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Vol. XI.

HALIFAX, NOVA SCOTIA, NOVEMBER, 1800.

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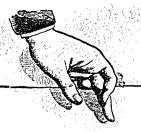
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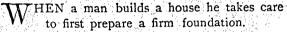
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Vol. XI.

HALIFAX, N. S., NOVEMBER, 1899.

No. 11.

Original Communications.

REMARKS ON PUERPERAL ECLAMPSIA WITH REPORT OF CASES.*

By JAMES W. BRIDGES, M. B., Fredericton, N. B.

Mr. President and Gentlemen:

In presenting this paper, it is apart from my mind and present intention to enter into any long or exhaustive dissertation on this most complicated and fatal condition.

To enter into its history and the various theories suggested as to its etiology, so far from being comprehensible in a brief paper such as this, would surely fill a very considerable volume. For, if there ever were a disease concerning which one set of great thinkers established theories and speculations, only to be in turn routed when human investigation was permitted to enter itself one hair's breadth further into the mysteries of physiological truth, "Puerperal Eclampsia" seems to me to stand unique. And, although the latest researches of the various experimenters seem to point to a pretty well established pathology, there still is yet some difference of opinion, and a good deal, from a clinical aspect, that is mysterious.

I present this paper to you to-day, not because I presume to know more of the subject or feel competent to instruct this august assembly of scientific thinkers, but simply to draw out a discussion on a very important subject.

I think we can scarcely estimate the vast amount of benefit which we all may derive by open discussion on these papers.

^{*} Read at meeting of New Brunswick Medical Society, Fredericton, July, 1899.

Those of us who are young look to the older and more mature for pointers," so to speak, to help us through some of the more obscure and intricate labyrinths of our professional career.

The interchanging of ideas and experiences upon these complicated questions, the rubbing of intellect against intellect in earnest debate, must surely have the effect, like silver coins when rubbed together, of clearing away the rust and dross and exhibiting the shining metal of truth to our mutual good.

This subject of puerperal eclampsia especially appeals to me, for my last experience was a rather bitter one, and deprived a fond husband for the second time, of a loving wife. Since my obstetric practice began, twelve years ago, it has been my misfortune to lose two patients during the pangs of childbirth, one from post-partum hæmorrhage and the other from puerperal eclampsia, and by a strange fatality both belonged to the same husband and each in turn left him with a helpless child to nurse

Puerperal celampsia, then, may be truly said to be one of the most sudden and serious conditions which complicate pregnancy and the early puerperium.

The nominclature is perhaps a little misleading as by it one would conclude that the seizure, the bursting, or shining forth, as the word, derived from the Greek, would imply, was confined to that period which is usually considered to begin after the child is born and the third stage of labor completed, whereas puerperal eclampsia so-called, may take place any time, after the early months of pregnancy, until three or four days of the puerperal period have elapsed.

Hence we may be confronted with the perplexing malady either before, during, or after labor.

One author defines puerperal celampsia as a symptomatic disorder characterized by convulsive or epileptiform seizures that suddenly come on prior to, during, or after labor.

This definition gives us no hint as to its cause, although various attempts have been made among the observers of half a century ago and earlier to assign it to a derangement of the nervous system in some way related to epilepsy.

A little later it was observed that eclampsia patients exhibited an excessive amount of albumen in their urine, and this naturally directed attention to the kidneys as possibly the seat of the disease.

Uræmia was known to be a disease due to derangement of the kidneys, and as these two conditions exhibited so many symptoms in

common, and as it was afterwards found that patients suffering from acute or subacute nephritis were more liable to puerperal eclampsia, it was concluded that they were slightly different aspects of one and the same disease.

When I was a student at Edinburgh the teachings of Simpson and Barbour were that there were two explanations of this disease. One was a theory proposed by Freich and supported by others, viz.: That it was due to the retention in the blood of urea.

The second theory was called Traube's, viz: That loss of albumen makes the blood hydramic, and this with an hypertrophied left ventricle and pressure of the pregnant uterus on the vessels of the pelvis and extremities caused increased pressure and cedema of the brain.

With regard to the former Speigelburg and Braun actually proved the presence of ammonium carbonate, or carbamid, in the blood, and as this was found to be an antecedent of urea, it strengthened that theory. Yet a puzzling clinical fact that seemed hard to reconcile was that some patients would have puerperal convulsions who had never had albuminuria, and Speigelburg still maintained that pressure on some of the pelvic nerves was a factor in the etiology of the disease.

In support of the second theory, Monk and Otto found that by injecting water into the veins of dogs they produced hydramia and the increased pressure on the vessels of the brain produced convulsions, much like those of puerperal eclampsia.

This was quite satisfactory until, shortly after, Olshausen, Schreeler and others found by autopsies on eclampsia patients that the brain was often-dry, and there was sometimes a sclerosis.

Others observed that there was in some cases anæmia instead of arterial tension, and an increase of waste products circulating in the brain.

Santos believed eclampsia to be an acute peripheral epilepsy having its origin in the uterus and that albuminuria is simply a physiological condition of pregnancy.

Pajot declines to admit eclampsia to be dependent on albuminuria. He believes the cause is reflex, culminating in a cerebro-spinal centre in close proximity to the disorganized centre which presides over the existence of albuminuria, because, he says, the certainty of eclampsia occurring is not proportional to the amount of albumen present; that many that are highly albuminuric do not have eclampsia, while others who have only a trace die in a comatose condition; that wemen have died of

eclampsia and yet no trace of albumen been found in the urine. He believes that albuminuria predisposes to attacks but does not act as an exciting cause.

Physiologists of to-day are startling us by their accounts of the toxicity of the waste products of the body; the greater amount of activity in the cells of the body, the greater amounts of waste products to be excreted or neutralized.

Some of these agents are so poisonous that unless excreted at once or transformed by chemical action into innocuous substances, a very serious and dangerous effect results.

The process of excretion and transformation of the excreta into simple and harmless products becomes very important as suspension of, or interference with, either of these actions leaves the organism with the power of poisoning itself. This is what is known as "auto-intoxication."

The power then of the organism to poison itself, or be poisoned, through an accumulation of its own waste products, or through the excessive production of ptomaines or toxic agents within its own tissues, is an established fact. These, by getting into the circulation, are soon carried to the brain, where they act on the centres in the cortex and may in a very short time, unless speedy elimination takes place, give rise to convulsions and epileptiform seizures identical with eclampsia.

Duhrssen's opinion, and that of all the more recent investigators, seems now to establish the fact that puerperal eclampsia is due to an auto-intoxication from the retained constituents of the urine.

Chamberlent, Bouchard, Riviere and others found the urine of parturient women to be less poisonous than non-pregnant, when injected into the veins of animals, and that urine of eclamptic patients is less toxic than either of the other; thus shewing that the waste products of the body that are usually eliminated by the kidneys are retained and thus render the blood toxic.

When Chamberlent, who was an assistant to the great French obstetrician Tarnier, reported this to his chief, the latter suggested a series of experiments by injecting the blood of these patients into the veins of animals to see if this was more toxic than normal serum. They found that it was, that the pregnant woman's blood was more toxic than the non-pregnant, and the serum of the eclamptic was more toxic still. They thus naturally concluded that, there being a relation between the non-toxicity of urine and the toxicity of serum, the theory of retention was the true one.

Their conclusions to give their own words is that "the gravid organism is saturated with poisonous end products of its metabolism, or at least, it is inclined to be overloaded with the same, as its blood serum is more toxic than that of the non-gravid, and the urine positively less poisonous.* * The eclamptic serum is also more poisonous than that of the normal parturient, yet in some cases it produces a specific action upon the kidneys.

The urine at the time of the increased toxicity of the blood serum, that is, the stage of convulsions, is less poisonous than that of the normal. There is no doubt that this toxicity is due to a retention of some urinary substance."

They furthermore state that this substance has a specific action upon the kidneys, producing hemoglobinuria.

Now, what is the nature of this substance? They say "Pathology has directed our attention to grave lesions in the liver of the columptic patients, and hence it is not impossible that a disturbance of its function is connected with it. Experimental pathology furthermore teaches us that the liver plays an important part in the change of the products of an intermediate metabolism."

Now this intermediate substance that they point at is carambic acid—an intermediate state of urea. This substance has been found in the urine of animals whose livers were extirpated. They exhibited toxic symptoms and soon epileptic convulsions supervened.

It was done in this way. An Eck's fistula was established in a dog. This consisted in establishing a permanent communication between the portal vein and the inferior vena cava. Thus the liver was shut out of the circulation by tying the hepatic artery and portal vein.

When the dog was fed on simple diet and kept up a fair appetite his body weight was maintained, but when he was fed on an excess of proteid food he very soon fell into convulsions. Under these conditions, when the liver was removed the urea was found to be very much reduced in quantity in the urine, and the ammonia salts correspondingly increased.

It is, moreover, proved by some St. Petersburg investigators that if the blood in dogs pass from the gastro-intestinal tract directly into the venous circulation without first passing through the liver, meat in any form eaten as a diet will cause disturbance of the nervous system which frequently leads to death. These results have been found the same if ammonium carbamate be introduced into the circulation. Late experiments prove that this salt is a product of oxidation going on in the tissues, but normally, carried to the liver, is changed by the hepatic cells into urea which is excreted through the kidneys.

Urea is an allied substance but is non-toxic.

The symptoms prevailing in dogs with their livers closed from the circulation seem to be an exact counterpart of what takes place in puerperal eclampsia. It has been found by injecting into the circulation a 5 per cent solution of carambic acid, epileptic convulsions have been produced just the same. May it not be then that the acid, or its salts with amnionia, is the offending substance so long sought for?

It has been shown that in pregnancy there is an increased amount of cell activity. This cell activity produces a correspondingly greater amount of ptomaines. Pathology points to a deranged liver; fatty degeneration of cells and necrotic patches with infarcts and dilatation of the vessels. The liver, unable therefore, to perform its normal function by neutralizing or transforming these toxic agents into harmless innocuous substances, they naturally are circulated to the brain, act on the nerve centres, disturbing the psychic balance, and consequently convulsions, come and death are the results from "auto-intoxication."

Therefore, from what I can gather from a careful study of the subject, it seems to me that puerperal eclampsia is due to an auto-intoxication by waste ptomaines, which, circulating to the brain, act on the centres in cortex causing a nervous irritability or an unstable puerperal eclampsia balance, which may either explode spontaneously or induced to an explosion of nerve energy by peripheral irritation from the uterus.

Another element which probably favors puerperal eclampsia is, as pointed out by Dr. Snyder, of Queen's University, Kingston, the tendency there seems to be for coagula to form in the blood of parturients, due to fibrin, causing thrombi to lodge in the brain.

Eclampsia occurs usually about once in every ten hundred cases. It is more common in primiparse and more especially when there are twins. No age or position in life is free from it, and it seems most common in well nourished and full blooded primiparse. Next, I think, are stout women with pendulous bellies, and especially when labor is slow and painful.

It has been stated that in Belgium, Sweden, and the states bordering on these, cases of eclampsia are very numerous, and it has been suggested as a cause that the excessive amount of lime salts absorbed in the drinking water may favor the accumulation of toxic agents in the blood.

I will now proceed to report a few cases which have come under my own notice, in which the ordinary symptoms of eclampsia will be represented.

CASE I. Mrs. McL., age about 40, multipara, pregnant about six months, had been attending to her ordinary housework, but had conceived an unnatural taste for chalk and lime and would persist in eating large quantities each day. She would even pick it off the wall, when not otherwise available, and eat it. One day she began to feel a swimming about the head and a ringing in the ears and all at once went into convulsions.

The doctor in attendance administered sedatives and narcotics of various sorts, but as the vomiting was very persistent and violent, these were all in turn rejected and failed to be of any benefit. After convulsions had continued for about thirty-six hours, during which time the patient must have had nearly a hundred, I was called to see her. I found her unconscious and still having the attacks as frequently as ever. The convulsions were very severe, bloody froth oozing from the mouth, and opisthotonus pronounced. I at once gave her, by the rectum, an enema containing a dram of potassium bromide and forty grains of chloral. This had the effect of reducing the attacks to about half their former frequency. In an hour, I repeated the dose, which still continued their reduction, but did not entirely control them. As the pulse did not indicate a very full circulation and death seemed imminent, I resolved to empty the uterus as quickly as possible.

Calling in assistance, an anasthetic was administered and I began upon, what proved to be, a difficult and tedious task.

The os would not admit of even my smallest finger, and was so tense and rigid that it seemed impossible to ever get it dilated. I, however, persisted with my aseptic fingers. First, I got my index finger inserted and, after a long and wearisome interval, two. Then Barnes' bags were tried, but with very little success. I finally enlarged the opening, by the addition of fingers until I was able to squeeze my hand through, when I grasped a foot. Soon version was completed and a six months fœtus was delivered.

After the delivery, the attacks suddenly ceased and she had no more. Being in an extremely exhausted condition, I feared she would be unable to rally, but by brandy, eggs and nutritious enemata, she finally, by degrees, gained ground.

The unconscious condition continued for about three weeks, during which time she was restless, sleepless and flighty, but could be aroused to take nourishment and medicine by the mouth.

In about six weeks she was able to be around again, apparently as well as ever.

Case II. Mrs. W., aged about 29, multipara, stout and fat Labor had been going on for several hours when, apparently without any warning, she had a severe epileptic seizure. These continued for about an hour. In the interim she would become conscious, then roll her eyes, grate her teeth, clinch her hands and another attack would follow.

After having several, I was called in consultation. I found the os about the size of a silver dollar, but soft and patulous. An enema of potassium bromide and chloral was first administered. Soon she was chloroformed and after dilating with my band rendered well aseptic, I was soon able to apply Simpson's forceps and delivered her. She had after delivery only one convulsion and made a good recovery.

CASE III. A multipara aged 40, pregnant 9 months, large and stout, with rather pendulous belly. After being in labor several hours was suddenly taken with convulsions. Upon arrival I found the os was well dilated but the labor pains feeble. The patient was conscious between the attacks, but the seizures were becoming more frequent. I gave her chloral as a sedative and as soon as assistance could be secured, had her chloroformed and delivered by forceps.

This was a very good case for blood letting but as she flowed quite freely, and the convulsions ceased as soon as the delivery was accomplished, I felt willing to let well enough alone. She made a good recovery with a living child.

Case IV. Primipara, aged 20, healthy and full-blooded. When labor had continued for some time, was threatened with convulsions. At first, it was more a nervous irritability, could stand no loud noise or bright light, had an anxious look with a feeling of approaching danger. The attacks, at first, were every three or four hours, but not of an alarming nature. She would resume consciousness but was averse to answering questions.

I gave her chloral by the mouth and waited. The pains were slight and the os about the size of a quarter dollar. Urine albuminous.

After receiving chloral she went about 5 hours without a single attack, but soon they returned and I resolved to empty the uterus.

Procuring assistance I had the patient chloroformed and after some trouble got the os dilated enough to admit my hand. Now seizing a foot I turned and extracted the feetus. The child was alive and the mother made a good recovery. She had only a couple of very slight attacks after delivery.

CASE V. Mrs. S., primipara, age 34, large and stout, with prominent abdomen. Poorly for two or three months with grippe, which apparently left her with considerable pain in the back and head. Expected to be confined about the middle of March, and every few nights as that period approached, would have more or less labor pains. These would wear away and disappear for three or four days again, and sometimes a week.

About a week before her confinement, I was called to prescribe for pains in the head. Having had grippe I did not think about urinary trouble.

The head symptoms improved under antifebrin and casseine, and all went well for another week, when labor set in with regular pains. As nearly as she could recollect, she had been pregnant about 10 months. The pains became frequent but the os dilated slowly, was thick and rigid and the uterine contractions were spasmodic and irregular. I waited for about six hours, sinding her suffering intensely and the pains doing little in proportion to their severity. After trying hot bathing, hot drinks, etc., I gave her a hypodermic of one-sixth of a grain of sulphate of morphia. This quieted her pains for nearly an hour and when they returned were more regular and suffering more bearable. The first stage passed off all right and the head was fairly well down, but as her labor had been protracted and she had suffered intensely, I resolved to apply the forceps, which I did and delivered her.

The child seemed dead but thinking I felt a slight quiver over the precordia, I worked away for nearly twenty minutes endeavoring, by all means, in my power, to resuscitate it. When all had failed, I injected stimulants hypodermically, and was rewarded in a short time by seeing it breathe regularly. It is living and well to-day.

During this time the mother had been somewhat drowsy, but could answer questions intelligently.

I found she had flowed quite a good deal while my attentions were directed to the child. When I got her cleaned up, I found the pulse rather thready and rapid and she was not rallying from the chloroform as might be expected. I gave her a hypodermic of strychnine, after

which she improved somewhat. In about twenty minutes, however, I noticed a changed look. Her eyes became fixed and starey, and the eyelids began to quickly open and shut, pupils began to dilate, skin grew pale, mouth was thrown into a sort of a grin, arms and legs grew rigid, tongue protruded, breathing became jerky, body became rigid and the limbs began to jerk, breathing became noisy and sterterous unconsciousness became more profound. We held her down in the bed and I administered chloroform as quickly as possible. After a short time the rigidity relaxed and the color returned, somewhat, to the face, respiration became more regular and the pulse beats fell from 120 to 100 per minute. I at once administered a quart of saline by the lowel, as I had nothing with which to give it hypodermically.

As the patient grew calm, I drew off the urine and boiled it. It was bloody and found to be loaded with albumen.

Dr. Atherton was called in consultation and we decided that her pulse was rather too thready, and her exhaustion, due to a long tedious labor, too great for venesection, so we administered chloral by the rectum. Soon she regained semi-consciousness and rested fairly well for a time. Then she was able to answer questions and I left her with instructions to the nurse how to proceed. An hour after I left restlessness returned, followed by a flighty delirium, and before I was able to reach her bed, she had a very severe convulsion in which she died. The total number of convulsions in all were two.

Treatment.—Having considered the etiology and symptoms of puerperal eclampsia, what are the best means to be adopted to combat this condition? As the cause is most probably a two-fold one, viz, "toxæmia," from a convulsive poison in the blood, and a reflex nervous irritability in the uterus, the plan of treatment will be of a two-fold nature, viz., to eliminate the poison and soothe the nervous irritability. Of course best of all treatments would be to combat the malady from establishing itself, when the condition threatens, by prophylaxis. To do this the urine should be carefully analysed from time to time during the late months of pregnancy for albumen, tube casts, etc., the quantity passed in twenty-four hours estimated, and the amount of urea calculated. albumen is found along with these other indications mentioned, the patient should immediately be put to bed and put upon a restricted diet consisting chiefly of milk with perhaps a little toast, buttermilk, gruel or junket. Pepto-mangan or some othe easily assimilable form of iron is valuable. The free action of skin and bowels must be secured and in

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fact all excretory organs of the system stimulated. Frequent hot baths, diaphoretics and diuretics may be carefully given. Large quantities of water should be taken. The body should be kept warm and the patient at rest and free from all excitement; a little chloral may be given if there is any of the latter exhibited. Under this treatment the patient may probably go to full time and be delivered without any active convulsions occurring. Tarnier says the has never seen eclampsia supervene in a pregnant woman suffering from albuminuria, who has been for seven days on a strict milk diet."

When the attacks occur, the treatment must be more heroic. Active diaphoresis must be brought about by rolling in hot blankets or by the hot pack and by the exhibition of digitalis and pilocarpin Some of the German doctors condemn the latter, as too depressing to the heart, but I believe it to be of great service when cautiously given. A brisk purge must be administered, such as croton oil or elaterium, if the patient be not too weak. Chloral by the mouth or rectum in large full doses. Veratum viride is greatly praised, given either by the mouth or hypodermically. It acts like aconite, and rapidly reduces temperature and pulse. Urinary secretion becomes copious under its influence by the spasms of the renal vessels being reduced. Some advise it to be given till the pulse falls to sixty or under, when they say a convulsion has never been known to take place with the pulse down to this point. It is contended that it saves venesection by bleeding the patient into her own veins. Its great disadvantage, however, is that it weakens a heart which often requires to be strengthened. Morphia is advised by some in large doses till narcosis is produced, but cases of interstitial nephritis, according to Tyson, bear morphia badly. If you are sure of the absence of this condition, give it, but with the exception of diaphoresis it tends to lock up the secretions. Chloroform, I think, is the most reliable sedative and has the advantage that you gain immediate control of the attacks. If the patient is strong, vigorous and greatly cyanosed, probably much good will be accomplished by venesection. As the patient is in the recumbent position, from ten to sixteen ounces of blood may be removed without harm, after which the latest and most successful plan of treatment is hypodermic injection of large quantities of one per cent. solution of saline fluid. This should be made of sterilized water, temperature 110°F. I have seen a couple of quarts given at once into the armpit or back of thigh with marvellous results. It encourages diaphoresis, diuresis, supplies the loss of the blood withdrawn by venesection, fills the vessels, and strengthens the heart. It dilutes the toxic blood remaining in the system and indirectly produces intestinal peristalsis. With these injections following, even a weak pulse and profound comu do not contra-indicate venescetion.

If this procedure does not control the attacks and spontaneous labor does not set in, I believe, both from the cases I have cited, and what I can gather from the best authorities, that the next most sensible thing to do is to empty the uterus. The feetus is undoubtedly an additional source of waste products, both from the placental cells getting absorbed as well as the inconium and biliary salts, so when other more conservative means fail, evacuate the uterus. Of course, if spontaneous labor is going on, do all you can, in a reasonable and safe way to accelerate it. As soon as possible apply forceps and remove in this way.

If the os is not dilating and the life of the mother is in imminent danger, the os must be dilated by artificial means—accouchement force. This may in some cases be very difficult. The nearer to the full term the easier it will be, and in the multipara easier than the primipara.

Anasthetising the patient, by chloroform, or in weak cases by the A. C. E. mixture, the operator, with the most rigid aseptic precautions, should dilate first by graduated sounds, then by the steel branch dilator hydrostatic dilators, or with the fingers, until, by forceps or turning, the feetus can be extracted. The dilatation must take place in urgent cases without loss of time, and when this cannot be accomplished by manipulation, small incisions have sometimes to be made. Hiemorrhage may be controlled by tampons of gauze or pressure forceps. Duhrssen is an advocate of deep cervical incisions, that the forceps may be introduced higher up. Others of note object to this, except by the most skilled obstetricans, as the mortality has been very high.

Kaltenbach and Halbertsma prefer Ciesarian section unless the child is dead, but this is difficult in private practice; and requires a skilled operator with everything ready at hand. After delivery by rapid dilatation, instruments, or turning, the uterus should be compressed for some time to prevent hemorrhage.

In eclampsia after labor there is no scope for surgical interference, and repeated saline injections and the exhibition of the drugs previously named must be our chief dependence. Of course in sthenic cases vene-section as well as diaphoresis, diuresis and free catharsis may be resorted to.

Nitro-glycerine, a drug not previously mentioned, may often be given with advantage, 1/16 gr. hypodermically. It relieves the cephalalgia. Guaiacol was rubbed into the abdomen of a couple of cases with satisfactory results. The inunction of 40 or 50 drops caused the pulse to become soft, free diaphoresis to set in and the convulsions to cease.

While the patient is unconscious, no attempt should be made to make her swallow; rectal alimentation of semi-digested food must be resorted to or a suitable stomach tube must be introduced for feeding purposes. The whole management of the puerperium must be about the same as after any other severe case of labor. Rest in bed for two or three weeks; freedom from worry and excitement, a careful and nourishing diet, iron, phosphorus, etc. in easily assimilable forms, constitute the chief regime in these cases.



THE NERVOUS ELEMENT IN DISEASES OF THE SKIN.*

By G. G. MELVIN, M. D., St, John, N. B.

In selecting a subject to bring before the society, it is due to the high attainments of the members composing it, that much thought should be devoted to the choosing. It cannot be denied that original matter is at all times the most important, and, generally, the most welcome. But an original idea is the rarest of commodities in the world. New stars in the heavens are scarcely less frequent than genuinely new thoughts. I am not going to quote Solomon's remark in this connection, as it is just possible many of the members have heard it already. Not claiming, therefore, to have a new thought to present to the society, and having been earnestly requested by the secretary to bring something before you, it has occurred to me that by considering an old subject from a somewhat novel stand-point, it might, perhaps, be given me to interest, where I cannot hope to instruct.

It is altogether needless, in this company, to point out the immense importance of the nervous system in the consideration of the etiology, the treatment and prognosis of general diseases. Not one of us, in approaching a patient, ever forgets the transcendent effect his individual nervous susceptibilities may have upon the outcome of his disorder. This is so well known that undue and dishonest advantage has been taken of it, and, in consequence, the world is filled with all sorts of pestilent quacks, whose sole stock in trade is to exploit this weakness of poor humanity for all that it is worth. Yet, notwithstanding this, the nervous system is frequently overlooked in the matter of diseases of the skin.

This is the day of microbes, of the bacteriologist, and of materialism. From the earliest ages it has been known that a few of the more common skin lesions are contagious, which few, in our day, have been demonstrated to be of bacterial origin. It is therefore just possible that this old knowledge may have something to do with the fact that we so seldom think of a neurotic agency, when called upon to treat a cutaneous disease.

I cannot hope in this paper, to do more than to touch upon in the briefest way, some of the more unusual, and perhaps, least thought of, nervous manifestations as exhibited in the skin.

^{*} Read at meeting of New Brunswick Medical Society, Fredericton, July, 1899.

Before considering those of pathological import, I would briefly call your attention to one or two which are purely physiological. First and perhaps the most common is the phenomenon of blushing. I do not know, but I presume, that the remark has been made before, that it is the "trade-mark" of purity, in every sense. The purer the complexion and the purer the mind, the more pronounced will be the nervous effect. His "unblushing cheek" is ever applied to the sharper and the sensualist. That natural lichen, induced by fear, by disgust, or by horror, commonly called goose-flesh, is as pure a manifestation of brain influence, as is Shakespeare's play of Hamlet. Other instances will present themselves, and it can be safely affirmed, that, with the exception of the heart and the genitalia, the skin is more under the influence of the nervous system than any other organ of the body. It is therefore not a matter of surprise that the part played by neurotic influence in the pathology of the skin is very important.

I will wholly omit mention of the purely nervous cutaneous diseases such as dermatalgia, anæsthesia, prurigo, etc., and will restrict my remarks to those disorders commonly met with in which a neurotic element is seldom looked for.

Eczema.—In the statistics of skin diseases, eczema occupies a very prominent position. It includes over two-thirds of all cases coming before dermatologists, though it is extremely probable, that as our knowledge of differential diagnosis progresses, this proportion will be greatly lessened in the future. It is entirely without the province of this paper to describe eczema. It occurs under a multitude of disguises, and has been attributed to an equal number of causes. But its neurotic etiology is one of the most important, and is most frequently overlooked. Perhaps the most troublesome, and to the physician, annoying form of this disease, is that which occurs in early childhood, known as infantile The trouble often begins on the cheeks, pruritus sets in, the place is scratched, suppuration is set up, auto-inoculation follows, and in a short time the face, scalp, arms, legs, and in short, every locality to which the infant's finger-nails can have access, become an unsightly mass of crusts and scabs, a source of humiliation to the parent, and of disgust and worry to the medical attendant. And yet, in many cases, the trouble is essentially neurotic, especially in the male. Examination will reveal, in a large proportion of these cases, a constricted prepuce, a glans penis that has never been uncovered, a mass of decayed smegma between the glans and foreskin, and such an excessive irritability of the whole organ,

that the slightest manipulation will produce an erection. Uncover the glans, either by stretching of the foreskin, incision, or circumcision, get the parts clean, and reduce the hyperemia and irritability by a soothing lotion, and the general eczema will vanish as by magic.

Again, in adults, we have cases which seem to be external in their nature. They are always symmetrical, generally on the extremities, preferably the upper, come very suddenly, last indefinitely, and itch intolerably. The following will serve as an illustrative case.—

On the 15th May, 99, there came to my office, Mr. S., aged about 50, engaged in the wholesale mercantile business. On the dorsal region of both hands, extending from the carpus to the knuckles, and covering the whole surface, was an aggregation of small vesicles, half the size of a split-pea, closely set, not very liable to rupture and exceedingly itchy, when the desire to scratch was given way to. The trouble hal been present for over a year, and the patient, being of a decidedly neurotic temperament, was greatly worried in consequence. The annovance caused was excessive. He was compelled to wear gloves at his business, and a contemplated trip to Europe seemed impossible while the trouble continued. He slept badly and was notably constipated. fancied it was imperative to pay a strict regard to diet, and denied himself many little luxuries to which he had been accustomed. He had nearly come to the conclusion that his condition was permanent and felt correspondingly depressed. The trouble was clearly The indications for treatment were to remove all causes of irritation, internal and external, as well as mental. The latter was accomplished by a pretty confident assurance that his disease was temporary, the constipation was corrected by frequent and minute doses of a saline laxative, and the cutaneous irritation, which had been kept up by injudicious applications, was removed by a discontinuance of these, and the use of Lassar's paste. In a few weeks the skin was normal, while the general health was so much improved that a return of the disease is not greatly to be feared.

Acne vulgaris.—Here we have a condition, so far as my own experience goes, much more frequently met with than eczema, and, on the whole, more amenable to treatment. Of course the large majority of cases are in young subjects between the ages of fourteen and twenty-five. This, I think, is the most significant fact in connection with the disease. It is the age of youthful generative maturity, and although I would not be understood as affirming that irregularities of the generative functions are the formative factors in the trouble, yet it is undoubted

that they play an important part in keeping up the disease. It may be objected that this is, primarily, not a neurotic cause, and the objection is just, but all such indications set up a reflex neurosis, which very unfavorably influences the course of the disease. It is true that a removal of this factor will not remove the disease, of itself, but it is also true that the disease is very difficult of removal unless this factor be eliminated.

Syphilis.—The tertiary manifestations of syphilis may be broadly divided into two great classes, the neurotic and the non-neurotic. The latter chiefly display themselves in the hones, the internal viscera, the skin, etc., while the former are almost exclusively restricted to the nervous system. Now the interesting point about this apparent selection is that the victims of vertiary syphilitic nervous lesions, are, in a large proportion in the higher walks of life, subject to a constant and intense strain upon the nervous system, intellectual workers, and people of high intelligence. So often is this the case, that in the absence of all external signs of the disease the essential factor in the trouble is constantly overlooked, and the patient becomes a prey to sudden death, mental aberration, paresis or paralysis without the real cause been suspected. Indeed, it frequently happens that the worker in dermatology has often very scant access to those cases, they, generally, coming under the cognizance of the general practitioner or neurologist. In the other class of cases we have a vastly different type of subject. It is the mechanic, the working man, and the laborer, the dull and lethargic, and the lover of the table. who display the outward and manifest symptoms of the disease, and with whom, in this paper, we have nothing to do.

Alopecia.—While the part played by the nerves in alopecia has from time immemorial been greatly exaggerated, a very large proportion of cases being occasioned by seborrhæa, rather than by any more occult cause, yet the neurotic element is not to be despised. More especially, in that disease, which, for want of a better name, we call alopecia areata, it plays a leading part. I am not going to enter upon the vexed question, how much this disease is due to the antecendent operation of the fungus of ringworm, but it has been placed beyond all doubt that in an immense number of cases the timea trichophytina element can be entirely eliminated. To anyone acquainted with this disease, its origin and distribution are clearly suggestive of a neurosis, and if the clinical history be closely enquired into, he can hardly fail in eliciting a story of nervous disorder. I cite the following case:—

May 29th, 1899, there was referred to me, C. O., a boy six years of age. When about four years old, parents began to notice a general thinning of hair at back of head, near occiput. This progressed steadily until a spot the size of a five-cent piece was entirely denuded. Soon other patches began to appear, as a rule on either side of the median line of the cranium, in symmetrical positions, until, by a gradual progression and coalescence of patches, the scalp became entirely bald, only a long hair here and there remaining as a reminder of the original condition of the region. A microscopical examination of scrapings from the scalp, and of hairs still remaining, revealed neither mycelium nor spores. The boy was fairly well nourished, his parents stating that he had good health as a rule, but a rather strict examination brought out the fact that if he was not closely watched at night, he would arise and walk about the house, sometimes in a waking and sometimes in a somnolent condition.

It is not necessary to dwell long upon the indications for treatment in cases like this. While undoubtedly external measures are essential, by themselves they are practically valueless. Means must be taken to get rid of the nervous defect and though internal remedies like nux vomica, zinc, phosphorus and perhaps arsenic are valuable, it is to the improvement of the patients general environment that we must chiefly look.

Feigned Disease.—There is yet one other class of cases to which I will advert; a class, which, luckily for the peace of mind of the physician and the patient's friends, is comparatively rare. I refer to malingery or feigned disease.

In some instances, doubtless, it is a mistake to call it a disease at all, as it is frequently assumed, in cold blood, for some specific purpose, and the term disease would be as suitably applied to theft, falsehood or any other allied crime, as to these cases. But, on the other hand, there often occur instances which appear to serve no rational purpose, for which no adequate reason can be assigned, and where we are forced to the conclusion that the hysterical element must be largely predominant. While not confined to any particular sex or age, it is most commonly practiced by young females. An almost melancholy interest often attaches to their efforts to delude. They are, in general, most crude, unsophisticated and often grotesque. The patient seems to take for granted that the observer will never suspect her integrity, and the genuineness of her tale, and, of course, the lack of anatomical and physiological know-

ledge, leads into the gravest blunders as regards the ultimate success of the scheme. Erotic ideas often play an important part in determining their actions. As they are generally right-handed, the lesions will usually appear on the left side, and as they are, in the nature of things, not capable of forming just judgments, the effects produced are nearly always greatly exaggerated.

The following case will illustrate some of these points:

M. D., a girl of 15, was referred to me on the 3rd of April, 1899. Upon the left fore-finger, on the dorsal surface, between the metacarpus and the third phalanx, were eight or ten parallel abrasions, 1 inch long, their length in the long diameter of the finger, made apparently with some sharp cutting instrument, and surrounded by an area of dried blood. Almost wholly covering the remaining surface of the finger, the dorsum of the hand and wrist, and at a subsequent interview the whole arm, was a deposit of coloring material resembling fuchsin in hue, perhaps a little darker, which the patient most solemnly declared oozed from the surface at frequent intervals. In this she was corroborated by a neighbor who accompanied her, who asserted that he had seen the surface wet and dripping with the red fluid. She also complained of total sensory paralysis of the index finger, and, later, of the whole arm, which afterwards deepened into the motor form also, so that, at the final interview she held the arm absolutely rigid, both when standing erect and leaning forward. As she seemed pronouncedly anæmic and complained of shortness of breath upon exertion, I took occasion to make a critical examination of the heart which necessitated an exposure and manipulation of the breasts which were well formed and developed. As a sequel to this at a later visit I found the left of those organs decorated with a most generous splash of the paint, and I was gratuitously informed that a similar spot existed on the left thigh near the groin. I hope it is unnecessary to say that I took her word for the The coloring matter was easily removed by soap and warm water, and, under the microscope, of course, exhibited none of the After prescribing a mixture of iron and characteristics of blood. arsenic for the anæmia, and bromide of potash and valerian for the neurotic trouble, and sending her to her home in the country, with directions that she be carefully watched, I finally lost sight of her. afterwards understood that she made her appearance at the General Public Hospital in St. John, but what her fate was in that institution I am unable to say.

I will not detain the society with any extended remarks on this case. It was to me, however, a most interesting one. I fancied myself, at once, in the middle ages, in contact with one of the renowned cases of stigmata, or bleeding pores, saints over which theologians have fought so long, and to whom, as in the person of St. Francis of Assissi, such devout reverence has ever since been paid. Nevertheless such cases are not to be coveted. The medical man is placed in a most embarassing position. Many such patients, as was the case just described, are apt to be in a disordered condition of health irrespective of their feigned disease. A fatal result is by no means infrequent, and then woe to the physician who has unadvisedly laid bare the artificial nature of the disease most apparent and chiefly complained of.

I shall refrain from going further into the subject of neurotic dermatology, but I have by no means exhausted it. In fact all that has been said is only the merest touching of, the surface of the subject. Scores of other diseases might be named in which a knowledge of the nervous element is of equal, or perhaps, of greater importance to the general practitioner. As was hinted at the outset I cannot help thinking that we are travelling too fast and too far upon the road of materialism in medicine, anxious and determined to find specific cause for every specific effect. We pay too much deference to the idea that the body is a machine. We have come to look with suspicion upon every factor of disease that cannot be seen in our microscope, or demonstrated in our laboratories. We are apt to forget the immense influence that our surroundings, our hopes and fears, our pleasures and passions, our desires for reward and our dread of punishment, have upon that strange and mysterious entity which we call the human system.

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Selected Article.

THE TREATMENT OF PULMONARY TUBERCULOSIS BY THE INHALATION OF ANTISEPTIC NEBULÆ.*

By Homer M. Thomas, A. M., M. D., Chicago.

At the Louisville, Ky., meeting of the Mississippi Valley Medical Association, I had the privilege of presenting microscopical proofs of the penetrability of vaporized medicaments into the pulmonary alveoli. Previous to that time all text-books on this subject stated that it was impossible for nebulæ to reach beyond the smaller bronchial tubes. A demonstration of the fact that nebulæ do reach the pulmonary alveoli raises the question of their efficacy in the treatment of pulmonary phthisis. Work demonstrating the value of this form of medication in the treatment of pulmonary tuberculosis has been going steadily on until the present time.

It is the purpose of this address to present such clinical facts as have been obtained through the use of this special form of medication in the treatment of pulmonary phthisis. There is no specific treatment of this disease. Cures are reported upon every hand through the media of many agencies. The disease being a complex one in its varied manifestations, each case should be treated upon such special lines as are individually indicated. The basis of all successful treatment is in the maintenance of nutrition. As a corollary to this, is the influence of selected climate, judicious exercise, rests, baths, internal medication and all other collateral agencies which stimulate vital resistance.

ANTISEPTIC NEBULÆ IN THE ROLE OF CURE.

Having surrounded each case with the essential conditions for repair of the pulmonary lesion, what relation does the inhalation of antiseptic nebulæ bear in the role of cure? The answer to this query involves a consideration of the pathological basis upon which nebulization of antiseptic medication rests. It is proved beyond doubt that these nebulæ penetrate through the ramifications of the respiratory tract wherever it is possible for air to go. The first question to determine, then, is, whether the medicament can reach the origin of the disease; and will it

^{*}Read before the Medical Section of the Mississippi Valley Medical Association, at its Annual Meeting in Chicago, Oct. 4, 1899

prove effective when the origin of the disease has been reached, is the second problem.

The air vesicle route is the rational one, since tubercle bacilli are discharged through the air, and are found in the sputum. The absence of general infection in curable cases shows that the possibility of connection with blood vessels is not large. All inflammatory areas are areas in which the mechanism of extra vesicular interchange is materially interfered with. Large numbers of tubercle bacilli are discharged by the air vesicles. Few get into the blood or lymph current; therefore the air vesicles must be in closer touch with the tubercle bacilli. The presence of the large quantities of pigment from the air around tubercular areas shows that considerable absorption through the lymphatics from air vesicles is possible. A nebulized antiseptic having reached the area beyond the limit of current finds a greater probability of falling on the epithelial covering and of being absorbed from it than if it reached only to a zone of current, for in such an extra current area no force is operating save gravity. On reaching an extra current zone nebulized antiseptics fall on squamous epithelium and are wafted to the outside. These mechanical laws hold good whether the foreign body be tubercle bacilli, dust, or oils in suspension.

Since this is true of healthy lungs, is it true when we speak of tubercular lungs? Nebulized antiseptics suspended in the air will reach the cavities and air vesicles of tubercular lungs just as well as if these lungs were healthy. But where there are considerable zones in which the air vesicles are obliterated these areas are necessarily very difficult to approach from the side of the air vesicle. Oil globules falling in the air vesicles of the neighborhood are picked up by the phagocytes, absorbed, and finding their way into the lymph and into the blood, reach these masses of tubercular overgrowth with as much readiness as they can be reached in any other way. It is true that the presence of large areas without air makes success through air routes very diffi-Admitting that encapsulated tubercular foci cannot be reached by nebulized medicaments, is there any known therapeutic agent which can None that I know of. Nature has walled off these encapsulated tubercular foci by connective tissue barriers and in that way makes an effort to effect a cure. It therefore follows that the most rational way to treat locally these tubercular encapsulated foci is to attenpt to render antiseptic their contiguous areas.

The pathologic conditions we have to deal with are those of lowered vital resistance in the lung tissue; development of tubercle bacilli; hyperplasia of fixed cells; formation of epithelioid cells; development of knot like foci where the tubercular bacilli multiply; giant cell formation in which there is no new capillary formation; inflammation; degeneration of the blood vessels, lympathics and air passages. In these areas, leucocytosis, further retrograde changes, mixed and secondary infection.

That antiseptic nebulæ have a beneficial influence on the parts of the lung they reach there is no doubt. In such places the laws of osmosis and dialysis unite to aid in the prevention of new invasion. That these antiseptic nebulæ do not reach the escapsulated areas is no argument against the efficacy of this method of treatment, for neither can these areas be reached through the blood nor the lymphatics, by antitoxins or any method of hemotherapy, for no blood vessels or lymphatics reach these walled off foci. Therefore our therapeutic resources are confined to persistent efforts toward preventing an extension of the tubercular processes.

SCOPE OF NEBULIZATION.

What is the scope of nebulization? 1. Control of cough. 2. Relief of dysphea. 3. Intimate contact of antiseptic nebulae upon 1400 square feet of respiratory capacity. 4. Inhibition to the extension of tubercular foci.

The advantage of controlling cough by inhalation, rather than internal medication, is self evident. By bringing to the inflammatory areas through direct contact specially adapted formulæ of expectorant or anodyne combinations, you allay many or all of the distressing symptoms from cough.

The relief of dyspnæa, incident to the blocking of the larger or smaller tubes by catarrhal products, is often marked. By means of expectorant types of nebulæ this as a rule is readily accomplished.

To properly use the antiseptic nebulæ in the treatment of pulmonary phthisis it it is essential that an abundance of compressed air be supplied at a steady pressure of from fifteen to thirty pounds to the square inch. The air should pass through a series of antiseptic chambers which entirely free it from all impurities. When it is purified and then compressed a final measure of purification should be given by its passage through the oil of cloves. In cold weather it is better that the air should be heated to a temperature of 60° to 70° F. before using for the purpose of producing nebulæ. Given an abundance of air that is pro-

perly prepared for use, a well devised and constructed nebulizer is placed at a point convenient for the patient's use. Into this nebulizer a variety of formule can be used; the selection of the special combination suited to each case will depend largely upon one's experience in the use of this medication, and from a close study of the physical findings in the chest of each patient. Where it is desired to relieve cough a mixture containing the tr. of stillingia and beech wood creasote, with lavolin as a base, is quite often efficient. For the relief of the dyspræ, which so often arises from a catarrhal blocking of the tubes, both large and small, expectorant combinations with carbonate of ammonia, syrup of scille, syrup of pruni virginæ, with lavolin as a base, often give marked relief. Should she case be one in which they are specially urgent symptoms to relieve, and where there is general toxemia from the disease, recourse should be had to the use of the well-known and tried antiseptics. Nebulization of eucalyptus, oil of cloves and beechwood creasote have been often effective. A mixture of ten per cent. iodoform in solution with sulphuric ether and lavolin has been found very valuable. Frequently the use of pure Ceylon cinnamon oil in solution, with lavolin as a base, in a preparation of about ten per cent., is an excellent stimulant for the bronchial mucous membrane.

Whilst all of the foregoing are standard antiseptics, and have their range of usefulness in individual cases, it has been found that they do not inhibit the growth of culture media, hence nothing pathologically curative can be claimed for any of them. They are useful more for the relief of symptomatic conditions than for curative results. We have, however, at our command one antiseptic, a powerful germicide, from which there is reason to feel hopeful that valuable results will be secured in cases of pulmonary phthisis. This antiseptic is formalin. It has been found by experiment that culture media placed in an atmosphere saturated with a respirable solution of formalin are markedly inhibited, and, in some cases, entirely arrested in there development. With this fact, upon which to estimate the antiseptic value of formalin, we feel justified in claiming it to be our most valuable remedy in the treatment of pulmonary tuberculosis by inhalation.

In using formalin I begin with a four per cent. solution of the forty per cent. aqueous commercial solution in water. This is placed in the nebulizer and violently agitated by means of compressed air. I do not nebulize this solution, but favor evolution of the gas through a mechanical mixture and agitation due to the pressure of compressed air. In a short time cases develop and acquire an increasing tolerance for the formalin mixture, and by degrees its strength can be increased from four per cent. up to twenty per cent. One invariable rule should be observed in the use of this therapeutic agent, and it applies with equal force to those previously mentioned, to instantly cease their administration as soon as cough ensues. By pursuing this plan the tolerance of the patient is readily secured and the time in which nebulization can be administered correspondingly lengthened.

RESULTS AT THE COOK COUNTY HOSPITAL FOR CONSUMPTIVES.

There has within a year been established in this county a hospital devoted exclusively to the treatment of consumptives. This building is completely equipped with chemically pure compressed air, abundantly distributed, and the treatment of pulmonary phthisis by nebulization is there extensively used. I have records of a number of cases treated there since the 21st day of February, 1899, and desire to call your attention to some of the results secured from the treatment. All of the cases were in the second and third stages of phthisis. They numbered fifty, all males. Of these we have a gain in weight among fifteen of the fifty averaging from two pounds to twelve pounds; a loss in weight among thirty-five, and in five cases there was neither loss nor gain in weight. When we reflect that the patients coming to this institution were in the worst possible condition of general health, all suffering from advanced tubercular processes in their lungs, that the food supplied is of poor quality, and in every case inadequate to the proper nourishment of the patients, I feel that the showing made in the short time elapsing, from February 21st to August 15th, is a very creditable one. I am quite aware of the inaccuracies that statistical statements may lead one into; I also appreciate the errors of deduction that one may easily make from such a general aggregation of cases, but I feel warranted in asserting that a very large proportion of the improvement, forty per cent., obtained in the number of cases enumerated, has come from persistent saturation of their respiratory passages with antiseptic nebulæ.

As far as work has progressed it certs by opens up a vista of therapeutic possibilities. As I have already stated, a lung with a tubercular process shows an immense amount of newly formed connective tissue. This is an effort on the part of nature to wall off the pathological process. If nature is successful there is nothing left but scar tissue, the tubercular process is enclosed and the patient recovers. If nature does

not succeed, secondary mixed infection takes place, we have sepsis, and the patient dies. There is only one cure, that is by walling off the tubercular process by embryonal tissue. In my experience I am led to conclude that medicated vapors are of great value in favoring such a process. Nebulization always did, and always will, occupy a secondary place in the treatment of this disease; its function is that of a supportive role, rather than the development of curative properties per se. We should remember that in advancing infection with the tubercular bacillus it is the vital resistance of the cells and the possibility of the reproduction of embryonal tissue which we must strive to secure. How much any treatment assists these processes it is difficult to say, but only along the lines of such assistance can success be reached. The treatment is not necessarily an effort toward the extermination of tubercular germs, but the stimulation of the cellular structures of the system by which the patient may resist invasion of the germs as well as the toxins which are manufactured and thrown out by the germs themselves,

THE MECHANICAL METHODS.

There are many mechanical methods for the introduction of antiseptic nebulæ into the respiratory passages. A double glass tube, so constructed as to occlude the anterior nares, will enable the patient to inspire freely through the nasal passages. The nebulæ can be admitted by a single glass tube held between the lips slightly compressed, and inhalation will take place through the mouth as well as an admixture of atmospheric air through the nares. The preferable method is the use of a pure gum-rubber funnel top, such as is used for lavage of the stomach. This funnel top is readily adjusted to all the irregularities of the facial contour and very little of the nebulæ escapes during its use. With this contrivance deep inspiratory efforts can be made simultaneously through the nares as well as the oral opening. The period of deep inhalation should be regulated by the easy tolerance of the patient to the nebulized medicament. Cough is the only warning sign which should cause us to desist for a greater or shorter length of time in the use of the nebulæ. With increasing use on the part of the patient, the time of contact of the medicament with the respiratory passages can be greatly lengthened. Again, the nebulæ can be respired directly from the exit opening of the nebulizer. This is a good way for those commencing the treatment, as the larger admixture of atmospheric air renders the deep inhalation of the nebulæ less irritant.

As a supersaturation of the respiratory passages with this nebulæ is the desideratum aimed at, the whole atmosphere of the room in which the patient is placed should be completely filled. Under these conditions every respiratory effort carries into the lungs a greater or less amount of nebulized medicament. So complete is the supersaturation attained that the expectoration of tubercular patients often has the characteristic odor of the medicament nebulized. The perspiration from the skin will also have this odor, and the ammoniacal odor of the urine is frequently lost in the characteristic smell of the nebulized medicament.

The adaptability of this form of treatment for individual use of patients in their homes is very wide. A great deal of mechanical ingenuity has been shown in efforts made to easily produce a large volume of compressed air for nebulization. Beginning with the small hand bulb, nebulization is only secured in a very inefficient and interrupted way. Passing from that primitive form up to the use of pumps, an almost infinite variety of mechanism has been devised. There is the hand pump, which is tiresome, and at best, can only be operated for a comparatively short time. Then there has been an effort made to reduplicate power by means of long lever pumps, rotary and circular. The most feasible and practical means of obtaining compressed air for nebulization, in localities where there is water supply to the homes, is in the use of the mechanism known as a compound pump. This pump is cylindrical in form. The water enters at the bottom and through a system of valves the pressure of the water operating upon the valves efficiently compresses the air and forces it out through the opening from which it is conveyed into the reservoir for use. The usual water pressure is from sixteen to twenty-five pounds to the square inch. By the use of compound pumps the pressure may be increased to thirty-five or forty pounds.

Should it be desired to take up nebulization to a considerable degree for the treatment of phthisical cases at home, facilities for the easy entrance of air into the pump are necessary. One of the first points to remember is to take the air from the highest point possible in the vicinity of the home so as to get it as free from surface contamination, odors and gases, as possible. In order to do this, after the piping has been placed at the highest point, there is put at the outer end, two or three screens varying in increasing fineness, preventing the ingress of any dust or solid impurities with the air. When the air is mechanically filtered and compressed there should

be placed an antiseptic chamber for the purpose of holding in suspension some antiseptic oil, as oil of cloves or oil of wintergreen. After this purification has been secured the air is then ready for piping to any portion of the house where its use is desired. The plumbing connections should be made at the point of entrance of the water to the home, preferably in the basement, for the higher you carry the pump from the basement the greater corresponding decrease in pressure. An apparatus, such as I have described, can be placed for about \$100.

While the inhalation of antiseptic vapor is not a specific for tuberculosis of the lungs, yet it plays an important role as a supporting means
to other methods of treatment. There can no longer be doubt of the
penetrability of properly compounded and vaporized medicaments.
Their value in the treatment of pulmonary phthis is largely determined
by the medicament used and the amount respired. Clinical experience
has proven their value. The weakness of this method of treatment lies
in the therapeutic action of the medicaments at our command, rather
than in the mechanics for vapor production. Chemical researches of the
future, we hope, will yet bring to our aid more powerful antiseptics than
those now available; powerful in their selective antagonistic action upon
the pathological conditions of pulmonary phthis and yet harmless in
their effect upon the healthy structures of the respiratory passages. We
are strong in mechanism, weak in therapeutic resources.

A PLEA FOR THE ADOPTION OF THE INHALATION METHOD.

I believe the chances of successfully coping with pulmonary phthisis are greatly enhanced by the general adoption by the profession of the inhalation method. It makes possible the creation of a sterilized atmosphere for the respiration by patients in their own homes. Too long have the profession been under the shrewd and often unscrupulous domination of those interested in the "commercialism of climate." In many instances incurable cases have been sent long distances from home, at great expense as well as bodily discomfort, allured by false hopes of the climatic cure of phthisis. Prominent specialists in localities, supposed to have great virtue in the cure of this disease, have reaped great financial rewards from the credulous faith of the incurably sick, and, when at last the fallacy of such hopes has been demonstrated, the excuse is given that they came "too late," and, would they die at home, must return at once. No intelligent physician can deny the value of altitude in the

treatment of selected cases of phthisis, but the great rank and file of these sufferers leave the comforts of home to share the discomforts of a residence away, when their disease is equally amenable to home treatment. I plead for greater discrimination in the selection of cases that leave their home climate for often an elusive hope of benefit in other altitudes. With our more intelligent appreciation of the causative factor in the production of this disease, with the valuable curative agencies we can surround our patients with at their own firesides, and with the additional compensation that if cured at home they can forever remain there, we should use conscientious discrimination as to where and when we send our tubercular patients. While assiduously working to cure, by any means in our power, let us not neglect the broad field of the prevention of tuberculosis.

There is every probability that the absolute extinction of tuberculosis from the world is not far distant. It is inevitable that when the race becomes fully cognizant of the dangers from tuberculosis and the simple measures necessary to stamp it out of existence, they will arise and forever make this scourge a thing of the past. Most hopeful is the outlook for the accomplishment of this great result. Not alone are the masses awakening to the needs of the hour, but those in high places, even royalty itself in England, is championing the cause of race emancipation from tuberculosis. Innumerable societies are springing up in every village, hamlet and city throughout the land; prevention, like territorial expansion, is in the air, and so comprehensive is this reform in its scope that a great international conference for war on tuberculosis has recently held sessions in Berlin. Let us all do something to restrict this disease, so that with the dawn of the new century we may hope to see the tuberculosis problem solved by the most humanitarian methods, thanks to the combined efforts of physicians, health officers, statesmen, philanthropists and the good will of an intelligent people.—The Medical Dial.

MARITIME MEDICAL NEWS.

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No. 11.

Editorial.

VACCINATION IN NOVA SCOTIA.

A statement was made by a reader of a paper at the last meeting of the Medical Society of Nova Scotia, that two-thirds of the population of this province under the age of sixteen had never been vaccinated. We believe this statement to be true. It is an astounding one and deserves our very careful consideration.

Nova Scotia is exposed to small-pox infection, an epidemic might at any time break out. If it did we would see a repetition of the 1886 outbreak in Montreal, where an unprotected population was attacked by

the disease and thousands perished before it was staid.

We hear often the statement that there is no small-pox now-a-days, that it is a disease almost extinct. It is a disease not extinct, but kept in check by the universal and judicious use of the protective influence of vaccination. To show that there still is a danger from small-pox, we quote the following figures. In the United States between the last of June and the first of November of this year there occurred no less than 1435 cases of small-pox. The majority of these cases are reported from unprotected districts, but no more unprotected than Nova Scotia. The unprotected condition of Nova Scotia and the means to improve it demands the careful consideration of our Legislature during the coming session.

But in order to carry out any system of vaccination thoroughly, there is a preliminary step which the Government would have to take, namely, the adoption of a method of Registration of Births. In the province of Nova Scotia there is no registration of births—a serious and distinct loss to the province in general and also to individuals, for we know of cases, that owing to an inability to produce a birth certificate Nova Scotians have been put to great loss and inconvenience.

To carry out vaccination we must have registration, this having been proved by the inability to enforce the rules in the city of Halifax, a difficulty which can not be overcome until a system of registration be

adopted.

At the meeting above referred to, a committee was appointed to bring these two questions before the Government. We believe that this committee is now at work and will shortly make an effort to bring about two measures which will be an immense advantage to the entire population of this province.

Society Meetings.

SAINT JOHN MEDICAL SOCIETY.

Dr. Scammell, President, in the chair.

October 4, 1899.—The first meeting of the year was opened by the President. Reference was made more especially to the loss which the society had sustained in the death of the late Dr. M. F. Bruce.

Then the President read a paper entitled "Diarrhœa in Infants." The condition of diarrhœa is a symptom, not a disease, is more prevalent in the summer months and difficult for classification, as there is no relation between the severity of the symptoms and the pathological changes present. The predominal predisposing cause is injudicious feeding. Three stages of the illness were described, (a) Premonition, (b) Emaciation, (c) Exhaustion.

As regard treatment, sanitary conditions, feeding and teething should be investigated. Locally, warm solutions injected into the rectum and returning along the side of the tube gives relief and cleanses the rectum. An evacuant should be given at the outset followed by the administration of some antiseptic. Suitable remedies are boracic acid, salol, turpentine, bismuth, glycerine, beta-naphthol and calomel. Opium and astringents as a rule should be avoided. To relieve restlessness, the fluid extract of hyoscyamus with spirits of chloroform in small doses given in glycerine may be tried. Particular reference was made to calomel, its antiseptic power being derived from the change to the perchloride by the action of the hydrochloric acid of the stomach.

In the discussion which followed, the value of calonel was pointed out; of starch injections for painful and frequent stools, of arsenite of copper in minute doses, frequently repeated, to check diarrhoea and in all cases proper hygienic surroundings.

October 11.—A resolution was adopted deploring the loss of Dr. M. F. Bruce, a former president of the society, a man who possessed ability of high order, a genial sunny disposition and a kind generous nature.

Dr. Ellis read a paper on the "Bubonic Plague." The various forms were referred to, as well as its special symptomatology and pathology—The means by which the disease is spread (by rats, etc.,) were fully discussed.

October 18.—A paper on "Tubercular Laryngitis" was read by Dr. J. R. McIntosh. A patient suffering from this disease was first exhibited.

followed by a consideration of the condition in detail. Among the more prominent features were described the pallor of the parts—this depending, however, on the chronicity or acuteness of the attack, acute laryngitis presenting more inflammatory signs: swelling of the arytenoid cartilages and inter-arytenoidal space; other areas involved, ulceration and nodules. Regarding diagnosis the two principal diseases to exclude are syphilis and cancer. The symptoms giving rise to this complaint are hoarseness, pain on swallowing, paroxysmal cough and dyspnæa. For treatment fresh air is necessary. The most important remedies are (1) Lactic acid 10% applied on a cotton swab and the strength of solution gradually increased even up to 90%. (2) Menthol in 20% solution of olive oil or liquid vaseline. The sedatives which may be used are more especially cocaine, orthoform and morphia.

In the discussion which followed Dr. T. D. Walker referred to tracheotomy in tubercular laryngitis and reported a successful case.

Dr. Melvin spoke of the use of codeia.

October 25.-A case of congenital absence of anterior bladder wall and dorsum of penis was shown by Dr. John Berryman.

Dr. Ellis exhibited a case of hypertrophy of lingual tonsil—the main symptom in which was a peculiar paroxysmal cough.

A paper on "Eczema" by Dr. Melvin was then read. The importance of recognizing the various forms and also the various stages of the disease was pointed out. Two characteristics were mentioned as essential in eczema: inflammation and fluid exudation. The latter is not always present but is never wanting in some stage of the disease. There are several bases for classification such as pathological, etiological, anatomical. The most practical is the first mentioned under which are the varieties (a) vesicular, (b) pustular, (c) papular, (d) erythematous and the squamous as a sub-variety of the latter.

Dr. Melvin intimated that in St. John eczema formed about one-fifth of all skin cases.

Treatment.—As eczema is a self-limited disease with a direct tendency to recovery, all that is necessary is to eliminate the cause. Local irritation is almost always present. Avoid this irritation and then protect the skin. The solution of subacetate of lead in fresh milk is frequently useful. Constitutional disturbances are not considered as important factors as formerly and we have eczema existing as a skin disease pure and simple. However in selected cases, Fowler's solution, sulphate of magnesia, antomony, etc., are of service.

In the discussion that followed Drs. Taylor (Charlottetown) Berryman, Inches and James Christie all thought that some constitutional disturbance was present in cases of eczema and that it was necessary to resort to internal medication to effect a cure.

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N. S. BRANCH BRITISH MEDICAL ASSOCIATION.

Dr. E. A. KIRKPATRICK, President, in the Chair.

November 1st. 1899. Meeting held at Halifax Hotel, a large number being present.

Dr. Farrell showed a case of resection of shoulder joint and urged importance of early movement in cases of operation and injury to the joints of this extremity. He particularly applied his remarks to cases of Colles' fracture and injury to the olecranon.

Dr. Ross commented on the case and referred to the differences of opinion among surgeons concerning fixation of joints after fracture. For instance, in cases where the elbow-joint is fixed, Southam, of Manchester, says at the end of two or three weeks, passive movement should be cautiously commenced. The writer on fractures in Dennis' Surgery says splints should never be removed before four weeks; and Mudd, of St. Louis, says passive motion before the bone is consolidated is out of place and dangerous.

Dr. M. A. B. Smith stated that Dr. Phelps advises the joints in these cases to be fixed for at least six weeks.

The President showed a case of keratitis hypopyon with severe ulceration due to injury. This was treated by applications of nitrate of silver and bichloride washes, and is rapidly healing.

The President also showed two other cases, one of traumatic dislocation of the lens into the anterior chamber in which he had operated in consequence of the opacity of the lens, and the other a case of chronic non-inflammatory glaucoma. The importance of early diagnosis in these cases was impressed upon the members, as many cases escape the notice of the general practitioner.

Dr. Murphy reported a method of sterilizing medium sized catgut by four per cent. formalin solution, afterwards boiling the catgut.

Dr. Farrell exhibited a crochet hook for removing stitches from sinuses.

Matters Personal and Impersonal.

Dr. F. W. Goodwin has lately returned to this city from London, after passing the examinations entitling him to the Membership of the Royal College of Surgeons and Licentiate of the Royal College of Physicians.

Drs. John Stewart, of this city, and R. A. H. MacKeen, of Glace Bay, arrived by the "St. John City" on the 10th inst., after spending some time in Great Britain and the continent.

Dr. W. Bruce Almon, who has been engaged at post-graduate work in Paris for the past few months, also returned by the "St. John City."

Dr. J. F. Teed, of Dorchester, N. B., was united in marriage on the 8th inst. to Daisy A., daughter of Ranchford Weldon, Esq., merchant of

London, England.

Before the Canadian contingent started for South Africa, Messrs. Parke, Davis & Co. sent one hundred dollars worth of their antiseptic preparation to the medical stores. This will not only prove a valuable contribution, but speaks well for the thoughtfulness of this enterprising firm.

Book Reviews.

A PRACTICAL TREATISE ON MATERIA MEDICA AND THERAPEUTICS.—By Roberts Bartholow, M. A., M. D., LL. D., Professor Emeritus of Materia Medica, General Therapeutics and Hygiene, Jefferson Medical College, Philadelphia. Tenth Edition, revised and enlarged. Published by D. Appleton and Company, New York, 1899.

This admirable work has now reached its tenth edition, which speaks in fitting language the popularity of Dr. Bartholow's treatise. The present edition has added the principal new remedies with their therapeutic value and an entirely new article on prescription writing, besides supplying omissions heretofore excluded. The size of the book has not been materially increased, which in itself is of considerale adv. eage, unimportant references being expunged. Dr. Bartholow's work has long been favorably known and the latest edition has the publishers deserve due credit for the general appearant. The publishers deserve due credit for the general appearant.

THE ALIENIST AND NEUROLOGIST—The October (1895) number contains: Outline of Psychiatry in Clinical Lectures, by Dr. C. Wernicke; Degeneracy Stigmata as Basis of Morbid Suspicion, by Jas. G. Kiernan, M. D.; Senile Dementia and Marriage, by Jas. G. Kiernan, M. D.;

Christopathy and Christian Science, by C. H. Hughes, M. D.: Hemicrania and Its Relations to Epilepsy and Hysteria, by Prof. v. Krafit-Ebing; The Legal Disabilities of Natural Children Justified Biologically and Historically, by E. C. Spitzka, M. D., besides the usual Selections, Editorials, Reviews, Reprints, Book Notices, Etc. C. H. Hughes, M. D., Editor, 3857 Olive Street, St. Louis, Mo. Subscription, \$5.00 per annum; Single copies, \$1.25.

THE PHYSICIAN'S VISITING LIST FOR 1900.—Forty-ninth year of its publication, Philadelphia: P. Blakiston's Son & Co.

This handy little book has been recognized for many years as the multum in parvo of the numerous physician's lists published. For conciseness and neatness of appearance it is difficult to excel. Besides, the book occupies a very small amount of space in the pocket, which in itself is a strong point in its favor. We can heartily endorse our previous opinion, already expressed in years past, and can readily recommend Blakiston's Visiting List to our numerous confreres.

Sajous' Annual and Analytical Cyclopædia of Practical Medicine.—
By Charles E. Dem. Sajous, M. D., and One Hundred Associate
Editors, assisted by Corresponding Editors, Collaborators and Correspondents. Illustrated with Chromo-lithograph Engravings and maps.
Volume IV. Infants, Diarrhæal Diseases of—Mercury. Sold by subscription for series of six volumes only. Cloth, \$5.00, Half Russia, \$6.00 per volume. Published by the F. A. Davis Co., Philadelphia.

We have referred in terms of the highest commendation to the first three volumes of this excellent Cyclopædia, and the volume under review is in every respect as worthy of praise as those which have ceded it. An exhaustive and thoroughly practical contribution on the Diarrhœal Diseases of Infants, by Prof. A. D. Blackader, of Montreal, constitutes the first article, and it is followed by valuable articles on "Influenza," by Prof. N. S. Davis, of Chicago, and "Insanity," by the late Prof. Rohé, of Baltimore. These three articles alone take up more than 120 pages. Prof. James C. Wilson and Dr. Thomas G. Ashton contribute an elaborate paper on "Malarial Fevers," and Prof. Mc-Phedran, of Toronto, furnishes a lengthy and profoundly interesting and instructive article on "Diseases of the Liver." Other specially meritorious articles are "Locomotor Ataxia," by Dr. W. B. Pritchard, of New York; "Intubation," by Prof. F. E. Waxham, of Chicago; "Meningitis," by Dr. Chas. M. Hay, of Philadelphia; "Intestines, Diseases of," by Dr. A. A. Eshner, of Philadelphia; and "Leprosy," by Dr. Sajous. In addition to these are a host of shorter papers on various topics by various authors, all of distinct merit.

It is not surprising to us to learn that the demand for the work has been so great that the publishers have already had to duplicate the editions of the first volumes. The work is worthy of every success, but it must be none the less gratifying to Dr. Sajous to know that it is

being so thoroughly appreciated by the profession.

408 NOTES.

Some months ago the Antikamnia Chemical Co. addressed circular letters to a large number of progressive physicians asking opinions and suggestions that might be advised concerning new combinations of antikamnia with other drugs. The result has been the production of two new tablets, the combination of each appealing at once to the physician as a useful and valuable aid in many varied affections. We reter to the "Antikamnia Laxative Tablets" and the "Antikamnia and Quinine Laxative Tablets," the formulæ of which can be seen in our advertising pages.

EPITHELIOMA CURED BY TOPICAL AND CONSTITUTIONAL TREATMENT.—Sarah M. S. Norwalk; American; age 29; first seen January 27, 1898. A growth on the right ear of the size of a quarter-dollar, involving the entire lobe. Three months before, a little pimple had appeared, itched, was scratched, breaking the skin, and became very sore. The ear swelled, and the patient became quite feverisb. A physician ordered lead and opium, which reduced the swelling, but the sore grew larger, and thenceforward began to assume a malignant appearance and continued growing.

A section of the growth was now examined microscopically, and proved to be an epithelioma. Operation was advised, but refused. The patient was at this time highly anemic, by all the symptons; only digestion and bowels in good order; but the red blood cells were only one-third of normal in number.

while the white cells were in excess. Treatment as follows:

January 29th, commenced internal treatment with a teaspoonful of bovinine in old port wine every two hours. Topical treatment: injection thrice daily of thirty minims of a solution of one-third bovinine and two thirds alcohol, deep into the growth on the ear, until February 2nd; thenceforward three times a week until the 10th; twice a week from the 10th to the 15th; once a week from the 15th to the 17th. Following each injection the wound was dressed with pure bovinine three times a day. At the latter date the growth had nearly disappeared, and by February 21st the case was considered to be cured, but will be watched for any possible reverse. The general condition was strikingly improved. I had never known so rapid and complete a result in the treatment of epithelioma.—St. Louis Medical and Surgical Journal.

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