which we see what it costs to work out facts so well-known by students in physiology of the present day.

Sec. VIII. The secretions of the cervix and vagina should not poison or kill the spermatozoa." The various kinds of secretions that prevent conception are dealt with and illustrated by cases which fix the facts in the mind. Many points are brought out that have been over-looked by most writers upon gynæcology and yet which must add very greatly to the success of the practitioner in dealing with many of these most difficult and trying cases. We commend this volume to the careful perusal of every student, and feel sure that no other extant will be more productive of fruitful results in the advancement of gynæcology.