Progress in medicine : Graves' disease.

Medical Progress and Hospital Clinics.

[*The Editor will be glad to receive offers of co-operation and contributions from members of the profession. All letters should be addressed to* The Editor, at the Office, 428, Strand, London, W.C.]

THE CAUSES AND TREATMENT OF UNUNITED FRACTURE.

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During the last few years I have had to operate on three case of ununited fracture of long bones, once on the femur, twice on the tibia—but in these cases one was at the junction of the upper and middle thirds, the second at the junction of the lower and middle thirds. All cases were in men. After a brief summary of the causes and treatment of ununited fracture of bones, I shall proceed to give details as to the methods of procedure I adopted and the results.

Ununited fractures are due to two classes of causes. The one consists of general systemic causes; in the other class the causes are purely mechanical, and it is this class which furnishes as a rule the cases for operative treatment.

Class I—Systemic Causes—Syphilis, Scurvy, Wasting Disease, Insufficient Food.—Of these scurvy is the most potent. The others are almost hypothetical causes, which with others of the same class are generally known in our text-book accounts, in order to give examinees a chance of concocting an answer; but clinically these causes are seldom or never ob served.

Class II—Mechanical Causes.—1. Nonapposition of fragments, which may be subdivided into separation of ends, as in fractured patella, and oblique fracture and misplacement of fragments, so that the raw and bony surfaces are not in contact. 2. The interposition of muscle or fascia between the ends of the bone. 3. Necrosis of the ends of the bone in compound fractures. 4. Rupture of the nutrient artery, the fracture being near the point of entrance. The latter is a doubtful cause, as the callus-forming material is thrown out by periosteum and other tissues in the neighbourhood of the bone to a very large extent. 5. Imperfect blood supply to the limb, owing to concomitant damage to the main vessels. 6. Mobility of the fragments.

Treatment.—The treatment of ununited fractures obviously falls into two categories. First, general, which may be dismissed in a few words. The general health and nutrition of the patient should be looked after, and the specific treatment for scurvy or syphilis be perseveringly followed.

The local treatment has for its object first, rest and the proper apposition of the ends of the fragments; second, that the ends should be rendered immobile; third, that endeavours should be made to excite callus formation. To this end tenotomy, careful splinting, rubbing the ends of the bones together, counter-irritation by blistering, friction, or seton. Failing these, more active measures may be adopted, such as subcutaneous incision or the driving of ivory pegs into the ends of the bones to cause a certain amount of irritation, simple resection, resection with pegging ligature or screwing, and finally bone grafting after resection. These, then, are the various means at our disposal, one or other of which may be selected according to the suitability of the case. In the case of necrosis of the ends of the fragments, nothing remains but to remove the dead tissue either by resection, which I have seen successfully carried out in the tibia, or by waiting for pathological processes to separate the necrosed portions.

The first case on which I had to operate was one of a bad oblique fracture of the lower end of tibia and fibula. The accident happened on January 1st, 1892. It had been treated for several months by rest and splints, but although the leg was fairly firm, there was no bony union, and the leg would bear no weight. The patient came from a neighbouring workhouse union, and was fifty years of age. On November 7th, 1892, with every aseptic precaution an incision was made for about 4 inches in length over the seat of the fracture, and the bone was cut down upon, and the tissues on all sides were freed by a blunt dissector and raspatory, all extraneous callus, of which there was a good deal, being removed by bone forceps. It was then seen that the fracture had been very oblique, and that the fragments had become displaced upwards and downwards. The fibrous union was then broken down and the ends of the bones freed, so that they could be drawn down—the most difficult part of the procedure, for it necessitates detaching all the tissues round each fragment. Then I carefully resected the ends of each bone, using first a saw, and afterwards bevelling each bone with chisel and mallet, so that the foot came into its proper position, and removed the sharp projecting angle of each bone. Then, with a drill, holes were made obliquely in each fragment, and a thick soft silver wire was passed and firmly twisted up, the ends being hammered into the bone. All fragments and bone chips were then carefully removed, and the toilet of the wound completed and the skin united by incisions without drainage. The subsequent history of the case was simply that the wound healed by first intention, and the patient left the hospital on December 15th, 1891, and when I saw the man last, some few months after operation, there was complete bony union, but he had not then recovered good use, owing to long interference with the muscle nutrition. The fibula caused no trouble in bringing the ends of the tibia into complete apposition.

Case 2 was much more formidable. It occurred in a canal boatman, aged forty, who had lost one leg just above the knee, and who came in with a fractured femur about the middle of the thigh, on June 21st, 1894. The leg was a very thick and muscular one, and there was great displacement and bruising. After four months' treatment it was decided to operate. An incision six inches long was made on the outer side of the left thigh, and continued through the muscle. The leg was enormously swollen and full of callus, and it was a matter of the utmost difficulty to chisel this away and bring the fragments together. The lower fragment had passed behind and outside the upper one for some

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inches, and each end was buried in a large mass of callus, but there was only fibrous union between the periosteal surfaces where they were in contact.

After one and a half hour's hard work the bones were resected and dragged into apposition, and it was only after removing at last one and a half inches from each fragment that they could be got into line. All extraneous callus was removed, and the ends were brought as well as possible into contact, but, owing to the expanded and transversely enlarged ends, they could not be very accurately adapted. The ends were secured in this position by thick silver wire and the wound washed out and sewn up, dressed, and the leg splinted. All went well at first and the wound united, to break down at the end of a fortnight with free suppuration. This condition of things went on for some time and gradually subsided, leaving a small sinus, the leg gradually becoming firmer, till at the end of eight months there was firm bony union. A small sinus still remained, probably leading down to the wire suture, which was explored on October 17th last, and the wire easily removed, when the sinus immediately began to close. It was a very important thing in this case to save the limb, owing to the loss of the other leg. The man can now get about a bit with the aid of crutches, which are necessary on account of his wooden leg.

Case No. 3 was a fracture of the left tibia, and was the easiest operation of the three. The patient was a man of thirty-five, who met with his accident on October 11th, 1894, and though the leg was in fair position, there was not a great deal of callus thrown out, and very little deformity. On March 5th, 1895, I operated by a U-shaped flap and exposed the tibia well, finding a very oblique fracture, the fragments separated by fibrous tissue. Freeing the end of the fragments and dividing the fibrous connections, I took obliquely from above downwards and without inwards, sections from each fragment with a saw, and carefully bevelling the faces with a chisel and removing surrounding masses of callus which interfered with perfect apposition I got the bones well in contact by the whole length of my section. I then drilled a hole and inserted one of Lane's screws, two inches long, which I drove home. The toilet of the wound was made and the wound closed. The case did well, nearly the whole wound healing by first intention; a smallsinus, however, was left leading down to the screw, the man leaving the hospital in a plaster splint, but the bony union seemed quite firm.

This class of operations is by no means easy. There is great difficulty in clearing the ends of the bones, especially when working by a single long incision, it being very difficult to free the bone from its callus and attachments behind and at the opposite side from the incision. A flap incision where possible gives much greater scope for operative procedure.

The points I regard as important are to remove as much surrounding callus as possible. It has been thrown out in wrong directions and is useless, and impedes muscular action during convalescence; and, indeed, is so often in the way of getting the fragments into line that the removal is a necessity, and further the complete removal of the fibrous union is essential. Complete adaptation of the ends of the fragments is not essential as long as they do come into contact at some points; but, other things being equal, the more completely the refreshed surfaces of the fragments are in apposition he more rapidly union takes place.

Oblique fractures are suitable for pegging or for adapting with ligatures or screws, or they will do well if only the surfaces can be kept in contact by accurate splinting and pressure. In uniting the patella I have on three occasions used silk or catgut ligatures with perfect results. The precise method of securing union must depend on the nature of each case. In only one of my three cases has the material used caused any irritation; and in the thigh case until the wire was removed.

The after-treatment has for its object the restoration of muscular power, so diminished by injury and disuse. To this end systematic massage is a great help, and daily movements of the joints which have become stiffened during treatment.

Progress in Medicine.

Graves' Disease.

Pathology.—We recently described the pathological changes observed by Edmunds[1] in the thyroid gland in Graves' disease, and the investigations of Notkine in connection with thyroproteid.

At the French Congress of Neurologists, held at Bordeaux August 1st to 7th, Brissaud[2] opened a discussion on the thyroid gland and Graves' disease. He stated that clinical experience teaches us that certain subjects, who have long been afflicted with simple goitre, may present almost the complete clinical picture of exophthalmic goitre. Impairment of the thyroid secretion by a recent or old standing glandular lesion may, therefore, determine Graves' disease; but it is evident that the toxin in circulation becomes fixed, or localises its effects in the region of the medulla oblongata and pons varolii. This is equivalent to the proposition that the cause of the disease is thyroid intoxication, but the cause of the symptoms is a medullo-pontal localisation of the thyroid poison.

Lesions of the thyroid gland, remarked Brissaud, are unquestionably constant in exophthalmic goitre, but are not specific; they vary widely in different cases, according to circumstances. The hypertrophy of the gland is variable, and, what is more, is not proportional to the severity of the symptoms. It is the result of two widely different lesions: (1) Cystic formations; (2) a sort of hypertrophic cirrhosis, consisting in multiplication of the follicles, or thyroid granules, in the midst of a more or less dense tissue of interstitial sclerosis. These vesicular formations, which are disseminated in the intralobular connective tissue of exophthalmic goitres, are capable of secreting a thyroid juice, the total quantity of which may be considerable, without their epithelium being that of the adult state. This would, indeed, explain hyperthyroidation; but it is absolutely illogical to conclude that Graves' disease is of the thyroid nature, merely from the fact that the thyroid gland presents other lesions than those of the vascular apparatus. This point he had investigated by examining carefully the structure of twenty-five thyroid glands taken without selection from adult subjects who never had manifested the least symptom of Graves' disease. He arrived at the conclusion that the thyroid gland is never healthy in an adult who has succumbed to a chronic disease.

Renaut[3] (Lyons) has found that the thyroid gland in every case of Graves' disease that he has examined,

whether hypertrophied or not, is invariably diseased in the same manner. He constantly met with granules and choked epithelial tubules connecting them, lined by a thin connective tissue of new formation, forming a layer of endothelioid corpuscles. A strong impregnation with nitrate of silver set them off with all their branches. These do not exist on the surface of the granules from a healthy thyroid of a dog, sheep, or child. Moreover, the interacinous tissue is not composed of areolar tissue, for when the ordinary methods of investigation are employed the latter no longer contain the normal lymphatic spaces, but are more or less distinctly injected with a colloid substance identical with that of the granules. In a healthy dog when the thyroid gland is injected with osmio-picro-argentic mixture, so as to fill up the lymphatic spaces this penetrates all the lymphatic channels. Each granule is surrounded by enormous lymphatic vessels. In the thyroid gland of exophthalmic goitre he always found that the interstitial, impregnating, and fixative injection developed to the utmost in the interlobular spaces; but in the interior of the lobules not a single lymphatic penetrates. The characteristic lesion then appears to be that the whole of the interlobular lymphatics are destroyed, the thyroid granules at the circumference alone discharging their colloid substance into the interlobular spaces, the only exit still open. At the centre, the veins form the only remaining avenue of escape, and this is largely utilised, as evidenced from the fact that the venous capillaries have frequently attained an enormous size, the veins sometimes have been so distended as to have ruptured. The thyroid secretion, therefore, is discharged through the lymphatics at the margin of the lobules, but at the centre exclusively and directly through the veins.

Renaut has further noted that in staining sections with eosin, the colloid substance lies in the marginal granules, and in the interlobular lymphatics, while in the central granules the stain is less marked, and in the granules of new formation, in the centre of the lobule it is usually *nil*. Now, in a human fœtus of about the third month the lobules of the thyroid have already developed a certain number of granules. The contents of the latter consist solely of a glistening substance, which eosin does not stain pink, though exceptionally a granule is found which stains like those of the adult gland. The number of these staining granules rapidly increases with the age of the fœtus. The thyroid epithelium, therefore, when young, secretes a peculiar substance, not stained by eosin, which he describes as thyromucoin; when the epithelium has reached the adult stage, and acquired its normal lymphatic-vascular arrangement, it secretes another substance, which Renaut terms thyrocolloin, the histo-chemical composition of which is that of thyroid colloid substance such as we know it.

Thyromucoin is the direct product of the secretory activity of the thyroid epithelium. It is seen to form in the shape of refractile bullæ. Thyrocolloin is the result of secondary reactions in the small glandular cavity formed by each thyroid granule at the stage of maturity of the thyroid secretion, produced in the natural course of events in all granules normally provided with lymphatic excretory ducts. But, as has been stated, thyrocolloin is not found except in the marginal granules in exophthalmic goitre. Where there are granules of new formation, the product of secretion consists solely of thyromucoin.

Renaut explains the occurrence of Graves' disease on the assumption that the central nervous system presides over the secretion of the gland, and for this regulation there must be centre, and we are justified in affirming that it is situated in the medullo-pontal region. A *primum movens* which is as yet undetermined, but perhaps variable—it may be the result of microbial action, auto-intoxication, extension of pre-existing neuraxial lesions, or shock—produces hyperactivity of the thyroid gland through intervention of the nervous system. Hyperthyroidation commences slowly and sluggishly at first. There is then too much thyroproteid to destroy in the lymphatic canals, and premonitory functional disturbances set in, such as emotivity, anxiety as to surroundings, slight tremor, and glistening of the eyes, which have been observed in experimental hyperthyroidation, and which are rarely absent at the commencement of Graves' disease if carefully observed. This is the inaugural stage of the disease, and also of the fever at the functional period. There is as yet no lesion, but the lesion is being prepared by the reaction of the tissues to the abnormal development of functional activity.

He is convinced that the lesion itself is determined by the hyperthyroidation, which sets up in the gland a sub-inflammatory condition, then thyroiditis, with return of the fœtal state of the secretory elements, and ultimately destruction of the intralobular lymphatics, due to peri-acinous sclerosis. The moment the normal paths of excretion of the thyrocolloin are definitely blocked at the centre of each lobule the period of thyroid intoxication necessarily begins. The product of an abnormal fœtal secretion, the special toxicity of which needs to be investigated, enters upon the scene. Renaut presumes true thyromucoin acts first on the nervous system. He holds it responsible not only for the fever, but for the whole syndrome of Graves' disease.

Whatever the original cause, he holds that there is a period of intoxication of the nervous system and entire organism; after this follows a period of toleration or death.

Gley[4] reminded the meeting that he had proved years ago that the blood of thyroidectomised animals was toxic; the thyroid gland, therefore, must possess antitoxic properties. But Graves' disease cannot be explained on the assumption of exaggeration of the thyroid secretion, for there are cases in which injections of thyroid juice do not appear to have added to the severity of the disease, and in some cases of partial extirpation the disease has been in no way altered. Just as plausible reasons might be adduced to explain Graves' disease by insufficient thyroid secretion. All the accessory symptoms, tremor, contractures and convulsions, paralyses, respiratory, digestive, ocular, and other symptoms are observed in thyroidectomised dogs. The exophthalmos and tachycardia might be accounted for by the goitre determining compression of the cervical sympathetic and pneumogastric nerves. A third hypothesis possible is, that the symptoms of Graves' disease are due to the formation of abnormal toxic products in the changed thyroid gland.

The experimental evidence of the effect of artificial hyperthyroidation on the structure of the gland, as observed by Enriquez and Ballet,[5] becomes a matter of the greatest interest in connection with the pathological observations of Renaut, Brissaud, and Edmunds.[6] Experimentally they have endeavoured to induce hyperthyroidation by three different procedures: grafting, ingestion, and injection of thyroid extracts, with the following results: (*a*) Age was an important factor in every case, very young dogs succumbing to doses which older ones bore well. (*b*) Hyperthyroidation by ingestion of sheep's thyroids was practised in six dogs. In no case, although one of these animals absorbed 800 lobes in forty days, did death ensue. This is a fact of importance, seeing that it does not accord with the serious symptoms observed in man, in some fatal cases, after the ingestion of thyroid gland of sheep.

The symptoms observed after ingestion of the thyroid gland closely resembled those constituting the clinical symptom of Graves' disease. In not a single instance, however, did they meet with any modification in size of the thyroid gland.

Hyperthyroidation by means of subcutaneous injections of thyroid extract was practised on twelve dogs. By this method hyperthyroidation was found to be much more constant, effective, and rapid, and fatal results occurred in five cases. The dose of the extract appeared to have less influence on the gravity of the symptoms than the age of the animal, young animals being profoundly affected by relatively small doses.

The injections, which were invariably practised at a distance from the thyroid gland, were followed by important changes in the thyroid gland, viz., enlargement of the gland and histological changes, similar to those described by Renaut—obliteration of the intralobular lymph paths, associated with exaggerated development of the perilobular lymph paths. There were also (according to Renaut, who examined his sections) a complete substitution of granular tissue for that of the normal gland substance in all the lobules. They add that one point of great interest lies in the intense inflammatory reaction determined in the thyroid gland by injection at a distance of thyroid extract. This fact may be taken to indicate that the functional antitoxic action of the thyroid gland, as at present understood, takes place within the gland itself and not in the circulation. Moreover, the sclerotic transformation of the gland, with complete destruction of the alveoli and epithelial cells, may also explain certain clinical cases, in which symptoms of myxœdema have followed Graves' disease. In the opinion of these experimenters, the primary phenomenon in Graves' disease consists in exaggeration of the functional activity of the thyroid gland, which secretion stimulates the nuclei in the medulla, or accessorily in the spinal cord, which preside over the symptomatology of Graves' disease; and secondly, the lesions in the gland are determined by hyperthyroidation. Finally, these observers tried the effect of injecting blood-serum from thyroidectomised dogs into certain patients suffering from Graves' disease, and the results in nine cases were most gratifying.

We may refer to Hurthle's[7] observations, who states that the colloid substance in the follicles is produced by the protoplasm of the epithelial cells. The secretion of the gland consists in the formation of colloid matter, and this can be increased by removal of the greater part of the gland, and also by icterus produced by ligature of the bile ducts. Matton[8] refers to a case which presented simultaneously symptoms of Graves' disease and hypertrophic cirrhosis of the liver with jaundice.

Other two records bearing on the question of inflammatory changes in the thyroid are of special interest in connection with Ballet and Enriquez' experiments. Engle-Renners[9] have observed enlargement of the thyroid in 130 cases of early syphilis. In no case were symptoms of Graves' disease observed, though in one myxœdema occurred and was cured by the use of mercury. Reinhold[10] reports a case in which acute stumitis occurred in influenza. The stumitis subsided, but three months later the patient was suffering from Graves' disease. The writer could only find one other similar case recorded.

Béclère[11] reports a case of a woman, age 31, whose case furnished an instance of the cure of myxœdema by ingestion of thyroid gland. In consequence of a misunderstanding she took at the outset as much as 92 grammes in eleven days, with resulting thyroid intoxication. But in addition to tachycardia, rise of temperature, insomnia, agitation-polyuria, glycosuria, albumenuria, and incomplete paraplegia, there was hastened respiration, transient tremor of the arms, exophthalmia, and brilliancy of the eye. Another peculiarity was that, although the patient was not in the least neuropathic before treatment, she developed transient aphasia with monoplegia and anæsthesia of the right arm, manifestly of hysterical nature.

The Thymus Gland and Graves' Disease.—Dr. Owen,[12] in December, 1893, recorded a marked case of exophthalmic goitre of twenty years' duration, for which thyroid feeding had been prescribed, resulting in the disappearance of all the symptoms of Graves' disease, but on re-investigation he found that the patient had been supplied with thymus gland and not thyroid at all. In January, 1894, the thymus was discontinued for a time, though against the wish of the patient, who attributed his relief to its administration. In course of time the Graves' disease symptoms began to return, viz., palpitation and increased size of the thyroid gland; and after March 20th the thymus gland was resumed with great benefit, and on July 25th, 1894, when the patient was last seen, the improvement in his condition was very remarkable, and he had gained in weight and strength, and he had been free from palpitation for six months. The pulse, which was formerly constantly over 120, was then 72, the eye symptoms had disappeared, the thyroid swelling was no longer present, melancholia was replaced by a feeling of well-being. He had been taking one lobe of neckberg—the cervical portion of the thymus—three or four times a week. The patient stated that he had several times discontinued the gland for a time, but finding himself getting worse had resumed it, always with immediate benefit, and during the latter two months had taken one lobe a week. Mikulicz[13] suggests that two different substances may be contained in the thyroid—one which prevents myxœdema, and which can only be supplied by the thyroid gland; the other,

which is useful in cases of goitre, and which may also be obtained from the thymus gland. Mikulicz himself has employed thymus feeding in eleven cases, ten of goitre and one of Graves' disease, and, as far as he can see, the result is similar to that obtained by thyroid feeding. He always gave 10 to 25 grammes of raw sheep's thymus, in gradually-increasing doses, and about three times weekly. Out of ten cases of goitre one was cured, six decidedly and two somewhat improved, one only being unaffected. In the case of Graves' disease, the subjective symptoms, exophthalmos and tachycardia, were all diminished, but the goitre and tremor remained practically the same.

Other cases are recorded by Cunningham[14], in which thymus feeding was employed in Graves' disease. The first case was that of a young lady, age 20, who had suffered from Graves' disease for some time. When first seen the pulse rate was 124 a minute, and exophthalmos, insomnia, mental depression, excessive sweating on the right side at night, tremor, &c., were represent. At first thyroid tablets were given, but these only made her worse. Fresh lamb's thymus was substituted, and taken broiled. In ten days there was some improvement, and six months later the patient reported perfect health; pulse 72, and the goitre and exophthalmos had disappeared. In two other cases there was marked improvement; in one, after taking freshly-cooked lamb's thymus, and in the other less rapid improvement after taking twelve to fifteen five-grain tabloids of thymus daily for a week. As bearing on the function of the thymus, the writer states that he has fed thyroidectomised dogs on thymus gland without apparently hastening or delaying the appearance of the cachexia otherwise than if the animals had been fed on so much ordinary cooked meat, although Breisacher has pointed out that when thyroidectomised dogs are fed on meat that has been thoroughly extracted by boiling, the cachexia is delayed, and that in dogs fed on the bouillon from the meat the cachexia develops with unusual rapidity.

Furthermore, there are the interesting observations of Ludwig Hektoen[15] on a case of hyperplastic persistent thymus in exophthalmic goitre in a female aged 20, a case of which was first seen November 29th, 1892, with well marked prominence of the eyes, drooping of left lid, uniformly enlarged thyroid, tumultuous heart, and with the tissue over the anterior aspect of the lower third of each leg swollen and elastic like myxœdema. She also had frequent spells of constant vomiting. The symptoms became more pronounced and emaciation progressive till she died on January 20th, 1893. A report of the post-mortem examination is given in detail. In the thyroid gland the stroma was increased in greater proportion than the glandular part, the stroma being richly cellular, but in places less vascular than normal; certainly the vessels were not large or numerous. The markedly proliferated cells of the tubules were more ovoidal than cuboidal, never cylindrical, and in only a few follicles was there any colloidal material. The thymus sections presented the same appearance as that of an active thymus in a very young person. The author cites other instances of persistent thymus in exophthalmic goitre recorded by Mosler,[16] Lasvenes,[17] Johnstone,[18] Spencer,[19] White[20] (two cases), Möbius,[21] Reymond,[22] Koppen,[23] Clarke,[24] Hilton Fagge,[25] Marie[26] (six cases), though on account of the indefinite descriptions the author admits that some may be instances of persistence of the retrosternal fat body that has been shown to preserve the form of the atrophied thymus. Another instance of persistent thymus is given by Murray.[27]

[1] The Hospital, Aug. 24, 1895, p. 359. [2] Med. Week, p. 388. [3] Ibid. [4] Ibid. [5] Ibid. [6] Hospital, Aug. 24, 1895, p. 360. [7] Pflüger's Archiv. fur die gesammte Phys. Bd. 56, Journ. Laryng. Nov. 1895. [8] Med. Week, 1895, p. 394. [9] Jahr. des Hamburg, Staabkrank, Jahr. 1892-93, Journ. of Laryn. xii., 1894. [10] Munich. Med. Woch., 1893, No 23., Journ. of Lar. xii., 1894. [11] Med. Soc. des Hop., Oct. 12, 1894. [12] Brit. Med. Journ., Feb. 16, 1895. [13] Berlin Klin. Woch., April 22, 1895. [14] New York Med. Rec., June 15, 1895. [15] Med. Mag., Sep. 1895, p. 584. [16] Krankengeschicht, Griefswald, 1889. [17] Thèse de Paris, 1891. [18] Journ. of Mental. Science, 1884, p. 521. [19] Trans. Lond. Path. Soc., 1891. [20] Brit. Med. Journ., 1880 and 1886. [21] Cited. Schmidts. Jahr. B. 193, p. 25. [22] Bull. de Soc. Anat. de Paris, sec. 5, vol. vii., No. 18. [23] Neurol Central, 1892, No. 19. [24] Bristol Med. Journ., 1887, No. 15. [25] Medicine p. 1,012. [26] Gaz. des. Hôp., Feb. 21, 1893. [27] Med. Week, No. 33, 1895, p. 393.

PROGRESS IN LARYNGOLOGY.

(*Continued from page* 50.)

Laryngeal Lesions of Typhoid.—Dr. Lucatello[18] has made experimental researches which show that these are attributable exclusively to the specific microbe of that disease. Like other pyogenic organisms they are capable of setting up abscess formation as a result of secondary infection of the parts.

Pneumothorax Following the Passage of a Plumstone into the Larynx.—A case is described by Dr. Carslaw.[19] Tracheotomy was performed as a precautionary measure two days after the stone had been swallowed, but not till a month later did it make its appearance, when it was coughed up *per vias naturales*. The patient recovered with slight collapse of the left chest wall. The cause of the pneumothorax was not apparent.

Vocal Breakdown on the part of Board School Teachers.—At a recent meeting of the British Laryngological Association,[20] this subject was discussed on the occasion of a succession of cases of myopathic aphonia that had been exhibited. The arytenoideus in one case, and the internal thyro-arytenoid in another (shown by Dr. Dundas Grant), were the muscles specially involved. It was suggested that the society should memorialise the authorities on this subject, Board School teachers being in the meantime instructed as to the proper methods of training and producing the voice when coming up for advice.

Chronic Laryngitis.—Dr. Krause[21] recommends scarification of the congested mucous membrane in certain cases. For an excellent *résumé* of the whole treatment of this intractable malady the reader is referred to an excellent clinical lecture by Dr. Greville Macdonald.[22]

Sodium Benzoate is given by Liegos[23] in acute laryngitis and pharnygitis. The dose for a child is 75 grains per day, that for an adult from 150 to 225.

Structure of so-called Fibroma of the Vocal Cord.—Chiari, in an elaborate paper read before the Rome Congress, holds the opinion that the true fibroma is probably rare, most of the growths thus designated being, in fact, circumscribed hypertrophies of all the superficial layers of the vocal cord, *i.e.*, a polypus in Eppinger's sense, and not true fibromata. He considers that their origin in chronic inflammatory thickening of the cords has been proved both by serial section cutting of the cord and growth together, and by clinical observation.

[18] Amer. Jour. of Med. Sci., Jan., 1895. [19] Glasg. Med. Journ., April 18, 1895. [20] Journ. of Lar., Rhin, and Otol., March, 1895. [21] Berlin Klinik Wochen Schr., No. 16, 1894. [22] Internat. Clinics, iii., Vol. IV. [23] Deut. Med. Wochen, 1895.

Progress in Rhinology.

Turbinal Hypertrophy.—The literature of this subject has received some interesting contributions recently. A succinct account of the microscopic appearances of mulberry growths of the inferior turbinate was given by Wyatt Wingrave in his paper at the Bristol meeting of the British Medical Association, 1894, when he proposed the designation "turbinal varix." The description of the histology of these common sources of nasal obstruction, as given by this author, was as follows[1]: "The peculiar villous or brain-like appearance of the surface was seen microscopically to correspond with a cystic invagination of the surface epithelium, covering distended loops of vessels with very thin walls embedded in mucoid tissue—that is, connective tissue in which the matrix was in excess of the fibrous reticulum and cells. The muscular walls presented well-marked atrophy and degeneration, varying from simple thinning to complete disappearance, owing to the fibres apparently sharing the surrounding mucoid and œdematous changes. In places the intervening mucoid tissue simply formed their boundaries, whilst in other parts the walls seemed to have undergone fibrotic changes. This condition is, therefore, not a mere hypertrophy of the structures, but consists of a true degeneration and infiltration of the walls of these vascular spaces, a morbid process which is responsible for the disease; for the walls gradually losing their power of active recoil, the vessels by degrees become more and more distended, and a permanent enlargement ensues, which is, in fact, a varix."

Moriform Hypertrophy of the Inferior Turbinated Bodies.—Jonathan Wright, of Brooklyn,[2] has described and figured these moriform hypertrophies in a paper which was intended to once more draw attention to the distinction existing between these bodies and true papillomata, a point which is constantly being overlooked by specialists, many of whom, on examining a case of nasal obstruction, and observing these foliated masses projecting into the inferior meati, seem incapable of persuading themselves that they have not true papillomata presented before them. These latter, though rare, are occasionally observed growing from the floor and lower portion of the septum nasi, but it is doubtful if one has ever been seen growing from the inferior turbinate body itself. Wright endeavours to account for the papilloma-like external appearance of moriform hypertrophies in these words: "The cause of this folding and crumpling, I conjecture, is the continued and exaggerated contraction and dilatation of the venous sinuses in a stroma deprived by chronic inflammation of much of its elastic and muscular fibres, and having in their place a considerably larger amount of non-contractile fibrous tissue. This exaggerated vaso motor action is indicated in the clinical history these patients give of varying degrees of nasal stenosis." Wright also points out that almost every fold communicates (as seen in his illustration) with the central mass, and that there is no appearance of a budding process. There is therefore some discrepancy in the views of Wright, and Wingrave, for the latter, "whilst admitting that a persistent exaggeration of the functions of the turbinal bodies may constitute a predisposing factor, thinks it is difficult to believe—particularly in the light of histological changes—that simple hypernutrition could be followed by any change other than hypertrophy of the vessel walls. But, given a tendency to mucous degeneration, due probably to some tropho-neurotic influences (local or general), excessive activity of the parts must play an important rôle." Wright speaks in his paper of areas of œdema, which he attributes to inflammation, but he nowhere describes any mucoid change. The subject is a difficult one, and it is not surprising that opinions on its pathology differ somewhat. Mucoid degeneration of the stroma is hard to distinguish microscopically from œdematous infiltration, and as to the changes in the walls of the sinuses, considering that the presence of a true involuntary muscular tunic is still denied by some authorities, it is apparent that the often-mentioned substitution of the muscular by fibrous tissue is not easy to demonstrate satisfactorily. That the "moriform" contour of the hypertrophies owes its origin primarily to an extension outwards of loops of distended capillaries in mucoid tissue (as implied by Wingrave), the pendulous extremities of the digitations ultimately becoming œdematous, seems to be the true fact of the case; whilst vaso motor influences and mucoid degeneration of the sinus walls occasion the distension of the cavernous spaces. In the meantime proliferation of the glandular elements, often very marked, contributes to the general hypertrophy. For further distinctions between these growths and true papillomata, and additional points in the histology of moriforms, see Pegler's paper in the transactions of the Laryngological Society of London, 1895.[3]

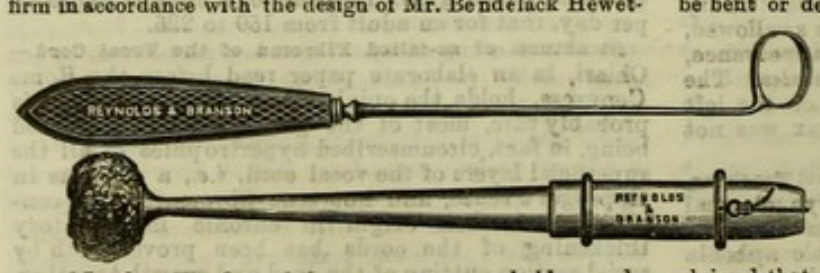
[1] Lancet, June 21, 1895. [2] Trans. Amer. Lar. Assoc., 1894. [3] Jnal. of Lar. Rhin. and Otol., July, 1895.

New Appliances and Things Medical.

NEW INSTRUMENTS FOR NASO-PHARYNGEAL SURGERY.

(Reynolds and Branson, 13, Briggate, Leeds.)

Two new instruments of considerable practical use in naso-pharyngeal surgery have been manufactured by the above firm in accordance with the design of Mr. Bendelack Hewetson, of Leeds. The first of them, a new sponge holder, made either in celluloid or vulcanite, is provided with a hollow central stem, through which passes a piece of whip-cord, fastened firmly at one end to the sponge, while the other end is made fast to a ring which is slipped over the end of the handle. The sponge is thus held tightly in the trumpet-shaped orifice of the holder. The advantages claimed for this instrument are: (1) The ease with which it can be cleaned and kept clean; (2) the avoidance of injury to the soft parts, which sometimes follows the employment of metal holders; (3) the durability and reliability of the instrument; it cannot be bent or destroyed by ordinary use. The price is 7s. 6d. in celluloid, and 3s 6d. in vulcanite. The second instrument referred to is a new form of scraper for the removal of adenoid vegetations in the naso-pharynx or pharynx. The instrument is in form something like the ordinary scraper, but the ring is semi-circular, with a double scraping edge, which can by easy manipulation operate in an upward, backward, or downward direction, and even effect the removal of adenoids which occupy the pharynx proper. It is claimed that adenoids in any position can be more readily removed by this instrument than by the older stirrup-shaped ring, and further, its range of usefulness is considerably more extensive, since parts inaccessible to the older form can be readily reached by simple manipulation of the cutting edges.



ANNOTATIONS.

"Jerry-built" Houses and Diphtheria.

THE increase of diphtheria in large towns, more especially in the southern and eastern parts of England, has been so alarming during the last eight or ten years that every medical or sanitary congress has taken to discussing the subject with a view to the discovery of the cause. For some time public elementary schools have borne the brunt of the blame; but at the British Institute Congress the other day Professor W. R. Smith showed reasons for believing that such schools are not the real founts of origin of the numerous epidemics which have prevailed. One speaker made a suggestion which may prove to be important. He affirmed his conviction that "jerry-built" houses contained stored-up poison germs, which, being liberated under conditions of extreme concentration, might give rise to sporadic cases of diphtheria. If such houses are built on small and unwholesome areas, it is easy to see that extensive epidemics may thus originate. That diphtheria germs may be present in the vile refuse which often goes to the erection of "jerry-built" houses, and that they may develope under the conditions of heat and concentration with which they are then associated, we can well believe. The whole subject of "jerry building" is fraught with danger to the public, and demands the most searching investigation on the part of our highest medical and sanitary authorities.

The Doctor's Verdict.

To the patient how important is the verdict! And yet to the doctor how grave is often the doubt how far he is justified in disclosing what is passing in his mind! It is, indeed, an anxious matter to decide how far a medical man should take a patient into his confidence in regard to the details and especially in regard to the prospects of his case. For the doctor's own protection there can be but little question that it is often the wisest course to tell the patient everything. For the patient's sake, however, this is not always the case. Not that we would ever either advise or even sanction the telling of an untruth. Even putting morality on one side, and considering candour as a mere matter of treatment, it may at once be said that nothing is worse for a patient than to lose confidence in the honesty of his medical attendant. But it often happens that a case is involved in doubt; not the sort of doubt which arises from obscurity in diagnosis, or can be cleared up by a consultation, but doubt as to its future progress, a matter which can only be solved by time; and while we feel assured that when a medical man is asked to tell the truth about a case he ought to deal honestly and give truth so far as knowledge goes, we are equally assured that it is neither kind nor right that he should make his patient a sharer in his doubts. The mind of a sick man is not able to judge questions of this sort fairly, his ignorance of terms makes it impossible for him to understand the true bearing of the facts, his personal interest is far too intense to make it possible for him to form a just estimate of the argument. We repeat, then, the doctor should, if asked for it, state his opinion, after giving the best powers of his mind to the forming of a true and just one; but it is no part of his duty to state the grounds on which that opinion is founded, or to lay bare before the patient all the doubts and difficulties, all the frightful eventualities which may perchance present themselves—things which, when anxious cases are on hand often destroy all rest and peace of mind, and for a time make the conscientious doctor's life a nightmare. It is, doubtless, hard that, in addition to deciding on the treatment of a case, a doctor should be asked to tie himself down to a prognosis. But if he is so asked, his first duty is either to make up his mind or say he does not know. He has no right either to prop up his patient with false hopes, or to pour out before him all the possibilities of the case, leaving the sick man to worry over a problem on which the doctor, with all his education, can come to no conclusion.

The Tottenham Hospital Dispute.

THE committee appointed to take evidence on the various matters which have of late been in dispute at the Tottenham Hospital has closed its sittings and issued its report. The members of the committee, it may be remembered, were Mr. H. M. Bompas, Q.C., Mr. Pearce Gould, F.R.C.S., and Dr. Biss. It is much to be regretted that the report, which is couched in sober and non-contentious terms, should be so singularly disappointing from a practical point of view. In every important particular it leaves things exactly as they were before. It is understood that the leading members of the medical profession in Tottenham, who have from the first taken up a very dignified and impartial position, intend to issue, as soon as may be practicable, what they hold to be a correct statement of the actual facts, and certain recommendations of a practical kind which they consider that the occasion demands. We await the publication of the "statement" before arriving at a final conclusion. In the meantime two points may be referred to, both of which have been dealt with by Mr. Bompas's committee. The first point has reference to the "director" of the hospital, Mr. Newton. The committee state that the director "is comparatively young, and think it would be to the advantage of the institution that his place should be filled by a married man of greater age and experience." But, they go on to suggest that Mr. Newton shall be appointed secretary instead of director. Now in an institution like a hospital a "secretary" is a "director" and a "director" is a "secretary." In other words, the committee advise the removal of Mr. Newton because he is unsuitable, in one breath, and in the very next advise his retention under another name. The second point has reference to the lady superintendent. The committee affirm that by defect of training and experience she is not competent to administer the department of the hospital's work which deals with the nursing of the patients and the instruction of nurses. Nevertheless, they propose to make the new head of the nursing department subordinate to the present lady superintendent! Enough, we think, has been said to show that the dispute at Tottenham can by no means be considered at an end.

NOTES AND NEWS.

(Collected and Communicated.)

The German Government is about to establish a classification distinguishing intelligent children from those of weak intellect attending the schools. Education suitable to the development of the latter will then be secured.

The annual report of the Ingham Infirmary, South Shields, shows a surplus of £111 for the financial year, after providing for all liabilities. There has also been an increase in the capital account, owing to the receipt of several legacies. It is interesting to note that while the annual subscriptions came to £317, the workmen's contributions amounted to £690. This seems to show that the institution is very popular with the class for whose benefit it was founded. We would draw attention, however, to the somewhat careless manner in which the medical report is drawn up. It may be doubted whether there is any advantage in publishing, in a general report, such an analysis of cases as we here find; but if it is published at all it should be drawn up much more carefully than is here the case.

The teaching of hygiene to women has, it is to be feared, often partaken of a somewhat dilletante character. The growing importance of the subject, and the fact that many appointments now open to women require a good knowledge of it, has led the Council of the Bedford College, London (for women), to establish a separate and scientific course of instruction in hygiene. Students will be required to devote themselves for a session or more solely to this and allied branches of science, viz., physiology, bacteriology, chemistry, and physics, which will be taught practically as well as theoretically, and thus they will have the opportunity of obtaining some real knowledge of the subject in its various bearings. As sanitary inspectors and teachers of hygiene under county councils and in schools, many appointments are likely in the future to be open to women who have aptitude for scientific work and are willing to devote themselves to it.

Hospital Saturday has been celebrated in Dover with considerable energy. In addition to the usual collections, a monstre procession of friendly societies and trades, in carnival costume, took place. The money collected amounted to £113.

A large meeting was held on Hampstead Heath on August 18th to protest against the action of the authorities of Hampstead Parish Church in refusing to allow the usual special service to be held therein in connection with the annual demonstration of friendly societies in favour of the North London Hospital for Consumption.

The gradual extension of small-pox in the Metropolis is a matter of considerable concern to other districts maybe far away. London is a centre which is in touch with all parts of the country, and it would be idle to pretend that there is any likelihood of the outbreak, if it should take an epidemic form, being confined within the metropolitan area. Sanitary authorities should then be on their guard, and be prepared with means for immediately isolating any case which may occur in their midst. It is in dealing with the early cases that isolation shows to the greatest advantage, for by immediate isolation an epidemic may often be entirely averted.

An alarming gas explosion took place on August 17th at the Mile End Infirmary. A considerable amount of damage was done. It appears to have been caused by the fracture of a large gas main immediately before its passage, below ground, through the wall of the building. The escaping gas had found its way into the covered trenches along which the water pipes are distributed, and on reaching a light exploded with great violence. This matter is worth noting by hospital authorities, as the placing of water pipes in covered trenches is a rather favourite plan with architects. It is clear that where gas pipes are in the neighbourhood, or, as in some cases, even within the same trench, the danger of leakage and consequent explosion must be carefully reckoned with.

A significant sign of the times in regard to street collections for charitable purposes is to be seen in the result of the twenty-second annual street collection in connection with the Hospital Saturday Fund, which took place on July 13th. This is now found to have realised a sum of £2,965, being a decrease of £1,842 upon that of 1894. The workshop collection on Saturday, the 10th inst., amounted to £6,043. The falling off in the street collections is attributed to the great extension which has recently taken place in this mode of raising money. Charities and institutions of all sorts flood the streets with emissaries, not always the most suitable, who assail the by-passer with such persistency that he hardens his heart and buttons up his pockets. So long as street collections were the outward sign of a great public movement, and were limited to an annual demonstration under the direction of the responsible managers of the Hospital Saturday Fund, all was well; but the whole thing has become commonised. Every week there are collections for some "hospital" or other, or some "fund" which no one ever heard of, and the charitable public, who would give willingly in answer to an occasional well-authorised appeal, are being rapidly educated in the art of saying "No." All this is bad, and, unfortunately, the Hospital Saturday Fund has to pay for excesses of its imitators.

Medical Progress and Hospital Clinics.

[*The Editor will be glad to receive offers of co-operation and contributions from members of the profession. All letters should be addressed to* The Editor, The Lodge, Porchester Square, London, W.]

TRAUMATIC STRICTURE OF THE URETHRA TREATED BY RESECTION.

By Wm. Horrocks, M.D., F.R.C.S., Hon. Surgeon, Bradford Infirmary.

Wm. F., an insurance agent, aged 52, was admitted to the Bradford Infirmary, suffering from constant dribbling of urine from the urethra. About two and a-half years ago, when mounting a bicycle, he slipped and injured the perinæum. Blood came with the urine for fourteen days, but patient could micturate without the help of instruments. Eventually an abscess formed, and burst externally, urine coming by this opening for many weeks. The fistula closed after some months, the patient passing the urine per urethræm with increasing difficulty. At present the urine issues constantly in drops. When patient attempts to empty the bladder, the urine still only comes in drops, and the effort causes great pain. The urine is alkaline, and contains pus, but no casts. The patient is otherwise in good health. In the perinæum a depressed scar is felt in the right ischio-rectal fossa. The urethra is felt to be thickened in front of the triangular ligament, but the thickening is not considerable, nor is the urethra fixed by cicatricial tissue. On passing a sound into the urethra it comes to a block about five inches from the meatus. Two unsuccessful attempts were made to pass filiform bougies into the bladder. On March 6th, the patient being under ether, a perineal incision was made on the end of a staff passed down the urethra. The urethra was freely divided in its length, and the sides held apart by silk threads. The stricture was then cut through, and a Wheelhouse's director passed into the bladder. The two parts of the urethra had been apparently completely divided at the time of the accident. The anterior end of the first part of the urethra passed directly downwards, while the anterior or penile portion of the urethra travelled forwards. The two parts were united at a sharp angle by a mass of cicatricial tissue, through which there was a narrow canal along which urine passed. This knee or bend in the urethra was removed, and the two parts of the roof of the urethra brought together transversely by interrupted, fine, catgut sutures. The floor of the urethra was repaired by deep and superficial sutures in the length of the urethra. The wound in the urethra was enlarged backwards, and a piece of rubber tube left in to drain the bladder. The front part of the urethra was filled with iodoform emulsion. On the third day the bladder drain was removed, and a large sized Lister's sound (12-15) passed along the whole length of the urethra. Since this time large bougies have been passed at intervals. Urine ceased to come through the perineal wound ten days after the operation, and patient was discharged on March 28th, 1895.

Remarks.—The first point of interest is the early history of the case. No instruments were required, although the urethra was almost or quite torn across. It seems noteworthy that a large opening can be made in the urethra in the operation of lithotomy, and the edges of the wounded urethra frequently stretched and bruised, yet no stricture ever follows the operation. The urine in these cases is frequently foul, and must infect the freshly-made wound. On the other hand, in traumatic rupture of the urethra, the parts before the accident are generally healthy, and the urine normal. Yet traumatic rupture, however treated, is almost always followed by troublesome stricture. The reasons for this seem two. In traumatic rupture the urethra is torn across completely, and the periurethral tissues bruised. Secondly, a cavity is formed, connected with the urethra, and distended at intervals by the passage of the urine. From these considerations Mr. Reginald Harrison advises, in all cases of urethral rupture, a perineal incision should be made, whether a catheter can be passed into the bladder or not.

One would rather avoid the passage of a catheter, as a source of infection, and trust to escape of the urine by a large perineal wound. The ideal treatment in this stage would be suture of the ends of the torn urethra and free drainage of the bladder by a posterior opening. This treatment must depend on the amount of bruising about the urethra.

In the case under consideration the objects aimed at were: (1) The restoration of the natural curve of the urethra by removal of the knee or bend caused by the scar; (2) the substitution of a wound healed by first intention for a wound which had healed by granulation. The present condition of the patient is very satisfactory; the largest-sized bougies pass with ease. Even if the divided part of the urethra contracts, the true curve of the urethra is restored, and this greatly assists in passing bougies. The man's condition is now quite natural, and beyond the passage of an occasional bougie, as a precaution, he has no discomfort.

Progress in Medicine.

GRAVES' DISEASE.

On the physiology and pathology of the thyroid gland much light has been shed during the past ten years; and more recently the discovery that myxœdema, cretinism, and cachexia strumipriva are produced by absence or atrophy of the thyroid gland, and may be favourably modified, and generally cured, by administering the gland by the mouth, has shown that the thyroid gland either destroys some substance which otherwise accumulates in the blood and is deposited in the tissues, or that it secretes something which is necessary to the economy, and without which cretinism and myxœdema will arise. But it is now very generally known that often the result of taking more than moderate doses of the thyroid gland, or its extract, is that a symptomatic complex is produced, indistinguishable from true Graves' disease; and the view that while myxœdema is due to deficient activity

of the thyroid gland, Graves' disease, or exophthalmic goitre, is due to excessive functional activity of the gland is gaining ground, and has already been made the basis of a new treatment of the disease under discussion. It will be useful to examine the data bearing on these points which recent literature has furnished.

Physiology of the Thyroid Gland.—Gley[1] has drawn attention to the structural changes determined in the accessory thyroid glandules by extirpation of the thyroid gland proper in rabbits. Under normal condition the glandules are of a homogeneous structure. On the contrary, within six days, and still more distinctly after fifteen or eighteen days have elapsed after extirpation of the thyroid gland, sections under a feeble magnifying power, show irregularly disseminated areas formed by cross bars of epithelial cells of smaller size than normal ones, with deeply stained protoplasm and a nucleus which stains more readily than the nuclei of normal elements. Not only is this trabecular structure well marked, but, what is of still greater importance, the epithelial cell elements have acquired characters which the cells of normal glands never possess. The hypertrophy of these organs is, therefore, due, if not entirely, at any rate in a great measure, to increase in the number of their epithelial cells. Moreover, in some cases phenomena of cellular division have been observed; but so far we have not discovered any vesicles with colloid contents. Gley thinks that these cellular modifications are due to functional development of the glandules, as a consequence of the thyroidectomy, and that in this manner such ill-effects as invariably result from total extirpation in rabbits of both glands and glandules are obviated.

We now turn to Notkine's[2] investigations into the nature of the substance in the thyroid which produces the effects following ingestion of the gland. Assuming that cachexia strumipriva is the result of intoxication by one or more toxic products, which accumulate in the organism of a thryroidectomised animal, he regarded this cachexia in the light of a true auto-intoxication, inasmuch as it is observed even in animals subjected after the operation to absolute deprivation of food, although in this case it is much less marked than if they are fed. The thyroid gland, then, secretes a substance which is capable of decomposing or neutralising the toxic products of the intra-organic exchanges, products which are the cause of the phenomena of cachexia strumipriva in thyroidectomised animals. Now a large number of experiments on animals, as well as clinical observations on a case of myxœdema led Notkine to the conclusion that the toxic principle which determines the cachexia strumipriva is to be found in the thyroid gland itself, and he has succeeded in extracting from the thyroid gland of various animals a peculiar albuminoid substance, constituting the greater part of the colloid mass of the thyroid gland, and to which he has given the name of thyro-proteid.

From experiments with this thyro-proteid he arrived at the following conclusions: (1) That thyro-proteid belongs chemically to the albuminoid group. (2) That chemically pure thyro-proteid is toxic to animals, and determines symptoms analogous to those of cachexia strumipriva, and is very slowly decomposed in the organism, and very slowly eliminated, and has, therefore, a cumulative effect. (3) To an animal deprived of the principal part of the thyroid gland, thyro-proteid is toxic, even in doses which normal animals can bear without difficulty; but if after partial thyroidectomy the injection of thyro-proteid is delayed until the resected gland has had time to become hypertrophied, the animal operated upon supports the thyro-proteid just as well as a normal animal. (4) The effect of thyro-proteid is first stimulating, then paralysing; it is probable that it acts on the central nervous system. The contractions of the heart appear to be slackened; the general nutrition is affected, emaciation occurring in all cases in which the action of the thyro-proteid is slow. Notkine believes that the colloid substance in diffuse colloid goitres represents the anatomical equivalent, as it were, of the thyro-proteid, and that the latter is not a product of secretion of the thyroid gland, but the waste material of intra-organic changes. The thyro-proteid, in his opinion, constitutes the poison which accumulates in the organism after the operation of thyroidectomy, and determines myxœdemic phenomena, but this poison is destroyed or neutralised by the genuine product of the secretion of the thyroid gland, which contains a special ferment. The physiological rôle of the thyroid gland, then, according to Notkine's views, is to rid the organism of the thyro-proteid existing in the blood; to store up this toxic substance in the alveoles of the gland, where it is neutralised and rendered harmless, after which it is again poured into the circulation. He has observed that Graves' disease, which "probably is the result of intoxication by thyroid enzyme, produced in excess," appears to be influenced in an extremely favourable manner by the administration of thyro-proteid in small doses. Other facts bearing on the functions of the thyroid and its relation to Graves' diseases have been adduced by Edmunds,[3] who has demonstrated that in exophthalmic goitre there is as a rule little colloid substance, but solid cylindrical processes of cells compose the main structure; similar tissue is met with in ordinary goitres. He takes the view that the general symptoms in Graves' disease were due to an excessive secretion, not of colloid, but some other substance, and the passage of this into the circulation. The particular tissue that he found resembled that of the accessory thyroids in animals and also in the human subject. He drew attention to the fact that the secretion of the common goitre does not cause exophthalmus. He had given a dog sixteen sheep's thyroids a day without producing any result; but the protrusion of the eye could be produced by cocaine internally or externally applied to the conjunctiva, while division of the cervical sympathetic caused the eye to recede.

Thus it would appear that Graves' disease is associated with excessive activity of certain epithelial tissues in the thyroid gland, and that these secrete a substance which produces the peculiar phenomena of the disease, but which ordinarily and in normal amount neutralise and destroy the colloid substance, which otherwise would accumulate in the system and give rise to myxœdema.

[1] Med. Week., Mar. 27, 1895. [2] Med. Week, May 3, 1895. [3] British Med. Jour., May 25, 1895.

(*To be continued.*)

ADMINISTRATION OF ANÆSTHETICS.

By SIR BENJAMIN WARD RICHARDSON, M.D., F.R.S.

IN four previous papers I have given an account of the causes of the large number of fatalities from chloroform, and I regret to say that every day seems, practically, to confirm my opinion that deaths from chloroform administration as well as from other anæsthetics seem largely on the increase. To say nothing of the deaths that are not reported, it would appear that during the past year there have been no fewer than 48 recorded cases, death in the majority taking place before any operation was performed. In 42 examples of these 48 the deaths were from pure chloroform, and out of the total number of deaths 37 took place before any operation was commenced. Of the deaths not attributable to chloroform purely one was from what is called the A. E. C. mixture, three were from mixtures of chloroform and ether, two were from ether, and one was from nitrous oxide gas. The whole means nearly one death per week, which is a sad number, and will lead before long to wider public inquiry. It is certainly far beyond anything that has occurred before, and there must be a reason for it.

In early days we considered that death by chloroform was probably due to rapidity of administration. Snow never varied from that view; Simpson did; and so there was produced a kind of fixed battle on the whole question. Snow, on his side, held to the fact that he had never had a death in his practice, although he had administered to over 4,000 patients. He thought the reason of his success was perfectly clear, and that when death did take place in the administrations of other men the subject of it must have been in a diseased condition. I was, at first, rather inclined to think that he carried his argument too far, because in two large hospitals, where no apparatus was used, and where the quantity of chloroform administered was free and rapid, I reckoned up 17,000 administrations without a death. It seemed, therefore, to me, at one time, that there might have been some other cause at work, when death followed, than rapidity of administration. Afterwards however, it appeared that, in the main, Snow was right and that the large increase of deaths which has occurred since his time has been due to the attempts, practically, to oppose his theory. I was much struck, in this direction, by a letter published on November 23rd. 1892, by Dr. Robert Bell, the senior physician to the Glasgow Hospital for Women, on the chloroform question. Bell quotes the experience of Mr. William Martin Coates, who expressed his conviction, in 1858, that chloroform could only be safely administered by limiting the dose to the smallest quantity capable of inducing insensibility to pain. By repeated trials he found that, by means of Snow's inhaler, five minims of this anæsthetic, followed by ten in twenty seconds, fifteen in forty seconds, and fifteen every minute until the patient became insensible, and afterwards an occasional ten minims, sufficed in almost every case to produce and maintain complete anæsthesia. Very rarely twenty minims were required. In the *Lancet* of December 23rd, 1882—twenty-four years later—Mr. Coates adds that, although during twenty-four years he was never prevented from administering chloroform by extreme age or infancy, by chronically diseased heart, lungs, or kidneys, he had not had a death from chloroform. He never refused chloroform to any patient in whose case pain was anticipated. The scares, including pressure on the chest, placing the head below the level of the body, did not occur.

Insisting on the necessity of giving chloroform in small and gradually increasing doses, Coates said he was certain that some, and not a few, persons were dangerously affected by the usual doses of chloroform. In support of which he gave the following illustrations. One young woman, twenty-four years of age, was completely narcotised by five minims of chloroform. A middle-aged woman was rendered insensible to pain, during an operation lasting a quarter of an hour, by seventy-five minims, and a child by ten minims. "*Had the usual doses been given to these patients their lives would have been placed in danger.*" In no case since the year 1858 had he to use galvanism, nitrate of amyl, artificial respiration, or any other mode of resuscitation. He read with painful interest the reports of deaths from chloroform, and did not come across one in which his mode of giving it had been adopted. In every case of death in which the quantity of the anæsthetic inhaled was recorded, it was much larger than that advocated by him. In later years a quicker and more daring plan, he thought, was advised and practised (the use of a towel and similar contrivances), hence, he thought, the more frequent fatal results.

It is certainly open to the administrators of chloroform that they should fall back upon the old method and administer chloroform, if they use it, or any other anæsthetic, with less rapidity than is usually employed. It must also be the duty of the surgeon not to hurry inhalation or look askance on an anæsthetist who does not rapidly perform his task.

Snow would sometimes commence inhalation in a child by administering so little as five minims at the first. He estimated that under ten years eight minims of chloroform was fully sufficient to enter the blood, and that it was quite a surprising fact what a minute quantity would suffice. He held firmly that from 4 to 5 per cent. of chloroform vapour in the air inspired was amply sufficient for the production of the deepest anæsthesia, and that more was unnecessary and dangerous. It was for this reason that he invented the "balloon"—afterwards transformed into Clover bag—in which the vapour of chloroform was never allowed to exceed 4 to 5 per cent. He considered the apparatus troublesome, however, and, being very much pressed for quicker action, invented the inhaler which bears his name, but which he quite admitted was not so perfect as the balloon, nor so satisfactory to the administrator. What we ought now to insist upon is that the wish of the surgeon should not interfere with the safety of the patient, and that it is the surgeon's duty to wait the bidding of the anæsthetist and not press him against his judgment in order to save time; knowing that whereas he himself can operate with perfect safety in a large majority of cases, the anæsthetist never administers without a certain risk, which should be reduced by every possible means at command.

The Fate of Colour-Blind Sailors.

Mr. P. H. Bickerton, ophthalmic surgeon to the Liverpool Royal Infirmary, brought what is nothing less than a public scandal before the annual meeting of the British Medical Association in July of the present year, a scandal of a kind involving many serious and dangerous consequences, one or two of which we desire to call attention to. Competent oculists have long been insisting that all persons connected with the navigation of ships, as well as all connected with the running of railway trains, should be men of perfect faculties as to eyesight, hearing, and so on. The reasons for this are so obvious that to argue the point would be ridiculous. As a matter of fact, nobody denies that sailors should be men of eyesight as perfect as is possible. But when it comes to applying such scientific and practical methods as will secure perfect eyesight in every boy or youth who proposes to follow the seafaring life, then difficulties of all kinds appear to spring up as if at the touch of a magic wand. In practice it comes to this: that anybody who pleases may commence the seafaring life, and he may continue it for as many years as he pleases if he be a person who has no desire to make the best of himself. But if, unfortunately for himself, he should develop a desire to improve his condition, he is obliged to submit his eyes for examination, and if he happen to be either colour blind or defective in sight, he is straightway told that he must leave the sea, or be content to be a plain A.B. to the end of the chapter.

Certain consequences spring from this condition of things which grieve the sympathetic and exasperate the practical. So much is this the case that if there were but any method of getting at all the sympathetic and all the practical members of the community in one supreme effort, there is no doubt that the new President of the Board of Trade would wish that his predecessors in office had shown a greater regard for practical science and a much diminished respect for permanent officialism and red-tape. Let us think for a moment of the intolerable hardships to which the best of our sailors are put who may find out when they are full-grown men that they are cursed with colour-blindness or defective sight. Of course, no boy ought to be apprenticed to a seafaring life without being first examined by an expert as to the condition of his eyesight. If he were so examined he could be informed, whilst still a boy, whether or not his eyesight were perfect, and whether or not he was fit for a seafaring life. In that case no harm would be done. He would simply devote himself to a different occupation in which the condition of the eyesight would be of less importance. But is not this expert examination of the eyesight of sailor apprentices already compulsory? it may be asked. By no means. Not only is it not compulsory, but the permanent officials at the Board of Trade seem to employ every means in their power to prevent its being made compulsory; and the late President of the Board, Mr. Bryce, appears to have taken a positive pleasure in upholding their wicked policy in every possible way. No doubt Mr. Bryce might have something to say in his own defence; but without waiting to consider that, let us lay to heart some of the practical results of this peculiar state of affairs. As we have said, there is no expert examination of boys as to their eyesight before apprenticeship to the sea, and, consequently, all our merchant sailors, through no fault of their own, grow to manhood in complete ignorance of their condition in this respect. Those of them who are smart and bright naturally want to advance themselves. So soon as they show any desire, after or during their apprenticeship, to aim at distinction in their calling, they are compulsorily subjected to an examination of the eyesight; and then, if any defect be found, comes the shattering of all their hopes and ambitions at a single blow. Mr. Bickerton told the British Medical Association of one young man, whose proper ambition to qualify himself for the position of mate having been thus rudely annihilated, straightway attempted suicide in consequence; and of another who, having become a captain without examination, had for some reason been examined, and having been found colour-blind, was dismissed his ship. The latter, not being able to obtain other employment, drooped and died within a twelvemonth. He told also of 165 other young men, who, after being allowed to complete their apprenticeship, had been found either colour-blind or defective in sight, and who, without any compensation whatever, were informed that they were disqualified for the sailor's life. All these circumstances are the record of less than a year's working of the compulsory eyesight examination system as now conducted.

Of course every scientific and every practical person recognizes that the eyesight of sailors should be examined, and that neither colour-blind nor near-sighted people should be employed at sea. The employment of such persons may indeed be the cause of some of the most tragic disasters of modern times. But a very simple method of procedure would both prevent the possibility of a certain class of disasters at sea, and also entirely obviate the necessity for throwing some hundreds of deserving young men helpless upon the world every year. All that is required is that every youth who desires to follow the seafaring life shall be examined as to the condition of his eyes by a competent expert: examined, that is, before the commencement of his apprenticeship. By this simple means, as we have already said, a certain class of marine disasters would be entirely prevented, and such shameful injustice to young and deserving men as we have pointed out would be possible no longer. What hinders that this simple thing shall be done? Absolutely nothing but the wilful ignorance, or worse, of the permanent officials of the Board of Trade. No doubt this universal examination by experts would cost a little money every year—a mere trifle compared with the advantages to be gained. But is it right, is it English common-sense, that all travellers by sea should be needlessly exposed to manifold dangerous risks, and that shameful injustice should be done to a large class of deserving young men, merely because permanent officialism refuses to recognise an elementary scientific fact?

ANNOTATIONS.

Guy's, and Mr. Gladstone's Appeal.

THE hearts of many people must have warmed towards Mr. Gladstone when they read his eloquent appeal in Wednesday's papers on behalf of Guy's Hospital. Mr. Gladstone went carefully into the question of expenses with the help of the "Hospital Annual," and made himself thoroughly acquainted with the financial needs and necessities of Guy's at the present time. The past week has been fruitful in appeals for personal service, and Mr. Gladstone's letter is a touching proof that everybody can do something effectual for others by giving themselves. At the present time the general and economical administration of Guy's Hospital is satisfactory, but we are afraid from what we hear that Mr. Gladstone's appeal must fail for the present. If Mr. Gladstone had first studied the constitution of Guy's, we believe his letter would have been withheld until certain modifications had been made in various directions. The present list of governors contains the names of some of the most respectable and best-known men in the City of London. It could be wished that they would devote a measure of personal service to Guy's Hospital at this juncture, and that they could be induced to attend the meeting of Governors on November 11th next, and to advocate the modifications in the conduct of their business which press for adoption. After a lengthened trial, it is admitted by most people with knowledge that the system of government by a treasurer is ill-suited to the requirements of a great hospital which needs the support of the public. The treasurer is apt to discourage the active co-operation of individual governors. Hence the attendance at committees, which are not too frequently held, gradually falls off; and such a system leaves the best interests of a great charity like Guy's too much in the hands of one man, who is less able to do the work thoroughly as years roll on. The present treasurer has given upwards of twenty years' service to the hospital, and has well earned the leisure which his increasing years entitle him to expect. We imagine that he would not offer any real objection to changes which would free him from responsibility, and place the management of Guy's to a much larger extent in the hands of the Court of Committees, which ought to meet every week, not once in six as at present, the head of each department being present when any business affecting him is dealt with. We should do but an ill-service to Guy's did we not say bluntly, that, unless these changes are brought about, Mr. Gladstone's appeal must largely fail, despite the great claims which Guy's undoubtedly has upon those able to give. Both the president and treasurer, after their long services, might properly be included in the new year's honours list. Their retirement would enable the present constitution to be modified in the directions indicated. If the governors will attend as they ought to attend the meeting on the 11th Nov., and express a wish there, as some have done privately, that these changes may be brought about, a small committee might be appointed to examine and report upon the 'present system' of control, with a view to its modification. The difficulty now impeding the subscription of funds will then speedily disappear. We have often had the pleasure of being associated with Mr. Lushington in various works of importance, and we cordially recognise his invariable courtesy and the services he has rendered in various directions. Our suggestions are therefore made from fulness of knowledge and in a spirit of true friendliness to him and to Guy's.

Abnormality or Madness.

PERHAPS it is too much to hope that the wit of man will ever be able to devise a strict criterion which shall mark off sanity from madness. Yet the fog in which we are involved as to the extent to which man is responsible for what he does is becoming denser every day. It is a misfortune that this question has chiefly arisen and been discussed in regard to grave and serious cases—cases of murder, in which the alternative of insanity has been death, for it can hardly be denied that in many such cases the plea of insanity would hardly have been invoked, and certainly would not have been listened to, but for the knowledge that a bald verdict of guilty involved an irrevocable sentence. Two very recent cases have shown on what very slight evidence of insanity, other than that derived from the crime itself, it is possible to escape the extreme penalty; and it becomes a matter of much interest to inquire to what extent the doctrine of irresponsibility, which is urged in murder cases, is to be taken as applicable to the little crimes and peccadilloes met with in daily life. We all know that such a malady as kleptomania exists, yet how sceptical we are when a case occurs, and how the people grin with satisfaction when they find a magistrate refusing a listen to such a plea. Kleptomania, however, is none the less a fact, and if sudden impulse be admitted as an excuse at all, we may well question whether it has not been the real cause of many crimes which nevertheless have received the punishment due to wilful malice. It is, however, in matters of ordinary conduct rather than of crime that the question of responsibility becomes of interest in our social relations. Clearly, so far as oddity can be taken as explaining and excusing crime, it should be admissible also as proof of that insanity the presumption of which is accepted as the crime's excuse. The doctrine is growing up that to be abnormal is to be irresponsible. But what a field of abnormality there is around us! Surely these odd people are not all insane! We have amongst us those who believe in the supernatural, and profess that in their comings in and goings out they are surrounded by spirits, who influence them and guide them in their daily life. Are they mad, and if not, how shall that man be excused, who, urged on by spirit voices in his ear, is driven with uncontrollable impulse to slay his neighbour? What, also, about immorality and defiance of custom; how far may man or woman outrage the social rules prevalent at the moment without risking the asylum? Everyone laughs at "The Woman Who Did," and says she was cracked upon her one idea. But how about her imitators in the flesh? Are they also mad? Are Socialists mad, or is it only that a rich Socialist is crazy while a poor one is a clever fellow? Who, indeed, is mad—the idle tramp who wanders o'er the country the summer through, no doubt suffering many discomforts but still enjoying life, or the honest worker who slaves in a mill, and lives in a slum, and dies in the workhouse? Normal man is often but a mean fellow, and we must be careful how we accept mere abnormality of conduct as proof of irresponsibility.

Notices of Births, Deaths, and Marriages are inserted in this column at a charge of 2s. 6d. for an announcement not exceeding four lines.

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NOTES AND NEWS.

(COLLECTED AND COMMUNICATED.)

A NEW isolation hospital has just been opened at Plymouth by the Mayor of that town.

THE North London Hospital for Consumption has received a cheque for £1,000, being the second sum of similar amount given to the institution by Mr. Henry Harben.

LAST Saturday Mr. Passmore Edwards laid the foundation stone of a much-needed cottage hospital, which is to be established at Tilbury Dock. Mr. Passmore Edwards provides £2,000, whilst the Docks Committee contribute £500 and a site. The public are asked to subscribe the furniture and provide for future maintenance. It is proposed to attach a district nurse and a midwife to the hospital.

THE hospitals of Liverpool are sharing some of the recent good fortune which has been shining on the metropolitan charities. Mr. Bernard Vincent Hall has bequeathed no less than £11,000 to be divided between the Royal Infirmary, Northern Hospital, Royal Southern, and Ladies' Charity and Lying-in Hospitals, in varying amounts, the Royal Infirmary heading the list with £5,000.

THE new buildings at the Bradford Infirmary, commenced a year ago, were opened last week by the High Sheriff of Yorkshire. A striking feature of the extension is the cooking apparatus, which is on a new plan as far as English institutions are concerned, the whole being arranged in the centre of the kitchen, whereby both time and labour are saved. The cost of the new improvements has been £6,000.

IT is announced that a conference of delegates of the London local authorities will be held to consider the position of the Metropolitan Asylums Board as a body which provides for the care of infectious diseases in the metropolis. The point at issue is as to where the responsibility of the local authorities ends in respect to providing for their own fever cases, and what should be definitely required at the hands of the Metropolitan Asylums Board.

ON Friday the Westminster Hospital will be formally opened, after having been closed for some time for important improvements. The president, the Duke of Westminster, will attend, and a large number of friends are expected to meet him and inspect the hospital.

ALTHOUGH the petition presented to the Royal College of Physicians praying for the admission of women to its licentiate has been rejected, the majority against the proposal was much less than some had expected. In addition to the ordinary arguments in favour of the equal admission of women to medical qualifications, it is, no doubt, felt that in case the reconstruction of the University of London should involve co-operation with the Royal Colleges for examination purposes, such co-operation would be much facilitated by the various institutions being on an equality in regard to the admission of women.

NEW regulations are about to be made in Russia in relation to the degree in medicine. Doctors of medicine will in the future be regarded as belonging purely to the scientific grades of professional calling. The degree can only be taken after medical men have held the diploma to practice for three years. Within the five years following the examination the candidate must write a thesis on some professional subject, and if he fails to do this he must pass another examination. The new regulations are destined to make the acquisition of a degree harder than before, and tend towards encouraging specialism, which is carried on to a very great extent in Russia.

THE ceremony of laying the foundation stone of a convalescent home for the French Hospital at Brighton acted as a shock to the inhabitants of Brighton. Very few persons appear to have known for what purposes the site at the end of the Kemp Town Parade was sold, and so the brilliant ceremony, in which the French Ambassador took part, acted as a most unpleasant surprise. The objection appears to be rather on the score of manners than of fear of infection of a bodily nature. It is thought that an influx of strangers from the poor neighbourhoods of Leicester Square will not add to the value of property adjacent to the proposed home, and vigorous protest is being made.

LITTLE real progress seems to have been made in settling the question of hospital accommodation for Manchester in relation to the present Royal Infirmary. A meeting of the trustees has been recently held, which shows, however, that amongst their number there are those who recognise the importance of avoiding mistakes which are easily fallen into by those who have not studied the question of hospital building, and the many issues at stake in erecting one. Plans and elevation for buildings on the present site are now to be secured, and the efficiency of such plans is to be submitted to expert opinion, the same expert or experts apparently being required to give an estimate as to cost. A sub-committee is also to be formed for the purpose of investigating the question of the desirability of erecting a supplementary hospital elsewhere, and the cost thereof, and into the best means of bringing the present building up to date. The resolutions thus passed at the meeting appear to open the question up more fully even than before, but any decision appears to be as far off as ever.

MEDICAL PROGRESS AND HOSPITAL CLINICS.

[*The Editor will be glad to receive offers of co-operation and contributions from members of the profession. All letters should be addressed to* THE EDITOR, AT THE OFFICE, 428, STRAND, LONDON, W.C.]

THE TREATMENT OF ABSCESS IN POTT'S DISEASE.

By A. H. TUBBY, M.S.Lond., F.R.C.S.Eng., Assistant Surgeon and in charge of Orthopædic Department, Westminster Hospital; Surgeon to the National Orthopædic Hospital and the Evelina Hospital for Sick Children.

Abscess complicating Pott's disease constitutes a grave source of danger of life. There can be no doubt that such abscesses and their sequelæ are the most frequent cause of death in spinal caries. The form of abscess may be psoas, lumbar, iliac, and pelvic. In gravity they may vary from a small collection of pus coming to the surface as directly as possible from the site of the bone disease, and readily amenable to treatment, to enormous cavities containing pints, and extending beneath muscles and between planes of connective tissue in so devious a manner, as to baffle all attempts at radical treatment. When such abscesses burst they form several discharging sinuses. One or more of these occasionally heal, and a new outlet is formed for the pus at some other spot, perhaps not so favourably situated for drainage and antisepsis as the previous opening. There is no type of case so formidable to the surgeon as this. To give details of such an one:—

Case—M. P., aged 12: On admission there is extensive angular deformity occupying the dorsal region from the seventh to the twelfth dorsal vertebræ. The boy is sallow and cachetic. Pus is discharging from one opening in the right iliac fossa, and from a second on the outer side of the thigh two inches below the trochanter major. Fluctuation extends on the right side from the crest of the ilium over the buttock to the thigh just above the second sinus, and laterally from the anterior to nearly as far as the posterior superior iliac spine; it is also felt over an oval area of about one inch in its long diameter just above the middle of the iliac crest, and again doubtfully one inch external and to the right of the last dorsal vertebra. On pressure over the right iliac fossa curdy pus wells up. An attempt was made to cleanse the discharging sinuses and cavities. The collection in the gluteal region was freely evacuated. Great difficulty was experienced in finding the communication between the smaller collection above the crest of the ilium and that in the gluteal region, but it was subsequently effected. A second incision was made in the space between the last rib and the iliac crest; but the abscess cavity could not be tracked further. Looking at the large extent of the deformity and its general rounded appearance, it was evident that several vertebræ were extensively diseased. It was probable that pus had made its way downwards from the dorsal spine to the crest of the ilium, and had then extended in two directions, externally into the gluteal region, and internally to the iliac fossa. After opening the posterior collections freely, and rubbing and sponging the abscess walls, the sinuses were dressed carefully. It was out of the question to attempt any radical treatment of an abscess extending over such a large area, and with such extensive disease of the vertebræ.

Cases such as the one I have quoted require great skill in dealing with them. Mr. Symonds,[1] speaking in the discussion at the British Medical Association Meeting on the treatment of spinal abscess, quoted the following details: He alluded to a case in which he had opened a large psoas abscess in the thigh, groin, and lumbar region, and obtained primary union. A sinus formed later, and a second abscess was discovered on the other side. The sinus was scraped, the second abscess cleaned out, and the patient was quite well. Lumbar and iliac abscesses constitute a more formidable danger than even psoas abscesses, the possibilities of their rupture into dangerous regions are greater, and their future course is more uncertain. It often happens that they sink into the pelvis, and burst into the rectum or the bladder, or in the perinæum.[2]

Such is the worst side of the picture. Fortunately, there is a more favourable aspect. The methods of treatment open to us are five: (1) The expectant, leaving the abscess to become encysted or absorbed; (2) aspiration; (3) aspiration with the injection of fluids; (4) incision and drainage, with or without washing out the cavity with antiseptics; (5) the method advocated by Treves, Barker, and others; (6) complete removal of the sac by dissection.

Dr. Townsend,[3] of New York, has carefully tabulated the results of treatment of seventy-five cases of spinal abscesses, and I take the liberty of producing his figures in full. The value of the table would have been enhanced if the position of the abscesses had been stated.

ANALYSIS OF SEVENTY-FIVE CASES OF ABSCESSES IN POTT'S DISEASE (TOWNSEND).

Expectant Method.		
No treatment by brace: Abscess disappeared	3	
No treatment by brace: Abscess *in statu quo*	8	
No treatment by brace: Abscess increasing, child doing well	8	
No treatment by brace: Abscess increasing, child doing badly	2	
		—21
Aspirations.		
Abscesses disappeared after aspiration	11	
Abscesses opened spontaneously after aspiration failed	3	
Abscesses incised after aspiration failed	4	
Abscess *in statu quo* after aspiration failed	1	
		—19
Number of aspirations in each case, from 2 to 6; average 3.		
Incisions and Scraping of Sac.		
With use of iodoform emulsion or peroxide of hydrogen:—		
Results—Good	11	
Bad	3	
		—14
Opened Spontaneously.		
Results—Good	15	
Bad	6	
		—21
		75
Deaths.		
Tuberculous meningitis	2	
Lardaceous disease	2	
Suppression of urine	1	
		5

Absorption of Abscess.—The Expectant Plan.—Formerly there were but two methods of treatment, to leave the abscess alone, or allow it to burst. That abscesses do disappear gradually no one is prepared to deny. Such may or may not have given rise to symptoms. We may take it that the course of events when pus has formed is as follows: The patient is placed at rest, the spinal column is fixed, the intervertebral pressure is relieved, and pus ceases to be formed. Gradual absorption of the fluid part of the abscess takes place, and there results a cheesy mass, which becomes firmer and tougher, and may partially or entirely calcify, and be surrounded by a firm fibrous capsule. In the non-calcareous parts and in the outlying parts of the capsule numerous tubercle bacilli are found. Their presence always constitutes a distinct menace to health and life, and may at any time light up fresh local, or cause general tuberculosis.

The indications for the expectant treatment are:—

1. When the abscess is apparently single, and not tracking in two or more directions. 2. When the recumbent position is followed immediately by cessation from pain, and improvement of the general health. 3. The expectant plan should be persevered with, when, after a short trial, the abscess ceases to enlarge. 4. If it is evident that pus is near the skin and pointing, it is better to open antiseptically and so avoid the risks of spontaneous opening. 5. A large collection of pus is no hindrance to the trial of this method, provided that the appetite is good and the temperature is normal; in fact in those abscesses which were formerly designated as "cold." At the present moment I am watching the course of a large lumbar and iliac abscess.

Case: A girl, aged eight years, was admitted to the National Orthopædic Hospital on December 19th, 1893, with a posterior projection of the spine extending from the tenth dorsal to the first lumbar vertebræ. A large abscess was felt in the right iliac fossa. It reached internally as far as the umbilicus, and fluctuation was manifest on the outer side of the femoral artery in Scarpa's triangle. She was placed in bed, extension applied, and given cod-liver oil. On February 2nd, 1894, the abscess was found to have diminished sensibly, and did not now extend beyond the mid-point of a line drawn from the anterior superior iliac spine to the umbilicus, and there was corresponding decrease in other dimensions. On April 30th all fluctuation had disappeared from below Poupart's ligament, and the abscess was limited to the iliac fossa. The child is now fat and healthy, and has put on fifteen pounds in weight.

But unfortunately good results on the expectant plan are the exception and not the rule. Apparent diminution in the abscess may take place from the pus sinking into the pelvis. If absorption takes place the result for the immediate present may be regarded as satisfactory, but there is always a possibility of a recrudescence of the tubercular process. In any case, time is gained, and when the abscess lights up again, as so many do, opportunity is afforded for other and more radical modes of treatment. Personally I should be inclined, if the indications mentioned above are present, to give the patient the chance of absorption on the expectant plan. One's hand is still free to adopt other measures later.

Progress in Medicine.

GRAVES' DISEASE (*Continued*).

Acromegaly and Graves' Disease.—Joffroy[27] refers to a case of acromegaly with slight tachycardia, but without goitre or exorbitis, which was treated by ingestion of thyroid glands of sheep with resulting thyroid intoxication, but no exophthalmos. Murray[28] records three cases of acromegaly. In the first, a male, age 34, there was no symptom of Graves' disease, but after thyroid extract was given for some weeks the languor had diminished and neuralgic pains disappeared. The second was a woman of 34, who also exhibited glycosuria, and a pulse of 100-132. The patient subsequently died, and considerable hypertrophy of the pituitary and thyroid glands and a persistent thymus were found. Murray reminds us that polyuria is common, and diabetes has been twice observed by Marie and once by Strumpfel in acromegaly. Lanceraux[29] relates a case of acromegaly with headache and mental dulness, who also presented all the symptoms of exophthalmic goitre, and also developed hæmorrhoids, polydipsia, polyuria and polyphagia, glycosuria and albuminuria. He considered that the evidence in favour of the group of symptoms being all the effect of some general disturbance was overwhelming. He further remarks that the same symptomatic complex has been met with in other instances, viz., in 1877, by Henrot, in a male aged 36, who had acromegaly, Graves' disease, and diabetes. The heart and thyroid gland were hypertrophied and the pituitary body was replaced by an ovoid tumour the size of a hen's egg. While the nervous system was diseased at various points, three ossiform patches were found in the thickness of the spinal meninges, the pineal gland was twice as large as usual, and the pneumogastric and glossopharyngeal nerves, a portion of those of the brachial plexus, and all the nerves and ganglia of the sympathetic were larger than normal. Another case reported in 1893 by Valat suffered from acromegaly with Graves' disease. Lanceraux remarks that as acromegaly usually precedes hypertrophy of certain glands, viz., the pituitary, thyroid and thymus, and that consequently it is impossible for the affection to be caused by the hypertrophy of these glands. Joffroy's case of acromegaly, aggravated by thyroid gland ingestion, has been alluded to above. Cunningham[30] cites Rogowitsch's experiments, which showed that after the thyroid has been removed in rabbits enlargement of the pituitary body occurs.

Diabetes and Graves' Disease.—Glycosuria has been observed in many cases, but it must be remembered that the urine is often not examined for sugar in Graves' disease, or acromegaly. We have already alluded to three cases of acromegaly, Graves' disease, and glycosuria, viz., Murray's, Lanceraux', and Henrot's. Denning[31] records observations on the effect of metabolism of thyroid treatment and mentions glycosuria as not uncommon.

Myxœdema and Graves' Disease.—Baldwin[32] records four cases of Graves' diseases which had eventuated in myxœdema. Oppenheimer[33] records cases of sisters, one having Graves' disease and one myxœdema, and refers

to Maude's[34] cases as the only other similar instance he can find recorded. Babinski[34] has on two occasions observed the coincidence of Graves' disease and symptoms of myxœdema in the lower limbs, and Hektoen[35] has seen the same group of symptoms in one case.

Lesions of the Nervous System and Graves' Disease.—Brissaud[36] cites as among the distinctly nervous diseases which may be primarily or secondarily associated with exophthalmic goitre, are epilepsy, hysteria, chlorosis, tabes dorsalis, syringomyelia, scleroderma, chorea, and insanity, and refers to the experiments of Filehne and Durdufi, who, having resected the restiform bodies in young rabbits, found the operation to be followed immediately by exophthalmia, swelling of the thyroid gland, and tachycardia. Oppenheim[37] also cites the fact that Filehne obtained goitre at times on electrical stimulation, and that Durdufi, having incised the tub. acustica, got Stellwag's sign; while Bienfalt practically confirmed Filehne's experiments. Further, several observers have found more or less hæmorrhage in the floor of the fourth ventricle. Hale White noted an old superficial hæmorrhage, extending from the middle line to the corpus restiforme, and involving the sixth nucleus on one side. Mendel found one restiform body smaller than the other, and the right solitary fasciculus atrophied. Oppenheimer goes on to say that at the time Mendel's paper was presented, Oppenheim remarked that the corpora restiforma are normally so unlike that a slight difference in the size would have but little weight. In most autopsies, however, gross lesions of the central nervous system have not been observed.

A case of Graves' disease, with monocular symptoms and unilateral thyroid hypertrophy, is recorded by Fridenberg.[38] A married lady, age 24, who had a great deal of worry, came with distinct exophthalmos and Graves' symptom in the left eye, insufficiency of the internal recti, venous pulsation on left disc, the right eye was normal. There was some flushing of the face, most marked on the left side, and greatly increased by exertion or mental excitement. The thyroid was not noticeably enlarged, but on palpation increase of right lobe and isthums was made out. Fine tremor of tongue and hands, five to six to the second. Heart was enlarged and tumultuous. Excluding doubtful cases, the author found that of thirteen cases the right eye was alone affected in ten. Of the three cases involving the left eye, but one, that of Burney Yeo was associated with hypertrophy of the opposite lateral lobe of the thoroid, and in this case both lobes eventually became much enlarged. Ocular and thyroid symptoms were limited to the right side in Chvostek's case only. In eight the unilateral exophthalmos was associated with general enlargement of the thyroid.

Finally, reference must be made to recent reports of reflex cases. Scanes Spicer[39] refers to the case of a neurotic young woman who came to him for the removal of nasal polypi. The thyroid gland presented a thrill and pulsation, there was tachycardia and fine tremor of arms. These symptoms began simultaneously with the symptoms of nasal polypi three years previously. After removal of the polypi the other symptoms improved. Stoker[40] referred to the case of a man who had nasal polypi and a soft goitre, which latter had resisted all treatment until the galvano-cautery was applied to the polypi. The goitre lessened, and with the continuance of the treatment the goitre disappeared in two months. Cases[41] of cure of Graves' disease by operation on the nose are reported by Hofmann, Hack, and Fränkel. On the other hand that many cases have had their nasal passages treated without any result whatsoever on the disease.

Hürthle, as the result of a series of experiments on dogs, states that the thyroid gland cannot be stimulated to secretion by stimulation of its nerves, and that the statesof the blood must supply the necessary stimulus. Eulenberg[42] states that ligature of the bile ducts has been shown to lead to an increase in the thyroid secretion.

Relation of Graves' Disease to Rheumatism.—H. Mackenzie[43] observes that quinsy and rheumatism are antecedent or coincident in a significant number of cases. Out of some forty cases he has noted quinsy in nine and acute rheumatism in five; this agreeing with the evidence of others. S. West records two cases, and remarks that they present two features of interest, viz., that they occurred in sisters and that in each there was a history of rheumatic fever and heart lesion. In a previous report of fifty-six cases, rheumatic fever had occurred in 11 per cent.

Heredity seems in many cases to have an undoubted influence on the occurrence of Graves' disease. Thus we have already alluded to two sisters, one with Graves' disease, the other with myxœdema, reported by Oppenheimer. In H. Mackenzie's forty cases five had a family history with exophthalmic goitre. West's two cases were sisters. Ball, cited by Oppenheimer, reports a case of a mother and two sisters, and Œsterreicher, also cited by the same writer, has recorded a remarkable instance of a hysterical woman who had ten children, eight of whom had exophthalmic goitre. Maude[45] reports a woman with myxœdema, whose daughter had exophthalmic goitre. Progressive muscular atrophy, in association with Graves' disease, is reported by Bathurst,[46] though Beevor thought it might possibly be a case of pseudo-hypertrophic paralysis.

Bryson's symptom in Graves' disease has been investigated by Patrick,[47] who found the average chest expansion in forty cases to be 4·3 centimetres (hand grasp 43·75 kilog.), in twenty-eight other chronic diseases 4·8 per cent. (grasp 56·36 kilog.)—that is, the expansion in Graves' disease is diminished half a centimetre (the grasp 12·61 kilog.). Thus the chest expansion is diminished 10½ per cent., and the hand grasp 22⅜ per cent., the grasp being diminished more than twice as much as the expansion, and thus the idea that the diminished chest expansion is simply part of a diminished vitality or energy is borne out both by these figures as well as by the history of the individual cases. He believes that the diminished power of conveyance often observed, and the occasional affection of the laryngeal muscles, is quite analogous to these other findings, and is simply a part of a general myasthenia. The value of the Bryson sign thus loses its importance as a diagnostic sign of Graves' disease.

Operative Treatment.—The recent contributions to the treatment of Graves' disease are chiefly in con-

nection with the question of surgical operations on the thyroid gland. We find reports of the following cases amongst recent literature:—

No. of Case.	Reporter.	Sex. Age.	Duration of Disease.	Main Symptoms.	Operation.	Result.
1	McCosh[48]..	F. 20	3 years	Exophthalmos marked, thyroid large, especially right lobe, palpitation, pulse 150, very nervous and anæmic	Thyroidect. of R. lobe 3 months previously	For 2 weeks pulse rapid, sometimes 200. The protrusion of eyes diminished notably in 12 hours; finally disappeared; left half decreased to half its former size. Pulse averaged 115. (Note.—This case had been treated for 2 months without effect by galvanism, arsenic, and thyroid extract.)
2	Curtis[49] ...	1st case	—	Graves', disease. Pulse 120	Thyroidect. R. lobe	Improvement. Seen a year later, improvement had remained, though there was still some exophthalmos. Pulse then 80 to 100. Hysterical and nervous symptoms had disappeared, also insomnia
3	,, ...	2nd case	—	Graves' disease	Thyroidect. R. lobe, October, 1894	Great improvement
4	,, ...	3rd case	—	Goitre, rapid pulse, nervousness, no albumer in urine	Thyroidect. R. lobe, October, 1894	Died. Apparently with symptoms of hyperthyroidation
5	Gerster[50]...	F. 24	1½ years	Typical Graves' symptoms, rapid pulse, 122-146, thyroid much enlarged, especially right lobe, proptosis especially on right side. Dyspnœa on exertion from compression	Thyroidect. R. lobe, December 3, 1890	Dec. 5, pulse 106-136; Dec. 6, pulse 102-116; Dec. 8, pulse 84-96; Dec. 9, pulse 78-92. From Dec. 9 the exophthalmos was notably diminished. Improvement gratifying and prompt.
6	Tuffier[51] ...	F. 27	7 years	Cystic enlargement of right lobe, with exophthalmos and other usual symptoms	Partial thyroidect.	All Graves' symptoms and exophthalmos entirely disappeared. Cure. Iodine injection, tapping, and electrical treatment tried without benefit
7	Edmunds[52]	1st case	—	Graves' disease. No details	Partial thyroidect.	Improved. No details
8 to 19	Mikulicz*[53]	11 cases	—	All presented marked tachycardia, and 5 serious dyspnœa	In 2 cases ligation of arteries, in 9 extirpation	6 completely cured, 4 considerably improved, 1 slightly improved (unilat-ligation). In one case after unilateral resection, temporary improvement, with subsequent hypertrophy of the opposite lobe and recurrence of symptoms. After this lobe was removed result was satisfactory
20 to 27	Krönlein[54],	—	—	Graves' disease	Resection	All much improved. Exophthalmos remained in one case
28 to 35	Lemke[55] ...	—	—	Well-marked Graves' disease	Partial resection	All survived, and in all the more important symptoms were relieved, viz., exophthalmos, goitre, nervous agitation, and tremor
36	Petersen[56].	F. 34	—	Symptoms 7 years. For some time before operation pulse 120, proptosis. No V. Græefe symptom. Tremor, flushing, hyperidrosis, and goitre present	Resection left lobe, 1889	All the symptoms greatly improved, and 5 years after operation she had no proptosis, no tremor, no tachycardia, no goitre, and she was quite well, except that the pulse remained at 90-100. Digitalis and galvanism had been tried without effect
37 to 75	Kocher[57]...	—	—	Vascular goitre with symptoms of Graves' disease	In 34 either ligation or partial extirpation. He prefers the former unless extreme dyspnœa exists. He usually ligatures 3 arteries	3 have since died; all the rest either cured or greatly improved

* Mikulicz remarks that the effects seem to be the same whether ligature, enucleation, or resection is performed, and that in some cases Graves' disease has disappeared after simple puncture or incision of a simple goitre.

[28] Brid. Med. Journ., Feb. 9, 1895. [29] Med. Week, 1895, p. 109. [30] Loc. cit. [31] Munch. Med. Woch., April 23, 1895, Epit. B. M. 7, May 25. [32] Lancet, Jan. 19, 1895. [33] Journ. of Nerv. and Ment. Dis., April 1895. [34] Barth. Hosp., Sep. 1893. [35] Med. Week, 1895, p. 394. [36] Loc. cit. [36] Loc. cit. [37] Loc. cit. [38] Med. Rec., July 13, 1895. [39] B. M. J., Nov. 19, 1894; Journ. of Laryng., Feb., 1895. [40] Ibid. [41] Cited by Oppenheimer, Journ. of Nerv. and Ment. Dis, April, 1895, p. 220. [42] Arch. f.d.ges. Phys. Bd. 56. [43] Lancet, Sept. 30, 1890. [44] Lancet, May 18, 1895. [45] St. Barth. Hosp. Rep., 1893. [46] Lancet, Aug. 31, 1895. [47] N. Yk. Med. Journ., Feb. 9, 1895. [48] Med. Rec., Aug. 24, 1895. [49] Ibid. [50] Annals of Surgery, Mar., 1895. [51] Lancet, June 1, 1891. [52] Brit. Med. Journ., May 25, 1895. [53] Med. Week, Ap. 26, 1895. [54] Ibid. [55] Med. Press and Circ., Jan. 30, 1895. [56] N. Y. Med. Journ. [57] Med. Week, Mar. 1, 1895.

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Some Practical Aspects of Bovine Tuberculosis.

In matters agricultural the French politician is sometimes unpractical; but he is mostly both scientific and logical. In questions of the same order the English agriculturist is, as a rule, neither scientific, logical, nor practical. Tuberculosis in cattle is a highly important question from the point of view alike of the farmer's pocket and the public health. The French Minister of Agriculture has recognised this fact, and has determined to stamp out the disease at all costs. In our own country little or nothing has yet been done, either by way of prevention or extirpation.

To our thinking the French Minister, though sound in his principles, is as unnecessarily drastic in his measures as the Englishman is unscientifically dull. Let us try to put the whole case in a nut-shell. In the first place, the percentage of dangerously tuberculous cattle is comparatively small. Moreover, tuberculosis, at any rate in the conditions under which the vast bulk of cattle live, is but feebly infectious.

Such being the problem, let us inquire how, on the one hand, clear-headed and logical France, and how, on the other, slow-witted but shrewd and practical Denmark have set about solving it. The motto of the Frenchman in the business is "Kill, kill, kill." It is enacted by the Ministry of Agriculture that if an animal be "obviously tuberculous" it must be immediately killed. If it only present "suspicious symptoms" it must be compulsorily tested by the injection of tuberculin. A confirmatory reaction to the tuberculin test is to be followed by prompt slaughter. If an animal, though apparently healthy itself, be known to have been in cohabitation with a tuberculous animal, it must be subjected forthwith to the tuberculin injection test. If it reacts unfavourably, it must, with certain specified exceptions, be slaughtered within a year. That, in brief, is the French method; and if tuberculosis in cattle were widespread, very dangerous to human life, and impossible to be coped with in any other way, the drastic nature of the extirpatory process might be submitted to in the interests of the general public. But when it is remembered that bovine tuberculosis is not very highly dangerous to human life, is not very widespread, and is quite capable of being coped with in other ways; when, too, it is borne in mind that the French Ministry of Agriculture gives only partial compensation to those agriculturists whose animals it summarily destroys in the public interests, it is obvious that the methods of France could not be adopted in this country except on the plea of much more urgent necessity than has yet been shown.

Denmark has acted differently in this matter. She recognises its importance as much as France does; but she is not carried away by the imaginative logic of the scientific enthusiast. To the knowledge of the scientist she has added the judgment of the experienced agriculturist, who remembers that bovine tuberculosis was born before science, and that populations have lived through many ages of it with comparatively little injury to either happiness or life. Denmark says that tuberculosis in cattle is first and chiefly the affair of the owner of the cattle. She teaches the owner that so mortal a disease is dangerous to his herds and to himself, as well as to the general public; and she offers him tuberculin without payment, and the services of the veterinary surgeon without fee, in order that he may test the condition of any suspected animals he may have upon his farm. The suspected animals she advises him to isolate. If he possesses any which are beyond the stage of mere suspicion, these she advises him to kill; and that in his own interests first and chiefly. Compensation she offers him none. Denmark is eminently practical; and she is scientific too, but in her own way.

What we in England ought to do is to take measures to ensure the prompt slaughtering of all cattle which are "obviously tuberculous"; and the most certain means of effecting this object would be to offer reasonable compensation for every animal thus killed in the interests of the public. That done there would only remain the discovery and isolation of those apparently healthy animals which are really in the early stage of tuberculosis. The county councils might very well provide tuberculin for this purpose. What we are desirous of showing in this article is that bovine tuberculosis is a real danger to the community; that though it is not a danger which justifies panic, it is yet so important as to demand legislative action; and that such action, if set about with knowledge and experience, may be very effective without being either very costly to the State, or seriously injurious to the owners of stock in our agriculturally depressed country.

Electricity and the Processes of Life.

The relation between electricity and those hidden processes of cell activity whose outward manifestations we recognise as the signs of life has always been a matter of the greatest interest. Unfortunately, its investigation has also been a matter of the greatest difficulty. The cells of which a large animal is built up are so connected with each other, so inter-related, and so buried in the mass, that the effect of exposing them to a current of electricity can only be judged of by very remote effects. Even the very fact of the influence of galvanism on vital processes, except at the points of entry and exit, has been doubted. Experiments which have been made, however, upon freely floating organisms are very suggestive, showing that the passage of even a steady current through them and the water in which they float—burying them, in fact, within a current—produces some change which is so far appreciated that they are driven to accommodate themselves to it. According to Dr. Augustus Waller,* if a galvanic current be passed through a bath containing paramœcia in sufficient abundance a curious sight is observed. When contact is made the whole crowd of paramœcia fall into order with their noses towards the kathode, and begin to swim towards it in converging curves, while if the current be reversed the crowd breaks up, all its units turn round and begin to swim away, as if of one mind, from the new anode to the new kathode; clearly these creatures are more "comfortable," if one may use the term, when swimming with the electric current than the reverse way. This, however, is not a general law for all micro-organisms, for some tend to swim against the current, and others again to place themselves at right angles to it. In a galvanic bath containing a mixture of ciliated and flagellated protozoa, while no current is passing these creatures swim about in all directions in a perfectly indifferent manner, but directly contact is made they divide themselves into two distinct armies, so to speak, which assemble on the two banks; "ciliata to the kathode, flagellata to the anode, seems to have been their *mot d'ordre*," and on reversing the current they immediately change places.

If in such a case we may speak of likes and dislikes, it is clear that each micro-organism is affected by the current in its own way, and is led to exercise a choice, and seek one pole or the other. So much for a free cell, which can move in any direction, but in regard to one which is tied fast, some similar influence must take place, and it is not difficult to believe that according to the direction of a current passing through it, may be the ease or difficulty with which it performs its function.

In regard to more complex free-floating organisms the same is found to be true. Much as cats are more comfortable when stroked the right way than the wrong, and in fact will often get up and move away when stroked from tail to head, so it would seem that tadpoles dislike being "stroked" the wrong way by electricity. An experiment is described by Dr. Waller. In a lantern bath were a number of fresh tadpoles, moving more or less leisurely and jostling each other in all directions. On sending through it a current of electricity, he says "the commotion is amazing, the tadpole community seems to have gone mad, a writhing mass is all that can be distinguished; but the disturbance does not take long to subside, and now all the tadpoles are fixed as if at attention, heads to anode, viz., traversed by a current from head to tail, stroked down the right way."

It can also be shown that if the current is turned on very cautiously to a degree short of making the tadpoles face about, those which happen to be lying in such a direction that it passes through them from head to tail lie perfectly still, while those which lie the other way wag their tails; clearly the whole organism reacts differently according as the current goes in one direction or the other. If two tadpoles happen to be lying in the bath in opposite directions, by cautiously reversing the current the tadpoles may be made alternately one or the other to wag their tails. Of course in such complex creatures as tadpoles this reaction is not due to the effect of electricity upon individual cells, but depends on the presence of the spinal cord, as may be shown by experiment, for a piece of a tail long enough to contain a bit of spinal cord will tremble when the current is turned on, while a shorter piece is not affected.

These experiments are then sufficient to suggest that to be bathed in a galvanic current may be by no means so immaterial to the proper functionisation of the body as some people have imagined. If freely moving organisms are so affected as to swing round in response to the current, it is hard to believe that those embedded cells which cannot swing are any the less affected, and it is open to us to believe that they will perform their functions all the less perfectly from their inability to conform to their new surroundings. In relation to this it is not without interest to bear in mind the assertions continually made by many people as to the distressing effect upon them of what is termed thundery weather, when the relation between the atmospheric and the earth potential is reversed, and when, therefore, the direction of the current discharging through our bodies is abnormal.

* "Science Progress," October, 1895.

On Modern Progress in Ophthalmic Medicine and Surgery.

By Robert Brudenell Carter, F.R.C.S., Consulting Ophthalmic Surgeon to St. George's Hospital.

SQUINT.

(*Continued from page* 42.)

If we study the development of ordinary convergent squint, by the light of the considerations laid down in the preceding paper, we shall usually find that the subject of it is a child whose eyes are flat in a moderate degree, and in whom the natural association between accommodation and convergence is maintained. Such a child, at the age of two or three years, begins to scrutinise carefully the appearance of near objects, of toys, pictures, and the like, and desires to obtain clear visual images of them. In order to obtain such images, he is compelled to accommodate, not only for the actual distance of the object of vision, but in the somewhat greater degree which is required to correct the flatness of his eyes; and in doing this he renders his eyes convergent to a point somewhat nearer than the position of the object, which, if he held it in front of his nose, midway between his eyes, would appear double. He soon finds, however, that this disturbing double vision is removed by holding the object a little to the right or left—that is, in front of one eye or the other, instead of between them. If we remember that the eyes are combined in a position of over convergence, we shall see that the practical effect of holding the object directly in front of the right eye will be to turn both eyes towards the right. An amount of movement in this direction which brings the convergent right eye into the middle of the eyelid opening will bring the convergent left eye well in towards the nose; and the effect will be to cast the image of the left eye upon a peripheral and comparatively insensitive part of the retina, where it may easily pass unnoticed by the consciousness, which will be engrossed by the correctly-placed image received by the right eye. If the object, instead of being held in front of the right eye, is held in front of the left, a corresponding effect will be produced, with the difference that the left eye will appear to be properly directed, and the right eye to squint. The left eye will then receive the central image, which must be regarded, and the right will receive the peripheral image which may be neglected. The eyes in either case may be distinguished as the working eye and the squinting eye; but it must not be forgotten that both, and not merely the latter, are misdirected. The working eye is an eye tending towards convergence, and forcibly turned towards its temporal side while its convergence muscle remains in action.

In these circumstances parents, if moderately observant (a condition not invariably fulfilled), will be likely to notice that the child squints when he looks attentively at any near object. When he ceases to do this his eyes return towards the correct position, and for a time the squint might be described as only occasional. The conditions which gave rise to it remaining, and the attention being more and more directed to the details of his environment, the squint becomes more and more permanent and more and more pronounced. If the eyes are equal in degree of flatness, in acuteness of vision, and in muscular power, it will be a matter almost of accident whether one or other of them is employed on any given occasion, and, in such circumstances, the squint is said to be "alternating." In most cases these conditions are not fulfilled, and, for some reason or other, it is more easy to employ one eye than its fellow. The eye most easily used will then be used habitually, and will become the working, while the other will become the squinting eye. The squint is no longer alternating, but "fixed."

A flat, or, in other words, a small eye, may perhaps be taken to represent a comparatively undeveloped organ, and it is certain not only that the vision of such eyes is often below the normal standard of acuteness, but that the vision of one of them is often less acute than that of its fellow. When this is so, the better sighted becomes also the working eye, and the vision of the squinting eye often suffers further deterioration, presumably from the almost complete withdrawal of mental attention from the images which it receives. It is not uncommon, even at an early age, to find the squinting eye practically blind, although it would appear that it must originally have been sighted in order that the squint should be produced. An eye which loses vision from disease is apt to become divergent from want of visual guidance, but I have never seen it become convergent.

In considering what should be done with a young child who squints, the question of the equality or disparity of vision in the two eyes becomes one of primary importance. Speaking generally, when vision is equal in the two, it is better to defer operation until at least the age of eight years. Perfection of the operative result can only be attained, subsequently to the comparatively rough correction effected by tenotomy, by the unconscious efforts of the patient to combine the eyes for the avoidance of double vision, and such efforts are hardly made until the faculty of attention and the muscular power are well developed. But, if the habitually disused eye possess only defective vision, it must be borne in mind that this vision may improve if the eye be brought into use, and that it may undergo further deterioration if the eye remains disused. Neither condition is certain, neither can be rejected as impossible. In such instances, therefore, it is better to operate at however early an age, even if the attainment of perfect position should require a second operation at a later period. The vision of a young child cannot be accurately tested by anyone who is not quite familiar with him. I advise parents to do it by tying a small patch over one eye as a bit of play, perhaps doing it upon themselves, or upon a doll, until the imitativeness of childhood is aroused. When the child can be induced, by any nursery contrivance, to submit to have one eye tied up, it will be quite easy to observe whether he will see and find any small object, such as a toy or a sweetmeat, with equal readiness with either. Should he do so, the operation should always be deferred. Should he fail to do so, with such constancy as to establish the existence of defective sight in the squinting eye, this should always have the benefit of such a chance of improvement as the early performance of the operation may afford. I have occasionally seen almost complete restoration of vision; but, as a general rule, there is not very much to be gained. Even in these cases we may hope that further impairment has been arrested.

Modern Sociology.

A SOCIAL REFORM CLUB.

In New York there has been formed a "Social Reform Club" with a view to improving the relations between employers and employed. If this club fulfils the object for which it is established it will do a most useful work, for, bitter as are the feelings with which masters and workmen regard each other here, they are "as moonlight unto sunlight," and as water unto—vinegar, compared with the class hatreds of the United States. And certainly the objects of the club, as stated in its prospectus, commend themselves both by what its members hope to do and what they purpose to leave undone. The first object is: "To form a common centre at which wage earners and others interested in the labour movement may meet to consider the next step or steps which should be taken in order to improve industrial and social conditions in the city of New York." So far, good; but to us who have known so many societies with vague Utopian aims which thought to do so much and did so little, this large ambition seems to be most wisely limited and conditioned by the second object, "The specific characteristic of this club is to be that it shall take no share in the propaganda of general theories of society, and shall rigidly exclude all so-called 'social panaceas' from its discussions, but shall confine itself to the consideration, the advocacy, and the carrying out of practical measures such as can be undertaken in the immediate future with fair hope of success, and commend themselves to conscience and to common sense."

This is good; this is worthy of a nation which is above all direct, practical, and clear-sighted; which in their own idiom, "gets there." They have got there—to the heart of the social problem, when they discard in advance the "social panacea." We hear so much of schemes of social reform which, translated into practical language, begin thus: First get rid of original sin. Make all employers just and considerate, all workmen honest and industrious, and then—why, then no schemes, no reforms will be needed. The New York Social Reform Club has perceived this, and despairing of eliminating human nature with all its faults from the labour world, confines its attention to "measures such as can be undertaken in the immediate future with fair hope of success."

The constitution of the club is framed so as to do justice to both parties. The membership is to consist as far as possible in equal proportions of wage-workers and of those who are interested in social reform, and the executive council is to consist of seven members who are wage-earners, seven who are not, and a chairman of either class whom these elect. That is to say, the balance of power, to use a phrase more European than American, shall be maintained. Five standing committees are to be formed from the members, dealing with, in the first place, the admission of new members, but taking up wider subjects. One, the Committee on Legislation, is to prepare and, with the approval of the club, present to the legislative bodies of the State Bills which tend to promote the welfare of the wage-workers. Another committee will aid in protecting the rights and interests of the wage-earner in Court, whenever general questions are raised affecting those rights and interests. Perhaps there is no country where such an advisory committee is not needed, and certainly in the United States the Courts are too corrupt to render it unnecessary. Another, but kindred committee, is to insist on the enforcement of laws affecting social reform. The last committee has a wider task. This is the "Committee of Instruction." Three duties are laid upon it; first, the enlightenment of the public on the necessity of organised relations between employers and employés; second, the inculcation of a spirit of friendly co-operation between the members of all classes in the solution of the labour problem; third, the public discussion and the advocacy, on platforms and in print, of such special measures as the club may from time to time agree upon. The club means to exert its influence on public opinion through the press and otherwise, especially in the case of strikes. When either strikes or lock-outs occur the executive council of the club is to do its best to promote conciliation and arbitration. If these methods fail, it purposes to investigate the merits of the question at issue, and then use its influence and its money on behalf of whichever side justice may be found.

If such a tribunal keeps itself really balanced and impartial its value may be immense. It will, of course, be laughed at to begin with; but if it once proves itself just and impartial, both sides will in the end seek its arbitration. But it will require to consist of the right men. We on this side know of whom such associations are apt to consist. Workmen who cannot work, employers who cannot guide, meet and dream over the world as it can never be. If the employers come to bankruptcy and the workmen to the poorhouse through indulgence in impossible theories, another set arise to take their place. It is useless for wage-earners to belong to such a club who are not willing to admit that their master gives thought and capital to his enterprise, and is entitled to some recompense for these, even if he never "takes his coat off his back." It is useless for employers to join it who cannot see that the man who does their bidding should profit by any improvement of prices, any enlargement of market, as well as he. And it is useless for the club to attempt any of its functions if once it gets the reputation of favouring one side, even the side against which the world, the flesh, and the devil are most generally arrayed. Justice for the rich is needed as well as for the poor, and in order that the poor may have justice, and may not be prejudiced in the world's eyes there must be no one-sidedness by their champions. But if conducted as it hopes to be with conscience and commonsense the club may do work of endless value in the labour world.

The question arises, are not such clubs possible and desirable with us? We, too, have labour disputes; we are in the midst of one just now. Is it not possible to create some tribunal where both parties would be represented, not by the irreconcileables of each, but by men who can look with impartial eyes on the rights and wrongs of either side? And apart from direct arbitration, would not a more wholesome frame of mind arise from the existence in our midst of a club which represented both parties, and could see that the interests in which masters and men are united are greater than those in which they are opposed?

PROGRESS IN MEDICINE.

GRAVES' DISEASE (*Continued*).

Ligature of Arteries.—Ligature of all the arteries has been performed by Trondelbenberg[59] in two sittings at an interval of a few weeks, without myxœdematous symptoms arising. Rydygler's[60] experience in 22 cases is the same in this respect. An interesting fact is related by Kocher,[57] viz., that in his six cases of extirpation of goitre for Graves' disease three were fatal, whereas in 870 cases of extirpation for non-malignant goitres he had only had three deaths.

Thyroid Injections.—The effect of thyroid injections in Graves' disease has already been referred to in considering the recent literature bearing on the pathology of Graves' disease, but it will be convenient to include these cases again in the following notes. Kocher[61] believes that the favourable effect of thyroid extract in Graves' disease may be explained by the fact that acute cachexy, with symptoms of tetanus, supervened in some of his cases in the first few hours following extirpation of a goitre or ligature of the thyroid arteries, suggesting auto-intoxication by retention of a toxic substance formed in the nervous system itself or in some other organ. It is known that these symptoms rapidly yield to ingestion of thyroid juice, which thus appears to neutralise the toxic substance in question. This led him to suggest an abnormal irritation of certain parts of the nervous system by toxic products formed in the latter or in some other organ, capable of determining hyperplasia of the thyroid gland, which is called upon to furnish in larger quantities the neutralising substance. Hyerplasia of the thyroid, then, constitutes a means of defence on the part of the nervous system against injurious action of certain toxic substances elaborated in the organism. Later on, in consequence of degeration in the gland, symptoms of myxœdema supervene.

Several observers have employed thyroid extract without improvement, viz., Madison, Taylor,[62] Joffroy,[63] while Voisin[64] reports excellent results in two cases (four grammes of gland daily), and favourable results are reported by Bruns, Reinhold, Béclere, and Bogrof. Voison believes that impaired quality of the thyroid secretion is the principal cause of the disease. Thyroid feeding doubtless destroys the toxins which the diseased thyroid gland throws into the circulation, or else it must be assumed that the ingested substance makes up for the insufficiency of the secretion of the diseased gland. He believes in the former hypothesis, for in one of his patients, in whom the thyroid treatment was irregularly administered, diarrhœa, emotivity, tremors, and palpitation reappeared within a few days after suspension of the treatment, and disappeared again two days after its resumption.

Electricity—We have referred to cases recorded by Tuffier[51] and McLosh,[48] in which electrical treatment had no effect. Bordeer[65] reports two cases treated with much benefit. The applications (Faradaic) by Vigouroux's method were: (1) To the upper branch of the facial nerve and to the orbicularis palpebrarum, half a minute to each side; (2) to the neck between the hyoid bone and anterior border of the sterno-mastoid, the electrode pressed deeply over the carotid artery, one and a half minute each side; (3) over the thyroid swelling for five minutes; (4) over the precordium for three minutes. The thyroid muscles were also made to contract a few times at each sitting. Treatment three times weekly. Indifferent electrode applied to the nape of the neck throughout. Boyd[66] records a case in a man, age 32, who, after suffering from anorexia, repeated bilious attacks and impaired digestion, developed Graves' disease, large thyroid, proptosis, pulse 150, and marked excitability. The treatment consisted in iodide, hydriotic acid, digitalis, galvanism daily over the thyroid, and rest, physical and mental. At times ice-bags to the thyroid when the excitement was very great. Result—improvement in every respect, proptosis greatly diminished, pulse 80-90, no excitement, and thyroid reduced; he was able to resume work. Joffroy[67] strongly recommends either galvanism or faradism, the negative pole applied to the heart, belly, and thyroid, while the positive is applied to the nape of the neck.

Climate.—Glax[68] mentions five cases greatly improved by the mild sea climate of Abbazia. He remarks that this very favourable action of sea air has previously been noted in Graves' disease.

Drugs.—Belladonna is rejected by Joffroy[69] as unreliable, but he believes in the use of strophanthus, bromide of potassium, and antipyrine. The application of ice and of cold douches to the thyroid is commended by Joffroy, Boyd,[70] and Fridenberg.[71] The two latter practitioners also advocate digitalis; Joffroy prefers strophanthus; Chibert[72] speaks of good results obtained by him with salicylate of soda. In each of four cases marked improvement took place in a few days. In others the symptoms returned on suspending the drug. The writer was led to try this drug in the first instance by finding a family arthritic history. In one case, if the patient was over-fatigued or chilled, the salicylate, which had been discontinued after a lengthy period of improvement, was resumed to prevent return of the symptoms. Trachewsky has found that sodium phosphate (three to four grammes daily) causes marked improvement in cases of Graves' disease.

The effects of the administration of thymus gland have already been related.

[58] Med. Week, Apr. 26, 1895. [59] Ibid. [60] Ibid. [61] Med. Week, Mar. 1, 1895. [62] N. Y. Med. Jour., Nov. 24, 1894. [63] Med. Week, 1895, p. 333. [64] Ibid. [65] Ther. Gaz., Mar. 15, 1895; Arch. d'Elect. Méd., Oct., 1894. [66] Med. Rec., Mar. 30, 1895. [67] Prog. Méd. XIX., 13, 1894. [68] Wien. Med. Woch., Mar. 2, 1895; B. M. J. Supp., Apr. 6, 1895. [69] Progrès. Med. XIX., No. 13, 1894. [70] Loc. cit. [71] Med. Rec., July 13, 1895. [72] Journ. de Méd., Apr. 10, 1895; Sup. B. M. J., June 8.

DISEASES OF THE DIGESTIVE ORGANS.

Appendicitis.—It is gradually becoming recognised that local causes and injuries cannot explain all cases of this affection. Sutherland,[1] in discussing the work that has been done on this subject, refers to Bland Sutton's theory that the appendix is an abdominal tonsil, arguing both from the excess of lymphoid tissue it contains, and from the similarity of the inflammatory attacks to which it is subject. From it are produced numbers of leucocytes which destroy the microbes found in such hosts about that part of the intestinal tube. Frequently the primary change in the disease is an inflammation of the tissues of the appendix, and without constriction or ulceration.

This may be caused by a poison such as that of rheumatism, and the effect of the inflammation is that the protective power of the appendix is lessened, micro-organisms gain entrance, and a septic state follows, just as in rheumatic tonsilitis. Sutherland has previously adduced cases in which manifestations of gout or rheumatism alternate or coincide with appendicular symptoms. The lymphoid tissue in early life is very active, and it is then that we most often meet with attacks. Chills, too, are frequent precursors, over-eating, general aching pains, and malaise may precede others, even an attack of tonsilitis may be the first symptom before appendicitis appears. Full doses of salicylates at the outset will sometimes cause the abortion of the disease, and the author would even add two or three grains of calomel. Brazil[2] reported two cases of rheumatic appendicitis, in one of which articular symptoms were also present. Both recovered quickly under salicylates. J. E. Blomfield[3] mentioned a family which suffered severely from rheumatic attacks, and out of them two developed appendicitis; one of them was rapidly cured by salicylates. T. E. Frazer[4] speaks of having attended several others which yielded to the same treatment; but, of course, the diagnosis is open to question in many of these cases. Though some such poison as the rheumatic may cause the first stage of an attack, infection by streptococci or the colon bacillus soon follows, and exudation produces compression of the tissues. Now in the narrow tube of the appendix this may cause necrosis from tension, or at least render the anæmic tissues still more vulnerable to bacteria. R. J. Morris[5] believes that infection by the colon bacillus only produces a temperature of 100 deg. or 101 deg., while with streptococci a much higher degree is reached. Even mild cases may cause, among other complications, embolic abscesses in the liver, and this when appendicitis has not been suspected. At the German Congress of Internal Medicine a warm controversy took place between those who, like Sonnenberg, would differentiate between catarrhal and suppurating typhlitis, and the adherents of Sahli, on the other hand, who regard all forms of typhlitis as due to a purulent inflammatory focus in the appendix. The latter school insist on the infective origin of every case, and the inability of coprostasis to produce the disorder. Still, Sahli confesses that spontaneous recovery does often occur, and where signs of suppuration have not appeared, advises medical treatment at first. He uses the ice pack, small doses of opium, rectal feeding, and leeches, but watches without ceasing for the first symptom of suppuration to advise operation. Sonnenberg[6] agrees that in deferring operation there must be no great change present in temperature and pulse, or in facial expression. However, many fatal cases have shown little alteration in any of these respects, and Henrotin[7] warns us also to watch the tumour in the flank that it remains well defined, deeply situated, and not variable in size or consistence, otherwise to operate without delay.

The question of giving aperients in mild cases is an important one. W. Schell[8] and many others hold that neither salines nor cathartics are desirable even in the mildest cases, for the bowel can be unloaded of decomposing matter by an enema without equal risk of opening perforations and breaking down protective adhesions. Indeed, this seems to be now the generally accepted view, though some of those who believe in a simple catarrhal inflammation still employ aperients in the earlier stages. Less importance is attributed than formerly to Concretions. Rochaz[9] has, however, collected copious statistics as to their frequency, and thinks they have much to do in causing the affection. Some operators have found them in the majority of cases, and others in only 1 or 2 per cent.

The Duodenum.—Various forms of cancer may occur primarily here; the diagnosis is difficult, as the disease may simulate pyloric stenosis, or cancer of the lower bowel. In some cases there is permanently a return of the bile and pancreatic juice into the stomach.[10] Simple ulcer is generally found close to the pylorus, and is single, round, and specially apt to cause perforation if situated on the posterior wall of the bowel. The pain felt comes on usually from two to four hours after a meal. Letulle[11] holds that ulceration is often unsuspected, and found it in 8 per cent. of post-mortems. Perry and Shaw,[12] in the Guy's Hospital Reports, discovered simple ulcers in ·4 per cent. only, and these were three times more frequent in males than in females. In those dying of burns ulcers occur to the extent of 3·3 per cent., and, according to some authorities, are due to the absorption of pyridine produced by the burnt fat. Perry and Shaw regard them as septic in origin. Other septic states, such as gangrene and bed-sores, are often accompanied by similar ulcers. They found 16 cases in which ulcers accompanied Bright's disease.

Colitis.—Hale White[13] draws attention to three forms of this disease—simple, membranous, and ulcerative. The two former may be chronic. Milk diet, rest in bed, bismuth, and catechu are valuable in the simple form. In the membranous and ulcerative types all treatment is unsatisfactory; the connection with Bright's disease and gout, and the possible production of liver abscesses must be remembered. Several cases of membranous colitis have been detailed by C. P. Crouch,[14] who emphasises the uselessness of treatment, while noticing that the health may be little affected by the disease. Wilson[15] advises acid. hydrocyan. dil. m. iii. after food. F. C. Wood[16] found Dr. Ralfe's prescription of a drachm of castor oil at night and m. x. of ol. terebinth every morning efficacious.

[Many other cases have been recently reported, and the abstractor recently met with one following after recovery from typhoid which resisted every form of treatment.]

Dysentery.—W. C. Weber[17] recommends small doses of calomel, followed by bismuth and salol, injections of ice-cold water, and, for the chronic form, mentions injections of nitrate of silver or quinine. Gassar[18] regards the anguillula stercoralis as a frequent cause, and doubts the importance of the amœba coli, since the injection of sterile vegetable matter produced attacks similar to those where the amœba was found. De Silvestri[19] showed that a certain diplococcus could also cause it. In a minute discussion of the treatment of every type of dysentery, Sir J. Fayrer[20] emphasises the value of ipecacuanha, dieting, and, in chronic cases, of turpentine, bael fruit, and especially of a change of climate. A plain milk diet, with rest in

bed, will sometimes effect a cure in intractable cases.[21] G. Thin[22] finds that, where this treatment is difficult because the patients cannot swallow enough milk, milk evaporated to half its bulk with frequent stirring can be often taken with success, and forms an invaluable food. H. Gallay[23] relies on a daily injection of nitrate of silver, gr. xx. to the litre, after washing out the bowel. This should be retained for two or three minutes, and used daily for two months. No special diet or medicine is required.

Minor Ailments.—Morning diarrhœa may possibly be a form of colitis. F. Delafield has noticed that it is far from uncommon and may go on for years. Some of the most obstinate cases pass much mucus in the stools. Castor oil in five or ten drop doses has seemed to him to do much good. W. H. Draper found that a nitrogenous diet without any sugar or fruit generally brought relief. On the other hand, Beverley Robinson believed the affection to be malarial, and recommended bark and arsenic.[24] J. C. Wise regarded it as the result of dyspepsia in the upper part of the digestive tract and recommends naphthol and change of air.[25] Summer diarrhœa appears closely connected with the temperature of the soil, for Priestly has noticed when it rose above 56 degrees the mortality from diarrhœa soon commenced.[26] Tannigen, as a remedy for chronic enteritis, has been tried by C. Künkler, who found it very valuable in daily doses of three to seven grains in boiled water.[27] Rectal injections or lavage by two or three quarts of water containing twenty grains of sulpho-carbolate of zinc are also recommended by a writer in the *Therapeutic Gazette*, April 16th. The value of naphthol-bismuth in stopping fermentation and other changes in the intestines is strongly urged by H. Engel, who quotes the investigations of Von Fincke and others, and reports many cases showing the powerful antiseptic action of this drug on the intestines.[28] Minute repeated doses ($\frac{1}{50}$ to $\frac{1}{10}$ grain) of calomel are again advocated by W. B. Stewart. He insists on the use of a pure drug, and has it carefully triturated with sugar of milk.[29] A number of cases of poisoning through overdoses of drugs administered by the rectum have led to special legislation in Germany,[30] and indeed the danger is one which must never be forgotten, as more constant use is made of rectal feeding and medication. Some doubt has been thrown on the activity of magnesium-sulphate when administered hypodermically, but both Fincke and James Wood have found it successful as a purgative in 70 per cent. of their cases. Wood, however, failed when using the tabloids of this drug, and succeeded with an ordinary neutral solution of two or three grains.[31] Among remedies for tapeworm the pelletierine of Tanret (9½ grammes of the sulphate) is recommended to be taken fasting with a little tannin. The usual aperients should be given, but the drug is only suitable for adults.[32] Masius notices the occurrence of amaurosis after repeated doses of male fern. Eichorst had previously met with this result, which he thought might be prevented by giving castor oil at the same time.[33]

[1] Lancet, Aug. 24, 1895 [2] B.M.J., May 25. [3] B.M.J., Sep. 14 [4] B.M J., June 15. [5] N.Y.Med.J., Feb. 27. [6] Med. Week, Ap. 19. [7] Chicago Clin. Rec., Ap. [8] N.Y.Med.J., Ap. 20. [9] Med. Chronic, March. [10] Am J.M.Sc., Ap. [11] Med. Chron., Dec. [12] Med. Chron., Jan. [13] Lancet, March 2. [14] Bristol M.C.J., Ap. [15] Lancet, Jan. 5. [16] Lancet, Jan. 12. [17] Med. Rec., March 30. [18] B.M.J., May 25. [19] Lancet, Feb. 16. [20] Pract., Dec., 1894. [21] Lancet, July 6. [22] B.M.J., Feb 9, [23] Lancet, Jan. 19. [24] Med. Record, May 11. [25] Med. Rec., June 22, [26] B.M.J., May 11. [27] Lancet, Ap. 20. [28] N.Y.M.J., March 30. [29] Med. Rec., May 11. [30] Am.M.S. Bulletin, Ap. 1. [31] Ther. Gazette, Jan. 15. [32] B.M.J., Feb. 16. [33] Med. Week, July 5.

Progress in Obstetrics.

Abdominal Section in Puerperal Peritonitis.—Noble[1] discusses the indications for this operation, and comes to the following conclusion. This operation does not hold out the least prospect of cure in ordinary cases of acute general lymphatic peritonitis, because, although the peritoneal cavity may be freely irrigated and drained, it is impossible to get at or remove the infective agent. It may be called for in cases of localised purulent peritonitis, but it is nearly always limited to cases of peritonitis due to rupture, bruising or twisting of an ovarian cyst, and to those cases where pus, which existed previously in the tubes or ovaries, has been set free and so excited general peritonitis. The operation of vaginal hysterectomy in cases of septic endometritis following abortion or childbirth is not likely to find many advocates, because if the infection is limited to the uterus it is quite unnecessary, and in cases where the infection is not limited to the uterus it is absolutely useless. Baldy[2] relates two cases in which he performed this operation after a miscarriage; in each case the infection had spread into the broad ligaments, and both the patients died.

The Use of the Curette in Cases of Puerperal Infection.—It is still an open question if it is desirable to use the curette in complications following full-term delivery. Demelin[3] states that the chief indication is infection, but he also recommends curettage in cases where a portion of the placenta is retained and has begun to undergo decomposition. He further asserts that in febrile conditions associated with retention of a thickened and hypertrophied decidua the curette should be used if the fever does not yield in three or four days to uterine irrigation. Perrin[4] describes fourteen cases treated in this manner by Auvard with the object of demonstrating that curettage of the uterus is the most certain means of obtaining rapidly a fall of temperature. He confesses, however, that the fall of temperature is not immediate, and that usually on the first night after the operation the temperature is higher than before. He then says that on the next day, though sometimes not for two or three days, the fever disappears. The value of this paper is much diminished by the fact that the majority of the cases narrated are cases of fever arising after abortion, and not after full-time delivery. Dumont[5] points out the dangers and complications that may arise from curettage of a recently-delivered uterus; he finds that it is impossible to remove the whole of the infected tissue in cases of septic endometritis following childbirth, because of the size of the cavity and the softness of the uterine wall, and thus the curette may be the means of opening the door to general infection. Severe hæmorrhage occasionally follows the operation, and in some cases the uterine wall has been perforated.

Lusk[6] strongly condemns the use of the curette in cases of endometritis following child-birth. He asserts that these cases will get perfectly well if let alone, and that by the uncalled-for use of the curette and intra-uterine douche severe and fatal complications may arise, and this is probably the experience of anyone who is constantly called on to see and deal with these cases.

Symphysiotomy.—It is probable that before long the value of this operation will be more fully recognised in this country, as up to the present its difficulties and dangers have been much exaggerated. The chief obstacles to its popularity in England up to the present have heen (1) the supposed difficulty in performing the operation in the patient's own house; (2) the fear that the division of the symphysis may afterwards interfere with the patient's power of locomotion. Greater familiarity with the operation will do much to dispel the former objection, and experience goes to show that the fear of bad after-results is unfounded. The work of Pinard[7] and his colleagues is that which demands the greatest attention. In 1894 this operation was performed twenty-two times out of 2,147 cases. Of these twenty-two there were three maternal deaths, and two of these deaths were attributed to septicæmia contracted before admission. In none of the cases was any special difficulty encountered, nor any serious hæmorrhage or injury to the soft parts, and thirteen of the patients were primiparæ. In none of these nineteen cases were any unpleasant after-effects noticed, and in one case the operation was performed a second time. If the head is delayed by pelvic contraction, provided the contraction is not too great, this operation is always performed at this institution, forceps, version, and craniotomy having been abandoned. In 1892 eighty-five cases were reported with the loss of ten women and twenty-four children. In 1893, 148 cases were reported, with the loss of eighteen women and twenty-nine children.

Rupture of the Uterus.—Dr. Edgar[8] writes about a case that was brought under his notice. For five hours she was under the care of a midwife, who stated she gave no ergot, and only made two vaginal examinations. She was then handed over to the care of a physician, who made several unsuccessful attempts to deliver by version, and next morning sent the patient into the hospital. No difficulty was then found in turning and delivering, but the placenta failing to appear an examination was made, and revealed a utero-vaginal rupture of the genital tract. The umbilical cord was then followed up, and the placenta removed from among the intestines in the peritoneal cavity.

The woman died two hours and forty minutes after delivery, and it was found that death was due to internal concealed hæmorrhage, for several pints of fresh blood were found in the abdominal cavity, and the hæmorrhage had evidently come from the left uterine artery, which had been completely torn across. This case illustrates the hopelessness of expectant treatment of uterine rupture by gauze drainage, where the rupture has involved the uterine artery, and where internal hæmorrhage has been going on into the peritoneal cavity.

As a rule, in these cases laparotomy only adds to the shock previously sustained, and the patient is almost invariably lost. Statistics from the Vienna Maternity Hospital show this very plainly. They have saved about 50 per cent. of the patients treated on the expectant plan. The haphazard introduction of gauze is quite likely to cause further tearing of the uterus, which is generally in these cases in a friable condition, and unless the packing is carefully and systematically done one can hardly expect it to be an efficient means of controlling the uterine hæmorrhage. Dr. Robert Murray speaks strongly against immediate laparotomy in these cases, notwithstanding the fact that most of the text-books lay it down as the usual and proper method of treatment. The mortality by any treatment appears to be about 75 per cent.

[1] Pract., Aug., 1895. [2] Amer. Gynæcol. and Obst. Journ., April, 1895. [3] Arch. de Tocol et de Gynécol., March, 1895. [4] Ditto. March, 1895. [5] Ditto. March, 1895. [6] Amer. Gynæcol and Obst. Journ., April, 1895. [7] Brit. Med. Journ., Aug. 10, 1895. Annal. de Gynæcol., Jan., 1895. [8] N.Y. Med. Journ., May 5, 1895.

EDITOR'S LETTER-BOX.

[Our correspondents are reminded that prolixity is a great bar to publication, and that brevity of style and conciseness of statement greatly facilitate early insertion.]

SAILORS AND DEFECTIVE VISION.

THE REV. CHARLES HOPKINS, Abbey Camp, Alton, Hants, writes: I have read with great interest and satisfaction your outspoken article on the "eyesight examination system" for officers in our merchant service, as now conducted by the Board of Trade. I have been engaged in work amongst our merchant seamen for over ten years, and case after case bearing upon the hardships and injustice which you expose has come under my notice. Only last week a young fellow who has completed his apprenticeship wrote to tell me he had passed his examination satisfactorily in seamanship and navigation, but was disqualified on account of defective eyesight. The mother of this young fellow (a widow of very limited means) made a generous effort, and raised the necessary premium with which to apprentice her son in a good firm, looking forward, of course, to the time when he would advance in his profession and keep her in her old age. He must now leave the sea, or else remain as able seaman all his life at wages ranging from £2 10s. to £3 a month. Justice demands that the Board of Trade should require an examination in eyesight before a boy signs his indentures. The fact is many shipowners care little or nothing about the future of a lad so long as they can secure the premium, and make sure of being able to keep it. It matters little to them whether a lad runs away, or "gives up" the sea, or is disqualified from advancing in his profession, for he invariably has to sacrifice the premium already paid, and there are always plenty of others ready to come forward to take his vacant place, and repeat the same old game of chance. You have only to take up a morning paper to see how constantly such apprentices are advertised for. I have approached the Board of Trade successfully on other subjects, and if you will kindly furnish me with any evidence in your possession or place me in communication with those who can and will do so, I shall be only too glad to see if it is not possible to move the Board of Trade to make such examination of sight compulsory before a boy signs his indentures of apprenticeship.

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A. G. T. writes: The article entitled "The Fate of Colour-Blind Sailors," which appeared in your issue of the 2nd inst., deserves to be copied *in extenso* by the leading organs of the lay press. Mr. P. H. Bickerton has earned for himself the gratitude of the whole seafaring class (especially the lower grades) by his exposure of a state of things which should never have been possible to exist. It may interest some of your readers to note my brother's case. He, in company with an influential friend, sought the chairman of a leading line of mail steamers with a view to obtaining a berth as a junior officer on board one of their vessels. The sight test was applied, and my brother failed—this, after two years on a training ship, a four years' sea apprenticeship, and the obtaining of a second mate's certificate! The Board of Trade, we are told, apply no sight test till a candidate presents himself at a first mate's examination. The above occurred nearly three years ago. Needless to add, the whole of my brother's training was thrown away, and his life's prospects thus cruelly dashed to the ground.