

showed simple fibrous structure. Five years have elapsed since second removal. No return. *Price Brown.*

**Manley, Thomas M.**—*Thyroid Tumour.* "Journal of Medicine and Surgery," August, 1900.

This is the report of a tumour removed from the neck of a young woman. The growth rendered phonation and respiration difficult, and produced great disfigurement. No exophthalmia nor marked evidence of goitre. The neoplasm was limited to one lobe, and hence removal was not likely to be followed by myxœdema. In operating the pedicle was securely ligated by the chain-suture before detaching the tumour near the isthmus. Convalescence was rapid, with disappearance of all symptoms. *Price Brown.*

### E A R.

**Blake, Henry.**—*Suppurative Otitis ; Mastoid Disease ; Cerebral Abscess ; Necropsy.* "The Lancet," March 31, 1900.

Youth of seventeen was admitted to hospital for pain and discharge from left ear of three weeks' duration. There was a purulent discharge, and a small polypus could be seen growing from the posterior wall of the meatus.

The ear was douched with boric lotion and insufflated with iodoform. Chromic acid was applied to the polypus. On September 25 (*i.e.*, after three days) the temperature rose to 104.5°, but after cold sponging it fell to 100°. For the next three weeks the temperature was very irregular, ranging from 98.4° to 103°, but the general condition seemed to improve, and operation was deferred. On October 2 the patient vomited, and he began to suffer from severe paroxysmal headaches. On the 16th the mastoid was trephined, and a few drops of pus escaped. A communication was made between the mastoid antrum and the meatus. The temperature, however, remained irregular, ranging from 100° in the morning to 103° in the evening, and on the 24th the patient had a rigor. On the 28th the mastoid opening was enlarged, and some bony detritus was cleared out. On the 30th the temperature rose to 102°. There were swelling and tenderness along the line of the internal jugular. On the next day the swelling and tenderness had extended along the line of the subclavian vein. Carbolic fomentations were applied, and in two days these symptoms had subsided. On November 1, and again on the 3rd and the 5th, the patient vomited. On November 1 the temperature fell to 97°, but on the 2nd it rose to 102°. The patient was now rather drowsy, and his cerebral processes became very slow. On the morning of the 6th the temperature was normal, and the pulse rate was 60. At 10 a.m. the temperature fell to 96° and the pulse rate to 48. There were slight paresis of the right facial nerve, and a slight tendency to ptosis of the left eyelid, and the left pupil was dilated. The fundus oculi looked healthy. In the evening Dr. Blake trephined over the temporo-sphenoidal lobe, entering the trephine at a point about 1¼ inches behind and above the centre of the external auditory meatus. An incision was made in the dura mater, and an exploring needle was inserted into the temporo-sphenoidal lobe. Pus was at once found, and about 1 ounce escaped. The opening was enlarged with sinus

forceps, and a rubber tube was inserted and stitched to the scalp. On the next morning the temperature was 97° and the pulse was 64. To insure better drainage, the rubber tube was replaced by a silver cannula. In the evening the temperature had risen to 102° and the pulse rate to 84. The following morning the temperature was 101°, but it gradually rose to 106·2°, and the patient died in the afternoon.

*Necropsy.*—A post-mortem examination was made on the following day. There was a small ragged opening about the middle of the inferior temporo-sphenoidal convolution where the tube had been inserted, and around the opening there was an area of about a square inch where the brain substance was very thin and friable. On cutting into the brain, an abscess containing a quantity of pus was found in the temporo-sphenoidal lobe. The cavity had a diameter of  $1\frac{3}{4}$  inches, and projected into the descending horn of the left lateral ventricle. The abscess cavity was lined by a pyogenic membrane  $\frac{1}{8}$  of an inch in thickness, which was very easily detachable from the brain substance. There was no thrombosis of either the internal jugular vein or the lateral sinus, and there was no indication of meningitis.

*Remarks by Dr. Goodall.*—The diagnosis when the patient first came under observation was septic absorption from purulent otitis, and it was only the continuation of the symptoms after douching, etc., that indicated mastoid disease. After the second operation there was reason to believe that there was venous thrombosis, and it was only the rapid extension of the condition that prevented operation. Subsequent events proved the decision to defer operation to have been fortunate. The most interesting feature of the case was the fact that the abscess, which had a thick pyogenic membrane, must have existed for weeks before it gave rise to any symptoms. The patient's mental processes were certainly slow, but it so happened that his sister, who was in hospital at the same time suffering from chlorosis, showed much the same peculiarity. It was therefore impossible to determine when the slow cerebration became pathological. Definite symptoms of brain abscess only showed themselves two days before the boy died.

*StClair Thomson.*

**Gray, Albert A.**—*The Production of Local Anæsthesia in the Ear.*  
"The Lancet," April 21, 1900.

In acute inflammation of the middle ear, no local anæsthetic has as yet been found which is at all satisfactory; and the pain, which is often severe in this affection, has frequently to be relieved by incision either under a general anæsthetic or, if without it, by subjecting the patient to indescribable agony, though it be only of short duration.

With a view to finding some vehicle which would dissolve cocaine (or eucaine, as suggested by Horne and Yearsley), and at the same time penetrate the tissues rapidly without destroying them, the author tried various solvents. The first which suggested itself was alcohol in the form of rectified spirits; but this was absorbed too rapidly, and, moreover, it caused in some cases rather severe burning pain before the cocaine took effect. Various combinations of the volatile oils with rectified spirit were next tried, but as these solutions were only to a slight extent miscible with water they proved unsatisfactory. Finally, he tried a mixture of anilin oil and rectified spirit, and this met the requirements of the case admirably. It penetrates rapidly, is miscible to a considerable extent with water, and does not destroy the tissues. For experimental purposes the following solution was used: 5 parts

of cocaine hydrochlorate, 50 parts of dilute alcohol, and 50 parts of anilin oil. This gives a strength of a little less than 5 per cent. of cocaine.

In conclusion, it may be well to indicate shortly the theoretical considerations which led to the results described above. This is important, because if they are kept in mind the surgeon may be able by various artifices, which a little imagination and a knowledge of elementary physical laws will suggest, to obtain the result he desires when a blind rule-of-thumb method of procedure has not been able to bring about this result.

To effect penetration through the outer layers of the tympanic membrane dehydrating agents are the most suitable. By abstracting the water from the tissues, the latter contract and the fluid passes through the interstices produced by this contraction into the deeper layers until it reaches the nerve-terminations in the innermost layer. Both alcohol and anilin oil are agents of this description, and for general purposes a solution composed as follows is best suited for the production of anæsthesia: 5 or 10 parts of cocaine hydrochlorate, 50 parts of dilute alcohol, and 50 parts of anilin oil. This solution is equally suitable for operations on the tympanic membrane, on granulations, or for the removal of ossicles. In the few cases in which we desire to operate upon a dense thickened membrane, the penetrating power of the solvent must be increased. This is best done by using absolute alcohol in place of rectified spirit and increasing the proportion of anilin oil, as shown in the formula above.

Further, the laws of osmosis must be kept in mind. Therefore, in order to effect penetration, a large proportion of the solution should be used. If this be not done, osmotic equilibrium is soon established and penetration will cease. In practice, the author always fills the external meatus with the fluid, and has never seen any serious effects of cocaine poisoning by so doing. The worst that has occurred has been a trifling giddiness, that passed off in the course of not more than five minutes. Nausea was noted in one case, but it did not occur until more than two hours after the patient had left the dispensary, and as she was subject to such attacks, it is very doubtful if the cocaine was to blame. Palpitation has not occurred in any of the cases.

The rendering of the membrane transparent depends, of course, upon the laws governing the refraction and reflection of light. In ordinary circumstances the indices of refraction of the various constituents of the membranes are of very different magnitudes, and as these different constituents are in close juxtaposition, there is great reflection and dispersion of the light. By infiltrating the tissues with the anilin oil, they all come to possess the same index of refraction, or approximately so, and light penetrates the membrane much more easily. To effect this purpose, the oil should be mixed with as little alcohol as possible, though, of course, the process of penetration takes a longer time. Other substances might be tried for this purpose, such as clove oil and glycerine; but the author has not carried out investigations in this direction very far, and cannot speak with any degree of certainty in the matter.

The beneficial effect which anilin oil seems to exercise upon suppurative affections of the middle ear is probably due to its power of extracting water from the tissues, the same principle, in fact, as that to which rectified spirit owes its value. Anilin oil dehydrates more slowly, however, and is also more slowly absorbed; further, it is not

so volatile, and its effect is less violent, but lasts longer. In practice it will be found that the mixture of equal parts of anilin oil and spirit is very suitable. Ten or 15 minims may be dropped into the ear and left there in the usual way once or twice daily. Various antiseptics may be dissolved in the solutions, but they do not seem to do much good, and some of the more powerful ones may do harm. Anilin oil seems especially indicated in cases where there are cholesteatomatous masses and much débris. It softens these masses, and aids in breaking them down probably by its great power of dissolving fats and oils.

The method of producing local anæsthesia described in this paper is, of course, applicable to other mucous surfaces. The author used it for throat work; and although there is at first a slight burning sensation, the subsequent anæsthesia is more complete than with the aqueous solution. A 5 per cent. solution is quite strong enough for throat work, and, owing to the large surface for absorption, he never uses it stronger. Another useful solution in throat work is a 5 per cent. solution in equal parts of glycerine and rectified spirit.

The writer is indebted to Professor Stockman for some interesting facts concerning the pharmacology of anilin oil. Of these, the most important is that the medicinal dose is 7 minims. Care therefore should be taken that not more than this amount may be absorbed, though in the ear such a contingency is very unlikely.

*StClair Thomson.*

**Lake, R.**—*Complete Ossiculectomy. Removal of Remains of Drumhead, Larger Ossicles, and Outer Attic Wall in Chronic Otitis Media.* "Lancet," March 10, 1900.

Removal of the remains of the tympanic membrane and of the larger ossicles has been a recognised mode of treatment for chronic suppurative disease of the middle ear for some considerable time. The results of Continental surgeons have been reported, and at various times papers have appeared in this country, of which one by Mr. A. Cheatle is fresh in the minds of many as a particularly useful expression of the opinions of a number of leading specialists at home and abroad. In none of the papers which have appeared of recent years is there any tabular list of cases by which one can estimate either the value of the operation or the class of cases for which it should be done or its results as regards the hearing power.

The table which accompanies this note shows some of these points. Thus, it is seen to be a very successful operation, that it is entirely free from danger to health, and finally that the hearing is often improved, and rarely if ever diminished. It is not all cases of suppurative otitis media that yield to the operation. Unfortunately, many require the radical operation, foremost amongst these being those accompanied by cholesteatomata of the attic and cases of destruction of the wall of the meatus in the posterior surface. In these cases the surgeon should perform this operation, following it up later with the larger one should it prove insufficient.

The indications for the operation appear to be divisible into two main subdivisions—those for the cure of chronic suppurative otitis and those for the improvement of hearing after the cessation of discharge. It is difficult, and indeed impossible, to place any time-limit as to how long chronic otitis media suppurativa will remain harmless even when unaccompanied by any other symptoms. As a

general guide, one may say that this duration is directly affected by the effects of treatment and by the situation of the perforation. An uncomplicated otorrhœa which has resisted all forms of treatment for six months is certainly a case for ossicectomy. This becomes more imperative when the perforation is situated in the attic or upper posterior segment of the drumhead.

The indications for the operation are briefly as follows: 1. Intractable disease of the attic with a perforation in Shrapnell's membrane, especially if accompanied by definite caries or deafness. 2. Intractable disease with perforation in the posterior superior quadrant. 3. Intractable disease with considerable destruction of the membrane in any other situation. 4. Residual deafness after suppuration without nerve deafness. Any more serious condition becomes a case for the radical operation, but in the foregoing there is justification for attempting to avoid more serious measures. The operation itself is so well known and so clearly described in text-books that all the writer adds is to emphasize the necessity of removing the anterior attic wall. This may be done with any of the cutting forceps, as Krause's, or by means of Cheate's burr, which enables a more radical operation to be done. The use of the author's crotchet-shaped curettes, which were first recommended by him in 1896 as a means of removing the incus and clearing out from the attic granulation tissue and detritus, has much simplified the hitherto difficult task of removal of the incus. By its use the smallest particle of a necrotic incus can be removed with certainty from the iter ad antrum. The instrument in question, of which an illustration is given, is introduced into the attic after removing the malleus: it thus occupies the place vacated by the head of that bone. The handle is then rotated forwards and grips the incus or what remains of it, and by a forward and downward motion the bone is either dislocated into the tympanum or brought out in the loop of the instrument. As a last precaution the cavity is thoroughly cleansed with Lister's strong solution (1 in 20 carbolic, with corrosive sublimate added in the strength of 1 to 500).

These fifty cases are almost equally divided amongst the sexes, but nothing can be deduced from that fact, as the proportion of otorrhœas in the sexes is fairly equal. As to cure, no less than forty-two were cured, although three had temporary relapses, and in several of the remaining eight the patients disappeared before a cure was effected, and some may now be well if all are not. Improvement was noted in the hearing power in twenty-one cases. In three cases hearing returned to normal, in four cases it was very much improved, and in the remaining fourteen the improvement was sufficient to be appreciated by the patients and their friends, and was demonstrated as well by careful tests. The right ear was the seat of disease in twenty-nine cases, and the left in twenty-one cases. The average age of the patient was 22.4 years, and the average duration of the disease was thirteen years. From this table can be derived information on all points save as to the time that should be allowed to pass before taking some radical step to check the disease, and the surgeon must rely upon his own judgment in this matter rather than upon any written rule.

*St Clair Thomson.*

**Regnier, Paul, and Glover, Jules.**—*Radiographical Researches on the Topographical Relations of the Brain, the Frontal and Maxillary Sinuses, and the Venous Sinuses of the Dura Mater to the Walls of the Skull.* "Lancet," February 24, 1900.

Reproductions of three of the radiographs will be found in the "Journal des Praticiens" of September 4, 1897, and also in "La Radiographie." The investigations led to the following results:

1. Regarded in its surgical aspect the topography of the skull and brain may be studied by radiographic methods, allowance being made for the fact that the views obtained inevitably present some very slight distortions. By means of radiography it is possible to see the brain through the skull. More than that, an important guide-mark in the study of the topographical anatomy of the brain and skull is furnished by the circumstance that in the photographic plate it appears to be possible to superpose the outline of the cranial sutures on the outline of the fissures which separate the cerebral convolutions from one another. By these methods the relations between the cerebral convolutions and the walls of the skull, so interesting from the point of view of surgical intervention, can be studied with almost no preliminary preparation, which might have the effect of materially modifying the exact relations between the brain and the skull. Similarly on the radiograph of the cerebral convolutions, viewed through their bony covering, the outlines and the form of the lateral ventricle of the cerebral hemisphere are very exactly traced.

2. The immediate relations existing between the venous sinuses of the dura mater and the skull, and in particular those existing between the lateral sinus and the skull, may be defined both in the child and in the adult. Injections of the venous sinuses of the dura mater made with liquids which ultimately become solid, and which hold metallic substances in suspension, as well as some other devices to the same end, have enabled the authors to see these sinuses very clearly through the bony wall. The radiographs show the lateral sinus.

3. The authors have also been able to study, especially in dried preparations, the extremely variable extent and form of the cavities and bony cells of the mastoid process, as well as of the maxillary, frontal, and sphenoidal sinuses, and of the ethmoidal cells.

4. It has been possible to recognise in the infant and in the adult the exact position with reference to the outside of the skull occupied by the petrous portion of the temporal bone and the three successive levels of the base of the skull. The authors have easily obtained, in specimens covered with their soft parts, the opaque triangular outline of the base of implantation of the petrous portion on the squamous portion of the temporal bone, as well as the outline of the three successive levels of the base in their exact relation to the external wall of the skull.

For details as to the methods of procedure the original paper must be consulted.

It is easy by mere examination with the fluorescent screen to verify the transparency and the condition as to emptiness of the frontal and maxillary sinuses, and perhaps even of the mastoid cells, with much more exactness than by making use of the ordinary electric light.

*StClair Thomson.*