Clinical Notes and Cases in Diseases of the Ear

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It is my intention in the following pages, to narrate the experiences that I have gained, since my entry into general prac=tice, in an attempt to render myself familiar with the nature and treatment of such of the Diseases of the Ear, as are most ordi=narily met with. I have been in the habit of recording in a book the essential features of the cases I have attended, the symptoms observed, objective and subjective, the treatment adopted for their relief, and the course and result of the disease. Certain of the more typical of these, I propose as briefly and concisely as possible to detail: I shall however take opportunity, upon arriving at a fresh division of my subject, of making a few introductory remarks respecting it.

Commencing with cases illustrative of some affections of the External auditory meatus and membrana tympani, the middle Ear will next be taken up, and catarrhal otitis (or "mucous catarrh") and acute suppurative otitis, will be dis=cussed. This will lead me to the consideration of Chronic Suppuration, which with one or two of its more important conse=quences, will conclude the paper.

As the success of our treatment and the degree of insight we obtain into the natural history of aural disease will depend largely upon our practical information

of the instruments to be called in our aid, a word or two about certain of them may not perhaps be out of place when treating of the forms of disease for the relief of which they are chiefly employed.
Of first importance is the extent to which we familiarize ourselves with the use of the aural speculum: opinions appear to be much divided upon the subject of this instrument. Some practitioners confine themselves to the simple speculum and perforated mirror, as perfected by van Tröltsch; the mirror being either fitted with a handle, or adapted for wearing on the forehead with a head band. Others again advocate the Otoscope of Lauder Brunton which differs somewhat in principle, but is too well known to need description. One objection which is raised against the latter, is our being unable to manipulate whilst we are observing with it, (Dr Barr) and Politzer complains that it is difficult to concentrate the rays of light upon its mirror. I cannot help agreeing however with Mr Geo. Field of St Mary's Hospital (who uses this otoscope constantly in his clinique, and extolls it in his book on "Diseases of the Ear") in regarding it as an invaluable invention, if only for the sake of the "minuteness and precision" with which it enables us to scrutinize the parts, especially when the magnifying power in the eyepiece is retained. Doubtless much depends upon habit and "bringing up"

but I feel pretty confident that surgeons who have once accustomed themselves to Brunton's otoscope, are not likely to lay it aside for any other speculum except when operating. Perhaps the most fortunate are they who are equally familiar with both methods of exploration, especially as by the habitual use of the fore=head mirror, they are more likely to feel at home with Siegel's Speculum, which cannot be employed without it.

I. Affections of the External Meatus

Otitis Externa.

The auditory canal is liable to inflammation occur=ring in two forms, diffuse and circumscribed, the latter appears as little boils or furuncles in the meatus, which are commonly met with and usually depend upon some fault in the constitution.

The Diffuse form – Otitis Externa diffusa, is almost always secondary to inflammation in the neighbour=ing parts, most usually the middle ear, or else it is induced by the presence of some foreign substance in the meatus. The inflammatory swelling and infiltration of the auditory canal which is such a frequent accompaniment of acute or chronic suppura=tive otitis is a familiar instance of the form that occurs by extension. Children seem to me to suffer most from it, and the complication is very troublesome

Otitis Externa Diffusa

on account of the sensitiveness to touch which it causes and the manner in which it excludes the view of the deeper parts. In adults it occurs in preference as a consequence of the invasion of the mastoid cells in the course of an acute suppurative otitis, in which case we observe projections here and there, encroaching upon the lumen of the meatus. The inflammation in these in=
=stances will be found to subside as the primary affection disappears, and our treatment is directed mainly against the latter.

What I wish to be chiefly concerned with in the present article, is the diffuse otitis externa which is met with as a result of the presence of certain irritating matters in the meatus; namely inspissated cerumen, and the parasitic fungus - aspergillus glaucus. (nigricans)

There is something noteworthy with respect to both these forms of foreign body, which is, that whereas they are quite capable of inducing by their presence a form of diffuse inflammation of considerable severity, they are both in all probability the consequence of a mild inflammatory affection seated in the meatus itself. With respect to ceruminal plugs, this preexisting affec=
=tion may be "a habitual or frequently recurring hyperaemia of the lining membrane of the meatus" combined with a tendency to hypersecretion on the part of the glands,[x] or

[x] Politzer. Text Book of Diseases of the Ear. p.580.

Otitis externa from Inspissated Cerumen
— Case —

It may be a subinflammatory condition secondary to chronic dry catarrh of the middle ear, or to labyrinthine disease; and we arrive at this conclusion through a consideration of the fact that a certain proportion of the patients for whom we remove ceruminal accumulations do not recover their normal hearing power after the operation. Roosa considers that the etiology of ceruminal inspissation is not so clear as it might be, but he thinks it probable that an inflammation extending from the middle ear or originating in the auditory canal itself is the starting point in many instances. (Treatise on the Ear. p.149.) The case which follows, illustrates some of the points I have just discussed, & also the necessity of examining the ear in all suspicious cases in which neuralgic pain is complained of in the side of the face and neck.

Case 1.* John Johnson, aet 40, miner, consulted me 23rd Jan. 7. 1885, complaining of giddiness, and great pain on the right side of his head, face, and neck, which had been coming on for some days and had grown much worse lately. He made no special reference to his ears, but on being questioned about his hearing, said he did not think he could hear so well as usual, and he admitted having noises in his head. Examination shewed the right meatus to be loaded with wax mixed up apparently with coal dust, as is

* Although in the present and following case the membrana tympani was chiefly affected, it is considered by the writer as having been so secondarily, by virtue of its anatomical relationship to the external meatus.

frequently the case with men of his occupation, an un=
=usually hard compound being the result. He could
not hear my watch in contact. The left meatus was
also impacted, but the hearing was less affected.
Preliminary to syringing, some cotton wool soaked in
a warm solution of bicarbonate of Soda was inserted
into the ears, and in the evening a large plug of wax
was removed with considerable difficulty from each.
—— The right meatus was then found to be red and
tender to the touch; the membrana tympani was also
very sensitive and of a deep red colour but varied in
places with yellowish ulcerative patches.
The removal of the wax enabled the patient to hear
the watch an inch distant, but did not give much
relief to the pain, which rather increased, especially
at night, preventing sleep, and obliging him to keep
the house for some days subsequently. The treatment
consisted in frequent syringings with warm water, and
the instillation of a solution of Boracic acid (gr x – ℥i),
together with the internal administration of sedatives
to relieve the pain at nights. Politzeration was practised
regularly. Considerable benefit was derived from these
remedies, but the redness and inflammatory thicken=
=ing of the membrana continuing obstinate; on the
8 February, Lin: Iodi P.B. was painted on the mastoid,

and a weak sulphate of Zinc lotion was substituted for that of Boracic acid. The liniment had a most beneficial effect towards removing the nocturnal pain.
On the 24th February, observing through specular examination what was about to take place, and having therefore previously inserted some cotton wool soaked in glycerine, for the purpose of an emollient, I syringed from the surface of the membrana tympani a dense membrane consisting of the thickened dermic layer whose vitality had been destroyed by the inflammatory process, and which had been thrown off in consequence. A great improvement in the hearing followed, and the watch was heard twelve inches.
Four days afterwards, the handle of the malleus came into view, and the membrane began to assume something of its natural colour; there were still to be seen streaks of injected bloodvessels coursing over it. These in their turn disappeared, by March 1st, the membrane looked more healthy, and the hearing distance was twenty-four inches. Although now quite able to resume his occupation, the patient was requested to present himself occasionally, in order that his condition might be watched. It was fortunate he did so, as I ascertained during the middle of the same month that the hearing of the affected ear for the watch (= H.D.) had decreased to three inches, and the membrana tympani looked whitish and opaque. Painting the mastoid was resumed,

Politzeration was recommenced, and an Iodide of Potassium mixture was given. (gr ij t.d.s.)
A second improvement took place, and by the 29th March the H.D. was 10 inches, the light spot had also begun to appear in place of the previous lustreless aspect of the membrana tympani. there was a free motion of the latter when viewed through the pneumatic Speculum. The last time I saw the patient he expressed himself much better, and heard my watch more than two feet on either side; still, owing to his comparatively slow recovery of hearing power and being not altogether free from tinnitus, I strongly suspect an underlying affection of the middle ear; time alone will probably clear up all doubt in the matter.

Otomycosis. – Aspergillus in the auditory Canal. –
I have already alluded to the Aspergillus nigricans as a cause of Diffuse otitis externa, and at the same time as a consequence of some pre-existing inflammatory affection. The variety of the disease which is characterized by the presence of this fungus, and called Otitis parasitica, or Otomycosis, is not frequent in this country. Its precise etiology is not yet quite satisfactorily made out, but the prevailing opinion appears to be, that previous to the development of the parasite, the meatus is the seat of a mild diffuse otitis of the nature

of an eczematous eruption. (Roosa) ("Treatise" p. 134.)
My experience of the disease being derived from only one case,
I have not had much opportunity of investigating this
interesting point, but the patient whose case is about to
be described, certainly observed an itching sensation in
her ear before the setting in of the pain and discharge
which had already become established before my assistance
was sought. Otitis parasitica is said to be favoured
by residence in damp houses, and to occur chiefly amongst
the poor, but the opposite conditions under which I met with
it in this instance, prove that there may be exceptions to this
rule.

Case 2. Elizabeth Bloor, aet 30. married, and in an ad=
vanced stage of pregnancy, sent for me on the 18th March
1883, complaining of great pain in the left ear, attended
by deafness, noises, and a thin non-offensive discharge
from all of which she had been suffering for about a week.
On examination, the left meatus was found to be occluded
by a dark substance reaching nearly to the orifice;
HD. not in contact. Right Ear healthy.
On syringing with warm water, a cast was removed
measuring three quarters of an inch long, and composed of
a soft material varying in colour from black to greyish=
white. Perceiving something unusual about this, I placed
it under the microscope with as little delay as possible

and thus saw that the light coloured parts of the mass were composed of epidermic cells and débris, together with a very delicate colourless mycelium. The black matter was made up of dark coloured spores intermixed with a mycelial structure, the filaments of which differed from each other, so as to be divisible into those which bore heads of fructification and those without. The fertile fibres threw off branches, at an angle with the main stem terminated by the sporangia in various stages of development When treated with Acetic acid, the structure of the heads was rendered very distinct, each globular mass being thus made to resolve itself into its component parts of Sporangium, basidia and terminal spores.

I had no hesitation in pronouncing the specimen to be one of the "Aspergillus nigricans."

After removal of the fungous mass, the meatus looked red and swollen, there was also redness and thickening of the membrana tympani, the outline of the malleus being completely obscured. H.D. contact.

For treatment, syringing was advised three or four times a day, and the instillation of a Zinc and Carbolic acid lotion, (āā grv. – ℥i.) On the 23rd March, more pain was complained of in the ear, and another small mass of the fungous growth was removed. the H.D. was 3 inches. On March 24th the patient was confined of a girl infant, and whilst lying

in, discovered that on blowing her nose, the air passed out freely through her Ear, showing that a perforation had taken place; there being still a trace of the fungus remaining, syringing with a weak solution of the Spt. Vini. Rect, in water was commenced, after which it did not appear again. By May 9th, the H.D. was 24. in; but the perforation remained open, and the case had assumed the usual characters of Chronic suppurative otitis. A solution of nitrate of silver, (gr. xxx – ℥i) was applied to the margin of the aperture, and the patient wore one of Field's modifications of Toynbee's artificial membranes, consisting of a disc of sponge on the inner side, and one of rubber externally. She heard nearly twice the distance when this was applied, and soon after the perforation closed. H.D. increased to 3 yards. Since then there has been no return of the parasite.

II. Affections of the Membrana Tympani.

"Myringitis."

Considerable diversity of opinion appears to exist amongst authors, as to whether an independent primary inflammation of the membrana tympani really exists. Some writers enter, as Dr Roosa states, "with theoretical minuteness" into the symptoms and Clinical history of Acute Myringitis, and even describe a chronic stage

II. Affections of membrana tympani – Myringitis.
— Case —

into which it may pass; other authors on the con=
=trary, and notably, Dr Roosa of New York, discounte=
nance its existence altogether, as a primary affection,
the latter basing his opinion upon anatomical grounds
as well as upon clinical observation. Hence Roosa
discards the term "myringitis" in his treatise, and re=
=gards all affections of the drum head which are not di=
=rectly due to injury as the consequence of an extension of
the morbid process from ~~either~~ the external or middle Ear.
So long however as we have the high authority of Politzer
for the occurrence of an independent myringitis, we must
I think atleast recognize its possibility, and rather endea=
=vour to make the conflicting opinions of authors act as an
incentive to further investigation.
Politzer states that "Acute myringitis commences with great
hyperaemia of the external layer of the membrane, generally
followed by effusion into its tissue in a very short time." ×
He then describes the various forms that the effusion may
assume, namely either a simple saturation of the dermic
layer, or a rising into blisters containing pus, serum, or
blood. (myringitis bullosa)
I have felt interested in the occurrence of these blisters,
since observing a case a short time ago which may be
briefly described as follows.
<u>Case 3</u>. William Guy, aet 48 came to me complaining

× Textbook. p. 219.

of pain and tenderness in the left ear accompanied by loud noises, he had been getting deaf, and suffering from noises in that ear for about a year, but both of these symptoms were now increased. (Feby. 18. 1885)
I found on inspection a haemorrhagic blister upon the posterior superior quadrant of the membrane, which saturated a pellet of cotton wool with a sero-sanguinolent fluid on pressure, and was very painful to the touch. H.D. was 1 inch. In four days there were two blisters visible but they were much smaller, blood could still be pressed out of them; the remaining portion of the drum membrane was pale. Three days later, there was a uni=form redness and only a trace of the blisters could be seen. the pain also had disappeared. By the 18th March the membrane had assumed the appearance of white=ness and opacity, that it has since retained; the hearing distance improved under treatment to 12 inches, and the tinnitus was much less troublesome.
I cannot regard this case as proving the existence of idio=pathic inflammation, since the patient was manifest=ly suffering from chronic dry catarrh of the middle ear, and the myringitis may possibly have been secondary to it; At the same time I do not see any necessary connection be=tween the two affections in this instance.

I come next to the consideration of some important diseases affecting the tympanic cavity.

III. Diseases of the Middle Ear

The affections of the tympanic cavity comprise by far the largest proportion of the cases of ear disease that come under our notice, and they are variously classified and named by authors. One would scarcely have expected that the extremely delicate mucous membrane of the tympanum could have been subject to so great a variety of pathological changes. It is described as being divisible into two layers, the under of which we are told to regard as a periosteum, (it being intimately connected to the bone) and its inflammatory condition a periostitis (Van Tröltsch) There appears to be some confusion arising out of the misunderstanding as to the distinction between a catarrh and an inflammation: some writers speak of the terms as synonymous; others regard a catarrh as a mild degree of the inflammatory process; some look upon the seat of the pathological changes as the point upon which the distinction should rest, whilst with others again, the character of the exudation, is regarded as the criterion in giving a name to the affection. As Politzer states in his text book (p. 242) it is extremely desirable that a general understanding should be arrived at, respecting the nomenclature of the various forms of otitis. The arrangement of that author seems to me to be a good and practical one. Agreeing with most authors in regarding the matter from a clinical stand point, he distinguishes those inflammations

in the course of which the membrana tympani is perforated, from those in which it remains intact, and thus forms two divisions, acute and chronic suppurative otitis being included in one, and acute non-suppurative otitis, and catarrhal otitis (otitis media acuta, and catarrhalis) in the other. The catarrhal form he subdivides into the serous or mucous variety, and that in which the secretion is dry and adhesive, the two latter corresponding to Roosa's subdivision of chronic non-suppurative inflammation into catarrhal, and proliferous, respectively. The objection to this arrangement is one which Politzer freely acknowledges, and which all writers on the subject find difficulty in avoiding, namely the separation of such forms for instance as the acute non suppurative, from acute suppurative, otitis, both these being pathologically and even clinically undistinguishable from each other until perforation takes place. Reviewing the matter generally, it may be stated that all the species of otitis run more or less into one another, and are not separated by any fast line of demarcation. We may likewise meet with them variously combined in the same patient. The space at my disposal not allowing of my giving illustrative cases of each one, I shall therefore commence by selecting two or three from my notebook, which may be regarded as fairly typical of what might be termed

Diseases of Middle Ear (1) Mucous Catarrh.

Acute Throat Deafness, or "Mucous catarrh".

There is I think, scarcely any aural affection that bet=
=ter repays the practitioner for energetic and judicious treat=
=ment than the last named. By directing our attention
simultaneously to the pharynx and the sound-conducting
apparatus, we can meet as a rule with good results, and
avert perhaps, incurable deafness, through preventing the
formation of permanent adhesions in the tympanum.
It is here that Politzer's invaluable invention for the inflation
of the Eustachian tube and middle ear, finds its most use=
ful application, and works such wonderful effects.
The details of the inflating bag have been variously modified
by aurists since its first introduction by Politzer.
With a view to lessening the patient's discomfort, the late Dr
Peter Allen, of St Mary's hospital, substituted his nasal
pad for the delivery tube used by the inventor, and the
former has many recommendations in its favour, not
the least of which is its being so much more cleanly
than the tube, with or without nasal piece attached.
I employ Allen's pad constantly, but am fully aware that
a little difficulty is sometimes met with in adapting it suc=
cessfully to the patient's nose. The first finger of the left
hand should be placed between the two parts of the pad
and press the latter upwards to the nostrils, whilst the thumb
and middle finger are employed in assisting in the adaptation.

In this way we can usually direct the whole volume of the air contained in the bag into the naso pharynx and little or no annoyance is caused the patient.

The throat, in catarrhal otitis, is invariably found to be congested, and tonsillar enlargements are exceedingly common. The appearance of the membrana tympani varies much according to the stage of the affection, the character of the secretion, and the degree of density which is natural to the individual. When the membrane is very transparent, the presence of fluid behind it may be made out by inspection, as a delicate horizontal straight or wavy line. In colour it is frequently pink or reddish, according to my experience, and its concavity is generally much increased through rarefaction of air in the tympanic cavity owing to closure of the Eustachian tubes.

The commencing practitioner should make himself thoroughly acquainted with the appearance of the membrana tympani in the healthy condition, in order the better to appreciate the various degrees of undue concavity that are met with in the acute and chronic catarrhs. The short process and upper portion of the manubrium will often be seen to have the appearance of leaning forwards, as it were, and when the concavity is very marked, a deep depression may be discernible on either side. The stretching of the dermic lining over the projection causes a whiteness too, of that

particular portion of it, and when the remainder of the membrane is abnormally red through injection of its bloodvessels, the contrast is very striking.
If we Politzerate the patient, and auscultate at the same time with the diagnostic tube, we shall hear rattling or sometimes, squeaking sounds accompany the passage of air through the Eustachian tube, and on examination afterwards the abnormal concavity of the drumhead will be found to have disappeared. The degree of mobility of the latter and of the ossicular chain should also be ascertained by means of Siegel's speculum which enables us after some practice to make many useful and interesting observations.
The following are fairly typical cases of mucous catarrh or throat deafness, running a short course and terminating in recovery.

Case. 4. Albert Brewster aet. 17. employed under the Clay Cross Company. consulted me Feb.y 21. 1882. Complaining of deafness and "singing in the ears" of three weeks duration. He made no special complaint of sore throat, but I found a considerable amount of congestion of the pharynx.
The memb.æ tymp.i on either side were injected and very concave and the short process very prominent, whilst the manubrium appeared foreshortened. – H.D. three inches, Right & Left.

but increased by Politzeration, to eight inches.
I painted the fauces with diluted Liq. Fer. perchlor. and ordered him to return at short intervals, which he did.
His hearing improved gradually under treatment, but in three weeks he came back stating that he had become deaf again, owing he thought to "catching a fresh cold."
After a few more applications of Politzer's method combined with attention to the throat, his hearing soon increased to sixteen inches, and in a week or two he heard perfectly, but he found it necessary to return occasionally for some time after and be "blown up" in order to maintain the improvement.

Case. 5. Charles King, aged 20, in the employ of the Midland Railway Company consulted me at Clay Cross Hospital. Feb.y 14. 1888. complaining of soreness of the throat, deafness and noises in the Ears.
A fortnight ago he caught cold, and since then has been gradually getting deaf.
The pharynx was congested, and both membranae were injected and Concave. H.D. Right, contact. Left, ½ inch.
On applying Politzeration he stated that he felt an instantaneous improvement in his hearing. The fauces were painted with Iron perchoride solution as in the last case. He returned on the 16th Feby hearing 8 in: Right + Left. and this increased by the 21st to 3 or 4 feet.

Case 6. Samuel Clarke aged 18, came to me Dec. 7. 1884, complaining of deafness of fourteen days' standing which he has felt coming on since the "lumps in his throat" have been increasing in size.
Examination shewed considerable chronic enlargement of both tonsils. The membranes wore a leaden hue, and were very concave, especially the left, which caused the short process to resemble a "white peg."
H.D. Right, before Politzeration 2 inches, after, 7 inches.
— Left, before Politzeration, 1/2 inch; after, 6 inches.
An iron mixture was prescribed for the tonsillar affection. On the 9th December after Politzeration the H.D was. Right, 11. Left, 16. On the 11th. R. 12, Left. 23. and the patient was dismissed with instructions to return occasionally. His hearing further increased afterwards. and the deafness has not returned.

In none of the above had I any occasion for the employment of the Eustachian Catheter, and I rarely find the latter necessary except where, in more chronic cases, it becomes indispensable for the purpose of injecting fluids into the tympanic cavity.

Acute Suppurative Otitis.

This is not only one of the most common but also one of

Acute Suppurative Otitis

the most important of the primary affections of the Ear, owing to its being so often the precursor of serious and even dangerous consequences. It is an ailment too, which I believe is largely overlooked in medical practice, and will continue to be so, until Ear diseases are more watched for and studied by the general practitioner; especially as the patients themselves, owing to their pain being often but lit=-tle localized in the Ear, but often affecting the whole head and reaching down the neck even to the shoulder, do not assist much in directing the notice of the medical attendant to the suffering organ.

Cases vary immensely too, in the amount of pain induced; occasionally it is but trifling, as is also the degree of constitu=-tional disturbance, and when this is the case, especially amongst the lower orders, who when the discharge appears and they feel relief, seem to take but little notice of what they style simply "a gathering in the head", the disease is easily allowed to run into a chronic and intractable stage. Fortunately in a large proportion of cases, acute suppurative Otitis seems to have a natural tenden=-cy towards recovery; after running a rapid course, per=-forating spontaneously, and discharging pus for a varying period, the opening closes, and perfect hearing is gradually restored. If it were not for this fact, chronic suppuration would I think, be a still commoner disease amongst the people

than it is already. The worst cases owe their origin to the acute exanthemata, especially Scarlet Fever: but Epidemics vary very much amongst each other with respect to the occurrence of this complication.

Like Mucous catarrh, Acute suppurative otitis invariably commences from an inflammation of the naso pharyngeal mucous membrane, the middle ear being implicated by continuity of surface through the Eustachian tube, the membrana tympani itself speedily becoming involved. The appearance of the latter is so similar to that met with in the acute nonsuppurative form, that the diagnosis of one from the other previous to perforation is all but impossible: In both forms, the membrane is deep red coloured, uneven, and bulging, often being patched over too, with white sodden epidermis. The practical importance of the diagnosis is not very great, as the treatment of both forms is the same up to a certain stage. We endeavour by the aid of leeching, antiphlogistics, and other means, to subdue the inflammatory action and preserve the drum head intact. If however in spite of all our efforts we observe an increasing convexity of the membrane taking place at one or more points, whilst the pain and deafness continue unabated, we puncture with the paracentesis knife at the point of greatest curvature and thus hope to hasten the termination of the case. Whilst fully recog-

=mizing the value of this procedure, and its urgent necessity, more especially if head symptoms threaten to supervene, I do not think it advisable for surgeons of limited experience to be in too great a hurry in having recourse to it. It should be borne in mind that if the case we are dealing with is one of suppurative otitis, spontaneous perforation is almost certain to occur in due time, whereas, if it should be one of the simpler form, the in=flammatory effusion may yet disappear under treat=ment, and the membrane remain intact. From obser=vations made to me by patients, I have concluded that the contents of the inflammation may escape into the pharynx in such cases especially if communication with the tympanic cavity is assisted by inflation. Once however, a perforation in the membrane is made by ourselves the secretion which is poured out, if not purulent at first, soon after becomes so, and should we, owing to a mistaken apprehension as to the degree of curvature of the membrane in a simple acute otitis media, have punctured too early, we have run the risk of setting up a lingering suppuration which will prove difficult to cure. The aperture made by nature, when spontaneous perforation takes place may prove a more efficient one than that made by the surgeon and as Mr Field remarks,* "it is in the first instance a slit, it only becomes a round hole afterwards through the

* "Diseases of the Ear" 3rd Edition. p. 119.

wear and tear of long continued discharge; all the more important therefore is the after care of this aperture when thus formed, and the pains that are taken to keep it clean and in a favourable state for closure before it has been hopelessly enlarged by the passage of the pus. Another point which experience leads me to lay stress on, is, that having decided upon puncturing, we should make a sufficiently free incision; it is to lack of this precaution, that I attribute the formation, some days after the operation, of small semiglobular swellings, corresponding I believe to what Politzer describes as "nipple shaped projections", having the aperture at their summit, from which inspissated pus escapes fitfully and with difficulty.
I would briefly sum up my view of the operation by stating, that in performing paracentesis, we should provide that free exit for the secretions, that nature makes for herself when the conditions are favourable, and not by failing in this respect render it necessary for her to make a second opening in the membrane later on in order to ensure a more complete and perfect evacuation. The paracentesis knife will best effect our purpose if made triangular shaped* in the blade, (many that are sold are undoubtedly too narrow in that part,) and if we give it a half or quarter turn before withdrawing it. It is of great importance too in the after management of an operation case, to Politzerate every day for a sufficient

* or perhaps more correctly, diamond shaped,

period of time, and not be too anxious to close the per=
foration whilst the discharge continues thick and abun=
=dant. On the other hand Politzeration must give place
to the injection of warm water (to which a small quantity
of Bicarbonate of Soda may be added) into the tympanic
cavity through the catheter,* if it is found that pouching of
the membrane, as already described, is taking place, through
a want of proportion between the size of the aperture and
the density of the secretion. In addition to this, it may
be necessary to enlarge the aperture. Neglect of these pre=
=cautions, will favour extension of the inflammatory
process to the mastoid cells, and lead to further trouble
from the formation of abscess, caries &c of the mastoid
process.

The following case is typical in its origin, course, and
result of a favourable case of Acute Suppurative Otitis.

Case 7. Thos. Dunn, æt 45. colliery underviewer,
sent for me on April 1. 1884 when I found him suffering
from severe neuralgic pains in the left side of the head
and face, and sore throat, these symptoms having
followed upon a severe "cold in the head" which he had
not yet recovered from.

April 2nd. Pain extending to left ear, aggravated during
previous night: some slight discharge in the auditory
meatus. Anticipating an acute otitis, I ordered the ear

* placed in the orifice of the Eustachian tube.

to be filled frequently with warm water: gargles and steam inhalations were ordered for the relief of the throat affection.

April 4th. Pain in left ear increased. Loud tinnitus. H.D. four inches. Memb. Tymp: wore a leaden hue, its concavity lost. A saline aperient to be taken internally. Six leeches to be applied to the tragus and mastoid process

April 5. Pain relieved by depletion for a time but still very great; there is great intolerance of sound and nervous irritability. Memb. Tymp: presents two red bulging points one on either side the manubrium which is now no longer visible. Pulse 96. Temp 101. H.D. not in contact

April 6th. Memb. Tymp. burst during previous night "with a report like a pistol": pus escaped freely with relief to all the symptoms. A perforation is visible in the inferior border through which the secretion can be forced freely by Valsalva's method. Ordered to syringe the ear frequently with warm water, and to "blow through" it occasionally. Politzeration practised during my visit.

April 7. Discharge somewhat diminished; more headache and throbbing, patient states that a "fresh gathering" has taken place.

April 8th Renewed suppuration with relief to the pain

but tinnitus still very troublesome. patient points to mastoid process, and says that the matter has been coming freely from that region, owing no doubt to an implication of the cells. H.D. contact. A weak Boracic lotion to be instilled warm, thrice a day after syringing. Politzeration to be continued daily.

April 15. Discharge thinner, and has been gradually diminishing in amount since last note. A mixture containing Tr. Fer: perchl; Acid phos. dil; and Tr. Nuc: Vom. to be taken to improve the general health.

April 30.. The secretion is thin and watery, pain is still referred to the mastoid process. H.D. 2 inches. Insufflate powdered Boracic acid.

May 1. Instillation of Boracic lotion to be resumed as well as frequent syringing, in place of the dry powder.

May 12. Perforation quite closed. Memb. Tymp gradually assuming pearly lustre. H.D. 6 inches.

May 20. Memb: Tymp: has regained its normal aspect; Hearing rapidly improving — It was eventually restored perfectly. —

I had the paracentesis knife in hand a few hours before perforation occurred in readiness to perform the operation, but finally decided upon leaving the case to itself unless more urgent symptoms arose. Perforation took place considerably below the point at which I had decided to puncture should

necessity demand it.

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There are numerous cases in my note book varying more or less from the foregoing in their duration and consequences. In one instance, that of a woman aged 35. only a single week elapsed between the first complaint of pain in the ear, and the complete closure of the perforation, which had been large and free: restoration of hearing followed very rapidly. I have but one fatal case recorded, it being that of a girl aged 13½ years, (only child of the preceding) in which an acute suppuration of the left ear which had followed upon a simple tonsillitis, ran a fatal course in three weeks. The symptoms partook more of the character of tubercular than of otitic meningitis, though eventually both ears were attacked, and as I was not able to verify the diagnosis by post mortem examination I do not think it would be profitable to give the case in detail. —

When the suppuration of an acute otitis has continued beyond a certain time, and the perforation has not closed, the disease is considered to have passed into the chronic form, which I shall next proceed to discuss.

Chronic Suppurative Otitis.

This is the most common of aural affections, and therefore perhaps the most important. Medical men

seem to shirk treating it because it is obstinate and difficult to cure, patients themselves neglect their own case because they suffer but little or no pain, and do not perhaps experience any marked degree of deafness, owing to the affection being often one-sided. Whilst parents and friends too often advise them not to interfere, from the sup=posed danger of arresting the discharge.—

I think I may safely say that what Politzeration has done for the relief and cure of mucous and chronic catarrh, the introduction of the dry methods of Bezold, Weber Liel Lowenberg, and others, variously modified and combined have done for chronic suppuration. We can scarcely re=gard now an old standing case of otorrhoea in that almost hopeless light in which we were wont, when the long dreary course of syringings, and instillation of aqueous solutions, was the only one open to us. A few careful and painstaking applications of the Spirit of wine, or Boracic powder, pre=ceded by thorough dry cleansing with absorbent cotton wool on some form of cotton holder, soon changes entirely the as=pect of a case. The unbearable foetor vanishes under the action of the antiseptic, and we feel encouraged to go on per=severing with the treatment until a cure is attained.

The variety of the appearances that we meet with in this dis=ease is so great that as Dr Roosa observes, the description of one case would do for no other. The external meatus

is usually found to be loaded with pus, and when this has been removed, we have to interpret as well as we are able the true nature of the morbid changes that are presented for examination through the speculum. Theoretically there must always be a perforation, however minute and apparent=ly invisible it may be in reality. It may vary in extent from a mere pin point to that of an aperture so large that only a rim of the membrana tympani remains. What we usu=ally find after preparing the part for inspection (when sup=puration is profuse) is a red uneven granular surface, and we endeavour to determine whether this is the disguised membrana tympani itself, or whether it is constituted by exuberant granulations springing from the tympanic cavity, the membrane being entirely gone; we shall be aided in coming to a conclusion, if we discover the rim of the membrane still in existence in its normal situation. By getting the patient to perform Valsalva's experiment, we may perceive air bubbles coming into view at some point on the diseased surface, but just as frequently we observe no alteration in the appearance, and we must then have recourse to auscultation with the diagnostic tube whilst the tympanic cavity is being inflated by Politzeration, or the catheter.
I have known the perforation to become visible only after the continued use of the Spt. Vin. Rect.; owing to the shrink=ing of the obstructing polypoid growths, thus brought about.

With reference to treatment our indications are evidently to subdue the granulations, arrest the discharge and if possible close the perforation. If we cannot succeed in the latter respect, we can perhaps ameliorate the patient's condition by enabling him to wear an artificial membrane, should the case turn out a suitable one, eventually.

Our mode of attaining these objects is by paying attention to the constitution and general health, and treating the naso-pharynx and Eustachian tube where necessary, simultaneously with the aural affection.

Although I must admit that I had fair results occasionally in cases of not too long standing, by careful syringing and the use of astringent lotions, I seldom or never employ that method now. It is nearly always necessary to syringe out the meatus thoroughly in the first instance, but I scarcely ever repeat the process more than once or twice: after drying carefully with cotton wool twisted on one of Purve's Ear-probes, I proceed to insufflate powdered Boracic acid, and effect all subsequent cleansings with the cotton wool alone. This process is a little tiresome at first, but after a few days, especially if the patient is instructed to cleanse the ear once or twice a day himself, and afterwards apply the remedies, the discharge will soon be observed to diminish greatly in amount, and what is important, to lose its offensiveness. This cleansing process cannot

be considered complete without the simultaneous employment of Politzeration, which not only helps in clearing out secretions from the tympanic cavity, but also generally effects a great improvement in the hearing. Writers upon this subject, all agree with each other in stating that no rule has yet been discovered which will guide us in our choice between the method of insufflation of Boracic acid or some other powder, and the instillation of the Spirit of wine, pure or diluted, or containing some substance in solution, in the treatment of Chronic Suppurative otitis. My own belief is, that the secret lies in judiciously combining the two methods by alternating one treatment with the other: commencing for instance with the insufflation and having recourse to the rectified spirit afterwards. As to the question, which of the various pulverized substances that have been suggested are we to employ? I think the preference rests with Boracic acid, as it never hardens into lumps however long it may have been packed in the meatus. I have seen more rapid effects at first from finely powdered Tannic Acid, which I had tried before hearing of the introduction of Boracic acid by Bezold, and expected to yield good results from observation of its effects upon nasal polypi. I abandoned its use on account of the hard cement which it formed (if not removed at short intervals) causing endless trouble in its removal. A similar ob=

=jection applies to Powdered Alum, though to a less extent. Roosa appears to raise this objection against all such remedies alike, he says, "I have not found powders useful in checking chronic suppurations of the ear. They usually act as foreign bodies and fly up the meatus".* certainly this experience in respect of Boracic acid astonishes me greatly. My reasons for commencing with the latter, are, that it is antiseptic, and quite painless, which can be scarcely said of rectified spirit, and if the granulations are not too large and extensive we can effect a cure with it alone. In tolerably recent cases, and still more in very young subjects, the Boracic powder will usually be found successful - In addition to which, it is stated by Politzer and others, that the previous employment of Boracic acid, enhances the effects of Spirit of wine. The fact is however that the Boracic acid has but little effect upon the granulations, so that when a certain stage is reached we re=quire to have recourse to the spirit method in order that they may be shrunk up and destroyed. I have seldom seen much benefit derived from a reversion to Boracic insufflation after a long continued use of the spirit had ceased to be produc=tive of any. On the other hand I have found the spirit and Caustic methods to alternate very well together, touching the polypoid tissue occasionally with a strong solution of nitrate of silver (40 to 80 grs to the ounce) assisting greatly in hastening the process of destruction and diminishing suppuration.

* S. Roosa's "Treatise." p. 377.

I am in the habit of ordering the spirit of wine to be poured into the ear (after being previously warmed) when the patient goes to bed at night, in order that, by lying on the unaffected side - if both ears are not diseased - the remedy may have a longer opportunity of remaining in contact with the parts. By performing Valsalva's experiment, and also by pressing in the tragus, when the meatus is full of the spirit, the good effect is increased. The pain and smarting which is experienced at first, disappear after a time, a sensation of warmth being all that is felt; and the patient who is treated by the spirit method is freed from the inconvenience of having his deafness temporarily increased by the plugging of his ears with Boracic powder, which with the ball of cotton wool in addition, must necessarily create a considerable obstacle to hearing. To obviate this, if there is a chronic suppuration in both ears: the spirit method should, or rather, might, be tried on one side, and the insufflation on the other. Failing the remedies just mentioned, there are others which should be tried. When the granulations are large and merging into the stage of polypi, they should be touched with nitrate of silver, fused on a probe, or in strong solution, all having been destroyed, the way is prepared for milder agents. The solution of perchloride of iron (or the solid crystals) are strongly recommended by Politzer. Iodoform dissolved in spirit (objectionable on account of its powerful smell) is also highly spoken of by Dr Barr.

The same author advises us to enlarge minute perforations with a paracentesis knife. Intratympanic injections of weak solutions of Bicarbonate of Soda, Boracic acid &c. &c. should be tried in obstinate cases, and will generally be found to be productive of benefit, on account of the cleansing effect upon the middle ear. I always introduce them through the catheter, by way of the Eustachian tube. —— The space at my disposal will not admit of my entering at length into the consequences that are apt to follow upon chronic suppurative otitis. The principal of these are Polypi. Caries and necrosis, mastoid disease, pyaemia, Thrombosis and embolism, cerebral abscess, purulent meningitis; any of these may be variously combined together in one case. Examples of the first and last mentioned will be given amongst the clinical cases at the end of this division. Polypi, which occur in three forms Mucous, fibrous, and gelatinous, the first being far the most common, may be suspected when the discharge is sanious in character. They should never be regarded as a disease per se, as is so often done by practitioners, but as cases of chronic suppurative otitis, in which a polypus has to be got rid of, as a preliminary to radical curative measures. Purulent meningitis appears to be liable to overtake any case of chronic suppuration (without the supervention of caries), especially in individuals whose

occupations expose them to the weather. Hence as well as for other reasons, the absolute advisability of arresting all cases of purulent discharge, and then, if possible closing up perforations, no matter what amount of prejudice the patient may exhibit in opposition.

The following case is one of Chronic suppurative otitis, in which the insufflation of Boracic acid effected a cure after treatment by astringent solutions had failed.

Case 8. Cecilia Hartlett, aged 8. a child of strumous constitution who had been deaf & suffering from a bilateral purulent discharge from her ears for five years, came first under treatment in January 1883. The meatus of either side was loaded with offensive pus, and when this had been removed by syringing, the membrane were found coated with red granulations forming a smooth surface which was rendered whitish in places, by a layer of epidermic accretions. H.D, Right. 2 inches, Left. 3 inches. Syringing was practised twice or three times a day, and lotions of Sulphate of Zinc & Carbolic Acid, (of each gr v — ℥j aq.) and other astringents, were instilled. By July 12th her hearing distance on the Right side, had increased to 10 inches that on the Left. remained as before. The discharge continued. This treatment was continued for some

months afterwards, and the patient then discontinued her visits. On Sept. 1st 1884. She was brought to me again, as the purulent secretion had increased abundantly, and was so offensive, that her school mates could not bear to sit near her. The membranes had a similar appearance to that already described. H.D. 3 inches. Right and Left: The dry method was commenced with at once: Boracic acid minutely pulverized, being insufflated, after cleansing and thorough drying by means of cotton wool. A pellet of cotton wool to absorb discharge, was placed exterior to the powder as usual.

By Sept. 6th. the daily repetition of this treatment combined with Politzeration, brought up the H.D. to 5 inches R and L. And there was scarcely any discharge in the cotton plug.

Sept. 13. Discharge ceased altogether. H.D. Right, 8 inches; Left, 1 yard. Powder and wool remain unaffected.

Oct 20. Insufflation stopped. Memb. Tymp. of right side quite dry, but still red, and wanting lustre; H.D. 1 yard. Left, more healthy in appearance, exhibits a minute cicatrix in the anterior segment. H.D. 18 inches.

January 8th 1885. The permanence of the cure is shown by the complete absence of any return of the discharge, when the case was examined at this date. The hearing distance had however slightly diminished. and Politzeration was employed daily, till by Jany 27th She heard the watch a yard either side.

The next case is one which exemplifies the results of treatment by Rectified spirit.

Case 9. Emily Mason, aged 17. came to me on the 16th January 1885. She had suffered from purulent discharge from both ears for more than five years, and figured in my case book so long ago as in 1880, when I opened an abscess over the mastoid process of the left side. She had since then been cured of chronic suppuration in both ears on more than one occasion: but owing to neglect, of attendance subsequently in order to ensure permanent re=sults, had allowed the disease to exceed the proportions it had ever before attained, and was now obliged to seek ad=vice again on account of her deafness.

Jan. 16. 1885. Meatus on either side loaded with pus. Hears watch ½ an inch R and L. Right membr: tympani (which for the sake of brevity is the only one I shall follow) pre=sents three deepred spongy prominences of a polypoid appear=ance, but having their surfaces striated by bloodvessels cours=ing over them. After cleansing in the usual manner, the Spt. Vini Rect. was poured warm into the ear, and cotton wool inserted afterwards into the meatus. The patient was instructed how to cleanse her ears and in=stil the spirit for herself, at home.

On Feb 7 the 16th. The discharge was found greatly dimini-

=ished, and the watch was heard 8 inches, increased to 18, by Politzeration. The shrinking of the granulation tissue discloses a large perforation, and the largest of the vascular "growths" is assuming an appearance which leads me to believe it to be the handle of the malleus, pro=jecting free from the roof of the tympanic cavity, and at a level with the margin of the perforation.

Feb. 30. Under the continued use of the spirit, and the occa=sional touching with nitrate of silver solution (gr. XL. - ℥i.) the shrinking of the granulations progresses rapidly, and the handle of the malleus, and tympanic cavity (surface of the promontory) is becoming, as it were, lined by a pale coloured dry coating. The patient finds that a ball of cotton wool, pushed into the meatus and left there, nearly doubles her hearing dis=tance, - on the principle doubtless, of Yearsley's cotton wool.

March 29. Still under treatment, but suppuration all but ceased. one or two minute granulations visible above, which are the source of what remains. Handle of malleus projects free. A probe armed with cotton wool pushed to the smooth surface beyond it, detects the hard resisting wall of the tympanum (inner wall) There is no alteration of the parts when air is exhausted and pro=pelled by Siegel's speculum: and auscultation detects only a distant murmur during Politzeration from all of which facts I infer the existence of a large cicatrix extending inwards from the rim of the membrana tympani, to the surface of the

promontory and shutting off the tympanic orifice of the Eustachian tube. The hearing distance varies somewhat at different times, but averages 24 inches for the watch, whilst conversation can be heard in a low tone at any part of the surgery; At the time treatment was commenced, the hearing for speech was so dull, that when appearing in court to give evidence on a certain occasion, the questions that were put, had to be shouted in the patient's ear.

An almost precisely similar case to the above, is that of a girl aged 20 whom I attended four years ago, for acute meningitis, the consequence of an old standing suppuration, from which she recovered. After protracted treatment commencing with Boracic insufflation and terminating with the instillation of the spirit, the granulations subsided and gave place to an extensive cicatrix, reflected over the handle of the malleus, which projected laterally instead of hanging free as in the last case. The mouth of the Eustachian tube is not shut off, and this perhaps accounts for the fact that a moist secreting surface still remains. The hearing is extremely good.

Chronic Suppuration followed by Polypous.

Case 10. Walter Lindley aged 20. a plasterer, came to me June 1. 1883, stating that he had been deaf and

Aural Polypus.

Suffering from a discharge from both ears since childhood. Examination showed a polypus obscuring the Right Mem=
=brana Tympani, and projecting far into the meatus.
H.D. not in contact. On the Left side there was a small perforation posteriorly, amid several small granulations: H.D. half an inch. Owing to an illness which overtook the patient, he was unable to undergo an operation for re=
=moval of the polypus till July 12. by which time it had reached the orifice of the meatus. On that occasion the growth was not extracted entire, on account of a sudden movement on the part of the patient, who was nervous and difficult to deal with: the completion of the operation was deferred until the polypus was grown again.

On the 10th of August, having again reached the orifice of the meatus, the polypus, which was one of the mucous variety, was removed entire from the root with a Blake's modifica=
=tion of Wilde's snare. It was nearly an inch long, and one third of an inch thick. The haemorrhage was very free, cold water, and the Liq Ferri perchlor. applied on cotton wool, proved ineffectual in controlling it; this was done eventually by pledgets of cotton wool charged with powdered alum. The plugs were removed on the day after the opera=
=tion, and fused nitrate of silver was applied on a probe to the root of the polypus.

On August 20th (ten days after removal) the insufflation

of Boracic Acid was commenced, the suppuration being profuse, and apparently thrown off by two large granulations.
H.D. at this stage was 1 inch.
Sept 14. The insufflation was exchanged for the instillation of Spirit of wine. and from that date, the discharge rapidly diminished
Oct. 18th. Discharge stopped. H.D. 4 inches. The left ear also improved under treatment, so that the patient no longer felt deaf to conversation, & followed his occupation with comfort. Unfortunately he discontinued attendance at this stage: but I have the satisfaction of knowing that the improvement is retained, and that there has been no return of the polypus.

Chronic Suppuration, — Purulent Meningitis.
Case 11. John Jackson, aged. 40. employed on the "screens" of one of the Clay Cross Collieries, sent for me March 18. 1884.
I found him in bed, complaining of great pain at the back of his head, and loud noises in his ears. He stated that he had been deaf and suffering from both ears with a discharge, for several years. He had a furred tongue hot skin and quick pulse. The right meatus was dry, H.D. contact. Left, loaded with pus, membr. tympani, red, covered with granulations. H.D. half an inch.
The left ear was carefully cleansed, & a saline purgative was

ordered to be taken internally. There was no special alteration in the patient's condition, (if anything he was better,) till March 22nd, when I ascertained that he had been delirious during the previous night, and now his facial expression was heavy and stupid: the pulse was 96. Temperature 103.4. Twenty grains of Bromide of potass were administered every three hours, and cold applications to the head.

March 23d: p. 96. T. 102.4: refuses food. perspires profusely.

——— 24th; p. 110. T. 101.5. deafness increases, answers questions incoherently, and lies always on left side.

——— 25th; p. 128. T. 103. head buried under the clothes. perspiration so profuse that it soaks through every thing he has on. Can still be roused at times, and made to answer questions.

March 26th. died at 2am. Post mortem examination made the same day, revealed the presence of pus beneath the pia mater on the surface of the lobes of the cerebellum and medulla oblongata. The examination was made under considerable difficulties, and in a very limited period of time. It was however ascertained that the inflammation had been localized in the parts mentioned. Abscess which had been rather suspected, was not present, and there was no trace of caries in the petrous portion of the temporal bone.