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THE

CANADA LANCET

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THE OLDEST MEDICAL JOURNAL IN THE DOMINION.

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The Canada Lancet.

VOL. XXX.] TORONTO, JANUARY, 1898. [No. 5.

*CONTRACTED FOOT.

BY

B. E. McKENZIE, B.A., M.D.

Orthopedic Surgeon, Hospital for Sick Children; Assist. Prof. of Clinical Surgery (in charge of Orthopedic Surgery), Ontario Medical College for Women:

AND

H. P. H. GALLOWAY, M.D.

Orthopedic Surgeon, Toronto Western Hospital.

The term employed as the subject of this paper may not be familiar to the profession, and has found its way into surgical literature only in recent years. It is possible, too, that the judgment of the profession may not endorse the introduction of a new term, on the ground that terms already employed fully describe all cases.

In 1885, Schaffer described a disability of the foot as "Non-deforming club-foot," and various authors since then have made favorable reference to his description, endorsing it as a distinct clinical variety of club-foot.

Without, therefore, claiming that any distinct variety is described, in using this term, which might not be included under the terms Talipes Equinus and T. Cavus, yet our observation points so directly to the fact that there is a class of cases having a clinical similarity and individuality that we shall, for the sake of discussion, arrange them under this heading. The cases here described include a wider range and larger variety than is implied in Schaffer's original description.

The term "Contracted foot," which has been more recently employed as synonymous with Schaffer's "Non-deforming club-foot" is eminently descriptive of a class of cases of foot disability not infrequently seen by the surgeon. There is generally deformity of considerable degree as well as disability, and in old cases the deformity is sometimes strongly marked (Fig. 1) and the disability so severe as almost to prohibit walking.

"In non-deforming club-foot," Schaffer writes, "all the conditions found in certain forms of talipes exist, with the exception of the exaggerated deformity. That is, there is a loss of normal relation between the articulation at the ankle and the muscles which act upon it, involving also, in many instances, the tarsus, producing a condition which prevents flexion at the ankle joint, and modified mobility with slight deformity at the tarsal, metatarsal and phalangeal articulations. With

*Read at the meeting of the Toronto Medical Society, Nov. 11, 1897.

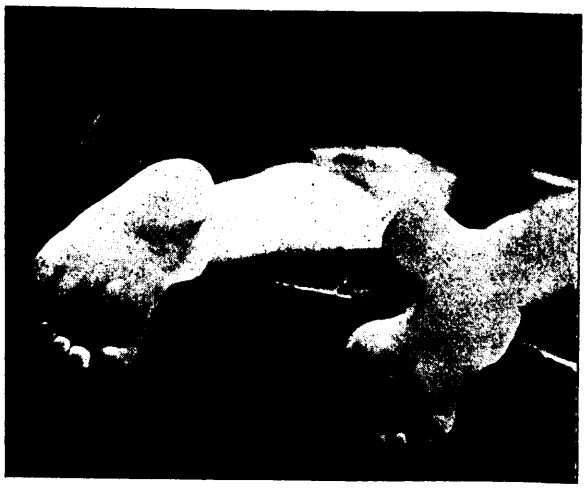

Fig. 1.

this state of affairs we find as a result, varying with the conditions present, actual disability, pain, sometimes very severe, in various parts of the foot, ankle, leg, and even reflected to the lumbar region, and tender and inflamed articular surfaces, especially at the junction of the first metatarsal bone with its phalanx."

His description and the term employed, though applicable to the slighter cases, are manifestly inappropriate to those which are more advanced, as will appear from the cuts and descriptions here presented.

We are unable to draw the line where Dr. Schaffer has done, as a case which at one time answers to his description may at a later date present exaggerated deformity.

Lovett says that in a series of tracings of the feet of young women the condition was found present in one case in ten. We have not found it nearly so common, in fact, much less common than other varieties of acquired deformities of the foot.

In very early cases we have found troublesome anomalous symptoms before any deformity was recognizable. Case one related in this paper will serve to illustrate this point. I was led to suspect commencing flat-foot when first consulted. In two years afterward the deformity was such as to demand operation.

In a moderately advanced stage the

affection is recognized by the impress made upon smoked paper, showing slight or no contact of the arch, by the tense condition of the plantar fascia by limitation of dorsal flexion, and by slight dorsal luxation of the toes, affording an example of a slight case of "clawed toe." In far advanced cases the deformity is at once seen on inspection, and consists in a more marked condition of the signs just referred to. The plantar surface and the dorsum are strongly arched, the tendo-Achillis shortened, the toes islocated dorsalward, the metatarsal bones at their distal extremities are tilted downward, making them approach the perpendicular, so that the body weight falls upon their heads; the foot is shortened, dorsal flexion greatly limited, the plantar surface, when the patient stands erect, touches the ground only at the distal extremity of the metatarsals, and the leg muscles are atrophied. The part of the foot distal to the medio-tarsal joint may be deflected outward so as to give a variety of valgus, or more commonly, be inverted, causing varus. In a similar manner the foot may be pronated, throwing undue strain upon the internal lateral and calcaneo-scaphoid ligaments, or, more generally be unduly supinated.

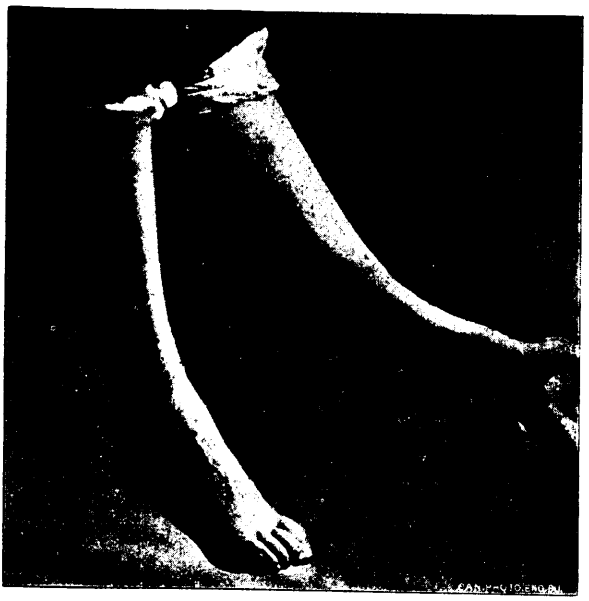

Fig. 3.

The symptoms which I have found present in early cases are tenderness upon pressure in the arch, pain and tenderness about the heel, and pain running up the leg and thigh. The gait may best be described as one deficient in elasticity and grace. In extreme cases walking is attended with much difficulty.

It is doubtful whether, viewed from the standpoint of pathology, this affection is a distinct entity. In some cases the affection has followed in the wake of an infantile spinal paralysis. Much more commonly, however, there is some form of progressive paralysis.

CASE I.—March, 1895. S.D., a girl of 10, referred to me by Dr. Caldwell of Peterboro.' Good family history. The present affection came on gradually. No history of an illness which laid her aside from walking. Left heel tender, some swelling, especially at the insertion of the tendo-Achillis. Sometimes walks without placing left heel on the ground. Some complaint made and some change in the gait noticed since Sept.,

1893, since which time periods of rest, more or less prolonged, have been advised and secured. Disease of the os calcis, periostitis, and hip disease have all been suspected in turn by different observers who have examined her. After careful consideration of the case I made a probable diagnosis of Achillo-dynia.

May, 1895. In addition to symptoms before named there is now found a tilting of the pelvis and consequent lateral curvature of the spine, resulting from the more marked disability of the left foot. The left calf and foot show slight atrophy as compared with the right. Expressed the opinion that this is a case of "non-deforming club-foot" (according to Schaffer).

Feb., 1896. Atrophy of left leg is now more marked. It is half-inch shorter and calf is three-fourths inch smaller. The left foot is noticeably more arched than the right and measures two sizes shorter.

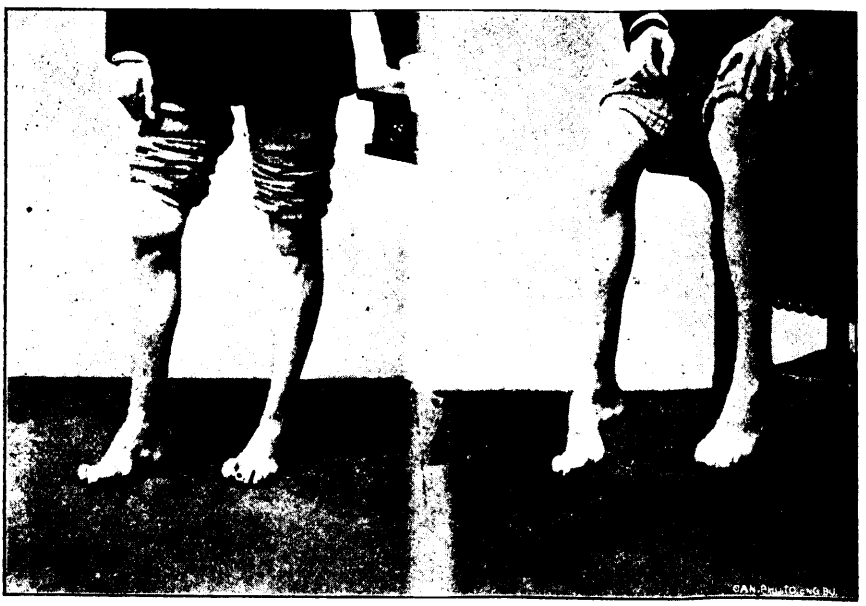

Fig. 4.

April, 1897. Treatment recommended has not been followed. Dr. Caldwell informs me that deformity increased to such an extent that he performed an operation for its relief.

CASE II.—April, 1896. Rev. L. D. W., 46 years, (Fig. 3) walks with a gait entirely wanting in elasticity and grace. Never was laid aside by any sickness. When a boy at school could run as fast as his fellows, and was in every way as active as they. As he grew toward manhood, working on a farm, he remembers that there crept on gradually some trouble in the feet and legs manifested by increasing liability to fall, and in lessened activity. These symptoms have been slowly progressive till the present.

A very interesting feature in this case is that this is distinctively a family affection. An older brother had some disability of the feet and limbs, similar in kind, which finally induced him to quit farming. Also a sister has some similar affliction the exact nature of which he does not know. A daughter twelve years old presents similar deformity and symptoms. One child, four years old, manifests some similar symptoms. Other children in the family of six are free from disability.

In the majority of cases seen by the writers, the history of the deformity is that of an insidious beginning and steady increase, while in a small minority of cases the condition evidently followed an attack of anterior poliomyelitis. The conditions found present, however, in these latter cases would seem to indicate a lesion other than that which is the anatomical basis of an infantile spinal palsy.

In an article by Herbert Allingham, in the *Br. Med. Journ.*, Oct. 2, 1897, is shown a cut of a typical case of contracted foot, and concerning the pathology of which he says it is probably due to an affection of the crossed pyramidal tract. The cut of foot shown in Dr. Allingham's article is from a case of Friedreich's ataxia. If this surmise be correct, may it not be that this part of the cord is similarly affected is some cases of varied diseases, thus giving the affection a definite pathology, though associated with different forms of spinal cord affections nosologically considered?

Treatment resorted to early is productive of much benefit. A simple night appliance strapping the arch down and keeping the foot at an acute angle with the leg, together with good boots worn in the day-time, have given much satisfaction. Frequently it is necessary at the commencement of treatment, however, to perform fasciotomy and tenotomy, to place the foot in an improved position. These feet are found frequently to be very rigid and unyielding. More than six hundred pounds force we have sometimes employed without satisfactorily replacing the foot. The most successful results follow an early diagnosis, and an intelligent and persistent use of mechanical means.

12 East Bloor Street, Toronto.

NITRO-GLYCERINE FOR SCIATICA.—Troussevitch has cured several obstinate cases of sciatica by giving the following drops:

℞ Solution of nitro-glycerine (1 per cent.) ..... ℥ ss.
Tincture of capsicum ..... ℥ iss.
Peppermint aq ..... ℥ iij.

M. Sig. Five drops thrice daily in a tablespoonful of water for the first three days, then ten drops thrice daily on the subsequent days.—*Practitioner.*

REFERENCES.—*N. Y. Med. Rec.*, May 23, 1885, p. 561; Bradford and Lovett, Orth. Surg., 746; Young, Orth. Surg., p. 353; Tubby, Deformities and Orth. Surg., p. 352; Lovett in Parks' Surg., vol ii., p. 665.

Editor "CANADA LANCET."

SIR,—When at the Ontario Medical Association meeting in June the subject of the "Victorian Order" for providing District Nursing was discussed, I was in full sympathy with the resolution passed by the Association in respect to that subject. Why? Because the object of the nursing project from having been misunderstood, and perhaps in a measure unwittingly misrepresented, I was under a false impression in respect to it.

Since Dr. Worcester, of Waltham, Mass., who has made a special study of the subject both in Europe and America and has had much practical experience in district nursing amongst the poorer classes in Massachusetts, has been in Ottawa and explained the working of such a system and its most excellent results my views have changed; as also, I particularly desire to state, have the views of a number of the medical practitioners of this city with whom I have had converse on the subject.

To be brief, three special advantages may be named as almost certain to result from the proposed nursing scheme, if carried out, as follows:

FIRST.—It would be a decided advantage (rather than a disadvantage) to our already somewhat considerable army of regular nurses, by increasing, probably in a little time quadrupling, the demand for these "ministering angels."

The new Order of nurses would go forth amongst the sick and distressed of the poorer classes, *visit* them, only, say for an hour or so (never remaining, as for a day or a week), for a small sum paid to the Home, not to the nurse.

One of them would be sent out, say to a woman at the commencement of labor, by the physician engaged, she would take the place at the bedside and in the room of the very incompetent neighbor or friend, or even mother, of the patient, now commonly in attendance. With a knowledge of the requirements of the case, with kindly sympathy, tender and *clean* hands, she would arrange everything for the comfort of the patient, the prospective baby, and also for the coming physicain, and in the best possible manner, very different from that in which they are now commonly arranged; sometimes providing, from the Nurses' Home, certain necessaries not obtainable in the patient's house.

If properly chosen or selected, as naturally adapted to this sort of semi-mission work, the district nurse would bring such a stream of sunshine (really and figuratively, with fresh air), such confidence, cheerfulness, hope and comfort, as would not only produce a favorable individual effect on the patient, but cause her family and neighbors to make great efforts on other occasions of the kind to employ a regular outside nurse for some days or a week or two, in order to have the benefit of a nurse's constant attendance instead of only visits.

So in a case of pneumonia, of enteric fever, of acute rheumatism, pulmonary tuberculosis, or any other disease. The very natural result of this sort of nursing would be, and as appears to have been Dr. Worcester's experience in Waltham, to greatly increase the demand for the regular nurse, as now provided.

SECOND.—The District Nurse is to be sent only under a physician, it appears, in all cases, and she cannot fail to prove a very great time and labor saver to the physician in all cases in practice which she attends, especially in midwifery practice. This, Dr. Worcester states, is his experience. She will let the attending doctor know just when he is needed at the bedside, saving him hours of patient, or impatient, waiting; or "watching" calls or visits; she will enable him to leave the case sooner, and to know when other after calls would be most needed by her morning visit to the patient and reporting the conditions.

THIRD.—The District or Visiting Nurse would by her sympathetic presence and other personal characteristics, and her knowledge and acts, bring into the often unventilated, unclean, perhaps darkened, noisy, ill-managed, unhappy house of the sick, pure air and light, cleanliness, quiet, comfort, etc., and so assist immensely to promote recovery and health—abbreviating the period of illness, preventing suffering, despair, death—in a word, to lessen the mortality by modifying and removing the cause of it, wherever she might be sent.

Trusting the above may enable the readers of the LANCET to a better understanding and appreciation of the proposed "Victorian Order,"

I am, etc.,

EDWARD PLAYTER.

OTTAWA, November 25th, '97.

TO CURE ITCH IN TWO HOURS.—Employ fresh sulphuret of calcium made as follows:

℞ Sulphur (flour), 3 ounces.
Quicklime, 6 ounces.
Water, two pints.

Boil together till combined, then allow to cool and settle. Decant and preserve in hermetically sealed bottles.

Application—Rub patient all over with soft soap for half an hour, then place in a tepid water bath for another half hour. Next rub over with the solution and allow it to dry on the skin for a quarter of an hour. Complete by washing in the bath.—VLEMINKX (Belgium).

THE BRANDT METHOD.—This consists essentially in *friction* baths at a temperature of 65° F. every three hours, when the temperature is 102.5° or higher. It is the safest, most grateful and most successful single means of combating typhoid fever.

DROPS FOR ATONIC DYSPEPSIA.—

℞ Tincture of nux vomica, 2½ drachms;
Resorcin, 7 grains.

Mix and take five to ten drops three times a day.

—*Therapeutic Gazette.*

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SOME REFLECTIONS ON APPENDICITIS.

On the ground of an extensive experience in appendicitis, Dr Le Dentu, in an instructive paper read before the Paris Academy of Medicine, concludes as follows:

1. While it is true that a large number of appendicitis cases should be treated by surgical means, there are some in which a definite or temporary cure can be secured by internal medication. These comprise cases in which, at no time in their evolution, are complicated by threatening peritonitis or peritoneal septicæmia.

2. There are some appendicitis cases which go on regularly to the formation of an abscess. Sometimes these are characterized by a frank inflammatory reaction: sometimes the phlegmasia is well localized to the cæcal region; sometimes the malady runs a natural course without signs of impending danger, and here it may be of advantage to allow the abscess to accumulate and become circumscribed before resorting to interference. The formation of the pus collection is revealed by local signs (localized pain, a tumor of the form of a breast-plate or globular, fluctuation), and general signs—increase of fever, more or less restlessness, followed quite often by a remission coincident with the arrest of pus formation. In these patients early intervention is not, in my opinion, without risk. It can result in a dispersion of the agents of infection confined to a limited area, and this result is to be more feared than the appearance of pus in the first few hours.

3. Surgical intervention becomes opportune and necessary when it is believed, from the signs given above, that a focus has formed. The operation varies in technique according to the situation of this focus. If situated directly beneath the abdominal wall, a simple incision of all the layers is sufficient. It is necessary to guard against the rupture of adhesions (except cases where one has reason to suspect the existence of multiple foci) and against trying to enucleate the appendix. It should be left in place if it is not floating or easily detached, and one should confine himself to suturing any perforation that may be discovered. Tamponnade of the abscess cavity and partial suture of the abdominal wall complete the operation. If at a later period an eventration should re-

sult, this furnishes an opportunity for searching for the appendix, and it is possible to determine whether all or nearly all the adhesions have disappeared, whether the intestine has again become entirely free, and to adopt the proper treatment.

4. If the focus is deeply situated, the operation is more delicate and also more dangerous. To penetrate down to it, it is necessary to break up some adhesions, taking all known precautions for preventing soiling of the neighboring parts: in a word, to guard in every way against operative infection. The diseased parts should be isolated by a tampon. But in spite of the best selected measures, it may happen that the peritonitis becomes general and that death results. If performed early in the cases characterized by a frank inflammatory reaction, the operation cannot be considered as absolutely inoffensive, while if delayed until the time when an abscess has formed, it is not entirely secure, for the above reasons. Among the cases which go on to pus formation, there are, therefore, those which are benign on account of the anterior situation of the abscess, and those which are dangerous on account of its posterior or deeper situation. In the latter no regret need be felt for not having interfered early, since the initial symptoms are often not menacing.

5. In the following conditions surgical interference should be resorted to as early as possible:

(*a*) When the patient presents, at the outset, the symptoms of a general peritonitis, or when in the course of an appendicitis the signs of extension to the peritoneum manifest themselves. These cases should not be confounded with those of simple tympanites, accompanied with a certain amount of tenderness at a distance, indicative only of peritonism, or peritoneal irritation, without septic peritonitis, properly speaking.

(*b*) When depression manifests itself under one of the following aspects: Absence of spontaneous pains, temperature normal or a little below, with a frequent and small pulse; diminished secretion of urine; abdomen not distended, but retracted by contraction; facies shrunken and sometimes betraying signs of suffering; color more or less dusky, bluish color of the extremities, especially of the nails; voice feeble; respiration a little accelerated, without being sighing.

6. It is always risky to abstain from operative interference in cases in which there is a recurrence of symptoms. Inasmuch as operations during the intervals between the crises give excellent results (for my part I regard them as absolutely inoffensive), the fundamental treatment of appendicitis should be to prevent these subsequent attacks. If one is not forced to operate by the recurrence of an attack, it is best, according to Roux, to wait five or six weeks, since at that time the adhesions formed by exudates, have, in general, disappeared, and the operation becomes extremely simple. There is every assurance of success, and the patient is once for all freed of a menacing danger.—*Bulletin de l'Academie de Médicine.*

There is positively no place in legitimate surgery for colpo-hysterectomy, or high or low amputation in cancer of the cervix, except when performed through the agency of the galvano-cautery.—*J. Byrne.*

BONE GRAFTING FOR UNUNITED FRACTURES.

Dr. A. M. Phelps read a paper and presented an illustrative case. Among the causes of ununited fracture were lack of nutrition, foreign bodies between the fragments of bone, bad coaptation, and sclerosis. Different methods had been resorted to with more or less success for inducing union. Thomas, of Liverpool, had suggested hammering the fracture with a mallet, then putting the limb up in plaster and allowing the patient to walk, thus grinding the ends of the bone together. Senn had suggested putting in decalcified chips of bone between the ends of the fractured bone. Another method was to turn in periosteum and pin the bones. In the cases which he had to report in his paper, eleven in number, one or more of these methods had been tried unsuccessfully before he had attempted bone grafting. His first attempt at bone grafting, different from that which he now practised, occurred about 1890, at one of the city hospitals, and was the source of a good deal of newspaper notoriety. A portion of the forearm of a dog, still retaining its nutrient attachment to the dog, was grafted into the ununited bones of a child's limb, and the two were bound together with plaster. But the dog became restless, squirmed in his plaster jacket, and it was necessary to separate it about the tenth day. The graft did not unite. He then adopted the plan which had succeeded in the patient presented and in several others. It consisted in taking numerous chips of the forearm of a dog, preferably a pup, and grafting them into longitudinal splits of the periosteum covering the ends of the bone which had just been cut down upon and wired together. The chips of bone started centres of ossification which resulted in good bony union. They seemed to act not unlike skin grafts on the surface of the body. In the case of the young woman presented, who had had ununited fracture of the bones of the forearm, he had employed about fifty bone grafts. Subsequently about a dozen of them came to the surface and were removed, but the remainder "took." There was slight shortening of that arm, but its use and power seemed normal. In one of the successful cases the bone grafts into the arm were obtained from the knee of another patient, on whom he was doing excision. In the case of a man who had no use for his little toes because of the presence of corns, he utilized these for bone grafts into his ununited fracture. Out of the eleven cases two came to amputation, one resulted in fibro-osseous union, in eight there was perfect bony union. All were of the extremities, five of the leg. There were successes, there were failures. He gave the method for what it was worth. When other methods failed, he thought this one of bone grafting should be tried before resorting to amputation.

Dr. Phelps had given up silver wire for uniting the bones. It was too fragile. He used strong steel wire and attached it to screws put into the bones.

Dr. Curtis asked whether the grafts of bone themselves grew, or whether they simply stimulated growth from the ends of the bones and then disappeared, as seemed from microscopical examination to be the

case when blood clot filled the intervening space. In the case of ununited fracture of the tibia he suggested that the gap might be filled by dividing and pushing in the fibula, and thus avoiding much shortening of the limb. He had used decalcified bone in a case of ununited fracture of the femur without success, and subsequently amputated.

Dr. Willy Meyer suggested the use of the method of Bardenheuer, turning a piece of the same bone with periosteal and muscle attachments over into the gap, as one would slide or transplant skin to fill a surface gap.—*Med. Record.*

SURGICAL ITEMS.

Chloroform is a more satisfactory anæsthetic than ether for operations liable to be complicated by difficult or suspended respiration; in those cases it is reasonably safe, and when carefully administered it may be confidently recommended to the profession for this particular kind of surgical work.—*Gay.*

Do not operate on a porencephalic child and expect to cure epilepsy. Do not, as a rule, operate on a case of post-hemiplegic epilepsy in a child and expect to cure. Do not operate on an old, idiotic epileptic, a victim of idiopathic epilepsy, with general convulsions of years' standing.—*E. G. Mason.*

I believe that pronation, with or without flattening of the arch, is the factor to study, and that its prevention and its cure are the prevention and cure not only of flat-foot, but of the painful affection without breaking down of the arch which I speak of as pronated foot; that the selection and use of proper boots will cut down very much the use and need of mechanical appliances.—*Lovett.*

I have come to the conclusion that it is never necessary to resect for artificial anus. I have had a good many cases of fæcal fistula, and in nearly all I have succeeded in bringing about closure by an external operation, without opening the peritoneum. For the resection of tumors, it is vastly preferable to do the operation in two sittings; such cases all recover.—*Greig Smith.*

There is no question that the more cultivated dentists know the surgery of the mouth better than the surgeon who has been only generally trained; know better also the relations of disorders of the oral cavity with contiguous and distant tracts, and are better prepared to diagnosticate the cause of many obscure lesions connected with those relations.

I therefore recommend to the surgical profession, particularly to those who have had no special opportunities for studying the diseases of the mouth, the calling in of a skilful dentist, preferably one who has been medically educated, at least for the benefit of his judgment in diagnosis, whenever there is room to suspect oral complications.—*Lennox Curtis.*

Surgical Treatment of Epilepsy.—In a paper on this subject, read before the late meeting of the American Neurological Society, the following conclusions are presented by Professors Gerster and Sachs:

1. That surgical interference is advisable in those cases of partial

epilepsy in which not more than one or, at the utmost, two years have elapsed since the traumatic injury or beginning of the disease which has given rise to the convulsive seizures.

2. In case of depression or other injury of the skull surgical interference is warranted even though a number of years have elapsed, but the prospect of recovery is brighter the shorter the period of time since the injury.

3. Simple trephining may prove sufficient for a number of cases, and particularly in those cases in which there is an injury to the skull, or in which a cystic condition is the main cause of the epilepsy.

4. Excision of cortical tissue is advisable if epilepsy has lasted but a short time, and if the symptoms point to a strictly circumscribed focus of disease.

5. Since such cortical lesions are often of a microscopical character, excision should be practised even if the tissue appears to be perfectly normal at the time of operation, but the greatest care should be exercised in order to make sure that the proper area is removed.

6. Surgical interference for the cure of epilepsy associated with infantile cerebral palsies may be attempted, particularly if too long an interval has not elapsed since the beginning of the palsy.

7. In cases of epilepsy of long standing, in which there is in all probability a widespread degeneration of the associated fibres, every surgical procedure is absolutely useless.

THE SURGICAL RELIEF OF OBSTRUCTION OF THE COMMON DUCT BY BILIARY CALCULI.—H. O. Marcy, of Boston, described the operation which he had been the first to do for the removal of calculus situated in the common duct. The original operation had been done on October 20, 1889, according to the following method: The walls of the common duct were divided with scissors and their edges everted from over the calculus, the abdominal cavity having been previously shut off from the field of operation by sponges. With a fully-curved needle, armed with selected tendon-suture, the divided edges of the thickened mucous membrane of the duct and gall-bladder were united by a continuous suture. Over this the peritoneal edges were coaptated by a layer of continuous suture, and then a third layer of continuous sutures was applied, the sutures being taken parallel to the long axis of the wound, and through the peritoneum. Tension on this suture buried not it alone, but also the uninjured peritoneum. After the removal of the sponges, the peritoneum was closed with a continuous double tendon-suture. The divided muscular structures were united in a similar manner in separate layers, and the skin was coaptated by a layer of buried tendon-sutures. The wound was sealed with collodion. Convalescence was rapid. The calculus, when dried, weighed fifty-nine grains.

TUBERCULOUS PERITONITIS.—Dr. R. Abbe concludes as follows with reference to the surgical treatment: We can say, that now, more than at any time in the past, it is the imperative duty of the surgeon to freely evacuate by incision all fluid of a tuberculous peritonitis. In all prob-

ability, additional perfection will be obtained by irrigation with normal salt solution, and closure of the abdomen. Where advanced tubercular deposits can be sponged over with camphor naphthol, it is probable some additional good will accrue. The cure in undoubted tubercular cases may be absolute, though remnants of disease are apt to be latent. The purulent form of tubercular peritonitis is amenable to the same treatment. As regards the general disseminated tuberculosis, with tubercular peritonitis, we must, if we read the cases aright, regard that as occasionally capable of cure. Patients in almost moribund condition, with extensive ascitic form, have been frequently restored to health. The treatment by puncture may be dismissed as inadequate. The power of the peritoneum to suppress a widespread tuberculous infection cannot be doubted, and its mode of action is through reparative inflammation, embedding the bacilli, and forcing retrograde metamorphosis. Cure has frequently followed a second laparotomy when the ascites has reaccumulated—which is the exception—*Med. News*, Aug. 1, '96.

Pneumotomy—Dr. H. Quincke has carefully investigated this subject on the ground of fifty-four cases, including seventeen of his own, and comprising abscesses, gangrene, gangrenous abscesses, bronchiectases, and suppurative processes due to the presence of foreign bodies. The diagnosis is difficult, but by a careful study of the history, a minute examination of the patient, and a close analysis of the symptoms, it can usually be made with sufficient accuracy to warrant operation. As long as urgent danger to life does not exist, the slow method should be given the preference. This consists in the production of firm pleural adhesions by the application of zinc paste. He points out that in parenchymatous inflammation of the pulmonary tissues adhesions are quite frequently absent, or if present are not firm. For this reason he regards exploratory puncture for suspected purulent foci as dangerous. The prognosis of operative treatment is rather unsatisfactory (acute cases gave sixty-five per cent. cures, thirty-five per cent. deaths: chronic cases twenty per cent. cures, thirty-eight per cent. deaths, forty-two per cent. no improvement or incomplete results. As the outcome of internal treatment is still less favorable, the author advises surgical measures as soon as no tendency to a spontaneous cure exists.—*Ther. Monatsch.*, June, '96.

Relief of Thirst After Abdominal Operations.—Dr. J. G. Clark (*Maryl. Med. Jour.*) says that for the last two years it has been a part of the concluding technique of every abdominal operation performed in the Gynecological Department of the Johns Hopkins Hospital to inject one liter of normal salt solution into the rectum, and the result has been so very satisfactory that they now propose to adopt it for all operations, even of minor degree. In order that the patient may retain the enema, she must yet be under the anæsthetic when it is given, otherwise the rectum will not tolerate such a quantity of liquid.

At the conclusion of the operation, before the abdominal dressings are applied, the patient is elevated to the medium high Trendelenburg posture, a stiff rectal tube is inserted well up into the sigmoid flexure, and

the fluid slowly poured into the glass funnel, which is held three or four feet above the level of the patient's buttocks. In this posture the solution gravitates downward into the sigmoid flexure and colon and is very rarely expelled, even during the most violent attacks of retching and vomiting during the recovery from anæsthesia.

POSITION IN THE TREATMENT OF FRACTURES OF THE LOWER END OF THE HUMERUS.—On the ground of 650 cases under the care of Drs. Hartley and Woodbury, Curtis, Van Arsdale and himself, Dr. C. A. Powers asserts that the best results are obtained by treating the limb in the flexed position, and that the general practitioner will find the greatest degree of satisfaction in following this form of management. It is his custom to put the limb up in plaster of Paris at about 90° when first seen, except in those cases in which a tendency to "gunstock" deformity was apparent. In these latter instances he has made the angle 135° for ten days or two weeks, reduction being made under an anæsthetic with careful attention to the "carrying-point," and then changing the angle to 90° or to 80°. He is convinced that the extended position is not necessary to the obtaining of suitable coaptation of the fragments, and he is by no means sure that a moderate degree of cubitus varus is prejudicial to the usefulness of the limb.—*Medical Record*, May 2, 1896.

GUNSHOT WOUND OF THE STOMACH.—Dr. L. A. Woodson (*Nashville Jour. of Med. and Surg.*, June, 1896) reports a case, male, 25, operated on sixteen hours after wound was received. The patient was weak from loss of blood and abdomen distended from internal hemorrhage. The ball, 38-caliber, entered the stomach at the cardiac end and had severed the gastro-epiploica sinistra artery, which was still bleeding. The ball emerged to the right of the esophageal opening, then made another perforating wound, an inch long, in the pyloric end of the stomach. The ball was not located, but the direction of its course indicated lodgment in the liver. Temperature the day after operation, 98.5 degrees. He was discharged, cured, on the twenty-first day. The points of interest in this case were the rapidity of healing and completeness of cure, the absolute absence of fever after the operation was performed, notwithstanding its gravity and extent, and finally, that an artery, the size of the one severed, should have remained unsecured for sixteen hours and not have resulted in death from hemorrhage.—*Jour. Am. Med. Assoc.*

RUPTURED URETHRA.—According to Dr. A. T. Cabot, the principles of treatment are as follows:

1. In case of ruptured urethra, immediate perineal section with suture of the urethra should be practised.

2. By this procedure not only do we greatly lessen the danger of urinary infiltration and abscess, but we also, in a large proportion of cases, may hope to prevent the formation of close intractable strictures.

3. In an early operation, the search for the posterior end of the urethra is much easier than it is later. The hemorrhage from the branches of the artery of the bulb serves as a guide to that end of the canal.—*Bost. Med. and Surg. Jour.*

THE MECHANICAL TREATMENT OF INGROWN TOE NAIL.—Dr. Henry Ling Taylor, of New York, recommends the following method, modified from that devised by Mr. Masters, of England: A flat strip of silver, one-one-hundredth of an inch thick, and one-eighth of an inch wide, and one inch long, is bent into the shape of a fish-book. The toe having been cleansed with peroxide of hydrogen and moistened with a solution of cocaine, the hook is inserted under the lateral edge of the nail so that the shank of the hook curves over the side of the toe and lies close to it. The greater the ulceration the less the pain in inserting the hook. It is retained in place by adhesive plaster or a bandage. The hook not only protects the flesh from the nail, but it exerts a lifting action on the nail. After a few hours the patient suffers no inconvenience from the hook, and in a few days the swelling subsides and the granulations become more healthy. It is well to wear the hook for several weeks after the tissues have healed.—*Medical Record.*

PATHOLOGICAL CONDITIONS OF THE PELVIS.—Dr. H. T. Hanks (*Americ. Gynec. Jour.*) concludes as follows with regard to the choice of operations in this class of cases:

If you are a well equipped surgeon, do a vaginal operation—a vaginal hysterectomy, in fact—when practicable.

1. For a suppurative pelvic disease, if located in the true pelvis, when exudation covers and agglutinates the uterus, tubes, ovaries and rectum.
2. For ovarian abscesses.
3. For an unruptured tubal pregnancy, and for a ruptured tubal pregnancy in the broad ligament.
4. For small ovarian and parovarian, movable cysts, and other small movable tumors.
5. For movable uteri, with small fibroids.
6. For carcinoma uteri when the uterus only is involved.

THE SUBCUTANEOUS INJECTION OF GUAIACOL CHLOROFORM.—*La Médecine Moderne* of March 10th, 1897, states that Colleville has employed hypodermically a solution of guaiacol and chloroform in the proportion of six parts to ten. This is to be injected directly into a painful point in the dose of from fifteen to thirty drops, and has proved itself peculiarly useful in the treatment of nerve pains such as sciatica. If as much as fifty minims are given, the injections are sometimes followed by induration, which, however, gradually disappears.

These injections are preferable to the morphine injections, and are to be preferred to rubbings and frictions.

TREATMENT OF SEXUAL ATONY IN THE FEMALE.—The *Journal de Médecine de Paris* gives the following prescription:

℞ Extract of cannabis indica,
Extract of nux vomica, of each 30 grains;
Aqueous extract of aloes, 7 grains;

Make into one hundred pills and take three a day.

MEDICINE.

IN CHARGE OF

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SCIENCE IN MEDICINE.

BY A. T. CABOT, A.M., M.D., BOSTON.

GENTLEMEN—I shall not enlarge on the fact that you are entering on a noble profession. That statement is often heard and has a good deal of truth in it; but the important thing for us to remember is that our profession is as noble, for each of us, as we ourselves make it, and no more so. It behooves us then to carry with us the resolve that we will do our utmost to sustain the high ideals of the past and to reach still greater heights in the future. In carrying out this purpose we shall have to turn often from the promptings of self-interest, and shall have to make sacrifices to our love of truth and to our sense of duty. Let us not be too vainglorious, however, over our sacrifices, for they are usually only such in seeming. Our voyages of discovery, like those of the old Spaniards, lead us often to where gold is to be had for the delving; and the medical man who devotes himself to the cause of science reaps his reward in this world in the added prestige and lustre which his attainments lend him. His light then so shines that men are attracted to him, and they see that he does not want.

This may seem a sordid consideration; and if it is allowed to be the mainspring of action, it, indeed, becomes so. There are many better and more inspiring inducements than this to incline right-minded men to scientific pursuits; but every prudent man must consider his own support and that of those dependent on him; and such a man may well feel encouraged to give time to seemingly unremunerative research if he believes that the knowledge and habits of thought which such research brings him will have a market value at some later date, and that the prestige of any good work that he may do will help him in his future career. A proper appreciation of these truths may encourage some of you to seek success by a devotion to science rather than by the pursuit of business. I venture to predict that few who are thus inclined will regret it.

It is about science in medicine that I wish to say a few words to you to-night, in the hope of emphasizing to you some of the gifts you have received from her and the duty you owe to her in return, and also with the desire of pointing out to you some of the ways in which you may serve her.

It is but as yesterday that medicine has become a hand-maiden of science and has escaped from the domain of inexact empiric art. So recent is this advance that the most important steps of it have occurred within the memory of one generation.

Do not understand me to belittle the achievements of past centuries, nor to imply that we have already reached the goal of exact knowledge towards which men have always been striving. But I do assert that in the past fifty years advancing medical knowledge has taken up more new ground than all of that occupied before, since our earliest authentic records.

How has this come about? Have the men of the last half of the nineteenth century been so much superior in intelligence to their fathers as to accomplish this? No! But their powers of research have been increased many hundredfold; and this advantage they owe to the physical laboratory, for it is the microscope which has revolutionized medicine and has made it possible for us to stand where we now do.

It enables us to see clearly where all was once dark groping, and to penetrate mysteries before which past ages have stood blind and uncomprehending. Let us not forget our gratitude to the physicists who have made this possible. They are busy people, these physicists, and their modern achievements have been so wonderful as to have almost exhausted our capacity for wonder.

A man sitting in his chair here in Cleveland talks with his friend in New York, and even recognizes that friend's voice over a thousand miles of wire. He reads each morning in his daily paper an epitome of what the human race has accomplished in the past twenty-four hours, a chronicle of the doings in the uttermost parts of the earth, and even shrewd suspicions of the happenings in some of the neighboring planets. Marvels which to a past generation would seem miracles are his daily bread, and he misses an accustomed stimulus if they are not constantly supplied and are not up to a high standard.

In an age of such enormous activity it is well to remember that our pioneers along the various roads of investigation have accomplished their results by concentration of effort and by the assertion of their own individuality. It is by the possession and exercise of these qualities that we must endeavor to carry forward their work. Every man must be more or less a specialist.

Even Bacon would hardly, at this time, claim all knowledge as his province; and we of lesser gifts must realize our limitations, and by attending strictly to labors that are within our strength, and by applying all of our powers to them, must endeavor to reach worthy results.

I do not use the term specialist as implying a narrow field. A man who practises surgery to the exclusion of general medicine is a specialist; and if his tastes and opportunities lead him especially into some branch, as gynecology or abdominal or orthopœdic surgery, he still further specializes his work. This I regard as the best way to approach a specialty: beginning with the general and working gradually more and more into special branches. In this way one is more liable to take a large grasp of his subject, and to acquire the habit of looking at his patient as a whole,

before allowing his attention to be drawn to the close study of a particular organ or region.

The various fields of study touch each other at so many points that we cannot occupy ourselves in one without coming in constant contact with those about. The surgeon studying a brain tumor requires the services of a neurologist, and perhaps of an ophthalmologist and aurist, before he can arrive at the best knowledge of the case. It is well that we should get the habit of thus using each other to help us to greater accuracy and efficiency. While travelling thus our own road, we shall get and give many a lift if we are so minded.

The generation now growing old has, in this country, been the one which has seen the various specialties of medical practice evolved. Fifty years ago the general practitioner was the rule, the specialist was the rare exception. I remember many of those old "family doctors," learned, sagacious, observant, friendly advisers and confidants, with an academic dignity which has been almost lost in the hurry and bustle and matter-of-fact directness of the last half-century. To follow one of these men through his daily rounds would be a curious experience to a modern specialist.

The first case, perhaps, would be a broken leg, then a pneumonia or dysentery, an ophthalmia, a middle-ear inflammation, a confinement, and a case of mania. To each of these various cases he would apply himself with trained powers of observation, often noticing and getting guidance from slight physical signs or movements of the patient which now pass unnoticed by the modern clinician. For the latter, with his instruments of precision, his clinical thermometer, his modern stethoscope, his stomach-tube, his specula, his blood count, and various other microscopical examinations, has more certain guides to a correct opinion, and does not need observation of the lighter straws to see which way the wind blows.

A student of to-day looking back at the generation of medical men who finished their work in the sixties is struck with the amount of empiricism that pervaded the best medical practice of those days. It was an empiricism not of choice but of necessity, for the field of vision was so limited for them that they had to do much blind groping among conditions but partly seen and imperfectly understood. The groper in the dark greatly sharpens his vision for what comes within the range of his sight, and it is surprising how many facts they discovered, the reasons for which were learned much later. Quinine, for instance, was given on correct principles in the treatment of intermittent fever long before the plasmodium was discovered; and subcutaneous tenotomy was put to valuable use for years before its immunity from harm was explained.

The discovery of vaccination and of surgical anesthesia are brilliant examples of the acute observation and the bold inductive reasoning with which the men of those days pushed out beyond the lines of safe navigation into the unknown, and brought back treasures from regions now somewhat explored, but then veritable *terra incognita* beset with dangers real and imaginary.

But a light was soon to break.

It was during this time that the foundation of modern medicine were being laid, not upon any therapeutic dogma, but upon the firm bed-rock of cellular pathology and bacteriology.

Gentlemen, we owe much to the European Continent, from which we all came; and not the least of our debts is to the laboratory system of Germany and France, in which this great medical revival of our day started.

In this country the facilities for scientific study and teaching were not then highly developed. Hospitals and laboratories were few, and the man wishing to pursue original investigations in the higher branches of medicine had to be first assured of an independent income; for salaried positions were scarce and the stipends were small.

Under the paternal governments of the Old World learning had secured more substantial appreciation and support. Great schools of medicine had grown up in the capitals and large cities of the European States, and the rivalry which existed among them had called into existence a great body of scientific workers striving for the high places and stimulated by the hope of advancement to put forth their best efforts along original lines. No man holding a professorship in Innsbrück was content to fold his hands and accept a routine of teaching if he felt within himself the ability and force to win a place in Munich or Vienna, and these places were to be won only by brilliant individual achievement.

Such was the system under which men like Virchow, Billroth, Cohnheim v. Recklinghausen and a host of others were reared. Under it they were encouraged to put forth their greatest strength in pushing their researches; they were stimulated by constant contact with other investigators working along the same or parallel lines. The very atmosphere in some of those old universities became so loaded with scientific impulses that to breathe it was an inspiration. The visitor there found himself acquiring habits of thought without knowing whence they came. Accustomed to well-trodden paths, he found himself seized with the irresistible impulse to plunge into hidden byways and to do some exploring for himself. Everyone seemed to have adopted the motto of the mongoose family as set forth by Kipling, "Run and find out."

If Americans of that day could not manufacture for themselves equally favorable conditions for study in this country, they knew at least where to find them; and the foreign clinics were filled with young men who had crossed the sea to put their guessing and calculating faculties under better guidance than they had been able to find at home.

And when these young men came back they came filled with a reverence for scientific methods and thought in medicine which could not and did not fail to make an impression in the communities in which they afterwards lived; and this leaven thus introduced into our country has worked, and to-day we see the awakened sentiment for higher medical education causing laboratories, workshops of science, to spring up in every direction, and to-day we are just getting into shape to take our place shoulder-to-shoulder with our older brothers abroad.

This growth of laboratories in America has been mainly accomplished by benefactions and gifts to learning from private citizens who have

shown their sagacity and intelligence—first, in the acquisition of wealth, and then in the wise disposal of a part of it, so that it may contribute to the highest public good. It is by a wide demonstration of the value of the best scientific teaching that the public interest will be so aroused that these gifts shall flow to our colleges in still greater abundance, and shall enable us to establish ourselves on an even higher plane of usefulness. Each of us may help the public towards this appreciation of the value of science in medicine somewhat by preaching, but still more by our practice. Fortunately the scientific exactitude of the laboratory has begun to bear fruit in the practice of medicine that everyone but the hopelessly color-blind can see. Every case of diphtheria saved by the judicious use of antitoxin is an object-lesson that cannot be overlooked.

The man who, in a case of difficult diagnosis, establishes the existence of malaria by the finding of the plasmodium in the blood, or of typhoid by the serum reaction, demonstrates the supremacy of scientific over empiric medicine and exerts a healthy influence on the minds of the surrounding community. Presently he will open their eyes to the immense importance of fostering a study which may have for them such beneficial results. Let us apply our shoulders to these wheels that they may move forward.

These are some of the ways in which, under our democratic form of government, we may properly influence the public purse to open to the cause of medical progress in America and to supply the sinews which will enable us to keep well up in the race. This is a generous rivalry. The ground gained becomes common property: no one can get ahead without pulling the rest along after him, and those that cannot pull must push.

But this educational effect which may be exerted on the community by a physician using exact scientific methods in his practice is an incidental public advantage, less important, as far as he individually is concerned, than the effects produced upon himself.

There is a constant force acting on the body medical, impelling it to seek easy running grooves, or, if you will, ruts. A busy practitioner adopts a routine to save himself thought and the expenditure of force. While he may, in the majority of cases, correctly diagnosticate the disease and properly treat it according to established methods, he cannot hope under such a plan to make any substantial improvement in his practice or to add anything to the knowledge of the diseases that come under his eye. Unusual cases do not arouse his interest, and rare diseases are unrecognized, or classed with some more common ailment which has somewhat similar symptoms. To such a man much of the pleasure of medical practice is wholly lost, the joy of discovery is to him unknown. Even though his practice embraces the whole range of medicine and surgery, he remains essentially narrow.

You will hear much of the narrowing effect of a specialty; and it is true that a specialty selected for business reasons, because there seems to be an opening in it, and pursued in this spirit, will have a narrowing effect. But a special line of work into which a man grows because he has a taste for it, and which he pursues in a scientific spirit, will lead him into far wider fields of thought than those which open before the routine general practitioner.

Therefore, I say to you that your profession will be satisfying and absorbing in proportion as you pursue it as a science and not as a business; and it is also true that the same course will lead you forward into the front ranks of those "practising physic."

It will happen to many of you to be so situated that time and opportunity are lacking for microscopical and chemical work, and this may seem an adequate excuse for relaxing the exactitude of your study. But it is not so, if, within accessible distance, you can find any one who can help you out and do some of this work for you.

A young man, fresh from the laboratories, can in this way be of the greatest assistance to his busier brother; and the older man by thus employing the junior gives him opportunity and stimulus for further research. The laboratories, too, are greatly aided by this constant demonstration of the value of their training. Perhaps in no branch of medicine is this kind of help more needed or of more value than in surgery; and I can use it best in illustration, for of it I am most competent to speak.

A surgeon approaches a doubtful tumor of the breast. If it is of benign character, it can be removed with comparatively little deformity, whereas if in any part of it a malignant change has commenced, the operation demanded is extensive, mutilating, involving not only the removal of the whole breast, and, perhaps, the underlying muscle, but also the dissection of the axilla and possibly of the supra-clavicular space.

For a wise decision in such a case as this, the prudent man requires the assistance of a trained microscopist versed in surgical pathology, who shall make careful search throughout the primary tumor, to determine the presence or absence of any malignant part in it. Such a search, to be of the greatest use to the patient, must be made on the spot at the time of the operation, so that the information gained may be put to immediate use in determining the extent of the operative procedure.

The patient has a right to demand such care in a matter which may be for her a question of life or death; for an operation done thoroughly on a malignant growth, so small that its detection is difficult, offers considerable chance of a lasting cure, while an incomplete operation done at that time may leave a commencing glandular infection untouched until too late. In other forms of malignant growth, a careful pathological supervision of the operation may detect the extension of the morbid process in unsuspected directions, and enable the surgeon's knife to circumscribe it by the removal of parts seemingly healthy, but in reality already infected.

Here is a field, then, in which surgeon and pathologist should work side by side; and the surgeon, by insisting on this co-operation, not only enhances the value of his own work, but also brings into due prominence the work of his scientific brother.

A slight consideration of the debt that surgery owes to bacteriology will make plain the importance of the daily employment of the bacteriologist in the study of our surgical cases.

The practical application of the germ theory to the combating of disease has reached more tangible results in surgery than in any other department of medicine. "So great an influence has this theory had upon

our successful practice that we are compelled to look upon the last quarter of the nineteenth century as the surgical golden age."

The discovery that the cause of inflammation in wounds is a preventable one has robbed surgery of the uncertainty and dangers that before prevailed, and has opened to the surgeon's knife regions and organs previously regarded as sacred. I well remember the time when an opening into the peritoneal cavity was regarded as a practically fatal accident, while now we open it without a thought of danger.

At present a knowledge of bacteriology enables the surgeon to test his antiseptic methods and his materials, and to thus keep a watch upon his technique, which is most necessary to his success. He also is often helped greatly in prognosis by an accurate knowledge of the organisms, which are responsible for an inflammatory process that he is dealing with.

Whether a further study of acute inflammations will enable us to attack a process already started with an appropriate antitoxic serum cannot now be predicted, but the success attained in diphtheria must make us hopeful, and should lead us all to give close study to our cases. Even if we cannot hope to ourselves contribute to the advance in this direction, we shall at least accustom ourselves to an accuracy of mind in considering inflammatory conditions which will prepare us for making prompt use of any discoveries made elsewhere.

The man who is in the habit of watching the streptococcus, the staphylococcus, the pneumococcus, and other microbes, and of studying their various effects upon his patients, will also put himself in a position to make immediate and intelligent use of any new method of treatment directed against one or other of these organisms.

In the recognition and study of tuberculous processes, the aid that the bacteriologist gives the surgeon is constant and valuable.

Whether future researches will put any of the malignant growths into the category of germ diseases cannot at present be told. There seems at least some reason for such a hope. Were this to prove true, the prophylaxis or cure of these dreaded conditions might be made possible. If such good fortune seems remotely possible, it is worth striving for with all the force that is in us, as it will only be reached by the combined work of the surgeon and the pathologist. Let every practising surgeon give what aid he can to the cause of scientific medicine, and so help towards this beneficent result. Who knows that we may not live to see cancer brought into the category of preventable diseases.

Any mention of the debts of surgery to laboratory research would be incomplete which stopped with an enumeration of the triumphs of the microscope, that gives us such insight into dead tissues, and enables us to read the histories within them, for we are still glowing with the enthusiasm awakened by the discoveries of Rontgen and his co-workers, who have taught the human eye to penetrate living tissues, and to see, as by the light of day, conditions heretofore concealed from us.

It is still too early to say how far-reaching the effect of this new power will be upon our surgical practice, but the results already obtained are of the greatest value, and the constant improvements in this method of research are opening up wider and wider fields of usefulness. It is

well to notice that this again is a benefit which, like the microscope, has been conferred upon the physician by the students of pure science, and is a capital illustration of the manner in which scientific workers in wholly different fields constantly come to each other's aid in ways quite unexpected. Such is the brotherhood of science.—*Boston Med. and Surg. Jour.*

CHLOROFORM vs. ETHER.

Dr. Leonard Hill's paper on "The Causation of Chloroform Syncope," recently published in the *British Medical Journal*, is reviewed at length in the *Boston Med. and Surg. Jour.*, by Dr. B. E. Keefe, of Springfield, Mass. The reviewer presents certain conclusions which we reproduce, chiefly because they support views which have long influenced our own practice. First, that it is easy to teach a student or assistant how to give ether safely, but very difficult to do the same with chloroform; and secondly, that especially for the isolated practitioner to begin with chloroform by the drop method and to substitute ether as soon as the irritability of the respiratory mucous membrane is obtunded, is the best routine plan. It gives a sense of security unknown when the anæsthesia is continued by chloroform alone.—N.A.P.

(1) Statistics are at present of little or no value in deciding as to the relative danger of chloroform and ether, because, as I have shown in a previous paper, the deaths under both bear a lower ratio to the inhalations than the sudden deaths in those who had not taken an anæsthetic bear to the population.

(2) Ether is a safer anæsthetic in proportion as it is weaker, bearing a relation to chloroform of about one to five. The danger of chloroform is not so much inherent to it *per se* as to its relative greater strength and the greater care and experience required in its administration. I would trust almost any physician to give ether, but not one in twenty to administer chloroform. Just as any child can handle a toy engine, but not every man can handle a steam locomotive.

(3) The difficulties with both chloroform and ether in the pre-soporous stage are, in nearly all cases, due to respiratory spasm, and the consequent heightened arterial tension and venous congestion. This is very likely to be unduly prominent in the brain on account of recumbency, and the few muscular fibres in its vessels in comparison to the general circulatory system. For this reason it is neither so well able to resist the onset by contracting its arteries nor to empty itself.

(4) In the post-stertorous stage, after long application, the death is most likely to be caused by anemia and cardiac paralysis.

(5) The best medicine for the first kind of interference is amyl nitrite, belladonna and strychnia; and for the second, digitalis and strychnia, supplemented by electricity and all the other movements recommended by Dr. Hill.

(6) Were I asked for the greatest advantage ether has over chloroform I would say: The anæsthesia of ether is loud and lifelike; hence any accident or interference is noticeable on the instant; whereas chloroform

produces so quiet a sleep that the patient seems on the borderland of the grave, and there is not so distinct a warning of accident until too late; consequently it requires a degree of vigilance and attention that few possess. Moreover, the administrator, if conscientious, feels that he assumes a greater responsibility than the operator.

(7) Chloroform is a more satisfactory anæsthetic for short operations, where the sopor need not be renewed or continued; for obstetrics, where the anæsthesia need not be complete; and for patients with lung or kidney disease, and children.

(8) Ether is, I think, pleasanter and safer (for the vast majority of physicians) to continue the anæsthetic state after having been induced by chloroform.

(9) I do not believe there is any well-marked difference in the manner of death under ether or chloroform; the stage of the anæsthesia has more to do with it than the agent.

BRIGHT'S DISEASE.—In actual practice, were I to be limited to only one way of telling how my case of Bright's disease was getting on, I would be better informed, and my patient would be safer if I knew from day to day the total amount of urine excreted and its specific gravity, and never made a test for albumin, than if I watched the albumin from day to day, and failed to know accurately the quantity or specific gravity of the urine. Quantity and specific gravity together would tell me how my patient was. Albumin might tell me the condition of the kidneys or of a part of one kidney. The condition of my patient is the vital question. The condition of a little patch of one kidney may be of trifling importance. And it needs only a localized defect in one kidney to keep up a very persistent albuminuria.—DR. INGLIS, *American Med. Jour.*

REDUCED MORTALITY FROM PULMONARY TUBERCULOSIS.—Good effects have already begun to show themselves in New York City as a result of the compulsory notification of cases of pulmonary tuberculosis to the Board of Health. In a report to Mayor Strong, this Board declares as a result of three years' special effort to stamp out pulmonary tuberculosis that the disease is a distinctly preventable one; that it is not directly inherited; and that it is acquired by transmission from the sick to the healthy. Deaths due to pulmonary tuberculosis are now 30 per cent. less that they were twelve years ago. The Board recommends that the law should be amended so that all cases of pulmonary tuberculosis shall be reported to it; that rooms of a patient dying from the disease shall be disinfected; that special care be used in transporting tuberculous patients on railroads, steamers, etc. The general dissemination of a knowledge of the foregoing fact, in conjunction with an application of the principles of an enlightened hygienic, will do much not only to further diminish the mortality from tuberculosis but also to resist its general prevalence.—*Jour. Am. Med. Assoc'n.*

NERVOUS DISEASES AND ELECTRO-THERAPEUTICS.

IN CHARGE OF

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NEURASTHENIA AND ITS RELATION TO OTHER DISEASES.

BY A. D. ROCKWELL, M.D., NEW YORK.

In that remarkable work, "The Art of Prolonging Life," written more than one hundred years ago, Hufeland speaks of imaginary conditions and morbid fears peculiar to hypochondriasis, which are brought on by brooding, reading works on medicine, excesses, etc. He evidently had seen cases of neurasthenia, although unconscious of their significance. Indeed, Arndt asserts that neurasthenia has been known for thousands of years. He, too, was unconscious of its significance, and both regard the fear and dread thus occasioned as imaginary, and would dissipate them by an effort of the will, not recognizing the fact that morbid fears are in the main dependent upon some vice of constitution, either autoinfection, due to malassimilation and imperfect oxidation of food products, or to mental and physical stress and strain that result in veritable cell exhaustion.

The will can do much, but it cannot do all; and in neurasthenic conditions as we commonly find them, the unaided will is a very unimportant factor. Impairment of will, indeed, as has been well said, "is the keynote to the psychic state in neurasthenia." One cannot use what one has not, and the will power that emanates from an exhausted brain is so insignificant that the slightest obstacle becomes insurmountable.

To tell a man with profound neurasthenic symptoms that he is all right, that there is really little the matter with him, and that all he needs is to "brace up" and not give way to unnecessary and unreal emotions and sensations, is very much like attempting to persuade a man on his way to the gallows that there is nothing real or disturbing about his situation. I do not know to what extent the general practitioner sees and recognizes these cases, but experience teaches me that he sometimes inflicts injury that is neither light nor easily effaced, by giving no heed to or misinterpreting a tale of woe because he fails to detect objective symptoms of disease. Gowers, in his masterly work on nervous diseases, devotes fifteen hundred pages to the elucidation of the symptoms, morbid anatomy, and pathology of a host of structural and organic diseases, for which little or nothing can be done in the way of treatment. He devotes less than a page to a condition that occasions far more misery and paralysis of utility than many a hopelessly incurable organic lesion, and for

which very much can be done in the way of successful treatment. Perhaps no greater misconception of the true state of mind and body of a typical neurasthenic can be found than when he says: "To describe the symptoms and treatment of all that may be collected under the name neurasthenia would be to repeat that which has been stated already in its proper place [in his book], especially in the sections on neuralgia, headache, cephalic sensations, hysteria, and hypochondriasis."

These conditions, one and all, are simply shifting symptoms of the neurasthenic state, and in its treatment they deserve no more consideration than the multifarious symptoms that are associated with any grave constitutional disturbance.

Since the term neurasthenia with its peculiar congeries of symptoms had its origin in this country through the labors of Beard, and has even been called the American disease, it is with no little satisfaction that those of us who have earnestly contended that it should hold a distinct position among diseases note that many of the keenest observers in neurology, both here and abroad, in Germany and France, are fully alive to its importance and reality. Bouveret believes that neurasthenia should be attributed to a disturbance of the nutrition of the nervous elements, to an impoverishment of the nervous force, and especially to a chronic enfeeblement of the superior nervous centres which regulate the activity of the inferior centres. The exaggerated action of the brain in the sphere of the intellectual faculties is the most common and best-established cause of nervous prostration. It is common also from the abuse of stimulants, from excessive muscular exercise, and from sexual excesses.

Benedict considers neurasthenia as a psychical condition excited by psychical emotion and intellectual overwork; claims that psychical treatment is equally important, and that the moral cure has been of late neglected, although he is distinctly sceptical as to the cure of all ills by suggestive treatment. The important question is whether to permit the neurasthenic to work or to demand absolute rest. Strictly absolute rest, however, increases the affection, and the patient should always be led to occupy himself in a suitable manner. He thinks isolation or removal from one's family or surroundings is often essential. He claims that if the Americans would learn from the Germans how to amuse themselves instead of yawning on holidays, the danger of neurasthenia would be diminished. Whoever has not learned how to play and jest, easily succumbs to mental work. He lays especial stress upon electricity; and for drugs, upon iron and arsenic.

Blocq considers neurasthenia as a neurosis, which in every case has its seat in the brain.

The list of other foreign writers, whose words are based on the authority of long and tried experience, and who are fully alive to the reality and importance of this disease which has ruined so many lives, includes Champagnac, who does not accept the nervous theory of Beard, but believes neurasthenia to be closely related to alteration in the digestive tract; Fournier, who is surprised that syphilis has been so little considered as a cause of neurasthenia; Savage, of London, who regards neur-

asthenia as a disturbance of the peripheral nervous system analogous to general paralysis; Vigouroux, of Paris, who believes the important etiological factor to be over-activity of the organic centres and the diminution of nutritive metabolism; Lowenfeld, who endeavors to reconcile neurasthenia with the uric-acid diathesis; Grasset, who attributes all neurasthenias to over-work of every kind; Joseph, of Landeck, who in studying the etiology or neurasthenia admits that it is generally caused by whatever enfeebles the human organization by prolonged action; and Kowalewsky, who considers that when the nervous system does an excessive amount of work, sufficient nutritive material is not brought to the centres of activity, and, furthermore, by the continuance of their activity the waste products are not carried away as speedily as they should be. This leads on the one hand to malnutrition, and on the other to intoxication from the waste products. In certain conditions, however, he holds to Arndt's theory that many of the cell elements in the nervous system of some patients show a defective development. In such cases neurasthenia is more clearly a congenital condition, and is, of course, much more easily developed. Bordarie advances a similar theory, basing the condition upon a vasomotor disturbance and excitation of the vasomotor centres, leading to a diminished nutrition and a consecutive intoxication: while Dujardin-Beaumetz and others discuss the frequency of dilatation of the stomach in neurasthenia, and advise local treatment as in dilatation from other causes.

These views comprise but a small part of the literature of neurasthenia, and I quote them to show that, however much men may differ in the minor details of its nature, its causation or its treatment, it would seem useless to contend, as Gowers has done, that neurasthenia cannot be regarded as a distinct disease, or that the symptoms of every so-called neurasthenic patient are sufficiently definite in character to bring the case into some special category of other well-known diseases. For purposes of rational treatment, however, it does become necessary to differentiate between true neurasthenia and pseudo-neurasthenia, a condition quite different, and one which some of the authorities just quoted evidently confounded with the classical disease. My meaning cannot, perhaps, be better conveyed than by reiterating what I have said in another place: "Neurasthenia is now almost a household word, and equally with the term malaria affords to the profession a convenient refuge when perplexed at the recital of a multitude of symptoms seemingly without logical connection or adequate cause. The diagnosis of neurasthenia, moreover, is often as satisfactory to the patient as it is easy to the physician, and by no means helps to reduce the number who have been duly certified to as neurasthenic, and who ever after, with an air too conscious to be concealed, allude to themselves as victims of nervous exhaustion. The doctrine to be taught and strongly enforced is that many of these patients are not neurasthenic, and under hardly any conceivable circumstances could they become neurasthenic. They do not belong to the type out of which neurasthenia is born, either mentally or physically. Many of them are unintellectual, phlegmatic, and intolerably indolent, and are pleased at a diagnosis which touches the nerves rather than the stomach,

bowels, and liver. The treatment needed is quite different from that of the true neurasthenic. These patients are lithæmic, not neurasthenic; the nervous system is strong enough, and would give no trouble were it not poisoned by the abnormal products of digestion, that enter the blood and circulate through every tissue of the body."

It is this lithæmic condition, so often mistaken for neurasthenia, of which Haig has been one of the later exponents. He dwells upon the importance of the retention of uric acid in the system in the causation of nervous disorders. These disorders, however, are in no sense neurasthenia. They consist, as Murchison had pointed out before him, of headache, vertigo, convulsions, depression, irritability, sleeplessness, pains and neuralgia, migraine and paralysis. According to his idea, those who indulge freely in meat and wine, and take of any food more than the system can oxidize, have a tendency to store up uric acid in the system.

Leubucher has studied many cases of nervous diseases, melancholia, and mania especially, and it was surprising how in most of these cases an examination of the secretions showed greatly increased acidity. Now it is an extremely easy matter, as a rule, to diagnosticate a functional disease of the nervous system from an organic disease: but it is not always so simple a matter to diagnosticate a neurotic condition, dependent upon retained uric acid or faulty metabolism in any way, from a condition of true neurasthenia. The presence of uric acid does not determine the difference, since uric acid is not infrequently found in the urine of neurasthenics, while the worst lithæmic may at times give no evidence of its presence. Differential points of importance refer to the mental phenomena. Mental depression and a profound sense of misery belong to both types, but with very different manifestations. The neurasthenic, however much he may suffer in mind, and however much he may worry in regard to his own condition and the affairs of the world generally, has no such irritable, ungovernable temper as the lithæmic.

In neurasthenia, the nutrition of the nerve cells is believed to be at fault. They are in a condition of pathologic fatigue, brought about by voluntary or involuntary stimulation of brain activity, frequently repeated to the verge of exhaustion, until the recuperative power fails to bring back the nervous tone to its normal level.

Suffering in this way, the demeanor of the neurasthenic is, as a rule, quiet and suppressed. He is timid and retiring, and one seldom sees in him the touchy mood of the lithæmic, whose brain is actually poisoned by the imperfectly transformed products of digestion. In lithæmia the tongue is generally coated, and where you will find one neurasthenic with cold hands and feet, you will find a dozen lithæmics bitterly complaining of this condition. The nitrogenized wastes circulating in the blood cause by their irritation tonic spasm of the arterioles and local anæmia.

No two conditions of disease, with such similar symptoms in many ways, demand such widely different methods of treatment.

Haig would remove the uric acid by salicylates and acids, and prevent the formation of more uric acid by an appropriate diet. The necessity is not for rest, or quiet, or soothing draughts, but for mental and physical activity, and sometimes actual starvation.

The neurasthenic, on the contrary, frequently needs more food and of the best quality—repletion rather than depletion. He may need absolute rest and quiet or at least an entire change in the character of his work, and whatever methods tend to improve nutrition must be persistently attempted.

I have had cases in which absolute rest in bed, as advocated by Weir Mitchell, has been of service; but in the great majority of cases the monotony of complete rest acts as an irritant rather than as a tonic sedative. Activity along some line, tempered to the characteristics and necessities of the patient, is far more potent for good than absolute idleness, while a judicious use of a combination of the three bromides, with some one of the zinc preparations and cannabis indica, is perhaps the most efficient form of internal medication. These drugs are not tissue builders, nor are they tonics in the ordinary acceptation of the term, but they temporarily curb the erratic and unstable nervous system, and enable it to receive with better effect those methods of electric application which experience has proven to be so valuable as an aid to animal nutrition.

In regard to the use of electricity in neurasthenia, there is much to be said, and, if time permitted, I should be glad to consider at length the *rationale* of its effects.

The fundamental principle underlying all the reconstructive and curative effects of electrization is its power over nutrition. The neurasthenic patient looks so well, is frequently so plump and healthful in appearance, that we are accustomed to say that he is well nourished, that his nutrition is good. This, however, cannot be. The morbid fears, the strange and persistent sensory symptoms, the vacillation, the feeble powers of endurance—all point to deficient nutritive activity; and whether we regard the pathologic change in the cell to be due to fatigue, to inanition, or to direct toxic influence, the processes of metabolism are undoubtedly defective, both in constructive and destructive power. Few facts are more clearly established than the influence of electricity, first upon the metabolic function of the body, and secondarily over nutrition. Through physiologic experiment and chemical analysis, we know of its effects upon metabolism; through clinical experience and observation upon nutrition. Every manifestation of electricity possesses this power in greater or less degree, and it is most unwise, it seems to me, to select and dwell upon any one form as the special medium through which nutritive effects are best obtained.

It is through the mechanic, chemic, and physiological powers of electricity that we influence nutrition, and that form and method of treatment which in the most thorough manner combines these effects, as indicated in individual cases, will prove the most effective.

The relation of the morbid fears of neurasthenia to other diseases, and especially to epilepsy, is of great interest. Many a neurasthenic will appear to be on the verge of an epileptic attack, and it is not uncommon for them to think that they are about to have it; but, as a rule, their very disease saves them from it. Nevertheless, although the two diseases, epilepsy and neurasthenia, evidently belong to different orders

of constitution, yet in a number of cases that have come under my observation I have found an epileptic attack and morbid fears to be convertible terms. I well remember the case which first called my attention strongly to this fact. A young man, aged twenty-four, came to me, some years ago, complaining of symptoms that had become chronic, typical of true neurasthenia. His morbid fears took the form of monophobia—fear of being alone. He seemed to be afraid of nothing else, but rather than sleep alone, or remain in a room alone, he would sit up all night or walk the streets for hours. He had never suffered from any form of convulsive seizure, but shortly after he came under my observation he was seized with an epileptic paroxysm of considerable severity, which was repeated every few weeks for more than six months; but the morbid fears left him at once and completely. When the epileptic attacks began to decrease in severity the morbid fears began to return, mildly at first, but increasing in severity as the epileptic attacks subsided. Evidently the same pathological condition, whatever that condition was, that caused the morbid fears was the cause also of the epileptic seizures. The practical point that I desire to make in regard to this occasional combination or alternation of two very distressing symptoms relates to the treatment. The epilepsy associated with neurasthenia is a different and less grievous affair than when due to reflex irritation from central traumatic causes, to organic brain disease, or the ordinary so-called idiopathic variety. In most cases of epilepsy from these causes the "fits" act as safety-valves, the secondary effects of which are a general mental and physical uplift; but in cases of what might be termed neurasthenic epilepsy the attacks are not followed by the same measure of relief. The prognosis, however, in neurasthenic epilepsy is far better than in epilepsy unassociated with the neurasthenic condition.

In the latter case, the bromides are unmistakably beneficial, and sometimes curative, and are not, as a rule, distinctly harmful: but in the epilepsy that displaces the morbid fears of neurasthenia bromides are, in my experience, less serviceable and more depressant.

For this reason, in those cases of neurasthenic epilepsy that come under my observation I am much more careful in the use of the bromides, and, indeed, treat the cases constitutionally, very much as neurasthenia itself is treated, by those methods that tend to aid cellular nutrition, and especially by central galvanization—than which there is no more efficient method in the treatment of chronic functional derangement of the central nervous system.

My experience does not teach me that syphilis bears any very important relation to neurasthenia, as suggested by Fournier. It may occasionally complicate it, but the great majority of my own cases had never contracte l the disease. It is unquestionably true that nervous exhaustion saves from disease. Those afflicted with it are, for example, less liable to inflammatory conditions. Their gonorrhœal attacks are lighter, and I have seen enough of syphilitic attacks in neurasthenics to incline to the belief that both local and constitutional effects are less severe than in the perfectly well.

Organic diseases of the brain and spinal cord, or of the peripheral

nerves, are very insignificantly related to neurasthenia in any real sense.

Very few neurasthenics develop structural disease, and it is rare to see the latter associated with the symptoms of true neurasthenia; but the tendency to mistake one for the other, although not so prevalent as formerly, is by no means rare.

Deficient mental control, sensory symptoms, and local fibrillary contractions are the symptoms which, according to my experience, cause the greatest alarm to the intelligent patient. If the patient be a physician, or one who has made himself familiar with the symptoms of central organic disease, the deficient mental control suggests to him insanity, the sensory symptoms locomotor ataxia, and the fibrillary contractions progressive muscular atrophy. The importance of a correct diagnosis cannot be overestimated. The gravest consequences may follow such mistakes, and it would seem that no adequate excuse can be offered for them. To mistake an organic for a functional condition is not, as a rule, so serious a matter. It is, indeed, sometimes desirable to keep for a time the worst from a patient; but to tell one afflicted only functionally that his disease is organic and incurable is a most serious matter. It takes away hope, shatters the *morale*, and materially lessens the chance ofultimate recovery.—*Medical Record.*

HEADACHE FROM OVARIAN DISEASE.—

Ammonium bromide, 6 drachms.
Fluid extract golden-seal, 4 drachms.
Tincture gentian comp., 12 drachms.
Water, 4 drachms.

A dessertspoonful three times daily.—*Medical News.*

CHOREA.—I have confidence in only three remedies, giving preference in order enumerated: Absolute rest, avoiding any external excitation whatever, and keeping the choreic in a dark or darkened room: The ascending electric current along the spinal cord—the best results with a gentle current, progressively increased: Arsenic in large doses, beginning with twenty-one drops Fowler's solution daily for children, and double the quantity for adults—even after the chorea ceases the remedy should be continued for some time, for the malady readily returns.

Of course nutrition should be maintained, with good food; and gymnastics may also prove useful.—RENZI.

IRRITABLE BLADDER.—

℞ Salol, 2 drachms.
Tincture hyoscyamus, 2 drachms.
Infusion of buchu, enough to make 6 ounces.

A tablespoonful three times a day.—W. E. FOTHERGILL.

CHRONIC LEUCORRHŒA.—The best constitutional remedy is arsenic in small doses.—THOMAS MORE MADDEN.

NOSE AND THROAT.

IN CHARGE OF

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TREATMENT OF NASO-PHARYNGEAL CATARRH.

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The treatment of catarrhal affections of the throat and nose by what may be termed minor surgical measures, was given little attention until recently. At present there seems to be a disposition to rely too much on these methods to the exclusion of other means which are equally essential. To obtain the best results, different kinds of naso-pharyngeal catarrh must be recognized, and the treatment selected accordingly.

Naso-pharyngeal catarrh, depending on nasal obstructions and pharyngeal hypertrophies of various kinds, may be treated by surgical methods with excellent results. There are two other causes of catarrhal discharge from the upper respiratory tract which are not so amenable to treatment —one depending on constitutional dyscrasias, which are hereditary, and the other acquired and resulting from some form of disturbance in the digestive tract.

Of the hereditary causes, syphilis, tuberculosis and the rheumatic diathesis head the list.

Persons suffering from congenital syphilitic naso-pharyngeal catarrh are easily recognized, as they have other symptoms which point directly to the nature of their trouble. A complete cure cannot be expected in these cases, but much may be done to hold the offensive discharge in abeyance. Internal medication is most important, and the administration of the liquor arsenici et hydrargyri iodidi will prove very satisfactory. It may be given in small doses, say 3 minims in distilled water three times a day after meals, and kept up for several months. It rarely disagrees, but should it cause derangement of the bowels or fulness of the head, a smaller dose may be given. Locally, any of the usually recommended solutions may be used for cleansing purposes, and a powder applied of zinci stearas comp. cum ichthyol. This powder is stimulating

and antiseptic, and owing to its low specific gravity, a small quantity covers a large area. It is also very adhesive, and it is impenetrable to aqueous fluids; it does not cake, and is not carried away by the secretions. The ichthyol in the zinc stearate comp. may be replaced by resorcin or balsam of tolu.

Catarrhal discharges, from a strumous or tubercular diathesis, begin about the age of puberty. The discharge is thick and yellow, and comes chiefly from the nasal fossæ and post-nasal space. The mucous membrane is pale and tightly drawn over the underlying bony structures, and covered with a thick, semi-transparent discharge. Patients suffering from this form of naso-pharyngeal catarrh almost universally have facial acne indurata, which scars them for years. The mucous glands on the inferior turbinated bodies are sometimes large and red, bearing a strong resemblance to the acne on the face. It usually occurs in several members of the same family. Immediate results of a palliative nature may be expected from well-directed treatment, but time alone will do a great deal for this catarrh and its accompanying acne. The treatment should be to increase the fatty tissues and build up the general health. Plenty of cod-liver oil and outdoor exercise should be advised. The usual cleansing agents may be used for removing the secretions; the douche is preferable to sprays, when the accumulation is abundant and dry. Dessar's nasal cup is a convenient method of carrying out this treatment, but a douche, arranged on the principle of a fountain syringe, gives better results. The reservoir should hold only a pint, and hang about six inches above the patient's head. The rubber tube and nasal tip should be about three feet long. The following rules may be given to the patient when using the douche:

1. Warm the fluid to be used, and apply vaseline to the nasal tip.
2. Put the nasal tip in the nostril of the side you can breathe best through.
3. Hold the breath, throw the head slightly back, and allow the fluid to enter the nose.
4. If there is a desire to breathe, take the nasal tip away for a few moments, and begin again.
5. While using the nasal douche, do not attempt to walk, cough, swallow, sneeze, or become excited in any way.

When the catarrhal symptoms are the result of a rheumatic diathesis, the mucous membrane of the nasal fossæ and naso-pharynx is of a deep red color, not specially hypertrophied, and the discharge is mostly watery and frothy in character. These persons are, at all times, very sensitive to dust, winds, change of temperature, etc., and when they take cold the nasal discharge is great, and keeps up for a long time. There will be intervals when the catarrhal symptoms are in abeyance, and then suddenly appear without any apparent reason, but, on further examination, the urine will be found highly acid, and with an increased specific gravity. Sprays and douches are positively contra-indicated in these cases, and it is a question if any local application is of service.

Thin ointments have seemed to allay the acute symptoms in some cases. For this purpose the following may be used:

℞.—Acid. carbolic ..... grs. ij
Camphor ..... grs. iij
Ol. gaultheriæ ..... min. iij
Benzoinol ..... ℥ss
Ung. oxidi zinc ..... ad. ℥j

M.—Sig.: Apply in the nostrils two or three times a day, with a camel's hair brush.

Internal medication gives the best results. To temporarily check the discharge, small doses of ext. belladonna, quinia sulph. and camphor, in capsule form, prove very satisfactory, but anti-rheumatics must also be employed.

Chronic pharyngeal catarrh, resulting from digestive troubles, is the most frequent form observed in this country. Adults are the principal sufferers. There is considerable discharge, varying in character, and with little or no odor. A full feeling behind the palate and around the base of the tongue is a constant symptom, as is also a sensation of something running from that region. The desire to clear the throat, especially when speaking, or after excitement or meals, is very troublesome.

No amount of hemming or clearing the throat seems to relieve these cases. Two classes of persons suffer from digestive difficulties which cause catarrhal affections. One class, of full habit, eat a great deal, and keep the whole digestive tract engorged, liver congested, and a general sluggish condition of the intestinal circulation.

The mucous membrane of the pharynx in this class is more or less congested, and bathed in a watery, frothy mucus The vessels and glandular tissues of the pharynx, and around the base of the tongue, are much enlarged and engorged to a more or less degree. The glandular tissue at the base of the tongue varies much in appearance; in some it is nodular, while in others it occurs in large masses which encircle the epiglottis. The varicose condition of the lingual veins and the hypertrophy of the glands have been called "lingual hæmorrhoids;" and they certainly have a close affiliation with rectal hæmorrhoids—not alone resembling them in appearance, but frequently result from the same cause, produce similar symptoms, and respond to the same treatment.

The other class of digestive catarrhal affections develops in persons suffering from dyspepsia of nervous origin. The mucous membrane of the pharynx and the condition of the neighboring parts is pale, and bathed in mucus, due to the sluggish condition of the circulation of the pharynx, œsophagus and stomach.

In the treatment of the first class of the digestive cases the diet should be regulated, and liquids of all kinds taken in moderation; saline purgatives relieve the congested circulation; walking, exercise and daily baths, or rubbing with a coarse towel, also assist. Washing out the stomach, by the usual method, gets rid of the excess of mucus, and produces more rapid and complete digestion. The patient should be taught to wash out the stomach every morning before breakfast. At first, considerable gagging will be experienced, but a little perseverance overcomes this.

Various methods have been suggested for reducing the hypertrophied glandular tissue, and all are more or less efficient. In my experience,

the best uniform results are obtained by the application of a saturated solution of pure iodine and carbolic acid, consisting of iodine and carbolic acid crystals, each 120 grains; iodide of potash, 10 grains; rectified spirits, 2 drachms. This solution applied to the glands on the posterior pharyngeal wall and the base of the tongue, once a week, causes no pain or soreness; at the same time it produces a change in the glandular tissue, which is unequalled by any other application in my experience.

The dropping of mucus from behind the soft palate is considerable in all forms of catarrhal affections, and for general use in stopping this disagreeable symptom, a powder containing nitrate of silver, in varying proportions, as first suggested by Dr. A. H. Smith, will prove most effectual. The formation of this powder, as described by Dr. Smith, is well worth our consideration.

In ordering a powder that shall contain a certain proportion of silver nitrate, it is necessary to select a diluent that will not decompose the silver salt. This condition at once excludes all powders of organic origin, and also all carbonates of the alkalies or alkaline earths. Of the powders remaining, we must select one that will be bland and unirritating to the tissues, and not disagreeable to the taste. Bismuth sub-nitrate at once suggests itself, and it serves an excellent purpose until it has been exposed for a while to the air, when it becomes damp and lumpy. It needs, therefore, the addition of a small amount of some powder that will not absorb moisture, and that will separate the particles of bismuth. Potassium sulphate fulfils these conditions, and as both base and acid are stronger than in the silver salt, no decomposition results. The sulphate is neutral in re-action, and not irritating to the mucous surfaces.

A powder composed as follows will not change chemically, will not become lumpy, will not cause irritation, other than that from the silver, and is not offensive to the taste:

R.—Argenti nit.....gr. x-xl
Potass. sulph.....℥j
Bis. subnit.....℥vij
M.—Sig.: For local use.

—Dr. Walter F. Chappell, in *Virginia Medical Monthly.*

A NASAL CUTTING FORCEPS.

BY JOHN C. LESTER, A.M., M.D., BROOKLYN.

A more or less extended experience in the removal of portions of the middle turbinated body by means of the nasal snare, and an occasional failure with this method, led the writer to look for an instrument which could be relied upon in an emergency. An instrument, devised by Dr. Robert F. Weir, of New York, was found, which, in the hands of the writer, has proved particularly useful.

The instrument, represented in the drawing, is a modification of Dr. Weir's nasal forceps. The modifications consist in the fenestrated cut-

ting ends, their increased size, and the enlarged angular handle. Dr. Weir's forceps, it will be remembered, consists of a straight, narrow scissors handle, which completely obstructs the view of the operator.

The increased size and depth of the cutting ends of the modified forceps, the fenestrations, and the strength of the handle, make it possible for the surgeon to remove the entire middle turbinated body, or any portion of it, with an entirely unobstructed view of the field of operation.

The writer has also found this forceps exceedingly valuable in removing large nasal polypi, especially those attached to the middle turbinated body. In these cases it has been possible to remove not only the polypi, but also that portion of the turbinated bone to which the polypi are attached.

This instrument is not intended to supplant the use of the nasal snare; for, in the judgment of the writer, although there is no method which requires a greater amount of skill and dexterity on the part of the surgeon, there is certainly no method accompanied with more satisfactory results than the use of the ordinary nasal snare in the removal of a hypertrophied middle turbinated bone. There are, however, cases of sclerosed middle turbinated bodies which, having ran the gauntlet of the "scorching" process, are still a source of discomfort to the patient. It is in this class of cases that a device of the kind under discussion is valuable.

Of course, an instrument so powerful must be used with extreme caution to avoid undue laceration of the tissues, as well as the removal of a greater portion of the turbinated body than may be desirable. The exercise of ordinary care will, however, obviate any such untoward result.

The forceps is made by Messrs. Tiemann & Co., of New York, and is up to their usual standard of excellence.

WHEN SHALL WE USE THE FORCEPS?—Wm. E. Parke (*Am. Gyn. and Obstr. Jr.*, Feb., 1897), in a practical paper relating to the above question, presents the following summary:

1. The indication for the use of the forceps rarely arises during the first stage of labor, before the membranes have been ruptured.

2. It may be necessary to employ the forceps during the first stage, when the waters have escaped, on account of the increasing exhaustion of the mother or child.

3. It is proper to apply the forceps during the first stage of labor for accidents, whenever they may arise, notably in certain cases of convulsions, placenta previa and prolapse of the cord.

4. In the second stage it is proper to apply the forceps one-half hour after the head ceases to advance, when there is no disproportion between the passage and the passenger.

5. When, however, there is a tight fit between the child and the birth-canal, the use of the forceps may be delayed. This delay should rarely exceed two hours after the head ceases to advance.

6. If the head is engaged, and neither advances with a pain nor recedes after the pain, the forceps should be applied promptly.

PAEDIATRICS.

IN CHARGE OF

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WHERE DOES THE MEDICAL PROFESSION STAND TO-DAY UPON THE QUESTION OF INFANT FEEDING?

BY L. EMMETT HOLT, M.D.,

Professor of Diseases of Children in the New York Polyclinic.

It is safe to say that at the present time there is no subject in pediatrics of greater interest and importance than that of infant feeding. It is only within the last decade that this subject has received anything like the attention in medical literature which its practical importance deserves. Until recent years it has been ignored by the physician and left largely to nurses and grandmothers. There are now signs everywhere that infant feeding is becoming a subject of scientific study. During the past few years an extensive literature upon the subject has appeared, particularly in Germany and in America, representing a large amount of clinical observation and laboratory study. It is the purpose of the present article to take a hasty survey of the question as it is regarded to-day.

By infant feeding is usually meant the nourishment, during the first year, of infants who are deprived of the maternal breast. The subject of wet-nursing will not be considered further than to remark that while, in the great majority of cases, wet-nurses are not required, they are sometimes indispensable.

The forms of infant feeding which are practised to-day may be reduced to three:

1. The exclusive use of commercial foods, or of canned condensed milk.
2. The use of fresh cow's milk with the addition of various foods or substances which are believed to modify the milk so as to increase its digestibility, particularly as regards the casein.
3. The use of only the elements of cow's milk, either with or without some form of sterilization. Cow's milk may be modified by simply diluting with water, or also by the addition of sugar; or more complex changes may be made, such as the various combinations of milk, cream, milk sugar, etc., and these mixtures, or plain or diluted milk, may be employed with or without some form of sterilization.

While there are many points which remain to be settled by future study, it is to the third position that the great majority of those who have come who are qualified by training and experience to speak upon this subject. There are, in fact, few questions in pediatrics upon which such unanimity of opinion exists as that fresh cow's milk is the best infant food, and that to depend upon anything else as a permanent food is to hazard the child's life.

Let us look at some of the reasons for this. It is assuredly not from any mere prejudice that canned condensed milk and the commercial infant foods have been given up by intelligent physicians as substitutes for breast feeding; but simply because experience has shown the dangers which lurk in them and the objections to which they are open. Infant feeding is a problem in nutrition, and the success of any method is to be judged by its ultimate results, for the immediate results with these foods are not infrequently most satisfactory and delightful. As an illustration, take the case of an infant who has been fed upon cow's milk not properly adapted by modification to its digestion. How often does one see as a result of such feeding continued fretfulness and discomfort, often attacks of severe colic, and the passages of stools containing large, hard curds. At this juncture the substitution of some commercial food may be followed by the almost immediate disappearance of the uncomfortable symptoms just mentioned. The experiment is often interpreted by the mother, and sometimes by the physician, to mean that cow's milk is not a suitable food, while one has been found in the commercial article which exactly meets the case.

But suppose that this food is now continued as the sole diet for several months, and what follows? The prolonged and exclusive use of such a diet reveals its fatal lack of some of the essential elements of food required by the growing infant, which are supplied by fresh milk and by nothing else. It may be three months, and it may be six months, before the effects of this are seen, but they come with great regularity, sometimes in the form of scurvy or rickets; sometimes as a general malnutrition; as a consequence of which there is so feeble a resistance that any acute disturbance may prove serious, or it may lay the foundation for delicate health during all childhood.

Within the past two years upwards of twenty cases of infantile scurvy have come under my observation, these being, almost without exception, seen in children whose principal or sole diet consisted of some one of the commercial foods. Said one very intelligent father, whose child was found to be suffering from a severe form of that disease, when the etiology of the scurvy was explained to him: "Why are not these facts published, so that not only the few physicians who have special opportunities, but the medical profession generally and the public may be made aware of these dangers and so avoid them?" He could scarcely credit the statement that a large number of such cases had been placed on record, and also that the commercial foods did not have the endorsement of the most intelligent portion of the profession.

Again, take the case of canned condensed milk. This is still widely used by the laity in the country as well as the city, and, I am sorry to

say, is advised by many practising physicians. During the past five or six years I have been in the habit of examining critically all children with reference to the effects of the prolonged use of various forms of diet, and I have yet to see an infant reared solely on canned condensed milk who did not exhibit the signs of rickets to a greater or less degree, though a few would have passed at first glance as particularly healthy specimens. The feeble resistance of condensed-milk babies to acute disease has long been noted by many observers.

The objection to those commercial foods which require in their preparation the addition of fresh cow's milk is not so serious as to the group just considered. Some of these foods, consisting largely of soluble carbohydrates, may supply the additional amount needed by cow's milk when it is used for an infant food. But that they do more is, I believe, not true; and until further evidence is adduced than at present exists, they cannot be regarded as modifying the casein of cow's milk, or increasing its digestibility. For routine use they are not to be compared with milk sugar, as used in ordinary milk modification.

Those foods which contain a large amount of unchanged starch are successful in the inverse proportion to the amount used. They serve a useful purpose as diluents of the milk and do not affect the nutrition in one way or the other.

The foods of this class are successful because of the fresh cow's milk which is used in their preparation, especially if the method of preparation secures a proper dilution for the casein of the cow's milk.

The addition of digestive ferments to milk, with the purpose of assisting the infant by a partial predigestion of the casein, is at times extremely useful. It should not, however, be continued indefinitely, or the stomach will not acquire the capacity of doing this work. As a routine method of feeding it is greatly inferior to the proper modification of the elements of cow's milk.

We come, then, to this final proposition, to which all students of the subject of infant feeding agree, viz, that no artificially-fed infant can safely be kept upon any permanent diet which does not contain fresh cow's milk. As temporary substitutes the commercial foods may at times be admissible, but their use should go no further.

While we must depend upon milk, and practically upon cow's milk, and are not upon safe ground without it, certain problems still present themselves for solution. Cow's milk differs from breast milk in several important particulars, both in its chemical composition and in the bacteria which it always and everywhere contains. Besides, it must be taken into account that milk is easily contaminated, and may become a vehicle of disease unless handled with great care. How to overcome these obstacles is the problem which has occupied the students of infant feeding for the past few years, and which still engages their attention. Whether the difference in chemical composition, or the presence of bacteria, is the more important, is still a matter of discussion. In Germany the latter opinion seems to prevail, and consequently the great majority of German writers still advocate sterilization at a high temperature (212° F.) In this country, on the contrary, high-temperature sterilization as a

routine practice is now advocated by very few, heating to a lower temperature (155° to 170° F.), *i.e.*, Pasteurization, being regarded as quite sufficient for all ordinary purposes; even this is thought by very many quite unnecessary where the production and handling of milk can be properly guarded, except in very hot weather.

It is in America especially, or we may say in America only, that anything like the accurate modification of the proportions of the different elements of cow's milk has been attempted. The methods employed in Germany in "*Gartner's Fett-milch*," are crude in comparison with those used in the milk laboratories of our large cities.

It would be going beyond the limits of this article to enter upon the discussion of the subject of milk modification. Its importance is everywhere realized. It is of interest in the present connection to glance at the steps by which our present position has been reached.

First was the period of indefinite modification, in which the milk was simply diluted with water, and sometimes also sugar, usually cane sugar, was added.

Secondly came the period of definite modification. After the composition of breast milk had become pretty accurately known, there were used various milk and cream mixtures in which it was aimed to secure the exact proportions of fat, sugar, proteids, etc., which existed in average breast milk. A single formula was made to do duty for all infants, one physician advocating one, another another—one which was widely employed analyzing four per cent. fat, seven per cent. sugar and two per cent. proteids. This was to be diluted with water in the case of young infants.

Thirdly, the period of accurate modification. According to this method, which is now widely used, the proportions of the different milk elements—fat, sugar, proteids, etc.,—are varied separately according to the age and digestion of the particular infant under observation. Following this plan it is usual to start with a milk the composition of which resembles breast milk, except that the percentage of proteids is considerably lower on account of the difficulty which the young infant has in digesting the casein of cow's milk. The proteids are then gradually increased with the child's powers of digestion. In carrying out this method of feeding it is of great advantage to have the assistance of a laboratory such as the Walker-Gordon laboratories, which have been established in half-a-dozen of our larger cities, but the principle can be carried out anywhere if the physician knows even approximately the composition of the milk and cream he is using, particularly the amount of fat they contain. In using this it is necessary to have some way of expressing definitely the proportions used, and none is so satisfactory as that of giving the percentages of the different elements, fat, sugar, etc., employed.

It is not claimed that any modification of cow's milk can make it identical with breast milk, or in chemical composition in the digestibility of its proteids, but that we can approximate the natural food of the young infant more nearly by a modification such as has been mentioned than by any other form of substitute feeding. Such feeding

has certain advantages over breast feeding, in that proportions of the different elements, fat, proteids or sugar, may be easily altered separately in cases where any one may be difficult of digestion, this being possible in the case of breast milk only to a limited degree.

To the view just stated, at least in its essential features, the great majority of the students of the subject of infant feeding in America have now come, viz., the modification of cow's milk by percentages, the general guide being the composition of breast milk, but the guide in the particular case being the proportions best suited to the digestion of that infant.

We have thus far considered the differences between the chemical composition of cow's milk and breast milk, and have seen that these differences may be, although never entirely overcome, at least so much lessened as to make cow's milk a food which may be digested by average infants. It is also a fact so well established as not to need argument here that the nutrition of an infant who is able to digest properly modified cow's milk is on safe ground, no other food being necessary for its healthy development. This is something, as we have already seen, that cannot be said of any of the commercial foods.

We pass now to a consideration of the other objection to cow's milk as an infant food, viz., its bacterial content. The presence of the germs of the specific infectious diseases—diphtheria, typhoid fever, tuberculosis, etc.—may be a source of great danger, but, after all, not a very frequent one. It is a danger that, with the supervision of milk production, which it is easily possible to give, can be removed altogether. It is not, of course, meant that such supervision now exists, except to a very limited degree, but the experiment has gone so far as to demonstrate that such milk can be secured anywhere if either the public or medical profession are united in demanding it.

The presence of other bacteria than those just referred to are for ordinary purposes not less important. These are those which affect the keeping properties of the milk, and to some degree, no doubt, its digestibility: their presence is constant, varying from a few thousands to four or five millions to each cubic centimetre. This depends essentially upon the care exercised in the handling of the milk, and the time since it left the cow.

There are two methods of getting rid of the bacteria of milk: the first to destroy them by heating the milk; the second to keep them out by the exercise of the most scrupulous cleanliness in the production and handling of the milk, and greatly shortening the time from the cow to the infant.

The whole question of milk sterilization is still *sub judice*. That simply heating cow's milk to 212° F. for thirty, sixty or ninety minutes thereby fits it for infantile digestion, I do not believe. My experience is that the heating of milk in this way does not greatly influence its digestibility, although I recognize its value in cities during hot weather in the prevention of diarrhœal diseases. For myself I believe that the value of milk sterilization consists in improving its keeping qualities, and in the destruction of pathogenic germs, but that with a milk which is fresh, and

as free from bacteria as has been shown to be practicably possible, sterilization is unnecessary. I am almost willing to say undesirable, unless milk must be kept more than thirty-six hours and no ice can be had. This will, I believe, be the milk of the future. For the present, however, some form of heating milk is for general use desirable, the lower temperature, 155° to 170° F. for thirty minutes, being greatly to be preferred to higher temperatures and longer periods.

In closing this cursory survey of the question we will first summarize the points which may be considered as well established, and then mention some of the most important questions still under discussion. It is well established:

1. That good breast milk is the best infant food.

2. That no substitute for breast milk can be trusted which does not furnish essentially the same elements, fat, sugar, proteids, etc., as breast milk.

3 That these elements are found only in the milk of other animals, cow's milk being the only one that is available for general use.

4. That cow's milk requires some modification before it is fed to infants; first, because the proportions of the different elements (fat, sugar, etc.) are not the same as in breast milk; and secondly, because some of these elements, notably the proteids, are not identical with those of breast milk.

The important questions in infant feeding which are now in dispute are:

1. With reference to heating milk: Whether all milk shall be heated, if so, to what temperature and for what time; whether the purpose shall be mainly to destroy pathogenic germs, or to improve the keeping properties of the milk; also whether heating improves its digestibility, or the contrary.

2. With reference to cleanliness: What the standard of a "clean milk," bacteriologically speaking, shall be; also whether the exclusion of pathogenic germs by care and intelligence, and a great reduction in number of saprophytic forms by scrupulous cleanliness in milk production, may not give us what we need—clean milk a few hours old, which will have all the advantages of Pasteurized milk without any of its possible disadvantages.

3. With reference to milk modification: Whether such accurate modification as is measured by variations of small fractions of a per cent. is really essential, or whether less accurate modification may not give equally good results provided the original milk is the best possible. Much is still to be learned regarding precise indications for varying the proportions of the different elements in milk modification.

Infant feeding is a large subject, and let no one think to secure the best results without giving both time and thought to the problem. It is still a rich field for study which will amply repay any one who devotes himself to it.

Medical Societies.

TORONTO CLINICAL SOCIETY.

The forty-first meeting of the Society was held December 8th, 1897. Dr. A. A. Macdonald occupied the chair.

Fellows present:—McDonagh, Peters, Parsons, Boyd, Garratt, Temple, Ryerson, Primrose, Wright, Macdonald, Fenton, Murray, Bingham, King, Oldright, Grassett, Hamilton, Cameron, Fotheringham, Brown. Dr. Graham Chambers was elected a member of the Society.

Dr. Fotheringham reported a case of hysteria in a girl aged 10. Three years before he saw the patient she had an attack of diphtheria, which might have given rise (in the opinion of those who saw her) to the paraplegic symptoms which appeared November 30th, 1895, disabling the child from feeding herself for ten months. One eye was closed for three months, and the movements of the other were impaired. Some weeks after there were twitchings of the arms and legs, but not spastic. For a time there were rhythmic movements of the head which were carried on in a rotatory fashion against the fists. The paralysis disappeared during sleep. There was no tendency to bed sores; and there was no marked wasting. At first there was some headache and some insomnia. The patient was hyperæsthetic in the presence of the mother; less so when the doctor was in. There were two sensitive spots over the two upper lumbar vertebrae. Under purely suggestive treatment there was a complete cure. The doctor then discussed the differential diagnosis. The diagnosis of hysteria depended upon the following facts: The interval between the diphtheria and the onset of the paralysis; the distribution of the paralysis and its disappearance during sleep; there was no active atrophy; the absence of bed sores; the increased knee jerk; the position of the legs—that of simple helplessness; the rythmic spasms; the twitchings; the hyperæsthesia, more marked in the mother's presence; and the hysterical stigmata.

Dr. Bingham referred to a case in which he had operated for empyæma. Although complete recovery took place the child would not allow its mother to touch the affected side.

Dr. William Oldright said that it was stated that there was an absence of the faucial reflex in these cases.

Dr. Fotheringham said that he did not think that this was so. In certain cases the fauces might be one of the anæsthetic areas.

Dr. Primrose presented a child aged seven who had come to the Children's Hospital with a psoas abscess. The treatment consisted of opening the abscess, curetting with the finger-nail, injecting a 10 per cent. solution of iodoform and glycerine, stitching, and sealing up with collodion. Healing took place by first intention.

Dr. Bingham presented a child upon whom he had done an œsophagotomy, for a button at one point had begun to ulcerate through, which made him pleased he had not persisted with the forceps in trying to extricate it prior to operating. The case was doing well.

Dr. Parsons related having assisted at removing a set of false teeth from the œsophagus. The wound suppurated. It was a difficult matter to keep such wounds from being contaminated.

Dr. E. E. King reported having had two cases of foreign body in the œsophagus—in one case it was a cent, in the other a piece of oyster shell. He was able to locate the cent with the X-rays. He was able to remove them by the probang.

Dr. Garratt reported a case he had seen with Dr. Harris. A cent had lodged in the œsophagus which they were able to locate with the X-rays. They introduced a bougie and shoved it into the stomach.

Dr. McDonagh reported a case where a child had swallowed a small tin whistle which became lodged in the œsophagus. He was able to reach it with an ivory-pointed bulb, and removed it with a pair of forceps.

Dr. A. Primrose, a paper on "The Physics of Surgical Dressings." This was the review of a paper by a Russian medical man, who holds that the success of the treatment of wounds by the Listerian method depends not so much upon the antiseptic qualities of the dressings as the allowance for drainage and evaporation from the wound, in the stream of which the germs would be carried.

Dr. Cameron, Dr. Oldright, and Dr. Parsons took part in the discussion.

TORONTO MEDICAL SOCIETY.

The regular meeting was held Dec. 9th in the Council building.

Present: Drs. Cameron, Oakley, Scadding, Galloway, McKeown, Parker, Spence, Hastings, Badgerow and Brown.

The chair was occupied by Dr. Oakley.

The minutes of the last meeting were read and adopted.

Treatment of Toxæmia by the Principle of Osmosis.—A paper thus entitled was read by Dr. Walter McKeown. For two years the essayist said it had occurred to him that toxœmia could be treated by carrying out the osmotic principle; but an opportunity of testing its efficacy on a test case did not occur until recently. The case was one of chronic pyoperitoneum from a probable ruptured pus tube. The patient was in such an extremely bad condition that as soon as the abdominal incision was completed, allowing for the escape of a large quantity of very offensive pus, further measures could not be taken, so badly was the patient taking the ether. Some iodoform gauze was passed into the wound, and a few stitches introduced hurriedly. Shortly after one and a half pints of normal salt solution were introduced into one of the veins of the arm, and a cupful of saturated solution of magnesium sulphate high into the bowel. This was done some six times during the next few days. A chill followed each injection, but within an hour or so the temperature would fall to normal or thereabout, and there would be a corresponding improvement in the pulse. The patient is rapidly recovering. In a case of puerperal pneumonia the doctor was trying the same treatment with marked benefit.

His idea is that the toxins in the blood, which are crystalline, dialyze through the bowel wall and are thus eliminated, while the antitoxins do not, and remain to exert their restorative action on a reduced amount of toxines.

It was too soon yet to generalize, but in these two cases he was pleased with the result and would continue his investigations.

Dr. J. N. E. Brown said the case was of interest to him, because he administered the anæsthetic, and had watched the progress of the case. The woman was in a very weak state when she went on the table, owing to the profound toxæmia. The abdominal fat showed that characteristic appearance seen in these toxic cases. He was gratified to see the ease and celerity with which a quart of the solution was run into the vein through a funnel, rubber tube and aspirating needle; and also the rapid improvement of symptoms.

Dr. Spence thought the procedure was reasonable, and desired to congratulate Dr. McKeown on the results so far. He thought the treatment might have a wide application.

Dr. C. J. O. Hastings certified to the value of high injections of salt solutions into the bowels in septic cases.

Dr. Oakley said he was slow to adopt new methods of treatment. He had now come to believe in the value of antitoxin in diphtheria. He was disposed to look favorably upon this plan of treatment, although he did not quite understand some features of it.

Dr. H. P. Galloway considered the plan of treating toxæmia advocated by the essayist worked up in a scientific way; and if further investigations confirmed the results obtained it would be one of the most useful discoveries that had yet been made known to the profession.

Dr. I. H. Cameron said he had no criticism to make on the theory. He had tried the injection of normal salt solution into the connective tissue beneath the breast, and magnesium sulphate per rectum, in hysterectomy case where severe distension had supervened. It acted beneficially.

Dr. H P. Galloway showed an apparatus for rolling plaster bandages. It consisted of solid board about 30 in. by 10 in., with an aluminum plate nailed to each side. Across the centre was placed a metal shingle on its edge, which could be raised and lowered in grooves at the sides, and when down would allow the flat bandage to be drawn under readily. The plaster was placed on one side, the bandage passed through and under the diaphragm and rolled on the other side.

The Society then adjourned.

MEETINGS OF MEDICAL SOCIETIES.

The regular meeting of the Pathological Society was held in the east wing of the Biological Building on Saturday, Nov. 27th, at 8.30 p.m.

There were present: Dr. H. B. Anderson, President, in the chair; F. N. G. Starr, H. J. Hamilton, D. J. G. Wishart, W. Oldright, W. H. Pepler, R. B. Nevitt, J. J. Mackenzie, J. M. MacCallum, R. D. Rudolf, G. A. Peters,

J. T. Fotheringham, G. Boyd, E. E. King, A. Primrose, J. A. Amyot, H. C. Parsons, I. H. Cameron.

There were present also as visitors: Drs. H. A. Bruce, H. Mullin, Scott, and Large, Silverthorn, and C. J. O. Hastings.

PROGRAMME:

1. The pathology of Baldness and its relation to Seborrhœa. Dr. W. H. Pepler.

Specimens:

1. (*a*) Lungs from a case of drowning.
   (*b*) Corpus luteum. Dr. W. J. Greig.
2. (*a*) Hypertrophied single kidney.
   (*b*) Tuberculosis of testicle.
   (*c*) Pyelo-nephritis with multiple strictures and dilatations of ureter.
   (*d*) Sacculated bladder. Dr. E. E. King.
3. Carcinoma of breast and lymph glands—with slides. Dr. Wm. Oldright.
4. Aneurism of aorta. Dr. H. C. Parsons.
5. Carcinoma of stomach—with slides. Dr. J. T. Fotheringham.
6. Carcinoma of stomach. Dr. A. McPhedran.
7. Invaginated Meckel's Diverticulum. Dr. G. A. Peters.

The specimens and the papers and discussions following these proved to be of unusual interest.

TREATMENT OF EXOPHTHALMIC GOITRE.—At a recent meeting (July 27) of the Academy of Medicine, of Paris, a paper by Jaboulay was read dealing with 9 cases of section of the cervical sympathetic for exophthalmic goitre. The results were good, both with respect to the exopthalmos and to the goitre and palpitations. The best effect was obtained in young people in whom presumably the accelerator system of the heart was less developed and more thoroughly modified by the division of the sympathetic. In cases of failure of the treatment, an explanation might be found in the existence of two sympathetic cords in the neck—a not infrequent anomaly. At the same meeting Doyen reported two cases of exophthalmic goitre successfully treated by thyroidectomy. He preferred this operation to division of the cervical sympathetic, both on account of its safety and for its beneficial results. Such cases seemed to demonstrate the pathogenic role played by hypersecretion from the thyroid.—*Progres Med.*, June 31, 1897.

A Remedy in Nervous Disorders when Characterized by Melancholia. —Mode of Exhibition.—

The "Reference Book of Practical Therapeutics," by Frank P. Foster, M. D., Editor of *The New York Medical Journal*, which has recently been issued by D. Appleton Co., of New York City, contains an article of which the following is an excerpt, which we feel expresses the consensus of medical opinion as adduced by actual results: "Antikamnia is an American preparation that has come into extensive use as an analgetic and antipyretic. It is a white, crystalline, odorless powder, having a slightly aromatic taste, soluble in hot water, almost insoluble in cold water, but more fully soluble in alcohol.

* * * * * *

"As an antipyretic it acts rather more slowly than antipyrine or acetanilide, but efficiently, and it has the advantage of being free, or almost free from any depressing effect on the heart. Some observers even think that it exerts a sustaining action on the circulation. As an analgetic it is characterized by promptness of action and freedom from the disagreeable effects of the narcotics. It has been much used, and with very favorable results in neuralgia, influenza and various nervous disorders characterized by melancholia. The dose of antikamnia is from three to ten grains, and it is most conveniently given in the form of tablets."

We may add, that the best vehicles, in our experience, for the exhibition of antikamnia are Simple Elixir, Adjuvant Elixir or Aromatic Elixir, as also brandy, wine or whiskey. It can also be readily given in cachets or capsules, but preferably tablets, as well as dry on the tongue in powder form, followed by a swallow of water. When dispensed in cachets or capsules it should be put into them dry. Antikamnia tablets should be crushed when very prompt effect is desired and patients should always be so instructed. The conditions of the stomach frequently present unfavorable solvent influences and they can be thus overcome.

—*Notes New Pharm. Products.*

In Pneumonia where there is Restlessness.

℞ Antikamnia (Genuine)..... 3 ij
Tinct. Digitalis..... 3 iss
Syrup Doveri..... 3 iij
Mx. Sig.:—Teaspoonful every 3 to 6 hours.

In Painful Dysmenorrhœa.

℞ Antikamnia (Genuine)..... 3 j
Brom. Potass..... 3 ij
Elix. Aurantii..... 3 ij
Mx. Sig.:—One or two teaspoonfuls every hour in water.—*Dunglison's Clinical Record.*

The Canada Lancet

A Monthly Journal of Medical and Surgical Science, Criticism and News.

Editorial.

THE VICTORIAN ORDER OF NURSES.

As was predicted last month, this scheme, in somewhat amended form, has lately been most vigorously explained and exploited, both before the medical men, the nurses, and the public, of the city. The local organization has been completed, at least temporarily, and the Augean task of raising the endowment has been begun. It is idle to say that the profession has been converted from views formerly erroneous, have seen the error of their ways, and, repenting, have taken up with enthusiasm the scheme which formerly they condemned. The explanations and details given so ably, frankly, and fully by Dr. Worcester, of Waltham, Mass., who came at Her Excellency's request (at his own expense) to describe the working of their local District-Nursing Scheme in Waltham, convinced most of those who heard them that a District Nursing System which is so successful in Germany, in England, and in part of the United States, would be a most desirable thing in Toronto, with certain modifications of a local nature to be determined by the local Board, the interests of the Nursing-at-Home-Mission being duly regarded. This is not

saying that the hearers were convinced that the Victorian Order of Nurses is a good thing. The new constitution is shorn of all the verbiage which so fairly gave offence before, and now the scheme seems to be little else than one of District Nursing. The former objectionable points, such as the proposal to train and examine their own nurses and to bring them in from London or any other part of the world, and to establish maternity hospitals where, so far as appeared from the original prospectus, the nurse was to reign supreme and the doctor appear only on sufferance, have been at any rate relegated to the background for the present. The profession, however, wish something more definite than mere platform assurances as to details before giving their adhesion. They stand very much aside from a scheme which has such possibilities of pauperization in it, and wish to learn among other things the exact constituency from which it is proposed to secure the nurses, and who are to have the power of appointment and dismissal; the exact means by which it is proposed to prevent improper utilization of the nurses by persons able to pay for their services, and how the exact point in the proposed sliding scale of fees is to be determined in each case; whether the services of the nurse are *in all cases* to be called into requisition only by the physician; these are only a few of the points which have been so imperfectly explained as yet to the mass of the profession. We may seem to some to be acting an ungracious part in still withholding our assent and consent. Probably it is the fuller personal explanations and discussions that have made the scheme find favor in the eyes of those of the profession who are being quoted as now so strongly in its favor. They are men who do not change their opinions for no cause, and can be trusted not to have been converted, but to have seen the good points in the plan and to have accepted the explanations which have not as yet reached the rest of us. Her Excellency deserves our sympathy, if she will permit us to say so, in the deplorably poor tact with which her original advisers floated the scheme, so that any merit which it now possesses, some of it, perhaps, the result of the criticism with which it was first received, can scarcely serve to make it gain headway against the bias left in the public mind; the *vis inertiæ* would have been enough in any case to overcome. And in the meantime the profession can be trusted to accept in a spirit of fairness any elaboration of the scheme which may in the future be presented by those of their number who are on the Local Board.

MATERNITY BOARDING HOUSES.

The legislation secured last year, at the instance of the city of Toronto, entitled "An Act to regulate Maternity Boarding Houses and for the Protection of Infant Children," has been receiving a good deal of attention of late in the city. The subject is one that at once arouses the sympathy and interest of every physician. Not one of us but has been at one time or another stirred to wrath at sight of the pitiful wailing wrecks who, though born "to rule by the Right Divine of helplessness," are by a process of slow murder removed from the need of earthly care. We are well

aware that Toronto is probably more free from this public evil than any city in the world, and hope that the tender public conscience may not raise an undue *furore*, and so do harm in addition to the good which may be done by judicious legislation. The provincial Act of last year will probably by experiment be found capable of amendment in a few details. For instance, it is permissive, not compulsory, and comes into force only by the act of the municipality. It thus shares the ill feature common to all "local option" legislation, and if adopted by the City Council would probably make things worse by driving these houses to the outskirts of the city, where any contemplated villainy would be even easier of accomplishment. The ladies who have so conscientiously and steadily followed the matter up deserve the thanks of the medical profession in particular and of the community at large. As it stands, the main provisions of this Act are as follows:

1. No boarding-house may be kept for any maternity case, nor as a home for "one or more infants," without registration and a license from the Board of Health of the municipality, which has full discretionary powers.

2. Every birth in such a house *shall* be attended by a legally qualified practitioner, and *shall* be registered in due form. [An important point as tending to determine *paternity*.]

3. The adoption of children (the chief means by which hitherto the unfortunates have been done to death) is absolutely prohibited, except through the medium of a Children's Aid Society, or other duly incorporated Charity, under rules to be approved by the Lieut.-Governor-in-Council. Advertising of these children for adoption is prohibited under penalty.

4. Responsibility for notice of death in the legal way is laid directly upon the keepers of such registered houses, and Boards of Health are ordered to provide for proper inspection, at any time, of the entire premises, the registers, and the inmates.

It will be found necessary to provide for the secrecy of the institutions, as, if they are to be in any sense public property they will never be patronized, and the evil will be made worse by becoming more subterranean. The general effect of the Act will be to put these places on very much the same footing as the Burnside Lying-in-Hospital, a consummation devoutly to be wished for, for humanity's sake.

TRINITY MEDICAL COLLEGE ALUMNI ASSOCIATION.

The attention of all readers interested is directed to the appended excerpts from the Constitution of the Trinity Medical Alumni Association, more particularly to the date, March 1st, 1898, by which competitors must have handed in their theses. It is to be hoped that the enterprise and scientific ardour shown by the Association in offering the "Alumni Gold Medal" may meet with a most encouraging response in the number and character of the theses submitted. Especially should the Association expect great things from the younger men, those recently returned from post-graduate work abroad or still so engaged.—[ED.]

The Alumni Association includes Active, Associate and Honorary Members.

Graduates in Medicine of Trinity University, Fellows by Examination of Trinity Medical College, Teachers past or present of Trinity Medical College and the Undergraduates' Representative on the Executive Committee are eligible for Active membership. Undergraduates of Trinity Medical College are eligible to become Associate members. Honorary members are those elected as such at any general meeting.

The objects of the Association are: The furtherance of medical science, and to foster an "*esprit de corps*" and fraternal feeling among the graduates and undergraduates.

REGULATIONS, ETC.

The General Meetings are held annually in Toronto, on the day appointed for the conferring of Medical Degrees. Yearly dues fifty cents.

All Alumni are requested to send their present address, or other items of interest, to the General Secretary.

ALUMNI GOLD MEDAL.

The Association offers annually a gold medal, under the following conditions:

1. Only graduates and members of the graduating class in Medicine of Trinity University, or of Trinity Medical College, or Fellows of Trinity Medical College who are members of the Association in good standing, can compete for this Medal.

2. The Medal may be awarded annually for the best thesis on any subject pertaining to modern medical science.

3. All these must be sent in to the General Secretary of the Association on or before March 1st in each year, signed only by pseudonym, the name of the writer to accompany his thesis in separate cover.

4. The awarding of the medal shall be determined by a committee of three, to be appointed annually by the Executive Committee of the Association.

5. The theses standing first and second respectively in merit shall be read by the writers, at the Annual General Meeting, and the Medal shall be presented at the Annual Dinner of the Association.

6. If in the opinion of the judges no thesis of distinguished merit has been submitted, the medal shall not be awarded.

EDITORIAL NOTES AND CLIPPINGS.

CAUSES OF SUBNORMAL TEMPERATURE.—Dr. Janssen sums up the causes of this condition as follows:

1. After the direct withdrawal of heat from the body, as in cases of exposure of unconscious or drunken persons in a very cold atmosphere, or after immersion in very cold water.

2. After the loss of great quantities of fluids from the body, as in severe diarrhœa, enteritis, cholera, or profuse hæmorrhage.

3. In conditions of cachexia and inanition, such as cancer of various parts of the alimentary canal, severe forms of diabetes, pernicious anæmia; during convalescence from febrile affections, and in many chronic mental diseases.

4. In grave circulatory disturbances, as in cardiac failure.

5. In various diseases of the central nervous system, in tuberculous meningitis, at the onset of cerebral hæmorrhage and embolism, in some cases of brain tumor, and in general paralysis of the insane.

6. After irritation of sensory nerves, as in intestinal strangulation, in renal and gall-stone colic, internal perforation of the intestines, etc., and after surgical operations.

7. In extensive skin affections, such as scleroderma and extensive burns.

8. After fevers, where the temperature may long remain subnormal, or in the course of certain fevers, as in pyæmia.

9. In cases of poisoning by phosphorus atropine, morphine, carbolic acid, and in alcoholic intoxication; also in the auto-intoxication of uræmia and in diabetic coma.

In some healthy persons subnormal temperatures are occasionally observed without any apparent cause.

It is not disappointing to British readers to find some, at least, of the profession in New York State vigorously condemning their so much vaunted scientific means of capital punishment by electricity. The name "electrocution" alone is enough to make one shudder. In a recent number of the *Atlantic Medical Weekly*, Dr. T. H. Manley, of New York, returns refreshed to the charge, after a visit to the Moscow meeting of last August, with added opinions and experiments from Sir Dyce Duckworth's paper there, and from Professor MacEwan, to the following effect, vigorous and correct enough, certainly.—[ED.].

"It is, therefore, a plain, demonstrated fact that electrocution is a most shocking mode of death; not so debasing in sound as 'hanged until dead' but not so deterrent and none the less agonizing.

The medical profession, as a learned and humane body, should sternly turn its face against any of its members participating in any executions whatever, except for the purpose of deciding on the extinction of life. In the face of these facts it is most certainly to be hoped that this mode of capital punishment will soon be abolished, and that, at all events, it may not be adopted by any of our neighboring states."

METHYLENE BLUE IN PAINS OF ATAXIA.—In two cases I have found in relief; in five out of seven a great diminution in the intensity and frequence of the pains, and in two the reaction was complete and prolonged.

The fulgurating pains in the limbs and the girdle pains yield the most rapidly to the methylene blue. The visceral pains, especially those of the stomach and rectum, resist more. The vesical disappear more rapidly. The two patients in whom the medicine failed totally had gastric pains to the exclusion of all others.

The effect of the methylene blue is very rapid, and the pain is relieved two or three hours after the urine becomes blue. Another advantage is that it persists many days and even weeks after the patient has ceased taking the medicine. It produces not only almost immediate relief, but is also a medicine which ameliorates in a durable manner.—Lemoine, *Comp. Rend. de Biologie*, June, '97.

FUNCTION OF THE SUPRARENALS.—The extirpation of both suprarenals causes a decided diminution of the blood-pressure; the pulse becomes smaller.

Introduction of suprarenal extracts into the veins produces, chief of all, a decided increase of blood-pressure, and increase of the heart's action.

The blood flowing from the suprarenal veins, when introduced into the circulation of another animal, causes the same phenomena as do the suprarenal extracts when introduced into the blood, but in a lesser degree.

It is concluded, therefore, that the suprarenals are organs of undoubted necessity to life, being glands with an internal secretion; that it is their duty (especially of the medullary substance) to produce and transmit to the blood a substance which continually upholds the activity of the vasomotor nerve-centres, the vagus, and the accelerator nerves, as well as the respiratory centres, and in all probability the centres controlling muscular tonicity.—SZYMONOWICZ, in *Archiv für Physiologie*.

Book Reviews.

A TEXT BOOK OF PRACTICAL THERAPEUTICS.—By H. A. Hare, M.D., B.Sc., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia, etc., etc. Sixth Edition. Lea Bros. & Co., Philadelphia and New York, 1897. This standard text book is well worthy of a place in the hands not only of every final student in medic ne, but of the practising physician as well. It represents the most advanced thought, is free from useless and obsolete matter, but thoroughly sound and conservative at the same time. The full title gives the key-note to the whole work—"the application of remedial *measures*" (not "drugs"—Ed.) "to disease and their employment upon a *rational* basis" (italics ours). The modern revolt against over-use of drugs, and the author's attitude thereto, is shown concisely in the motto of the work: "When called to guide a patient through an illness the physician should be constantly a watchman, and a therapeutist only when necessity arises." Still, no one who reads the work through can charge the author with lack of confidence in drugs properly used.

CONSTIPATION IN ADULTS AND CHILDREN.—By H. Illoway, M.D., formerly Professor of Diseases of Children, Cincinnati College of Medicine and Surgery, etc. $4.00. New York: Macmillan Co., 1897. For sale at Tyrrell's Book Shop, 12 King St. W., Toronto. The general impression given by a cursory perusal is that there is more bibliography and detailment of cases rare or peculiar in character than exactly suits the needs of the reader who is seeking help in the management of cases of his own. The scholarship of the work cannot be very highly praised nor is it likely to be an epoch-marking production. As a specimen of the bookbinder's art the volume will fully sustain the reputation of the publishers.

Publishers' Department.

PHTHISIS PULMONALIS.

BY L. H. WARNER, M.D.

The nature of the morbid process which leads to the destruction of lung and the waste of body, of whatever etiological origin, is of two classes:

1. Inflammation, affecting in various degrees of severity the tissues of the lung, and running an acute, chronic or chequered course.

2. Tubercular growths, with their characteristic granulations disseminated through the lungs grouped, or through inflammatory changes developed into fibroid tissue, or undergoing necrotic change.

We often find fatty degeneration as a consequence of inflammation, the former leading to caseation, which is produced by the action of the tubercular baccili. The inflammatory process is the destroying element in phthisis pulmonalis, and the seat of the tubercle is the interstitial connective tissue of the lung, and its caseation and softening are the causes of lung destruction. In the treatment of phthisis pulmonalis it is, therefore, of primary importance to seek for, and remove as far as possible, the causes which have been at work producing it The patient should be actively nourished by introducing into the system the necessary amount and quality of food required to build up and sustain healthy tissues as quickly, continuously and extensively as the combined capacity of the patient's digestive ability, the ingenuity, knowledge and resources of the physician, cook and larder will allow. With a sound stomach there is great hope for a patient. Physical exercise in many cases is of great help; such as running, excepting in cases of malnutrition or when producing pains in the pulmonary region. Running encourages vigorous respiratory action, thus enlarging and giving increased nutrition to the pulmonary tissues. With the facts above enumerated, I have for some time past given particular attention to the treatment of this disease, using the various methods advocated by different authorities. In multitudes of cases successful treatment depends upon the co-operative aid of medicaments, combined with hygienic treatment. A large majority of phthisical patients would be saved from the ravages of this disease if the proper tonic could be administered to them at the right period, thus giving the pulmonary tissues sufficient ability to resist the commencing action of the disorder. The administering of medicine in these cases is for the purpose of improving the general nutrition of the patient. Opinions differ as to the expediency of administering alcohol to the phthisical patient, although I advise same for its anodyne effect, it having the virtue of reducing heat and repressing active tissue changes and supporting and stimulating the heart's action. The administration of Cod Liver Oil has its advocates, pro and con I may note here that medicine is not given with a direct view of a specific influence on the disease, but it may be most advantageously given to promote the building up and the maintenance of the bodily tissues in that elevated health status which is our only hope

for staying the progress of the phthisical process. Those physicians who favor the administration of Cod Liver Oil in this disease claim for it a twofold virtue—the utilization of its fatty elements as a food, and the nutritive tonic effects of its peculiar principles, the alkaloids. Of late years some most convincing proofs as to the efficacy of the alkaloids of Cod Liver Oil have been brought to light, being the results of scientific researches and pathological and clinical tests. Statistics from hospital clinics and private practice bring proof that numerous phthisical patients have improved better under the alkalodial preparation of Cod Liver Oil than under the oil itself, the former not causing the usual nausea and eructation which accompanies the latter product. I have observed in patients who were put upon large doses of Cod Liver Oil that on examination of the stools passage of oil by the bowels was discovered. An examination, chemical and microscopical, of the oil taken by the patient, showed therein the presence of alkaloids, while the oil passed through the bowels, and, washed of the stools, was devoid of these principles, only confirming my belief that the active medicinal principles of Cod Liver Oil are the alkaloids therein. These facts lead me back to the introductory lines in which I outlined the morbid process which leads to the destruction of lung tissue and waste of body. The hydro-carbon, or fat, of Cod Liver Oil generally taxes the digestive system too severely, and hence the eructations following the administration of this remedial agent in its entirety. In wasting diseases it is of primary importance to rebuild wasted tissue and to prevent the accumulation of nitrogenous waste which will follow the administration of fatty substances. The hydro-carbon of Cod Liver Oil inhibits the metabolism of the albuminates, and thus causes a direct accumulation of fat in the system, and hence an undue accumulation of nitrogenous waste. The alkaloids of Cod Liver Oil are known as alteratives, and as such have the power of stimulating the cells to eliminate waste matter from the system and to build up healthy tissue from food. The hypophosphites are of undoubted value in this disease, as is dilute hydrocyanic acid; and all these remedial agents are combined in Wampole's perfected and tasteless preparation of the Extract of Cod Liver Oil with the hypophosphites, malt and wild cherry. This preparation has been tried and found efficient both as tissue builder and food.

Dr. J. M. Hole, of Salem, Ohio, hopes that Unguentine will get into the hands of every practitioner of medicine in this country. He remarks that he would not be without it for an hour for ten times the amount of money it costs.

The first case on which I used your Unguentine was a case of frosted feet, extremely tender to the touch and very sore. Had been using the ordinary remedies for some time without any result. The first application of Unguentine was a surprise to myself and the patient, and in a few days they were entirely healed and the patient discharged.

I have been in constant practice in medicine for over fifty years, and can say for it what I cannot say for any like remedy in the whole catalogue, that it beats them all.

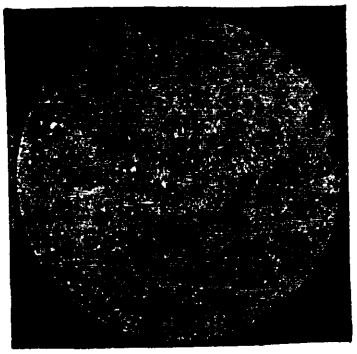
THE CROWNING DEVELOPMENT OF PRACTICAL MEDICINE

IN HÆMATHERAPY, OR BLOOD TREATMENT.

BLOOD, AND BLOOD ALONE, is physiologically ascertained to be the essential and fundamental Principle of Healing, of Defense, and of Repair, in the human system; and this Principle is now proved, by constant clinical experience, to be practically available to the system in all cases, to any extent, and wherever needed, internally or externally.

And the same overwhelming clinical demonstrations have also proved that the Vitality and Power of Bovine Blood can be and are *PRESERVED*, unimpaired, in a portable and durable preparation, sold by all druggists, and known as Bovinine. Microscopic examination of a film of Bovinine will show the LIVING BLOOD CORPUSCLES filling the field, in all their integrity, fullness, and energy; ready for direct transfusion into the system by any and every mode of access known to medical and surgical practice; alimentary, rectal, hypodermical, or topical.

A FILM OF BOVININE:
Showing the Blood-corpuscles Intact.



Micro-photographed
by Prof. R. R. Andrews, M.D.

In short, it is now an established fact, that if Nature fails to *make* good blood, *we can introduce it.* Nothing of disease, so far, has seemed to stand before it.

Apart from private considerations, these facts are too momentous to mankind, and now too well established, to allow any further reserve or hesitation in asserting them to the fullest extent.

We have already duly waited, for three years; allowing professional experimentation to go on, far and near, through the disinterested enthusiasm which the subject had awakened in a number of able physicians and surgeons, and these daily reinforced by others, through correspondence, and by comparison and accumulation of their experiences in a single medical medium adopted for that provisional purpose.

It is now laid upon the conscience of every physician, surgeon, and medical instructor, to ascertain for himself whether these things are so; and if so, to develope, practise and propagate the great medical evangel, without reserve. They may use our Bovinine for their investigations, if they cannot do better, and we will cheerfully afford every assistance, through samples, together with a profusion of authentic clinical precedents, given in detail, for their instruction in the philosophy, methods and technique of the New Treatment of all kinds of disease by Bovine Blood, so far as now or hereafter developed.

☞Among the formidable diseases overcome by the Blood Treatment, in cases hitherto desperate of cure, may be mentioned: Advanced Consumption; Typhoid Fever; Pernicious Anæmia; Cholera Infantum, Inanition, etc.; Hæmorrhagic Collapse; Ulcers of many years standing, all kinds; Abscesses; Fistulas; Gangrene; Gonorrhœa, etc.; Blood poisoning; Crushed or Decayed Bones; Mangled Flesh, and great Burns, with Skin-propagation from 'points' of skin; etc., etc.

N. B. Bovinine is not intended to be, and cannot be made, an article of popular self-prescription. As it is not a stimulant, its extended employment in the past has been, and the universal employment to which it is destined will be, dependent altogether on the express authority of attending physicians. Address

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Canada Lancet.

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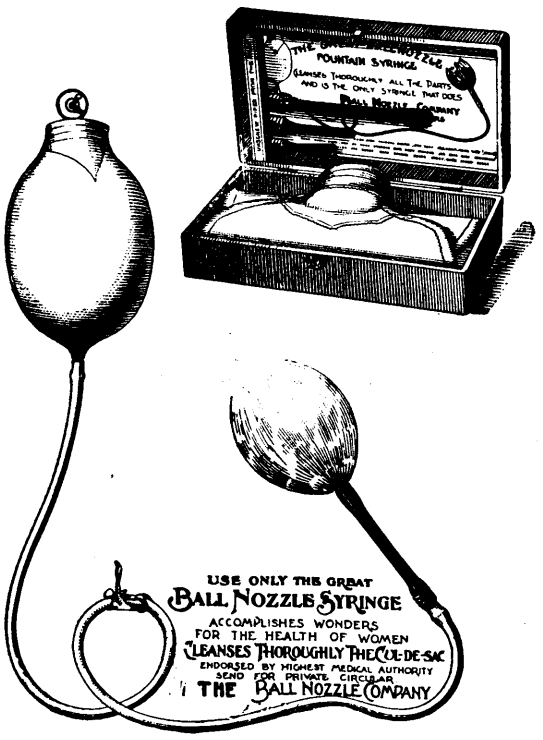

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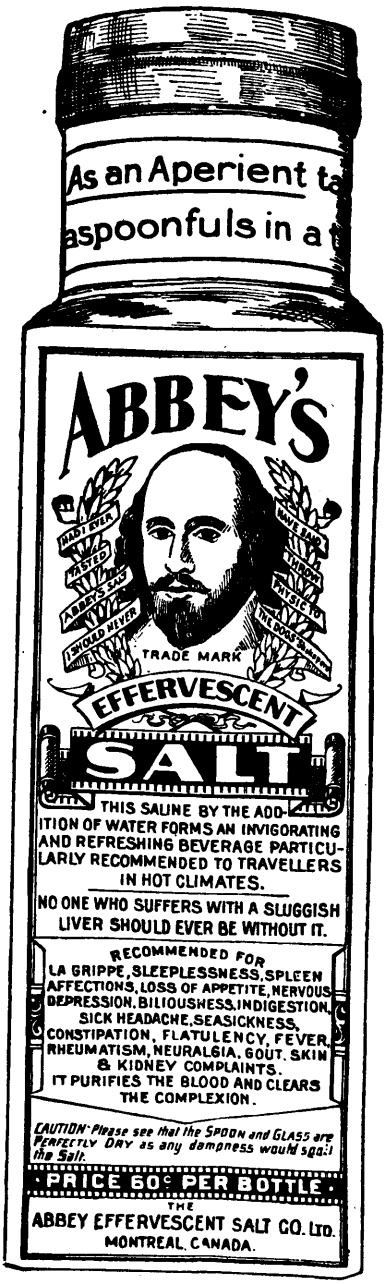

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Heat the mixture with constant stirring until it comes to the boil in ten minutes.

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