

## TREATMENT OF TYPHOID FEVER.

At a meeting of the *Association Française pour l'avancement des Sciences*, M. Duboué, of Pau, stated that he had treated a number of cases of typhoid fever with ergot, and that his success has been satisfactory. The toleration of ergot increases with the severity of the disease. As a rule, the drug is not so well tolerated by women as by men; consequently, it must be given in smaller doses to the former. It may be given without fear to pregnant women. The pulverized ergot of rye preserves all its medicinal qualities for about eight days; if it lose its physiological properties within that time, it is because it was already altered when pulverized. Of fifteen cases treated by Dr. Duboué, the extreme rapidity of the cure rendered the diagnosis of two uncertain; five cases of moderate gravity that recovered presented during their courses alternations of aggravation and amelioration that corresponded with intentional interruptions of the treatment. Of eight very grave cases, six recovered; three of these cases being already far advanced before the ergot treatment was begun. In the two fatal cases the ergot did not produce its ordinary therapeutic effects, and on examination it was found to be worm-eaten and covered with a grayish powder.—*Gazette Hebdom. de Méd. et de Chir.*

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NOTES OF PRACTICE AND PECULIARITIES OF TREATMENT.

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## THE COLD BATH IN THE TREATMENT OF TYPHOID FEVER.

In patients possessing the average physical strength, and sick with typhoid fever, the cold bath is employed promptly whenever the temperature of the body rises above  $103\frac{1}{2}^{\circ}$  F. The patient is immersed to the neck in water having a temperature of  $85^{\circ}$ – $90^{\circ}$  F., and cold water is then steadily added until a bath having a temperature of from  $58^{\circ}$  to  $60^{\circ}$  F. is obtained. After remaining in the bath from ten to twenty minutes, the patient is removed, rubbed dry, enveloped in a blanket, and put in bed, and an ounce of brandy administered to aid in establishing reaction. The thermometer is used fifteen minutes after the patient has been placed in bed, and the temperature in the rectum in the male, and in the vagina in the female, has, as a rule, been found to have been reduced from  $2\frac{1}{2}^{\circ}$ – $4^{\circ}$  F.

If at any time during the employment of the bath, symptoms of marked prostration supervene—as evidenced by decided chilliness, lividity of the surface, most readily detected on the prolabia and nails, chattering of teeth, etc.—the patient is immediately taken out of the water, rubbed dry, and warmly covered in bed.

A patient was seen in whom the disease had run its full course twice since his admission to hospital. In the second attack, which was of unusual severity, the cold bath was administered forty-six times in the course of thirteen successive days. The man at the time of the visit was considered as convalescent.

The character of the eruption had been found to be a pretty safe guide with reference to endurance of the baths in any given case. As a rule, when the eruption has been abundant, and of a deep-red color, the reaction after the use of the bath has not been what was desirable, and a few trials has been sufficient to convince the attendants that it was necessary to have recourse to some other form of antipyretic treatment.

## QUININE IN TYPHOID FEVER.

In conjunction with the cold bath, quinine might or might not be administered. When, for any reason, cold water is contra-indicated, chief reliance has been placed upon the antipyretic influence of quinine. The drug has been used in the following manner: *First*, It has been given in small doses frequently repeated (5 grains every two or three hours). *Second*, Twenty or thirty grains have been administered in one or two doses at the time when the temperature was highest, generally late in the afternoon. *Third*, The same quantity has been administered in one or two doses when the temperature had about reached its lowest point.

Of these three methods, the first had exercised but little influence in controlling the temperature; the second had generally yielded tangible results, in so far as the temperature, taken from 1 to 3 hours after the administration of the drug, had generally been found to have been more or less reduced; but the improvement was only transient, and another large dose was soon required. The third method was considered the most judicious, and was the one generally employed. The temperature in cases of typhoid fever has been taken every three hours, in the rectum in males, and in the vagina in females; and the average of the twenty-four hours, in patients treated by the third method, has been found to be lower than that of the cases in which quinine was administered in accordance with the first two.

## IODINE IN TYPHOID FEVER.

Iodine has usurped the place of the mineral acids, and is given internally in all cases of typhoid fever. It is thought to lessen the troublesome gastric irritability so often present, and to diminish the number of evacuations from the bowels. The following formula is usually employed:

R. Iodinii ..... 3 j.  
Potassii iodidi ..... 3 ij.  
Aq. dest ..... 3 x.  
M. Gtts. iij. in wineglassful of water every three hours.

Lugol's solution, the liquor iodinii comp. of the Pharmacopœia, may be used in doses of six drops every three hours.

The cold bath, quinine and iodine, with the close attention to the diet and the exhibition of stimulants when indicated, constitute the main features in the treatment of typhoid fever. The cold wet pack is occasionally substituted for the cold bath when the latter is not well borne.

## ENLARGEMENT OF THE SPLEEN.

Enlargement of the spleen, demonstrated by percussion, has been present as early as the latter part of the first week in all the cases of typhoid fever treated at this hospital during the last two years. Notice was made of this fact, not on account of its supposed singularity, but for the purpose of directing attention to its value in a diagnostic point of view. The enlargement of the organ, it was claimed, could in most cases be ascertained before the appearance of the eruption, and was almost invariably present at the period of the disease when patients generally apply for admission to hospital. When great tympanites exists the spleen may be crowded out of its normal position, and it must then be searched for posteriorly, where it will usually be found lying against the ribs and the side of the vertebral column.

## CHRONIC BRONCHITIS WITH EMPHYSEMA.

It has become a sort of routine treatment for cases of chronic bronchitis with emphysema, to administer from one-third to one-half a grain of apomorphia daily, and continue it for some time. It has been given by the mouth, and continued for two or three weeks without annoyance to the stomach. It was believed that the patients did better with than without it, although other medicines were at the same time administered.

## INJECTION OF PULMONARY CAVITIES.

In several cases, a hypodermic needle had been thrust through the chest-walls, and into cavities in the lungs, and a few drops of a one and one-half or two per centum solution of carbolic acid injected. *No bad effects have been produced*, and it had seemed to lessen the expectoration and cough, and thus modified the fever.—*Medical Record.*

## CLINICAL STUDY OF DIPHTHERIA.

At the late session of the *N. Y. State Medical Society*, Dr. Bayles read a paper on the above subject, in which he endeavored to prove that diphtheria is primarily a constitutional disease, and that it is in all probability autochthonous and not excited by a specific germ poison. His observations were based on twenty cases of the disease met with in dispensary practice. In all these cases he found that there had been a deterioration of the health and strength for a varying period before the appearance of the disease, and after the commencement of the disease, all, with perhaps one exception, were seen before the appearance of membrane in the throat, and many even before the appearance of the catarrhal throat symptoms. The symptoms these cases presented were, quick, irritable pulse, high temperature, cool extremities without moisture of skin, pallor, rather slow respiration, nausea, and sometimes vomiting, diarrhœa, somnolency, irritable temper, and scanty urine of high specific gravity and loaded with urates. In each of these cases the doctor made a slight abrasion of the cutaneous surface at some distance from the usual seat of local lesion, and in every case after a short interval a membranous patch covered the surface of the wound. In one case this was done to verify the diagnosis after the throat lesions had appeared, but in all the others the traumatic exudative patches preceded or appeared simultaneously with the faucial patches or the nasal flux. The appearance of those patches on the body is a certain diagnostic sign of diphtheria, and the fact that they preceded the formation of faucial patches in some cases, demonstrates beyond question the primarily constitutional nature of the disease.

With regard to the etiology of the disease, Dr. Bayles is convinced by his observations that the disease is autochthonous, and neither depends upon nor is propagated by a specific contagion received from without. A predisposing cause is to be found in the noxious influence of bad air, bad food, and uncleanness, acting on an already impaired and badly sustained system. The fact that many persons in a family often suffer in turn from the disease does not militate against this theory, for all the members of the family are generally exposed to the same noxious influences. The infrequency, not contiguity, and slow multiplication of Dr. Bayles' cases, excluded the idea of an epidemic, and in no case could he, on the closest scrutiny, find one sufficient local cause for the disease.

All of Dr. Bayles' cases recovered, a result which he seems inclined to attribute to the early and active constitutional treatment to which they were subjected. As soon as the diagnosis was made, he gave a single dose of from ten to thirty grains of calomel as a sedative and alterative. The dose for infants was smaller. Two hours after this he gave a powder containing one grain of quinine and three grains of Dover's powder, and repeated it every hour until free diaphoresis was produced, and then at intervals of two or three hours, for twelve hours longer. This was to supplement the action of the calomel, and, at the same time, support. He then gave the elixir iodo-bromide calcium compound, in doses of a teaspoonful every two or three hours until convalescence was established. This medicine he considers as a valuable general tonic and alterative. When possible, he used the same medicine mixed with water as a spray or gargle, but employed no other local treatment. Milk was the chief food allowed, with the addition of a little brandy from the third day. Lastly, the body was bathed two or three times a day with a tepid lotion of salicylic acid, partly as a concession to the disinfectionists.—*Virginia Medical Monthly.*

## LESION OF THE CEREBELLUM.

In a fatal case of diabetes mellitus, which was treated in Mosler's clinic, and in which there had been no disturbances of sensation, or motion, or of the special senses during life, the autopsy revealed a well-marked spot of inflammatory softening about the size of a pigeon's egg, in the nucleus dentatus of the left hemisphere of the cerebellum. The theory of the neuropathic origin of diabetes rests on sound practical grounds, and there can be little reason for doubting that in this case the increased secretion of sugar was excited by the central affection, especially as Eckhard has shown that injury of the second lobe of the vermis cerebelli in rabbits will artificially excite diabetes. It is strange that such a well-marked lesion was not attended by any signs of disease of the central nervous system during life.—*Berliner klin. Wochenschrift.*

## LISTER'S SYSTEM AS USED AT FREIBURG.

Dr. A. W. C. BERNIS furnishes a summary of the results of the Lister treatment of wounds as obtained in the Freiburg clinique, under Prof. Czerny. In April, 1874, they adopted this treatment. In 1873, there were 901 cases treated, with forty-five deaths, of which nine were from pyæmia and three from erysipelas. In 1874, 910 cases and forty-two deaths, of which pyæmia claimed five and erysipelas three. In 1875, 864 cases and twenty-four deaths, three from pyæmia and one from erysipelas. Conservative surgical procedures have been notably benefited by the employment of this method.—*Archiv. f. klin. Chirurg.*

## PHYSICAL SOCIETY—LONDON, DECEMBER, 1876.

PROF. G. C. FOSTER, President, in the chair.

## PLANETS BETWEEN MERCURY AND THE SUN.

M. JANSSEN made a brief communication, in French, with reference to a method which he has proposed to the Académie des Sciences for ascertaining whether planets really exist between Mercury and the Sun. After mentioning the importance of photography from an astronomical point of

view, he explained his reasons for hoping that a series of solar photographs, taken regularly at intervals of about two hours, at a number of places on the earth's surface, would enable us to determine this question, which is now agitating the scientific world, since any spots which crossed the sun's disc would be at once registered. As it is necessary that such observations be made at several places, and in several countries, M. Janssen hopes that other countries besides France will ere long arrange to have such a series of observations taken, and he considers that in a few years the circum-solar regions would thus be explored with a certainty which could not possibly be attained by any other method. He exhibited some of the original photographs taken in Japan of the transit of Venus, and explained the advantage of placing a grating in the focus of the camera in order to eliminate distortion.

## GALLIUM.

Mr. Crookes showed the spectrum of a small specimen of chloride of gallium, which he had received from its discoverer, M. Lecocq de Boisbaudran. The discovery of this metal is of peculiar interest, as M. Mendeleeff had previously, from theoretical considerations, asserted it to exist, and had also correctly given some of its chemical and physical properties. The most prominent line in the spectrum was a bright line in the blue, somewhat more refrangible than that of indium.

## FLOW OF ELECTRICITY.

Mr. Lodge briefly described a model which he has designed to illustrate flow of electricity, &c., which is fully explained in a paper in the *Philosophical Magazine* for November, and he showed how similar considerations can be applied in the cases of thermo-electric currents. The model in its simplest form consists of an endless cord passing over four pulleys, and on one side of the square thus formed it passes through a series of buttons held in their positions by rigid rods or elastic strings, according as they represent layers of a conducting or non-conducting substance. When considered in connection with thermo-electricity, the buttons are assumed to oscillate on the cord, and if they move in one direction with greater velocity than in the other, the cord will tend to move in the former direction. Now, at a junction of copper and iron, since the metals have different atomic weights, and their kinetic energies are equal, the velocities must differ on each side of the junction, and an unsymmetrical oscillation of the molecules must ensue, analogous to that assumed by Mr. Stoney to take place in Crookes' radiometer, and the cord, or electric current, will advance when two junctions are at different temperatures. Mr. Lodge showed experimentally that for a given difference of temperature the maximum thermo-electric current is obtained when one of the junctions is at  $280^{\circ}$  C, and beyond this point the amount of deflection decreases. This fact led Sir W. Thomson to discover the convection of heat by electricity; that is, if we have a circuit composed of copper and iron, and one of the junctions be at the above temperature, the current in passing from hot to cold in the iron, or from cold to hot in the copper, absorbs heat. This fact was experimentally illustrated by Mr. Lodge. A strip of tin plate is symmetrically bent, so as to nearly touch the two faces of a thermopile, and is heated at the bend by steam passing through a brass tube on one side (not end) of the thermopile, and kept cold by a current of water on the other side. As the arrangement is symmetrical, no current is found to pass through the thermopile, but when a powerful voltaic current passes through the strip of metal, a distinct deflection of the needle is observed in accordance with the above law.

## MAGNETIC CAPACITY.

By MM. TREVE AND DURASSIER.

LET a horse-shoe magnet, of any length, be covered on one face with a varnish, or, better, a plate of glass. If on the neutral part we place a cylinder of soft iron, we shall see this move towards the poles, which it will reach in a time which is, naturally, a function of the weight of the cylinder, and the coercitive force of the magnet. The magnetic attraction, then, is here exerted not merely in the limited field which has been assigned to it, but over the whole extent of the magnet.

Thus we have a new way of estimating the magnetic force by the mechanical work it does. The product of the weight of the movable body by the space passed through, divided by the time, will be the exact measure of this magnetic force. If we determine this force, *e. g.*, for three large and three small magnets, similar in form and weight, and containing respectively 0.250, 0.500, and 1 per cent. of carbon, we can see how it may perhaps be possible to determine the unit of magnetic force, the "magnetic," and to fix its equivalence in kilogrammetres.

We have made great efforts to determine the magnetic conductivity of steels in relation to their proportion of carbon; but the want of a rigorous mode of estimation of magnetic forces has always stopped us. The phenomenon described will fill the gap, and help us to reach the desired end. We will, however, indicate here the plan we have followed.

If we take *e. g.*, a steel A<sub>1</sub>, with 1 per cent. of carbon, of our first Creusot series, its coercitive force is found approximately  $47^{\circ}$  with the compass. We now enclose it in coils, like an ordinary electro-magnet, giving the coils the proportions of length, section, wire, &c., established by M. du Moncel for obtaining maximum magnetic force; and pass a very strong current. The magnet no longer gives  $47^{\circ}$ , but  $64^{\circ}$ . If 47 and 64 were absolute numbers, we might say that the magnet A<sub>1</sub> has 47 of permanent magnetism, but can take 64 in the temporary state. 64 would represent the magnetic capacity of the magnet with 1 per cent., that is, the maximum of magnetism it can receive. The difference between 64 and 47 would give the magnetic conductivity.

Take now E<sub>1</sub>, the extreme steel of the series, with 0.250 per cent. of carbon. Its coercitive force is 13. If we adapt to it the same coils as to A<sub>1</sub>, since they are identical in form and weight, we get 69 for the magnetic capacity. The difference between 69 and 13 will be the magnetic conductivity of steel with 0.250 per cent. of carbon.

We have operated in the same way with B<sub>1</sub>, C<sub>1</sub>, and D<sub>1</sub>, and have obtained the following table:

	Coercitive force.	Magnetic capacity.
A <sub>1</sub> .....	47	64
B <sub>1</sub> .....	45	66
C <sub>1</sub> .....	42.5	67
D <sub>1</sub> .....	33.5	68
E <sub>1</sub> .....	13	69

The magnetic capacity of a soft piece of iron, the same in form and weight, was 71. These approximate relations show the importance of finding a mode of rigorous measurement of the magnetic force.—*Comptes Rendus.*