Next day I made an examination of the larynx and tube. I found the latter plugged by a clot of blood. There was an erosion of the inferior (posterior) laryngeal artery and vein on the left side, but not sufficient, in my opinion, to account for the bleeding. As permission to make a complete necropsy could not be obtained, I was unable satisfactorily to determine the true source of the hæmorrhage. But this much I could make out, that the tube as it lay in the larynx had nothing to do with its causation.

2. About the middle of the same month I was requested by another practitioner to insert a tube in the case of a child, aged 3½ years, who suffered from "croup." The immediate result of the operation was most satisfactory, and nothing could have been better than the ease with which the little patient breathed for about seventy-two hours. On the fourth day, in the absence of the family physician, I was hurriedly sent for, and arrived only to find that the child had died just before I reached the house. On removal and examination of the tube I found it blocked by a firm, dryish, purulent mass, which was with difficulty removed, even after immersion for some time in hot water. Inspection of the larynx was not permitted.

I have been unable to find any record of a case similar to the first, in which the tube was blocked by a clot of blood. The fatal result in the second might, I now think, have been obviated by the removal of the tube on the third day. It had been my intention to do so, but the patient at that time was progressing so satisfactorily that I was induced to let well alone. It is now my rule to remove and examine the tube not later than forty-eight hours after its insertion; should this be followed by laryngeal dyspnoea, reinsertion can easily be effected. I venture to think that in the majority of cases all the benefit that is likely to result will have been accomplished within that period.

3. In the case of a child, aged 4½ years, I had considerable difficulty in inserting the tube, and indeed I was not by any means certain that it was left in its proper position in the larynx. I therefore allowed the silken thread to remain attached, brought it out by the mouth, and fixed it by adhesive plaster round the ear. Several hours before death the child gnawed through the thread, and the tube must then have slipped down the gullet, for, on *post-mortem* examination, I found it lying in the lower section of the œsophagus. A curious point was that the little patient was able to drink without difficulty until a short time before death. On making some experiments with the larynx after death I found it not an easy matter to introduce the appropriate tube, on account of the narrowing of the supraglottic portion of the larynx from membrane and infiltration. I would here remark upon the endo-laryngeal distortion which sometimes ensues in diphtheria (membranous croup), and which is best demonstrated by the aid of casts of the larynx. This last case has hitherto been the only one in which I have encountered any real difficulty in inserting the tube.

I have, on a very few occasions, seen the tube expelled by coughing. The probability of this occurrence need not cause alarm, as there is usually ample time for its reinsertion. On one occasion, however, its ejection was followed by immediate severe dyspnoea. Fortunately, I happened to be in the patient's house at the time, and so was able to replace it at once.

The difficulty in swallowing, which is always present to a greater or less extent so long as the tube is in the larynx, is an additional reason why the tube should not be left in an hour longer than is absolutely necessary.

I have elected in this short paper to bring forward some of the causes of failure in, and some of the drawbacks to, this operation, believing that a consideration of these will be more useful than an illustrative record of its advantages—of which it is not by any means devoid. After a fair experience of it, I am inclined to think that the operation is one which has made good its claim to a reasonable trial at the hands of the profession. It is doubtless still capable of improvement, especially in the matter of instrumentation.

Compared with tracheotomy, I would say that the advantages of intubation of the larynx might thus be summarised: (1) readier consent of relatives, (2) greater ease and rapidity of operation, (3) anæsthetic not necessary, (4) subsequent opening of the wind-pipe is not precluded. Its disadvantages are connected with (1) deglutition, and (2) blocking, coughing-out, or swallowing of the tube. Also, in cases of laryngeal diphtheria or membranous croup, it may not permit of such free local treatment of the upper air passage, and membrane might be pushed in front of the tube,

and so cause occlusion. I think the latter objection more of the nature of a hypothesis than of a well ascertained fact. False membrane in the larynx is usually very closely adherent to the subjacent structures, and its detachment is not so easily accomplished by artificial means as some objectors to intubation would have us believe. I am not conscious of having encountered this mishap.

ON MASSAGE OF THE MEMBRANA TYMPANI AND THE OSSICULA IN THE TREATMENT OF CHRONIC CATARRH OF THE MIDDLE EAR.¹

By ADOLF BRONNER, M.D.,

Surgeon to the Bradford Eye and Ear Hospital.

THE most common cause of deafness is the so-called "chronic catarrh of the middle ear," or, as some call it, chronic non-suppurative catarrh, or chronic dry catarrh, or sclerosis, or hypertrophic catarrh, or ankylosis of the ossicula, or adhesive catarrh, or the old-fashioned name, chronic obstruction of the Eustachian tube.

No one can accuse the otologists of not having tried all conceivable kinds of remedies for curing this very common affection. They have blown air into the middle ear through the Eustachian tube with Politzer's bag or with the catheter; they have blown all kinds of fumes and vapours into the middle ear; injected many solutions; they have passed bougies, used electrolysis and electricity; they have incised the drumhead, cut through the posterior fold, divided the tensor tympani muscle; they have removed the whole of the drumhead and also the ossicula; they have even opened the mastoid antrum; they have used many local applications to the mastoid process, and given all kinds of medicines.

Professor Lucae, of Berlin, some years ago recommended as a new method that of compressing the air in the external meatus, thus pressing in the drumhead; and of rarefying the air in the external meatus, thus drawing out the drumhead. He, however, soon gave up this method, because, as he said, it gave rise to hyperæmia and inflammation.

Professor Delstanche, of Brussels, has since taken up this idea, and recommends it chiefly in cases of sclerosis or dry catarrh. He has suggested an instrument by which you can alternately compress and evacuate the air in the external meatus, thus moving the drumhead up and down and with it of course the ossicula. In order to avoid the possibility of irritating the drumhead too much, he has attached the apparatus to a Siegle's pneumatic speculum, so that you can, if necessary, carefully control and watch the operation. The apparatus can also be used as a powerful evacuator, in order to break down any adhesions of the drumhead.

Hommel² recommends pressing the tragus into the external meatus with the finger at the rate of 120 times a minute five to six times a day for one to two minutes. Several authors, among others Professor Rohrer of Zürich, have carefully tested this method, and without obtaining any good results. In fact, Rohrer tells me that in several cases the hearing became decidedly worse after this process.

In 1884 Professor Lucae³ recommended the use of what he calls a "pressure probe" for the treatment of some cases of chronic catarrh of the middle ear. The instrument consists of a probe with an enlarged concave end, and attached to a weak spiral spring. The end, covered with cotton-wool or gum, is pressed on to the short process of the malleus, and moved up and down two to ten times, of course under guidance of the frontal mirror. In this manner you move the chain of ossicula, break down any slight adhesions, and loosen the joints of the ossicula. In some cases this is not at all painful, in others, however, very much so. The local application of cocaine does not seem to relieve the pain at all. Lucae only uses the probe in those cases of chronic catarrh in which Rinne's method is negative, and in which "speech" is imperfectly heard. He has only tried it in those cases in which the use of Politzer's method and the Eustachian catheter had failed to improve the hearing. Out of 44 recorded cases Lucae

¹ Read before the Leeds and West Riding Medico-Chirurgical Society.

² *Archiv für Ohrenheilkunde*, xxiii, 17; "Die mechanische Behandlung des Trommelfells und der Gehörknöchelchen."

³ *Archiv für Ohrenheilkunde*, xxi, p. 84, "Über eine methode für mechanischen Behandlung der chronischen Beweglichkeitsstörungen im schalleitenden Apparat des Gehörgangs."

failed to improve the hearing in 7 cases. There was slight improvement in 14, much improvement in 10, and in 13 the improvement was very marked.

Eitelberg⁴ reports on thirty cases of chronic catarrh in which he used Lucae's pressure-probe. He, however, treats indiscriminately all cases of catarrh, and not only those as selected by Lucae. In a few cases only was the hearing improved, but in no case did the improvement last for any length of time. He succeeded, however, in greatly relieving some cases of tinnitus.

I have in the last two years used Delstanche's and Lucae's instruments in many cases, chiefly in private practice. At first I used Delstanche's method alone, but without any good results. Lately I always first use the Eustachian catheter, then Delstanche's, and then Politzer's bag, at one sitting. The results have in many cases been very good indeed. Of course if used in the manner suggested, it is difficult to say if the improvement in hearing is due to the use of the Eustachian catheter or to Delstanche's, or to both. In several of the cases, however, I found that the use of the catheter alone had failed to improve the hearing.

Only in those cases in which the use of the catheter combined with Delstanche have failed to improve the hearing do I use Lucae's "pressure probe." I have tried it in 64 cases. In one case the deafness became decidedly worse, in 43 cases there was no or very slight improvement, and in 20 cases there was well marked improvement. In 5 of these cases the improvement was permanent, in 7 it lasted from 1 to 10 weeks, and 8 cases did not return, so that the hearing could not be tested again. I also tried the pressure-probe in several cases of tinnitus. In 3 cases there was decided and permanent relief, and in one case the noises stopped altogether. These were all cases in which, as before stated, I had used the catheter and Delstanche unsuccessfully. I followed the suggestion of Lucae, and only selected those cases in which Rinne's method was negative.

In spite of the many kinds of treatment of chronic catarrh of the middle ear, there are, however, many cases which we do not improve and many in which we do not even quite arrest the progress of the disease. But is this wholly the fault of the otologist? I think not. In most cases the patients do not come to us at the commencement of the disease, and only come when they are very deaf, that is, when well marked and often irreparable changes have taken place in the middle ear. How can we expect to improve the hearing in those cases, for instance, in which there is well-marked ankylosis of the ossicula, or where the ossicula are tightly bound down by adhesions, or where the membranes of the fenestra ovalis or rotunda are thickened or calcified? not to speak of those cases in which the disease has spread to the internal ear. I find, as a rule, that when a patient says he is "not at all deaf, but only slightly hard of hearing," he can hear the watch at about two inches on the bad ear, and four to twelve on the good ear, which, he says, is as good as ever it was. If you ask him how long he has been deaf, he will at first say some weeks, or, perhaps, some months, but he will soon concede that he has not heard quite so distinctly for some years. In many of these cases we improve the hearing to a certain extent; then the patient is lost sight of for some time; he comes again only when he is, if anything, deaf than he was before, and then deliberately accuses the otologist, not only of not having done him any good, but often, also, of having made him worse.

In treating chronic catarrh of the middle ear, it seems to me to be of great importance that the disease be discovered and treated early, and that the patient show himself, and, if necessary, be treated every five to six months. We could then arrest the progress of the disease in a great many cases, and often at least prevent the rapid increase of deafness.

There is, I know, a widespread and popular belief, even among medical men, that cases of chronic catarrh of the middle ear are incurable, and that it is useless waste of time and money to undergo any kind of treatment. Against this belief I should like most energetically to raise my voice in protest. I think it is the duty of every medical man to impress upon his patients not to think too lightly of a slight beginning deafness, but to be treated at once, and also to impress upon them that even if the treatment does not relieve the deafness, that it certainly tends to arrest its progress, and that thus the treatment ought to be repeated at certain intervals.

⁴ *Zeitschrift für Ohrenheilkunde*, xiv, page 279. "Zur Behandlung von Mittel-ohrerkrankungen mittels der Lucaeschen Drucksonde."

MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, Etc.

CASE OF COMPOUND COMMUNUTED FRACTURE OF PATELLA, WITH AVULSION OF LIGAMENTUM PATELLÆ: REMOVAL OF THE ENTIRE BONE: RECOVERY WITH FREELY MOVABLE AND USEFUL JOINT.

THE injury occurred in a man, aged 40, and was caused by a fall on the bare knee from a height of seventeen feet. Chloroform was given, and, on examination, it was found that the ligamentum patellæ was torn from the tibia, and, together with the lower fragment of the patella, was lying in a wound—about four inches long—which extended across the front of the knee-joint. There was a smaller wound over the anterior tubercle of the tibia, the skin around was grazed, small pebbles and road dirt being "ground" into the wound and surrounding parts. The lower fragment and ligament, with two or three loose pieces of bone, were removed; the finger passed into the joint felt at either side small hard bodies, which were dissected away with a certain amount of tissue, and proved to be small pieces of bone. A vertical incision, two inches long, was then made and the upper fragment (more than half the bone) was dissected out, a small piece being broken off one side. The joint was then well washed out, and the wounds scrubbed with a hard nail-brush. An opening was made through the external lateral ligament at the most dependent part for a drainage tube, and another tube, passed up into the patellar pouch, was brought out at the centre of the wound. The wound was stitched, dressings applied, and the limb laid on a M'Intyre splint. Full antiseptic precautions were taken. There was a good deal of pain for the first day or two, requiring morphine. The highest temperature was on the second day: Morning, 99.4° F.; evening, 101° F. (pulse 112).

A week after the accident the temperature and pulse were 98° F. and 84, both morning and evening, and the appetite was good. The dressings were changed as required, and the drainage tubes gradually shortened, the anterior one being removed in two weeks, the other, through which almost the whole drainage occurred, in three weeks.

Six weeks and two days after the accident the patient got up, and, with the support of splints, could walk about. The joint was freely movable without pain, and rapidly gained strength. The splints were soon dispensed with, some cotton wool and a bandage giving all the support required.

When seen ten months after the accident the patient could walk with perfect freedom and confidence, could go up and down stairs as usual, and was able to ride on horseback. The only thing noticeable in his gait was a slight swinging movement of the leg as he brought it forward.

REMARKS.—The reasons which induced me to remove the whole bone were: 1. That I might clean the joint and render it thoroughly aseptic. 2. To obviate, as far as possible, all after-irritation from tension, or the separation of necrosed bone. On examining the large fragment I found a pebble firmly fixed in the cancellated tissue, which had escaped detection and could not have been removed by irrigation, and which of course would have caused trouble if it had been left behind.

Penrith.

JAMES ALTHAM, M.B.

A CASE OF INFLUENZA AND APHASIA.

WHILE taking charge of the practice for Dr. Kebbell, the following case, which may not be devoid of interest, came under my notice.

Mrs. W., aged 27, lives in a small low-lying village. Family history good. Her mother and sisters are healthy; her father died of dropsy, apparently of a hepatic nature. She has had the usual diseases of childhood, and has had five children. About three weeks prior to the present illness I attended her at her confinement, which was normal, except perhaps that I was obliged to rupture the membranes. Two days after confinement the temperature was 100°, which I attributed to the breasts. This soon subsided, and in eight days she was up and well.

On April 11th, she was cooking in a small room without a fire, while a current of cold air was playing on the left side of her face.