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IX.

Golden Rules
OF
Tlural and Masal Practice.

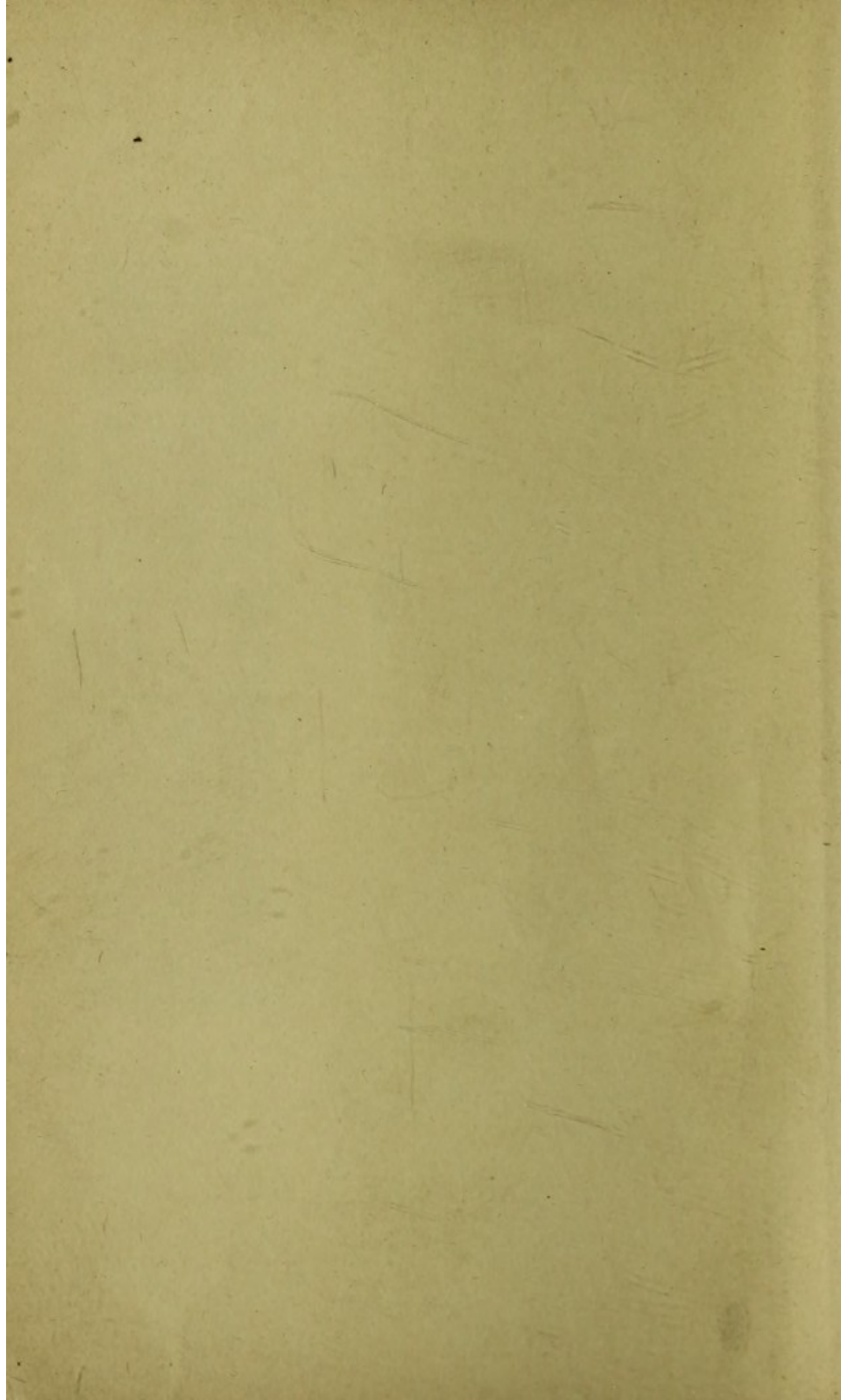


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GOLDEN RULES
OF
AURAL AND NASAL
PRACTICE:

BY

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PREFACE TO SECOND EDITION.

THREE years only having elapsed since the first edition of "Golden Rules of Aural and Nasal Practice" was published, but few additions are necessary in a Second Edition.

The subject matter of the book, namely "Golden Rules," is of such a nature that but few additions are requisite to bring the book up to date. Such additions I have made.

P. DE S.

15, STRATFORD PLACE,
OXFORD STREET, W.

PREFACE TO FIRST EDITION.

No attempt has been made in this small book of "Golden Rules" to deal with Aural and Nasal Practice other than briefly.

It has been the author's experience that many students during their curriculum pay but little if any attention to diseases of the ear and nose, especially the former, a mistake they invariably regret later in life.

A large amount of good work has been done the last few years in these branches of medical science, and the author has, in as concise a manner as possible, with the space at his disposal, dealt with those affections of the ear and nose most likely to be met with in everyday practice.

His main object has been to emphasize the essential points with a view to practical utility, that the practitioner may at a glance learn the most recent views of the causation, symptoms and treatment of the many diseases of these regions he may meet with.

P. DE S.

15, STRATFORD PLACE,
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CONTENTS.

DISEASES OF THE EAR.

	PAGE
EXAMINATION OF THE EAR	7
METHODS OF TESTING THE HEARING	12
GENERAL THERAPEUTICS	15
DISEASES OF THE EXTERNAL EAR	17
FOREIGN BODIES IN THE EAR	19
AURAL EXOSTOSES	21
PURULENT OR PERFORATIVE INFLAMMATION OF THE MIDDLE EAR	22
ANOMALIES OF HEARING	38
NERVE DEAFNESS	40
MENIERE'S DISEASE	41
SYPHILIS	42
DEAFNESS AS A SYMPTOM	42
DEAF-MUTISM	43
ARTIFICIAL AIDS TO HEARING	44

DISEASES OF THE NOSE AND NASO-PHARYNX.

EXAMINATION OF THE NOSE	46
ACUTE RHINITIS	49
CHRONIC RHINITIS	51
CHRONIC ATROPHIC RHINITIS.. ..	53

	PAGE
THE NASAL NEUROSES	54
VASO-MOTOR RHINITIS	55
DEFORMITIES AND DISEASES OF THE SEPTUM ..	58
PERFORATION OF THE SEPTUM	60
NASAL STENOSIS	60
SYPHILIS OF THE NOSE	62
TUBERCULOSIS OF THE NOSE	63
LUPUS OF THE NOSE	64
RHINOSCLEROMA	65
TUMOURS OF THE ANTERIOR NARES	66
TUMOURS OF THE NASO-PHARYNX	69
ADENOID GROWTHS	71
NASO-PHARYNGEAL CATARRH	74
EPISTAXIS	75
FOREIGN BODIES IN THE NOSE	76
THE ACCESSORY CAVITIES	77
SUPPURATION OF THE ETHMOIDAL CELLS ..	80
SUPPURATION IN THE SPHENOIDAL SINUS ..	81

Golden Rules of Aural and Nasal Practice.

Diseases of the Ear.

EXAMINATION OF THE EAR.

Always examine your patient in a good light ; sunlight reflected by a laryngeal mirror is excellent for inspection of the external auditory meatus and tympanic membrane ; in its absence artificial light is necessary.

Inspect the *orifice* of the ear with your eye ; note abnormalities such as hæmatoma, supernumerary auricles, etc.

External Auditory Meatus.—You may find pus, granulation tissue, polypi, eczema. Note the size of the meatus—whether inflamed or not.

Inspect the mastoid region ; condition of cervical glands ; note the facial aspect (adenoids, facial paralysis).

(1) EXAMINATION THROUGH THE EXTERNAL AUDITORY MEATUS.

Remove any obstruction, *i.e.*, wool, hair, cerumen ; straighten the curve of the canal by grasping the auricle and pulling it upwards and backwards ; reflect the light on to the parts, and gauge the size of speculum necessary.

Introduce the speculum gently.

Remember the speculum should be introduced only a certain distance, not exceeding $\frac{1}{3}$ inch. If pain is caused, use a cocaine spray 10 % strength.

Move the speculum carefully about ; a reflex cough is often caused by the introduction of the speculum.

Conditions revealed by the Speculum and Mirror :—

(a) *The External Canal.*—Inflammation, cerumen, foreign bodies, pus, polypi, etc.

(b) *Tympanic Membrane.*

The normal tympanic membrane is

pearl grey in colour. Its general concavity is outwards; it is divided roughly into an anterior and posterior half by the long handle of the malleus running from above downwards and backwards to just below the middle of the membrane. **Note** a distinct projection at its upper part (the short process of malleus); above this the membrana flaccida; from the short process two folds are seen—one passing backwards, one forwards. The fore end of the long handle is called the umbo, and from it radiates forwards a triangular cone of light.

Note if normal or not: presence or absence of perforation; colour of membrane; presence of vessels; opacities local or general; calcareous cicatrices; bulging or depression of membrane; cone of light.

Test the mobility of the membrane by Siegle's pneumatic speculum.

(2) EXAMINATION THROUGH THE EUSTACHIAN TUBE.

By Inflation—Posterior rhinoscopy.

Remember the middle ear can be

inflated by Valsalva's method, Politzer's air bag, or Eustachian catheter.

(a) *Valsalva's method*.—Direct your patient to hold the nose tightly, shut his mouth, and forcibly expire; the air passes up the Eustachian tubes and impinges on the membrane.

(b) *Politzer's method*.—Direct your patient to hold a small quantity of water in his mouth, introduce the nozzle of Politzer's bag into one nostril, close both with your fingers, and give the signal to swallow, and at the same time squeeze the bag forcibly. In children the act of crying can be substituted for the above method.

(c) *By Eustachian Catheter*.—Catheterization is generally difficult, and only acquired by constant practice.

The catheter can be of silver or vulcanite, and 5-5½ inches long.

Remember the catheter must be passed along the floor of the nostril (inf. meatus); guide it straight backwards until it reaches the posterior pharyngeal wall; next rotate it outwards

through an angle of 90° ; now withdraw it until the point passes over the projection forming the posterior lip of the Eustachian orifice. Connect your ear with the patient's by the auscultation tube, and the catheter with a Politzer's bag. Inflate.

Never, in passing the Eustachian catheter, employ force.

Always pass it along the floor of the inferior nasal meatus.

Be careful to thoroughly disinfect your instrument after use.

INFORMATION GAINED BY INFLATION OF MIDDLE EAR.

If the surgeon's ear be connected with that of the patient's by the auscultation tube, the air driven into the middle ear will give a certain sound.

The normal sound should be of a blowing character, as if air were striking against a soft, yielding membrane.

A full dry sound denotes a wide tube and abnormal dryness.

Note that râles, moist or dry, may be heard, and indicate moist or dry catarrhal changes. If they sound distant,

the Eustachian tube is usually affected; if as though produced in one's own ear, probably of tympanic origin.

In Eustachian obstruction the sounds may be thin, weak, distant or interrupted, sibilant.

In perforations of the membrane the sounds always appear to be disagreeably near the surgeon's ear.

Inspect the membrane during inflation. If indrawn and movable, observe unfolding and change of colour. If there be a perforation, the presence of air-bubbles—nature of secretion.

Note the effects of inflation on hearing and subjective sounds.

If in a case, say, of non-perforative catarrh, inflation produces no effect or increased deafness, the prognosis is bad; if improvement for a few hours or a day or two, correspondingly good.

METHODS OF TESTING THE HEARING.

(a) *By Air Conduction*:—

- 1.—Simple tones.
- 2.—Speech.

Remember that a considerable amount of hearing power may be lost without any corresponding appreciation of the fact.

1.—Simple tones. *The Watch.*

Note first of all the distance at which the tick is heard by a normal ear : say it is 36 inches. Now instruct your patient to close the opposite ear and shut his eyes ; now gradually approach the watch until the tick is heard ; then note the distance. Supposing it to be

8 inches, express it as: Watch R. $\frac{8}{36}$

If not heard when pressed on $\frac{0}{36}$
the ear - - - - -

If heard on pressure - $\frac{P}{36}$

If heard on slight contact - $\frac{C}{36}$

2.—Speech. Test the patient in a similar way, with whispering voice, ordinary conversational and loud voice.

(b) *By Bone Conduction* :—

Use for this purpose a tuning fork, pitch C, vibrations 512 per second.

Note Weber's test and Rinné's test :

Weber's test.—If a healthy ear be closed and the tuning-fork placed on the middle line of the skull, it will be heard best by the closed ear. This is because the air-conducting apparatus is blocked and the vibrations are thrown back into the fluid of the labyrinth.

Rinné's test.—If a vibrating tuning-fork be applied to the mastoid process of a healthy ear and held there until it ceases to be heard, and is then held in front of the external meatus, its vibrations will again be heard. This is Rinné positive ; the reverse is Rinné negative.

Remember that Weber's test, when present in a diseased ear, usually indicates mischief in the air-conducting apparatus, *i.e.*, meatus, membrane, and middle ear, and that Rinné's test, if negative, has the same significance ; and if positive in an ear with impaired hearing, suggests labyrinthine disease.

Posterior Rhinoscopy.—Posterior rhinoscopy requires much skill on the part of the surgeon, and great patience on the part of the patient. It is usually impossible to employ it in children.

Reference is made to its employment under Diseases of the Nose.

GENERAL THERAPEUTICS.

In many aural cases, general as well as local treatment is required.

Tubercle, anæmia, rheumatism, syphilis, etc., may predispose to aural mischief.

Always bear in mind that the large majority of ear troubles arise from naso-pharyngeal disease, and that the naso-pharynx, nose, and throat all require to be examined, and, if diseased, treated.

Note that in certain forms of chronic deafness climate has a marked effect upon the malady. Seaside resorts should be avoided in chronic middle ear suppuration.

Syringing the Ear :—

See that no undue force be employed ; that your syringe be quite clean ; that the fluid used—preferably boracic acid solution—be tepid, and that it be injected along either the upper or lower wall of the meatus.

Severe giddiness, sickness, and even unconsciousness may follow syringing the ear.

Hartmann's intra-tympanic tubes may be employed for syringing out pus from the interior of the tympanum.

These tubes are dangerous unless used by a skilled hand.

Remember after ordinary syringing to dry the ear with cotton-wool and to place a pledget of wool in the meatus for twenty-four hours afterwards to prevent cold.

“Ear-drops,” except rectified spirit, should be warmed before being instilled into the meatus; not more than 3ss should be employed at a time.

Note that a certain amount of the drug is absorbed, while another portion may find its way into the pharynx.

Vapours may be made to act on the middle ear by directing the patient to fill his mouth with the vapour, *i.e.*, chloride of ammonium, and then carrying out Valsalva's experiment.

They may also be introduced through the Eustachian catheter.

The insufflation of powders through the external meatus for chronic suppuration should be employed with caution.

Remember such insufflations may lead to interference of free drainage of pus, and cause mastoid trouble.

DISEASES OF THE EXTERNAL EAR.

(1) AURICLE :—

Hæmatoma may be spontaneous (often connected with insanity) or traumatic.

Subsequent deformity—"shrunk ear"—is common. When traumatic, suppuration and necrosis of cartilage may ensue.

Treat, if traumatic, by cold applications; failing this, by aspiration or incision.

Eczema may be acute or chronic: treat as for Eczema, elsewhere.

Congenital Malformations.—Either defective formation—complete absence rare—or supernumerary auricles.

(2) EXTERNAL MEATUS:—

Cerumen is usually yellowish or dark brown in colour, and varies in consistency.

The causation of impacted wax may be increased secretion, hindrance to natural escape, especially very narrow canal, hairs, eczema, etc.

Note that the symptoms when the canal is blocked and no gap exists in the wax, are—deficient hearing, generally sudden from closing of gap; subjective sounds such as buzzing, etc., due to pressure on membrane; often giddiness and itching, and sometimes severe pain.

Impacted wax may cause inflammation of the walls of the canal, thickening of the tympanic membrane, pressure of it inwards, and rarely perforation.

Treat by syringing with warm boracic lotion; if the wax is hard order the following ear-drops, to be instilled at night:—

R	Sod. Bicarb.	-	-	3j
	Glycerin	-	-	3j
	Ac. Carbol.	.	-	grs. ij
	Aq.	-	-	3iij

Syringe in the morning.

Instruct your patient to wear wool for twenty-four hours after the removal of the wax.

Furunculi or boils arise from the entrance of the staphylococcus pyogenes aureus and albus into the hair follicles.

Use the speculum very gently; treat by incision under cocaine and dressing of iodoform and vaselin.

Diffuse Inflammation of External Auditory Canal :—

Remember that middle ear suppuration is the chief causative factor; injuries, foreign bodies, and syringing are less frequent causes. Pain is usually severe, especially if the osseous part be involved, and is increased by movements of the jaw.

Note that when acute, the treatment is as for furunculi; when chronic, treat the cause, and syringe with boracic lotion.

FOREIGN BODIES IN THE EAR.

Such bodies may be animate (flies, vermin, etc.), or inanimate (peas, beads,

etc.); they are generally seen in children or weak-minded adults. If the body is capable of swelling, *e.g.*, a pea, much pain and inflammation is caused, and occasionally the result is fatal.

Always inspect the ear carefully and confirm the patient's statement.

Always employ a speculum and good light.

If a foreign body be present,

Remember the body is usually smaller than the lumen of the canal, and that immediate resort to instruments, etc., irrespective of size, position, etc., of body, in unskilful hands is *dangerous*.

Always exercise great care and gentleness in using instruments.

If syringing does not dislodge the body, it is best to employ general anæsthesia.

Instrumental removal may be carried out by hook or forceps, wire loop, brush with glue on it.

The upper part of the tympanic membrane is nearer the outer orifice than the lower.

If all else fails, and the symptoms are imperative, detaching the auricle and separating the cartilaginous from the bony meatus should be advised.

AURAL EXOSTOSES.

These may be ivory or cancellous, sessile or pedunculated, single or multiple.

They appear as knob-like, palish red outgrowths, tender to the probe, and situate on the posterior wall and junction of the cartilaginous and bony parts.

Note that the hearing becomes very bad only when the canal is entirely closed.

Remember that if perforative otorrhœa be present, the pus may be pent up, and the condition become dangerous.

That if the exostoses are ivory and sessile, they are best left alone unless there is loss of hearing in the other ear or pent-up pus.

If pedunculated and a steel loop can be got round, try a steel loop.

If it is imperative to remove an ivory exostosis, use a drill or burr, but remember the operation is both difficult and dangerous in unskilled hands.

Otomycosis is an affection due to the presence of fungi (usually some variety of *aspergillus*) in the auditory passages. It is best treated by thorough removal of the masses (the diagnosis can be established by discovering the mycelium microscopically), and instillation of rectified spirit twice a day.

Atresia of the External Meatus is usually due to antecedent suppurative inflammation causing granulations and septa or thickening and narrowing of the walls.

PURULENT OR PERFORATIVE INFLAMMATION OF THE MIDDLE EAR.

This affection constitutes 30 to 40 per cent of all aural cases: 5 per cent are acute, the rest chronic.

Its causes are:—

1.—Exanthems.

- 2.—Nasal or naso-pharyngeal catarrh.
- 3.—Injuries, *i.e.*, rupture of membrane; foreign bodies.
- 4.—Cold through the external meatus.

It is predisposed to by tubercle, heredity, syphilis, etc.

Remember there are three stages :—

First stage, before perforation; *second stage*, of perforation and discharge; *third or non-secreting stage*.

Subjective symptoms.—Pain (acute, first stage), fever, giddiness, variable deafness. The mastoid may become affected.

Objective symptoms.—In first stage, hyperæmia of membrane, followed by bulging.

Second stage, perforation: pus, granulations, glands.

Note, perforation is commonest about the centre of the posterior half of the membrane; pin-point in size to almost entire disappearance.

The interior of tympanum, as seen through the perforation, is red and swollen.

Third or non-secreting stage.—If the perforation is closed, vessels radiating from it, or an opacity, are seen.

If the process has been chronic, a cicatrix or calcareous deposits are visible.

If the perforation is large, no cicatrix forms, and a dry perforation results.

The first stage lasts from a few hours to two weeks, and usually ends in perforation in three or four days. The second stage may last two or three days, sometimes a few months, very often many years, and sometimes for life.

Remissions are common.

Always bear in mind that pus in the middle ear is a source of danger.—The patient has a charge of dynamite in the ear, and it may explode any time.

Remember the consequences, viz.—

1.—*Limited to Ear and Eustachian tube.*

Polypi, acute mastoid periotitis, acute and chronic

purulent collections in mastoid antrum or cells. Facial paralysis.

2.—*Intracranial and Vascular Infective Complications.*

Cerebral, cerebellar abscess, meningitis, sinus pyæmia, embolism, hæmorrhage.

If pus comes from the attic, antrum, or mastoid cells, it is difficult to cure, and always dangerous.

Never tell your patient *he will grow out* of the discharge.

Do not tell him to leave matters alone as long as the discharge is free.

In the first stage order leeches and warm fomentations.

If there is localized yellowish bulging, the membrane should be incised.

In the second stage **syringing** may suit one case, and **dry treatment** another.

Never use the one for all cases.

The line of treatment, if the discharge be profuse, consists in syringing (sol. of boracic acid, corrosive sublimate 1 in 4000, peroxide of hydrogen 10 vols.),

inflation with Politzer's bag, drying. A plug of cotton-wool should be worn and changed after each syringing.

As the discharge lessens the syringing should be less frequent and the dry treatment adopted; the latter consists of cleansing with cotton-wool pledgets and insufflation of a little finely-powdered boracic acid.

Note that after the discharge has ceased, inflation and rarefaction is necessary to separate adhesions and improve the tension of the ossicular chain.

If severe deafness follows, try an artificial drum. The best form is the cotton-wool artificial drum; no other can safely be recommended.

Never forget that many of these cases are very difficult to cure, and require much patience from surgeon and patient.

CONSEQUENCES OF PURULENT INFLAMMATION OF THE MIDDLE EAR.

1.—AURAL POLYPI.

These may be mucous, fibrous, or gelatinous. They usually grow from

the mucous membrane of the posterior and inner walls of the tympanum; their size varies, they grow sometimes quickly, and after a certain stage remain stationary. They may separate spontaneously.

Remember blood in the discharge is always suggestive of a polypus; usually they are easily seen and diagnosed by the eye or speculum, aided by the use of a probe.

Their removal should be insisted on, but it is never safe to operate without three or four days' thorough preliminary cleansing of the parts.

They can then be removed by snare or forceps.

Never forget to have thorough illumination of the parts and to use a general anæsthetic if the patient is nervous. Free hæmorrhage is not unusual, but soon ceases.

It is necessary to keep the patient indoors three or four days, and to treat the parts antiseptically.

The after-treatment is most important, namely, the destruction of the root

of the polypus (preferably with chromic acid fused on a probe), and treatment of the condition producing the polypus.

Granulations are usually seen in chronic cases, with great destruction of the tympanic membrane, and are often indicative of bone mischief. Dry insufflations may be tried, or a small curette used.

Remember to examine the mastoid region, and for carious or necrosed bone.

II.—AFFECTIONS OF THE MASTOID PROCESS.

Acute Mastoid Periostitis is rarely primary: there is great pain, swelling, and redness over the mastoid, followed by fluctuation. It may end in caries or necrosis.

In the early stage treat by warmth and leeches; later free incision, and if symptoms persist, or there is a carious opening in the mastoid, open it up thoroughly.

Acute purulent inflammation of the Mastoid Cells or Antrum.—Enlargement of bone rather than of the soft parts.

The pus may burst through the external shell or lower and inner surface of the mastoid, or through the osseous wall of the canal. It may extend to the cranial cavity.

The mastoid should be opened without delay.

CHRONIC PROCESSES IN MASTOID CELLS, ANTRUM, AND ATTIC.—This includes caries, necrosis, caseous and cholesteatomatous masses, sclerosis, dilatation of antrum, etc.

Caries and necrosis usually affect the outer wall, roof, or inner wall of the mastoid antrum, the walls of the facial canal, or the ossicula.

Among the symptoms are: granulations, carious openings or sinuses, pain, swelling, glandular enlargement, facial paralysis,

Always note the state of the discharge, *i.e.*, thick, foetid, bone débris.

Remember these conditions are **highly dangerous** to life: if thorough cleansing antiseptically fails, extensive operation on the parts is imperative.

INDICATIONS FOR OPENING THE MASTOID ARE:—

- 1.—Acute purulent collections in antrum or cells.
- 2.—Caries of cortex or digastric fossa of mastoid.
- 3.—Chronic purulent otitis media where ordinary treatment has failed, especially where cholesteatomata have formed or sequestra are suspected.
- 4.—When facial paralysis supervenes.
- 5.—In intracranial complications prior to opening the cranial cavity.
- 6.—Cases of dangerous retention of pus from stenosis of the external auditory meatus.

The structures in danger during the operation are the sigmoid sinus, the middle or posterior fossa of the skull, the facial nerve, the external semi-circular canal.

Remember the operation is much easier in acute cases, and limited

usually to opening the mastoid antrum. In all other cases difficult and extensive (opening up of antrum, attic, and middle ear).

INTRACRANIAL AND VASCULAR INFECTIVE COMPLICATIONS.

These usually attend the chronic processes, and the methods of infection are by direct contact, through foramina, fissures, or bony defects; through the blood-vessels, through the lymphatic vessels.

Note that the pathways of infection are: (a) by the roof of the antrum or tympanum (middle fossa); (b) by the inner and posterior wall at the concavity for the sigmoid sinus (lateral sinus, pyæmia, cerebellar abscess); (c) through the labyrinth and Fallopian canal to posterior fossa by means of the auditory or facial nerves; (d) to the internal carotid artery or bulb of the internal jugular vein.

(1) *Cerebral and Cerebellar Abscess*:—

Remember that cerebral is three or four times commoner than cerebellar abscess; that these conditions are usually

seen in chronic cases and people under thirty, and that the symptoms are often latent.

Bear in mind the following symptoms :—

Pain in the ear and head, usually continuous and severe.

Vomiting not associated with the ingestion of food.

Shivering, giddiness, disturbance of digestive system (constipation especially), ocular disturbances, *i.e.*, photophobia, optic neuritis, paralysis of third nerve; drowsiness, the patient answering questions slowly (slow cerebration); coma, the temperature at first usually up, later subnormal. Pulse and respirations slow.

Facial paralysis, aphasia.

Note death results from coma or escape of pus into the arachnoid cavity (delirious meningitis), and that the duration of the disease is usually two to four weeks.

It is often impossible to diagnose between cerebral and cerebellar abscess

In cerebellar abscess the pain is occipital, there are often retraction of the neck and disturbances of co-ordination; optic neuritis is more frequent, vomiting more persistent, and the pulse and respirations usually very slow from pressure on the medulla.

(2) *Lepto - Meningitis — Pachymeningitis — Extradural Abscess — Subdural Abscess* :—

The symptoms are very similar to cerebral abscess, but the temperature is usually raised, the pulse and respirations rapid. Local rigidities, as retraction of the head and abdomen, may be present, and there is delirious excitement and hyperæsthesia of the surface; coma eventually ensues.

(3) *Septic Sigmoid Sinus Thrombosis* :—

Note the special diagnostic features are recurrent rigors, the temperature ranging from 101° to 106° ; pulmonary symptoms, *i.e.*, septic pneumonia; digestive symptoms, *i.e.*, diarrhœa, dry tongue, etc., sudden onset, optic neuritis, pain and swelling over the mastoid

region and down the neck in the course of the internal jugular.

Remember the conditions operable on are :—

(1) Cerebral ; (2) Cerebellar ; (3) Extradural ; (4) Subdural abscess ; (5) Sigmoid sinus thrombosis.

Always as a preliminary step open up the mastoid and middle ear thoroughly, and explore especially the roof of the antrum and tympanum, and the bony wall near the sigmoid sinus.

[In the author's experience, after opening these cavities the temporo-sphenoidal and cerebellar regions or the sigmoid sinus area can be explored as occasion requires by enlarging the bone wound from the original operation site.]

ACUTE NON-PURULENT INFLAMMATION OF MIDDLE EAR.

The symptoms are the same as the first stage of perforative inflammation.

Note that the tympanic membrane becomes yellowish grey or leaden coloured ; in most cases it recovers its lustre.

If seen early, such cases give good results. If in the early stage, treat as for first stage of perforative inflammation; after the acute stage, inflation for one month to six weeks is necessary.

EXUDATIVE CATARRH OF MIDDLE EAR.

Seen mostly in children: adenoids, acute or chronic rhinitis, tubercle, exanthemata.

The **subjective symptoms** are variable deafness, crackling sensation as of water in the ear, fulness, tinnitus, giddiness, seldom pain.

Note the tympanic membrane is indrawn, the handle of the malleus foreshortened, the short process and folds very prominent, and that there is moist crackling on inflation.

If due to an acute naso-pharyngeal attack and limited to the mouth of the Eustachian tubes, the duration varies from three days to a fortnight: if due to adenoids or chronic catarrh, it is more protracted, and worse in winter and spring.

Purulent inflammation may follow, and adhesions and retractions are common.

Note the line of treatment to be :—

- 1.—Restoration of the proper tension of the membrane and ossicles (Politzer's air douche).
- 2.—Treatment of the naso-pharynx, nose, etc. (removal of adenoids, etc.).

If the exudation is thick and abundant, incision of the membrane.

Remember that the duration of the improvement is the guide to the frequency of employment of Politzer's bag.

NON - EXUDATIVE (INTERSTITIAL) INFLAMMATION OF THE MIDDLE EAR.

Chronic dry catarrh is, next to purulent affections, the commonest aural disease.

There are two types—*catarrhal*, adhesions, indrawn membrane and inspissated secretion ; and *sclerotic*, thickening and loss of elasticity of the membrane, ankylosis of the chain of ossicula.

In both the result is impediment to conduction of sounds through the tympanum to the labyrinth.

The causation is similar to exudative catarrh, but heredity also plays a prominent part.

Usually both ears become affected; the deafness is often slow and insidious, and liable to fluctuations, deafness for speech being most marked.

Note that tinnitus often precedes the deafness; is often worse at night and better in noises, and that giddiness and occasional vomiting due to pressure on labyrinthine fluid may occur.

The membrane appears drawn in, and inflation has no effect on it; the normal lustre is usually dimmed; there are calcareous deposits, and a ground-glass appearance.

The disease is usually progressive, and marked by temporary aggravations. If the labyrinth is intact, there is never total deafness.

Treat by inflation every three days for about six weeks. If subjective sounds are increased, stop the inflation.

Give appropriate treatment to the nose and naso-pharynx.

Do not omit to treat any constitutional diathesis.

ANOMALIES OF HEARING.

Paracusis Willisii is a condition present in some forms of deafness in which the patient hears better in a noise, such as a railway carriage produces. It is probably due to movement of the membrane and ossicular chain by the powerful waves of sound. It is usually associated with middle-ear deafness.

Hyperæsthesia acoustica, or painful acuteness of the auditory organs, especially to high tones, is met with usually in conditions of general nervous irritability, *i.e.*, meningitis.

Diplacusis, or double hearing, usually of notes, not words, is found in middle-ear deafness and labyrinthine disease.

Paracusis loci is inability to determine the direction of sounds.

Tinnitus aurium, or subjective noises in the ears, is a common and distressful condition.

Any inward pressure of the chain of ossicles may produce tinnitus; in many cases it is due to alterations of vascular tension in anæmia, Bright's disease, etc. In some cases it is of nervous origin (mental shock, worry, etc.).

Remember, in the treatment of tinnitus,

- 1.—To examine for *local* mischief in the ear, nose or naso-pharynx.
- 2.—To examine the patient *generally*, especially the vascular and nervous systems.

Treat according to the cause discovered. When of nervous origin, bromides (especially dilute hydrobromic acid) are of use, also free purgation and attention to diet.

Do not forget that certain drugs, as quinine and salicyclic acid, will produce tinnitus.

Galvanism, in the author's experience, has been of only temporary benefit.

NERVE DEAFNESS.

The cochlea is concerned with the act of hearing, the semi-circular canals with equilibration.

Disease or injury of the auditory nerve may affect its origin, course, or termination.

The commonest cause of progressive labyrinthine disease is chronic non-suppurative middle ear inflammation; it is indicated by frequent recurrent attacks of increasing deafness, tinnitus, and vertigo.

Nerve deafness may be associated with syphilis, exanthemata, especially typhoid and mumps; locomotor ataxia, intracranial aneurysms and tumours; pachymeningitis chronica, and constant exposure to loud sounds (boiler-makers, artillerymen).

A few cases are due to vascular congestion (Bright's disease, alcoholism), and some to hysteria.

Remember the following points are suggestive of disease of the labyrinth or auditory nerve (Roosa) :—

- 1.—Tuning-fork heard better through the air.
- 2.—Power of hearing better in a quiet place.
- 3.—Noises markedly annoying.
- 4.—Inflation of middle ear makes the hearing worse.

Note the prognosis in most cases is bad, and that if the labyrinthine disease is due to middle-ear suppuration, there is danger to life.

Treat any causative factor, *i.e.*, syphilis. Strychnine hypodermically gr. $\frac{1}{30}$ to $\frac{1}{10}$, and the constant current appear to be the two methods of treating these cases, but they are generally of little use.

Never, if possible, prescribe quinine or the salicylates in nerve deafness.

MENIÈRE'S DISEASE.

The history given is of prime importance; sudden onset of marked or even absolute unilateral deafness, accompanied by tinnitus and vertigo in a

patient quite well a few hours previously, is typical of the apoplectic form (primary labyrinthitis). Bone conduction is lost or much diminished, while the membrana tympani is normal.

Hypodermic injections of pilocarpine (gr. $\frac{1}{6}$) have given the best results as regards treatment.

SYPHILIS.

Syphilis may affect the ear: (*a*) as sores in the external meatus; (*b*) as affections of the middle ear secondary to throat ulcerations; (*c*) as diminished hearing during the secondary stages, without middle-ear changes; (*d*) as loss of function in the auditory nerve in inherited syphilis—this occurs between five and fifteen years of age, is progressive, and may lead to deaf-mutism; it is also met with in primary and tertiary syphilis when its onset is likely to be rapid and bilateral (labyrinthine syphilis).

DEAFNESS AS A SYMPTOM.

To recapitulate: Deafness may arise from wax, adenoids of naso-

pharynx, malignant disease of nasopharynx, narrowing of meatus, chronic non-suppurative inflammation of middle ear, chronic suppuration of middle ear, head injury, blow on the ear, loud sounds, changes in meninges, idiopathic or cerebrospinal meningitis, intracranial lesions, advanced age, hysteria, syphilis, use of salicylates or quinine, diseases of labyrinth.

DEAF-MUTISM.

Mutism is almost always the result of deafness, either congenital or acquired during the first six years of life.

Always endeavour to make out whether there is imperfection of the conducting media, perceptive media, or general imperfection of the cerebral understanding.

Remember it is difficult to estimate the degree of deafness and intelligence in a deaf-mute until the child is three years old. In testing the deafness be careful not to confound vibrations for hearing. A stone-deaf child can feel loud noises.

Do not forget the importance of thorough examination of the ears and naso-pharynx and enquiries into the family history, especially as regards congenital syphilis.

Try all recognized methods for improving the hearing, especially the cotton-wool pellet in drum perforations.

Advise the teaching of the patient by the pure oral method and by competent teachers. The education of deaf-mute children extends over eight years. Those cases are most favourable where the perceptive faculties are good, the intelligence and therefore the imitative powers well developed, and where the child, having learnt to speak, is forgetting articulation from increasing deafness.

ARTIFICIAL AIDS TO HEARING.

The *Audiphone* is a thin vulcanite disc; the edge of the plate is pressed closely against the upper teeth, so that the convex surface is directed forward. A person's voice, when speaking in front of a deaf person, may be heard with clearness.

There are a large number of artificial aids advertised by various quacks; they are all costly, useless, and frequently harmful.

Remember the utility in certain cases of the cotton-wool pellets.

As a rule one of the ordinary conversation trumpets gives the best results. It is wise to advise your patient to go to a reputable instrument maker and obtain a selection, and test them at home.

The main points to see to are that the instrument fits well into the meatus, and that there is a sufficient surface to catch the waves of sound and conduct them to the auditory canal.

*Diseases of the Nose and
Naso-pharynx.*

EXAMINATION OF THE NOSE.

ANTERIOR RHINOSCOPY.

To make a satisfactory examination of the anterior nares, a strong light, a laryngeal reflector, and a suitable speculum (Duplay's) are necessary. In children a medium-sized ear speculum will be found useful.

Examination shows in the lower part of the anterior nares the inferior turbinated body; its mucous membrane is pale pink or reddish in colour; under the mucosa is erectile tissue. The inferior turbinate extends backwards to the posterior nares and its free margin reaches towards the septum; the space below it is the inferior meatus; into it, anteriorly, opens the lachrymal duct.

Inspect the floor of the nostril, then the septum, and next the middle turbinal body and middle meatus; into the latter open the frontal sinus anteriorly, and a little further back the antrum maxillare; the anterior ethmoidal cells also open into the middle meatus.

The openings of the accessory cavities are usually not visible.

POSTERIOR RHINOSCOPY.

This consists of examination of the post-nasal spaces by a laryngeal mirror placed behind the soft palate.

Remember cocaine is usually necessary, and that the mirror on introduction must not touch either the uvula or posterior pharyngeal wall. A small laryngeal mirror (No. 2), or Michel's posterior rhinoscopic mirror, is convenient. Tell your patient to breathe through the nose; this ensures the soft palate hanging down in a relaxed condition; if the tongue cannot be kept out of the way, employ a tongue depressor. By manipulating the mirror the two choanæ separated by the vertical septum are seen.

Bear in mind that the middle turbinal body is the most prominent of the turbinals in the posterior nares. It is usually bluish-red in colour. Above it is the superior meatus, below it the middle meatus. The posterior ends of the inferior turbinals, the openings of the Eustachian tubes, and above and to the outer side of the latter Rosenmüller's fossæ are seen. Examine the vault of the naso-pharynx and the pharyngeal tonsil.

In children, posterior rhinoscopy is generally impracticable. In difficult adult cases Voltolini's palate retractor may be tried.

PALPATION.

Remember the use of nasal probes for caries, attachments and consistency of tumours, for abnormal reflex results, and for patency of communications with the accessory cavities.

Note that in many cases, especially children, the posterior nares can best be examined with the finger; take care you are not bitten.

Take note of nasal speech in stenosis;

of snuffling in polypi; snoring; of sense of smell.

Remember nasal obstruction is the commonest complaint; it may be complete or vary according to the weather, etc. (erectile tissue). Mouth breathing accompanies the obstruction, and a stupid, vacant expression often co-exists (adenoids).

Always enquire about the hearing powers; deafness is frequently associated with nasal disease. Secretion from the nose is frequently found to be excessive, rarely diminished. It may be foetid (atropic rhinitis, syphilitic caries).

Do not forget that many cases of both pharyngeal and laryngeal inflammations are due to disease of the nose, and will only right themselves after appropriate nasal treatment.

ACUTE RHINITIS.

The symptoms are those of a severe cold in the head. First, there is an excess of watery secretion, then it becomes muco-purulent, and finally ceases.

In very young infants at the breast the condition may be serious, by causing great interference with respiration.

Treatment to be of any use should be begun at once. It should be general (diaphoretics, vapour bath, etc.) and local (carbolic ball, snuffs, etc.). The author usually employs a spray of menthol in paroleine with a little cocaine added.

Purulent Rhinitis.—This condition occurs in the newly-born from gonorrhœal or leucorrhœal infection, after exanthemata, in glanders, and empyema of the accessory cavities.

Foreign bodies, syphilitic caries, and necrosis and tubercle will cause a discharge of pus from the nose. Eliminate these latter causes and treat the disease by sprays of, or syringing with, suitable antiseptic solution.

Fibrinous Rhinitis is a form of inflammation of the nasal mucosa characterized by the formation of a false membrane.

It nearly always occurs in early life; it is a rare affection, attacks principally the septum, inferior and middle turbinals, and causes great local discomfort.

Note that the diagnosis from diphtheria is made by the absence of constitutional symptoms, by the distribution of the false membrane, and by bacteriological examination.

Treat by swabbing out the affected parts with a solution of lactic acid 2 parts, carbolic acid 3 parts, and glycerin 30 parts.

Glanders affects the nasal mucosa, causing swelling, pustular and nodular infiltration, ulceration and caries (foetid discharge). It is a serious condition.

CHRONIC RHINITIS.

Chronic Hypertrophic Rhinitis:—

Among causative factors are repeated attacks of acute rhinitis, dust, and irritant vapours, sudden changes of temperature, presence of adenoids and enlarged tonsils, heredity.

The usual symptoms are nasal obstruction (variable and worse at night), mouth breathing, nasal voice, headaches, sneezing fits, and often deafness. If the middle turbinals be swollen, taste and smell may be affected.

There is hypersecretion, which may be viscid or purulent, and generally does not smell.

Note, there is increased redness, swelling and enlargement of the anterior ends of the inferior turbinals; a like condition of the posterior ends exists. Usually the middle turbinals are much less affected.

Cocaine applied to the thickened mucosa causes but slight contraction (thus diagnosed from vaso-motor rhinitis).

If there is only slight secretion and obstruction, removal of the cause and alkaline or astringent injections (especially spir. vin. rec.) will suffice as treatment. If these fail and the inferior turbinals are much enlarged, the latter may be snared or cauterized with a flat burner.

For enlarged posterior extremities the electro-cautery or snare is indicated.

Note, the electro-cautery must be used with care, otherwise adhesions may result.

If the main symptom is hypersecretion, chromic acid fused on a probe can be used instead of the electro-cautery, and gives better results.

CHRONIC ATROPHIC RHINITIS.

(OZÆNA.)

Usually seen at or about puberty and mostly among females. Its pathology is uncertain; anæmia and tubercle appear to be causative factors.

Remember both nostrils are attacked; that the principal symptom is a horrible smell unrecognized by the patient; that the nose itself is enlarged inside, and the bridge flattened and widened (saddle-back bridge), whereas the tip is uptilted.

Note that examination of the interior of the nose shows collapse of the erectile tissue and atrophy of the turbinal bones, especially the inferior; greenish crusts are visible over every part of the mucous membrane, especially in the middle meatus. There is no ulceration unless the nose be picked. The naso-pharynx and pharynx may be involved, causing a hacking cough.

For treatment to be satisfactory the following points must be attended to: (1) Thorough cleansing of both nostrils by syringing all crusts away with warm water; this should be done daily for some time by the medical practitioner himself; (2) Prevention of further drying of the secretion: this is best carried out by the insertion of tampons of non-absorbent wool in both nostrils; (3) Increase of nutrition, generally by cod-liver oil, iron, etc., and locally by cupric electrolysis. This latter is carried out thus: Free the nose from crusts, cocaine the parts, insert the copper needle connected with a positive pole into the inferior or middle turbinal, and the platinum or steel needle connected with a negative pole into the septum; use 3-10 milliamperes for ten minutes.

THE NASAL NEUROSES.

Hyperosmia is the term applied to increased sense of smell; it is seen mostly in neurotics, also in insanity.

Parosmia indicates perverted olfactory sensations; it has been noticed as an

after-consequence of influenza, also in hysteria and insanity.

Anosmia signifies loss of the sense of smell. It may be due to local swelling preventing the odoriferous particles reaching the olfactory region, to changes in the mucous membrane affecting the peripheral olfactory nerve endings (atrophic rhinitis), or to some central lesion.

Use in testing the olfactory sense odoriferous substances, such as assafoetida, peppermint, etc.; pungent substances, such as ammonia, should be avoided.

If the sense of smell has been lost for two years, there is but little chance of recovery.

Treatment is based on the etiology. In some obstinate cases insufflations daily of strychnine, $\frac{1}{24}$ gr., combined with hypodermic injections of the same drug, have given good results.

VASO-MOTOR RHINITIS.

(a) *Simple Erectile Swelling*: This occurs in neurotic, over-worked people.

The inferior turbinals are much swollen, though the swelling is often variable.

Note that cocaine applied to the swollen tissue causes very marked shrinking, and that the tissue pits easily to the probe.

Rest of mind and body and the judicious use of the galvano-cautery to the swollen mucosa are indicated.

(b) *Hay Fever (Paroxysmal Sneezing)* ; True hay fever occurs in England in May and June, and is probably due to the irritation of the nasal mucosa caused by pollen. Paroxysmal sneezing is a better term in so far as it includes a large number of cases with exactly similar symptoms to hay fever, but arising from other causes, such as the smell of animals, drugs, etc. ; the irritation of dust (in winter).

Remember among predisposing causes are: Heredity ; race (it is unknown in the tropics) ; the male sex ; nervous temperament (therefore met with more frequently among the upper classes) ; previous attacks of nasal catarrh ; and usually some morbid condition of the nasal cavities.

The disease is characterized by severe catarrhal symptoms at the onset, and the occurrence of violent attacks of sneezing after exposure to a source of irritation. Mental depression, photophobia, and spasmodic asthma often co-exist. Examination of the nose during an attack shows marked swelling of the inferior turbinals, accompanied by a profuse watery discharge.

Remember that few cases tend to get well from purely medicinal treatment, but that where structural faults exist and can be remedied, the prognosis is good.

Treatment in those cases due to pollen should be directed to a change of climate, and, if this is impossible, precautions, such as wearing of tinted glasses, a gossamer veil, etc., should be insisted on when out-door life is compulsory. Sprays of various sorts have been recommended. One of the best is a solution of chromic acid, gr. $\frac{1}{16}$ —gr. $\frac{1}{8}$ to the ounce of water. Lately serum treatment has been advocated, but the results are not yet satisfactorily established. Nervine tonics are beneficial.

Surgical treatment should be urged

if there be any marked morbid condition of the nose; find any sensitive areas, often the anterior parts of the septum, and cauterize the sensitive spots.

Nasal Hydrorrhœa signifies a constant or intermittent flow of serous fluid from the nose. In a few cases the fluid has been cerebro-spinal.

DEFORMITIES AND DISEASES OF THE SEPTUM.

Deviation of the Septum in the large majority of cases is traceable to trauma. It is rarely met with under seven years of age, is more frequent in males, and commonly met with in the anterior two-thirds and cartilaginous portion. The deflection may be simple or S-shaped.

The symptoms are those of nasal obstruction, and surgical treatment is necessary only when there are respiratory, reflex, or aural troubles.

Forcible straightening with Adam's forceps, forcible dilatation with Hill's instrument, and sawing off the convexity are among the more common surgical measures adopted, but in most cases the

results are unsatisfactory. Of late several new operations have been practised, especially Asch's and Moure's. I have had excellent results from both Asch and Moure's methods.

Ecchondroses and Exostoses of the septum, when causing distinct obstruction or irritation, should be removed with knife or saw, and when removed for such causes the results are good.

Hæmatoma of the Septum signifies a collection of blood beneath the mucous membrane of the septum. It is almost always due to trauma, and presents as a red, smooth tumour in one or both nostrils. Cold external applications are indicated.

Abscess of the Septum usually follows a hæmatoma; it may also be due to syphilis, tubercle, or primary perichondritis.

Note that the swelling is usually bi-lateral, hard at first, then fluctuating and accompanied by pain, headache, and a rise of temperature. The cartilaginous portion is generally affected, so there is no danger of deformity.

Treat by incision on both sides.

PERFORATION OF THE SEPTUM.

Remember, if due to syphilis, the perforation is in the bony portion ; when idiopathic, in the cartilaginous part. Perforation may arise also from trauma, tubercle, irritants (bichromate of potassium), diphtheria, leprosy, and typhoid.

Note that symptoms, except in syphilitic cases, are frequently absent, and that treatment must be directed to the cause of the perforation. Picking the nose, a fairly common cause of so-called idiopathic perforation, should be prohibited.

NASAL STENOSIS

includes all those conditions of the nose in which there is more or less complete obstruction to nasal respiration.

Stenosis may be due to :—

- 1.—Changes in the mucous membrane.
- 2.—Changes in the bony framework.

- 3.—Changes in the cartilaginous framework.
- 4.—The presence of tumours.
- 5.—The presence of foreign bodies or rhinoliths.
- 6.—Operative treatment (adhesions).
- 7.—Congenital atresia or occlusion.
- 8.—Adenoid vegetations.
- 9.—Naso-pharyngeal tumours.
- 10.—Enlargement of the pharyngeal or ordinary tonsils.

The *objective* characteristics present may be: Noisy respiration (snoring), mouth-breathing, vocal impairment, a peculiar physiognomy, deafness, abnormalities of secretion, maldevelopment of chest, reflex neuroses, affections of the pharynx, larynx, and bronchi, and aprosexia.

Subjective symptoms that may be present are: A feeling of stuffiness, of dryness in the mouth and throat, headache, affections of the smell and taste, deafness, ozæna.

SYPHILIS OF THE NOSE.

All stages of syphilis have been met with in the nose. Tertiary manifestations are, however, of most frequent occurrence.

Remember tertiary syphilis usually attacks the septum, either the bony or cartilaginous, or both portions. The disease is generally unilateral and accompanied by a most characteristic foetid, unilateral, purulent discharge; examination of the nose reveals ulceration, granulations, and bare bone; the destruction of the affected parts is rapid and followed by severe deformity, the latter arising from destruction of the cartilages of the alæ, the nasal bones, or the bony septum.

The treatment consists in constitutional treatment, cleansing sprays, and removal of any bony sequestra.

Use the greatest caution in removing dead bone situated in the superior meatus. The limits of the sequestrum cannot be told, and fatal results have followed surgical interference.

For granulations and ulceration calomel fumigation is beneficial.

Congenital Syphilis occurs in the secondary stage as hypersecretion and crusts (syphilitic coryza, snuffles). Spraying with boracic lotion and constitutional treatment give good results.

It also attacks at a later period the bones and cartilage, causing caries and necrosis, considerable deformity resulting.

TUBERCULOSIS OF THE NOSE.

This condition is rare; it may occur in the form of tumours or ulceration affecting the anterior part of the septum (half an inch from the anterior border).

Remember general or pulmonary tuberculosis may co-exist; that tubercular ulceration presents itself as an ulcer with thick everted edges, greyish surface, and often covered with crusts. There are sometimes spots of miliary tubercle, and tubercle bacilli can be discovered microscopically.

When appearing as a tumour, it grows from the cartilaginous septum, present-

ing itself as a swelling, variable in size and of a pale pink to a darkish red colour, and bleeding easily on probing.

Always examine the lungs and larynx, also the secretion microscopically for bacilli. From syphilis it can usually be diagnosed by its slow progress and the fact that the bony septum is rarely affected. In lupus the granular appearance of the tumours or ulceration and the presence of cicatrices contrast with the superficial, worm-eaten, anæmic ulceration of tubercle.

Prognosis is unfavourable; the disease may extend to the naso-pharynx.

Treatment consists in scraping the parts and the application of lactic acid.

LUPUS OF THE NOSE.

Usually an extension from the skin to the nasal mucosa.

When attacking the nose primarily it is always seen first on the anterior part of the septum as small, scattered nodules, rather resistant to the probe; these eventually coalesce and ulcerate,

the ulcers being deep, with a red granular floor. The disease tends to spread over the floor of the nose to the inferior turbinals and outer nasal wall.

Lupus vulgaris attacks **young people**, usually females. Its progress is very slow, there is but little discharge, and the nodules may shrink, leaving depressed cicatrices.

Much deformity may result from destruction of the cartilaginous septum, alæ nasi, and subjacent structures.

Treatment consists in giving iron, cod-liver oil, arsenic, and the thorough use locally of the sharp spoon, in conjunction with the galvano-cautery or chromic acid.

RHINOSCLEROMA.

This is a rare disease, consisting of a cellular infiltration of the skin and mucous membrane of the nose, together with the formation of fibrous tissue and shrinking. It usually attacks the inferior meatus. It is characterized by the great hardness of the growths, the absence of ulceration, and its very slow

progress. It is capable of indefinite extension. The only treatment is excision.

TUMOURS OF THE ANTERIOR NARES.

I.—NON-MALIGNANT.

Mucous Polypi grow principally from the middle turbinated bone or the outer wall of the middle meatus; they less frequently grow from the superior meatus and roof of the nasal cavities. They generally consist of œdematous connective tissue, are multiple, and affect both nostrils. They are uncommon before fifteen years of age.

Their causation is practically unknown; that they are often connected with suppuration in the accessory cavities is undoubted. Many believe they arise from caries of the ethmoid. It is necessary, therefore, to examine for suppuration and caries.

The symptoms are nasal obstruction, nasal voice, anosmia, constant sniffing, a serous or purulent discharge, pharyngeal and laryngeal irritation, and various

nasal reflexes. On examination of the nose, mucous polypi are seen as greyish-blue or yellowish translucent bodies, pitting on pressure with a probe, and movable; they may be pedunculated or sessile.

Note, polypi may exist for years; even after surgical treatment there is a strong tendency to recurrence, and the prognosis is not good where there is accompanying suppuration in the accessory cavities.

Treatment consists in removal of the growths and prevention of recurrence.

If the growths be pedunculated and uncomplicated they can be removed under cocaine with the cold snare; several sittings are required, and care should be taken to remove, if possible, the *fons et origo* of each growth.

The galvano-cautery snare is not as efficacious as the cold wire snare.

If the growths be sessile and accompanied by suppuration, a general anæsthetic should be given and the growths removed with suitable forceps, a ring, knife, or sharp spoon. Care must be

exercised when working above the middle turbinals.

Always, after using the snare, destroy any stump left with chromic acid or the galvano-cautery point. The author usually wrenches the polypus away with the snare with the view to removing the piece of bone from which it sprung.

A spray of rectified spirit is useful in the after-treatment.

Among the more uncommon non-malignant tumours of the nose may be mentioned fibromata, papillomata (usually originating from the septum or inferior turbinal), angiomas (septum), osseous cysts, osteomas, and enchondromata.

II.—MALIGNANT GROWTHS

are usually sarcomatous, though carcinoma, particularly epithelioma, is occasionally met with.

Sarcoma most frequently arises from the septum, less frequently from the roof or outer wall of the nasal fossæ.

Remember malignant disease more commonly invades the nose from adjacent structures. The symptoms, when

primary in the nose, are nasal obstruction, epistaxis, rapid growth, ulceration, pain, and deformity.

Always look upon any tumour growing from the septum with suspicion. When in doubt, make a microscopic examination of a piece of the growth.

If malignant disease is present, the only hope of benefit is extensive removal by external operation. It is worse than useless to perform any "niggling" intranasal operation.

TUMOURS OF THE NASOPHARYNX.

Fibro-mucous polypi in this situation are usually single and pedunculated. They may be seen with the posterior rhinoscopic mirror, or, if large, may press the soft palate forward or even hang down into the pharynx.

After removal they do not as a rule recur. They can be removed with a snare, or, if very large and with a thick pedicle, with suitable scissors.

Fibromata grow from the periosteum of the vault of the pharynx and base of the skull. They are seen usually in males of from ten to twenty-five years of age.

Fibrous tumours of the naso-pharynx tend to spread in all directions, invading the neighbouring fissures and cavities and causing great deformity—"frog-face."

The symptoms are nasal obstruction, hæmorrhage, ulceration, and foetid discharge. The hearing and voice may become affected, and drowsiness is often noticed.

Note the tumour as seen by posterior rhinoscopy appears as a large, smooth, dense growth, generally covered with dilated vessels. Examination with the finger is necessary to ascertain its limits.

Bear in mind any operation for removal is generally attended with great hæmorrhage. If seen early and the growth be limited in extent, removal with galvano-cautery snare or evulsion with forceps may succeed.

Splitting the soft palate gives free access to the parts, and has been successfully combined with the snare and gouging of the bone away at the site of the growth.

Other tumours, such as exostoses, cysts, enchondromata, and angiomatica have been met with.

Malignant tumours are almost invariably sarcomatous. Pains in the ear and throat, rapid growth, ulceration, infiltration, and hæmorrhage are the principal symptoms.

To the finger the growth feels much softer than fibroma, and its base is usually broad.

ADENOID GROWTHS.

Adenoid vegetations occur chiefly in children and young adults, and possess a tendency to atrophy in later years.

Predisposing causes are heredity, race (the Hebrews), climate, anterior nasal stenosis, and tubercle. Attacks of the exanthemata, damp, and repeated colds are exciting causes.

Remember the first symptom complained of is generally deafness ; with this are associated snoring, mouth-breathing, muffled speech, a typical stupid expression, and aprosexia. Among less frequent symptoms are convulsions, bad dreams, post-nasal catarrh, cough, and anæmia.

Inspect the pharynx ; it is usually granular. The soft palate and uvula are often swollen and flabby, and the tonsils much enlarged.

The cervical glands are frequently swollen.

In children, posterior rhinoscopy is often impracticable ; digital examination of the nasal-pharynx is therefore necessary. To the finger, adenoids give the impression of a bag of worms. Bleeding usually follows the manipulation.

In the majority of cases digital examination is preferable to posterior rhinoscopy, as the consistency of the growths, whether soft or hard, and their distribution, are best ascertained this way. The parts of the post-nasal space principally affected are the posterior

wall, the vault, and upper limit of the choanæ.

Surgical interference is necessary in nearly all cases, especially where there is anæmia, pigeon-shaped chest, interference with free respiration, increasing deafness, laryngitis, or convulsions.

The chief danger of the operation is in connection with the anæsthetic; the laryngeal reflex should never be abolished.

The position of the patient should be with the head hanging downwards and to one side, and efficient gagging is necessary. If the growths be of firm consistence, Loewenberg's forceps should be used, finishing up with Gottstein's curette.

If soft and pliable they can be removed with Gottstein's curette alone. Remove the tonsils at the same time if enlarged.

The after-treatment is important and should be directed towards curing any anterior obstruction and improving the hearing and faulty speech.

NASO-PHARYNGEAL CATARRH.

Usually a symptom rather than an actual disease, though chronic posterior rhinitis and thickening of the post-nasal lymphoid tissue are possibly primary causes of the disease.

The symptoms are evidenced by discomfort behind the palate, nasal speech, constant hawking of mucus, and profuse mucous or muco-purulent secretion from the posterior nares. Posterior rhinoscopy shows a granular condition of the post-nasal mucosa and an increase of the lymphoid tissue on the upper and posterior wall.

Note treatment should be directed towards improving any general condition, *i.e.*, gout, and to cleansing the parts locally with post-nasal sprays. Any granulations should be destroyed with the galvano-cautery point, or the affected area may be scraped with a curette under general anæsthesia.

Thornwaldt's disease consists in hypersecretion from the median furrow of the pharyngeal tonsil; it is really part of a post-rhinitis sicca.

EPISTAXIS.

Remember epistaxis is only a symptom and may be due to constitutional or local causes ; among the former may be mentioned increased arterial tension (chronic Bright's disease), interference of return of the blood from the head (heart disease, goitre, cirrhosis liver), alterations in the composition of the blood (anæmia, scurvy, etc.), heredity, vicarious menstruation.

Among the local causes, mechanical violence, ulceration, nasal tumours, especially angiomas and malignant disease, and rarefied air.

When not due to tumours the most frequent site of the hæmorrhage is the lower and anterior part of the septum ; next to this the inferior turbinal.

Do not be in a hurry in all cases to stop the hæmorrhage ; it is beneficial in plethoric subjects and in vicarious menstruation.

If the bleeding is to be stopped, any of the ordinary domestic remedies may suffice.

Failing these, insufflation of hot water 110° F. or compression of the alæ nasi between the finger and thumb may be tried.

Failing these measures, resort must be had to anterior or posterior plugging.

Never keep a plug in longer than twenty-four hours.

In habitual nose-bleeders discover the bleeding point; it is indicated by swelling of the mucous membrane or the presence of a scab, and bleeds on touching with a probe. Such a point is best treated by cauterization.

FOREIGN BODIES IN THE NOSE.

The diagnosis rests in most cases upon the history. In young children where this is unobtainable, a unilateral, purulent, foetid discharge is always suggestive of a foreign body, and should lead to a careful investigation of the nares. If the body be a vegetable substance, such as a bean, much swelling and pain may occur.

Be careful whilst examining not to

push the body backwards. If the position of the body is ascertainable, it may be removed with a bent probe, a scoop, or suitable forceps. In some cases a general anæsthetic is necessary.

Rhinoliths are nasal calculi, the nucleus usually being a foreign body; in a few cases no such nucleus exists, and the calculus is composed of carbonate and phosphate of lime. They may be single or multiple (rare). The symptoms and treatment are those of a foreign body.

Fungi (*Oidium albicans*) and *Parasites* (maggots) have been known to affect the interior of the nose.

For maggots an injection of equal parts of water and chloroform administered under a general anæsthetic is the best treatment.

THE ACCESSORY CAVITIES.

Empyema of the Maxillary Antrum arises from dental caries, nasal disease, and as a sequela to certain general diseases, *i.e.*, influenza, typhoid. It may present itself (a) With retention of the secretion, in which case there is

bulging, pain, etc., or more commonly
(b) With free drainage of the secretion.

Where there is free drainage of the secretion the characteristic symptoms are a unilateral, intermittent, purulent discharge from the nose, worse in the morning and varying with the position of the head. The patient both smells and tastes the discharge; to the surgeon there is usually no smell; this contrasts strongly with atrophic rhinitis. Pain on percussion over the malar prominence or side of the nose, supra-orbital neuralgia, and obstruction of the nostril are frequent symptoms.

If examination of the affected side shows a canary-coloured discharge occupying the upper part of the middle meatus, which discharge, on being washed away, almost immediately reappears, it is sufficient evidence to justify exploratory puncture of the antrum.

Remember pus formed in the other cavities, *i.e.*, frontal sinus, ethmoidal cells, etc., may flow into the antrum. In some cases polypi exist both in the nose and antrum.

In doubtful cases, Heryng's transillumination or exploratory puncture should be done.

Note when the empyema is due to dental caries the tooth or stump should be extracted, an opening made into the antrum through the socket, and the cavity irrigated. An Ellis's drainage tube should be inserted through the opening made. When due to nasal disease this should receive appropriate treatment and a free opening be made into the antrum through the canine fossa. The cavity can then be washed out and plugged daily.

In obstinate cases where the antrum contains polypoid granulations, a very large opening is required, and the lining membrane should be thoroughly scraped and the cavity plugged daily.

Suppuration of the Frontal Sinus is usually secondary to nasal or antral disease. If the pus is retained, there is much pain and swelling—often eye, and even cerebral, symptoms.

When there is free drainage into the nose, pus may be seen in the middle meatus, but is not increased by altering

the position of the head. There is also pain over the inner wall of the sinus on pressure, and some swelling. Pressure on the sinus may cause some pus to descend into the nose.

Treatment.—When there is retention, if the passage to the sinus cannot be catheterized, an incision should be made, the sinus opened, and free drainage established into the nose.

A similar line of treatment is necessary in the absence of local bulging when there is persistent and severe headache and pus in the middle meatus (exclude antral disease first).

The incision should be in the line of the eyebrow from the root of the nose outwards; the anterior wall of the sinus is removed with a gouge, the interior curetted, and a communication made with the nose; the external wound can then be closed.

SUPPURATION OF THE ETHMOIDAL CELLS.

The anterior set open into the middle meatus just behind the frontal sinus,

the posterior set into the superior meatus.

Bear in mind that when the anterior cells are affected, pus will be seen in the nasal cavity over the middle turbinal; when the posterior cells are affected behind the middle turbinal (pus in nasopharynx, not in anterior part of the nose).

Among the symptoms are headache, and in the upper part of the nose, tenderness over the infra-orbital region, and lachrymation.

Probing may reveal caries, and polypi frequently co-exist.

Treatment consists in opening up the middle turbinal and breaking down the cells with a curette.

SUPPURATION IN THE SPHENOIDAL SINUS.

Characterized by pus in the vault of the pharynx. The discharge is frequently offensive, and a crust may often be seen.

Any treatment, such as curetting, in this neighbourhood, is dangerous unless great caution be exercised.

INDEX.

	PAGE
ABSCESS, cerebellar	31
— cerebral	31
— extradural	33
— of ethmoidal cells	80
— — frontal sinus	79
— — septum nasi	59
— — sphenoidal sinus	81
— subdural	33
Accessory sinuses of nose, affections of	77
Adenoid vegetations	71
Aids to hearing	26, 44
Air conduction	12
Anæsthesia in removal of adenoids	73
Angioma of naso-pharynx	71
— — nose	68
Anosmia	55
Antiseptic lotions (ear)	25
Antrum of Highmore, empyema of	77
— — — exploratory puncture of	78
— — mastoid, suppuration in	28
Aprosexia	72
Asthma in nasal disease	57
Asylum ear	17
Audiphone	44
Auditory nerve, affections of	40
Auricle, affections of	17
— supernumerary	17
Auscultation tube	11
 BACILLI in nasal tuberculosis	 64
Bleeding from nose	75
Bone conduction	13
 CARCINOMA of nose	 68
Caries of mastoid	29
Catarrh, aural	34, 35
— naso-pharyngeal	74

	PAGE
Cerebellar abscess	31
Cerebral abscess	31
Cerumen, impaction of	18
— prescription for	18
Cholesteatoma	29, 30
Chromic acid, use of	53
Chronic hypertrophic rhinitis	51
Cocaine	8, 47, 52
Cochlea	40
Cupric electrolysis	54
Cysts of naso-pharynx	71
— — nose	68
DEAFNESS as a symptom	42
— catarrhal	22, 29, 35, 36
— nerve	40
— syphilitic	42
— tests for	12
— throat	15, 72
Deaf-mutism	43
Dilator, nasal, Hill's	58
Diplacosis	38
Duplay's speculum	46
EAR drops	16
— examination of	7
— syphilis of	42
— trumpets	45
Ecchondroses of septum	59
Eczema of auricle	17
— — established auditory meatus	18
Electricity, treatment by	41
Electro-cautery	52
Ellis drainage tube	79
Empyema of maxillary antrum	77
Enchondroma of naso-pharynx	71
— — nose	68
Epistaxis	75
Ethmoidal cells, suppuration of	80
Eustachian catheter	10
— tubes	9

	PAGE
Exostosis of established auditory meatus ..	21
— — naso-pharynx	71
— — septum nasi	59
External auditory meatus, examination of ..	8
— — — atresia of	22
— — — diffuse inflammation of	19
— — — exostosis of	21
— — — foreign bodies in	19
— — — furunculi of	19
 FACIAL paralysis	25, 30
Fibroma, nasal	68
Forceps, Loewenberg's	73
Foreign bodies in canal	19
— — — nose	76
Frog-face	70
Frontal sinus, suppuration of	79
Fungi of nose	77
Furunculi in meatus	19
 GLANDERS of nose	51
Gottstein's curette	73
Granular pharyngitis	72
Granulations in tympanic cavity	28
 HÆMATOMA of ear	17
— — septum	59
Hay fever	56
Hearing, anomalies of	38
Hyperæsthesia acoustica	38
Hyperosmia	54
 INFLATION of middle ear	9
Insects in ear	19
Internal ear, functions of	40
Intra-tympanic syringing	16
 LABYRINTH, diseases of	40
Leeches, application of	25
Lupus of nose	64
 MALFORMATIONS, congenital, of ear	17
Malignant growths of naso-pharynx	71

	PAGE
Malignant growths of nose	68
Mastoid bone, affections of	28
— — caries of	29
— — indications for opening	30
— — necrosis of	28
— — periostitis of	28
Medication, intra-tympanic	16
Membrana tympani, anatomy of	8
— — incision of	25
— — perforation of	23, 24
Menière's disease	41
Mirror, forehead	7
— post-rhinoscopic	47
Myxoma, nasal	66
 NARES, anterior	46
— posterior	48
Nasal calculi	77
— fungi	77
— hydrorrhœa	58
— neuroses	54
— parasites	77
— polypi	65
— probes	48
— spurs	59
— stenosis	49, 60
— tumours	66
Naso-pharynx, adenoid growths of	71
— catarrh of	74
— digital examination of	72
— fibromata of	70
— fibro-mucous polypi of	69
— sarcoma of	71
— tumours of	69
Nerve deafness	40
Neuritis, optic	32, 33
Nose, anatomy of	46, 47
— carcinoma of	68
— examination of	46
— palpation of	48
— sarcoma of	68

	PAGE
OBSTRUCTION of Eustachian tubes ..	34, 35
Ocular symptoms in ear disease ..	32
Olfactory sense, testing of ..	55
Osteoma, nasal ..	68
Otitis media, suppurative ..	22
Otomycosis of canal ..	22
Otorrhœa ..	22
— consequences of ..	26
Ozæna ..	53
PAPILLOMA, nasal ..	68
Paracusis loci ..	38
— Willisii ..	38
Parasites in nose ..	77
Parosmia ..	54
Paroxysmal sneezing ..	56
Perforation of membrana tympani ..	23
— — septum nasi ..	60
Pharyngeal tonsil ..	74
Pilocarpine ..	42
Plugging of nares ..	76
Politzer's bag ..	10
Polypi, aural ..	26
— nasal ..	66
Powders, insufflation of ..	17
RHINITIS, acute ..	49
— chronic atrophic ..	53
— — hypertrophic ..	51
— fibrinous ..	50
— purulent ..	50
— vaso-motor ..	55
Rinné's test ..	14
Rhinoliths ..	77
Rhinoscleroma ..	65
Rhinoscopy, anterior ..	46
— posterior ..	47
SARCOMA of nose ..	68
Semi-circular canals ..	40
Septum, abscess of ..	59
— deformities of ..	58

	PAGE
Septum, deviation of	58
— diseases of	59
— ecchondroses of	59
— exostoses of	59
— hæmatoma of	59
— perforation of	60
Sigmoid sinus thrombosis	33
Snare, cold	67
— galvano-cautery	67
Sneezing, paroxysmal	56
Speculum, aural	8
— Duplay's	46
— Siegle's	9
Sphenoidal sinus, suppuration of	81
Stenosis, nasal	49, 60
Strychnine, hypodermic injections of	55
Syphilis of nose	62
— congenital	63
Syringing the ear, mode of	15
TESTING hearing	12
Thornwaldt's disease	74
Tinnitus aurium	39
Tonsillotomy	73
Transillumination, electric	79
Tubercle of nose	63
Tuning fork	13
Turbinal inferior, hypertrophy of	51
Tympanum, acute non-purulent inflammation of	34
— — suppuration of	22
— chronic suppuration of	22
— exudative catarrh of	35
— interstitial inflammation of	36
VALSALVA, method of	10
Vaporization of tympanum	16
Vaso-motor rhinitis	55
Vertigo	41
WEBER'S test	14

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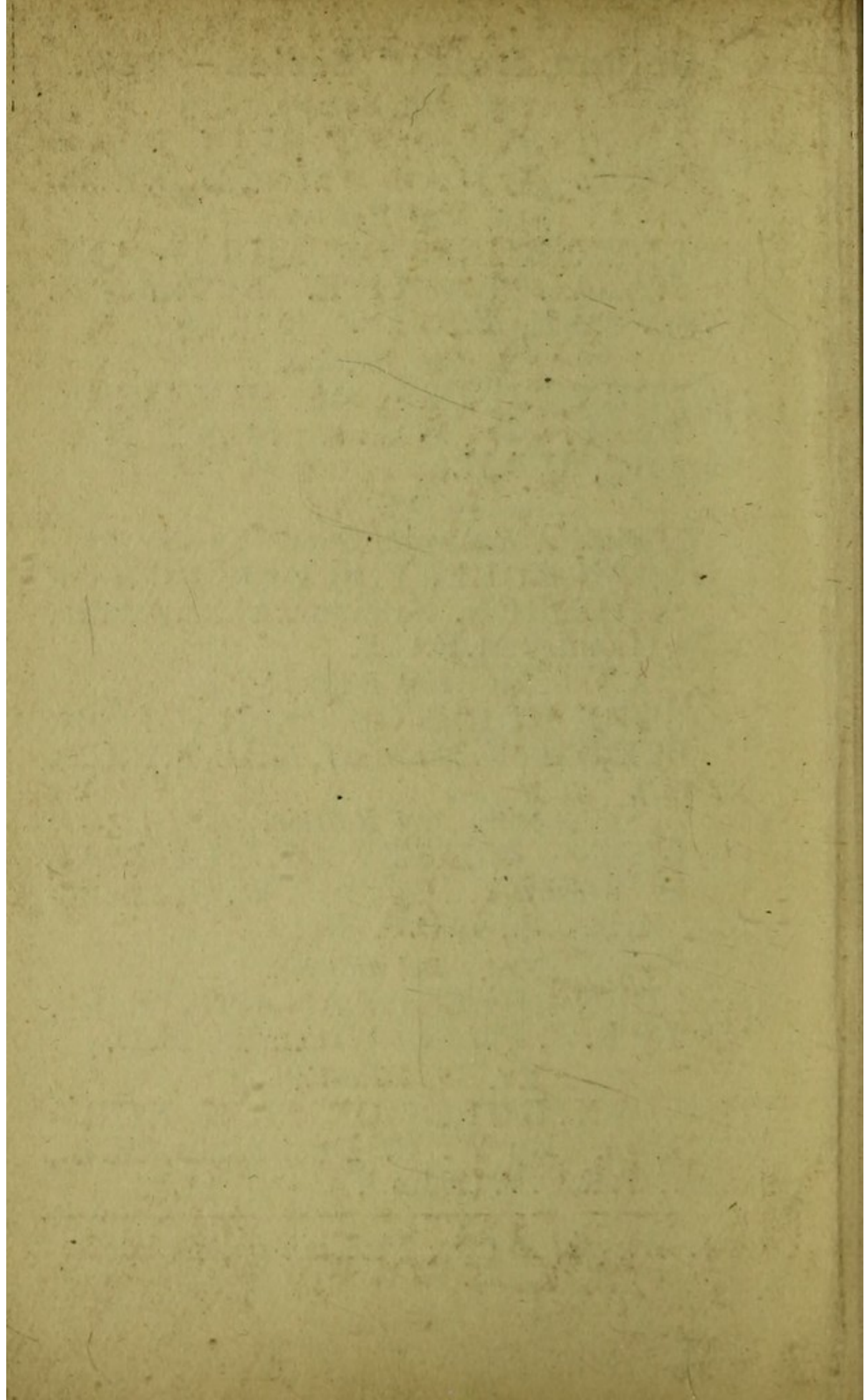
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