bly always be anomalous cases that will baffle diagnosis, and can only be determined by post-mortem examination. And cases like the one reported can not be operated upon, unless we establish the arbitrary rule to perforate the mastoid in all cases where middle ear disease exists, together with fever, either high or low, or any cerebral symptoms of a threatening character, regardless of their nature, no matter what other conditions may be present that fully explain their existence.

Dr. Chisolm, of Baltimore, said, as to mastoid trouble, he feels assured that inflammation of the cells exists much more frequently than is generally believed. Those who have occasion to examine sections of the temporal bone are aware of the great variations in the size of the communication from the drum cavity into the dural cavity of the mastoid. When we remember that the membrane lining each is a continuation of the other, we can easily explain why the discharge is often so abundant, owing to the extensive mucous surface. Should the opening be small, as we sometimes find it to be, its closure through swelling of the soft tissues may incarcerate pus and bring about mastoid abscess. As to instrumental interference, in many cases the indications are clear and demand immediate action. In other cases the symptoms are so illy defined that prudent surgeons abstain from making experimental mastoid openings. I have operated on some patients where I thought the indications were clearly defined and yet found no pus. In one such an autopsy exhibited a general phlebitis of all the venous sinuses, but no pus. In another case where we would have opened the mastoid but found the patient too low to undergo the operation, a large blister covering the back of the neck, and one-half drachm doses of the tincture of the muriate of iron, suggested the doing of something for the dying man, brought about such good results as to eventuate in time in perfect restoration. He has seen cases of profuse discharge of long continuance, sequel of acute aural catarrh, with cerebral symptoms coming on in the course of the disease, irregular walk, beside severe pain over the mastoid region, get well without mastoid section. Such cases would also get well, no doubt, with the section, to which much good would be attributed undeservedly, as the sequel has shown. The difficulty in diagnosing the cases that should be operated upon is the more conspicuous the larger our experience, and I find myself shrinking from doing needless work, even when it is not accompanied with much danger in the operative manual. Not to be too hasty in adopting the heroic treatment is a good surgical quality.

Dr. Knapp:—Dr. Greene spoke of the quantity of pus being so large that it could not originate in the tympanic cavity alone, and pointed to the presence of an abscess. I think that the mucous membrane of the tympanic cavity with the adjacent air cells are sufficient to secrete large quantities of pus, just as we see it in the conjunctiva.

The so-called post-aural abscess is, the more I am acquainted with it, regarded to originate in a suppurative of the middle ear, mostly of the attic. The fistula may be difficult to detect, but the more carefully I seek for it the more frequently I find it, sometimes distant from, for instance, as far as an inch above the insertion of the auricle.

The difficulty in the management of middle ear and mastoid inflammation lies in the diagnosis more than in the treatment. Different symptoms, pain; temperature, lack or presence of discharge, presence or absence of external signs are of value, but none of them in itself is pathognomonic. We require the appreciation of all the symptoms, in their combination, to arrive at a diagnosis in which there may be one symptom prevalently to guide us in the localization of the lesion and in our action. This we ought to keep in mind also during the progress of an operation. The operation of the mastoid does not involve so great a danger as craniotomy, but I think, with Dr. Frothingham, neither of them ought to be done on a possibility, but on a probability, and in brain surgery only on a probability approaching certainty.

Dr. Burnett said he was in entire accord with Dr. Knapp in what he had said regarding mastoid symptoms and treatment. He would add, however, that in his opinion, no one should open the mastoid in chronic mastoid disease, or in any case where cerebral symptoms had shown themselves, without being prepared to go further and open the cranial cavity. Regarding peroxide of hydrogen, Dr. Burnett would say that he has observed denuded bone on the promontory heal and the membrana tympani close under the use of peroxide of hydrogen instilled into the cavity.

Regarding acute mastoid disease following acute otitis media, he would say that he has never seen a case demanding opening the mastoid, unless the local treatment of the

ear after the opening in the membrana had been made, or had occurred spontaneously. After the membrana is opened nothing should be thrown into the drum cavity for fear of irritation and possible mastoid complications. The mere presence of pus in a previously healthy mastoid cavity, in acute otitis media is not sufficient reason for opening the mastoid unless the mastoid symptoms are very severe and increasing, having been present a week. There should be no haste to open the mastoid as resolution of the intra-mastoid congestion will surely take place without such operation.

Dr. Seiss thinks much of discussion bears more upon cerebral surgery than upon aurist's work. Regards blistering the mastoid, when used in connection with proper treatment through the external canal and Eustachian tube, of very great value.

TREATMENT OF OPACITIES OF THE MEMBRANA TYMPANI, ACCOMPANIED WITH DEAFNESS.

Read in the Section of Laryngology and Otology, at the Forty-third Annual Meeting of the American Medical Association, held at Detroit, Mich., June, 1892.

BY FRANCIS DOWLING, M.D.,
OF CINCINNATI, O.

A distinguished writer on ear diseases says that between the ages of 20 and 40 nearly every third person has some difficulty of the hearing with one ear at least. Although this statement may be somewhat exaggerated, still we know from our everyday experience in practice that there is a very large number of people along towards middle life who no longer hear well with one ear at least, and that, while during the years from 20 to 40, the number who are completely deaf is comparatively few, still the number whose hearing power is below normal is very great.

If we examine these cases carefully, we will find that a fairly large percentage of them present ears with no evidence of disease. In a still larger number, however, the drum-head of one and often of both ears, present conditions of opacity either circumscribed or general, with more or less thickening of the membrane.

These opacities, when present, are usually the result of an antecedent inflammation of the external meatus, or a catarrh of the cavity of the tympanum, or senile changes in advanced age. When, in consequence of the inflammation either external or internal, exudation takes place into the substantia propria of the drum-head, the opacities thus formed are permanent and cannot be removed by any species of medication.

About two years ago I instituted a series of experiments in the treatment of these opacities of the drum-head with a view to clearing them up and restoring the drum-head to a fair degree of usefulness, and thus getting an improved condition of the hearing. The treatment consisted mainly in penciling the drum-head and the adjoining parts of the external meatus with various medicated solutions.

Altogether, something like a dozen different remedies were used, in solutions of water, glycerine, olive oil and albolene. The applications were made from once a day to twice a week, and were continued from one to eight months in each case.

I obtained better results from an oily solution of phosphorus and strychnia in different strengths than from any of the other remedies tried.

The remedy, I think, does good by directly stimulating the membrana tympani, thus increasing its nutritive activity, which in these opacities is usu-

ally below par, and thus getting rid of the opacities by absorption of the exuded or deposited material giving rise to them.

I found the influence of the remedy particularly well marked in cases of opacities arising from catarrh of the cavity of the tympanum caused by attacks of la grippe during the late epidemic of that disease. In some of these cases the improvement in the hearing was very great.

In the opacities in elderly people as a result of senile changes the remedy sometimes did a great deal of good, and then again, there was no apparent improvement, even after months of patient treatment. In about 10 per cent. of these cases I succeeded in improving the hearing by the use of this remedy. These elderly people are often very thankful even for a slight improvement in their hearing, and are willing to spend a goodly share of time and money in furthering any treatment that will secure this end.

In cases which present a parchment-looking general opacity with abnormal thickening of the membrane, applications of this remedy or any others of its kind will, in my opinion, do no good. In cases of this nature attended with great loss of hearing power, the only remedy that promises any permanent relief in improving the deafness is a total excision of the drum-head. Making an opening in the membrane by any of the methods that have as yet been proposed does good only for a time, as the opening, by whatever method it may be made, is sure to close up in a comparatively short time, when the deafness again returns.

Probably one of the most ingenious of the appliances that have been devised for keeping the opening from closing is Politzer's eyelet, but even this does not always work well in practice. To begin with, it is a very difficult and tedious thing to get it in place, and then after one has succeeded in doing this the contrivance is readily displaced, during a fit of coughing, sneezing, etc., falling either outwards into the external meatus, or still worse, inwards into the cavity of the tympanum.

I wish to submit here a few cases taken at random from my note book:

Case 1.—Mr. N., aged 40, was treated in January, 1887, for an acute inflammation of the external meatus of the left ear, which he stated was the result of a strong ear injection which he used to cleanse his ear of wax. The disease terminated in recovery. In December, 1891, he came to me, complaining of loss of hearing and a feeling as if a foreign body was in the ear. On examination the drum-head presented a uniform opaque color. The outlines of the malleus and incus could not be distinguished. The watch could be heard at 6 inches from the ear—the right ear had been deaf from childhood. The drum-head and cartilaginous portion of meatus externa was penciled with a solution of 1 gr. to the oz., every second day for a month, and twice a week for two months longer. At the end of this time the hearing power had increased so that the watch was heard at 14 inches.

Case 2.—This was the case of an old man aged 76, who came to me October 6, 1890, complaining of great difficulty of hearing, and was very sensitive about his condition. He had tried everything that had been recommended to him; had tried quack doctors and regulars without getting relief. On examination I found both drum-heads studded with opacities of a calcareous deposit. In the right ear there was a crescentic-shaped patch that occupied half the surface of the membrane. The watch could be faintly heard on both sides when placed in immediate contact with the ears. There was no history of disease of the middle or external ear. I applied a 1-gr. solution in this case, but soon increased it to 2 grs. The treatment was kept up until

January, 1891, when there was an increase in the hearing distance of 3 inches by the watch for the right ear and 5 inches for the left ear.

Case 3.—Miss W. has complained of difficulty of hearing for over a year. Had a gathering in her right ear years ago, during an attack of measles. Examination reveals quite a large perforation of the drum-head of the right ear, which probably dates from the attack of measles. She hears a watch at 10 inches with the right ear. The left drum-head is intact, but considerably thickened; the watch is heard at 3½ inches with this ear. This case was under treatment from July 20, 1890, until January, 1891, when the hearing distance had increased to 12 inches with the left ear, the one treated.

Case 4.—Mrs. G., aged 52. In this case the deafness dates from the birth of her last child, now aged 16. Both ears are affected. The hearing distance for the right ear is 28 inches, that for the left ear only 6 inches. Both ear-drums are opaque. A 4-gr. solution was used in this case, but the strength of the solution was reduced to 2 grs. to the oz. on her complaining of a disagreeable feeling in her ears on account of the treatment. The case was treated about a year, marked improvement in the hearing.

Case 5.—This is the case of a young woman aged 25, who came to me in November, 1890, complaining of difficulty of hearing in the left ear. There was a marked general opacity of the drum-head of the affected side; the other was about normal in appearance. Here there was a history of catarrh of the middle ear. I treated the case about two months and gained some improvement, but at the end of this time the patient got tired of the treatment and I lost sight of her.

Case 6.—Mr. S. came to me in the fore part of January of this year, and is still under treatment. He is 60 years of age, and has had difficulty of hearing since he was 40 years of age. Here I used a 4-gr. solution. He could not hear the watch even when placed in contact with the right ear when he came to consult me; now he hears at 1 inch, and at 4 inches with the left ear. The opacities in this case are undoubtedly the result of senile changes.

Discussion.

Dr. Seiss thinks the paper of Dr. Dowling very valuable; has used iodine ointment (10 per cent. in lanolin), with very good results in many cases of aural sclerosis.

Dr. Dowling, in closing the discussion, said: A distinguished professor of surgery in a German university used to say to us that when we got into practice the big operations would fill our heads, but the small ones our pockets. You will all subscribe to this as a truism. The big operations, especially on the ear, do not come to us every day, but a large number of cases do come to us claiming treatment for opacities of the drum-head accompanied by more or less deafness. The patients are doleful in appearance and equally doleful in spirits. They implore us to do something for their failing hearing. Often they get no encouragement from the physician.

The results of my experience in the treatment of these cases I have given you to-day in a terse form in my short paper. I hope others of the gentlemen present will give the remedy a faithful trial and report the results of their treatment at the next meeting of the Association.

In answer to the questions that have been asked I would say that the remedy ought to be increased from 1 up to 5 grs. to the oz. according to the degree and standing of the opacities of the membrane of the drum-head. Furthermore the treatment ought to be kept up for months, and the patients should be told at the start that they need expect very little improvement in their deafness under two or three months' treatment. If the larger doses cause undue stimulation of the membrane with a sense of fullness in the ears, the dose should be reduced, as it is apt to produce a certain amount of giddiness. This occurred in two cases which I treated, but vanished on reducing the dose.

PERFORATION OF THE INTESTINE BY A SPOON.—Dr. Libotsky reports the case of a woman in the eighth month of pregnancy who was suddenly seized with the symptoms of acute peritonitis. She died in a few hours, and at the autopsy it was found that the duodenum had been perforated by a silver teaspoon, and the spoon itself was found lying in the peritoneal cavity. It was ascertained, on inquiry, that the woman, while suffering from post-influenza mania two years before, had swallowed the spoon with suicidal intent. *Centralblatt für Gynäkologie.*