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Original Communications.

DANGEROUS INHALATION OF NITROUS OXIDE GAS.

By DR. C. E. NELSON, New York.

As chloroform accidents are reported, I can see no valid reason for not reporting a similar event, in the case of inhalation of nitrous oxide gas. As far as I am aware, no accident in the case of inhalation of nitrous oxide has as yet been reported, Dr. Colton alone having caused it to be administered to more than 122,000 without accident.

The facts of the case, in this paper, are as follows: On April 21, my six-year old boy required the extraction of two carious molars in the lower jaw; he was accompanied to the dentist's (not Dr. Colton's) by myself, wife and a female domestic; not wishing to see anything done, in the case of my own child, I left the child in the dental apartment in charge of the servant, letting the child suppose I was right behind him, and joined my wife in the waiting room; the child is courageous, and was not in the least flurried in the presence of the dentist; on the contrary, he obeyed all the instructions with alacrity; I mention these points to show he was not frightened in any way. The following account was afterwards told me by the

servant; the readers of this journal may say I did not see the symptoms myself, but I have every reason to believe the girl's statements at all times, which were as follows:—The child took a few deep inhalations, when the face turned pale, the child then cried out, and all of a sudden the face, neck (back and front), arms and hands became covered with purple blotches, lips very dark, face swollen, eyes protruding, and the physiognomy of the child perfectly unrecognizable; arms and legs moving rapidly; the teeth were extracted with marvellous rapidity; the dentist then rubbed the ecchymosed patches, with the effect of almost instantaneously restoring the skin to its normal colour; all this happened perhaps within the space of three quarters of a minute. I then returned to the dental apartment, and saw nothing wrong with the child, although my wife, on entering before me, noticed the dark blue marks on the back of the neck, leading her to suppose he had been forcibly held, which was not the case. As Shakspeare says, "all's well that ends well," but the child was certainly as near death as could possibly be.

Thinking that this was an unusual condition of persons during the inhalation of nitrous oxide, I to-day (April 22) visited Dr. Colton, who very politely told me that in his large experience he had never noticed it; that when a couple of teeth are extracted, person becomes slightly pale; that when up to fifteen teeth are extracted, some people may have their ears a little bluish, and the face a

deep red with a slight purplish tinge, such as you may see in persons who are out in the street on a sharp, cold day; he informed me also that no sense of suffocation is experienced.

Some years ago, Dr. Carnochan performed an operation, prior and during which, anæsthesia was produced by the nitrous oxide, administered by Dr. Colton, but I suppose not pushed to the full extent, as in extraction of teeth; the patient, a lady, was under the influence during some little time, perhaps a quarter of an hour; my father, the late Dr. Robert Nelson, was present; said nothing about the skin being blue, but remarked that the finger-nails were bluish, which he regarded as a very dangerous sign; this was observed in a marked degree yesterday in the case of my child.

Progress of Medical Science.

THE TREATMENT OF EPILEPSY.

Dr. W. R. Gowers concluded his recent course of Gulstonian Lectures before the Royal College of Physicians with the following interesting remarks on the treatment of epilepsy:

The treatment of epilepsy is a subject on which numerical analysis gives little help. A large number of cases are under observation too short a time to enable the effect of remedies to be fairly estimated; and of the cases in which benefit is derived, we have no means of ascertaining how many relapse when treatment is discontinued. My notes of the result of treatment in this series of cases extend to 562 cases only. In the remainder, either the period of observation was too short for just conclusions to be drawn, or, in the press of out-patient work, the influence of remedies was not noted with sufficient precision. The effect of treatment is more likely to be recorded when it is distinct and considerable than when it is slight. Hence the following figures have no relative value. Of the 562 cases, the attacks ceased while the treatment was maintained in 241; doubtless many of these relapsed when treatment was discontinued, but in a few I have been able to ascertain that the patients remained free from fits even for years after they ceased to take medicine. In 266 cases improvement short of arrest was obtained; the fits being reduced in many to $\frac{1}{20}$, $\frac{1}{30}$, $\frac{1}{40}$, and even $\frac{1}{200}$ of their former frequency. In 55 cases little improvement was obtained by any method of treatment.

Time forbids me to enter at any length on the details of treatment, and I can do little more than mention the remedies which in this series of cases were of most distinct service. The subject of possible modes of action it is better to leave almost

untouched. It may be doubted whether a rational therapeutics of epilepsy is yet possible. At any rate, up to the present time, remedies used empirically have been of most service.

Although the results shown that we must not only rely exclusively upon bromides in our treatment of epilepsy, they show also, as might be expected, that on these our chief trust must still be placed. Of the arrests of fits, 66 per cent., and of the improvements short of arrest, 62 per cent., were due to bromides, given alone. Of the three alkaline salts of bromine, that of potassium deserves, I think, as it has popularly received, the first place. I have made a careful comparison between the salt of sodium and potassium in a series of about fifty cases, substituting the one for the other. In a few cases the sodic salt appeared to do better; in the great majority it was distinctly less useful. Bromide of ammonium possesses slightly more power than bromide of potassium, but this is not greater than the larger quantity of bromine which it contains will account for.

The period after its administration at which the maximum effect of a dose of bromide is obtained varies, I believe, with the dose. The larger the dose the longer is the maximum effect deferred; the smaller the dose the sooner does it occur, and the sooner is its action over. When small doses are employed in cases in which attacks occur at regular times, they should not therefore be given more than two or three hours before the attack is expected. This is contrary to some opinions which have been expressed, but I have several times known attacks arrested when a dose was given some two or three hours before the fit was expected, which were not arrested when the same dose was given twelve hours earlier.

The effect of bromide upon fits appears to be for a time cumulative, just as is, indeed, its action in causing bromism. Attacks may continue under its administration for a time, and yet ultimately cease without any increase in the dose. On the other hand, still later, tolerance, or rather indifference, may be established, and attacks which have been for a time arrested may ultimately recur.

Drugs which increase reflex action, such as strychnia, are now believed to do so by lessening the resistance in the nerve-centres involved. Bromide diminishes reflex action, antagonizes strychnia, and it is probable that it does so by increasing the resistance in the centres. If the view above expressed be correct, that the morbid state in epilepsy is essentially an instability of the resistance in the cells, it is also probable that bromide acts by increasing the stability of this resistance.

Bromide is commonly administered in a continuous course, in such moderate doses as will just suffice to keep the fits in check. Given thus it needs to be given frequently. I have more than once observed that a daily quantity which given in two doses did not quite arrest the fits, arrested them completely when given in three doses. It

therefore, the greater convenience of infrequent doses, one or two daily, is preferred, a somewhat larger quantity needs to be given.

When bromide is thus given continuously, it has not seemed to me desirable to increase the daily dose beyond a drachm or a drachm and a half. If this does not arrest the fits, I have very rarely found that larger doses succeed so well as the combination of bromide with other drugs. But it is I think open to question whether this method of administration, using doses only just sufficient to arrest the fits, is the wisest in all cases. If bromide cures epilepsy, as without doubt it does sometimes, it must be by effecting a nutritive change in the nerve-cells corresponding to its action, whereby they are rendered permanently more stable. That it, or any other drug, does good in epilepsy by influencing the vascular state of the brain, appears to me without even probable proof. Even if such were its action, we are only driven back to similar influence in increasing the stability of the cells of the vaso-motor centre. There are, I think, many grounds for the belief that the change in the nutrition of the cells may be produced more effectually by subjecting the patient for a time to the full influence of bromide, giving doses much larger than are needed to arrest the fits, in the hope of producing more readily a permanent nutritive change. In giving bromide thus I have preferred large doses at intervals of two or three days, gradually increasing the dose until it is as large as can be well borne, and then diminishing it. The largest single doses which I have given in this way have been doses of one ounce. This in some patients produces slight stupor, sometimes reaching its maximum on the second day after the dose. In other cases it produces very little disturbance beyond headache. From the marked differences which patients present in their tolerance, it is not well to begin this method of treatment with a larger dose than four drachms.

The value of the various combinations of bromide with other drugs was tested, as far as possible, on a uniform plan. First, bromide was given alone for several months, and then an additional drug was added to the same dose of bromide, and the result watched for several months longer. Of the various combinations which are in common use, those with digitalis and belladonna unquestionably deserve, as they have commonly received, the first place. Digitalis is one of the oldest remedies for epilepsy. It was recommended by Parkinson two hundred years ago, and has been perhaps for a still longer time a popular remedy for this disease in certain rural districts in the west of England. I have met with no case in which, given alone, digitalis arrested the fits for more than a few months, in several cases it effected very distinct improvement. The combination of digitalis and bromide, however, was distinctly more useful than bromide only, in no less than sixty-three cases. In more than half of these thirty-seven cases,

the attacks ceased under its use, although they had continued under bromide alone. In the cases in which cardiac disturbance was associated, the combination was almost always superior to bromide alone; but its use is not confined to these cases. Many cases of nocturnal and other forms of epilepsy yielded to the combination, although the attacks had continued under bromide, and this when there was no evidence of cardiac disease. I know of one patient with nocturnal epilepsy who, for two years under this combination, has not had a single fit, although the attacks occurred every few weeks on bromide only.

In rare cases belladonna alone will arrest attacks. I have met with only one case in which attacks, which continued on bromide, ceased entirely when belladonna was substituted, and this was a case with hystero-epileptic symptoms. The combination of bromide and belladonna, however, was distinctly better than bromide alone in 35 cases, and in 15 of these arrest of the fits was thus obtained.

Indian hemp was first employed in epilepsy by Dr. Reynolds, and is sometimes of clear value. In one case the attacks were invariably arrested for many months by its use, recurring only when the patient ceased attendance, but twice on his resuming attendance the drug instantly arrested the attacks. When bromide was substituted for the Indian hemp, the attacks at once recurred. Combined with bromide it is also sometimes useful, and seems to exercise most influence over attacks in cases in which there is persistent headache. The same fact has seemed true of the combination with gelseminum, which is occasionally of marked service.

The use of opium in epilepsy has long been advocated by Dr. Radcliffe, and in some cases it is certainly effective. The combination of bromide and morphia I have rarely found to present special advantages. In the status epilepticus in which attacks occur with great frequency and severity, and where bromide, even in large doses, was useless, I have found small hypodermic injections of morphia of great service.

The combination of bromide with aconite and hydrocyanic acid I have also tried, and found it in some cases slightly better than bromide only. The addition of iodide to bromide has been lately said to increase its effect. Occasionally this is true, and in four cases of the series the combination was distinctly better than bromide only, but in many other cases it was ineffective. Even in the cases the subjects of inherited syphilis it has not appeared of special value.

Zinc unquestionably deserves some of the repute it has enjoyed for more than a hundred years as an anti-epileptic. Of the cases of this series in which it was employed it was distinctly useful in ten, but in only three did the attacks cease. In three other cases attacks which continued under bromide ceased under bromide and zinc, and in a fourth they ceased under zinc, digitalis, and bromide. The oxide of zinc was the form commonly

employed. Its nauseating influence constitutes a serious drawback to its use, as toleration is difficult to establish, and I have rarely succeeded in giving more than twenty grains a day. Bromide of zinc has seemed of small value, and is borne badly. The addition of arsenic to bromide in no case produced any marked effect on the attacks. It was used in a large number of cases on account of the readiness with which, it was found, the bromide rash could be prevented by its use.

Bromide of camphor, highly praised by Bourneville, was tried in a considerable number of cases, but without any good results. Turpentine has been recommended by Dr. Radcliffe, and I have seen it produce very striking benefit, but only in cases of hystero-epilepsy.

The use of iron in epilepsy has been discountenanced by high authorities, on grounds which are not altogether beyond question. In rare cases it increased the frequency of attacks; in the majority of cases in which it was used it was borne without any ill result; in many the addition of iron to bromide was attended with a marked and permanent improvement, and in some cases iron alone arrested the fits. The series includes 4 cases which ceased under iron only, and 8 others in which iron alone was distinctly better than bromide, and 19 cases in which the addition of iron to bromide exercised a marked influence. In no less than 11 cases attacks which persisted on bromide, ceased on the addition of iron, and remained absent as long as the treatment was continued.

In several inveterate cases of epilepsy in which bromide had no effect, I have tried borax. In some cases it did no good, but in 12 its value was most distinct. I may mention one or two. In one, fits which had continued on bromide and on zinc ceased entirely on borax for three months, and then only recurred when the medicine was discontinued. In another case the fits continued, about one weekly, during three months' treatment on bromide and on belladonna. Borax was then substituted, the fits at once ceased, and for five months the patient had not a single fit; then he had one in each of the two following months; the dose of borax was increased, and up to the present time, eight months later, no other attack has occurred. In a third case, one or two attacks occurred once a fortnight on bromide. Borax was substituted, and for five months the patient had not a single fit. The doses given have been ten or fifteen grains twice or three times a day. It produces in some patients gastro-intestinal disturbance, and, rarely, a form of dysenteric diarrhoea. By others it is well borne, and one of my patients has taken forty-five grains a day for twelve months without the slightest inconvenience, and says that no medicine has ever done him so much good. In cases in which bromide fails, borax certainly deserves a trial.

The use of *cocculus indicus* in epilepsy, recommended by Dujardin-Beaumetz, has lately attracted attention, in consequence of the recommenda-

tion of Planat. I have tried the alkaloid picrotoxine in a few instances, but only in one case has it appeared to do good. My own experience of its use has, however, been small, and I am very much indebted to my colleague, Dr. Ramskill, for permitting me to mention some interesting results which he has obtained by the hypodermic injection of picrotoxine. His experience of its effect on the fits when given through the skin is nearly the same as my own of its employment by the mouth. In seven cases in which it was injected, in daily doses of from one to four milligrammes, no beneficial result was obtained; in most cases, indeed, the attacks were rather more frequent and severe. Of course, we are not justified in assuming that the effects of picrotoxine and of the *cocculus indicus* itself are identical. A very interesting fact has, however, been ascertained by Dr. Ramskill—viz., that picrotoxine in larger doses of from fifteen to eighteen milligrammes will almost invariably produce a fit in twenty or thirty minutes. In one patient, for instance (according to the notes of Mr. Broster, who carried out the experiments), the dose was daily increased, and when more than five milligrammes were injected, a sensation of giddiness followed, similar to that with which the attacks commenced. The same effect followed larger injections, and when the dose reached eighteen milligrammes a severe attack occurred thirty minutes later, and an attack always followed the injection of this dose. In another patient a similar progressive increase of the dose was followed by giddiness and headache, when eight milligrammes were injected. When the dose of fifteen milligrammes was reached, a severe epileptic fit followed. Next day a second dose of fifteen milligrammes did not cause a fit, but eighteen milligrammes, two days later, caused a fit in half an hour. After a week's intermission twenty-four milligrammes were injected, and a severe fit occurred in twenty-five minutes. In a third patient a fit occurred after one injection of eight milligrammes, but ten milligrammes next day caused no fit. Fifteen milligrammes, however, were followed by a fit in thirty minutes, and a second injection of the same dose the following day caused a fit in fifteen minutes. Seventeen milligrammes next day caused a fit in thirty minutes. In a fourth patient a single dose of eighteen milligrammes caused, in ten minutes, giddiness and slight dizziness before the eyes, and in thirty minutes there occurred the usual aura of an attack—a sensation of something creeping up the right arm to the top of the head, and numbness and twitching in the right thigh, but no fit followed, although the patient was stupid and dull for a time just as after a fit.

Among other drugs which I have tried and found useless I may mention benzoate of soda and nitro-glycerine.

In hystero-epilepsy bromides, sometimes useful; fail entirely much more frequently than in simple epilepsy, and the combinations with *digitalis* and *belladonna* are also less frequently useful. Iron, especially guarded by aloes, is often of the highest

value, quite apart from the existence of anæmia, and, next to it, valerianate of zinc, morphia, and turpentine.

High authorities have urged on different grounds that the diet of epileptics should contain little or no animal food. In a few observations which I have made by keeping a patient under unaltered medicinal treatment for alternate periods on a diet with and without animal food, I could observe no difference in the attacks, except that in one patient they were slightly more frequent in the periods when animal food was excluded, and in one patient hystero-epileptic attacks on ordinary diet became, when meat was excluded, severe epileptic fits, and again became hystero-epileptic when animal food was restored.

In pure epilepsy the only treatment needed during the attacks is such care as shall secure the patient as far as possible, from injury. It is very different with the attacks of hystero-epilepsy, which, from their character, severity, and long duration, often furnish the attendants with a task of no small difficulty, and which can almost always be cut short by appropriate treatment. The patients often hurt themselves during the attacks, and some control is absolutely necessary. But, as already stated, restraint tends to increase the violence and makes the paroxysm last longer. Hence considerable judgment is often required, so to adjust control as to be efficient, and not too much. I have seen these patients put within padded partitions and left alone, but I have never myself found this necessary.

The slighter attacks can be arrested by closing the mouth and nose with a towel for some thirty seconds, after Dr. Hare's method. The profound effect on the respiratory centre, and the related higher centres, caused, by the anoxæmia, seems to arrest the convulsive action. Cold water over the head is often successful, if applied freely; in severe attacks a moderate quantity only excites redoubled violence, while a second gallon is often more effectual than the first. This has the disadvantage of drenching the patient's head and often giving cold. When the mouth is open during the attacks a small quantity of water poured into it is often effectual. A much more convenient and more effectual remedy than water, however, is strong faradization to the skin; applied almost anywhere it will commonly quickly stop the attack. It is rare that ovarian pressure will arrest an attack. In some cases all these means fail, even when thoroughly used, and I have known such attacks go on, in spite of skilled treatment, for several hours. Chloroform is of little use; its administration is a matter of extreme difficulty, often impossibility, and the attack is commonly renewed, when the influence of the anæsthetic passes off. The remarkable effect of nausea in relaxing spasm, led me some years ago to try the effect of injections of apomorphia, and I have found in it an unfailling means of arresting the attacks. After the injection of a twelfth of a grain in four minutes with cer-

tainty all spasm ceases, and normal consciousness is restored; in six minutes the patient will get up and go to the sink; in eight minutes will vomit, and afterwards, except for slight nausea, is well. A twentieth of a grain has the same action, but is rather longer in its operation. Moreover, I have found that the treatment is, so far as the hystero-epileptic symptoms are concerned, curative as well as palliative, for the attacks in many cases ceased after a few paroxysms had been thus cut short.—*Lancet*,

ACUTE RHEUMATISM.

[A Clinical Lecture at the Louisville City Hospital.]

By JOHN A. OCTERLONY, A.M., M.D.,

Professor of Theory and Practice of Medicine in the Kentucky School of Medicine.

[Reported by A. H. Kelch, Stenographer.]

GENTLEMEN:—I wish to speak to you this afternoon about acute rheumatism as illustrated in the patient we have before us. This young man has had one attack after another of acute rheumatic fever. "Inflammatory rheumatism is a term that has been given to a number of affections that are characterized by fever, an affection of the joints and fibrous tissues, and which are not produced by injury, nor due to gout, nor to pyæmia," and this is perhaps as good a definition as we could give. We may add that acute rheumatism depends upon a peculiar condition of the blood, and is often excited by some cause that for the time being lowers the vitality of the system. There is no doubt that rheumatism of the variety I now allude to is a blood disease; that it affects especially the larger articulations; that it attacks the fibrous and the fibro-serous tissues; that it is attended by fever; and that when left to itself it runs a rather uncertain course. A tendency to recovery is certainly observed, for persons get well when nothing is done for them, and they get well sometimes quickly enough when they are honestly treated with homœopathic medicine, and of course the nominal medication receives the credit. Shrewd and unscrupulous homœopaths give rational medicine, and homœopathy gets the credit, as well as the homœopathist, which is due to rational medicine.

The tendency to run a certain course is so well known that long ago, before the treatment for rheumatism was as successful as it now is, it used to be said that the best remedy for rheumatism was "six weeks," for experience had shown that it took about that length of time to run its course.

I believe when the patient is left to nature, given the simple conditions of good hygienic surroundings, that the disease will often be found to run a much shorter course than six weeks. It is very certain that the average duration of the disease at the present time will be found to be very much less.

It is very frequently developed after exposure t

cold; or when the individual is debilitated by some disease, such as scarlet fever or some other trouble; when owing to bad food or depressing influences which reduce the system below par. But not all persons exposed to these influences will fall victims to acute rheumatism. So we are forced to admit that the system must be in a peculiar condition; these must be something beyond the mere exciting cause, and that has been called the rheumatic anæsis, which makes a person liable to attacks of rheumatism on exposure to any of these causes.

Among predisposing causes, heredity plays a very important part. Persons of rheumatic stock are more liable to this disease than those who come of parentage free from it. Persons who have had one attack are very liable to have another. I do not believe exactly that one attack of rheumatism predisposes to another, for that peculiar condition of the system which led to the first attack will also make the patient liable to a second or a third. There is really nothing in the attack of rheumatism itself, except that it lowers the vitality of the system, that can be looked upon as predisposing to another attack.

The disease began as follows: This man tells us he felt cold; then he had fever. Sometimes a distinct chill is first experienced. In this first attack the disease was confined to the knee-joints. It is a notable fact the rheumatism affects by preference the larger joints. Another peculiarity of the affection is that it flits about. I know of no disease that furnishes a better illustration of what has been called metastasis. It affects one joint, which swells up and becomes tender and painful—becomes the seat of excruciating suffering and of a really violent inflammation, and as if by magic it disappears in a few hours or in a night, simply to transfer itself to another joint, frequently the corresponding joint upon the opposite side, or from the knee to the shoulder, and so on. These joints then in their turn become swollen, red, and tender. The pain is often greatly aggravated by the slightest provocation, even by some one walking across the floor.

You must not always expect that because the disease attacks a new joint there will be a speedy subsidence in the joint first affected. The disease may affect all the joints at the same time so as to render the individual helpless.

Along with this affection of the joints there is high fever, as there was in this case. This sometimes runs as high as 105° ; sometimes indeed we have hyperpyrexia, as it is called, in which the temperature has been known to run as high as 112° , but these are rare exceptions which you may never witness although you pass a long life in active practice. The fever is usually remittent. There is an exacerbation in the evening and toward morning a remission, but it does not run as regular a course as we observe in typhoid fever. It is not characterized by regular excursions, as in acute pneumonia, but it varies very much for several reasons. First of all, each invasion of a

new joint will be characterized by a rise of temperature. Any complication will be accompanied by it. Sometimes you will find that the first evidence of the disease is not an affection of this or that joint, but a rheumatic inflammation of the heart. I do not remember having witnessed such a case, but it is well known that the cardiac inflammation may be the only evidence of the rheumatic diathesis at the time. For instance, a man has had an attack of inflammatory rheumatism and passed through it without any cardiac complication. A few months after that he is attacked again, and this time it is not the joints but simply the pericardium or endocardium that is the seat of the inflammation; and after this has existed for a few days, then lo, and behold, a joint affection sets in. This or that joint becomes tender, swollen, red, and painful, and we have now a typical case of acute articular rheumatism. The tongue is usually coated, the appetite wanting, the bowels constipated, and the urine scanty and loaded with urates. You must make the distinction between these and uric acid. Even so far as gross appearances are concerned this is easily done. Uric acid lies at the bottom of the vessel like fine, glistening sand. It does not stain the bottom, and when you tip it up you see the uric acid roll over. When you have a deposit of lithates, the vessel is stained by it of a brick-dust or pinkish color, and while we find the uric acid as soon as it has had time to settle, the lithates do not appear until the urine cools. Sometimes the urine is muddy when it is first passed. This is not infrequently the case when the patient drinks but little, when the skin is over-active, and when there is high fever; but even then we do not notice the staining of the vessel until after the urine has stood for some time.

The skin as a general thing is bathed in sour-smelling perspiration. I do not believe that the perspiration really is more acid in reaction than in health, but the acid is peculiar. It gives a very sour and unpleasant odor, and is in greater abundance, simply because of the increased perspiration, and we are likely to presume that the latter is more intensely acid. Another thing to be noticed is that the sweating gives no relief to the fever. In acute rheumatism the symptoms are in no way alleviated by the free perspiration, but, on the contrary, the more severe the rheumatic fever the more perspiration there is apt to be. The popular opinion is that when a patient sweats freely he can have no fever; that free perspiration indicates a condition of the system the very opposite to that of fever. This is a great mistake. For instance, in some forms of puerperal fever, where the temperature runs very high indeed, the surface is bathed in copious sweats. In that condition of far-advanced phthisis when we have constant hectic fever the surface is bathed in drenching sweats—the thermometer in the axilla showing a high temperature indeed. So we find in rheumatism, also, that, though there is copious perspiration, this in no way abates the affection nor in any way lessens the intensity of the fever.

The pain is often terrible. The patient can not sleep; he is tormented by pains both day and night. In consequence of the high fever, the loss of sleep and appetite, and impaired digestion, and constant suffering, there is rapid loss of flesh.

The remedies for rheumatism are as numerous as those employed for hooping-cough.

First of all, you want to relieve pain; secondly, you want to shorten the disease; and, third, to prevent complications.

How shall you relieve pain? There are two ways of doing it; one is by internal remedies, the other by external applications. For the relief of pain the internal use of opium in some form is necessary, and the proper thing to do is to administer an opiate without delay if the pain is at all severe; certainly you ought to give it at bedtime so as to secure rest and sleep. A hypodermic injection is perhaps the speediest and surest way to accomplish that result. A quarter of a grain of morphine at bedtime will often give the patient a comfortable night's sleep and will allay the pain. I think it decidedly preferable to the administration of opium by mouth. Secondly, combine with the morphine, atropia. By so doing you prevent some of the unpleasant effects of the morphine, and obtain all its good effects. If the perspirations are very copious and debilitating, I am sure it is an object to relieve them. That can be done by atropia, which has a powerful influence in diminishing and controlling the action of the skin.

I am in the habit of treating the local trouble. It may be done in several ways.

First, if there is not very severe pain, or if inflammation is not very violent, I simply wrap the joint in cotton batting. If the pain is very severe and the distention of the joint very distressing, I use alkaline fermentations. Take a sufficient number of short and broad bandages, also a quarter of a yard of quite soft rubber cloth or oiled silk. Then make a solution of carbonate of potash in hot water, one dram to the pint, and after dipping the flannel cloths in it wring them out and apply them around the joint, last of all putting on the oiled silk. You will find that this dressing affords rapid and marked relief. Sometimes I add laudanum, about two ounces to the pint of the alkaline solution. Sometimes relief is obtained by applying to the joint an ointment of extract belladonna, one dram to one ounce; or the affected joint may be surrounded with a succession of small blisters. This will sometimes greatly mitigate the pain and reduce the local inflammation.

What ought to be the treatment directed against the disease itself? How shall we shorten the disease? Can it be done? I think it can be very materially shortened. I believe the average duration of acute rheumatism at the present time is about nine days—a good deal better than six weeks. While a good many cases must have lasted longer than that, it is evident that a good many must have run a much shorter course.

At the present day the fashion is to give salicylic

acid, and it is given not only in acute rheumatism but also in the chronic form indiscriminately. It is doubtless true that a great many cases of acute rheumatism are benefited by it; that the duration is shortened, and the intensity lessened by the administration of this remedy; yet I am satisfied that in many other cases little good is done by it, What cases are to be treated by it and what cases are not, and how are those not amenable to salicylic acid to be treated? The more violent the case the higher the fever, and the earlier in the case you begin its administration the greater the likelihood that you will do good with salicylic acid. This is a good practical rule. When you meet with a case that has lasted for several weeks, I don't think salicylic acid the best remedy. When you find a patient that is very anemic, one in whom the fever does not run high, where the disease tends to assume a subacute form, salicylic acid is not so likely to do good. In a case like the one before us I would not use salicylic acid.

If you have, then, a moderately well-nourished patient with violent symptoms give salicylic acid, and give it in full doses. How shall you give it? Salicylic acid is not only a powerful antipyretic but it is also powerful antiseptic. When it is given pure, uncombined, it is perhaps as powerful an antiseptic as we have. It deserves to stand side by side with quinine. But when we give it in combination, as the salicylate of soda, it no longer acts as an antiseptic, but merely as an antipyretic. Then, so far as rheumatism is concerned, it is as well to give the salicylate of soda, because only the antipyretic effect is wanted. As a rule the salicylate of soda is better, because not so irritating. About twenty grains in some syrup, and repeated every two hours until the fever falls, and with the fall of the fever there is usually a subsidence of the articular symptoms. If the fever rises again begin with the acid again. There is no doubt that this remedy is absolutely curative in a considerable proportion of cases. If you were to ask me with what remedy my best results have been obtained I would answer, "veratrum viride." If you have a patient in the early stage of the disease, the fever running high, the pulse bounding and full, in whom there is no evidence of anemia nor cardiac asthenia, I would put him upon veratrum viride; and I would expect to do a great deal of good with it. I would give immediately three or four drops, repeated every two hours, and increasing the dose each time by one drop till a decided impression is produced, until the fever had fallen, the pulse becomes slower, and the respirations less hurried, and the skin, from being hot and dry, had become cool and moist. When these violent symptoms pass away the joint symptoms abate, the tenderness and swelling subside. While it rapidly removes the most important symptoms, it tends to shorten the disease.

Some friends of mine are partial to the use of aconite; but while I admit I have seen it do good in their hands, it is a remedy I have not desired to

use so long as I can produce good results with the *veratrum viride*. While this remedy has been used on an enormous scale in many acute diseases throughout the southern parts of our country, the number of cases of poisoning by it have been exceedingly rare. It is, then, a remedy that can be used with safety. It may produce unpleasant effects, such as prostration and diarrhea, but when it does these symptoms are easily controlled by the administration of alcohol and opium. Indeed some physicians are in the habit of prescribing opium and alcohol in combination with the drug.

Large doses of quinine have been used and with signal success in some cases. I would class quinine with salicylic acid. They act very much alike, and the only thing that can be said in favor of salicylic acid is that it does not cause as unpleasant effects, though it does produce head symptoms, fullness, and even delirium, but not to the same degree as the alkaloids of bark, especially quinine. Quinine ought to be used, then, in the same class of cases in which salicylic acid is indicated.

We have another class of cases in badly-nourished, weak, anæmic persons. In these you will find the best treatment will be, not by those remedies I have mentioned, but by large, what is called saturating, doses of the *tinct. ferri chloridi*. Thirty drops given every three or four hours will sometimes be found in the course of three or four days to cut the disease short. How it does it I can not tell you. We must be content with the fact itself when our knowledge extends no further. We must not say, "I will not cure the patient with this medicine, simply because I do not know how it accomplished the cure." That would be unreasonable. While we strain every faculty to solve the mysteries of therapeutics, while we study with the utmost care the physiological action of remedies, the crucial test of their value is clinical experience, and it is that which will finally decide what will be the rank of a drug. Some years ago alkalies were very extensively employed. The carbonate or bicarbonate of potash or soda in doses of twenty or thirty grains was administered every two or three hours. The nitrate of potash was also used. But this was very soon found to be decidedly debilitating to the heart, and it was so nauseating that the patient objected to taking it, and it also caused irritation of the stomach. I have employed the bicarbonate of soda and potash very largely in connection with the *veratrum viride* in sthenic cases of acute rheumatism.

I would mention in connection with this the treatment of acute rheumatism by lemon-juice. That amounts to the same as the administration of alkalies. The acid is the citric, and does not exist in a free state, but as a citrate of soda or potash. So when this acid is taken in large quantities it makes the urine alkaline. The citric acid, during its transit through the circulation, is replaced by carbonic acid; so we find citrates, tartrates, and malates of soda and potash are excreted from the system under the form of bicarbonates. Now these reme-

dies were given on the principle that the poison that causes acute rheumatism is an acid. For a long time it was supposed to be lactic acid, but now we know this is not the *materies morbi*, and we know that the alkalies are not a *remedium universale* of acute rheumatism, though we find they are well adapted to certain cases. It was supposed at one time that the administration of alkalies prevented cardiac complications. I have met with a considerable number of cases that have been conscientiously treated by alkaline measures from the beginning of the disease, and yet cardiac complications arose.

With this brief survey of the remedies used in combating this disease I will close my remarks so far as the treatment directed to cutting short the disease is concerned.

I must now say a few words about the prevention of complications. Can we do it? I think we can to a certain extent. I will put it this way: A certain proportion of cases will have cardiac complications, no matter what we do. In a certain proportion of cases, I have already said, the heart is the organ first affected. In a certain proportion of cases you will find that the cardiac complications arise from the want of attention to proper and necessary precautions. What are they? A person suffering from acute rheumatism, in the first place, ought to have no linen next to his body. He ought to be swathed in flannel. Chambers gives some excellently-reported cases of acute articular rheumatism. He shews how, after patient had been carefully swathed in flannel for a number of days, he allowed his vanity to get the better of him, and put on a shirt with a linen bosom, and in twenty-four hours afterward he had pericarditis. Such events have occurred sufficiently often to make it probable that it is something more than a mere coincidence. If I were attacked myself I would immediately be dressed in flannel from neck to foot. I would sleep between blankets, and when the daily examination of the heart was made the stethoscope should be insinuated between the folds of the blanket. When the daily evacuations of the patient are made he should not be allowed to get out of bed; he ought to use an urinal or bedpan. Then the air of the room ought to be uniformly warm. It is one of the defects in our methods of heating our apartments at the present time. We make a big fire during the day and evening, and during the night it is allowed to die out; and toward morning, when we know the vitality of the system is at its minimum, the air of the sick-room is actually chilly. I am satisfied that in a certain proportion of cases complications are caused by want of attention to these important details. The nurse ought to see that the fire is kept up, night and day, and there ought to be a thermometer in the room by which to regulate the temperature.

The patient's general strength should be kept up. There is no doubt that complications are favored by a much lower vitality of the system. The tendency is to a very considerable reduction

of strength, and the more feeble the system is as a whole the more feeble will be every part.

High fever and rapid action of the heart tend to weaken this organ, and I have no doubt that this is the reason why cardiac complications arise as a rule when rheumatism has been going on for a number of days. I don't think such complications are prone to arise much before the second week, and that indicates that the tendency to rheumatic inflammation of the heart becomes strongest after the system has been weakened. The heart is so enfeebled as to rapidly take on diseased action; and if you can cure the patient before that time comes, and keep his strength up to a certain point, you will diminish very greatly the tendency to cardiac complications. Look at this poor fellow now. He is twenty-three years old. Suppose he were entirely cured of his rheumatism; suppose we had the power, by some magic art, of freeing him in a moment of all rheumatic taint; what would be his future? He has a crippled heart, and its tendency is to grow worse and worse. His circumstances in life are such as to preclude the possibility of his taking good care of himself. The best thing that could be done for him would be to keep him in the hospital all his life. But the hospital is not intended for the care of incurables, and in a short time, when sufficiently improved, he must go out. You know what, after a while, will be the end.

Are there no other complications that may arise? There are. The first is suppurative inflammation of the joint; secondly, we may have rheumatic peritonitis—both exceedingly rare. Then, we may have rheumatic meningitis, also very rare. Then, again, when there is acute rheumatism, and when there is endocarditis, we may have embolism; hence we ought to endeavor, by every possible means in our power, to prevent the cardiac complication which is the most fruitful cause of embolism.

In this disease there is hyperinosis—a very serious thing under certain circumstances. Embolism may occur in connection with rheumatism from this cause, independent of any heart trouble.

Finally, chorea may be a complication of a sequel, and a large proportion of cases of chorea arise in connection with rheumatism, and especially in the young, when the original disease has been protracted and severe and the patient is enfeebled and anemic.—*Medical Herald, Louisville, Ky.*

NERVOUS DYSPEPSIA.

Dr. Myers writes to the *Virginia Medical Monthly*: I can not speak too highly of the following preparation which I have employed, with the happiest results, in those cases of nervous dyspepsia the result of cerebral hyperemia:

R Bromid. sodium	℥ ij
Ext. ergot, fluid	ʒ ij
Pepsin (saccharated)	
Pulv. carbo-lignis	aa. ʒ iiij
Aqua	ʒ ij

M. fiat mistura. S: A teaspoonful every three or four hours.

It contracts their cerebral vessels in their ordinary size, thereby relieving gastric derangement, etc. If constipation exists, I employ, as a purgative, the combination of ox gall and ext. aloes aa grs. xv; podophyllin, grs. iii, made into five pills, of which one is given every night, or every other night, as the case may require.

THE PULSE.

By T. A. McBRIDE, M.D.,

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GENTLEMEN,—We begin to-day with the study of the pulse. The word pulse is derived from the Latin *pulso*, I strike, and expresses the striking or lifting of the finger by the distending vessel, as, with each contraction of the heart, blood is forced into the vessels. The significance of the word has also been extended, so as to be applied to the appearance of a lifting up of the coverings over a distending vessel, so that the word *pulse* is applied not only to that which is felt, but to that which is seen.

There are two kinds of pulse—the arterial and the venous. The arterial is appreciated mainly by palpation, the venous by inspection. We have to study especially the arterial pulse.

In the writings of the old school of physicians, even to the days of Hippocrates, the pulse was regarded as one of the most important symptoms, and although some of the distinctions that these observers made were too fine and subtle to be really appreciated at the bedside, there can be no doubt that their observations of the changes in the pulse were often extremely acute and accurate. So accurate, indeed, that Dr. Broadbent, referring to these observations, says: * "It was with astonishment that I learnt when I first took up the study, that every single element of the pulse revealed to us by the sphygmograph had been previously recognized by the old school of physicians, and that a nomenclature existed ready made for all of its teachings.

The radial pulse is the one usually selected, since it answers all of the requirements. It is of moderate size, is superficial, and can be readily compressed against the radius. The pulse in vessels elsewhere must sometimes of necessity be observed, as in the brachial, the facial in front of the masseter muscle, the temporal, posterior tibial, dorsalis pedis, the carotid and femoral arteries.

When the pulse is to be taken, the patient should be either sitting or lying down. The observer should place his index, middle, and ring fingers lightly upon the pulse, and should then appreciate the state of the coats of the artery, and

* Lancet, vol. ii., 1875, p. 441.

should next note the frequency, the rhythm, the tension, volume and force of the pulse, and lastly, any peculiarities, if present. Moreover, the pulse of one side of the body should always be compared with the other. It should also be remembered that forcible extension or flexion of the forearm will sometimes arrest the radial pulse. In taking the pulse in children and infants, it is well to count the pulse, if possible, while they are asleep. This can often be done nicely in the temporal artery. In taking the pulse at the wrist, asleep or awake, there are often involuntary movements of the arm and twitchings of the muscles, which render it difficult to keep the finger of the observer on the pulse. The difficulty may be overcome in a great degree by grasping the entire hand of the child, and then extending the index finger upon the pulse.

It is also advisable not to take the pulse of the patient until some little time has elapsed after the appearance of the physician.

The factors of the pulse, and the several phenomena dependent upon them, are shown in the following table :

2. Heart.	<ul style="list-style-type: none"> a. Rate or frequency. b. Rhythm—intermittency and irregularity. c. Force or strength. d. Quantity of the blood. 	
2. Degree of resistance to the passage of blood through small arteries and capillaries.	<ul style="list-style-type: none"> a. Degree of tension. b. Size of vessels. 	<ul style="list-style-type: none"> { Hard or long. { Soft or short. { Large. { Small.
3. Elasticity of vessels.	<ul style="list-style-type: none"> a. Dicrotism, hyperdicrotism. b. Non-dicrotism (senile pulse). 	

In health, changes in the frequency and rhythm of the pulse are often met with.

I subjoin a table of the variations in the frequency of the pulse in health which is taken from Hooper's "Physician's Vade-mecum," edited by Drs. Guy and Harley, and from this work is also taken most of what follows on the changes of the frequency of the pulse in health.

Infant asleep at birth.....	140
Infancy.....	120
Child five years of age.....	100
Youth.....	90
Male adults.....	72-80
Female adults.....	80-85
Old age.....	70

Heberden records 42, 30, and 26 beats to the minute, in an old man of eighty, apparently in perfect health; Fordyce, another of 26 (Hooper's "Vade-mecum," p. 179, London, 1869). Great frequency in health is not often met with, but I have under observation a case where the pulse ranges from 100 to 120, and the individual states that this frequency has existed all his life.

Sex has some influence. Up to seven years of age the frequency is about the same in both sexes, but later the female pulse is from 6 to 14 beats—average 9, greater than in the male.

Posture also affects the pulse. It is most frequent in the standing, and least in the recumbent position. The pulse of a man is twice as much

affected by change in position as that of a woman. When the pulse is much increased in frequency, change in position has but little effect, and for the higher numbers entirely disappears. When the head is lower than the body the pulse falls (a hint for the treatment of some forms of palpation). The general law as to the degree of frequency of the pulse as affected by position is as follows—the frequency is directly proportioned to the amount of muscular effort required to support the body in different positions.

The pulse falls in sleep as much as ten beats. Sleeplessness increases its frequency. On awakening from sleep there is usually a decided increase in frequency.

Food increases the rate. Mental excitement and activity of the emotions increase the frequency; mental depression is often accompanied by a decrease. Cold lowers and heat raises the rate. Among other causes producing an increase in the frequency of the pulse in health may be mentioned spirituous and warm drinks, tobacco, diminished atmospheric pressure. Among the remaining causes producing diminished frequency there are fatigue, long-continued rest, debility without disease, and increased atmospheric pressure. Occasionally the pulse is *irregular* in health, but when that is so it is usually congenital.

Intermittency is not infrequent in health, and it is then either congenital, or, as Dr. B. W. Richardson* has shown, may be due to terror, anxiety, grief, passion, mental or physical fatigue, adverse fortune, and old age. The intermittency may be only temporary, or it may become permanent; and if it becomes very frequent, may be pathological.

I now ask your attention to the pulse in disease, and I shall consider the subject under the following heads :

1st.—The condition of the walls of the vessel the seat of pulsation.

2d.—Changes referable to the several factors of the pulse.

3d.—Names and significance of certain pulses.

1st.—The condition of the walls of the vessel the seat of the pulsation. In health, an artery of the size of the radial should not be felt in the interval of pulsation. When the artery can be easily appreciated in this interval, the coats of the vessel have undergone some pathological change, or else the vessel is over-distended with blood; the blood pressure is greatly increased. The artery sometimes feels like a rubber tube with thick walls, or a pipe with rigid walls, or, again, resembles a string of beads. It is often tortuous or serpentine, and may be traced up almost the entire forearm. These changes in the walls of the artery are the result of chronic inflammation with subsequent degeneration—deposition of calcareous matter. Usually these changes are widely distributed in the arteries throughout the body. The temporal

* Discourses on Practical Medicine: On Intermittent Pulse and Palpitation. London, 1871.

arteries especially are tortuous and serpentine, and sometimes the ophthalmoscope reveals thickening of the arteries at the fundus oculi. Changes in the coats of the arteries are observed in cases of Bright's disease, in the rheumatic and gouty, in the syphilitic, and sometimes in athletes as the result of overstrain, and in lead-poisoning and scurvy. Excessive use of tobacco and alcohol occasion these changes. Certain infectious diseases besides syphilis seem also to excite pathological alterations in the walls of the vessels, as, for example, diphtheria and typhus fever. Exposure to cold and heat, want of food, or good air, also, may produce these changes; and, lastly, they may appear as among the earliest of the degenerations incident to senility.

It is important to appreciate the abnormal conditions of the walls of the artery in the following: in the diagnosis and prognosis of cerebral hemorrhage and thrombosis; in the prognosis, diagnosis, and treatment of changes in the aortic valves of the heart; and in the prognosis and just estimation of many diseases when found associated with this sign of beginning degeneration, and which may be the only positive sign of beginning decay.

I have already alluded to the fact that in pulse of high tension the vessel may be felt in the interval of pulsation, and one may be so deceived as to mistake such a condition of things for a vessel with diseased walls, whereas the artery is over-distended with blood and the walls may be normal. This is not so infrequently met with, and very often we find that disease of the walls eventually does supervene, apparently by reason of this condition of high tension. It may be necessary sometimes to differentiate these conditions, and Dr. Broadbent, in his interesting and valuable lectures on the pulse in the *Lancet*, 1875, to which I shall often refer, has demonstrated how perfectly this can be done by having the patient inhale some nitrite of amyl. If the pulse be one of high tension only, the thick, cord-like vessel disappears in the interval of pulsation, and is only felt during pulsation, and is then very soft. If the walls of the artery are actually thickened or diseased, very little change takes place. But, as I have said, you may find both combined, and the difference is in the change in the compressibility of the pulse.

2d.—Phenomena referable to various factors of the pulse.

The Heart:—Increased and diminished frequency of the pulse.

a. Increased frequency.

I ask your attention to the following schemes of the causes of increased frequency of the heart as determined by experiment on animals. It is taken from Lauder Brunton's book on the "Experimental Investigation of the Action of Medicines," Part I., Circulation, London, 1875. I do this so that you may, if possible, explain to yourselves the probable cause of a frequent pulse in many conditions. I should be overstepping my limits of time were I to attempt it.

Paralysis of vagus roots or vagus fibres.

Stimulation of the sympathetic roots	} Directly.	ends in the heart.
Stimulation of the cardiac ganglia		} Indirectly by lowered blood-pressure.
	} Directly.	
		} Indirectly by increased temperature of the body.

A pulse of 90 or more may be regarded as a pulse of abnormal frequency in an adult. There are exceptions to this, but they are rare.

In the following pathological conditions a frequent pulse is of importance in diagnosis or prognosis.

1. Fevers.—"In fevers the pulse is generally quickened in proportion to the elevation of temperature, though the proportion between the pulse and the temperature varies in different fevers. In scarlet fever the pulse is quicker than in typhoid fever with the same temperature, hence a quick pulse is of less serious import in scarlet than in typhoid fever. The same elevation of temperature quickens the pulse relatively much more in children than in adults."

"If a pulse is quicker than the temperature will explain, it indicates cardiac weakness—the weakness being proportionate to the want of ratio between the temperature and the pulse. In this way the pulse affords important information in prognosis and treatment."

"A pulse that day by day progressively increases in frequency, the temperature remaining the same, shows increasing cardiac weakness."

"In all febrile diseases a pulse in adults over 120 is serious and indicates cardiac weakness. A pulse of 130 or 140 indicates great danger, and with a pulse at 160 the patient almost always dies."*

a. In eruptive fevers, just before the appearance of the eruption, the pulse becomes sometimes very frequent.

b. In relapsing fever, during the febrile periods, the pulse is of very great frequency, and is often 130 to 140. It attains a greater degree of frequency than in any other fever, without being of grave significance (Murchison). †

c. In typhoid fever the prognosis is usually bad when pulse persistently exceeds 120 (Murchison). †

d. In the convalescence from all fevers the range of increase in the frequency of the pulse in changing from a recumbent to a sitting or standing position, or the range of decrease in its rate in changing from a standing or sitting to a recumbent position, is a measure of the debility of the patient. During the pyretic period such changes in position have little or no effect. The rate of the pulse may therefore be of importance in gauging the strength of the patient.

2. Inflammations:

a. The occurrence of a sustained frequency of the pulse after confinement is a very suspicious symptom, and may betoken advent of puerperal peritonitis.*

* A Hand-book of Therapeutics, by Sidney Ringer, M.D. William Wood & Co., New York, 1879, pp. 7 and 8.

† A Treatise on Continued Fevers, by Charles Murchison, M.D.; London, 1873.

* Pulse in Forming Stage of Puerperal Peritonitis. Archives of Practical Medicine, No. 3, Mary Putnam-Jacobi, M.D. New York, 1873.

b. Diseases of the lungs and pleura.

1. Under the age of fifteen any disease of the lungs is almost invariably accompanied by great frequency of the pulse, so that a pulse of 120 to 140 would not be considered as so serious in significance as if it occurred in an older person.

2. When a frequent pulse is present in pneumonia it is always of bad significance, even if only a small portion of the lung is involved. Moreover, when a pneumonia occurs in the cachectic or debilitated, the pulse is especially apt to be frequent, often 120 to 160, and such cases usually die.

3. When complicated with heart disease, the frequency of the pulse is significant. Traube asserts, when in a strong robust person you find a pneumonia with a pulse of 120, you may be sure that there is present some form of heart disease.†

c. In the diagnosis of incipient phthisis a sustained frequency of pulse is thought to be of importance by Sir Thomas Watson, and others.

d. In pleuritic effusions the pulse may be very frequent, especially when there is displacement of the heart.

e. In pericarditis and myocarditis very great frequency of the pulse is observed at times—especially on any movement by the patient—130 to 160. The change in rate may be very sudden, and is of some importance in diagnosis and prognosis.

f. In acute articular rheumatism unaccompanied by peri-, endo- or myocarditis, a pulse of 120 or more indicates great danger (Ringer).

g. In the last stages of meningitis of the convexity, and particularly in tubercular meningitis, a very frequent pulse is often observed.

3. Diseases of the nervous system:

a. In diseases affecting the medulla oblongata—in glosso-labio-laryngeal paralysis the pulse is quite frequent.

b. In the early state of locomotor ataxia a frequent pulse is a quite constant symptom.

c. In Basedow's disease a pulse of 120 to 140, and even of 200, is often observed at times.

d. In hysteria an exceedingly frequent pulse is not uncommon, 130 to 160 and more.

e. In puerperal mania, Sir James Y. Simpson insists upon the very great importance of the frequency of the pulse in prognosis, and he states that where the pulse is 110 or over, the outlook is very bad, and that in his experience no case had ever recovered.

f. In certain cases of peripheral irritation a very great increase in the rate of the pulse has been observed:

1. Where tumors in the neck have pressed upon the pneumogastric or sympathetic nerves.

2. In cases with intra-thoracic tumors.

3. Where there has been some inflammatory process in the sheaths of the pneumogastric or sympathetic nerves.

4. In cases of irritation of nerves in the abdominal cavity as by over-distention of the intestines

by gas; in the passage of hepatic and renal calculi; worms in the intestines, etc. As showing the very great disturbance of the pulse, which may be occasioned by the presence of entozoa in the intestines, a case was reported in the *British Medical Journal*, June, 1867, in which attacks of palpitation of the heart with a pulse of 240 were observed, and after the expulsion of a tænia from the intestines the attacks entirely disappeared.

g. In nervous exhaustion the result of venereal excesses, of over-indulgence in alcohol, coffee, or tobacco, or from excessive mental or physical labor, or as the result of previous disease, a very frequent pulse is often observed, and this may, when very frequent, have an alarming significance. Dr. Latham, in the new Sydenham edition of his works, vol. ii., p. 538, describes most eloquently the significance of the very frequent pulse. Likening the heart to the finger of the clock, he says: "We have already seen in these two cases the index hurrying rapidly round the dial-plate, and telling that, from some cause or other, the mechanism within was running down, and if it were not arrested that it would quickly stop. Even prior to any outward presentments to give assurance of disease, even earlier than its known beginning, we have seen countless fluttering of the heart and arteries give token of the nervous system already under trial of mortal suffering, and ready to let life go for ever."—*N. Y. Medical Record*.

SUMMER DIARRHŒA OF CHILDREN.

By JAMES I. TUCKER, A.M., M.D., Chicago.

In the broader sense of the term the summer diarrhœa of children is a neurosis. As medical science advances this doctrine will throw off the disguise of the transcendental, and its true significance becoming more and more practically recognized, will finally be accepted by every practitioner from the centre to the periphery of the profession. There is no other rational explanation of the phenomena with which we meet in the complex of symptoms which constitute the disorder in question. The disharmony of function amounts to a pathological entity. To restore harmony is the sole duty of medicine. Medicine thus becomes not only a *fine art*, but the finest of the fine arts, because it deals with human life. Unless we are guided by this principle we will oscillate between the *gloria in inferno* of allotherapy and the *gloria in excelsis* of homœotherapy, and have no resource except in the pitiless and pointless pædriatics of a pathy. Let the etiology be what it may, certainly heat is a prime factor, but be it what it may a specific disharmony of bodily function exists belonging to the first and second periods of anthropological evolution. The first period is brief, extending not beyond the seventh month, when the first teeth generally appear. But some time before the appearance of the teeth there are many

† Die Symptome der Krankheiten des Respirations, und Circulations Apparats. Traube. Berlin, 1867, p. 37.

disturbances liable to occur which are due, not to the pricking through of the teeth as is popularly supposed, and this idea is not entirely foreign to the profession, but the appearance of the teeth is but an index of the general evolution of the alimentary canal. Bear this in mind, and consider the necessary alterations which take place in the digestive function as a consequence, and we have an important guide to therapeutics. The therapeutics of early infancy is mainly alimentary. The mother's milk is the normal food for her infant. I need not say that she should be free from emotional disturbances which are so common to American life. Doubtless the prominent cause of those changes which render the human milk innutritious is psychic and emotional, and is often removed by what Bulwer Lytton calls the "calm intelligence" of the medical adviser. But artificial feeding must often be resorted to, for the mammary secretion is often deficient. Now we have to avoid both the Scylla and the Charybdis of medical extremes. A wet nurse may be the poorest substitute for the mother. On the other hand the market is flooded with foods which have become an abomination, and the commercial aim back of them is so far from being humane that it has for its object only the transmutation of nostrums into nuggets. In my experience, and it has not been too limited to justify me in expressing an opinion, the best artificial food is made of rice flour with water or with pure cow's milk. Cheap, wholesome, pure, highly nutritious, and easily digestible, there is no one article which commends itself more strongly to the judgment of the physician. When I use cow's milk alone, I generally follow Vogel and deprive the milk of its property of coagulating into large, compact lumps by adding at every meal a teaspoonful of a solution of carbonate of soda (3j. to water 5vj.). In hot weather he also renders the milk alkaline by adding a tablespoonful of the solution to five ounces of milk.* The following is a very useful formula which was given me years ago by Dr. B. E. Cotting, of Boston Highlands, and has now and then served me well. Take of gelatine, 5 grains; arrowroot, 25 grains; water, 1½ pints; milk, 1 pint and 4 ounces; cream, ½ pint. Dissolve the gelatine in half the quantity of water cold. Dissolve the arrowroot in the other half, hot. Mix. Boil, adding the milk. In cooling add the cream. Sweeten a little. A very exact dietary, prescribing the food for different ages, in sickness and in health, would be desirable, because babies, like nations, cannot subsist on "glittering generalities." The nearest approach to a reliable dietary is to be found in Eustace Smith's work.†

With variations in quantities and with regard to the difference between our climate and that of

* Alfred Vogel, M.D., "Diseases of Children," p. 43. Raphael's trans. N. Y., 1873.

† Eustace Smith, M.D., "The Wasting Diseases of Infants and Children." Phil., 1871.

London, and with due consideration of the peculiarities and idiosyncrasies of American children, I have found this dietary a very useful guide. So useful in fact that I transcribe it for the benefit of the readers of the *Review*.

DIET IN HEALTH.

I. FROM BIRTH TO SIX MONTHS OLD.

DIET 1.

If the child be suckled, and the breast-milk be found in all respects suitable :

No other food.

The child should take the breast alternately every two hours for the first six weeks; afterwards, every three hours, except between 11 P.M. and 5 or 6 A.M.

In cases where the secretion of milk is slow to be established, and the quantity drawn is insufficient to supply the wants of the infant, the following food may be given as an addition to the breast-milk, until the secretion becomes sufficiently abundant :

One tablespoonful of fresh cream.

Two tablespoonfuls of whey.

Two tablespoonfuls of hot water.

This mixture must be taken from a feeding bottle. The whey is made fresh in the house by adding one teaspoonful of prepared rennet to a pint of new milk. The coagulated casein is removed by straining through muslin.

DIET 2.

If the infant be brought up by hand :

New milk and lime water in equal proportions.

Three to four ounces, sweetened with a teaspoonful of sugar and milk, are to be given at first every two hours from a feeding-bottle.

The proportions of milk and lime water may be varied according to the age of the infant.

From six weeks to three months, one-third of lime-water may be used; and from three months to five months this quantity should be reduced to one-fourth.

DIET 3.

If the infant be partially suckled, the breast milk being poor and scanty :

The breast must be given only twice a day.

For the other meals the child must be fed upon milk and lime water as directed in diet 2.

Up to the age of six months the milk should be warmed by dipping the bottle containing it into hot water. After the age of six months it may be boiled if convenient. New unskimmed milk should always be used. If the milk has been previously skimmed a teaspoonful of cream must be added to each meal.

In all cases where the child is artificially fed, the utmost attention should be paid to the cleanliness of the feeding bottle.

2. FROM SIX TO TWELVE MONTHS OLD.

FIVE MEALS IN THE DAY.

DIET 4.

First meal, 7 A. M.

One teaspoonful of baked or boiled flour carefully prepared with a teacupful of milk.

*Second meal, 10.30 A.M.**Third meal, 2 P.M.*

A breakfast-cupful of milk alkalinized, if necessary, by fifteen drops of the saccharated solution of lime.

Fourth meal, 5.30 P.M.

Same as the first.

Fifth meal, 11 P.M.

Alkalinized milk, as before.

For the second meal, twice a week, may be given the yolk of one egg, beaten up with a teacupful of milk. * * *

DIET 5.

FOR A CHILD ABOUT TEN MONTHS OLD.

First meal, 7 A.M.

Dessert-spoonful of pearl barley jelly, dissolved in a breakfast-cupful of milk, and sweetened with loaf sugar.

Second meal, 10.30 A.M.

A breakfast-cupful of milk alkalinized, if necessary, by fifteen drops of the saccharated solution of lime.

Third meal, 2 P.M.

The yolk of one egg beaten up in a teacupful of milk.

Fourth meal, 5.30 P.M.

Same as the first.

Fifth meal, 11 P.M.

Same as the second.

Pearl barley boiled for six hours forms on cooling, after the water has been strained off, a jelly which dissolves readily in warm water.

DIET 6.

*To alternate with the preceding.**First meal, 7 A.M.*

Half a teaspoonful of cocoa essence boiled for one minute in a breakfast-cupful of milk.

Second meal, 10.30 A.M.

A breakfast-cupful of milk alkalinized if necessary by fifteen drops of the saccharated solution of lime.

Third meal, 2 P.M.

A teacupful of beef tea, half a pound of meat to the pint.

A rusk.

Fourth meal, 5.30 P.M.

A dessert-spoonful of pearl barley jelly, dissolved in a breakfast-cupful of milk and sweetened.

Fifth meal, 11 P.M.

Same as the second.

It is advisable, as a rule, to avoid giving intermediate meals, and therefore the meals should be sufficiently large to satisfy all reasonable demands.

If the child requires food before 7 A.M., on waking from sleep, a little milk may be given.

A healthy child, between ten and twelve months old, will require from a pint and a half to a quart of milk in the twenty-four hours.

3. FROM TWELVE TO EIGHTEEN MONTHS OLD.

DIET 7.

First meal, 7.30 A.M.

A rusk or a slice of stale bread, well soaked in a breakfast-cupful of new milk.

Second meal, 11 A.M.

A drink of milk, a plain biscuit or slice of thin bread and butter.

Third meal, 1.30 P.M.

A teacupful of good beef tea, a pound of meat to the pint, or of beef gravy with rusk.

A good tablespoonful of light farinaceous pudding.

Fourth meal, 6 P.M.

Same as the first.

Fifth meal, 11 P.M., if required.

A drink of milk.

DIET 8.

*To alternate with the preceding.**First meal, 7.30 A.M.*

The yolk of a slightly boiled egg.

A slice of thin bread and butter.

A cupful of milk.

Second meal, 11 A.M.

A drink of milk.

A slice of thin bread and butter.

Third meal, 1.30 P.M.

A mealy potato, well mashed with a spoon, moistened with two tablespoonfuls of good beef gravy.

A cupful of new milk.

Fourth meal, 6 P.M.

A rusk or slice of stale bread, well soaked in a breakfast-cupful of milk.

Fifth meal, if required.

A drink of milk.

The fifth meal, at 11 P.M., should never be given unnecessarily. The sooner a child becomes accustomed to sleep all night without food, the better. When, however, it wakes in the morning, refreshed by its night's rest, it should never be allowed to remain fasting for an hour or more until its breakfast is prepared. A drink of milk, or a thin slice of bread and butter should be given at once.

Some children will take larger quantities than others at one meal; but, if the meals are made very large, their number must be reduced in proportion. Many children between twelve and eighteen months old will be found to do well upon only three meals a day, as in the following:

DIET 9.

First meal, 8 A.M.

One teaspoonful of baked flour.

One teaspoonful of fine oatmeal.

Three quarters of a pint to a pint of fresh milk.

A little white sugar.

Second meal, 1 P.M.

The same with the addition of the yolk of one egg.

Third meal, 5 P.M.

Same as the first.

In this diet the baked flour and the oatmeal are first beaten up till smooth, with four table-spoonfuls of cold water, and then boiled. The milk and sugar is then added, and the mixture is boiled till it thickens.

For the second meal, the yolk of egg is stirred up in the sauce-pan and boiled with the rest.

If the child requires anything early in the morning or at 11 P.M., he may take a drink of milk, or a thin slice of bread and butter.

A healthy child of a year to eighteen months old will usually take between two or three pints of milk in the four and twenty hours.

4. FROM EIGHTEEN MONTHS TO TWO YEARS OLD-

DIET 10.

First meal, 7.30 A.M.

A breakfast-cupful of new milk.

A rusk or a good slice of stale bread.

Second meal, 11 A.M.

A cup of milk.

Third meal, 1.30 P.M.

Under-done roast mutton, pounded in a warm mortar, a good tablespoonful.

One well mashed potato moistened with two or three tablespoonfuls of gravy.

For drink, milk and water or toast-water.

Fourth meal, 6 P.M.

A breakfast-cupful of milk.

Bread and butter.

After the age of eighteen months it is well to omit the meal at 11 P.M. A healthy child of eighteen months old should sleep from 6 P.M. to 6 A.M. without waking.

DIET 11.

For a child of the same age.

First meal, 7.30 A.M.

A breakfast-cupful of new milk.

The lightly boiled yolk of one egg.

A thin slice of bread and butter.

Second meal, 11 A.M.

A cup of milk.

Third meal, 1.30 P.M.

A breakfast-cupful of beef tea, a pound of meat to the pint, containing a few well boiled asparagus heads, when in season, or a little thoroughly stewed flower of broccoli.

A good tablespoonful of custard pudding.

Fourth meal, 6 P.M.

A breakfast-cupful of milk.

Bread and butter.

These diets can be given on alternate days.

Between the ages of two and three years the same diets may be continued. Meat can, however, be given every day, and a little well-stewed fruit may be occasionally added.

The morning and evening meals should always consist principally of milk. * * * *

I have transcribed these several diets because they are the most complete and specific of any I am acquainted with. Variations will suggest themselves to the individual practitioner according to his peculiar circumstances. A rigid and intelligent regimen is the best prophylactic against the summer diarrhoea of children.

I will close with a brief mention of some of the medicinal agents that have served me well. First I will say that it is a bad practice to resort at once to mercury. If Dr. Clevenger's theory be true, it is preposterous to do so. When the stools are green, many colored and slimy, which is a very early symptom of coming trouble, I use, especially in very young children, *camomile*. It not only alters the character of the passages, but allays restlessness and peevishness. It may be given in infusion in doses of half a drachm or drachm,* or in tincture in water in an equivalent dose. When the character of the stools are not readily changed by this means, I sometimes resort to mercury in the form of a trituration of the mild chloride with sugar of milk in doses of one-tenth of a grain or less two or three times a day, or a trituration of the metal hydrargyrum with sugar in doses equivalent to those of gray powder, upon which it is a decided improvement. On this point Dr. H. G. Piffard, of New York City, has given important testimony. When there is vomiting, in addition to a food consisting of diluted whey with cream, milk and lime water, with cinnamon water and equal parts of veal broth and barley-water, given cold or hot, not tepid, I use wine of ipecac in hourly drop doses, and when vomiting and purging are conjoined, small doses of the tincture of *veratrum album*.† This is a valuable remedy. *Opium* may be used when the diarrhoea is due to simple irritation, but it is, strictly speaking, not a remedy for infants, and if the exigencies of a case seem to demand it,

it should be used with great caution, and in doses that are stimulating, not narcotic.‡ Among the astringents I have used *geranium** in infusion, and sometimes increase the astringency by *catechu* or *kino* or *red wine*, and in older children continue to use the *mistura creta* of the pharmacopoeia.

One observation I would like to add, that polypharmacy in infantile therapeutics should be studiously avoided. Avoid the shot-gun practice and use only the true rifle, which, under a steady eye and hand, is most sure to hit the mark. Therefore I would seldom combine, but use my remedies singly wherever practicable.—*Chicago Med. Review*.

*Ringer. Handbook of Therapeutics.

†Ringer's Handbook of Therapeutics, p. 413.

‡See Austic's works.

* \mathcal{R} Infusio. geranii mac., one and one-half ounces.

Infusio. authemidis flor. (vel matricariac), one and one half ounces.

Vini. rubr. optim., once ounce.

M. Sig: Dose, one-half to two teaspoonfuls p. r. n.

NANA'S DAUGHTER.

T. B. Peterson & Brothers have just published a remarkable book which will create a great sensation, being no less than a continuation of, and sequel to, Emile Zola's great Paris realistic novel of Nana, being a far superior book, which can be appreciated by all. It is entitled "Nana's Daughter," and is one of the most exciting and absorbing stories ever given to the public. The heroine is elevated upon the stage of Parisian fashion, and is more natural than realistic. Look out for another eruption.

FOR TREATMENT OF DISEASES OF THE THROAT AND LUNGS.

Vapor Cajuputi :

Oil of Cajuput.....	4 parts ;
Light carbonate of magnesia.....	1 "
Water, to	180 "

Vapor Calmi Aromatical :

Oil of calamus aromaticus	2 parts ;
Light carbonate of magnesia	1 "
Water, to	180 "

Vapor Camphoræ :

Spirit of camphor.....	6 parts ;
Rectified spirits of wine.....	9 "
Water, to.....	24 "

Vapor Carui :

Oil of caraway.....	2 parts ;
Light carbonate of magnesia.....	1 "
Water, to.....	144 "

Vapor Juniperi Anglici :

Oil of juniper.....	2 parts ;
Light carbonate of magnesia.....	1 "
Water, to	48 "

One teaspoonful of any of these mixtures in the inhaler is a suitable quantity for one inhalation.—*The Druggist.*

CHILBLAINS.

In response to an inquiry in the *British Medical Journal*, the following suggestions for the treatment of chilblains are given :

Have the patient wear large shoes which do not compress the feet. Touch the toes with nitrate of silver. Galvanism has always proved successful with one writer. Liniment of aconite is recommended.

An ointment of lard and dry mustard rubbed in before the fire for twenty minutes will cure the trouble after a few applications.

Paint the affected parts with flexible collodion to protect them from the air. Very hot water, applied with flannels or sponges, is efficacious. A strong solution of acetate of lead was highly recommended by Sir Astley Cooper. Sulphurous acid is useful in mild cases.

CYSTITIS.

Dr. A. J. C. Skene, of Brooklyn, gives the following, which he regards as almost specific in cystitis, especially in the earlier stages, affording rapid and lasting relief :

℞ Acidi benzoici.....	} aa gr. x ;
Sodii biberatis.....	
Inf. buchu.....	℥ ij.

M. Sig. This quantity to be taken three or four times a day. The diet should also be carefully regulated, and the skin and bowels kept in an active condition.

TREATMENT OF COUGH IN BRONCHITIS AND PHTHISIS.

T. Lauder Brunton (Lond. *Lancet*) thus analyzes the following prescription of Dr. Warburton Begbie :

℞ Liq. morphinæ hydrochlorat }	} aa ℥ xviii ;
Acidi hydrocyanici, dil....	
Chloroformi.....	} aa fl. ʒ j ;
Spiritus chloroformi.....	
Acidi nitrici dil.....	
Glycerinæ.....	fl. ʒ ij ;
Infus. cascarillæ (seu infus quassiæ).....	fl. ʒ ij.

M. A sixth part to be taken three or four times a day.

Here the sedatives—morphia, hydrocyanic acid, and chloroform—tend to lessen the excitability of the respiratory centre ; the glycerin tends to retain the sedatives in longer contact with the throat, and acts also to some extent as a nutrient, and the nitric acid and bitter are supposed to have a tonic effect on the stomach. In what way this tonic effect is produced we can not at present say ; but we will imagine that they will in some way partially counteract the effect of the congestion which the cough produces, and, exciting appetite, will counteract the influence of the morphia. Nitric acid had also, as Dr. Brunton points out, a definite effect upon the secretions of the lungs themselves. Considering those drugs which tend to lessen congestion, Dr. Brunton mentions digitalis, and gives the following prescription from Beasley, as used by Sir A. Crichton :

℞ Succi limonis.....	fl. ʒ ss ;
Potassi carbonat. ad saturand..	
Decoct. sarsaparillæ.....	fl. ʒ x ;
Tinct. digitalis	℥ x ad xxx ;
Mucilag. acaciæ	fl. ʒ x.

M. To be taken every sixth hour.

The tincture of digitalis here tends to contract the vessels, diminish pulmonary congestion, and lessen cough. The potash renders the pulmonary secretion more fluid and abundant. Warm food, as beef tea, Dr. Brunton says is a good expectorant, as also is cod-liver oil. Ice, hydrocyanic acid, and alum are recommended in the vomiting of phthisis.

COD-LIVER OIL IN PHTHISIS AND BRONCHITIS.

Dr. T. Lauder Brunton, writing on this subject in the London *Lancet*, says:—

One of the most powerful expectorants is simply a little warm food in the stomach, and in cases of chronic bronchitis, in which the patients complain of violent coughing immediately after rising, one of the best expectorants is a glass of warm milk, either with or without a little rum, and a biscuit or a piece of bread, about a quarter of an hour before they get up. A little warm beef tea will have a similar effect. After taking this for a short time they generally tell you that the sputum comes away much more easily than before, and they are not so much exhausted by it. But perhaps the remedy, *par excellence*, not only in cases of phthisis, but in chronic bronchitis, is cod-liver oil. Persons suffering from long-standing chronic bronchitis will often come to a hospital to beg for cod-liver oil, saying that it eases their cough far more than any cough mixture. Other oils or fats have not this power to the same extent as cod-liver oil. We cannot say positively what the reason of this may be, but I think there is no doubt about the fact. My own belief is that cod-liver oil is more easily assimilated than other oils, and not only so, but more easily transformed into tissues themselves. Whether it owes this property to its admixture with biliary substances or to its chemical composition, we cannot say. Dr. Weir Mitchell quotes a remark made by an old nurse, that "some fats are fast, and some fats are fleeting, but cod-liver oil fat is soon wasted." By this she meant that there were differences in the kinds of fat accumulated under the subcutaneous tissues of men, just as there are differences in subcutaneous fats which accumulate in horses. The horse fed on grass soon gets thin by hard work, while the fat laid on when the horse is feeding on hay and corn is much more permanent. Persons fattened on cod-liver oil soon lose the fatness again, and this, I think, points to the power of ready transformation which the oil possesses. Supposing that it does possess this power, we can readily see how very advantageous it will be. In chronic bronchitis, and in catarrh and pneumonia, we have a rapid cell-growth, but want of development. The cells lining the respiratory cavities are produced in great numbers, but they do not grow as they ought to do. They remain, more or less, lymphoid cells, instead of developing into proper epithelium. They so rapidly form, and are thrown off so quickly, that they have not time to get proper nutriment, and if they are to grow properly we must supply them, not with an ordinary kind of nutriment, but with one which is much more rapidly absorbed, and is capable of much more rapid transformation in the cell itself than the usual one. This power is, I believe, possessed by cod-liver oil, and to its quality of nourishing the rapidly-formed cells in the lungs in cases of bronchitis and catarrhal pneumonia I believe its great curative power is owing.

TEMPERATURE OF SLEEPING ROOMS.

Dr. Horace Dobell, of London, in his excellent work, "Winter Cough," makes remarks on the temperature of bed-rooms, that are so appropriate that I will quote them. He says: "But before leaving the subject of sudden changes of temperature, I must not forget to speak of sleeping-rooms. It is quite astonishing what follies are committed with regard to the temperature of sleeping-rooms. On what possible ground people justify the sudden transition from the hot sitting-room to a wretched cold bed-room, which may not have had a fire in it for weeks or months, it is impossible to say; but it is quite certain that the absurd neglect of properly warming bed-rooms is a fruitful source of all forms of catarrh. We cannot too much impress this upon our patients." For those who do not become warm quickly after they go to bed, during cool or damp weather, the bed-clothes should be warmed by a hot smoothing iron, or a warming bed pan, before they retired for the night. This warming operation may be necessary, even if there has been a fire in the sleeping-room all day. If a patient is subject to profuse night sweats the dampened bed-clothes should on each morning be removed from the bed, and fresh, well-dried *coils* clothes (linen sheets and pillow cases should be eschewed) supplied in their stead. If the perspiration has been but slight, the bed sheets alone may be all that requires removal, or even these may be so slightly dampened that their being placed before a grate fire will be sufficient to dry them for the next night's use.—*Dr. Rumbold's Hygiene of Catarrh.*

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THE MONTREAL GENERAL HOSPITAL.

Since our last issue, there has been an election for an indoor and an outdoor physician. The indoor vacancy was created by the resignation of Dr. John Reddy, who, after twenty-five years faithful service, retired upon the consulting staff. Dr. Molson, for several years on the staff of assistant physicians, was elected to fill Dr. Reddy's place. Dr. Gardner was elected to the vacancy which Dr.

Molson's promotion caused. The resignation of Dr. Reddy took place on the 17th, the election was on the 19th. This was quite in accordance with the by-laws, but the sooner the by-laws are altered on this point the better. The contest, if such it can be called (for Dr. Gardner's friends tried to elect him to Dr. Reddy's vacancy, and three candidates went to vote with Dr. Gardner on the outdoor staff), has apparently resulted in promises of some amendment. The Governors, badgered by doctors, relations and female friends in these medical elections, are now loud in demanding the ballot, as a means of affording them relief from persecution, and the possibility of exercising a conscientious vote. Unfortunately the founders of the Hospital did not apparently believe in this manner of voting, and as the charter names how it shall be conducted, it is believed the Hospital will have to go to the Legislature for an amendment to it before this *desideratum* can be obtained. We think the movement a wise one, and wonder that it was not long since adopted. We at the same time warn the Governors that they must be prepared for opposition, for with the ballot the days of the Medical Monopoly, which have always characterized that institution, will we believe be at an end.

THE BOGUS-DIPLOMA BUSINESS IN PHILADELPHIA.

The confession of the now notorious Dr. Buchanan, with regard to the infamous traffic in bogus diplomas, in which he was for so many years engaged, reveals a state of things which is almost beyond belief. That one could have for so long a period carried on this business in a city where medical education occupies a foremost place, and in the midst of men jealous of professional honor, is difficult of comprehension, in spite even of the explanation given. To a representative of the secular press the credit is due of unearthing and bringing to light the nefarious traffic. It appears from the statements made by Buchanan that the bogus-diploma business was not only a distinct branch of industry, but was a business of immense proportions, having its recognized agents, drummers, go-betweens, and influential advisers. Through this concern alone sixty thousand bogus diplomas have been sold within the last forty years; of these forty thousand were disposed of in Europe. The price for each of these pieces of parchment varied from ten to two hundred dollars,

according to the means and gullibility of the applicant. Nothing was required from the candidate but the money. The representative of the Philadelphia *Record* purchased several of these diplomas without having studied medicine a single day, and without making the slightest pretension to a knowledge of the science. Fac-similes of these documents are published by the gentleman in question, and help to make up an interesting part of the history of a stupendous and barefaced fraud. As Buchanan has nothing to gain one way or the other by his statements, it is fair to presume that they are worthy of some credence. At all events they are corroborated by the documents which he has surrendered to the authorities.

One fact of special interest to us as Canadians is the number of men who figure in the published list as hailing from Canada. So far as we are able to judge, few of them are in practice in the Dominion to-day, but, at the same time, we think we have not got rid of all of them. In the Province of Ontario the Registration Act cleared out many of them. If any are in our own Province, they will soon be heard of, for, thanks to the present Governing Board of the College of Physicians and Surgeons, the present Medical Act is not being left a dead letter.

ANOTHER DODGE.

Some two or three years ago the Medical Press of the United States and Canada suddenly awoke to the fact that they were being contemptibly swindled by those men who from one end of the country to the other were writing for "a specimen copy of your Journal." One can hardly conceive that there exists, in the form of humanity, a person so mean as in this way to arrange for the supply of his Medical reading, at a cost calculated simply by the number of post cards which he dispatches asking for "a specimen," yet such was the fact. For a time after the exposé, these little missives, so polite in expression, ceased to come to us; then they began to reach us again, but, failing to elicit any response, they once more ceased. We hoped the "swindle" had collapsed, but if we are not mistaken it has once more come to life—in a form which has, we confess, deceived us for the last six months. During that time we have received from at least a dozen or more persons, living in the United States, a postal card asking quotations for a small advertisement, "and the favor of a specimen copy." At first we took the bait, and gave

ordinary quotations, but never getting a response, we began to think that this was "the specimen copy" man in another form. We then gave quotations ridiculously low, but still no advertising came, and we are now convinced that this is indeed the old swindle in a new form, and consign all such cards to our waste basket. There is, however, a very singular phase to both these swindles, which is difficult to understand. The cards, asking for specimen copies, came in floods for over two years, and from every section of this continent from Nova Scotia to Colorado, and yet the wording was very much the same in all. In the new departure the same thing is noticeable, a remarkable similarity of wording. Does there exist a widespread organization for the purpose of obtaining medical and general literature almost without cost? We cannot believe it, yet facts would almost seem to point that way. Do they believe that literature should be endowed by the State, and disseminated for the general good? Till that time arrives, we must decline to send specimen copies free, even though it be to one "*who desires to advertise.*"

Reader, are you anxious to know what other practitioners are doing? Are you anxious to advance higher day by day in the practice of your profession? Then tell others what you have learned; what strange freaks of disease you have encountered; what remedies have yielded good results, and what have failed. Send us your experience and your subscription money, and you shall hear from the rest. Don't hide your light under a bushel, or think because you are plodding away among the hills and waysides that you know nothing of interest—or, worse still, think you know everything. Keep in line, or the world will wag along and keep you in the lurch.

HOW TO RESTORE THE SCALE OF THERMOMETERS.

Physicians are frequently troubled by the scales of their thermometers becoming indistinct, the pigment in the marks wearing out. The scale may be made distinct again by painting it with an alcoholic solution of any aniline color. Make two or three applications, let the color dry, and then rub off with a dry cloth. The aniline will fasten itself on the roughened glass of the scale alone making each line show distinctly. Water will not

remove the coloring matter, which, when it fades, may be easily renewed.

CANADA MEDICAL ASSOCIATION.

The next meeting of this Association is to be held in Halifax, Wednesday, 3rd August. Owing to the serious illness of the General Secretary, Dr. A. H. David, all communications concerning the meeting should be addressed to the Local Secretary for Ontario, Dr. Adam Wright, who has kindly undertaken the duties of the General Secretary.

A PROPOSED NEW PLAN TO DISINFECT SEWERS.

Dr. A. J. Holkett, the medical examiner for the Germania Life Insurance Company, New York, has laid a new plan for disinfecting the sewers of that city before the Board of Health. He proposes by the use of electricity to neutralize the gases generated in the sewers. It is said to be probable that an experiment will be made, although the Commissioners are not very sanguine of the results.

CORRECTION.—In the February number of the RECORD we published a paper by Dr. F. W. Otiss of New York "On the Sulphide of Calcium in the Treatment of Suppurating Buboës," and credited it to the *N. Y. Medical Record*. This was an error, as the paper first appeared in the *New York Medical Journal*.

ERGOTINE: ITS INCONVENIENCES AND DANGERS.

At a recent meeting of the Paris Academy of Medicine (*La France Medicale*) Dr. Boissarie read a memoir on the above subject. His conclusions are that ergotine, which is of important service in hæmorrhage when we require immediate energetic action, cannot be used with impunity in affections of long continuance, even in small doses, so as to saturate the system. It has the property of accumulating and storing itself up in the economy, and of manifesting itself, after a longer or shorter time, by a sudden outburst of serious consequences. To follow the precept of Trousseau of giving the poison for a long time in small doses is to expose the patient to gangrene.

The *Medical Press* gives an extract from the diary of the late Mr. Mewburn :—

“The following statement from the fee-book of Sir Astley Cooper is curious :—

“My receipt for the first year was 5*l.* 5*s.* ; for the second, 26*l.* ; the third, 64*l.* ; the fourth, 96*l.* ; the fifth, 100*l.* ; the sixth, 200*l.* ; the seventh 400*l.* ; the eighth, 610*l.* ; the ninth, 1,100*l.*

“In 1815 Sir Astley made 21,000*l.*!! A Mr. Hyatt, an ancient merchant, gave him 1,000*l.* on recovery under his care ; and Mr. Coles, of Mincing Lane, for a long course of time, gave him 600*l.* every Christmas.”

The invention of the capsule may be regarded as one of the triumphs of modern pharmacy.

The old-fashioned naked pill, with its irregular contour and its nauseous taste, which not infrequently excited in the pharynx an inverted deglutition, has become almost, if not quite, a thing of the past.

The capsule has manifest advantages over the pill, such as, ease in swallowing, readiness of solution, together with the protection it affords the medicine against atmospheric influences, thus insuring that it shall arrive in the stomach in the best condition for assimilation ; and these facts being well understood by the physician, the term “*Ft. pilulæ*” at the close of a prescription is not now very often seen.

A capsule to meet the above requirements should consist almost entirely, if not wholly, of pure gelatin, which, on entering the stomach, appropriates water of composition, and, becoming a jelly, will readily dissolve and set the contained medicine free.

But the increased demand for capsules, together with a desire to furnish them at a low price, has tempted some manufacturers to use glue and various other cheap and impure compounds in their manufacture.

Capsules made of these substances are sometimes so slow of solution as to seriously delay the action of the medicine, or, worse still, resisting the fluids of the alimentary tract to the end, pass out like bullets, unchanged.

Before ordering them for a patient the physician should test a given specimen of capsules by holding one in his mouth until it dissolves. If its solution is rapid, and no unpleasant flavor is perceived, it may be safely used ; but if it tarries long

upon the tongue, or imparts to the taste a savor of the hide-store or the sour-paste pot, it should not, under any circumstances, be given to a sick person.

The old and highly reputable firm of H. Plan-ten & Son, 224 William Street, New York, furnishes an article which will stand any test, and we can conscientiously recommend their capsules to the profession.

They are made of seven different sizes for the mouth and of three for the rectum. The latter are conical at one end, and present a form which may be easily introduced into the rectum, and retained by this organ without discomfort.

WYETH'S ELIXIR OF PHOSPHORUS.

Although Phosphorus has long been recognized as of great therapeutical value, there has been up to the present time a drawback to its extensive employment in the difficulty of finding a safe, accurate, and agreeable form in which to administer it.

Wyeth, of Philadelphia, now prepares an ELIXIR OF PHOSPHORUS, which is free from all the objectionable qualities above stated. It is absolutely reliable, non-irritating, and pleasant to the taste. Each teaspoonful contains grain 1-100 of free Phosphorus, held in perfect solution, and of assured stability. This article has been tested for nearly a year by leading physicians, and their satisfaction with it has been such as to warrant them in offering it to the profession at large as worthy of their favor. It may be given in combination with other preparations, as for example with Elixir of Iron, Quinine, and Strychnia, with the tincture of *Nux Vomica*, etc.

THE POPULAR SCIENCE MONTHLY.

The nineteenth volume of *The Popular Science Monthly* begins with the May number, and it would be difficult to find, since its start, an issue that more fully sustains the high reputation of the magazine as an exponent of modern science in a readable and attractive form. The first article, by Professor David S. Jordan, is a capital example of the way science may be made both entertaining and instructive to the general reader, youthful or adult, without any sacrifice in accuracy or dignity of statement. It is entitled the “*Story of a Salmon*,” and treats of the life-history of that interesting and useful fish from the time it is produced as an egg until it becomes itself an egg-producer.

Dr. Felix L. Oswald, who, as readers of the *Monthly* know, has always something interesting and useful to say, continues his articles on "Physical Education," treating in this number the subject of "Gymnastics." The "Mineral Springs of Saratoga" is an illustrated article on the geology of the springs with a brief statement of the two rival theories concerning the sources of their mineral constituents, and an extended table giving the chemical compositions of the various waters.

Professor Tyndall has a valuable paper entitled the "Action of Radiant Heat on Gaseous Matter," in which he describes some wonderful experiments with the photophone.

Under the title of "The Eucalyptus in the Roman Campagna," Mr. H. N. Draper gives a history of the introduction and cultivation of the eucalyptus in one of the worst parts of that pestiferous plain, and the remarkable improvement in the healthfulness of the locality which has resulted therefrom.

New York: D. Appleton & Company. Fifty cents per number, \$5 per year.

ELIXIR FERRI ET CALCIS PHOSPH. CO.

This preparation, made by Dr. Wheeler of Montreal, has now been before the profession for a number of years, and the fact that it is still in large demand proves most conclusively that it is a medicine of very great value. We have always held it in high esteem, and a twelve years' experience of it has only confirmed our high opinion of it. It is palatable, and does not leave a disagreeable after-taste. Our readers who have not done so should include it among their list of remedies, and when occasion presents where it should be useful, we are satisfied, if prescribed, it will give every satisfaction.

GYMNASTICS AS A CURE OF DISEASE.

Physical vigor is the basis of all moral and bodily welfare, and a chief condition of permanent health. Like manly strength and female purity, gymnastics and temperance should go hand in hand. An effeminate man is half sick; without the stimulus of physical exercise, the complex organism of the human body is liable to disorders which abstinence and chastity can only partly counteract. By increasing the action of the circulatory system, athletic sports promote the elim-

ination of effete matter and quicken all the vital processes till languor and dyspepsia disappear like rust from a busy plowshare. "When I reflect on the immunity of hard-working people from the effects of wrong and overfeeding," says Dr. Boerhaave, "I cannot help thinking that most of our fashionable diseases might be cured *mechanically instead of chemically*, by climbing a bitterwood-tree or chopping it down, if you like, rather than swallowing a decoction of its disgusting leaves." The medical philosopher, Asclepiades, Pliny tells us, had found that health could be preserved, and if lost, restored, by physical exercise alone, and not only discarded the use of internal remedies, but made a public declaration that he would forfeit all claim to the title of a physician if he should ever fall sick or die but by violence or extreme old age. Asclepiades kept his word, for he lived upward of a century, and died from the effects of an accident. He used to prescribe a course of gymnastics for every form of bodily ailment, and the same physic might be successfully applied to certain moral disorders, incontinence, for instance, and the incipient stages of the alcohol-habit. It would be a remedy *ad principium*, curing the symptoms by removing the cause, for some of the besetting vices of youth can with certainty be ascribed to an excess of that potential energy which finds no outlet in the functions of our sedentary mode of life. In large cities parents owe their children a provision for a frequent opportunity of active exercise, as they owe them an antiseptic diet in malarious climate.—By DR. FELIX L. OSWALD, in *Popular Science Monthly* for May.

TO PRESERVE THE BRAIN.

Extracted from Journal of Anatomy and Physiology, January, 1879. (Giacomini method.)

The organ enveloped in its membranes is immersed in a solution of zinc chloride sp. gr. 1.343. Turn two or three times a day. If the subject has been dead for some time, inject 600 grammes of the solution through the carotids, so as to give firmness to the somewhat soft brain before its removal. After forty-eight hours the surface is hard enough to have the membranes removed. Let this be done without taking the organ out of the solution. After having been cleaned let it remain in the solution, till, as the hardening proceeds, it begins to sink no longer, and then remove it. Now

it is immersed in commercial alcohol for not less than ten or twelve days. As it sinks here it must be turned often to avoid deformity by pressure on the bottom of the vessel, and it is well to renew the spirit two or three times, the oftener the sooner the process is required to be finished. Let the organ now be immersed in commercial glycerine, at first it floats, but gradually becomes heavier as the alcohol evaporates; when level with the fluid it is to be taken out. Now set it aside for several days till the surface is dry, then cover with gum elastic varnish.

To the above process we would make the following suggestions:

(A mixture of damar and copal varnish will do better, we think. A brain prepared as above will make a beautiful preparation for studying the cortical substance, but as most of the lesions are in the anterior ovule it is advisable to make sections as advised by Pitres in his "Lesions du Centre Ovule," and referred to with illustrations in Ferrier's "Localization of Cerebral Disease." The sections can be very readily made after the brain has been a few days in the chloride of zinc solution, before transferring it to the alcohol. After the sections are made, leave them in the chloride of zinc for three or four days, then proceed as described above.)

REVIEW.

On the Construction, Organization and General Arrangements of Hospitals for the Insane, with some Remarks on Insanity and its Treatment. By THOMAS S. KIRKBRIDE, M.D., LL.D., &c. page 320. J. B. LIPPINCOTT & Co., Philadelphia and 16 Southampton street, Covent Garden, London; Montreal, Dawson Bros.

This book is nothing more nor less than what its title implies, and our author has given us a most valuable work, one no doubt which will prove to be of the greatest possible advantage to any community about to establish an insane asylum. The plan of choosing a proper place for such a building, the amount of land that should surround the building or buildings, the plan of the building or buildings, the manner of choosing a governing board, what the medical superintendent, and all the officers and employees of the establishment should be, are matters all gone into with the most minute details, and although these are subjects that have been written upon over and over again, yet our author shows himself to

be no apprentice hand at the work he has undertaken, but a man of master mind; a mind well stored with knowledge from observation, and wishes to impart his knowledge to others.

We said the book would be found useful to those about to establish an insane asylum, we may add that it will be found useful, even to those who have already established asylums, for it affords many practical hints that can be taken advantage of by medical superintendents.

Unfortunately, from the peculiar system of farming out patients to contractors, adopted in the Province of Quebec, a system probably our author never heard of, his book is useless in this Province, for it speaks to those who have no existence amongst us, a medical superintendent having entire power and control of the whole establishment and all that is therein, he being responsible for all his acts to the executive, either directly or indirectly. We doubt if our author ever heard of such an anomaly as of a religious community of ladies being contractors with a Government for the insane of a country at so much per capitum for pauper patients, said ladies being sole proprietors of the insane asylum, appointing one of themselves as Superior and Superintendent of the establishment, who in turn appoints her own attendant physician, that is responsible to her and her only for all his acts and deeds, and so does she appoint all keepers, and discharge them at her pleasure. That these pauper patients are treated in every respect as seems best to this Lady Superior and her own medical attendant, not responsible nor letting any one know what the treatment consists of. True, that the Government has a most reliable, capable and experienced alienist as Government visiting physician to this establishment, who performs his duty to the public fearlessly and honestly, guided in all his acts by benevolence and justice. But what are his powers? To recommend the admission of those whom he considers suitable persons for admission under the law, to recommend to the Government the discharge of those patients whom he, in his judgment, considers should be discharged, to report from time to time the mental and physical state of the patients, to report as to their comfort, that is their clothing, bedding, lodging, &c., and, if he sees anything that he disapproves of in a sanitary point of view, such as heating, ventilation, drainage, &c., to report the same,—so far so good, but he controls nothing.

His opinion is not asked nor is he consulted in anything; the medical attendant never consults him, he does not know what the medical treatment is. He cannot control the classification of patients. He may see cases of acute mania in the same apartment with demented and imbeciles, and he is powerless to correct it. He may disapprove of straps and straight waistcoats, but he can do nothing but report. The Lady Superior controls all these things herself. From the foregoing facts we think our author will see how little use there is for his book in the Province of Quebec. We, however, take this opportunity of protesting against our unscientific system. It is different in the Province of Ontario—there our author's book will be a valuable contribution to the library of medical men.

Dr. Kirkbride writes from the standpoint of a medical superintendent, and, like all others who have written from the same standpoint, considers that, for the majority of insane persons, the best thing to be done with them is to have them treated in an insane asylum, but here we will let him speak for himself: "As the insane generally cannot be treated successfully nor be properly cared for in private houses, very clearly they cannot be in ordinary hospitals, almshouses, nor in penal institutions. The only mode, then, of taking proper care of this class in a community it is obvious, as all enlightened experience shows, is to provide in every State just as many special Hospitals as may be necessary to give prompt and proper accommodations for all its insane, to cure those that are curable, to give every reasonable comfort to those that are not curable, and to prevent their becoming worse." We entirely agree with our author in all the foregoing, but we maintain that, amongst the affluent, arrangements can be so made in private houses, where patients can be as successfully treated at home, by a well educated medical man, with the benefit of a consultation with a mental expert, just as successfully, if not more so, as in an insane asylum. We have had such in our own practice, and we are aware that such is the experience of many of our confrères. We confess, however, that there are many occasions where we would avail ourselves of a public institution, if there was one in our province that we had confidence in its management.

We quote one passage more, as bearing upon a very important matter in very many respects:

"There is no power to insure any case, or to

"say that there may never be another attack. No one has a right to assert that a combination of circumstances, like that which produced the first, may not cause another; that ill-health, and commercial revulsions, and family sorrows, and the many other causes that may have originally developed the disorder may not again bring on the return of the same symptoms, just as they may produce them in one who has never before been insane. Out of seven thousand eight hundred and sixty-seven consecutive cases in the author's observation, five thousand six hundred and ninety-five had never had an attack before. Whatever induced the disease in them certainly may induce it in those who have already suffered from the same malady, for we cannot expect one attack of insanity to act as a prophylactic, and, like measles or small-pox, to give immunity for the future. But this new attack is no evidence that the patient was not cured of the previous one. If the patient, then, is well in the sense in which he is considered well from an attack of typhoid fever, or dysentery, or rheumatism, or a score of other maladies, when another attack is developed, it is as much a new case and the recovery is a cure just as much as it would be if he suffered from any other form of illness, and it ought to be so recorded.

"If he does not recover, in the sense in which a recovery has already been described, he should not be recorded as cured."

Our author's experience, from length of years and number of patients treated by him, gives him the right to speak with authority, and in what he has said in the foregoing, we agree with him in every particular. But when it is such an established fact that the large majority of persons who have been once insane generally become insane again, we consider the term recovery is preferable to the term cure, and less likely to lead to error or misunderstanding. A man loses his sanity and recovers it again, no matter from what cause (and generally it is very difficult to pronounce to what cause his recovery is due) is a term quite explicit enough for all purposes. But when the term cure is made use of persons are liable to understand the term as meaning that the remote or latent cause of insanity has been removed from the patient by medical treatment, which gives him immunity for the future.

Aphorisms in Fractures. By R. O. COWLING, A.M., M.D. John P. Horton & Co., Lennoxville, Ky., U. S.

This little work contains some good practical information, and, although we may not agree with all it states, we have no hesitation in recommending it to the busy practitioner and the student.

We are in receipt of a little *brochure* from the Trommer Extract of Malt Company, the object of which seems to be to prove that, for medicinal purposes, the extract of barley malt is superior to that of any combination of cereals. So far as our opinion is concerned, this is a foregone conclusion, as all investigation goes to prove that, in regard to the essential (medicinal) principle of malt extract, barley is richer than any other cereal. The facts in regard to this are clearly stated in the pamphlet referred to, as follow :

"The superiority of barley for malting depends partly upon the peculiar structure of the grain, and partly upon the greater solubility of its nitrogenous principles. The protection afforded to the radicle (or shoot) by the husk which envelopes the grain, during germination or malting, is of the utmost importance. The process can go forward to the desired extent without loss by imperfect or incomplete germination. In the malting of wheat, maize, and even oats, a considerable portion is lost or damaged by germinating slightly and then perishing, leaving decayed grains in such abundance as materially to lessen the value of the malt.

"The nitrogenous matter of wheat consists mainly of gluten, albumin and vegetable fibrin, that of oats in avenin, *substances insoluble in water, and which therefore cannot be obtained by maceration or infusion in a watery menstruum.* Wheat and oats are poor in those soluble albuminoids which abound in barley. This solubility of a larger proportion of its nitrogenous matter, in water, prominently characterizes barley, which yields its constituents generously to this convenient menstruum. On the other hand, the poverty of barley in coagulable, glutenous and albuminous matter, renders it comparatively unfit for bread-making. Thus, while barley is rich in all the principles requisite for the nourishment of man, these exist in such form that malting of the grain is alone necessary to make them soluble in water.

"But a remaining fact constitutes a most impor-

tant consideration. Barley is best adapted for malting because *it yields a larger quantity of diastase than any other kind of grain.* Wheat, oats, and Indian corn furnish by malting scarcely sufficient diastase to convert the starch they contain into maltose and dextrine; whereas barley malt yields so large an amount of that important principle that one bushel is capable of converting not only all its own starch but that contained in from four to six bushels of wheat, oats, Indian corn or rice, into maltose and dextrine. Brewers and distillers are in the habit of availing themselves of the diastatic power of barley malt, thus not only saving the expense of malting, but enabling them also to substitute cheaper unmalted grain in the manufacture of ale, beer, &c."

The pamphlet also contains interesting reviews of "the Physiology of Starch Digestion," and the "Value of Carbo-Hydrates as Food" (drawn from most recent scientific researches on these subjects), which make it very interesting to medical readers. Such of our subscribers as have not received a copy of the pamphlet can do so free upon application to Trommer Extract of Malt Co., Fremont, Ohio.

PERSONAL.

Dr. John Reddy has resigned his position of attending Physician to the Montreal General Hospital after 25 years' service.

Dr. W. A. Molson has been elected to the In-door staff of the General Hospital, in place of Dr. Reddy resigned.

Dr. Wm. Gardner has been elected on Out-door Staff of the Montreal General Hospital, in place of Dr. Molson, elected on the In-door Staff.

Dr. Henderson has been appointed House Surgeon of the Montreal General Hospital.

Dr. J. A. Macdonald and Dr. Mewburn have been appointed resident clinical assistants at the Montreal General Hospital.

Mr. Ninian C. Smillie, fourth year student at Bishop's College Faculty of Medicine, has been appointed resident clinical assistant at the Woman's Hospital.

Dr. James Bell, of Montreal, who retired a year ago from the House Surgeoncy of the Montreal General Hospital, was on the 19 inst. appointed, under the new By-Laws of the Institution, its Medical Superintendent at a salary of \$1500 the first year, and increasing till \$2000 is reached.