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CANADA

MEDICAL JOURNAL.

ORIGINAL COMMUNICATIONS.

Calabar Bean. Substance of Lectures delivered January, 1869, in the University of McGill College. By WILLIAM WRIGHT, M.D., L.R.C.S., ED., Professor Materia Medica.

Calabar bean, which has within a few years back obtained celebrity for its remarkable action as an ophthalmic agent and as a remedy in tetanus, owes its activity to a peculiar alkaloid called *Eseria*, or *Physostigmine.*

Eseria, or physostigmine is contained in the kernel or white interior, and probably is confined merely to the cotyledons.

It was separated in 1863 by Jobst and Hesse. A lengthy description is given of the mode of extracting it, but the chief steps in the process are to make an alcoholic tincture of the beans,—to evaporate this down so as to leave a thick residue,—to digest this remainder in sulphuric ether,—and lastly to drive off the ether from the solution thus got. The substance that remains behind is the alkaloid.

It appears at first as oily drops, but subsequently becomes more consistent. It has not yet been crystallized. It is commonly seen as a brownish yellow mass, having the usual characters of alkaloidal agents. As regards solubility, it dissolves readily in acids, in solution of soda or ammonia, in ether and alcohol, but it is only sparingly soluble in cold water. By contact with acids it is neutralized and salts are formed. These have either a red or blue colour of dark tint. Like the volatalizable alkaloids, when heated with potass, it is more or less dispelled in vapour, which acts on colouring matter in the same way as ammonia.

Its tests are yet to be discovered. From its solution, however, tinct. iodine and sol. iod. potassium throw down a copious orange precipitate, The proportion in which it is present is probably very scant, as twenty-one beans are said to yield only a little alkaloid.

It is so exceedingly powerful that when applied to the eye of a rabbit it rapidly caused marked myosis of the pupil, and when given to animals it has induced effects as dangerous as those of atropia or other agents equally potent.

For therapeutical purposes, it is safer to substitute some of the preparations of the bean.

From the sample before you,—for which I am chiefly indebted to Dr. Fraser, of Dublin, through Dr. F. W. Campbell, and to Dr. Howard,—you may judge of the characters of the bean which contain this active principle. The bean is somewhat like a diminutive kidney in shape, nearly as big again as a common horse-bean. In the dry state it weighs about a drachm, measuring a little more than an inch in length and three-fourths of an inch in breadth. It presents two flat surfaces and two borders, the longer one convex, the other concave. Of these, the convex or placental, as it is called, is the most remarkable. It is indented by a broad groove, which does not run the whole length in one direction, and in the other stops at a slightly raised circle, which is marked by a longitudinal fissure. The edges of the groove are raised, and are paler than the surrounding parts, the bottom usually darker and striped by a pair of parallel lines passing from end to end.

The spermoderm or envelope of the bean varies a little in colour; commonly it is reddish-brown, less often it is cineritious; there are also differences in shade between fresh and dried, young and more mature specimens. The exterior feels rather rough, is hard in texture, not readily sectile, and has a slightly polished aspect, Microscopically, this envelope or integument is resolved into three tunics;—the outer or epidermoid shows rows of columns side by side terminating in clubbed extremities,—the middle, or cellular, formed of piles of starlike cells, becoming more and more condensed as they approach the former,—and the innermost, or dermoid, spread beneath the latter as a basement of dark ligneous membrane.

The kernel is of a cream colour, having an odour compared to that of laburnum seeds, but not having any peculiar taste. It is devoid of bitterness, acrimony, or aromatic flavour. It might be eaten without exciting any suspicion of its toxic power, and if mixed with food would cause no change by which it would be detected. When dry, it is hard, brittle, and easily powdered.

The embryo is of large size, the cotyledons lay close to the inside of the spermoderm, but are separated centrally by a respiratory cell, or space of considerable size, filled with air. It communicates with the outside by a minute chink, which may be shut or not as the sides are closed or opened.

Lastly, the microscope detects a loose areolar texture, with hexagonal loculi, each holding from one to six starch granules of large size.

The average weights of spermoderm and kernel in a single bean are 15 and 35 grains respectively.

Calabar bean readily yields its virtues to rectified spirit, and this is the menstruum chiefly used in making its preparations. In the second edition of the British Pharmacopœia are directions for making an extract, the *Extractum Physostigmatis*. This is the only officinal preparation. It is a strong tincture, reduced by distillation and evaporation to the consistence of thick treacle. One pound of the bean in coarse powder is exhausted by four pints of rectified spirit by digestion, percolation, and expression. The resulting liquid is then thickened. The bean should be steeped for a couple of days with one-fourth of the alcohol, the mixture ought then to be transferred to the percolator, and when the dropping stops, the remaining three-fourths of the spirit is to be gradually put into the percolator. The pulp is to be well squeezed into the filtered liquid. Inspissation is easily effected by a water bath. Here is a sample of some expressly made for me. It has a dark brown colour. The dose is gr. $\frac{1}{16}$ to gr. $\frac{1}{4}$. This extract is preferred to other preparations, because it is the most reliable and the least likely to vary. Next to the active principle, it is the strongest form in which the bean can be given. It may be given as a pill in union with different excipients, as bread crumb, soap, vegetable extracts, or pill masses. It may also be given as a mixture, with water, as the two rubbed up together make a mixture of a white appearance that becomes pink upon exposure to air and light.

There is another extract, sometimes referred to, the *Aqueous*. It is got by evaporating to a proper thickness a strong decoction.

An *acetic* extract may also be procured by using distilled vinegar or dilute acetic acid as the exhauster.

The best preparation after the alcoholic extract is a *tincture*.

Different tinctures are mentioned. Dr. T. R. Fraser's is the most powerful. ℥ ij. of product only are obtained from ℥ i. of kernel. The latter is pulverized minutely, then soaked for two days in half the amount of rectified spirit to be used, next the mixture is put into a percolator, and the other half of the spirit is added when passed; through, if there be not enough tincture to make up the measure to twice the proportion of the kernel used, more spirit is to be added to make up the deficiency that may exist. Every ℥ i. of kernel is acted on by ℥ ij. spirit, or as much as will yield ℥ ii of tincture. Here are several ounces of it which I had made according to Dr. F.'s directions. You notice it has a beautiful, clear, transparent look, of a pale sherry tint. It differs from

other preparations in being made with the decorticated kernel. The others are made with the entire bean, both spermoderm and kernel. It is therefore very active, as the active principle resides chiefly, if not exclusively, in the kernel. An objection to Dr. F.'s formula is that the quantity of menstruum ordered is not enough to exhaust the kernel of its energy. Dose M v.; this is equal to gr. iij. of the kernel. M xv. have been given without inducing extreme effects.

A second tincture distinguished from the former, by being only half the strength, is made from ℥ v of the bean, in fine powder, and Oj of rectified spirit, by maceration for a fortnight.

From the tincture is made the *charta* or paper, intended for ophthalmic purposes. Soft bibulous paper, or very much better, gelatine or cacao butter is dipped in the tincture and then set aside; when needed, a disk about half the size of a finger nail is cut of, and put under the lower eye-lid. The gelatine or cacao butter, as I said, is very much the better substance as it dissolves away in situ. When paper is used it should be removed after ten minutes.

While upon the preparations I may add that the *powder* of the bean has been used in the dose of gr. j—iv. Gr. v. have induced alarming symptoms. Gr. xii are the largest amount, I know of, from which recovery has followed. Prof. Christison on one occasion experimented upon himself with this formidable quantity. The powder is objectionable, for when long kept it is apt to vary in strength from dynamical changes or the attacks of mites; it is also slower in acting from being less quickly absorbed than the extract or tincture.

Suppositories, each containing half a grain of the extract, may be made with oil of Theobroma and white wax. And lastly, an *infusion* has been applied as a parasticide against pediculi.

The plant that furnishes the bean is found in Western Africa, chiefly at a small settlement, Calabar, after which the bean is called. This settlement is on the left shore of the old Calabar river. The plant is a runner or climbing herb of large size, ascending upon the neighbouring trees and bushes; by means of these it often overhangs the river,—and the beans, when ripe, drop down, and floating upon the river, considerable numbers may be gathered from its surface. The plant is also found along the banks of other streams. It thrives best in a swampy soil. It is called *Physostigma Venenosum*, and received its name from Prof. Balfour, of the Edinburgh University. The bark is harmless. The sap from a fresh wound is first astringent and then acrid to the taste. The leaves are eaten by goats without any deleterious effects ensuing. The foliage is profuse and forms rich festoons. The flowers are decandria diadelphia,

of a purple colour, veined with pink markings, and of a butterfly shape. They are most remarkable for a large hood or sac which extends along the upper part of the convexity of the style and covers the stigma. It has been compared to an admiral's hat set in a jaunty manner.

Calabar Bean is of great interest to us as A POISON. It is used as a judicial poison at Calabar in the so-called "trial by ordeal," after which the bean is called ordeal. Other names for it are the Eseré or Chop Nut. This trial is set up to find out if a person accused of a crime be innocent or guilty of the charge. Beans are administered to the accused, if he die the death is thought to serve him right and prove his guilt, but if he vomit and get well he is declared innocent. The mode of proceeding is this: a council of the chiefs, presided over by the "fetish man," is called, the charge heard,—and in self-defence an appeal is made to the bean, each chief then lays one down upon the ground, the accused is told to take up at least two, sometimes a great many more. There and then he is bound to chew and swallow the prescribed amount, and afterwards he is carried to the town hall or Palaver House when a further dose is forced into him in the shape of an emulsion or infusion by way of enema or draught. Trials of this sort are very numerous, upwards of a hundred and twenty persons out of a hundred thousand have been thus sacrificed annually. The only check against still greater frequency is that if the accused escape he turns upon the accuser, who has to take his turn with the chop nut for having been false or to show he was not actuated by spite. The Fetish man has the right to stop the affair at any stage and his prejudices may influence the result, for it is supposed he can tamper with the beans before they are taken so as to deprive them of much of their power. The most improbable causes suffice for an impeachment. When any one gets sick or meets with a misfortune of any kind, it is believed to be due to some enemy of his who has used "witchcraft," or "freemasonry," against him, or cast an evil eye upon him, and whoever is suspected must succumb. One instance, I read, was of a child of about eight years of age. He had been amusing himself and his little companions by indulging in some extravagant gestures. These were taken to mean he was up to "freemasonry," next he was accused of being at the bottom of certain proceedings of a frightfully cannibal description that had lately occurred, he was then supplied with chop nut, and death soon closed the scene.

Sometimes the beans are taken for suicidal purposes or to try one's powers of enduring their effects.

In 1864, about seventy children were poisoned at Liverpool by eating the beans by mistake. A ship had lately arrived from the West

coast of Africa, out of her hold some rubbish was swept, and the children, in searching through it, found what they took to be edible nuts, but which were in reality Calabar beans. The children were mostly under the age of ten. They cracked the beans and ate the kernel, each taking from half a bean to six beans. Only one case, where four beans had been eaten, was fatal.

The *symptoms* of poisoning vary according to the amount taken. When this is excessive, no sensation may be felt for about ten minutes, the victim becomes thirsty, often, extremely so. In a few minutes more, the power of swallowing is lost, mucus escapes from the mouth, next the ability to speak fails. Sensibility and intelligence seem to remain intact. Twitches of a convulsive kind occur in the muscles of various parts but principally of the back. Syncope sets in, complete paralysis of the heart follows, and death ensues in about thirty minutes.

Where death is slower, from the dose being smaller, the chief features are rapidly spreading paralysis of the voluntary muscles. Asphyxia succeeds. In these cases the pupils become contracted, and the pulse may be felt very feeble for some time before it ceases.

These two classes illustrate the two ways in which it is said to kill, by syncope and by asphyxia.

When death is still further retarded, much gastro-intestinal disorder is often noticed towards the latter part of the case, shown in nausea, severe griping and purging. The dejections may have a watery character, or present a dirty white semi-fluid appearance.

Should recovery take place, there is early vomiting, the weakness rapidly passes off, and the only remaining symptom is headache which ceases after a good sleep.

Post Mortem, the evidences are chiefly negative. In the stomach there are no marks of the work of an irritant; the gastro-enteritic mucous surface generally shows no unusual vascularity. The intestines have been found to contain the same whitish substance found in the discharges, passed during life, and derived from the beans that had been eaten. The condition of the heart and other large organs is either that in which they are found in syncope or in asphyxia, according as to whether the death has been rapid or more tardy. Except, then, in the whitish ingesta, and that only when the beans have been taken in substance, there may be nothing to declare the cause of the poisoning, and were these expelled, as they would be by long continued purging during life, no evidence whatever would be left of the cause.

The *tests* for a preparation of Calabar Bean are of two kinds: one to bring out its characteristic actions on the pupils and muscles;

the other to induce certain precipitates or changes of colour. In toxicological investigations, a liquid fit for testing may sometimes be got by exhausting the contents of the stomach by alcohol. Solid substances may be digested at once in the spirit. Liquid substances require to be first concentrated. The pseudo-tincture thus obtained should be percolated, and the filtrate evaporated in the manner of making an extract. If the product contain Calabar Bean, a little of it applied to the eye of a small animal will contract the pupil; and injected under the skin it will produce a flaccid weak state of the limbs. Again, if diffused through water: 1st, ammonia turns the solution first yellow, afterwards (in a few hours) green, and eventually blue. 2nd, persalt of gold, as the terchlorid, throws down a purple precipitate, from which metallic gold may be separated. 3rd, with sulphuric acid and bi-chromate potass, or peroxid manganese, a violet which changes to red,—a deposit falls and leaves a clear, yellow fluid above. This last test is something like the colour tests for strychnia, but the latter is done in a different way and is marked by a greater variety of colours.

The *treatment* of a case of poisoning differs according to the phase it wears. If asphyxia threaten, the mouth and throat should be cleared of mucus that may have accumulated, artificial respiration established by Silvester's method, and mustard applied over the spine. Electricity along the course of the phrenic nerve has been recommended. If the symptoms be less urgent, the stomach is to be emptied by the pump, when a liquid preparation has been used, and by an emetic, as sulph. zinc, when the bean itself has been taken. When allowable, the pump is always preferable if there be much paralysis. Warm diluents should be freely used to dilute and wash out the poison. After this has been thoroughly done, I would advise small doses of tinct. nux vomica, a first dose of m iv. then m j. every fifteen minutes or half hour, till improvement set in, when the frequency of the dose should be carefully diminished. Stimulants, as brandy, will generally be serviceable.

Another point of interest about Calabar Bean is its ACTION UPON THE EYE. If the extract be diluted with glycerin, in the ratio of one to four, and a drop of the compound be applied to the eye by a camel's hair brush, or the paper, before described, be inserted, the following effects occur:

A.—Contraction of the pupil; perhaps so great as to reduce the aperture to a mere speck or a state of occlusion. It begins in about ten minutes, often attains to a maximum in 30 minutes, and lasts about three days, subsiding gradually. It is limited to the eye to which the application is made. The pupil of the other eye is often slightly dilated. No

change is said to ensue from painting a solution over the temple or eyebrow. Contraction occurs in both pupils when the remedy is taken internally, but it is not so marked nor so continued as that from the direct use. Calabar Bean contracts the pupil after it has been dilated by atropia or belladonna. It is such a strong anti-mydriatic that when the pupil is dilated to the full by atropia, a free application has brought it down to the size of a small pin-head. The contraction can be explained by supposing that the radiating fibres of the iris are paralysed, and affording no resistance to the sphincter or round fibres, the latter have it all their own way and contract. The paralysis of the radiating fibres is probably the result of a primary depression transmitted to the naso-ciliary branches of the ophthalmic nerve which has a spinal origin, and supplies these fibres. This transmission may proceed from the ciliary ganglion when the remedy is used locally, or when it is taken internally from the spinal cord. The round fibres are furnished by a cerebral nerve (the short root of the third) but Calabar Bean does not affect them, its action being purely spinal. On the other hand belladonna acts on the cerebral and not on the spinal division of the nervous system. The greater intensity of the local over the general action may be due to more of the influence being carried straight to the ciliary ganglion. As a myosic or contractor of the pupil Calabar Bean moderately used is found very serviceable in restoring the normal size of the pupil after dilitation by atropia when required.

B.—Calabar Bean causes more or less impairment of vision, not so much from the less light admitted through the diminished aperture, as from an action upon the ciliary muscle, by which the acommodating power of the eye is deranged, and the refractive state of the eye becomes increased, in consequence the person, under the influence of the agent, is made short-sighted or myopic. Except that the near point is closer to the eye, vision is good, and clear within the shortened range. This action is posterior to the former, it begins as soon as the pupil contracts; it is shorter in duration, passing off in about six hours; and of the two is the more important. Here again the bean is the antagonist of belladonna; the latter, as you may recollect, also occasions a change of acommodation, but, it is of the reverse kind, *i. e.*, presbyopia. When the eyes are in dissimilar states, as after the topical use of the bean, one myopic the other not, asthenopic symptoms necessarily arise from using them together in binocular vision. As a myopic agent, the use of Calabar Bean may be beneficial in improving sight in cases of presbyopia from natural causes, or to restore it to the normal condition after atropia, or in certain forms of disordered acommodation from affection of the ciliary muscle.

C.—The colour of the iris is occasionally rendered paler than usual.

D.—Slight congestion of the conjunctival vessels may appear,

E.—Twitches of short duration have been noticed in the orbicularis palpebrarum.

F.—Pain or a sense of tension in the supra-orbital region has been complained of.

G.—Its first contact with the eyeball is apt to draw forth a slight flow of tears.

H.—Painted on the outside of the eyelids, a degree of immobility follows. These last effects are commonly very transient.

Other *topical effects* have been noted after the application of Calabar Bean elsewhere than the eye, but they are comparatively of little importance. Placed upon the skin, it induces no irritation, after about half an hour there is some anæsthesia so that the part may be pricked and very little pain be felt. In contact with exposed muscle, during vivisections, the contractility of the fibres is first impaired, and then lost for a time, as shown by irritating them either directly or through the nerves they receive. Introduced within certain tissues, as the serous and cellular, it excites congestion, but more from being a foreign body than from any specific property.

Let us now consider the *internal actions* of Calabar Bean. If a *small* dose be swallowed, in about five minutes afterwards a peculiar feeling is felt at the pit of the stomach like that caused by bolting a piece of solid food of too large size. Though slight at first, the sensation gradually increases till it grows painful. Next a feeling of dyspnœa supervenes, dizziness follows, and in a short time more or less loss of muscular strength in the extremities. When *larger* doses are taken, these symptoms are intensified, and there are added to them twitchings of the fibres of the pectoral muscles, dimness of vision, flow of fluid in the mouth, and perspiration. Of the *after effects* dizziness is the most prominent; it passes off after a night's sleep. The heart's action has been found to be tumultuous and irregular.

Besides these symptoms, medicinal doses of Calabar Bean induce the pupils to contract, lessen the force of the circulation by weakening the heart's force, and, if often repeated, they stimulate the intestinal glands and prove aperient.

In morbid states they are decidedly anodyne and calmative, and as such are effective in allaying nervous irritation. Intelligence is not affected.

Of the symptoms so far mentioned, several may be referred to *increase of secretion*, particularly of the perspiratory, salivary, and intestinal

glands; the discharges that follow are occasionally very free, producing profuse sweating, insalivation, and catharsis. A copious flow of tears has likewise been seen. These hypersecretions are due to a common mechanism, and appear to arise from, 1. congestion due to gradual slackening of the pulmonary circulation, producing a temporary increase of the functions of the organs from which they proceed, and 2, relaxation of the walls of the capillaries, part of a general muscular relaxation, whereby they are more fully filled with slowly moving blood.

This leads me to speak of another point of special interest about Calabar Bean, viz: its power to induce MUSCULAR PARALYSIS.

The part where Calabar Bean exerts its distinctive or primary influence is the spinal cord,—as we have before seen, its action on the eye tells this, showing that its operation is spinal not cerebral. It acts upon the anterior or motor column so as to suspend or deaden its energy, or reduce the activity of its function. As a result of this, the power of the part to convey impressions to the motor nerves is impaired or lost, and the muscles they supply are not furnished with the stimulus necessary to excite or accomplish strong or normal movements. This being the case, paralysis of motion occurs. No other explanation will account for the fact, as we shall understand by reflecting upon the peculiarities that characterize the Paralysis.

1. The powerless parts are those that receive their nervous supply from the spinal cord and its nerves;—the muscles of the extremities and of respiration are most enfeebled;—and the paralysis is primarily and always seated in the striped muscles.

2. The cause is not cerebral, for the paralysis is not unilateral, as in hemiplegia where there is a cerebral cause, but both sides of the body are involved as in spinal palsy. Again there is no failure of volition; the will is strong, but a difficulty lies in the way of carrying out its purposes: a person under Calabar Bean may have strong desires to move, but there is a want that prevents him from being able to do so; he may make the attempt, fail of his object, try again and fail again,—and perhaps after several failures at length succeed. Once more, the mind exhibits no defect, it is clear and active in all its manifestations.

3. The mechanism of the paralysis may be easily conceived by assuming that the difficulty or want, just referred to, removes the voluntary muscles from the influence of the will, and that the difficulty or want consists in a suspension of the function of the motor tract, by which it does not conduct the impulses of the will through the cord to the muscles, so that the mind may strike the corpus striatum (the cerebral centre of the voluntary nerves), but this striking is either not felt or not

sent further on. The motile function is inactive, polarity narcotized, and diastaltic movements can necessarily be but very feebly excited.

4. The paralysis cannot be exclusively owing to poisoned blood, as some might think, because the muscles implicated are affected in an order the reverse of that which would be the case if it had such an origin. Were it of blood origin, those muscles would be affected first, and mostly, which were first irrigated with the poisoned fluid, as it was brought to them in the course of circulation. It is, however, found that this is not so. The lower limbs are first paralysed, then the upper, then the trunk, then the neck. In short, the paralysis creeps up from below.

5. There is no fault in the muscles. They retain their normal contractility unimpaired, and still respond to direct irritation when artificial stimuli are applied. The paralysis is commonly preceeded by twitchings or tremblings of the muscles generally, in the lower animals these are often convulsive.

6. The paralysis is like that of Conia in many features, except in the absence of the twitchings in the latter; and Conia is admitted to act upon the motor tract of the cord. A resemblance is also said to exist to the effects of Woorara.

There are still a few more particulars concerning paralysis from Calabar Bean, which I have kept back till now, as, at first they seem not to fall in with the explanation given. When movements occur, they have sometimes been un-coordinated; again, the palsy has been found to include the unstriped muscles; and, furthermore, the functions of the brain may be disturbed. None of these, however, really constitute objections to the explanation;—for, the first is only met with after entire loss of exercising the will; the second is, perhaps, due to extension of the poisonous influence to the sympathetic system; and, the third is only a secondary phenomenon observed towards the end;—while all are of rare occurrence and in no way essential.

Exacerbations and remissions, or periods of increase and decline in the degree of the paralysis, have been seen, chiefly in experiments on animals, but alternations such as these, you know, are observed after many other toxics.

The next chief point of interest about Calabar Bean is its merit as A REMEDY IN TETANUS. It was first proposed for this object, suggested no doubt by its power of controlling muscular action, by Dr. T. R. Fraser, who in the year 1863, when he graduated at Edinburgh, received the gold medal for his inaugural dissertation on Calabar Bean. As a remedy in this disorder, it was first used by M. Lemain, in 1864; Mr. H. Coote, also, used it in the same year. Up to January, 1869, so far as I

can gather, there are thirteen cases upon record in which it was administered, and judging from the results, as stated, it is entitled to pre-eminence over all other substances that have yet been prescribed in Tetanus. Of these cases, nine recovered, four died. Of these last, (the death cases) one patient was in articulo mortis when treatment was commenced, and only one dose of Calabar Bean was given; in another, Tetanus had existed eight days before the remedy was had recourse to, and the person lived three days afterwards; in the third, the disease followed a severe injury of the knee, amputation was performed, and the person died four days subsequently, during which time the Bean was exhibited; and in the fourth, (Reported in *Lancet*, October 31st, 1868) Tetanus came on after dislocation of the finger and other injuries, six days after its commencement the remedy was begun, the patient lived thirteen days longer,—the remedy appears to have been given freely, as well as fully, and, it is said to have alleviated the severity of the paroxysms. Except this last, the remedy was probably not given in any of these cases effectively, so as to develop its physiological action. Let us now turn to the nine successful cases: Tetanus was due in the 1st to severe exertion; in the 2nd not stated; in the 3rd to slight injury of great toe; in the 4th to injury of the forefinger; in the 5th to wound of the left thumb; in the 6th to contused wound of the sole of the foot; in the 7th to wound of the scalp; in the 8th and 9th not stated. I am particular about these facts, as it is only by knowing the kind of Tetanus, whether traumatic or not, we can judge of the real value of the remedy. There are some forms of Tetanus where there can be no hope of benefit from Calabar Bean, as where either serious nerve lesions are the cause, or some irritation of peripheral sensory nerves constitutes a larger share than ordinary of the affection. In these it is likely enough to fail, because it does not control the afferent or sensory nerves, nor suspend their conductivity, as it does that of the motor nerves. As we have seen, it operates upon the centre and not upon the surface of the reflex nervous arc. Could it do this last, also, as well as the first, it would be a universal remedy in Tetanus, a cure for all cases. The fairest cases for its employment are those where, either, there is undue exaltation of the reflex activity of the spinal cord, or where there is the same condition of abnormal excitability in the motor nerves. There is no remedy in common use equal to Calabar Bean for subduing these morbid states; and in cases where it fortunately happens, the cause of the Tetanus has been spent in inducing them, or does not continue in further play after their establishment, the remedy, if given, is most favorably adapted for being entirely successful. To obtain its full benefits, it should be administered as early as possible,—a little at the onset may accomplish what much, after

a delay, may be unable to do? We have seen, where it was unsuccessful, it was not had recourse to until late, too late. It should be ordered so as to produce a decided impression, so as to bring the system under its paralysing action, and its operation must be maintained by cautious renewal. Of course, care must be had not to overdo the dosing, and not to substitute poisoning for Tetanus. The *juste milieu* is to give it so that its influence will never be entirely withdrawn, and yet never grow unnecessarily powerful. Do not repeat the doses too rapidly, else the strength of one will be added to that of the former; the effects of one should be declining before the next is administerd. Slight nausea, strength of pulse slightly contracted pupil, and decrease of rigidity indicate the safe action of the remedy. On the other hand, extreme nausea or vomiting, feebleness of pulse, excessively contracted pupil, and inability to move denote that it has been pushed too far. Each dose requires about twenty minutes before its effect is perceived; once this is begun, it continues for about half an hour, after which it subsides, and disappears rather quickly. In some cases, every two hours may be often enough to repeat the medicine; —but, in the most severe, not more than an hour should be let elapse between the doses, till improvement ensue. Directions about the subsequent doses are to be regulated by the impression made. Small quantities may be preferred, because they can be renewed more frequently. The doses of Calabar Bean in Tetanus are larger than in other disorders, just as larger doses of other active substances are tolerated in it than in them. An admirable plan of giving the remedy in Tetanus is the hypodermic, owing to the difficulty of opening the mouth and of swallowing. One third of a grain of the extract or Mvi of Fraser's Tincture may be injected at the commencement of the treatment. If gastric administration be preferred, one third more of either preparation may be used at first. Once an impression is induced, a less dose may suffice to maintain it. The extract, or tincture if selected, to be injected, ought to be diluted with 10 or 15 minims of water. Occasionally, irritation of the cellular tissue has been found to follow,—it is said to be prevented by combining a small quantity of Bicarb Soda. As soon as the relaxation induced renders swallowing easier, the remedy may be continued by mouth instead of hypodermic administration. If you use the remedy, use it fairly or not at all. To give the smallest wee dose three times a day in a formidable case of Tetanus, and call this treating Tetanus by Calabar Bean is a sham; and is as great an absurdity, as to shake the head despondingly should the patient die and then mutter "Ah! another death after Calabar bean," leaving one to infer that the *post hoc* is a *propter hoc.* The just conclusion warranted, I think, by the present state of our knowledge

of the treatment of traumatic tetanus is this: *the* PROBABILITY *is without Calabar Bean the patient will die, and with it he will live.*

The last point of interest about Calabar Bean, upon which I shall dwell at any length, is its ANTAGONISM TO STRYCHNIA. From the correspondence between tetanus from strychnia and tetanus from other causes, the utility of the remedy in the one naturally leads us to expect it would be serviceable in the other. The actions of the two agents on the same parts or functions are diametrically opposite. Strychnia causes undue excitation of the motor column of the spinal cord, or augments the polarity, as the fact has been differently expressed; Calabar Bean represses this excitation, reduces this polarity. Strychnia induces a tetanic state of the muscles; Calabar Bean a paralytic. Strychnia produces inordinate irritability of the sensory surfaces: Calabar Bean does not. It is, therefore, to be expected one could counteract the other. Dr. Fraser of Edinburgh and Dr. Watson of Glasgow have performed a large number of experiments to show they really do so. In rabbits, cats, dogs and frogs, where tetanus had first been developed by strychnia, the subsequent use of the bean prevented the recurrence of the rigid spasms, and, in their lieu, left the opposite state of relaxation; so that there is no doubt whatever it will, in sufficient quantity, control the tetanic action of strychnia. This it accomplishes, not as a chemical antidote, but, by its power to establish a vital change in the state of innervation. You may now, perhaps, be surprised to hear, that although it can achieve so much, yet still many of the animals, experimented upon, died. But the reason is sufficiently obvious: one poison followed another,—two poisons were at work in the system, so that if one failed to kill, the other might be fatal, since after annulling the action of the other, a surplus quantity large enough to destroy might be left; or even where there was no surplus, after the first had been nullified, the shock already communicated might be too exhaustive to allow of recovery. Again, from the duration of the capability of strychnia to act as a poison, being longer than the duration of Calabar Bean to subdue its effects, it has happened that after the latter agent has quelled the operation of the former for a time, and the animal seemed likely to recover, a return of the toxic symptoms of strychnia took place. I would like you to give these considerations their proper due, from their bearing upon the subject of the treatment of tetanus, as this will keep you from falling into the false idea that as are the results of Calabar Bean in strychnia tetanus, so will they be in traumatic tetanus. Of the two cases, most advantages are upon the side of the latter; the remedy is safer, there is not the need of such a large quantity, instead of being administered at one time it is

divided into occasional doses, and more time exists in which it can be tried from the longer duration of the case. In order to obtain a cure from the bean in poisoning by strychnia, not only should the dose of the latter be comparatively small, but, as in tetanus from injury, the remedy must be employed early, else the destructive influence upon innervation or nervous structure may be too far gone to overtake.

Calabar Bean has been used at Prague in poisoning by belladonna, and it is affirmed with benefit. Vomiting was induced, or promoted if present, and then the bean administered. I suppose the contrary action of the two agents upon the iris prompted this use. There are, however, no real antagonisms between them upon the same part of the nervous system, as between strychnia and Calabar Bean. Each affects a different organ, belladonna is a cerebrant and the bean a spinant. Little hope, therefore, can be entertained of any such benefit being had from Calabar Bean in poisoning by belladonna as in poisoning by strychnia.

I may mention that the bean was used in 1863, for the first time, by Dr. Harley in Chorea, and successfully. In this affection a moderate dose three times a day is sufficient, and there is no need of producing the physiological action of the drug as in the treatment of tetanus.

I may also mention, in conclusion, that Calabar Bean has been prescribed in epilepsy, and as a vascular or cardiac sedative in erysipelas, acute bronchitis, rheumatic fever and other disorders, in none of which, in my opinion, it has any superiority over the remedies usually exhibited, and is not even their equal.

And lastly, Calabar Bean might be found advantageous in some cases of acute myelitis, cerebro-spinal meningitis, spinal irritation, and hypercinetic states of the spinal cord, which suggest themselves to me as a more likely group for its good service than the last mentioned.*

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* I would refer those who wish to read more about this interesting agent to the communications of Dr. T. R. Fraser, *Edinburgh Medical Journal*, 1863; *Idem*, December, 1867; *Practitioner*, August, 1868; Dr. Harley and others, *Edinburgh Medical Journal*, 1863; Dr. E. Watson, *Idem*, May, 1867; Dr. J. B. Edwards and other, *Pharmaceutical Journal*, 1864-65; to whom I am much indebted for information afforded.—W. W.

Messrs. K. Campbell & Co., Medical Hall, have a stock of the beans, and will supply preparations that may be ordered.

Excessive use of Morphia, A DRAHM *of the Sulphate taken at one Dose with impunity.*—By D. McGILLIVRAY, M.D., Physician to the Ottawa Protestant Hospital.

In the month of June 1867. I was called to visit Mr.——M.D.B., staying at one of the hotels in this city, where he was confined to his room having symptoms of delirium tremens. He was thirty-seven years of age, stout, muscular and plethoric and of intemperate habits, had resided in New York city for the last six years where he practiced his profession as barrister at law. About the commencement of January 1865, he had an abscess in the thigh from which he suffered severe and continuous pain, and in order to allay his agonies and induce sleep he was, ordered by his physician to take a drahm of laudanum each night and a similar quantity during the day. He continued by that prescription for a period of three months until every symptom of his complaint had entirely disappeared; he then discontinued it but much to his discomfort becoming nervous, irritable and wakeful and subject occasionally to intolerable tremors. He was forced to resume his habit. He made repeated efforts to master his desires and stop the use of opium in any form, but without avail and finding it impossible to do without it, he was obliged to resume his accustomed draughts, gradually increasing the dose from time to time as nature seemed to suggest and require it, until he had fostered himself into the daily habit of taking astonishingly enormous quantities. In order to satiate and appease his abnormal appetite he found it necessary take half a drahm of sulphate of morphia daily, some days more and some days less.

He took as much as a drahm and a half in thirty hours and found no alarming effects to follow, he frequently took three ounces of laudanum at one gulp and repeated the same dose within twenty-four hours, with the only effect of causing snatches of sleep lasting from one to four hours. He had always had a good appetite for food and enjoyed comparatively good health. Abstainance from opiates was latterly followed by by troublesome diarrhœa associated with the other symptoms already named, when sleep occurred it was disturbed by frightful dreams. He was an inveterate smoker and a hard drinker almost incessantly revelling in debauchery and profligacy, the more whisky he drank the more morphia he required to take. Until about a year ago he used laudanum almost exclusively, but to avoid the inconvenience arising from carrying about him such large quantities as he required to use, he betook himself to the use of morphia of which he kept abundance on hand but he took laudanum occasionally.

One evening after he had recovered from his illness at about 7 o'clock, while I was present with him in his room in order to assure me of the capability of his system resisting the effects of opium, an experiment I was very reluctant to witness, he opened a parcel containing twelve small bottles each of which contained a drahm of sulphate of morphia, he took up one of these bottles and emptied its whole contents into a tumbler which he had half filled with whiskey, stirred the mixture well and swallowed the terrible dose at one gulp, (a quantity sufficient to destroy twenty or more lives,) and in the course of fifteen or twenty minutes after drank down at one draught four ounces of laudanum which he had procured in a drug store close by.

An hour after performing the dangerous experiment he went to spend the evening in the theatre where he enjoyed the drama with all due complacency. I visited him at his rooms in the hotel at eleven o'clock the same evening and saw him take nearly a fourth of a drahm of morphia in a glass of whiskey before retiring. Fearing that the experiment might have proved too much for him during the night I called to see him at an early hour the following morning and to my utter astonishment found him wide awake after having passed a quiet night and apparently suffering from no ill effects of the poison. He asked for more whiskey and morphia, I strongly remonstrated and cautioned him against the results sooner or later to follow such enormous doses of poison and such flagrant abuse of his constitution—his only reply was, "I am used to it and there is no danger." Satisfied and easy in his own mind that there was no danger and that the seeming impunity he enjoyed in the past he would still enjoy in the future, he was willing and determined to pursue his dangerous habits. Two days after he went home to his family in New York, and was gone nearly four months at the end of that time he returned to this city with the intention of taking up his residence here with a view to practice his profession, when he arrived here he consulted me for urethral stricture which caused him intense pain and to allay it he was obliged to use opiates in larger quantities.

He was now feeble and exhausted, worn and emaciated, apparently fast sinking a victim to his evil habits of the dangers attending which he was now fully convinced. He had been addicted to this destructive vice of opium eating for nearly three years and it had gone on increasing from day to day until it had acquired its alarming and incredible magnitude. With the perfect consciousness at last that he was destroying himself and with every desire to struggle against the insatiable cravings of his diseased appetite he found it utterly impossible to offer the slightest opposition to them. In vain did he try to resist the baneful temptation.

His love for ardent spirits was so strong, his appetite for opium so uncontrollable that he must still indulge in the use of these insidious poisons which he knew were undermining his system slowly but surely, and as an inevitable consequence nature yielded to their pernicious influence; an attack of delirium tremens supervened and death closed his sad career.

Wellington Street, Ottawa, Dec. 1868.

REVIEWS AND NOTICES OF BOOKS.

A Hand-Book of Vaccination. By EDWARD C. SEATON, M.D., Medical Inspector to the Privy Council. Philadelphia; J. B. Lippincott & Co., 1868. Montreal; Dawson, Brothers.

The subject of vaccination is one which certainly should be full of interest to every practitioner, yet it seems to us that, compared with its very great importance, it receives but comparatively little attention. We are frequently asked by the public how it is, that in spite of the apparent vaccination of the majority of people, small-pox continues its ravages, every now and again striking terror into a community, by suddenly carrying off its victims from among the wealthy and the well-to-do. Were we to answer this question honestly according to our convictions, we would be forced to state that much of the vaccination is spurious, and therefore does not give that protection which is rightly supposed to belong to a thoroughly genuine and characteristic vesicle. At the present moment it is not our intention to enter into a discussion of this question; this we may do at an early date, but as the subject is one which is creating considerable excitement at the present moment in the city of Montreal, we could not avoid expressing briefly our opinion as introductory to a notice of the volume, the name of which heads this article. Although much progress has been made in investigating this subject within the last twenty-five years, no complete work has, till now, appeared since very early in the present century. The recent introduction of compulsory vaccination laws in the United Kingdom has been the means of concentrating upon this subject a good deal of attention from men well calculated to investigate, and Dr. Seaton's position as Medical Inspector of the Privy Council has enabled him to bring together in a handsome little volume of almost four hundred pages, the very latest information. At the very outset of the volume he starts with a truism which we can honestly endorse:

He says, "the operation of vaccination was not, it appeared to me, regarded in its real value. Seemingly so simple in itself, many of the niceties and cautions which so influence success, and the value of which is so well known to the practical vaccinator, have been unheard in general practice, and I deem it of great importance that attention should be called to them." The above lines deserve the most careful consideration. Carelessness in performing vaccination is often the cause of want of success. It is, we are aware, a common belief, especially among those who have imbibed the idea that the vaccine lymph of the present day is loosing its protective power, that by passing humanised lymph through the cow it would regain its original intensity of action. Dr. Seaton says :—

"When active lymph, such as passes from arm to arm with the greatest facility, is passed through the cow, and at once vaccinated back, it yet *retains* so much of its humanization that it is not apt to fail like primary cow-lymph, but will be found also to have *lost* so much of its humanization that on its return to the human subject it takes effect less kindly: papulation is usually retarded, and though the vaccination may attain maturity at the ordinary average period, the completion of the maturation is often postponed. The vesicles are often smaller and the disease not really so well developed as by the stock from which the lymph was derived. Two, three, four, or several removes are necessary to give it the same activity as it had before it was transferred.

Considerable stress is laid upon the selection of lymph to be used in vaccinating. He says:—

"This is a matter of the utmost consequence. The lymph must be taken only from perfectly healthy subjects, and from thoroughly characteristic vesicles. No second-rate vesicles should ever be used to take lymph from. Babies are in general much better lymph-givers than elder children or adults. Children of dark complexion, not too florid, with a thick, smooth, clear skin, are those which yield the finest and most effective lymph. Prime lymph is always perfectly limpid, and has besides (and no less essentially) a certain degree of *viscidity*. A thin serous lymph is always to be avoided. With regard to the period of the vesicle's course at which the lymph should be taken from it, this *may* be done, and with perfect propriety, as soon as ever the vesicle will yield any; such lymph, though it can only be got in small quantity, is very effective. Usually, however, lymph is not taken, nor for the purposes of good vaccination is there any necessity whatever that it should be taken, until the vesicle is fully formed, which, in regular cases, is the day week from the vaccination. The vesicle then yields lymph of the best quality, and in sufficient abundance. It must be taken, however, according to Jenner's 'golden rule,' before

the appearance of the areola, or at all events within a very few hours o its commencement. No greater mistake can be made than that of taking it later, and when the areola is fully complete. The protest which Jenner felt it necessary to make against this practice in the earlier days of vaccination has been repeated by every vaccinator of authority since his time. No doubt the lymph flows more freely at this late period, and may be got in greater abundance, and no doubt also (as is alleged by those who defend this practice) such lymph very often takes; but, in the first place, it does not take *with anything like the same certainty* as earlier and more active lymph, and in the second place, it is more apt to be followed by erysipelatous and spurious results. I repeat, that judicious *choice* of lymph—the taking it only from suitable subjects, from the primest vesicles, at the proper time—is a cardinal point in good vaccination. And I will venture to say that just in proportion as the rules here laid down—rules sanctioned by all the best authorities—are adhered to, so will success be attained, and irregularities in the course of the vaccinations performed be avoided.

Collection of the Lymph.—A child and a vesicle fit for the purpose having been selected, the vaccinator, in order to collect the lymph, proceeds to open the vesicle by a number of minute punctures, which must be made on its surface, and not round the base. The object of many punctures is to open the various cells of the vesicle in which the lymph is contained, and the reason for making these on the surface and not round the base is to obtain the lymph free from any admixture of blood. If by accident any blood be drawn, this must be allowed to coagulate, and then be carefully removed before taking the lymph; for it is a rule never to be deviated from, that the vaccination must be with vaccine lymph, *and with lymph only.* When the cells of the vesicle are freely opened, the lymph soon exudes and lies on the surface; and thus lying, it may be taken on the point of a lancet, or in any other way that is desired, for use. On no account must there be any pressure or squeezing of the vesicle with the lancet, or otherwise, to make the lymph exude; and when lymph ceases to stand spontaneously on the surface of a vesicle, that vesicle must be considered no longer useable for lymph supply. Very generally, however, when the lymph which has first exuded has been taken, and the surface of the vesicle left apparently dry, if the operator wait a minute or two he will find there has been a fresh exudation of good usable lymph; and when he does not find, he may often induce this in a way quite unobjectionable by wiping very gently the surface of the vesicle with a soft wet linen cloth, thereby removing or dissolving the inspissated lymph which clogs the punctures."

Our author strongly recommends arm to arm vaccination as being the most successful. Investigation proves that when this is carefully done there is only about one failure in one hundred and fifty cases, while in the next best method, namely, vaccinating from liquid lymph, preserved in capillary tubes, the failures often amount to as many as one in ten. Five punctures are to be made, each about half an inch apart, and it is quite immaterial whether they are made by scarrification, tatooing, or puncture. The somewhat common belief that when a considerable quantity of blood oozes from the scarification it will destroy the infecting power of the lymph, is, Dr. Seaton says, only chimerical. As, in Canada, few practitioners employ anything but the scab in vaccination it may be useful to note that he strongly insists upon the absolute necessity for the utmost care being taken in the selection of scabs, none being used except what he terms the dark dense mahogany scab, and equally great care must be taken to preserve it. One that has been kept longer than eight months should never, upon any account, be employed, as it never yields a true Jennerian pustule, although it may give rise to an amount of inflammation well calculated to deceive. In dissolving the scab to make a ropy mucus he recommends the employment of cold water, and only a drop of it. His reason for so doing he does not mention, although from the fact of the word cold being in italics we fancy he lays considerable stress upon it. We have, when using the scab, although of late we have almost entirely used liquid lymph collected in tubes, always used warm water to dissolve the matter. Since reading Dr. Seaton's work we have used, as he recommends, cold water, and fancy that we have obtained rather more success.

"The *perfect* scab—the mahogany-colored semi-transparent scab of a vesicle which has not been damaged, either for taking lymph or in any other way—should alone be employed. It is used by moistening it with water on the back of a plate, and then working it up with a little water by means of a clean knife, so as to get a ropy solution, abundance of which should be inserted. It seems at first sight strange that this mode should succeed, when we know that the lymph taken at a late period from a vesicle is of very little value. Jenner illustrates and explains the difference thus: 'Several punctures were made in the arms of a healthy child with vaccine matter taken from the edges of a vesicle when three-quarters of the centre were incrusted. Not one of them took effect. Some weeks afterward, with a solution of the same scab, I vaccinated effectually. This, I think, may be accounted for—the scab is made up of the *early* as well as the late-formed matter.' Still, vaccination from the scab is a very uncertain mode of proceeding, and no one would think of employing it now in this country, where so much better means are at hand."

Our author insists upon the practitioner *seeing* the child a week from the performance of the vaccination, and not trusting to being *told* by the mother that it has taken well. Care must be taken to see that the pustule is specific—*this alone can make the child safe.* Care must be taken not to allow the clothing to rub over the pustule, thus breaking it and allowing a large quantity of lymyh to escape.

Dr. Seaton writes strongly upon the absolute necessity for special instruction in vaccination, which Jenner always insisted upon. It is a strange anamoly that examining bodies in this country (we believe the College of Surgeons of England now insist upon a certificate of special instruction in vaccination) do not insist upon some test as to the knowledge of the candidate upon the subject of vaccination. We fear it would puzzle not a few of them to describe the characteristics of a genuine vaccine vesicle. With such a state of things is it to be wondered that small-pox still continues its ravages?

With regard to the deterioration of lymph Dr. Seaton says:—

"It has been held by many that vaccine lymph degenerates, deteriorates, or loses something of its active power, merely by passing through a succession of human bodies. This hypothesis dates from a very early period of the history of vaccination, and applications for lymph 'as recent from the cow as possible' were made to Jenner within two or three years from the promulgation of his discovery. He thought it of no importance whatever to comply with the exact terms of such requests, for he was well satisfied from his experience at that time that no such deterioration had then taken place. Nor did he think it likely that with proper care it would occur at all; though this, he said, was a point which 'time alone can determine.' Further experience—a careful watching of vaccination for upwards of twenty years more, during which lymph, successively transferred from subject to subject, had undergone no change whatever in its qualities—fully satisfied him that the hypothesis was groundless.

But, in so deciding, he was most careful to draw the essential distinction between deterioration of lymph by mere successive transmissions (the subjects for transferring it having been proper ones), by mere lapse of time since it was taken from the cow, on the one hand, and deterioration by transmission through unselected subjects, through subjects not fit for transferring it, on the other. And while he regarded the former as an utterly erroneous notion, a conjecture which, as he said, 'he could destroy by facts,' he did not fail to point out the danger of deterioration from want of proper care in the choice of subjects. 'The matter,' said he, writing in 1816, 'may undergo a change that may render it unfit for further use by passing even from one individual to another, and this was

as likely to happen in the first year of vaccination as in the twentieth;' but that, with proper care and attention, lymph underwent no change, was proved, he held, by the fact that the vesicles he was then producing were 'in every respect as perfect and correct in size, shape, color, state of the lymph, the period of the appearance and disappearance of the areola, its tint, and finally the compact texture of the scab, as they were in the first year of vaccination; and to the best of my knowledge, the matter from which they are derived was that taken from a cow about sixteen years ago.

Now, if lymph could thus undergo from eight to nine hundred transmissions without giving any evidence of change, it seems difficult to understand why, in equally careful hands, and with similar opportunities of choice, it should not remain equally unchanged after an indefinite number of transmissions. Accordingly, numerous trustworthy observers, who had watched the vaccine disease at the introduction of vaccination, on comparing what they had seen with the effects produced by lymph of the earliest stocks after a lapse of thirty or forty years, were unable to detect the slightest difference either in the course or character of the vesicles. Exactly the same is the case if we compare Jenner's description of the course of the vesicle with that induced at the present day with lymph of Jenner's stock. Marson says he has frequently produced lately, with lymph brought into use by Jenner more than fifty years since, vaccine vesicles, which, on comparison, exactly correspond with the vesicles sketched in Jenner's original work. Mr. Steele, the able and experienced teacher of vaccination at Liverpool, states that the lymph he is now using was supplied by Jenner himself, and is producing still precisely the results it developed at first. After it had been more than fifty years in use there, it was compared, side by side, with lymph which Ceely had taken from a cow six years before, and which he guaranteed to have lost none of its activity; but no difference between the effects of the two lymphs was detectable. The lymph now in use throughout the stations of the National Vaccine Establishment is, if not exclusively, nearly all of Jenner's original stock, and, from daily opportunities of observation, I can affirm that it has not lost anything of its infective power, and that the vesicles produced by it correspond accurately in their character and course with Jenner's description.

I concur entirely, from personal observation, with the statement which the National Vaccine Board made in 1854, 'that the vaccine lymph does not lose any of its prophylatic power by a continued transit through successive subjects, and that it is a fallacy to predicate the necessity of resorting to the original source of the cow for a renewal supply."

Upon the very important subject of Re-vaccination we copy the following:—

"Many of the cases of post-vaccinal small-pox which are met with in practice are in persons whose vaccination has been irregular or imperfect. When, also, after a lapse of years, it became evident that some individuals, whose vaccination had been normal in its course, might yet afterward be susceptible of small-pox infection, and that these cases occurred chiefly to persons who were grown up, the idea of renewing the vaccine process, once or oftener, in the life-time of each individual, naturally suggested itself. When, further, the necessity of a certain *amount* of local infection in vaccinating was recognized, re-vaccination was looked to for supplying this amount in cases in which, in the original vaccination, it had been deficient. Hence the present practice of re-vaccination aims at much more than Jenner thought of: it aims not only (1) at repairing whatever was irregular in the course of a primary vaccination, but also (2) at supplying what was imperfect in the *amount* of infection in cases in which the *course* of the disease was regular, and further (3) at extinguishing the susceptibility to small-pox which may remain, or may rearise, in an indeterminate number of persons whose primary vaccination may have been complete as well as regular."

It is a belief generally gaining ground among the vulgar that every seven years the body undergoes a kind of metamorphosis, and that regularly every seven years re-vaccination should be performed. Experience, however does not so teach us, and while we are open to all reasonable suggestions, come from where it may, we must not allow ourselves to outrun our discretion. Dr. Seaton says:

"Revaccination about or after puberty is of extreme importance; it seems also certain that a revaccination at or after this period of life may give additional security * * * After successful revaccination, small-pox, even of the most slight or modified kind, is rarely met with. Thus Heim found that in five years there occurred among 14,384 revaccinated soldiers in Wirtemberg, only one instance of varioloid, and among 30,000 revaccinated persons in civil practice, only two cases of varioloid. * *

Every person should take care to be revaccinated about or soon after puberty. Under ordinary circumstances, about fifteen years of age is the best time for it to be done; and it should not be left much beyond this, for the age of most danger from post-vaccinal small-pox is from fifteen to twenty-five. On the other hand, where there is any unusual risk of small-pox, as in localities in which the disease is prevailing, it would be imprudent to wait so long, and the revaccination may be done at any period after twelve years of age, or, in individual cases, even earlier than this. In girls, especially, in whom the changes connected with puberty manifest themselves early, revaccination may be performed cor-

respondingly early. The degree, however, in which vaccinated persons, when they are grown up, stand in need of revaccination, is, I repeat, very different. Those who have imperfect marks need it much more than those whose marks are characteristic; those who have but one or two good marks much more than those with three or four. Small, indeed, as the risk of contracting the variolous infection in any form is to those who have been thoroughly vaccinated, who have four good marks of their vaccination, and infinitely small as is to them the risk of having it severely, it is a risk not worth the running, and as no individual can tell whether he is one of the wholly protected majority, or one of the but partially protected minority, it is the part of wisdom, even for the best vaccinated to seek the additional security of a revaccination."

Dr. Seaton strongly recommends a systematic revaccination, and not waiting till an epidemic warns of the danger. In other words revaccination should be as systematically performed at the age of puberty as is primary vaccination within a few months of a child's birth.

We have thus given our readers, we believe, a fair insight into this valuable little book of Dr. Seaton's, and it will not be our fault if every subscriber to this Journal does not obtain a copy. We strongly advise them to do so, for, after its careful perusal, we feel convinced they will get up thoroughly convinced that heretofore, at all events in Canada, the profession have *not* paid that attention to vaccination which it deserves, and that much of the prevalence of small-pox has been due to the large amount of spurious vaccination which we cannot help again reiterating is constantly taking place.

PERISCOPIC DEPARTMENT.

Surgery.

A NEW METHOD OF ARRESTING HÆMORRHAGE.

On the 21st of November, 1868, Dr. Frank H. Hamilton removed a schirrous breast when he adopted the following method for controlling hæmorrhage during the operation. We copy from a report of the case in the *New York Medical Gazette* of the 5th of December, 1868.

Dr. Hamilton says, in order to restrain the bleeding until the vessels could be secured by ligatures, I adopted the following procedure which I have never used before nor seen suggested by others: After the patient was fully under the influence of ether, I encircled the chest with two long strips of adhesive plaster, each of which was about two

inches in width and long enough to surround the chest completely and allow the ends to overlap each other. They were drawn tight, but not so tight as to interfere with respiration. One of them passed under the breast at a point about one inch from the line I had indicated to myself as the probable line of incision; the other passed above the breast, between it and the axilla, at about the same distance from the projected upper line of incision; the two strips of plaster forming an ellipse completely enclosing the breast. Within this ellipse the incisions were made, and it was apparent that by the pressure of the plasters the bleeding from all the tegumentary and superficial muscular vessels was completely, or almost completely controlled; so that the amount of blood lost in the operation was comparatively trifling.

On closing the wound I did not remove these strips. This was an error which on another occasion I should avoid, since they prevented the complete and accurate coaptation of the tegumentary flaps and allowed the margins of the wound to become everted.

Medicine.

ABSTRACT OF A LECTURE ON THE THERAPEUTICS OF WAKEFULNESS:

Delivered at Bellevue Hospital Med. College, by WILLIAM A. HAMMOND, M.D.

Brushing the hair, or friction of the skin, as by rubbing the palms of the hands or the backs of the arms, will in some persons tend to induce sleep. Soothing sounds have sometimes a similar effect. On the other hand, persons whose occupations are noisy are apt to awake when the noise to which they are accustomed suddenly ceases. A miller has been known to wake up when the noise of the machinery stopped, and a man, who had for many years lived within sound of the roaring of Niagara Falls, was unable to sleep at first on removing from the locality.

But agents more efficacious than such external ones, are those which lessen the amount of blood circulating in the brain. First may be mentioned food and drink, of whose happy influence a frequent illustration is given in the case of a late supper. During digestion more blood circulates through the gastro-intestinal vessels than when the abdominal organs are unemployed; and this additional amount of blood must come from some other part of the body, since a marked excess of this fluid cannot exist in two different parts at the same time, except in cases of disease. That the amount of blood in the brain is diminished during digestion is evinced by the feeling of drowsiness commonly experienced,

which is a perfectly healthy sensation. The food, thus taken as a therapeutic agent, should be easily digestible. The sensible physician will hardly resort to drugs, if such pleasant medicine as a good supper can be given with equally good effect.

In persons weak or anæmic, especially women who have been rendered so by hæmorrhages, a dose of some one of the various preparations of alcohol at bedtime is frequently advisable. Of these, wines are not generally so admissible as the stronger preparations, such as spirits; in this country whiskey will be most easily attainable. A Methodist clergyman, who came under my care, had been unable for seven or eight weeks to sleep more than two hours each night. I prescribed a dose of whiskey to be taken at bedtime. He at first strongly protested against taking it, upon grounds of principle and his previous habits of total abstinence, but finally agreed to try the remedy. The first night he slept five or six hours; the second, seven or eight hours: his whiskey was then reduced in amount gradually, from half a glassful to none at all. He continued to sleep well, and has not formed any habit of drinking.

In healthy persons, coffee is calculated to produce wakefulness; in others it acts as a hypnotic, much as other stimulants do in asthenic cases. For the latter purpose, do not trifle with it by administering a little of a weak infusion, but give strong doses at once. Much depends upon the method of making it. Exhaust the strength of three or four ounces of ground coffee by percolation, with a rather small amount of boiling water; and give without milk or cream. Tea is not to be compared with coffee as a therapeutic agent, in this connection. It acts in a similar manner, but not so efficiently.

Sometimes sleep may be produced by physical exercise taken regularly about two hours before bedtime. This acts best in sthenic cases. It has been often noticed that change of air and carriage exercise produce sleep. The modus operandi of this I cannot explain, more than the familar fact that the rocking of a cradle puts an infant to sleep.

Some time ago, in England, there was constructed a table, known as Darwin's table, for the purpose of producing sleep in the insane. It was circular, and rotated upon a screw at the centre. On this the patient was placed, with his head at the centre, and the table was turned, thus producing sleep according to correct physiolological principles, although those principles were not then known.

The warm bath may be used as a hypnotic. In employing it, the head should be prevented from becoming heated, as by putting cold water upon it while the body is immersed; the application of cold water is, however, rarely necessary in the case of infants. The temperature of the bath is best regulated by the hand. Sometimes cold water alone applied

to the head proves sufficient, without the warm bath. I remember having read somewhere in Grave's writings that the Indian women sometimes put their babies to sleep by giving their heads a cold douche, this was also applied in the British army at one time as a punishment, and, it was found, with the almost invariable effect of producing sleep.

Another remedy, of much value, is the application of a sinapism to the epigastrium. How it acts I do not know; it cannot well do so through the circulatory system, but may by impression upon the nervous system.

The position of the body is important. In many cases, holding the head down produces wakefulness, such persons should go to sleep in the erect position.

Certain drugs form another class of agents for the production of sleep. That which has been longest in use is opium. As regards its power of bringing on sleep, the dose of opium varies in different patients. In small doses of half a grain to three-fourths, as an average, it acts as a stimulant; in moderate doses of one or two grains, it is hypnotic; and in larger ones it produces stupor, and not true sleep. Narceine, one of its constituents, has been found to produce profound and continuous sleep, but the ordinary preparations of it are too uncertain to be relied upon, and it is too expensive for frequent use.

Hyoscyamus sometimes acts excellently; it has the advantage over opium of not producing headache and constipation the following day. The tincture, especially Neergaard's, may be given in doses of a drachm to a drachm and a half three times a day, if necessary.

Oxide of zinc may prove serviceable in some cases. It came into use in the treatment of the nervous condition preceding delirium tremens. It has also been of value in hysteria when everything else has failed. Its dose is, as a maximum, two grains three times a day; as much as four grains may be given at the same intervals, but this quantity will generally produce irritability of the stomach.

Phosphorus is a remedy which has come into use more recently, in the class of cases of which we are speaking. It is supposed to act by supplying a deficiency in the elements of nervous tissue, increasing the amount of protagon. Owing to its chemical properties, it is not easily administered. Is can be given in the form of phosphorated olive oil, in the proportion of four grains to the ounce. It is preferable, however, to boil twelve grains of phosphorus in one ounce of almond oil, and filter. The oil absorbs four grains of phosphorus, so that each minim contains 1-120 of a grain. Half an ounce of the oil is now mixed with an ounce of gum arabic, and fifteen drops of some aromatic oil are added. Of this mixture the dose is fifteen drops, equal to five drops of the phosphorated oil, and containiag 1-24 of a grain of phosphorus. I have used this remedy in

eight cases with success, and failed in two cases. I try to get three doses taken before bed-time, and thus far have succeeded in producing the desired effect on the second day, if I had not on the first. The dose may be increased a drop a day till twenty drops are taken, or signs of gastric irritation supervene. I would not advise giving it in larger doses. In one of my cases, nausea was produced on reaching twenty drops, but sleep ensued also.

But of all the sleep-producing agents at our disposal, the bromide of potassium is most deserving of the name of hypnotic. I have never seen it fail when given in sufficient quantity. A healthy adult may take from twenty to thirty grains three times a day; the latter dose is not too large when it is needed at all. Sometimes it produces, among its other effects, great weakness in the legs, and a staggering gait, strongly resembling that of a person intoxicated with alcohol. In fact, I know of a gentleman who, while under the influence of this drug, was twice arrested in in our streets for drunkenness. Bromide of potassium occasionally produces also great lowness of spirits and a disposition to cry. It should be administered very much diluted. It may be conveniently prescribed one ounce to four ounces of water; a drachm dose of this is to be given in at least half a tumblerful of water.

A remedy which I have used recently, especially in cases of nervous excitement where a sedative seemed indicated, is sumbul. This is a plant of the same family as valerian. I have used it in conjunction with bromide of potassium in epilepsy, with the result, as I think, of increasing the effect of the latter. The dose of the fluid extract (Neergaard's) is from twenty drops to a drachm three times a day.—*Medical Record.*

ICE TO THE SPINE IN DELIRIUM TREMENS.

A case of delirium tremens successfully treated by the spinal ice bag is reported in the *Dublin Medical Press and Circular.* The ice was applied from the fourth cervical down to the first lumbar vertebra. In a short time the following phenomena were observed: 1. The induction of sleep. 2. The diminution, and finally the disappearance of the tremors. 3. The regulation of the heart's action. 4. The cessation of sweating. The production of a rise in the temperature all over the body, with a return of the natural color to the face. The patient fell asleep soon after the application, and slept the greater part of three days, during which time the ice bag was applied three times daily. He always found it to strengthen him, and said it made him feel as fresh as ever. It was discontinued for the reason that it caused so much depression of the circulation. Recovery was rapid and complete, without the use of stimulants.—*Pacific Med. and Surg. Jour.*

Canada Medical Journal.

MONTREAL, FEBRUARY, 1869.

THE ONTARIO MEDICAL BILL.

If we considered what is due to ourselves as a profession, we would pass over with silent contempt the puerile exhibition, styled a debate, in the Ontario Legislature, on the occasion of the introduction of the Medical Bill before the committee of the whole house. It was from beginning to end, on the part of all the speakers, save one—Mr. Pardee,—a tirade against our profession, and a laudation of humbug and quackery. Even the introducer of the Bill, who we believe is a graduate of McGill Univerity, endorsed every word that was uttered, and stated that he looked upon this Bill as the "*greatest boon offered to Ontario for a long time.*" Whether this sentiment will be acceptable to the profession of Ontario, remains a question. We cannot in reality see what is best to recommend to our brethren in Canada West, but were a similar calamity to happen to us in Lower Canada, where French Domination is so often cast in our teeth as a thing to be regretted, the profession would rise up as one man and force our rights on our Legislators. It is greatly to be regretted that our Ontario friends have not a little sprinkling of our *French*, who are at least gentlemen,—gentlemen too, who are not easily led by doctrine which is false and without foundation. Of our French Canadian Legislators we can truly say, if they are speakers, they are orators; if they are writers, they write grammatically; and if they attempt argument, they do so logically; they are not easily carried away by divers doctrines, having a due respect for scientific facts, the result of scientific investigation. Is the science of medicine so difficult a subject to grasp, that men without knowledge of its stand-points, will have the assumption to speak in the Legislative halls of the country, without presuming to know aught of the bearings of the subject, and utter rodomontade openly and without a blush? Since the Ontario Legislature have made a beginning, they had better follow up the roll. We would suggest their legislating on things spiritual as well as temporal, and as they have done for one of the learned professions they would do

well to insist, that all divines, who desire to preach the Gospel or any other doctrine, in that favoured land, Ontario, shall pass an examination before a central board, to be composed of examiners to represent the various religious elements to be met with; and that inasmuch as the doctrines will be necessarily numerous, the candidate shall not be required to state his conviction of the existence of a God, or even a belief in his own entity. A Bill with the above objects would be a fitting supplement to No. 30, of the 2nd Session, 1st Parliament of Ontario, and we should say that Mr. McGill (we are not surprised that he has dropt the Doctor) would be a very proper person to introduce it to the House, so that Jew and Gentile, of whatever hue—Ritualist and Atheist, might if possible accord.

But to return to the bill. Members of the medical profession have had forced into their ranks, by legislative enactment, persons who have hitherto been regarded as irregular practitioners. It was not sufficient that these men should hold a legal status. This *boon* was granted them mainly through the exertions of the wise men of the West some twenty years ago. The men of our days have gone a step farther. Thompsonians and bone-setters, and every shade of visionary, have been associated, by Legislative enactment, with the legitimate profession at a common board. They have all been placed in a sack together and shaken well up, to make a mixture, with a request from their learned legislators that all future bickerings and heart-burnings should end, and that the blessedness of harmony and peace shall be found to exist in their ranks, to the manifest elevation of that noble and god-like profession, whose votaries they are. We quit the subject with disgust, but with a sincere hope that the profession will be true to itself, and by steady and perservering industry adopt means to relieve itself from the awkward position in which it is at present placed.

AN EYE AND EAR HOSPITAL.

We perceive that Mr. Chapleau, M. P. P. for Terrebonne, has presented a petition to the Quebec Legislature for aid to the Eye and Ear Hospital, Montreal. The existence of such an institution is in the fertile imagination of the petitioners, and we doubt much the benefit to be derived by the sick poor of our city, if the aid asked be awarded. We have heard that the promotor of the petition is a member of the profession, whose sole claim to public confidence is a flaming advertisement, surmounted by a mammoth eye and ear which has graced the columns of our daily press for some years past. With regard to his ability as a

surgeon we know nothing, but the means adopted of attracting the public *eye* or of tingling the public *ear* is what is not customary with surgeons of respectability. We would merely state that the hospitals in this city, both of which receive Legislative aid, are in the habit of receiving for treatment a large number of diseases of this class, and if the members of the Quebec Legislature, whose aid is asked by the petitioners, will take the trouble of referring to the published annual reports of the Montreal General Hospital, they will there observe that a large number of diseases of the eye and ear are treated, both as interns and as out-door patients. We believe the same may be said of the Hotel Dieu Hospital. On public ground, therefore, we oppose this grant as an unnecessary outlay of public money.

CASE OF MALPRACTICE AT ST. JOHN, N.B.

Key vs. Thomson.

It has been truly said by an eloquent writer, "Go into the abodes of the sick, and the poor and deserted, wherever there is disease or distress, there will you find some medical practitioner exercising his glorious art, patiently, freely, and fearlessly, for those whom poverty or vice, or the breath of pestilence has deprived of every other friend. Or, again follow him among the higher classes of patients, and you will find him there the friend and honest adviser of those who can seldom hear truth from any other lips;" yet such "medical practitioner" is often the victim of vexatious and vindictive law proceedings.

Should his best efforts fail, and his case terminate unfavourably, and should he unfortunately fall into the hands of those prompted by greed or malice;—a neighbouring medical man is consulted,—an *unguarded* opinion adverse to the treatment is given,—the case is placed in charge of an attorney, who, seeing a "bill of costs" looming in the distance, enters into the speculation,—for speculation it often is,—by which the medical practitioner, innocent or guilty, is to be mulcted in costs. It is true, that in the majority of such trials, the verdict is in favour of the medical man, yet success does not exonerate him from expense.

The following case is an illustration,—it has been *twice* tried in St. Andrews, the first time, extraordinary damages ($25,000) were given against Dr. Thomson,—upon an appeal to the Supreme Court, the verdict was "set aside;" it was again tried in August last, before Judge Weldon and a special jury:—this trial occupied nearly *a month*, and the jury disagreed. There the matter stands,—the unfortunate Doctor is saddled with the expenses of his defence, and will probably be obliged to run the gauntlet of another trial.

The plaintiff, John B. Key, was agent for a mining company, in the receipt of about $1500 a year, and having lost his fingers and toes, he is unable to retain his situation. The defendant, Dr. Thomson, is a man of ability and education, having been for 40 years a leading practitioner in St. George; and for many years a member of the Provincial Parliament; and is independent in circumstances. Hence the sympathy in favour of the afflicted man, who, charging the Doctor with *negligence* and *malpractice*, endeavours to prove that the parts were lost, not from the effects of *frost-bite*, but from inflammation and mortification produced by improper applications.

The plaintiff in his evidence stated, that he left St. George in a sleigh, by himself, at five o'clock on the afternoon of Saturday, the 23rd of December, 1865, to go to his residence about ten miles distant. That he had been drinking, could not say how much, but was sober. That the night was very cold, and he faced a north-west wind. Other witnesses proved that the thermometer registered below zero. After driving half an hour, he got out of the sleigh to "obey a call of nature,"—found his feet numb,—fell,—and the horse left him,—tried to follow the horse, but fell repeatedly, then lost his cap and mittens,—was alarmed and perspired from exercise. Had no pain or feeling in his hands or feet after he fell out of the sleigh, supposed he was frozen then. That he wandered about *four or five hours* before he came to a house, knew that he was frozen when he got in,—hands were hard and without feeling. Hands were immediately put in cold water, and kept there *half-an-hour*, scales of ice appeared on the hands when in the water, when they were taken out, *blood flowed from under his nails*,—his feet were *then examined* and found to be frozen, and when *they* were taken out of the water, *blood flowed from the ends of the toes. Warm flannels were then placed round the hands and feet.* That the defendant visited him the next day at twelve o'clock, about twelve hours after the frost was removed, *at which time* the hands and feet were "*dark red*," and *covered with blisters containing blood and water.* That the Doctor ordered the fluid to be let out, and a poultice of *flour, meal, hops, yeast* and *charcoal* to be applied, said that it would be a six weeks' job, and that not a joint would be lost, and directed that word should be sent to him on Wednesday, the 27th. That on Sunday afternoon after the Doctor left, *the nail of one of his toes fell off*, and in a few days several others came off with the skin. Poultices continued, flesh hot, swollen, red, and tender,—blisters refilled, could move fingers and toes perfectly. Sent for the Doctor on Wednesday, he did not come; pain increased, poultices continued; sent again on Friday, he did not come, but ordered turpentine to part, and chalk and

lime-water in poultice, which, when applied caused such pain, could not bear it; then applied a carrot poultice. On Saturday, the 6th of January, the Doctor came, left some medicine, applied a white powder to parts which caused pain, and ordered charcoal poultice to be continued. He did not came again till the 19th of January, when he brought his nephew Dr. R. Thomson with him, the hands and feet were rotten at this time,—they took off the fingers and toes at the joints with a pocket knife. The bones protruded, and the poultices were continued. Defendant promised to return in a week; he did not do so. And on the 28th of January, plaintiff sent for Drs. Gove and Babb, who "amputated his hands and feet." That he thinks he lost his hands and feet from inflammation, produced by *absorption* of *oxygen* of *blood* by *charcoal in poultice ! ! !*

The defendant in his evidence corroborated the statements of the plaintiff respecting the appearance of the parts when he saw them on Sunday, the day after they were frozen; but *positively denied that he said no joints would be lost.* That he believed at the time, that mortification must follow, and treated him accordingly, ordered a poultice to be applied composed of *half a teacupful of charcoal to two pints of meal, with some hops and yeast,* and directed him to report on Wednesday. Did not promise to see him again, said he would do so if he could, but he might not be able to do so: received frequent reports, and gave directions *in writing.* Visited him on the 6th of January, found his health good, mortification established, and ordered a wash composed of equal parts of sweet oil and lime water, with a little turpentine, to be applied daily; never thought of ordering turpentine *in* a poultice; directed charcoal poultice to be continued. In a day or two sent a powder composed of morphine, chalk, and quinine to be applied to the granulations. Saw him again on the 18th of January, found parts dead and falling off: had forgotten his instruments, and divided the ligments and tendons with a pocket knife. Did not take off ends of bones, believing that granulations would extend, and thereby enable him to save greater length of limb.

Dr. Gove was examined on behalf of the plaintiff, and deposed that he thought the freezing severe, but could not increase during exercise. That frost was properly removed, and *hot applications at that time not objectionable.* That vesication, falling off of the nails, pain, redness, and swelling indicated such vitality that parts might have been saved. Should call the poultice described, a mild stimulating one, one which would increase inflammation. *Charcoal would increase the heat and inflammation, and cause the death of the part.* Such a poultice con

tinued twenty-five days, highly injurious, would *harden and prolong inflammation, the very thing he would do to produce death of parts* Could not account for the death of the parts in any other way. Surgeon should attend often, and let out matter, which, by remaining would imperil joints and be absorbed. That the line of demarcation might appear from the 6th to the 10th of January, after this, thinks that absorption was taking place. That the *operation by defendant on the 18th of January was improper, "no medical man would do it ;"* thinks limbs were ready for amputation on the 18th of January. On the 28th of January was called to visit plaintiff and to perform an amputation, with Dr. Babb; found bones protruding, "shoved back flesh," and took off bones a little above granulated surface with the forceps; could not cover ends of bones.

On cross-examination said, if hands were black next morning, should consider it a desperate case.

Dr. Black on behalf of the plaintiff deposed that freezing was severe and deep seated; frost was properly removed; *right to apply warm flannels.* That motion of parts, coming off of nails with skin, pain, redness, swelling, and vesication, indicated such vitality, that parts should have been saved. Daily attendance necessary if possible. *No harm in charcoal,* should be used dry as an absorbent, being a *mechanical irritant* might cause inflammation. Turpentine should not be used in a poultice. *Thinks plaintiff 's limbs should have been saved.*

On cross-examination said, that continued freezing for six hours, chances of recovery much reduced. Hot flannels applied, and a warm room injurious immediately after frost has been removed.

Dr. Adams, surgeon H. M. 22nd Regiment, and Drs. W. Bayard, Keator, and Earle, of St. John, were examined at the last trial; and Drs. Parker and R. Thomson, jr., at both trials, on behalf of the defendant.

They substantially deposed as follows:—That taking into consideration the length of time four to six hours, that the plaintiff was exposed to cold, *after* parts are acknowledged to have been frozen; the frost-bite must have been *severe, deep,* and *dangerous;* as they believe that the longer a frozen part is exposed to the atmosphere in which it was frozen, within certain limits, the greater the amount of congelation and consequent disorganization. The spray of æther or rhigolene thrown with force upon the surface, will produce superficial freezing in a few seconds, but continue the application too long, and mortification will follow.

That the manner in which the frost is taken from the part is of *vital consequence.* It should be removed gradually by the application of snow

or iced-water, continually applied until the part is *entirely* free from frost, and cool applications should be continued for a length of time in a cool room, to moderate that reaction which must follow. All warm applications, whether moist, or dry, should be scrupulously refrained from, as their use would almost certainly be followed by mortification. In consequence of ignorance of the above precepts, the mischief in cases of frost-bite is generally done before the surgeon is called. In the plaintiff's case, the *application of warm flannels at the time mentioned,, was highly improper.*

That they think a part cannot be so immediately *killed* by the cold that *reaction will not take place.*

That general exercise will frequently prevent the extension of frost-bite, but it cannot thaw a part already frozen.

That the flow of blood from the parts immediately after the removal of the frost, the swelling, pain, and "dark red" colour of them; the early vesication, and vesicles containing *blood and serum;* and the falling off of the nails, are symptoms rendering the probability of *saving the parts more than doubtful.*

That for incipient mortification consequent upon cold, some recommend the application of the compound tincture of iodine, blistering, &c., others emollient poultices with yeast; and when mortification is established, charcoal, the chlorides, &c.

That the treatment pursued by the defendant was not at all calculated to produce inflammation or mortification, the poultice was unobjectionable, so was the wash and the powder. It would not be proper to mix turpentine in the poultice. Charcoal is not a stimulant, it could not produce heat, inflammation and death of the parts. The continued use of the poultice described, was, under existing circumstances, quite justifiable; and could not produce mortification.

That when mortification exists, and the portion of the limb involved is large, the length of the part to be removed of little consequence, the line of demarcation formed, the strength of the patient in a fit state to bear the shock, then amputation of the part is necessary. But, when the parts involved are small, as the fingers and toes, *the elimination of them should unquestionably be left to nature,* for by so doing, length of limb is saved, which is of the utmost value to the individual.

That the operation, if it can be called one, performed by the defendant on the 18th of January, was not an improper one; dividing the ligaments and tendans, should produce little pain or loss of blood. The one performed by Drs. Gove and Babb, on the 28th of January, was not, in e surgical sense of the term, an amputation, and should not have

been called one; it consisted in removing the protruding ends of the bones, with the "bone forceps;" by which neither loss of blood, nor much pain should be produced, consequently it may be said that nature eliminated the parts, and that the plaintiff was not subjected to the shock of a surgical operation.

That the plaintiff lost his limbs in consequence of the severity of the frost-bite, and *not from negligence or mal-treatment* on the part of the defendant.

Here concludes the evidence, which, it may be stated, has been carefully taken from the Judges' notes.

Many other witnesses were examined, who, corroberated the testimony already given respecting the appearance of the parts, the mode by which the frost was removed, the nature of the poultices used, &c. But it is chiefly upon the medical testimony, that a case of this kind must be decided, and for the character of our profession it is to be regretted, that medical men in the witness-box are so often found to differ upon points, where difference of opinion should not exist, and that when a medical man finds himself a defendant in a court of law, his accuser is a professional brother. We do not deny that a medical man should be held responsible for malpractice, or that it is not sometimes the *duty* of one medical man, to express in court disapproval of the treatment followed by another; but to justify it, the maltreatment should be clear, and he should be morally certain that *his* opinions are correct.

In this case we find medical men arrayed on either side, differing widely in opinion. Those for the plaintiff asserting that the limbs were lost, not in consequence of the frost-bite, but from inflammation and mortification produced by the treatment. While those for the defendant say that the inflammation and mortification were caused by the severity of the frost-bite, and not from maltreatment.

Here is an unjustifiable difference of opinion, for any tyro in his profession should know, that the generally received opinion respecting frost-bite is, that where a part has been *long* exposed to extreme cold, and that immediately after the removal of the frost, blood flows from it, and, if within fifteen hours, the part turns "dark red," vesicles appear containing blood, and the nails fall off, the surgeon should expect such an amount of inflammation to follow, as would in all probability result in mortification. Yet, Drs. Gove and Black urged that because vitality existed,—ergo,—the parts should have been saved; forgetting that they could not have been so immediately *killed* by the frost, that no reaction or inflammation could follow.

Dr. Gove supports his opinion that "the parts were lost in consequence of maltreatment," by the assertions that the poultices composed of meal, hops, yeast, and charcoal, were improper, that the charcoal would increase heat and inflammation, and cause the death of the part; and that the application of such a poultice continued for twenty-five days, was "highly injurious;" the very thing he would do to produce the death of the parts. He does not stop here, but gives an opinion respecting a surgical operation at which he was not present, characterizing it as "an improper one," and "one that no medical man would do:" though it may be asked, what is the difference between the one performed by himself, and that by the defendant: the one divided ligaments and tendons, the other nipped off the protruding ends of the bones.

It would be a work of supererogation did we in a medical journal combat such ideas. We simply advise the Doctor, should he ever again appear in the witness-box, to study his subject, and exercise more caution; for he must recollect, that, however erroneous his opinions, they may, and probably in this case have had weight, with jurors incapable of reasoning upon medical subjects.

The premises upon which Dr. Black based his opinions are equally erroneous, though he is not quite so hard upon charcoal as his coadjutor.

When medical men in the witness-box differ in opinion, jurors as a rule are unable to say who is right. It may be said that the standing of the practitioner, should add such weight to his opinions, as to guide the jury true,—but the juror is the judge.

The result of this case, and that of several others recently tried in England, suggests the expediency of referring cases of malpractice to a jury or board of medical men. Of course this could not be made compulsory without Legislative enactment, though it might be practically carried into effect in this way. Let a board be established composed of medical men of the best standing, to whom a practitioner could refer, when threatened with a prosecution, it would be to his interest to represent the facts impartially, if an opinion adverse to his treatment be given, let him compromise the matter, if one in his favour, it would probably prevent his being dragged into Court.

We throw this out as a suggestion for consideration, at the next meeting of the Canadian Medical Association.

St. John, N. B., December, 30, 1868.

CANADIAN INSTITUTE.

MEDICAL SECTION—ELECTION OF OFFICERS—INTERESTING PAPER FROM DR. AGNEW.

The regular meeting of this society took place on Saturday evening last. Dr. Thorburn in the chair. The attendance of medical men was large. After preliminary business the following gentlemen were elected office bearers for the ensuing year:—E. M. Hodder, M.D., F.R. C. S. E., chairman; J. N. Agnew M.D., secretary, and Drs. Thorburn, W. W. Ogden, Roseburgh, committee.

After the election, Dr. Agnew read an interesting communication, of which the following is a synopsis:—

* * * * * * * *

The passing year has not, so far as the city is concerned, been remarkable for any visitation of epidemic disease. Notwithstanding the almost unprecedented depth of rain that fell in May and the early part of June, and the long continued drought, and extreme heat of July and August, the health of the city may be said to have been very good indeed—quite up to the best average. During the year scarlatina of a peculiar type prevailed to a considerable extent, presenting an aspect not entirely new to medical observers, but still sufficiently novel to be worthy of notice The cases that came under my own observation varied considerably, but nearly all of them had the dual aspect, more or less marked, we should expect to meet in a simultaneous attack of measles and scarlet fever if that were possible. In some instances the coryza and bronchial cough usually preceding a simple attack of measles, with slight soreness, only of the throat, were the predominant symptoms, while in others the early symptoms were all such as usually usher in scarlet fever more or less severe. But the most noticeable peculiarity, so far as my observation has served me, was the rash, which presented in combination some of the characteristic appearances of both measles and scarlet fever. In most of my cases, however, the color of the eruption was of a duskier hue than usual, in the simple forms of those diseases, and in several fatal cases the prominent symptoms present apart from the eruption were those of the malignant type of scarlet fever. The susceptibility to the disease did not appear to me to have been affected by a former, and even recent attack of measles, and, in two or three instances it followed a former invasion of scarlatina.

The extreme and long continued heat of July and August resulted in an usual number of cases of sun stroke, both in this city and throughout the country, and many sudden deaths were recorded from this cause.

The usual class of summer complaints, affecting children, did not prevail to any alarming extent during the past season, although numerous additions to the death roll from gastro-intestinal affections may be considered the normal issue of the summer campaign. The comparative immunity from these affections in healthy country localities points out the duty of the profession, and I presume that most of us now recommend the prophylactic method of sending the children out of town before what may be called the sickly season has commenced. The circumstances of many, however, prevent them from availing themselves of this advice. They are compelled to face the danger of the city, and are often called to mourn the loss of little ones, who may have become the objects of fondest hope and dearest affection.

I do not know whether my experience coincides with that of my medical brethren in the treatment of summer affections of children, but my greatest difficulty and discouragement has been the lateness in which medical aid was sought. Most of the fatal cases occuring in my practice, were utterly hopeless before I was called upon, and I generally found that the little sufferers had run the gauntlet of the domestic list of remedies, and had then been treated by some dispensing chemist who, when death became imminent recommended that a physician should be called—ostensibly, I suppose, in the interest of the patient, but more probably for the purpose of avoiding personal responsibility, and fixing it upon a medical man. I suppose there is no help for this state of things but, if in the right of choice by parents, a fatal course is pursued, for the sake of economy, they are themselves the greatest sufferers, and it is manifestly unfair, in such circumstances, to attach odium to a medical man, whose humane calling forbids his refusing to risk his reputation in taking charge of the most unpromising cases, with a view to save life or relieve distress.

During the autumn and beginning of the winter seasons we usually have an invasion of remittent and typhoid fever, in this city. The cases seem to me to be of a sporadic character, and the disease is probably not traceable to any specific cause, but rather a combination of causes. If I might be allowed to enumerate some of these, I should suggest that the exhausting effect of long continued heat, producing in weakly persons a low vital condition, opens the way for this class of diseases. Add now, to this predisposition, insufficient clothing, insufficient food, bad well water, small bed rooms with closed windows and no other means of ventilation, and we shall not require to draw largely on bad drainage and malarious miasmata to find causes for the low type of disease generally prevailing at the close of the warm season. In the treatment of typhoid

fever, I have been in the habit of considering it a self-limited disease, and have trusted more to *vis medicatrix naturæ* than to strict therepeu tics. My plan, for which I do not claim any special merit, consist in placing the patient in the best and most easily ventilated available room, enjoining quiet and the strictest cleanliness. I attach importance to directing the exact kind and quantity of diet, and the intervals at which it should be given; and this minuteness is especially necessary when stimulants are administered. The secretions are then attended to, and any local symptoms as they arise. I have found this "let alone" method much more satisfactory than any meddlesome effort I have ever made to "break" the fever and shorten its duration.

The re-opening of the Toronto general hospital during the summer, with additions to the medical staff, has been viewed with very general satisfaction, by both the profession and the public, and it cannot be otherwise considered than as a subject for lively congratulation that the Premier of Ontario is not only willing but that the people are ready to sustain him, in any effective scheme he may devise for relieving this noble charity from its embarrassments, and developing the humane purpose for which it was established to the utmost capacity of the institution. It is to be hoped that the present session of the Ontario legislature will not be allowed to close until a scheme shall have been adopted for providing ample means, in an equitable manner, for liberally endowing an institution, whose appeals are prompted by christian principle and made to our common humanity. To fail, in this respect, would be a reproach to us, as a christian people. It is to be hoped too, that the increased liberality of the hospital endowment will place within the reach of the trustees and medical staff the utmost facility for the classification of patients, and for the isolation of contagious disease. One cannot help shuddering at the bare possibility of a patient undergoing some slight surgical operation, and while an immate of the hospital, contracting, and, perhaps, falling a victim to some malignant, contagious disease, on account of defective classification. Such a possibility should not be allowed to exist, for any mere money consideration, in this Augustan age of science and philanthropy.

The formation of the "Canada Medical Association," and the success in point of numbers and debating ability of those attending its first meetings is to my mind, a subject for the liveliest congratulation. The work however, so far, has been of an initiatory or preliminary character, almost exclusively, and although many questions of great interest to the profession and the public at large, came before the notice of the association, yet I think it will be conceded that it remains for the next annual meeting

to give the association its character and rank amongst the scientific societies of the world. It is, therefore, to be hoped that at the Toronto meeting, next autumn, this city may have the honor accorded to her of inaugurating the real work of the association. But if the meeting is to be made a successful one, it can only be by early and persevering labor, and much of the responsibility and labor must devolve upon the medical profession of Toronto. In this connection I cannot help congratulating the medical section of the Canadian Institute, in having secured, for our chairman for the ensuing year, the able, learned and experienced vice-president of the Association. And I trust that nothing, on our part, in the way of hearty co-operation with Dr. Hodder, shall be wanting to give *éclat* to the next meeting, and crown it with the highest success. The experienced, senior members of the profession will, I trust, pardon me for hinting that we look to them to take the lead in contributing from their stores of learning some well matured scientific papers, and if these cannot be hurriedly prepared, the sooner they are commenced the better. I trust, too, that in this respect the medical section will give a good account of itself.

To give, however, to the Canada Medical Association a lasting vitality, it must have a permanent source of supply, and this, it seems to me, can only be secured by the formation of branch associations, embracing areas of convenient dimensions. The medical electoral divisions would, probably answer for this purpose, and the members of council might accept the suggestion to call their constituents together for the purpose of forming electoral associations, in affiliation with the Canada association, and named respectively after each division. The formation of such tributaries would not only give vitality and strength to the Canada association, but would, also, give compactness to the medical profession of Ontario, and, rising above the rivalries of the past, enable us to exercise that influence in the creation of public opinion, on all the great questions of social interest, to which by our numbers and habits of thought we are justly entitled.

The quiet and unobtrusive calling of the medical profession, and the unending round of duty its practice involves, forbid our entering the lists with many of the robustious demagogues, whose noisy declamations tend to make one think they have been sent on a special mission to turn the world upside down. It is, nevertheless, gratifying to observe that in Britain the medical profession is not only accorded a higher social position than ever before, but that the pursuit of scientific inquiry and the general attainments of physicians, make them considered to be in a high degree available to fill positions of the greatest honor and the highest public trust. And here, in this fair province of ours, the sprinkling of

able medical men in our Legislative Assembly, is conclusive proof that the people of this country are not backward to recognize true merit, though it may not obtrude itself by noisy demonstrations on their notice at every turn. It is no vain boast to claim that the healing art has in all ages, embraced within its circle, men of culture and of thought, and that science, in the broadest sense, has been much enriched by the research and learning of the medical profession. The close of the last century and the beginning of the present produced discoverers in the domain of medical science who may fairly take rank with Newton or Columbus, and the profession now, claims among its votaries, men of whom the world may well be proud. It is true that the seeming diversity in the medical theories of the day, has given rise in the public mind to the idea of a diversity of schools, and we have, in medicine, numerous offshoots and excrescences from the parent stock, just as we have in religion diversity of creed. Probably, however, in regard to both cases, these diversities arise from superficial examination of the subjects, and inaptitude or inability to grasp and apprehend the truth. For, doubtless, in each, there is but one legitimate school, and that one must be founded on truth, which is immutable.

It is impossible, then, to over estimate the value of establishing such a medical association as I have indicated. The leading medical men of each district would be brought frequently together, for the reading of papers, and the discussion of subjects of interest to the profession. Such meetings, while they would disseminate a vast amount of useful information, and give the profession the valuable experience, gathered year by year, by practical observation, in regard to the character and treatment of prevailing diseases, would, at the same time serve as a most wholesome and needed incentive to studious systematical reading. It has been, probably, too much the habit of the profession, in this country, to consider the goal as having been reached when their "license to practice" was secured. Human nature is the same in medical men as in other mortals, and it seems to be the tendency of human nature to fold hands and indulge in relaxation, whenever the spur of emulation or self interest is laid aside. The field is as open to original observers in the wide Dominion of Canada, as in any other part of the world, and these associations would form most valuable and influential media by which the professional world might be reached. And who can tell but the absence of such societies may have already condemned many a medical flower, "to blush unseen, and waste *his* sweetness on the desert air." At all events the establishment of such influential societies would place more surely within the reach of the studious physician, the reward always due to ability and earning.

But, I trust, it is not necessary to further enlarge on the desirability of forming such branch associations as I have indicated, and I hope these suggestions, emanating from the medical section of the Canadian Institute, (should they meet your approval,) will be accepted in a friendly spirit by our brethren throughout Ontario.

And now, Mr. Chairman, lest my ramblings should grow wearisome, I shall close by wishing to you and to our brethren throughout Ontario and the Dominion, "a Merry Christmas and a Happy New Year," Happy family gatherings, good dinners and good appetites to enjoy them, not forgetting devoutest thanksgiving to the great author of good, "who giveth to all men liberally, and upbraideth not."

Dr. Agnew was warmly applauded at the conclusions of his address, and the cordial thanks of the meeting were, on motion of Dr. Hall, seconded by Dr. Ogden conveyed to him.

The meeting then adjourned till after the holidays.

HAMILTON CITY HOSPITAL.

We give below an abstract of the medical report of the Hamilton City Hospital, kindly forwarded to us by the resident Physician, Dr. O'Reilly.

Medical Report of the Resident Physician of the Hamilton City Hospital for the year 1868:

	M.	F.	T'l
Patients remaining in Hospital January 1st, 1868	24	24	48
Patients admitted during 1868	239	193	432
Births in Hospital during 1868	22	13	35
Total No. in-door patients	285	220	515

	M.	F.	T'l
Patients remaining in Hospital December, 31st, 1868	26	19	45

The following table gives the number of patients discharged from Hospital during the year:

	M.	F.	T'l
Discharged	222	187	409
Deaths during the year	15	11	26
Totals	237	198	435

The following are the diseases which proved fatal during the year and the number of deaths from each disease, (including seven persons admitted to Hospital in a dying state). Coroners' inquests were held on th[illegible] diseases.

Ascites	2	Phthisis	9
Cerebritis	1	Injuries	1
Diarrhœa	2	Wounds	1
Heart disease	2	Peritonitis	1
Pneumonia	2	Puerperal convulsions	1
" Typhoid	2	Enteritis	1
" Tetanus, idiopathic			1

The following is the result of treatment of those patients discharged during the year:

Patients discharged cured	314
" " relieved	93
" " not benefitted	2

The following are the diseases or injuries for which patients were admitted into hospital during the year:

Abscess	5	Hysteritis	2
Abortion	1	Injuries	27
Alcoholism	24	Incontinence of urine	2
Anasarca	1	Impetigo	8
Anœmia	1	Iritis Syphilitic	1
Aphthœ	5	Mania	2
Anchylosis	1	Morbilli (measels)	15
Apoplexy	1	Morbus coxarius	1
Asthma	3	Neuralgia	7
Ascites	1	Orchitis	1
Bronchitis	2	Otorrhœa	1
Burns	4	Obstruction of bowels	2
Cancer	1	Ophthalmia	5
Catarrh	3	" gonorrhœal	1
Calculi, Urinary	1	Pneumonia	19
Coup de Soleil	1	" broncho	3
Colic, Lead	1	" chronic	6
Cellilutis Pelvic	2	" pleuro	2
Cerebritis	1	" typhoid	2
Chorea	1	Pleurisy	3
Contusions	3	Phthisis	18
Condylomata	4	Pertussis	4
Debility	12	Pleurodynia	1
Delirium Tremens	9	Pregnancy	40
Dyspepsia	11	Peritonitis	1
Dysmenorrhœa	1	Parotitis	1
Diarrhœa	13	Paraplegia	2
" Chronic	3	Psoriasis	1
Dysentery	1	Rheumatism, acute	20
Enteritis	2	" chronic	3
Erysipelas	1	Scabies	12
Epilepsy	4	Sciatica	3
Fever, continued	2	Strabismus	1

" intermittent	6	Strictures, urethral	2
" remittent	2	Sprains	6
" typhoid	3	Syphilis	15
Fractures	6	Tumor, syphlitic	1
Frost-bites	3	Talipes	1
Fistula, in ano	3	Tetanus, idiopathic	1
Gonorrhœa	12	Tinea decalvans	1
Granular eye-lids	7	Ulcers	19
Hœmorrhoids	3	" syphilitic	2
Heart, diseases of	6	Veins, varicose	4
Hemiplegia	2	Wounds, lacerated	3
Hydrocele	1	Wounds, gun-shot	1

The following table classifies the patients admitted, according to their religious persuasion.

Episcopalians	162	Baptists	8
Roman Catholics	137	Lutherans	4
Presbyterians	67	Unknown	3
Methodists	51		

The following table gives the nativity:

Canada	158	United States	18
Ireland	134	Germany	8
England	69	Norway	1
Scotland	41	Unknown	3

The following table gives the occupation or trade of patients admitted 1868:

Bakers	1	Laborers	85
Barbers	1	Masons	2
Blacksmiths	2	Machinists	5
Bar-tenders	1	Nurses	2
Boiler-makers	2	News-boys	1
Brick-makers	1	Painters	7
Carpenters	5	Printers	4
" ship	1	Pensioners	9
Carriage makers	2	Porters	2
Cooks	2	Pedlars	2
Coopers	1	Prostitutes	38
Cab-drivers	2	Sailors	4
Coachmen	1	Sawyers	1
Carters	1	Seamstresses	2
Clerks	5	Switchmen	1
Chimney-sweeps	1	School teachers	3
Cabinet makers	2	Servants, Gen'l	114
Destitutes	8	Shoemakers	4
Druggists	1	Tin-smiths	3
Engineers	1	Teamsters	5
Farmers	3	Tailors	5
Grooms	1	Vagrants	19

House-keepers	1	Wool-carders	1
Hostlers	9	Writers	2
Joiners	1	Children	52

The number of out-door patients attending the Hospital during the year was 331. Thirty-seven visits were made during the year, in cases of emergency, and to paupers "too ill" to be removed to Hospital.

TOTALS FOR 1868.

Total Number in-door patients	480
" of births	35
" out-door patients	331
Total under treatment in 1868	846

C. O'REILLY, M.D.C.M.,
Resident Physician.

We regret to observe the death of Dr. Litchfield, superintendent of the the Rockwood Asylum in connection with the Penitentiary at Kingston. Dr. Dickson surgeon to the Penitentiary has been temporarily appointed to discharge the duties of superintendant.

It is to be hoped that the Dominion Government which has the gift of marking the permanent appointment will exercise wise discrimination in their selection. These public appointments ought to be made a reward of merit, not in consequence of either local or political influence.

We regret to learn the death of Dr. Thomas Hillier, of London, whose Manual of Skin Diseases, and more particularly his recent admirable treatise on diseases of children, had rendered his name familiar to every member of our profession.

The Toronto General Hospital is now in a sufficiently prosperous state to admit fifty-three patients. Besides these, there are nearly as many more who gain admittance and are treated, by paying forty cents per diem. The number of extra patients are generally numerous.

RETURNS FOR THE YEAR 1868.

Appended is the rate of mortality for the city of Toronto during the year just closed. For these returns we are indebted to Dr. Tempest, medical officer of the Board of Health for that city, who, notwithstanding the greatest obstacles, has presevered year after year in making the returns as perfect as the circumstances admit of.

Total number of deaths from abscess, 4; accident, 16; apoplexy, 10; asthma, 10; bladder, disease of, 2; blood-vessel, bursting of, 4; bowels,

inflammation of, 15; brain, congestion of, 16; do. disease of, 13; do. inflammation of, 5; do. softening of, 3; do. water on, 17; Bronchitis, 4; burns, 2; cancer, 7; catarrh, 1; child-birth, 16; cholera morbus, 4; chronic disease, 1; cold, 2; complication, 20; consumption 136; convulsions, 48; croup, 12; debility and exhaustion, 94; decline, 9; diarrhœa, 96; do. chronic, 1; diptheria, 10; dropsy, 17; drowning, 15; dysentery, 33; erysipelas, 2; fever, 7; do. bilious, 3; do. brain, 5; do. gastric, 1; do, intermittent, 1; do. typhoid, 11; do. typhus, 1; fall, injuries from, 3; fright, effects of, 1; found dead, 3; general decay, 3; gravel, 1; heart, disease of, 31; hip disease, 1; hooping cough, 27; inflammation, 39; influenza, 2; insanity. 5; intemperance, 4; jaundice, 2; kidney, disease of, 2; do. inflammation of, 1; leg, disease of, 1; liver, disease of, 9; lungs, congestion of, 10; do. disease of, 11; do. inflammation of, 36; measles, 9; neuralgia, 1; old age, 64; operation, result of, 1; paralysis, 25; pleurisy, 2; poison, effects of, 1; rheumatism inflammatory, 3; scarlet fever, 18; scrofula, 1; small-pox, 3; sore throat, 4; spasms, 5; spine, disease of, 3; do. injury of, 3; still-born, 86; stomach, disease of, 4; suicide, 2; sunstroke, 6; teething, 30; thrush, 5, tumour, 5; ulceration, internal, 1; worms, 3; unspecified, 37.

TORONTO MORTALITY.

The following is the mortality of the city of Toronto for the month of December, 1868:—

Still born, 5; under one year, 17; over one and under 10 years, 15; over 10 and under 20 years, 6; over 20, 38; Zymotic diseases, 21; deaths from other causes, 60. Total deaths, Dec., 1868, 81. Zymotic diseases, Dec., 1867, 10; deaths from other causes, 61. Total number Dec., 1867, 71; increase, Dec., 1868, 10.

CANNABIS INDICA IN SENILE CATTARRH.

Dr. J. Curran Waring writes to say that he has found cannabis an invaluable remedy in catarrhus senilis. He administers it in ten-minim doses gradually increased. Its effects, he says, must be seen to be thoroughly realized. He believes that as an anodyne it is immensely superior to every other drug.—*The Practitioner.*

ASTHMA.—Dr. Begbie reports of having cured two cases of asthma of long standing, where the patients had renounced all hope of benefit from drugs, by the use of Bromide of potassium in full doses, night and morning.