BRITISH MEDICAL ASSOCIATION.

SEVENTY-SECOND ANNUAL MEETING, OXFORD, JULY 26, 27, 28, AND 29, 1904.

Section of Laryngology and Otology.

President: Charters James Symonds, M.S. (London). *Vice-Presidents:* Frank Marsh, F.R.C.S. (Birmingham); Cecil Edward Shaw, M.D. (Belfast); Harry Lambert Lack, M.D. (London). *Honorary Secretaries:* Walter Jobson Horne, M.D. (London); Edmund Cecil Bevers, M.B. (Oxford).

The Meeting of the British Medical Association will take place this year at Oxford from July 26 to July 29 inclusive. The Section of Laryngology and Otology will be held under the presidency of Mr. Charters Symonds.

Foreign and Colonial visitors will be cordially welcomed in the Section, and such as may desire to attend are requested to send in their names as soon as possible to the Honorary Secretaries, together with the titles of any papers they may wish to read.

The Section will meet on Wednesday, Thursday, and Friday, July 27, 28, and 29, at 10 a.m., adjourning at 1 p.m. each day.

The following subjects have been selected for special discussion:—

1. Wednesday, July 27.—"The Treatment of Non-Suppurative Disease of the Middle Ear."

2. Thursday, July 28.—"The Ætiology, Treatment, and Prognosis of Innocent Growths of the Larynx."

3. Friday, July 29.—"Intranasal Disease as a Determining Factor in the Production of Laryngeal and Pulmonary Affections (Spasmodic and Catarrhal)."

Through the courtesy of the Editor of the *British Medical Journal* we are able to afford our readers the opportunity of studying the following abstracts of introductory papers.

THE TREATMENT OF NON-SUPPURATIVE DISEASE OF THE MIDDLE EAR.

The discussion will be introduced by Professor Urban Pritchard (London) and Dr. Thomas Barr (Glasgow).

Abstract of introductory paper by Professor URBAN PRITCHARD.

The classification of the conditions included under non-suppurative disease of the middle ear is not yet agreed upon, but for discussion of treatment the following rough divisions will suffice:

1. Acute non-suppurative otitis media.
2. Early stages of chronic non-suppurative catarrh.

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3. Advanced stages of the same.
4. Middle-ear adhesions, the result of former acute inflammation.
5. Sclerosis resulting from disease of the bony capsule enclosing the internal ear and forming the inner wall of the tympanic cavity.

1. *Treatment of acute non-suppurative otitis media.*—In the earliest stages gentle, not forcible, Politzerisation (not catheterisation) will often relieve the pain at once and tend to cut short the attack. Counter-irritation behind the ear is always most valuable, and will often arrest the otitis and relieve the pain. Instillations are occasionally advisable; when used should be strong anodyne solutions (for example, cocaine or morphine) in an antiseptic medium. Glycerine of carbolic acid has been strongly recommended; also adrenalin with cocaine.

Heat in the form of very hot fomentations or hot bran-bags is very useful. Leeches in front and below the ear are valuable in very acute cases.

Incision of the membrane is called for when there is marked bulging of the membrane. The meatus must be purified and afterwards dressed antiseptically to avoid suppuration.

Purgatives are nearly always necessary. Phenacetin or antipyrin, etc., may be given to relieve the pain. Pharyngeal treatment is usually required, but nasal douches or irrigations must absolutely be avoided.

After-treatment.—Politzerisation should always be employed; it will restore the hearing and prevent adhesions. If adenoids are present they must be removed.

2. *Treatment of the early stages of chronic non-suppurative catarrh*, in which there is exudation into the mucous membrane and from its surface; hence stenosis of the Eustachian tube and more or less fluid in the tympanic cavity.

Politzerisation is preferable to catheterisation. This should be repeated at intervals of one, two, or three days, according to the relief obtained as ascertained by the amount of improvement to hearing. This must not be continued when it increases the deafness.

Incision of the membrana tympani may be practised if there is much fluid in the tympanic cavity, but this is practically a rare condition. The operation should be performed antiseptically.

Local medicinal treatment is most valuable. Sterile alkaline nasal irrigation (for example, borax and sodium bicarbonate) is to be preferred to the nasal douche, as the latter occasionally will produce acute otitis. Mild astringent sprays are often beneficial. Inhalations of pine oil, eucalyptus oil, or still better, of fumes of ammonium chloride, are most valuable.

Adenoids and also enlarged tonsils, if present, must be operated on, and any nasal stenosis must also be removed, to allow of free nasal breathing.

Internal medicinal treatment is rarely needed except for general health.

Climatic treatment is important. Damp situations, such as river valleys of gravel with clay subsoil, should be avoided. High, dry, and sunny positions selected. Warm and well-drained seaside resorts are good, whereas cold, damp seashores with northern aspects must be avoided. High sunny Alpine valleys are often very beneficial, but on rapidly descending from these Valsalva's inflation should be practised. Early and continued treatment of these stages of catarrh is most important, and will often prevent the advanced stages.

3. *Treatment of advanced stages of chronic middle-ear catarrh.*—This is much less satisfactory, on account of the adhesions causing retraction of the membrane and fixation of the membrane and ossicles.

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Mechanical.—Catheterisation is often preferable to Politzerisation, but the value of courses of repeated inflations has been much overrated. Patients must be warned against the constant recourse to Valsalva's method of inflation; at the same time, cautiously employed, it is of value. Gentle suction by means of Delstanche's masseur is occasionally of value, but may easily be overdone. We have yet to learn the value of the rapid suction massage recently introduced. The Eustachian bougie has been overrated. The objections to its use are: First, the risk of injury to the delicate ciliated mucous membrane; the narrow part of the tube being bony, it cannot be dilated except at the expense of this mucous membrane. Secondly, in advanced cases the loss of hearing power is almost always due to changes in the tympanic cavity, and not in the Eustachian tube.

Operations.—All these up to the present have been futile.

Local medicinal treatment.—Nasal irrigations of sterile alkaline and saline solutions are of much value. Inhalations of the ammonium chloride fumes, with cautious Valsalva's inflation to introduce them through the Eustachian tubes, form a most valuable treatment; but long-continued use, with intervals of rest, is necessary. Injections through the Eustachian catheter are much employed by some surgeons, and are occasionally of value; probably a sterile solution of sodium bicarbonate is the most efficacious.

Internal medicinal treatment.—Occasionally, when the mucous membrane is glazed and dry, small doses of potassium iodide with ammonia, so as to produce slight symptoms of coryza, combined with some form of inflation, will yield excellent results. Turkish baths are of value in some of the less advanced cases.

Climate.—The same holds good as with the early stages of the disease, but has far less effect.

4. *The treatment of middle-ear adhesions of old standing.*—This is most unsatisfactory. Operative interference has as yet signally failed, though there may be a future for it. In fact, at present these cases only make the surgeon regret that active treatment was not adopted directly after the acute inflammation which resulted in the adhesions.

5. *Treatment of sclerosis.*—This is still more hopeless, and in a pure case no treatment is of any avail—mechanical, medicinal, operative, and climatic treatments are alike useless. All that we can do is to use such general treatment—for example, iron, arsenic, etc.—as will keep up the general health in the hope that this may help to arrest the disease. We have yet to learn whether the high-frequency electric treatment will yield any results.

In conclusion, although very much may be done in acute otitis and in the early stages of chronic catarrh, yet in the advanced stages of chronic catarrh the aural surgeon can do very little. This is very much to be deplored, as these cases are so very common.

Some of us are too apt to give up the advanced cases at once as quite hopeless, forgetting the fact that even a small improvement in hearing is of value to a very deaf patient. Whereas others, being over-enthusiastic, vaunt the value of this or that treatment, which seems to have benefited, perhaps temporarily, one or two cases.

The writer knows of no condition in which treatment should be considered more judicially, avoiding hasty conclusions for or against any proposed treatment; and considers that we ought certainly not to judge harshly of our over-enthusiastic *confrères* who may be unduly vaunting some new process, having been carried away by a few apparent successes.

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Abstract of Introductory Paper by Dr. THOMAS BARR (Glasgow).

Dr. BARR, in introducing the discussion, will not attempt to traverse the whole field included in the title, but limit himself to the non-exudative or dry forms of the disease, whatever their origin may have been. These are the cases for which otologists eagerly and earnestly desire improved methods of treatment, and are therefore well fitted for investigation and discussion. The problem to be dealt with here is more difficult than in the exudative forms. There are usually changes and products in the middle ear which may have originated long before, sometimes during early childhood, in acute inflammation, in simple exudative catarrh, or worst of all, in gradual, and scarcely perceptible, changes of a dry nature from the beginning. The scientific character of the treatment is faulty because of the deficiency of our knowledge of the anatomical changes existing in any given tympanum, and efforts of treatment are on that account bound to be often empirical and to some extent experimental.

The field of treatment is large, but not proportionately fruitful. It is manipulative, operative, medicinal, hygienic, and climatic. Amidst the diversity of opinion regarding the value of the different methods, *inflation* in some form or another, but especially in the form of *Politzerisation*, is probably practised by all otologists. In view of the fact that it is rarely possible to determine the precise condition of the intra-tympanic structures in any given case, we are not often justified in excluding the possibility of doing good until the test of treatment, *especially the test of effective inflation*, has been applied. As to how far experimental treatment may be pushed there is room for difference of opinion. Any increase in the deafness or in the intensity of the subjective sounds calls for an immediate halt, whereas improvement, even although comparatively slight but of course more so if marked, would encourage the continuance of these efforts. Inflation should not be practised too frequently, seldom more so than every second or third day; too prolonged treatment is bad. After three or four weeks there should be a pause of one, two, or three months, and in some cases short courses of such treatment may be required at intervals during the whole course of the person's life.

Patients or friends can usually be taught to inflate efficiently, but then definite directions as to the frequency and duration of the treatment should be given, with the warning that if any increase in the deafness or subjective sounds be observed, the fact should be immediately reported.

Valsalva's method of inflation is rarely permissible, because the patient is either unable to inflate his tympanum, or he does great mischief by unduly frequent repetition, so that it is not uncommon to find that a patient repeats it before every interview, it may be twenty or thirty times a day, acquiring such dexterity that the act is scarcely perceived by an onlooker. The improvement in hearing becomes less and less, and shorter and shorter, with gradually increasing mischief to the function of the organ. Efforts to force vapours through the Eustachian tubes into the tympanum are generally futile.

Probably the best results are obtained by the sudden impact of air yielded by Politzer's method, and *catheterization* is limited to the cases in which the introduction of solutions or vapours into the middle ear is indicated, or where a stricture exists in the Eustachian tube. Applications to the inside of the tube itself through the medium of the catheter are productive of good. Paroleine solutions of iodine, menthol, camphor, cocaine and adrenaline may be introduced through the catheter with good effect, by means of an atomizer, in catarrhal swelling of the

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Eustachian tube. The treatment of organic stricture of the Eustachian tube is very unsatisfactory, and the attempt to forcibly dilate such a stricture by means of some kind of bougie seldom leads to a good result. Hence the writer has for several years past rarely employed the Eustachian bougie.

In regard to the *value of nasal treatment* there is divergence of opinion. Probably most otologists would approve of operating upon the naso-pharynx when post-nasal adenoids exist, without, however, expecting such brilliant results as in the case of the exudative catarrhs. There can be no doubt that nasal obstructions, especially when severe, tend to exercise an injurious influence upon the tympano-Eustachian apparatus. There is a good deal of agreement as to the propriety of operative or other treatment when there are hypertrophic changes in the nasal passages. The existence of a small spur or knot on the septum, interfering very little or not at all with nasal breathing, and producing no special tendency to catarrhal attacks, should probably be ignored. There are cases in which intra-nasal operations have seemed to aggravate deafness, perhaps through nervous shock or from the entrance of blood into the Eustachian tube, while the nasal douche may in the absence of careful precautions be productive of much harm.

The so-called *pneumatic massage of the tympanum*, along with inflation, is useful. The writer uses a suitable piston and cylinder propelled by an electro-motor, the electric current being derived from an accumulator. This is capable of producing up to 800 rarefactions and condensations in a minute without any unpleasantness to the patient, who frequently expresses a distinct feeling of relief and clearness after from one to two minutes of its use. It is always employed along with inflation and is a useful addition to the treatment by inflation. Even in sclerosis it frequently allays tinnitus.

Many patients find that rubbing behind the ear gives them a sense of benefit, and the *use of friction* with the aid of a stimulating ointment, such as camphor, oil of peppermint, and vaseline, applied behind and below the ear, in the form of a kind of massage, seems often to be productive of good.

In regard to *the value of operative treatment* on the tympanic membrane and intra-tympanic structures there is remarkable diversity of opinion, as shown by the result of the valuable investigation carried out by Mr. Arthur H. Cheatle seven years ago, and reported in the *Practitioner* in 1897. It may be said in the first place that, with a narrow meatus, many of such operations are well-nigh impossible, while, in the absence of an exact knowledge of the pathological conditions present in the tympanum the operator is in the position of one groping in the dark. An artificial perforation with the galvanic cautery may improve the hearing or relieve tinnitus. If such an opening could be rendered permanent there is here distinct possibility of doing good. In proceeding to the other and deeper operative measures there is great danger of injuring rather than improving the hearing, and by producing a purulent condition we may even imperil life. The experience of most observers is that while improvement in the hearing or relief of the tinnitus not infrequently follows operation, such improvement is rarely permanent. To what extent opinion may be modified by improvements in the methods of operating, or in the means of determining the exact pathological conditions present, the near future will probably show.

Electrical treatment, long in abeyance in aural therapeutics, has been again revived in the form of the *high frequency currents*. In Glasgow this method has been under trial during the past year, when from

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forty to fifty cases have been treated. In each of the cases the patient received from twenty to forty applications, continuing a quarter of an hour each time, and at intervals of from four to six times a week. It is employed in two ways: first, the multiple point electrode is held as near to the patient as possible without producing sparks, and at the same time another electrode in the shape of a white metal disc is pressed on the other side of the head; second, by means of thin metal rods covered with glass tubes which are closed at the distal ends and introduced into the external meatus. The results have been sufficiently encouraging to justify further trial, although no doubt the treatment is entirely empirical.

The discussion will be continued by Dr. A. Bronner, Dr. E. Deanesley, Mr. Mark Hovell, Dr. Macnaughton-Jones, Mr. R. Lake, Dr. J. Kerr Love, Mr. F. Marsh, Dr. W. Milligan, Dr. H. Pegler, Dr. H. Smurthwaite, Dr. Scanes Spicer, Dr. Herbert Tilley, Dr. Ernest Waggett, Dr. Watson Williams.

Etiology, Treatment, and Prognosis of Innocent Growths of the Larynx.

The discussion will be introduced by Dr. Dundas Grant (London) and Professor A. Rosenberg (Berlin).

Abstract of introductory paper by Dr. Dundas Grant.

Consideration will be limited to non-malignant growths found in the interior of the larynx, and chiefly to those points which are of practical importance with regard to treatment. This *etiology* is a question of practical weight, and it is only to be regretted that it is often veiled in obscurity. The removal of the cause is an essential step in treatment in medicine, and to a less extent in surgery; in the particular branch of laryngology under discussion it is obviously of secondary importance as compared with the operative removal or destruction of the growth, but it is of the greatest value in prophylaxis and in the prevention of recurrence after extirpation.

Many growths in the larynx are so closely related to inflammatory products that they cannot be distinguished from them, and, indeed, are identical with them in their anatomical structure. Their diversity depends mainly upon which elements in the composite structure of the laryngeal mucous membrane are chiefly affected.

Among the commonest growths in the larynx we find papillomata (pachydermia verrucosa) essentially identical with the pachydermia found in its most typical form on the vocal processes and in the inter-arytenoid space. Such growths as fibromata, fibro-papillomata, fibro-adenomata, cysts, and angiomata, are also explicable as the results of inflammatory conditions. In many cases the sequence of events from an acute to a chronic inflammation, with such subsequent hyperplasia as to constitute a tumour, is evident; in other cases it is most obscure.

Those parts of the vocal cords which undergo the greatest amount of mutual concussion and attrition, such as the junction of the anterior and middle thirds (the most frequent nodal point during phonation), the vocal processes and the inter-arytenoid space would seem to be most liable to chronic inflammatory and neoplastic changes. In the inter-

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arytenoid space the result is a diffuse thickening (pachydermia), at the vocal process the typical pachydermic nodule. At the junction of the anterior and middle thirds of the cords there may be a "singer's nodule," consisting of a simple epithelial thickening (a miniature corn), a smaller or larger papilloma generally of soft consistence or a sessile or pendulous œdematous fibroma which may exceptionally contain glandular structure.

Growths at the anterior commissure may depend on the same causes, but it seems likely that they are at times of developmental origin, and are really embryonic remains allied to those congenital diaphragms sometimes occupying more or less of the space between the anterior parts of the cords.

The chief causes of irritation of the larynx are over-use or wrong use of the voice and irritating vapours or dusty atmosphere—for example, the black-board chalk in the case of teachers. Excess in tobacco smoke (especially "inhalation" of cigarette smoke) may also be quoted. Nasal obstruction leading to mouth-breathing or purulent nasal discharges inhaled into the larynx are among the most potent contributories. Syphilis and tuberculosis may induce such chronic inflammatory changes as predispose to the development of new growths, but the irritation of the microbes of pulmonary phthisis—the tubercle bacilli as well as the accompanying micrococci—is known to be capable of exciting the growth of papillomata. It is probable that laryngeal papillomata when multiple are due to microbic infection.

Prognosis of innocent laryngeal growths.—This is dependent mainly upon their accessibility for removal and the possibility of avoidance of the predisposing and exciting causes.

If not removed their tendency is to increase of growth leading to fatal obstruction to respiration, all the more rapid in supraglottic or intraglottic growths, also to continued and increased impairment of voice, more rapid in intraglottic or infraglottic growths (in the latter case still more if the growth is sufficiently mobile to be driven up between the cords during expiration). Spontaneous disappearance is possible in the case of papillomata, but cannot be counted upon.

After operation recurrence is probable unless the removal is complete. The writer's experience would lead him to the view that single pedunculated growths at the anterior commissure are unlikely to recur, whereas sessile ones at the junction of the anterior and middle thirds of the vocal cord are very likely to do so, as also are multiple papillomata.

The question of malignant transformation of benign growths cannot be left unconsidered. Practically, it only arises in connection with papillomata, which, in exposed parts of the body, have a tendency, under repeated or continued irritation, to develop into epitheliomata. There is no reason for immunity on the part of the larynx, but the results of Semon's collective investigation seem convincing as to its extreme rarity. Moreover, the evidence that while it occurred in one in two hundred and eleven of the cases on which no operation was performed and in only one in two hundred and forty-nine of those operated on, allows a margin in favour of operation. This is a complete answer to those who have been inclined to attribute to the traumatism effected by intralaryngeal operation a tendency to bring about malignant changes in innocent laryngeal growths.

In the few cases related by Fauvel the removal of the growth was followed by long-continued cauterisation with nitrate of silver.

Treatment.—This is not necessarily always operative. The avoidance of exciting and predisposing causes—for example, complete silence or

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limitation of voice to a whisper for several months—is sometimes sufficient in cases of very small nodules due to over-use or misuse of the voice. Coughing must be absolutely prohibited or prevented. Avoidance of smoking or smoky atmosphere and moderation or abstinence in regard to alcohol and other causes of gastro-hepatic disturbance are also valuable prophylactic and therapeutic factors. The correction of errors in voice production is of vital importance. The writer is convinced of the beneficial effect of the vocal exercises devised by Holbrook Curtis and of a rational method of respiration in the use of the voice. The occasional application of astringents may contribute.

In other growths removal is the only treatment and it should be carried out *per vias naturales.* The form of instrument employed varies with the special experience of the operator.

The following practical hints, founded on the writer's practice, may meet with the approval of those who are accustomed to Morell Mackenzie's form of handle, and the forceps referred to are modifications of those with which he did his finest work.

Pendulous growths at the anterior commissure call for the cold snare, and, if it fails, Powell's or Lack's forceps with anteflexed tips. Similar growths on the edge of the cord may be removed with snare or Grant's safety forceps. For sessile growths on the edge of the cord, the latter instrument is pre-eminently adapted. For growths in the posterior commissure Wolfenden's or Lake's forceps, and for those on the upper surface of the cord, Whistler's are very useful.

Krause's handle is much use abroad, and his is the best known tube forceps to which various double curettes and other blades can be adapted. The advantages of these blades combined with a handle acting like that of Morell Mackenzie's are obtained by means of Watson Williams's recently devised intrument. A cutting punch-forceps with blades adapted for the four cardinal points has been invented by Jurasz, and the writer has found it invaluable for the removal of portions of growths for microscopical examination.

Cutting ring knives (Luc) and guillotines (Chappell) have been used by some, but British operators in general seem to pin their faith to some adaptation of Morell Mackenzie's-instruments.

For the destruction of the stump various caustics have been employed, such as nitrate of silver, formalin, chromic acid, trichloracetic or salicylic acid, the last named being in the writer's opinion particularly valuable for papillomata. The writer's recent experience impressed him very favourably with the value and practicability of the fine galvano-caustic point.

Among other means must be mentioned an instrument like O'Dwyer's intubation tube with thin-walled tubes having fenestræ cut in such positions as to engage the growth (usually papilloma in children) and snip it off. Tracheotomy has sometimes led to the disappearance of papillomata in children, but not constantly.

Cysts on the lingual aspect of the epiglottis may be avulsed, or elsewhere they may be incised, preferably by means of the galvano-caustic knife. Angiomata may be destroyed by means of the galvano-cautery.

Anæsthesia by means of cocaine has rendered many of these operations easy, which were formerly impossible. The best method seems to be the slow injection of about 5 minims of a 20 per cent. solution of hydro-chloride of cocaine, by means of a laryngeal syringe, so that the liquid is allowed to trickle over the edge of the epiglottis (Westerman). The combination of local anæsthesia (cocaine) and general anæsthesia

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(chloroform) introduced by Scanes Spicer, has added still further to our possibilities. Lastly, the use of Mount-Bleyer's "epiglottis lifter" has greatly facilitated the writer's examinations and operations. Escat, of Toulouse, and Lambert Lack have devised somewhat similar instruments. Kirstein's method of autoscopy is available for growths situated close to the upper orifice of the larynx.

The distance from the dorsum of the tongue to the vocal cord is sometimes very considerable and beyond the reach of ordinary laryngeal forceps—say fully four inches. In such a case the writer eradicated a papilloma of the size of a split pea by a few touches of the fine galvano-cautery point.

Are there any circumstances which call for removal of non-malignant intralaryngeal growths by external operation? Fauvel, with characteristic decision, rejected this absolutely. Certainly the cases in which it is justifiable are extremely few (we are not considering growths on the outer aspect of the framework of the larynx). When, however, all endolaryngeal methods in the most skilled hands available have failed, or the size or vascularity of the tumour makes intralaryngeal measures impracticable, external methods are called for.

Tracheotomy may be practised in children with papillomata, who may not be amenable to endolaryngeal treatment, more especially if breathing is obstructed, in the hope that spontaneous disappearance of the growths may take place. It is also useful for the removal of a growth so low in the larynx as to be beyond the reach of intralaryngeal instruments.

Infrahyoid laryngotomy is adapted only for growths which should be reached through the mouth.

Thyrotomy had formerly a high mortality, but is practically nearly as safe as tracheotomy. It should, however, be avoided for fear of impairment of voice, as the result of imperfect coaptation of the vocal cords. No doubt a more complete extirpation may be effected in this way than by the natural passages. Recurrence is thus made less probable, but it is by no means excluded.

In the complete paper the writer will cite cases illustrating the points touched on in this summary.

Abstract of Introductory Paper by Professor A. Rosenberg.

Reference is made to cases in which before the invention of the laryngoscope laryngeal tumours were removed through the mouth, to rare instances in which a polypus has been spontaneously expelled by coughing and to the occasional spontaneous disappearance of papilloma following an exanthematous disease. Although astringent applications may be of use in inflammatory nodules and in so-called singer's nodules, it is difficult to say how much is due to the simultaneous disuse of the voice. In other endolaryngeal growths, inhalation, insufflation, and injections are useless. As a rule operation is the only proper treatment, and endolaryngeal methods are to be preferred. General anæsthesia is generally necessary in children, but in adults local anæsthesia by cocaine is almost always sufficient. When the epiglottis lies far back, or when the growth is in the anterior commissure, it may be desirable to have the epiglottis pulled forward by a retractor in the hand of an assistant. Professor Rosenberg also discusses the special difficulties in treating papilloma in children owing to their refusing to permit the use of the laryngoscope, and in referring to intubation he points out the possible risk of dissemination of the growth. With regard to endolaryngeal instruments, he expresses a preference for the cutting curette, while

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admitting that in certain cases better results may be obtained with the snare, a special form of which he will describe. He then briefly discusses the treatment of amyloid, lipomatous, myxomatous, and adenomatous growths, of tumours of thyroid origin, and of angiomata.

The discussion will be continued by Dr. N. C. Haring, Mr. Mark Hovell, Dr. S. Moritz, Dr. H. Smurthwaite, Dr. Scanes Spicer, Dr. StClair Thomson, Dr. Herbert Tilley, Dr. Ernest Waggett, Dr. Watson Williams.

Intranasal Disease as a Determining Factor in the Production of Laryngeal and Pulmonary Affections.

The discussion will be opened by Dr. Greville MacDonald (London) and by Dr. Samuel West (London).

Abstract of introductory paper by Dr. Greville MacDonald.

Referring to the unsatisfactory condition of a subject where the conflict of clinical facts, the contradictory opinions deduced by authorities, and the small help afforded by the physiologist, preclude the possibility of establishing a scientific basis for future investigation, the paper offers a working generalisation which may be a step towards the establishment of a definite law.

The writer deals with his own observations, and divides his cases into three classes:

1. Those pointing to the relief or cure of asthma by removing obstruction to easy breathing or obstruction causing pressure.

2. Those where the treatment of any other sort of abnormality in the nose is similarly successful.

3. Those where the mere cauterisation of the mucous membrane in a healthy nose results in relief or cure.

These three classes are then discussed *seriatim*. In the first, the most favourable forms of obstruction are, first, anterior hypertrophy of the inferior turbinals; second, septal spurs and deviations; third, adenoids; and, lastly, polypus. In the second class are found general œdema of the mucous membrane, especially when associated with excessive sneezing, frequently also with chronic bronchitic asthma. Not infrequently the cure of these cases is effected by the electric cautery. Atrophic rhinitis may also be responsible for asthma, and the amelioration of the nasal condition may result in cure of the bronchial symptoms. In the third class the writer endorses the valuable observations of Dr. Alexander Francis as to the frequent relief, and even cure, of asthma from the mere cauterisation of the mucous membrane covering the upper part of the triangular cartilage in perfectly healthy noses.

So far the clinical facts of the association of the nose with asthma are obvious enough. But they are further emphasised by the observation that occasionally the removal of polypus sometimes originates, for the first time, the onset of asthma.

Passing to his generalisation, the writer invites attention to three points of collateral evidence:

1. That whenever a patient complains of frequent and severe cold-taking, and we find any abnormalities whatever in the nose, we can almost promise to cure his cold-taking by curing the nasal abnormality.

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2. That whenever a patient complains of paroxysmal sneezing, whether of daily attack or of longer interval, we are tolerably sure of curing him by correcting the nasal disease or malformation.

3. That a patient with polypus, less often with other form of obstruction, sometimes takes cold often severely, in the form of rhinitis, laryngitis, or bronchitis, after the removal of the obstruction. Probably the sudden exposure of a protected mucous membrane to cold air accounts for each of these accidents as well as the asthma.

Remembering these three points, which will be conceded by many observers, this generalisation may be formulated:

Any treatment that allays the irritability of the Schneiderian membrane, whether by operation and the ventilating of abnormally protected areas of mucous membrane, or by hardening the hyperæsthetic areas with the electric cautery, or by the exhibition of such local remedies as cocaine, or the very useful but pernicious nostrum known as "Tucker's cure," any such treatment of the nose may modify or arrest the onset of catarrhal attacks, whether they manifest themselves in symptoms of sneezing, laryngitis, bronchitis, and asthma.

The discussion will be continued by Dr. Colin Campbell, Dr. N. C. Haring, Mr. Mark Hovell, Dr. Macnaughton-Jones, Dr. H. Pegler, Dr. Knowles Renshaw, Dr. H. Smurthwaite, Dr. Scanes Spicer, Dr. StClair Thomson, Dr. Herbert Tilley, Dr. Ernest Waggett, Dr. Watson Williams.

The following communications have been announced:

Dr. Marcel Natier (Paris). "*Deafness: its Treatment through Acoustic Exercises by means of Tuning Forks. Physiological re-education of the Ear.*"

Professor Onodi (Budapest). "*The Disturbances of Vision and Development of Blindness of Nasal Origin induced by Disease of the Posterior Accessory Sinuses.*"

Professor Onodi will also give a *Demonstration of Photographs of his Preparations, illustrating the Anatomy and Surgical Treatment of the Accessory Sinuses of the Nose.*

Professor A. Rosenberg (Berlin). "*Pulmonary Infusion: a Method of locally treating Diseases of the Lungs.*"

Abstracts of the following papers have been received:

"*On the Treatment of certain Forms of Non-Suppurative Catarrh of the Middle Ear by the Eustachian Catheter with Compressed Air and Nebulizer,*" by Adolph Bronner, M.D.

Most cases of disease of the middle ear are due to a primary affection of the mucous membrane. The latter is directly continuous with that of the naso-pharynx and Eustachian tube. It is, therefore, of great importance that we should be able to treat not only the mucous membrane of the middle ear, but also that of the Eustachian tube, locally. Most authors follow the teaching of Politzer, and state that the use of

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Politzer's bag is as efficacious as the catheter, if not more so. In Dr. Bronner's experience this is not at all the case. In fact, he thinks that the use of the bag is often harmful. The proper way to use the catheter is not to blow into it with a Politzer's bag, which is dangerous and often very painful, but to use Lucae's double bag.

With this a continuous current of air can be kept up and the pressure easily regulated. Better still is the large compressed air apparatus as used in America. This consists of a large receiver of seamless steel about three to four feet high and one to two feet in diameter. Air can be pumped into the receiver by an ordinary hand pump, or more conveniently by an automatic pump, attached to the water main, which gives a pressure equal to about three to four of that of the water. You can fix a so-called multiple communiter on to the receiver. This consists of one or more bottles connected with one another. The compressed air blows the liquid contained in the bottles against the walls of the same and breaks it up into exceedingly fine particles. In this form it escapes from the bottle and is blown into the middle ear through the catheter. Practically any drug—iodine, menthol, camphor, formalin, tincture of benzoin—can thus be sprayed on to the mucous membrane of the Eustachian tube and middle ear, and for any length of time, and under any pressure. When the drum is perforated the liquid, looking very much like vapour, can be seen escaping by the external meatus. It also, of course, enters into the cavities and recesses adjoining the middle ear. By an ingenious arrangement the flow of compressed air can be interrupted so as to produce up to 1000 vibrations per minute. This is very useful in breaking down slight adhesions of the drum to the middle ear, removing spasm of the tensor tympani muscle, etc.

By this method the immediate result obtained is not only greater than after the use of Politzer's bag, but more permanent, and the diseased mucous membrane of the Eustachian tube is treated at the same time.

In some cases Dr. Bronner uses the communiter several times at intervals of quarter- to half-hour, and often the hearing improves slightly after each application. Many cases of so-called dry catarrh of the middle ear are not due to affection of the mucous membrane at all, but to a primary disease of the osseous labryinth. Naturally in these cases the catheter should be used most carefully. If sudden great pressure is used, as with Politzer's bag or the bag attached to the catheter, the hearing and tinnitus often become worse.

In dubious cases Dr. Bonner uses the catheter and iodine spray under very low pressure.

Dr. Albert A. Gray (Glasgow) will exhibit and demonstrate macroscopic and microscopic preparations.

Macroscopic:—(1) Human membranous labyrinth. Unstained. (2) Human membranous labyrinth. The endolymph spaces have been injected with lamp-black. (3) Human membranous labyrinth. Stained with osmic acid and showing the distribution of the nerves. (4) Human membranous labyrinth. Showing the aqueducts of the cochlea and of the vestibule. (5) The membranous labyrinth of the seal. The noteworthy features are: the large size of the cochlea, the vestibule, and the semicircular canals.

Microscopic:—(1) Section of the human cochlea, showing the helicotrema. (2) Section of the cochlea of the guinea-pig. The peculiar substance above the organ of Corti is stained black with osmic acid. (3) Section of the cochlea of the mole, showing the peculiar spiral

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arrangement round the outer hair cells and the relatively large size of the rods of Corti. (4) Section of the cochlea of the white mouse, showing the details of the organ of Corti in a very thin section.

"*Notes on a Case of Mastoid Abscess five weeks after Measles; Operation; Immediate Recovery,*" by L. A. LAWRENCE, F.R.C.S. (London).

Little girl, aged five, first seen June 3, 1904. Then a little discharge from left ear and a mastoid abscess on a level with the upper limit of the pinna. There were no granulations in the ear. An opening was made giving exit to about two drachms of pus, quite healthy and sweet. The mastoid was extensively destroyed, but there were no granulations, and a probe passed down towards the middle ear. Ear and abscess cavity packed with iodoform gauze and dressed daily. The ear continued discharging for less than a week, the discharge almost immediately becoming mucous. The abscess healed rapidly and completely, and (on June 30) the child was practically well.

History.—A healthy child as regards the ears till May 1, then an attack of measles. The abscess came during the third week without any complaint of the ear on the child's part.

"*Disease of the Posterior Ethmoidal and Sphenoidal Cells as a Cause of Laryngeal and Bronchial Affections and of Ozæna,*" by JOHN MACKIE, M.D. (Nottingham).

Briefly, the conclusions respecting nasal suppurations are:

1. That nasal suppurations for the most part are either in direct continuity with adenoids and the naso-pharyngeal catarrhs of childhood, or are set up later in life in noses where drainage has been interfered with by the deformities and hypertrophies left by these conditions of early life.

2. That the ethmoidal is the sinus most frequently involved.

3. That frontal and sphenoidal disease is almost invariably due to extension from the ethmoid, and rarely requires individual attention in treatment, providing the ethmoid has been thoroughly dealt with and drainage established in the middle meatus.

4. That antral disease, though occasionally due to diseased teeth, is far more often caused by defective drainage in the middle meatus.

5. That by bearing 3 and 4 in mind the treatment of frontal and antral disease is made easier, and the heroic surgical proceedings now being advocated are seldom necessary.

6. That disease of the posterior sinuses is the main factor in an ordinary ozœna and the very frequent cause of chronic catarrhal conditions of the pharynx, the larynx, the trachea and bronchi, associated with cough, purulent expectoration, and at times an oozy type of hæmoptysis; that such conditions are often mistaken for, and treated as, phthisis. Of this last the author has some very striking instances.

"*Some Practical Points in the Treatment, Operative and Non-Operative, of Frontal Sinus Suppuration with an Analysis of the Ultimate Results obtained in Forty Cases,*" by WM. MILLIGAN, M.D. (Manchester).

General observations. Diagnosis of frontal sinus suppuration (diffi-

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culties of); aids to diagnosis. Acute suppurative sinusitis. Chronic suppurative sinusitis. Association with suppuration in other nasal accessory sinuses. Symptoms demanding special attention. Importance of preliminary intra-nasal treatment. External operations upon sinus. Importance of free drainage. Treatment of the mucosa lining the sinus. Should drainage tubes be used? Should the sinus be packed? Complete closure of external wound. Incomplete closure. Analysis of forty cases, with special reference to age, sex, sinus or sinuses involved, duration of disease, method of operation and after-treatment. Ultimate results.

"*Menière's Disease: a Clinical and Experimental Inquiry*," by WM. MILLIGAN, M.D. (Manchester).

Usually accepted theories of the pathology of Menière's disease. Varieties of Menière's disease. Is the "symptom-complex" due to peripheral or central disease? Deductions from clinical investigations and experimental and operative investigations. Relation of deductions to the question of treatment.

"*On the Benign Neoplasms of the Septum Nasi with particular reference to Bleeding Polypus*," by HEMINGTON PEGLER, M.D. (London).

1. In this paper the author proposes to review our knowledge of certain intra-nasal neoplasms (other than mucous polypi) clinically and pathologically benign.

2. Even with these limitations, this subject is so comprehensive that on this occasion but one group of neoplasms can be considered; that chosen being typified by the so-called "bleeding polypus of the septum."

3. These neoplasms derive importance from their liability to set up frequent and sometimes dangerous attacks of hæmorrhage from the nose and to rapidly recur unless thoroughly eradicated.

4. The designation "bleeding polypus" has been in use in this country and abroad for some few years past, and though suggestions have been made for its discontinuance (Grünwald), the author advocates an opposite course owing to the practical value of a popular nomenclature by which a tumour that should be familiar to the medical practitioner can be referred to and recognised even though the term be not scientifically perfect.

5. The main objections are that—(1) The growth is not confined to the septum nasi; (2) it is not strictly speaking a polypus; (3) other vascular growths arise from the septum that belong to a different category.

6. The etiology of bleeding polypus of the septum which will be more conveniently called here nasal angeioma, is still unsettled. Siebenmann, with whom Krieg concurs, traces its origin to rhinitis sicca; proliferation of the epithelium leading through stages to erosion and septal perforation in one class of case and to inflammatory tissue formation and proliferation in another. Grünwald ('Atlas of the Nose,' etc.), regarding bleeding polypus as a simple granuloma, seems to coincide with this hypothesis. Against this—

7. Angeiomas histologically and clinically indistinguishable from the septal type grow not rarely from the inner surface of the ala nasi and with no apparent association with rhinitis sicca.

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8. The theory that distension of the vessel walls (old and new) takes place from malnutrition thereof (Kyle and others) presupposes a non-inflammatory origin, and not being supported by microscopic confirmation must be regarded as surmise only.

9. The histology of nasal angeioma is sufficiently distinctive to merit the employment of the term as a generic title for the group; individual members varying in unimportant details only. The type form is essentially a soft fibroma containing some myxomatous or œdematous tissue—more or less. The matrix is in every case permeated by vascular channels, or replaced at intervals by large interspaces filled with blood. The enclosing epithelium is stratified.

10. The term fibro-angeioma is admissible when from age or other causes the fibrous element is unusually abundant, and accordingly as the blood spaces are small or extensive, it is styled a simple or cavernous angeioma.

11. The inability of certain authors to distinguish satisfactorily between true angeiomas of the nasal cavities and inflamed polypi, or simple œdematous polypoid hyperplasias of the turbinals is perhaps due to this admixture of myxomatous tissue, in the softer growths especially.

12. A more serious confusion not rarely to be found in the reports of experts is between simple nasal angiomas of the septal "bleeding polypus" type and true malignant tumours, *e. g.*, the sarcomata, angeio-sarcomata, and endothelioma. The expression "sarcomatoid," which has been employed to indicate a doubt in the observer's mind as to the nature of the specimen, should in the author's opinion be avoided. A careful scrutiny of the material at his disposal with the kind collaboration of Mr. G. Shattock, at the College of Surgeons, has so far failed to discover any true sarcomatous elements.

13. Allowance has to be made for the somewhat deceptive appearance of many microscopic sections taken from the nasal cavities exhibiting young cell-tissue, which therefore require familiarity with special (nasal) pathology for correct interpretation.

14. The connective-tissue cells are especially aggregated around the vessels in the more vascular portions of the field. Many are fibro-blasts displaying a lack of definitiveness in their arrangement. Being cut in the section at various planes to their axes, they create a somewhat heterologous appearance in the tissue, sometimes suggesting that of a mixed-celled sarcoma. In most cases, however, groups of lymphocytes are freely scattered in the stroma amongst the fixed or free and proliferating connective-tissue cells.

15. A heaping up of the endothelial cells, due in many places to collapse of the young newly-formed vessels (Shattock), in other parts (probably) to true proliferation of the endothelial cells around the vessels, together with a kind of spurious alveolation of the matrix, has apparently been responsible for a diagnosis of endothelioma.

16. The epithelial covering is usually stratified, bounded by a horny layer of squames. Rarely ciliated columnar in unexposed parts. The author has found in one atypical case a spurious epithelial surface formed by blood clot. Masses of proliferated epithelium are sometimes to be seen in the sections.

17. The question of malignancy anent these growths when discovered clinically is obviously of the utmost importance to the practitioner, who should be in a position to reassure his patient positively on this point.

18. From polypoid hypertrophies of the septum and turbinal bodies, a typical nasal angioma may be distinguished by the single endothelial lining of the vessels and blood spaces. The author has seen a fibrous

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investment, in one instance of fibro-angioma, but the generality of the vessels were free, and were easily distinguishable from the venous sinuses of the turbinal mucosa. Moreover, acinous glands have not been discovered in the author's material.

19. The favourite seat of bleeding polypus of the septum is Kiesselbach's area, *i. e.* the space towards the anterior extremity of the septum included within the vestibule, and immediately posterior to the lumen. It is practically identical with that of common epistaxis, simple erosion, and perforating ulcer. The next most frequent is the inner aspect of the alæ nasi.

20. Clinically the growth first excites attention by virtue of the repeated attacks of nose bleeding to which it has given rise on the slightest provocation.

21. At a varying interval after the incipient hæmorrhage, a feeling of obstruction supervenes and increases. Owing to the proximity of the growth to the nostril the stenosis soon becomes complete.

22. On inspection, a bright red usually lobulated body is seen, much resembling a raspberry. Examination with the probe discovers its attachment to the septal wall by a pedicle varying in thickness. If very broad the tumour assumes a mushroom shape.

23. In one case only—and this was atypical in structure and seat—has an external disfigurement been described. (Alar case of Brown Kelly; also alluded to in paragraph 16.)

24. The clinical *diagnosis* is not difficult in the hands of one skilled in rhinological examinations. True (squamous) papilloma resembles nasal angioma somewhat, especially in an early stage.

25. Papillomata are paler in colour, more finely papillated, smaller and more sessile, and bleed less readily.

26. Mucous hyperplasias are pearly and œdematous, do not bleed when touched with the probe, and occur less frequently on Kiesselbach's site.

27. Treatment is best effected by removal with the cold stout wire snare (No. 6 piano). If sessile, transfixion with a needle must first be performed.

28. The base must be thoroughly seared with the flat galvano-cautery burner; and this plan must be followed up by repeated applications of the cautery point or of chromic acid at each appearance of recrudescence. Actual recurrence must be regarded as indicating a want of thoroughness in the treatment of the base.

29. In Germany the chisel is more often employed (Krieg), and is probably quite radical in effect.

The paper will be accompanied by a drawing of "bleeding polypus" from life, and by microscopic drawings illustrating the principal points mentioned in the text.

"*A Case of Congenital Word-Deafness*," by W. S. Syme, M.D. (Glasgow).

The patient is a boy aged nine, of full size, cheerful, and healthy looking. The history given is that he has never spoken, and that he does not seem to understand when he is spoken to. And yet he is not deaf, because he hears music, and is frequently observed to hum tunes which he has heard played, and to hear at once, when, for instance, a street organ is in the neighbourhood. He plays with and as other children, is active and cleanly in his habits, dresses and feeds himself.

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In fact, except for the defect referred to, there is nothing to suggest lack of average intelligence. On examination the tonsils were found to be much enlarged, and a mass of adenoid growth was felt in the naso-pharynx. The tympanic membranes showed the usual condition found in adenoids. There was no other sign of previous ear disease, nor was there anything in his family or personal history to suggest intracranial disease. After removal of the tonsils and adenoids his hearing power was not appreciably altered.

It is impossible to obtain reliable results by examination with the watch or tuning-fork. A piano played in another room he evidently hears distinctly, but when spoken to he takes no notice. If, however, he is made to watch the lips of the person speaking, he attempts to repeat the sound of the words. If his eyes are covered he still attempts to repeat what is said to him, getting usually the number of syllables but not the words themselves.

"*The National Importance of the Thorough and Systematic Removal of Adenoids in Childhood*," by GRIFFITH C. WILKIN, M.R.C.S.

1. The obligation of the State to the poor, especially in the country. 2. The general presence of adenoids amongst the children of the poor in the country districts the author has medically visited. 3. The general presence of adenoids for generations past as shown by paintings. 4. The altered condition of the kingdom through the growth of large cities. 5. Growths a cause of hawking and spitting. 6. A brief glimpse of the general practitioner's work showing the impossibility of his having time for the thorough examination of cases of the finer branches. 7. Suggestion for efficiently treating the trouble. 8. Remarks.

"*Some Observations on the Mode of Origin of Nasal Polypi*," by EUGENE S. YONGE, M.D.(Manchester).

The central idea in this investigation was to endeavour to find some of the processes which immediately preceded polypus-formation, and to trace the progression of the disease from normal mucous membrane up to the fully-formed growth. Observations were made both on the cadaver and on specimens obtained from clinical cases.

The cases from which specimens were obtained for microscopic examination may be divided as follows:—

I. Cases in which the nasal tissues were not diseased. Obtained *post-mortem*.

II. A case of early nasal polypus. Obtained *post-mortem*. The outer wall of the left nasal cavity was examined, sections being made in sucessive antero-posterior planes. There was a condition of chronic inflammation of the various turbinal and meatal tissues, with the exception of the inferior meatus which was practically normal. The mechanical process of polypus-formation could apparently be traced from smooth (non-polypoid) mucous membrane to structures which showed the characteristics of ordinary mucous polypus. The mucous glands were degenerate almost throughout the sections. Other appearances, such as enormously thickened vessels in the middle and inferior turbinal regions, were also noted.

III. Clinical cases of nasal polypus at various stages, in which certain of the tissues were examined.

IV. A case of rhinorrhœa unattended by nasal polypus.

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V. Cases of chronic inflammatory conditions of the nose, unattended by polypus.

Chronic catarrhal rhinitis may perhaps be taken as the type. The conditions observed in the middle turbinal and meatus, which regions may be regarded as the usual sites of polypi, differed from the appearances seen in the same regions, when polypi were present, in an early stage, chiefly in the following particulars :—

1. A mucous membrane free from the œdematous folds which seem to precede actual polypus formation, and to co-exist with them.

2. Active, as opposed to degenerate, glands.

3. A sub-mucosa which, especially in its superficial layers, failed to show the noticeable œdema which was present in the polypus cases. On the other hand, the instances of chronic catarrhal rhinitis gave evidence of long-standing inflammatory mischief similar to that exhibited by the group of polypus cases mentioned.

Provisional conclusions.—As a result of the study of the specimens exhibited, and of others, the writer brings forward the following propositions as being possibly worthy of discussion :

1. Judging from the sections exhibited, the occurrence of nasal polypus gives some evidence of being preceded by a chronic inflammation of the mucous membrane and of being a process which is partly mechanical and partly degenerative.

2. In view of the extremely frequent selection of the region of the middle meatus and middle turbinal as the seat of election of these growths, it is possible that the differences in histological structure, seen in the sections and known to exist in this area, as compared with the other parts of the outer wall of the nasal cavity, may be a predisposing factor in the production of the disease, assuming that the propinquity of the drainage openings of the anterior group of accessory sinuses is not regarded as a factor more capable, *à priori*, of predisposing to the disease.

3. The sections of the early polypus case (No. II) seem to indicate that the mechanical part of the process of polypus-formation is (at any rate in this instance) primarily an œdema of the mucous membrane of the affected regions. Following this there is the formation of shallow sulci on the mucous membrane, which give that structure a wavy appearance, but which later, as they deepen, produce the appearance of distinct folds. The folds tend to become constricted at their bases ; they grow more œdematous, and finally assume the characteristics of a minute polypus. These œdematous projections are practically confined to the lower edge and the concavity of the middle turbinal and to about the upper two thirds of the middle meatus. They are considerably more noticeable in the anterior regions of the nose than posteriorly, and they differ markedly from the folds normally observed on the inferior turbinal. Similar appearances to those described above were observed in many other instances of polypus.

4. It seems necessary—apart from the question of any anatomical peculiarity of the middle turbinal regions, and of the influence of chronic inflammatory changes—to search for the determining cause or causes of the œdema, and especially of the œdematous projections which the sections (No. II) strongly suggest as the primary mechanical process in the formation of polypus in that case, and inferentially in other cases. The writer is unable to point to any theory which is capable of complete substantiation, but he believes that the question of the immediate influence of the degeneration of the mucous glands, on polypus formation, is worthy of further investigation.

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His principal reasons for this statement are:—(1) The abundance of these degenerated glands in the mucous membrane subjacent to, and in the neighbourhood of, the polypi of which specimens were examined; (2) the absence of œdematous projections in the normal mucous membrane, and, generally speaking, at the points where the glands were normal in the turbinal tissues, in instances of polypus; (3) the presence in a section of the lower edge of the middle turbinal from a case of early polypus (No. III) of two isolated œdematous projections (similar to those observed in other instances of polypus), immediately beneath which lay the only group of diseased glands visible in the section, the other groups being normal and the remainder of the mucous membrane smooth; (4) the presence of active glands and the absence of œdematous projections in the middle turbinal regions in cases of chronic catarrhal rhinitis (which were free of polypi), although the other signs of chronic inflammatory action, which the sections exhibited, were distinctly similar to those seen in the mucous membrane of polypoid cases; (5) the microscopic appearances noted on comparing the whole length of the mucous membrane covering the lower boundary of the hiatus semilunaris (1) in a normal (non-polypoid case) and (2) in a case in which polypi were present in the nose.

On the other hand, inasmuch as in the case of nasal polypus (No. II) in which all the structures of the outer wall of the nose were examined, degenerated glands were observed in every part except the inferior meatus, it is not possible to think of gland-degeneration as the sole factor in determining the onset of the disease.

Dr. Yonge will exhibit and demonstrate his model of Meyer's apparatus for laryngeal demonstrations.

The following papers have also been promised:

Dr. Walker Downie (Glasgow)—"*Two and a Half Years' Experience of the Subcutaneous Injection of Hard Paraffin for the Removal of Deformities of the Nose.*"

Dr. StClair Thomson (London)—"*Arrest of a Case of Maxillary Sinusitis by Spontaneous Expulsion of Polypi through the Natural Ostium.*"

Abstracts.

NOSE AND NASO-PHARYNX.

Glatzel.—*On the Examination of the Permeability of the Nose.* "Monatsschr. f. Ohrenheilk.," January, 1904.

Zwaardemaker's method of measuring the permeability of the nose, by observing the marks left on a flat metal or glass surface by the expired air, is adopted by the author. The surface he uses is a nickle-plated piece of zinc plate. From the centre of both ends a piece is cut out, so that the plate will fit closely to the upper lip, below the nose. A straight line is marked from end to end, dividing the plate into two equal parts,

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