

## **Diseases of the nose and nasopharynx.**

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DISEASES OF THE NOSE  
AND  
NASO-PHARYNX

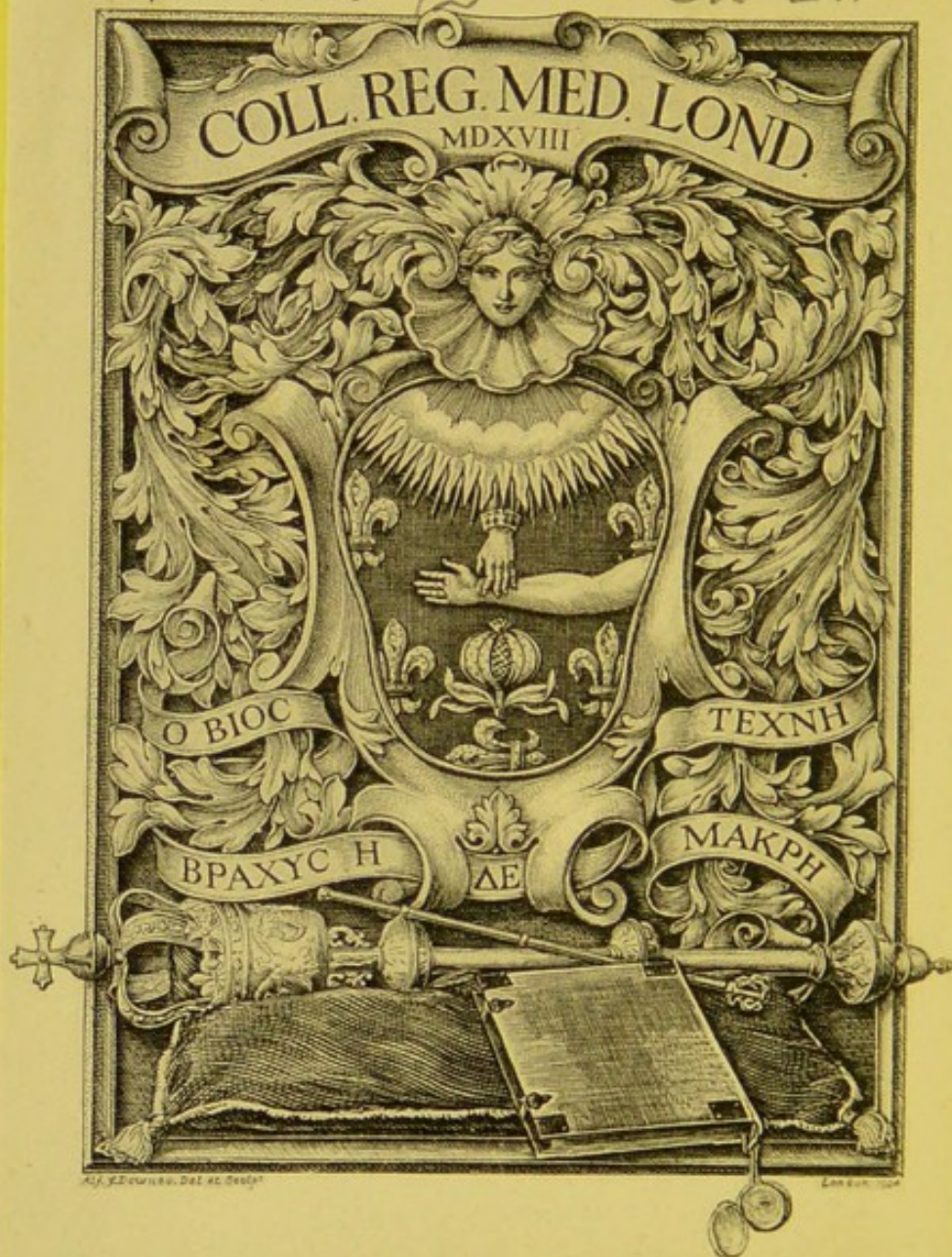
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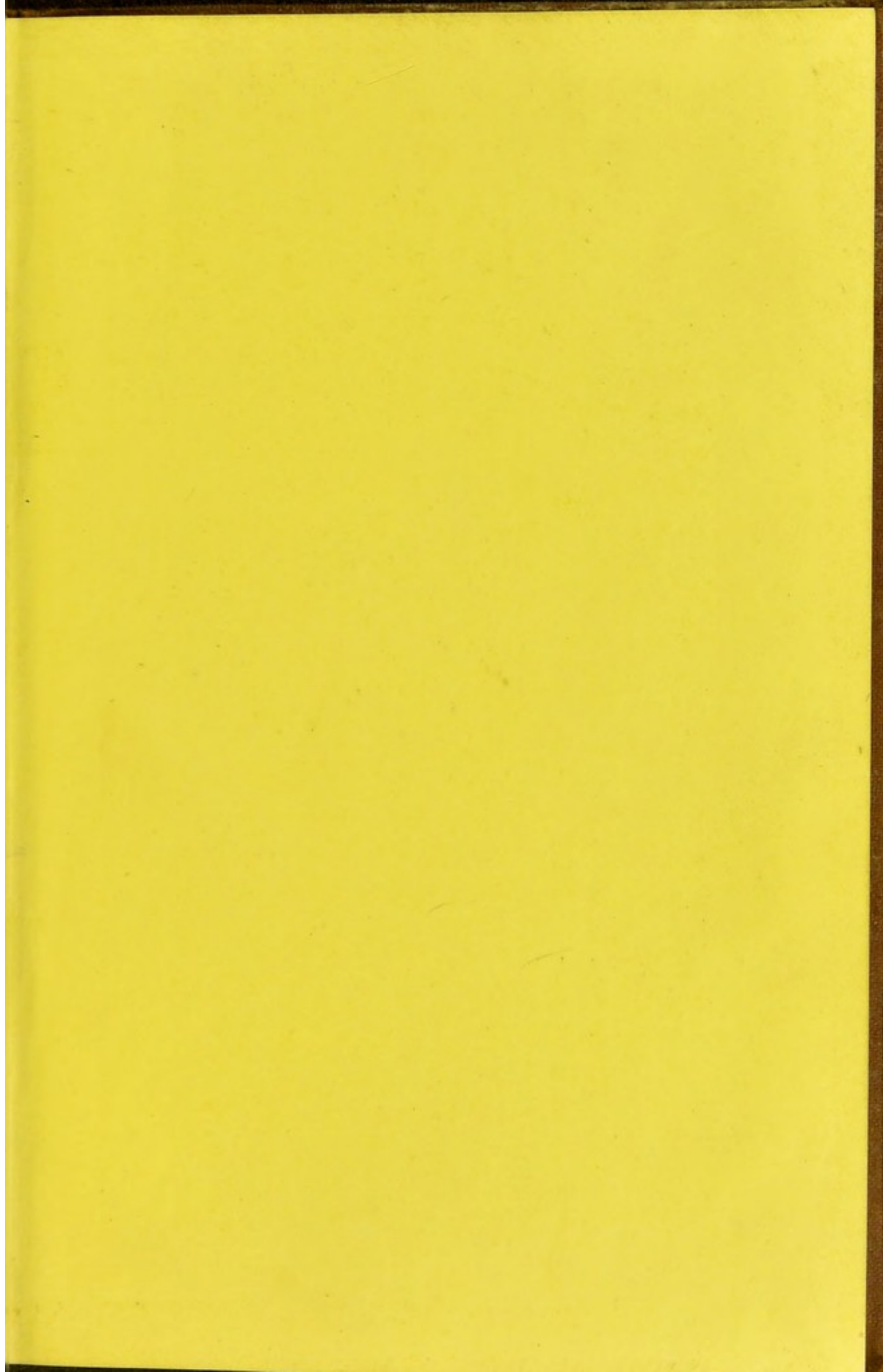
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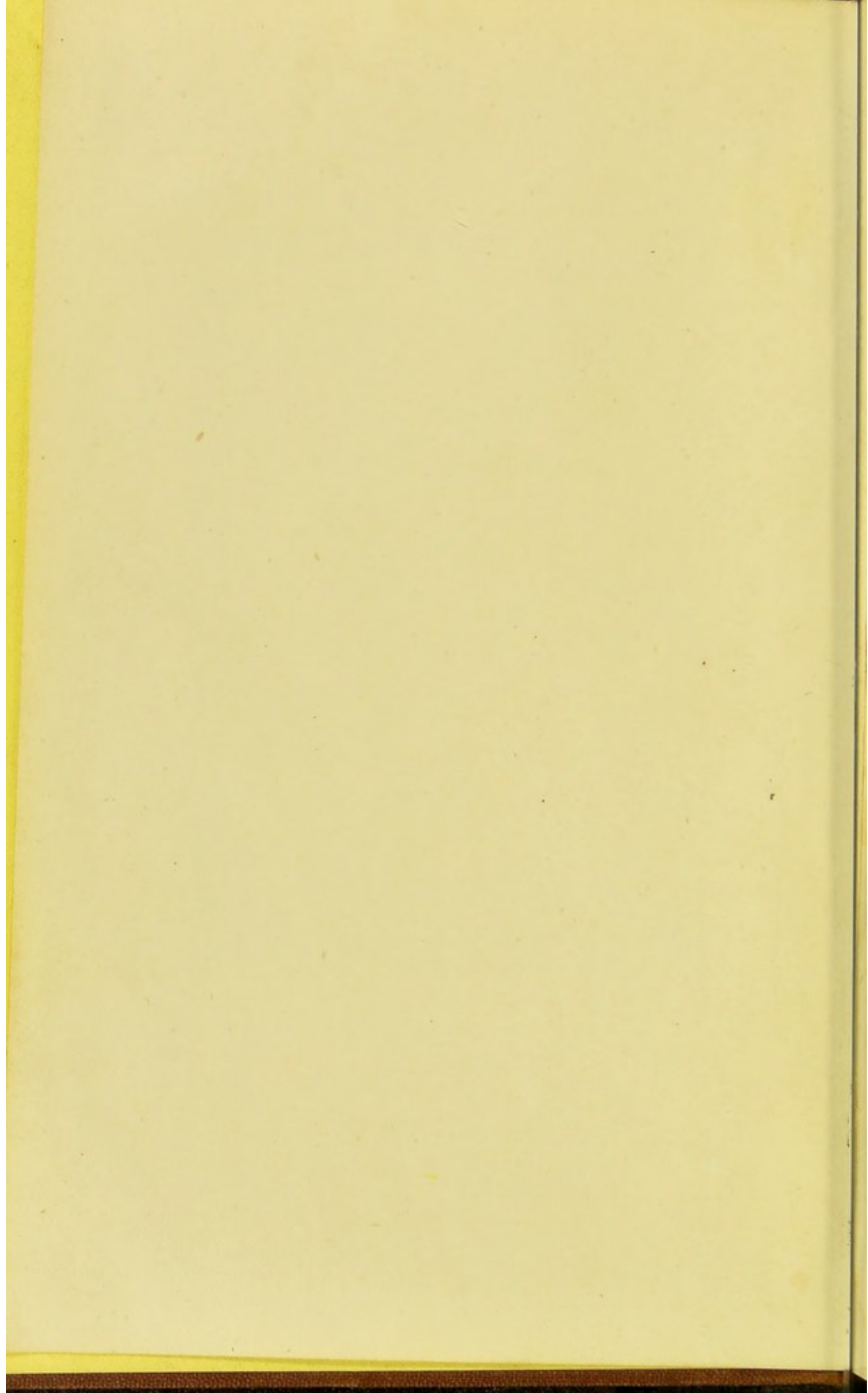
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# DISEASES OF THE NOSE

AND

## NASO-PHARYNX.

BY

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*"Deafness and its Curative Treatment" (7th Edition), "On the  
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associated with Noises in the Head," &c., &c.*

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HENRY RENSHAW,

356, STRAND, LONDON.

1889.

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## PREFACE.

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THE following work is the result of several years of special practice. It is intended as an Introduction to the subject, and has been written more especially for those who have neither the time nor opportunity for consulting the larger special treatises. The writer's object has been to render the work as practical as possible. Theoretical discussions have, therefore, been avoided, and, as far as possible, accepted opinions and definite facts only have been given. The more commonly met with affections—such as catarrh and polypus—have been treated at considerable length, while those which though more serious are of extremely rare occurrence, have been dealt with very briefly. In the compilation of this work, the Author has necessarily been under obligation to those who have already worked in the same field, and these obligations he has acknowledged, as far as possible, in the text. It has not, however, been thought advisable to cumber the work with references to

foreign treatises or special periodicals. The following list of works, however, will be found frequently referred to. To the writers of these the Author is anxious to acknowledge his indebtedness—viz., “Diseases of the Nose,” by Sir MORELL MACKENZIE, (J. & A. Churchill, London, 1884); “Manuel Pratique des Maladies des Fosses Nasales,” par Dr. E. J. MOURE, Paris, 1886; “Diseases of the Mouth, Throat, and Nose,” by PHILIP SCHECH, translated by Dr. R. H. BLAIKIE, Edinburgh (Young & Pensland); “Nasal Obstruction,” by GREVILLE MACDONALD, M.D. (Alexander G. Watt).

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LONDON, W.

## CHAPTER I.

---

### METHODS OF EXAMINING THE NOSE.

IN examination of the nose two chief methods are employed—namely, *anterior* and *posterior* rhinoscopy. The former of these is easily carried out, requiring only some form of speculum to dilate the nares, and a strong light. This latter may be sunlight, reflected from a plain frontal mirror; or the electric or lime light; or light from any ordinary lamp, reflected from a concave mirror. I find an ordinary gas jet and the laryngeal mirror sufficient for most purposes. Numerous specula have been invented, but of these only one is absolutely necessary—viz., some instrument with expanding blades, such as KRAMER'S or MAW'S.

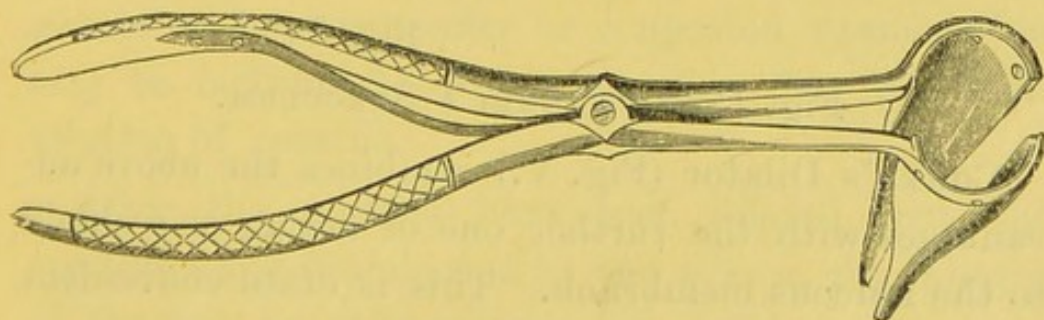


Fig. I.—KRAMER'S SPECULUM.

Fig. II.—  
MAW'S.

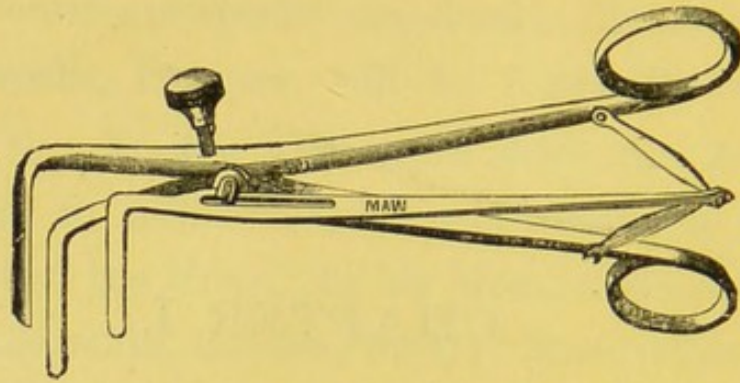


Fig. III.

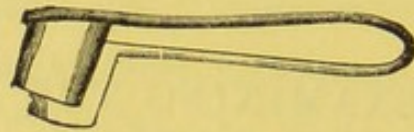


Fig. III.—THUDICUM'S SPECULUM, which is self-retaining, is also at times very useful.

In addition to these, FRANKEL'S fenestrated speculum is convenient (Fig. IV.), because it enables dilatation to be made gradually. It is self-retaining, and conceals a very small extent of mucous membrane.

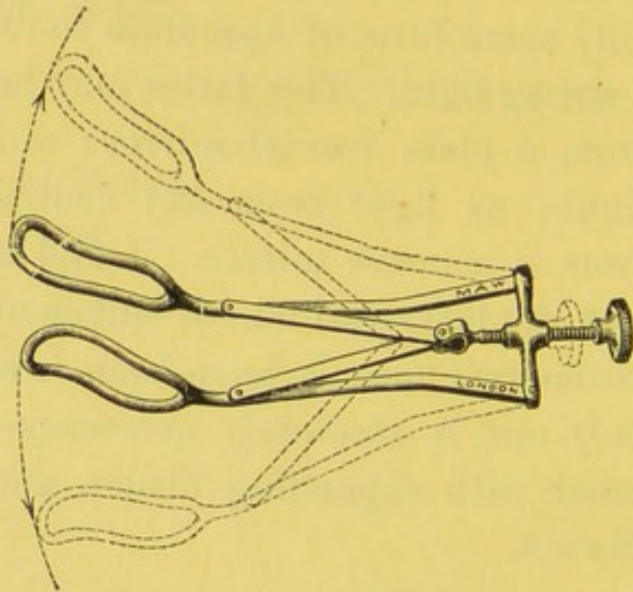


Fig. IV.

Fig. IV.—FRANKEL'S SPECULUM.

COHEN'S Dilator (Fig. V.) combines the above advantages with the further one of acting as a shield to the mucous membrane. This is often convenient in operations, especially with the electro cautery.

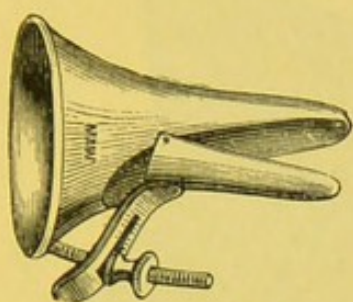


Fig. V.  
COHEN'S DILATOR.

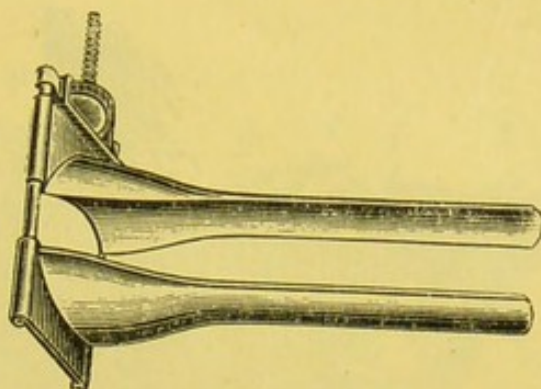


Fig. VI.  
ZAUFAL'S SPECULUM.

Fig. VI.—ZAUFAL'S SPECULUM.

A third form of speculum is ZAUFAL'S, (Fig. VI.), which is intended chiefly for examining the posterior wall of the pharynx and the orifices of the Eustachian tubes. It may be used both for operative and diagnostic purposes, but though the principle is a good one, the instrument itself is difficult to introduce, and its utility is therefore limited. Every speculum should be warmed before being used, and should not be passed in further at first than the anterior end of the inferior turbinated bone; morbid changes of the latter will thus not be overlooked. If the mucous membrane be very tender or congested, examination may be facilitated by the use of a four per cent. solution of cocaine.

After the nostrils have been dilated with the speculum and illuminated by the mirror, the interior of the nose becomes more or less visible.



Fig. VII.

## Fig. VII.—CARTILAGES OF THE NOSE.

(a) Right nasal bone; (b) Ascending portion of superior maxillary bone; (1) Right superior lateral cartilage; (2) Lower lateral cartilage, its outer part; (3) Ditto, its inner part; (4) Sesamoid cartilage and portion of integument completing the nostrils.

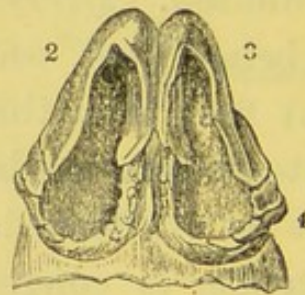


Fig. VIII.

## VIEW OF CARTILAGES OF THE NOSE, LOOKING INTO THE NOSTRILS FROM BELOW.

(1) Septum; (2) Right lateral cartilage; (3) Left ditto; (4) Sesamoid cartilage.

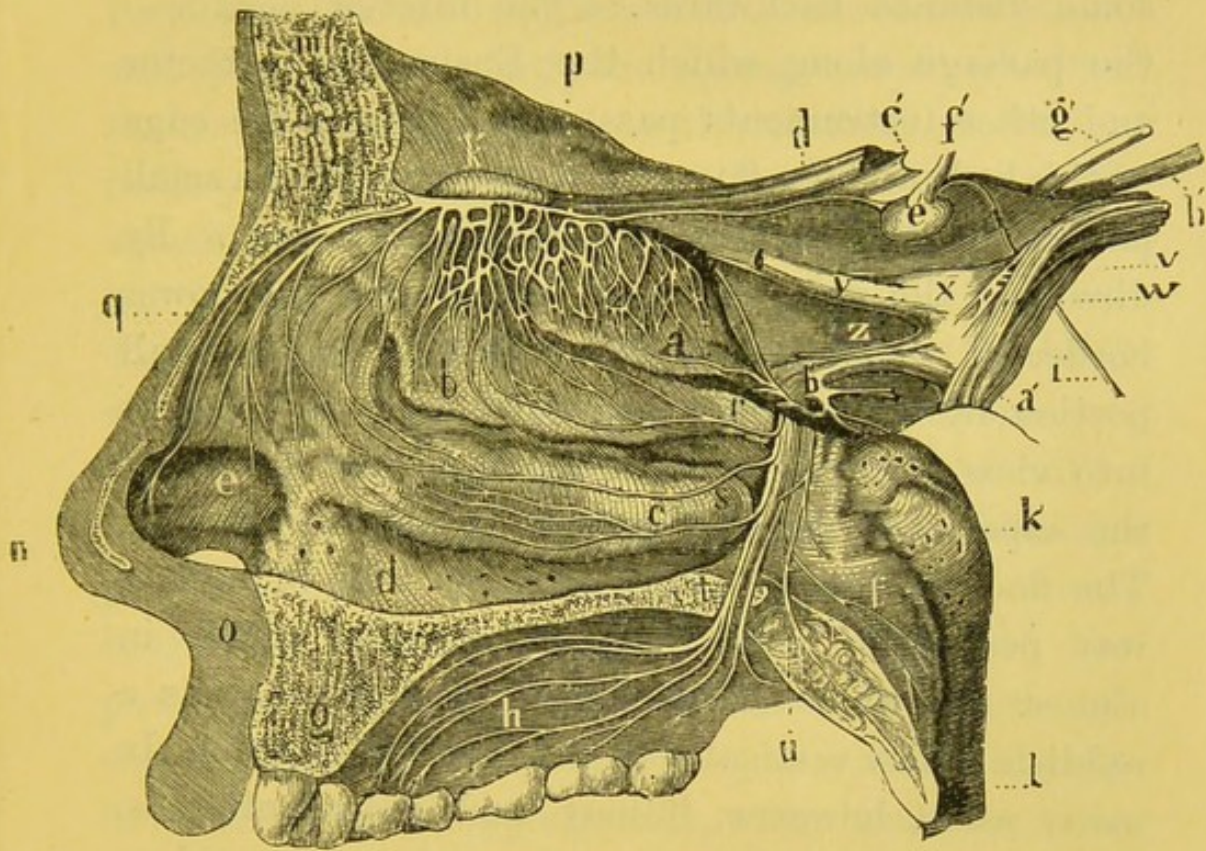


Fig. IX.—VERTICAL SECTION THROUGH THE NOSE.

(a) (b) (c) Turbinated bones; (h) Hard; (i) Soft palate; (j) Upper part of pharynx; (k) Opening of Eustachian tubes; (p) Nerve of smell; (q) Sensitive nerves coming from the fifth pair (u) and (w).

But how far in it may be possible to see depends on the size, shape, and condition of individual features. In straight and wide noses the whole interior may be visible, while in others it may be possible to see only the anterior end of the middle turbinated bone. In all normal cases, however, the anterior extremity of the inferior turbinated body is perceptible, and its lower surface may be traced

some distance backwards. The inferior meatus—the passage along which the Eustachian catheter and other instruments pass—lies between the edge of this body and the floor of the nose; and only a small portion of the meatus can as a rule be seen. By directing the patient's head backwards, the lower border of the middle turbinated body and a small portion of its exterior convexity may be brought into view. At the roof of the nose, and far back, the superior turbinated body is occasionally visible. The floor of the nose may often be followed a long way posteriorly. The septum may be visible in almost the whole of its length, and appears as a reddish yellow vertical wall between the nostrils. In many cases, however, it may, and, indeed often is, deviated to one side or the other, while bony ridges may traverse it longitudinally. With ZAUFAL'S speculum (Fig. VI.), the patient's head being inclined well forwards, I have seen the posterior wall of the pharynx and orifices of the Eustachian tubes.

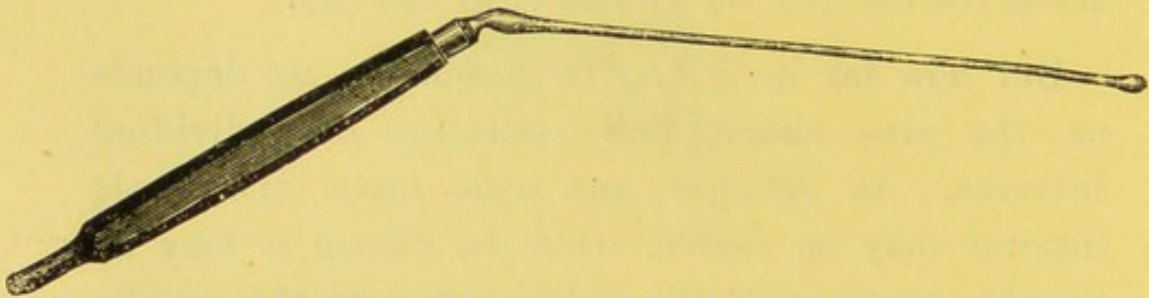


Fig. X.—TROELTHS' NASAL PROBE.

To complete the examination, a probe (Fig. X.) should always be used. It will give important in-

formation as to the condition of the mucous membrane, will open up and enlarge the passages, and will show the connections and positions of neoplasms, or foreign bodies, or diseased bone. To the use of the probe should be added that of the index finger, passed behind the soft palate into the post nasal space. This examination I constantly perform in all doubtful cases, and consider it of great practical importance. If done dexterously and quickly, it causes but little discomfort. The finger should be passed, while the patient draws a deep inspiration, into the mouth backwards between the uvula and fauces to the posterior surface of the soft palate, and then upwards towards the roof of the pharynx, and lastly downwards on the opposite side, when it may be withdrawn. By this method important information as to the condition of the posterior nostrils, roof of the pharynx, and space between the Eustachian orifices may be obtained.

*Posterior rhinoscopy* is confessedly more difficult than anterior, and both skill and practice are necessary before all the nasal structures can be brought into view. The only apparatus required is a reflector and small mirror about one-third of an inch in diameter. This latter should be set on its handle at nearly a right angle for examining the septum and vault of the nose, but at a wider angle for the nasopharyngeal wall (Fig. XI.).

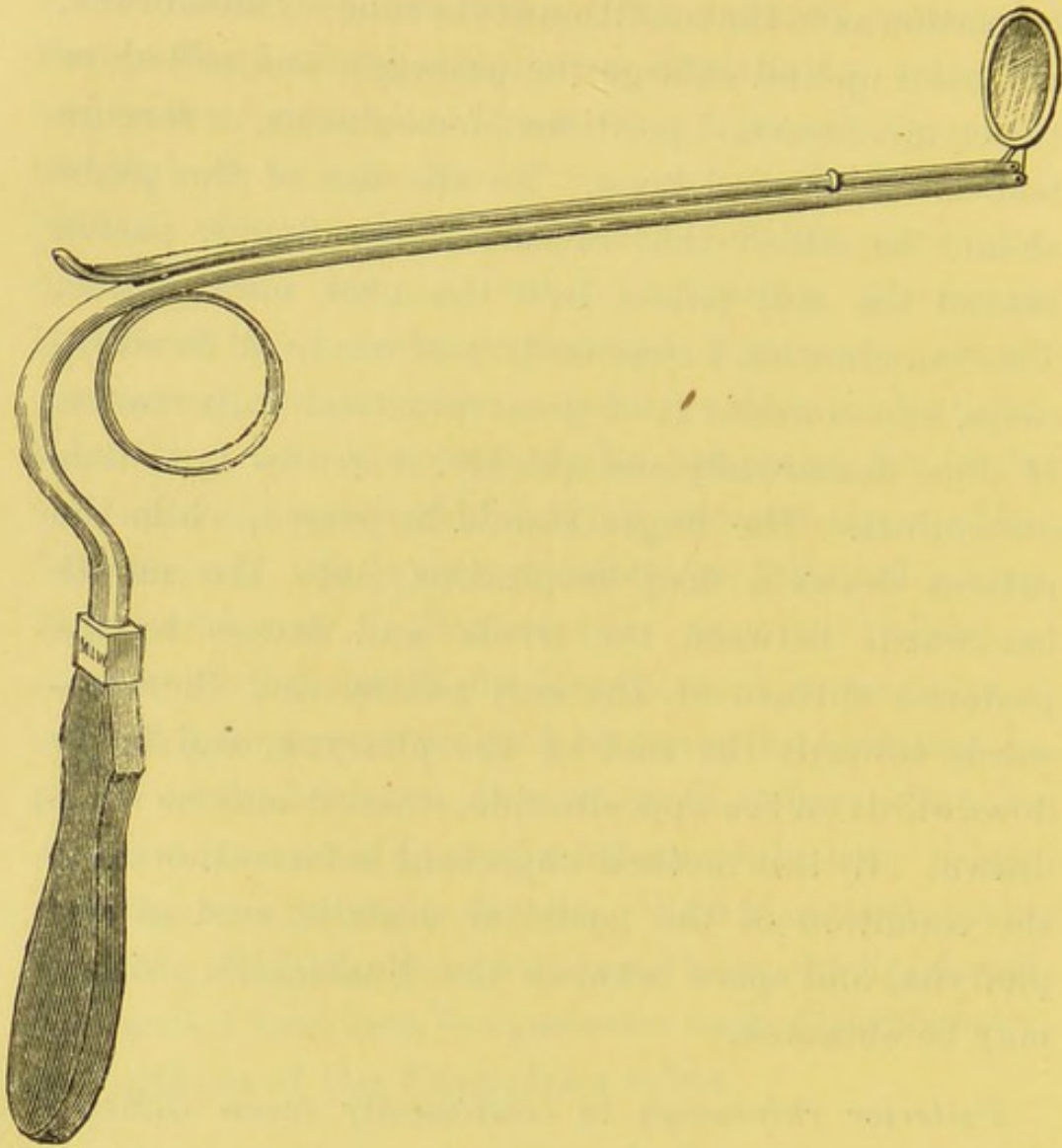


Fig. XI.—RHINOSCOPE.

The handle should be stout enough to act as a tongue depressor. Palate hooks, uvula snares, tongue depressors and such accessory appliances, are seldom necessary. The chief difficulties resolve themselves into two, viz., the anatomical, due to the condition and formation of the naso-pharynx; and those due to irritability of the patient. Anatomic-

cal difficulties are sometimes insuperable, and in such case posterior rhinoscopy becomes impossible. As to the irritability of patients, much of it may be neutralized by skill and rapidity on the part of the surgeon, or by the use of a ten per cent., or weaker, solution of cocaine. The mirror, well warmed, and, with its angle pressing on the back of the tongue,

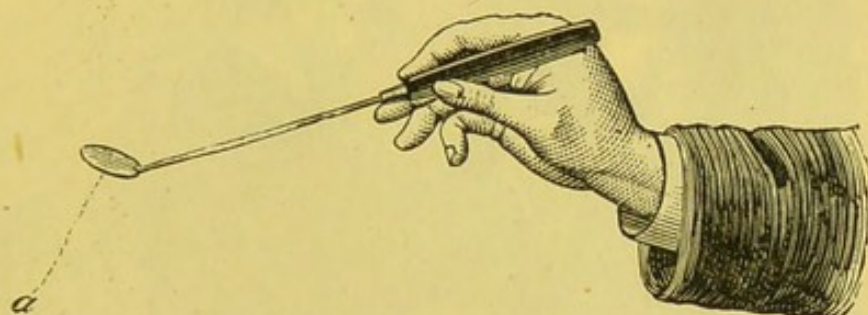


Fig. XII.—POSITION OF THE RHINOSCOPE MIRROR.

should be introduced between the uvula and pillar of the fauces, and pushed towards the posterior wall. The success of the operation depends on keeping the soft palate in as relaxed a condition as possible, and in insinuating the mirror behind the uvula, without touching either it or the posterior wall of the pharynx. The post nasal structures cannot be seen all at the same moment; but by turning the mirror in various directions, and elevating or depressing it, a series of partial views are obtained, which together make a complete picture. The objects seen by posterior rhinoscopy, when the surface of the mirror is directed upwards and somewhat forwards, are the septum, which appears as a red bony ridge, with, on each side of it, the nasal fossæ (Fig. XIV.) Into these

project, horizontally, the superior or smallest tur-  
 binated bone, the middle, or larger, and below it the



Fig. XIII.—POSITION OF OBSERVER IN POSTERIOR  
 RHINOSCOPY.

inferior or largest. Between these bones lie respec-  
 tively the superior, middle, and inferior meatus; in  
 many cases the inferior meatus may appear little more

than a slit, while the inferior turbinated bone may be partially covered by the contracted soft palate. If the mirror be held almost horizontally the vault of the pharynx will come into view. Its surface is irregular and in adenoid conditions furrowed and dotted over with small depressions which mark the seat of the pharyngeal tonsil. If the mirror be inclined slightly to the right or left, the fossæ of Rosemuüller become visible, with, in front of them, the orifices of the Eustachian tubes, which appear yellowish white against a red background of mucous membrane. The salpingo palatine fold passes in front, and the salpingo pharyngeal behind, while between them rises the prominence made by the levator muscle.

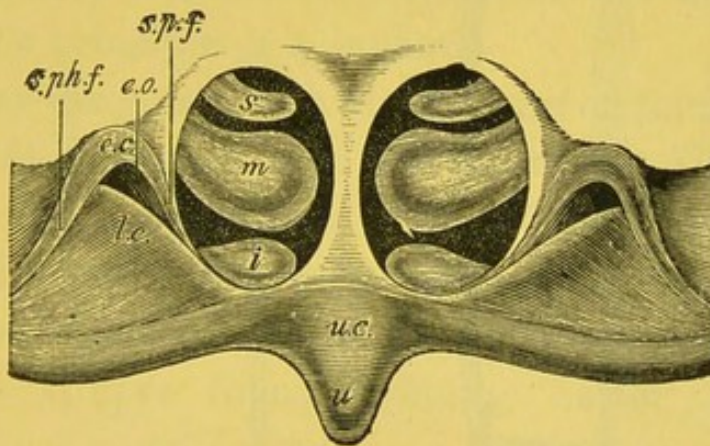


Fig. XIV.—RHINOSCOPIC VIEW OF THE POSTERIOR NASAL FOSSÆ.—(After MOURE.)

(*s*) Superior turbinated bone; (*m*) Middle do.; (*i*) Inferior do.; (*ec*) Prominence of Eustachian tube; (*eo*) Orifice of do.; (*ucu*) Posterior surface of uvula; (*sphf*) Salpingo pharyngeal fold; (*spf*) Salpingo palatine fold.

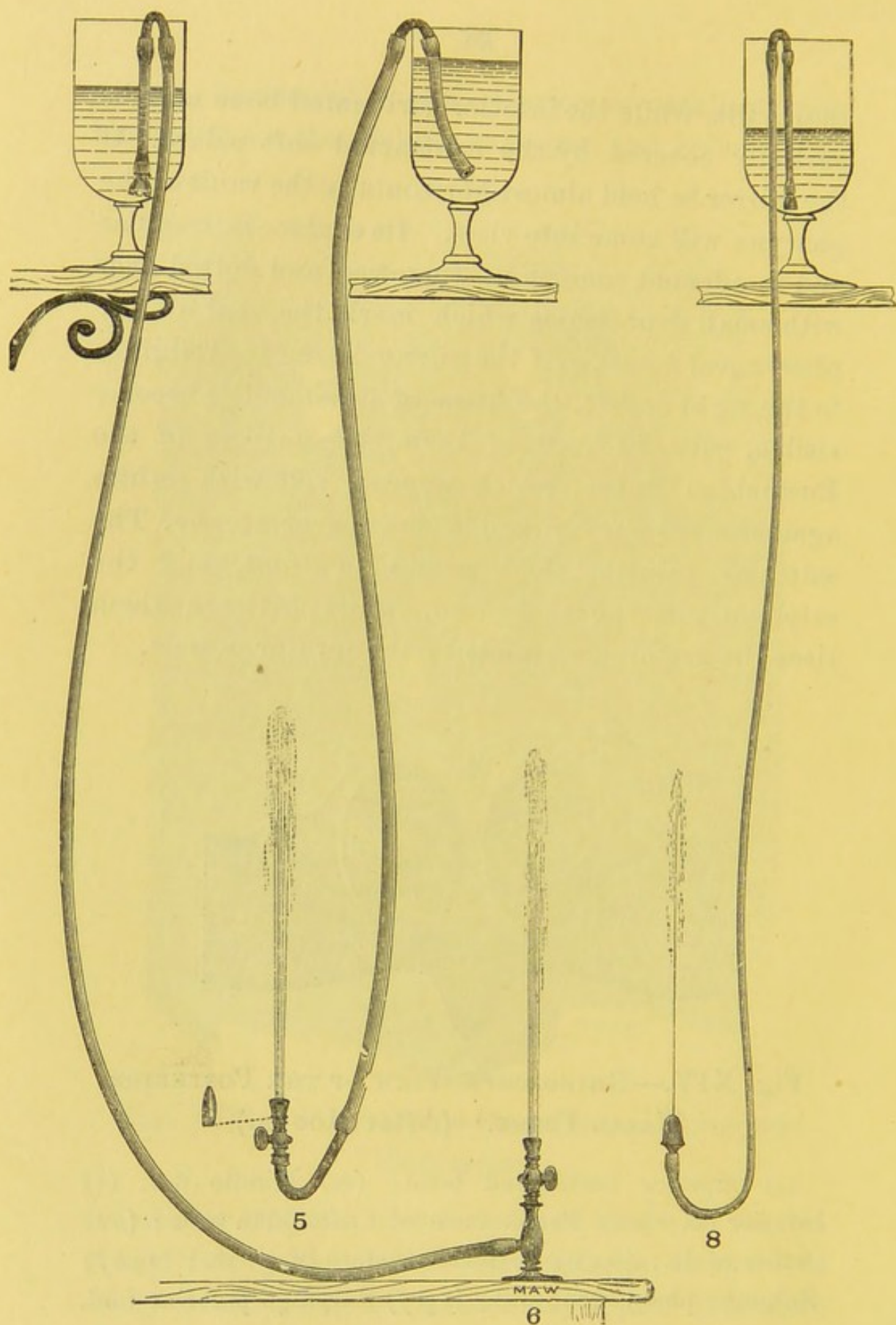


Fig. XV.—MAW'S NOSE DOUCHE (6), WEBER'S SYPHON (8), GRAEFFE'S SYPHON (5).

## CHAPTER II.

### GENERAL NASAL THERAPEUTICS.

In most cases of nasal disease one of the first indications is to cleanse the parts thoroughly, whether for purposes of inspection or of treatment. This object may be effected sometimes by simply directing the patient to sniff up fluid from the palm of the hand or from a vessel. This, however, is seldom a satisfactory method, and it is usually necessary to have recourse either to a douche or to nasal or post-nasal syringes. The douche consists of a tube of from three to five feet long, provided at one end with an olive-shaped nozzle; at the other with a weight to keep it under the surface of the fluid. It acts on the principle of a syphon.

In many cases, however, the amount of force which can be safely obtained from a WEBER (Fig. XV., 8) or other douche is insufficient. To bring away foreign bodies, adherent crusts, or to thoroughly cleanse the nose from tenacious mucus, a syringe is generally required. I have found nothing better than a

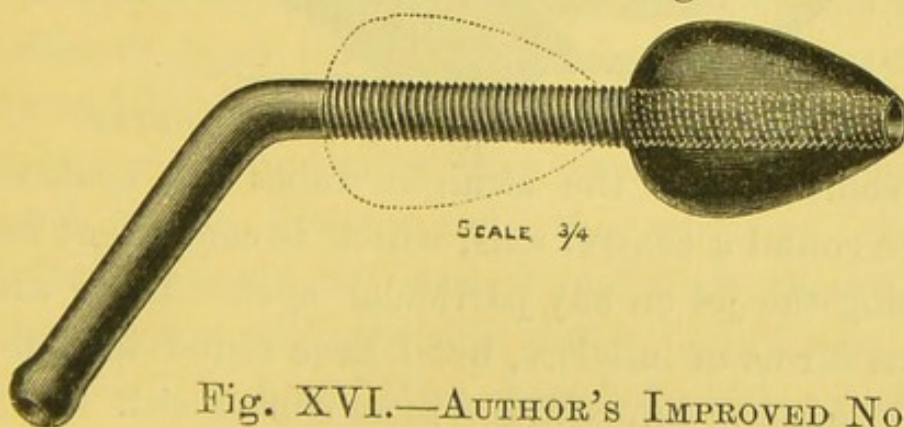


Fig. XVI.—AUTHOR'S IMPROVED NOZZLE.

HIGGINSON'S, with an olive-shaped end, or with the improved nozzle which I have devised.

The other instruments required from time to time for purposes of medication, are a spray and an inhaler. An ordinary hand ball spray will do well, provided it be fitted with two nozzles, one long and thin for penetrating into the nares and pharynx, the other curved for the posterior nares.

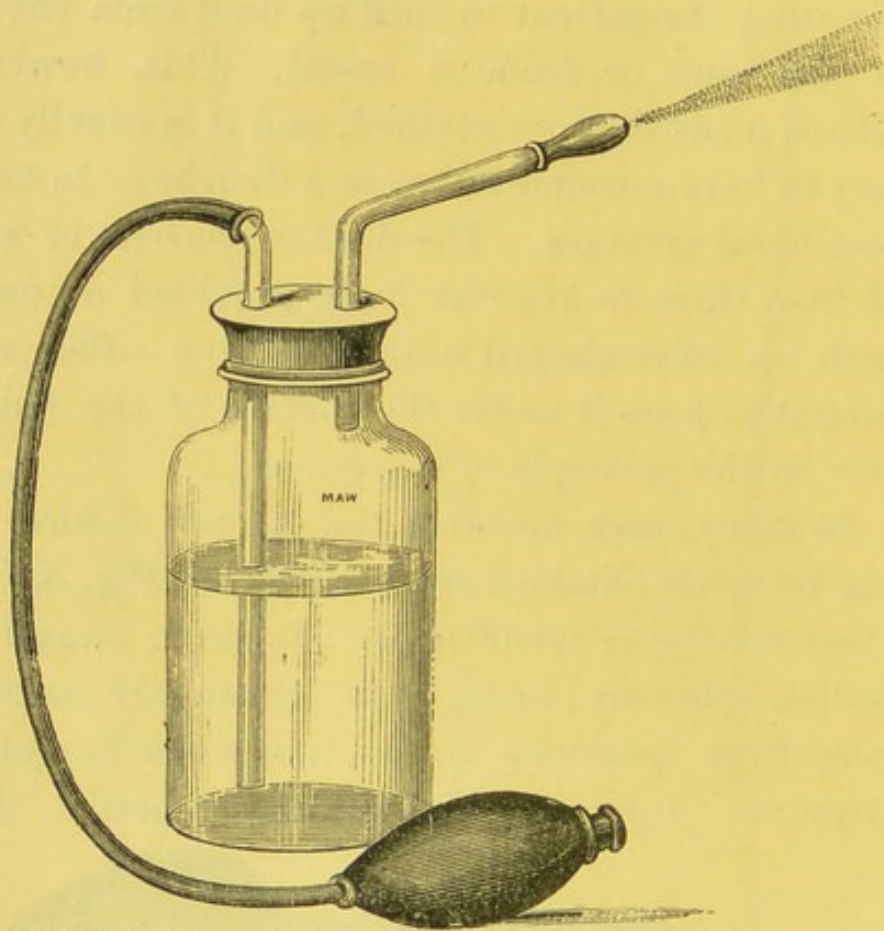


Fig. XVII.—SPRAY FOR VAPOUR OF IODINE.

In some sprays the straight tubes are made to revolve round a central axis, which is convenient for directing the jet on any particular spot. There are various forms of inhalers, but I have found the subjoined form the simplest and most convenient.

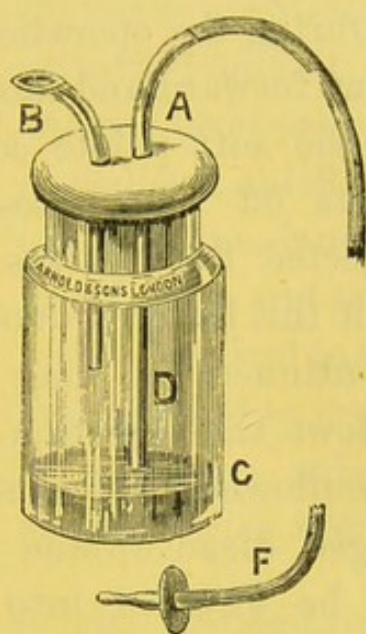
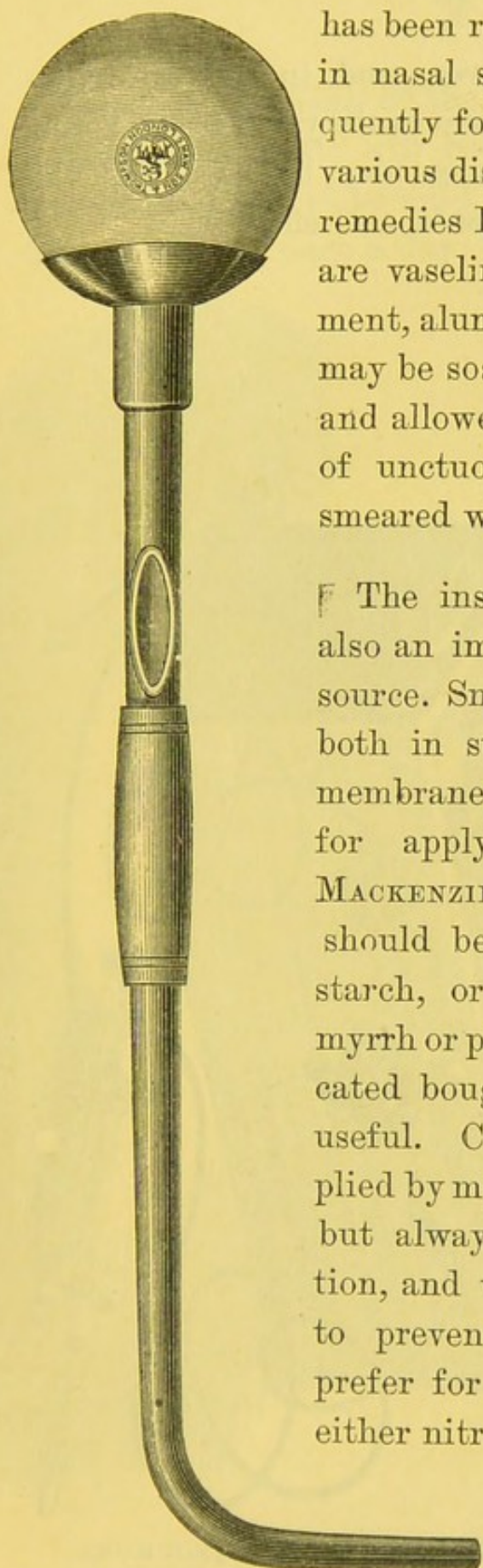


Fig. XVIII.—AUTHOR'S INHALER.

In injections the fluid should be used lukewarm or at a temperature not below 90 deg.; never cold, unless to stop hæmorrhage. It is most important to direct the stream directly backwards—not as is often done by patients, upwards towards the frontal sinuses and base of the brain. It is neglect of this simple precaution, together with using too much force, which has brought syringing into disrepute with many. With any douche it is important to recollect that each two feet of elevation above the patient's head will signify a hydraulic pressure of about 1 lb. on the square inch. The reservoir should, therefore, be not more than three inches above the level of the patient, and the quantity of fluid injected should not exceed one pint, though half that amount will generally suffice. As a rule, twice a day will be found often enough for either douching

or syringing. During the operation the head ought to be slightly bent forward and the mouth to be wide open. At first the soft palate contracts by reflex action, and shuts off the naso-pharynx; consequently, the injected fluid passes out through the opposite nostril if this latter is unobstructed. If the syringing be continued too long the palate finally relaxes, and allows the injection to pass into the throat and be swallowed, which is not always desirable. One alleged disadvantage of the douche is that fluid may be directed into the middle ear through the Eustachian tube, causing inflammation and perhaps otorrhoea. This, however, is scarcely possible, unless undue force be used in the wrong direction, or unless one nostril is closed, or unless swallowing movements be made. With the author's improved nozzle, which directs the stream backwards, these accidents are scarcely possible. The solutions for injection should not be irritating, as the mucous membrane of the nose is more sensitive to interference than that of the throat; without caution in this respect, therefore, severe headaches, lachrymation and fits of sneezing may be readily induced. Painting the mucous membrane, plugging and insufflation of snuffs are also useful therapeutic measures. For the former, astringent solutions are chiefly used. In plugging, the remedies are intended to be retained in the nose for a longer or shorter time, and to be in contact with the mucous membrane. This method of treatment



has been recommended by WOAKES in nasal syphilis, and I have frequently found it advantageous in various diseased conditions. The remedies I chiefly use on the plugs are vaseline, lanolin, boracic ointment, alum and tannin. The plugs may be soaked in the medicaments and allowed to dry, or in the case of unctuous substances, may be smeared with them.

¶ The insufflation of powders is also an important therapeutic resource. Snuffs are useful generally, both in stimulating the mucous membrane, and also as vehicles for applying actual remedies. MACKENZIE recommends that they should be made up with maize starch, or occasionally powdered myrrh or phosphate of lime. Medicated bougies are also sometimes useful. Cauterization may be applied by means of various reagents, but always under good illumination, and with proper precautions to prevent undue spreading. I prefer for ordinary cauterization either nitrate of silver or chromic acid, fused into a bead on a probe or glass rod.

Fig. XIX.—RAUCHFUS'S INSUFFLATOR.

The best caustic, however, and indeed an indispensable one, is the galvano cautery. Various forms of batteries and appliances may be used, but the subjoined is convenient, safe, and effective.

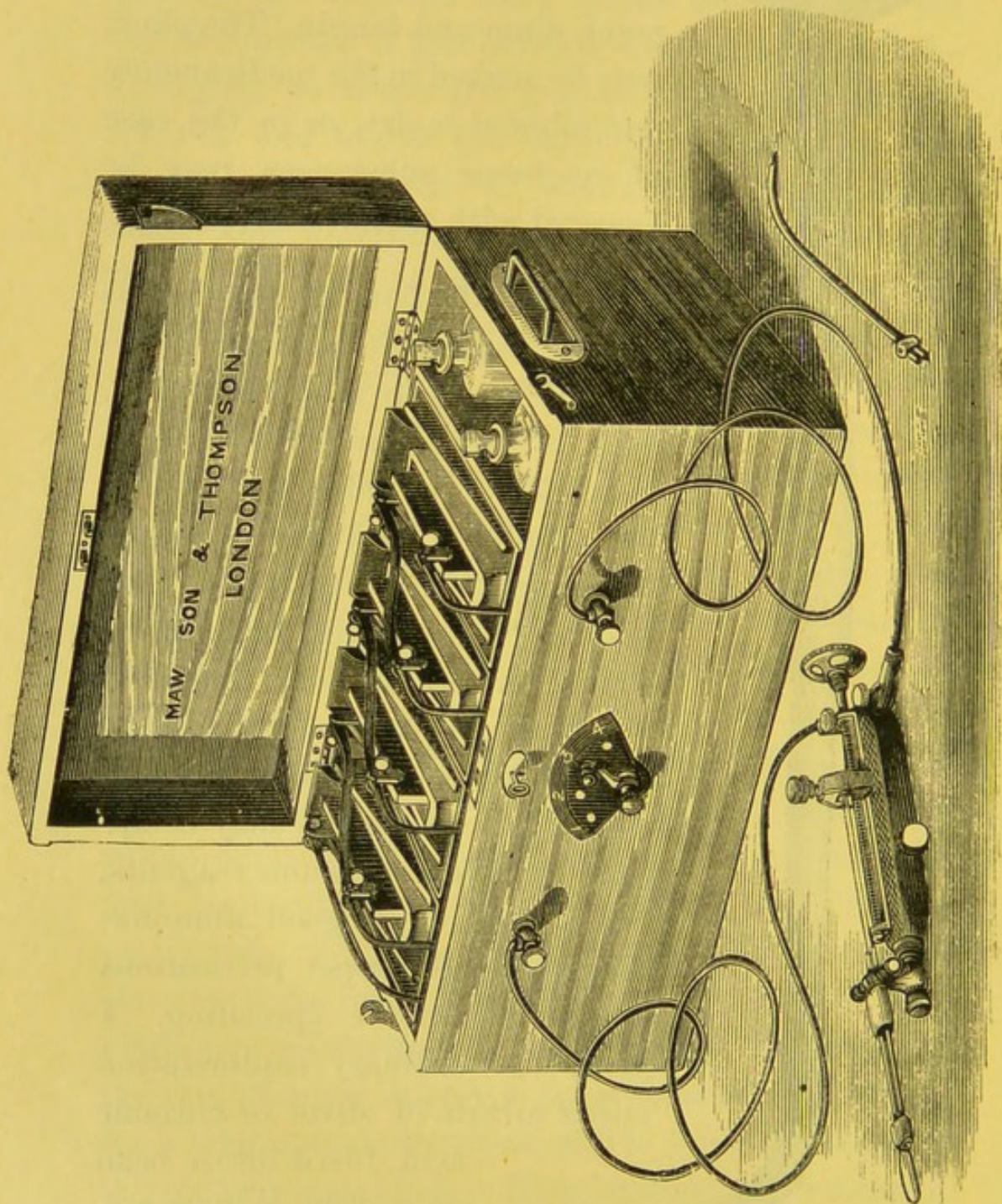


Fig. XX.—CAUTERY BATTERY AND RHEOPHORE.

In many affections of the nose, more especially in neuroses, electricity will be found of great benefit. The current should be mild, and be used for about fifteen minutes once a day.

## CHAPTER III.

---

### ACUTE NASAL CATARRH.

DEFINITION.—*An acute catarrhal inflammation of the Schneiderian mucous membrane, inducing sneezing, obstruction and hypersecretion.*

The causes of catarrh, or common cold, may be grouped under two main divisions—viz., *prediposing* and *exciting*. Among the former must be mentioned *youth*—for it is a well known fact that old persons are practically exempt from this malady. Many individuals appear, moreover, to possess a certain idiosyncrasy as regards the affection. It is not uncommon among the gouty, and in persons whose nervous system is in a condition of unstable equilibrium, and among those with a strumous diathesis, or predisposed to asthma. Hay fever would often appear to be a connecting link between asthma on the one hand, and catarrh on the other (MORELL MACKENZIE). Climatic conditions and sudden changes of temperature, not necessarily from heat to cold, but some times the reverse, must also be noted.

The most common *exciting* cause is without doubt the action of damp cold, more particularly if the body be heated and perspiration active. Sometimes simple transition from warm to cold air will be

enough to induce an attack; at others the prolonged action of cold is required, especially on the feet, and in bald persons on the head. Heat, either as solar heat, or the elevated temperature of a warm room, may produce similar results. In the former case it has been suggested that the catarrhal effects may be due either to direct irritation, or may be of a reflex character, dependent on undue stimulation of the retina. In the latter case the coryza is generally observed in persons in a depressed condition of health, and in those who have been the subject of previous attacks. The influence of irritating vapours, and of certain medicinal substances, such as iodide of potassium, and of the pollen of many plants in producing nasal catarrh, has long been known.

It has been thought that under favouring circumstances coryza may become contagious, and even assume an epidemic form. Most writers refer to the classical instance given by AGLADA in which the entire French army in Andalusia suffered from this affection after a long march, and a sudden lowering of atmospheric temperature. On the other hand all attempts to inoculate nasal catarrh have failed.

Coryza is generally observed as a symptom in the exanthemata, more especially in measles, scarlatina and typhus. In the former the congested condition of the mucous membrane is due to the eruption itself, while in scarlatina it is caused by extension of the inflammatory process from the throat. At times its presence is due to metastasis, and is correlated

with the cessation of habitual discharges such as menstruation, hemorrhoids or eczema.

*Symptoms.*—The earliest symptom of an attack of coryza is pyrexia, with a feeling of chilliness over the body, and a sense of weight and perhaps pain in the brow and forehead. This is followed by unpleasant dryness of the nasal mucous membrane, and itchiness, accompanied by sneezing. Either or both nasal fossæ become blocked, and an irritating watery discharge then appears, and subsequently becomes mucopurulent. The duration of the attack may be from three days to as many weeks. But it is not unusual after a first period of invasion for all the symptoms to cease. This may be looked for when the exciting cause has been mild or of short continuance. In such cases the attack has been one not of true coryza, but rather of simple congestion of the mucous membrane.

Both taste and smell diminish in catarrhal attacks, and may even disappear. The voice becomes distinctly nasal in its tones. This is due to the fact that when the anterior nares are blocked the nasal cavities can no longer act as reverberating chambers. On the other hand, when the stoppage of the nostrils is chiefly posteriorly, articulation becomes defective, *m* becoming *b* and *n* being sounded as *d* (SEILER, quoted by MORELL MACKENZIE).

The second stage of coryza is marked by an increased secretion of alkaline serum, which may cause erosion of the nostrils and upper lip. This discharge

may be so copious as to necessitate the constant use of the handkerchief, and may even be accompanied by slight hæmorrhage. During sleep the secretion is arrested wholly or in part. The nostril opposed to that of the side on which the patient lies may become dry and free, to be affected in its turn by any change of position.

When the inflammation extends to the nasal ducts, there will be lachrymation with hyper-æsthesia and congestion of the conjunctiva; if to the frontal sinuses, pain in the forehead and a sense of weight; if to the antrum of Highmore, severe pain in the cheek. Neuralgic pains, moreover, may be experienced over the course of one or all the branches of the fifth pair of nerves (*see* Fig. IX., p. 9). Temporary blocking of the Eustachian tubes will cause partial deafness, with noises in the head and a sensation of fulness. The irritation caused by the discharge, and also by abrasion of the mucous membrane, may produce troublesome and painful herpes labialis. Moreover, the nasal inflammation may extend to the pharynx and larynx, and from thence to the respiratory passages.

*Diagnosis.*—The diagnosis of acute coryza is too evident to render much description necessary. It should not be forgotten, however, that coryza may often be a premonitory symptom of some acute specific disease, such as measles, small pox, or scarlatina.

*Prognosis.*—In the majority of instances, spontaneous cure takes place, and it is only in the case of

very old persons or young children that there is any danger to life; at the same time, each successive attack, as a rule, leaves the patient more susceptible, and the inflammation has a tendency to reproduce itself on the slightest provocation. These repeated attacks at length induce chronic thickening of the mucous membrane, the formation of polypi, and indirectly, blocking of the Eustachian tubes, together with deafness, noises in the head, and giddiness.

*Pathology.*—The only actual lesions found in coryza are such as are common to all inflamed mucous membranes, and are superficial and unimportant. The initial stage is active congestion of the pituitary mucous membrane, followed by serous exudation. The exuded fluid, as CORNIL and RANVIER have shown, contains epithelial cells more or less altered, which increase in number as the catarrh advances, together with blood corpuscles, pus globules, and micrococci. These latter HUETON considers as the real cause of coryza. It is not quite clear whether the inflammation attacks exclusively the respiratory tract, or both it and the olfactory region. The latter appears the more probable, seeing that the inflammation not uncommonly extends to the cavities accessory to the nose.

*Treatment.*—In the majority of cases a common cold will cure itself with little aid from medicine, but at times, whether from the severity or the frequency of the attacks, treatment becomes advisable. This may be either *stimulant* or *derivative*. Of all

stimulants, opium, either in the form of Pulv. Ipecac. Co. or Tinct. opii., is the best. Doses of from five to seven drops of the latter, taken at the commencement of an attack, will often cut it short. But this treatment need not be continued after the second day (MACKENZIE). Ferrier's snuff, a combination of morphia (gr. ij) and bismuth Sub-nitrate ʒ vj) will often be found useful. The powder may be blown into the nasal cavities with the insufflator (Fig. XIX.), or may be snuffed up. Sufficient should be used at frequent intervals to keep the interior of the nostrils well covered. Camphor, in the form of a few drops of the spirits on a lump of sugar, is a favourite domestic remedy. Local stimulants, such as strong smelling salts, are also useful.

Derivative treatment consists in diuretics, diaphoretics, and purgatives. Turkish baths, or, if these are unattainable, the common hot air baths, will often be found very efficacious. Along with this, James Powder, or the Pulvis Antimonialis of the Pharmacopœia, or a mixture composed of five grains of nitrate of potash, twenty minims of spiritus ætheris nitrosi, and two drachms of liquor ammoniæ acetatis, may be given. Small doses of aconite have also been recommended. Total abstinence from all liquids will often check a catarrh. WILLIAMS, who advocates this treatment, recommends that it should be put in force immediately at the commencement of an attack, and that all fluid should, as far as possible be abstained from.

When these methods fail, I often relieve, temporarily at least, the difficulty of nasal breathing and sense of stuffiness, by painting the interior of the nostrils with a ten per cent. solution of cocaine. Or, if this be not possible, then a powder composed of hydrochlorate of cocaine, one grain; morphia, one-third grain; powdered benzoin, twenty-five grains; and sub-nitrate of bismuth, one drachm (MOURE), may be used at intervals as a snuff. Carbolic acid inhalations are often of service, and should be employed three or four times a day. Towards the end of the attack the secretions may become inspissated, and continue unduly long. In such cases nasal irrigations of warm alkaline lotions (bicarbonate of soda, chlorate of soda or chlorate of potash) should be used. The above will be more particularly indicated where the inflammation has extended to the posterior nasal fossæ, with danger of aural complications.

#### ACUTE CORYZA IN INFANTS.

Owing to the peculiar anatomical conditions of the nasal fossæ in infants, acute coryza may become an extremely serious affection. In very early life the face is much less developed than the cranium, and the nose is relatively smaller than other features. The ethmoidal cells do not exist; while the palatine arch and velum palati are more horizontal than in the adult. The nostrils are exceedingly narrow, and the posterior opening of the nasal fossæ is markedly

diminished by the vertical direction of the pharynx and the mass of the prævertebral muscles. In infants the nose is essentially the organ of respiration. In health and during sleep the mouth is closed, and the tongue pressed against the palatine arch. Hence any swelling of the pituitary mucous membrane will on mechanical grounds necessitate oral respiration which will be difficult during sleep or sucking. In some cases symptoms of asphyxia show themselves; these may be due either to the tongue falling back posteriorly, and so cutting off the access of air to the larynx or to pulmonary congestion from insufficient entry of air. If the swelling of the mucous membrane be slight, the child may still suck by forcibly respiring, but fatigue quickly ensues, and, as a consequence, insufficient nutrition. If the nasal fossæ are completely obstructed, either by tumefaction of the mucous membrane, or by accumulation of secretion, sucking becomes impossible, and the infant may succumb.

*Treatment* will be much the same as in the case of adults, but all opiates should be avoided. A weak solution of cocaine applied to the interior of the nostrils with a brush, would probably in mild cases re-establish nasal breathing, and enable the child to take the breast. Failing this, a small tube may be passed through the nose, or spoon-feeding may be resorted to, or in bad cases an œsophageal tube may be used, or MACKENZIE'S temporary sponge tampon.

## CHAPTER IV.

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### PURULENT NASAL CATARRH.

DEFINITION.—*An inflammation of the nasal mucous membrane, accompanied from the first by purulent secretion.*

*Etiology.*—This affection is met with both in children and adults, but is much more common in the former. Occasionally it would appear to be a sequence of ordinary acute inflammation. More usually, however, it is induced by injuries or operations on the nose, or by the presence of a foreign body in the nasal fossæ, or by some specific contagion. To this latter cause, in common with purulent ophthalmia, its presence in infants is generally ascribed. The evidence, however, on this point is by no means conclusive. HERMANN WEBER quotes one remarkable case, in which a mother had suffered from a vaginal discharge for some weeks previous to delivery. The infant was not washed for three hours after birth, and was subsequently attacked with purulent inflammation of one eye and of both nostrils. Others (MORELL MACKENZIE, FRAENKEL) attribute its causation to sudden exposure of the pituitary mucous membrane, while yet very sensitive to the stimulus of cold currents of air, or the irritation of soap and

water. It is probable, however, that all the above causes may at times produce the affection, while the analogy of purulent ophthalmia would lead us to expect that direct infection might take place in the nose as well as the eye. Nor are cases wanting to show that in adults the nasal mucous membrane can be infected, directly with the specific virus of gonorrhœa. Purulent catarrh is also met with in the course or as a sequence of scarlatina, small pox, diphtheria and glanders.

*Symptoms.*—The affection is generally ushered in with pyrexial disturbance, which assumes, from the outset, considerable severity. This may, however, be absent, and the chief symptoms be only abundant yellowish discharge, acrid and foul smelling. This forms crusts at the nostrils, blocks their cavities, and produces excoriations of the upper lip. The inflammation may extend to the eyes. After three days the secretion becomes more abundant, and is accompanied by formation of grumous cheesy crusts, whence it has received the name of “caseous coryza” (DUPLAY). At this stage the sense of smell is much impaired, the voice becomes nasal, and the obstruction of the nostrils is almost complete. Severe pains of a neuralgic character may radiate over the face, and especially over the orbital region. Such cases are, however, the exception, and in proportion as the discharge finds a free exit, the patient is generally free from acute suffering. In the case of infants, purulent catarrh may interfere with respiration and

feeding, and must therefore be considered a serious affection.

*Prognosis.*—In most cases in adults the disease is mild, and is dangerous only in infants.

*Complications.*—If neglected, purulent catarrh may induce caries of the nasal cartilage and bones. In infants, owing to the thinness of the cribriform plate of the ethmoid bone, the inflammation may extend to the brain and cause purulent meningitis and death. Elimination of the turbinated bones also at times takes place, followed by atrophic catarrh and ozæna.

*Diagnosis.*—It is important not to mistake this affection for malignant disease. The diagnosis is not always easy, especially where there is retention of pus and caseous matter in the nose with fœtor. Careful syringing and the use of the probe will generally resolve all doubts. As regards diphtheritic catarrh and glanders the presence of false membranes, and the history of the case, together with the general symptoms, will be sufficient guides.

The *treatment* should be both general and local, due attention being given to any constitutional disease on which the catarrh may depend. If a foreign body be present it must be removed. Locally, the first indication is thoroughly to cleanse the nostrils from all crusts. This is best accomplished by warm lotions alkaline at first, and subsequently antiseptic. Thus, alum (gr. v to ʒj), sulphate of zinc (gr. ii to ʒj), or warm milk with the addition of bicarbonate of soda or borax are both soothing and cleansing. The

antiseptic solutions which I have found most useful are carbolic acid (gr. iv ad. ℥j), and borax (gr. xii ad. ℥j). These may be administered either with the nasal douche or a HIGGINSON'S syringe with the author's nozzle Fig. XVI., or better with a post nasal syringe. The remedies must be changed from time to time. With infants, nasal injections cannot safely be administered, owing to the danger of causing spasm of the glottis. In such cases, therefore, little can be done, except to cleanse the nostrils from without, and, when necessary, resort to artificial feeding.

## CHAPTER V.

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### TRAUMATIC RHINITIS.

DEFINITION.—*A peculiar inflammation of the pituitary mucous membrane, due to irritating vapours or particles of dust.*

*Etiology.*—In addition to the generally irritating effects of dust on the nasal mucous membrane as seen in millers, sawyers, brushmakers and other trades, there are certain nasal lesions more especially found in connection with workers in chemical manufactories. This is especially the case among workers in bichromate of potash, yellow chromate (HILLAIRET and DELPECH), arsenical and mercuric preparations, and generally in those exposed to caustic dusts and vapours. CLOUET and DELPECH have, however, elicited the fact that snuff-takers enjoy almost complete immunity from the affection.

The earliest *symptoms* are much akin to those of coryza, but instead of being merely temporary, persist for a varying length of time, in proportion to the rapidity with which the inflammatory process is evolved. To the earlier symptoms of pricking and smarting there is gradually added discharge passing from serous into purulent. This dries and forms crusts, which are cast off with more or less hæmorrhage.

hage. The next and last stage is ulceration of the bone and cartilage, with perforation of the septum; without, however, any offensive odour. The sense of smell is rarely affected. Ulceration of the inferior portion of the turbinated bone may take place, and be followed by perforation. Owing, however, to the fact that the anterior portion of the septum is not involved, no deformity follows.

The immunity enjoyed by snuff-takers may be explained by the excessive activity of the nasal secretion, and by the fact that the nose is so frequently blown. Hence, no irritating matters can long remain in contact with the mucous membrane, which, moreover, by the chronic thickening it undergoes, is rendered less sensible to external irritants.

*Prognosis.*—The portion chiefly affected is the septum, and little practical inconvenience ensues from its perforation.

The *treatment* should be mainly prophylactic. Frequent spraying with alkaline solutions will keep the nostrils clean, while wearing plugs of wadding will effectually prevent the entry of irritating particles. When the disease has been fairly established, local detersive treatment with chlorate of potass or carbolic acid injections are useful. To these should be added tonic and hygienic measures for the general health.

*Case 1.*—(213.)

“Mr. S., of Norwich, was recommended to consult me in December, 1888, for stoppage of the nose,

associated with partial deafness and noises, and a sensation of discomfort in the pharynx. He was fifty-eight years of age, a miller by occupation, and dated his symptoms from about ten years previously. He complained of a sensation of something trickling from the nose, of a watery discharge, and of partial loss of smell. He attributed his symptoms to irritation caused by the flour dust. Rhinoscopic examination showed a perforation at the anterior and inferior extremity of the septum. Of this the patient was not conscious, and no history of syphilis could be obtained. The case was one of traumatic rhinitis with perforation. He was ordered to wear plugs of cotton wool when at work, and to use locally sprays of alum to the pharynx, and to the nose alkaline injections and inhalations of eucalyptus. The perforation caused no apparent annoyance. Under the above treatment all troublesome nasal symptoms disappeared in about two weeks.

## CHAPTER VI.

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### CHRONIC NASAL CATARRH.

**DEFINITION.**—*A chronic inflammation of the lining membrane of the nasal fossæ, characterized by increased secretion, more or less obstruction, and impairment of smell.*

**Etiology.**—Chronic catarrh, in the majority of cases, depends on previous attacks of acute catarrh. It may also be favoured by malformations of the nose, especially any congenital narrowing of the nasal fossæ, and in children by the presence of adenoid vegetations of the naso-pharynx; workers at certain trades are also liable to it from irritation by dust or chemical vapours. Snuff-takers and spirit-drinkers and aged persons frequently suffer from it. The affection is generally looked upon as being connected with the strumous diathesis in children, and with gout or syphilis in the adult. It is often also a sequence of polypi.

**Symptoms.**—The symptoms which predominate in chronic nasal catarrh are a sense of stuffiness in the nostrils, an alteration in the character of the voice, and a profuse discharge of serous fluid. Occasionally the disease may spread to the naso-pharynx, and

cause deafness. Owing to interference with nasal respiration, the patient is obliged to respire by the mouth. The result, especially during sleep, is that the tongue becomes dry, and the discharge accumulates at the back of the throat, to be removed not without difficulty in the morning. A feeling of discomfort, and a desire to vomit are thus caused, which, however, do not continue after removal of the inspissated mucus. In chronic cases the nasal duct may become obstructed, and the flow of tears interfered with, while the tip of the nose is commonly maintained in a condition of redness and irritation, much to the annoyance of the patient. The flow of watery fluid is in some cases very great. One patient, under my care for over a week, used from fifteen to twenty handkerchiefs daily, but other writers mention the mucus discharge as amounting to as much as several quarts. In all these cases the sense of smell is impaired. Patients complain, also, of headaches of an intermittent character, of general malaise, inability for brain work, with loss of memory, and great depression of spirits.

Examination with the speculum will show the mucous membrane over the turbinated bones and septum to be covered with a layer of yellow mucus. In all cases, abrasions of the surface are apt to occur. These may in turn give rise to small and superficial ulcers, generally on the septum. If neglected, these may eventually pass on to perforation. In chronic cases the mucous membrane becomes pale and

thickened with an irregular parchment-like surface. One nasal fossa may offer the characteristic aspect marking transition into atrophic catarrh (*ozæna*), while the other may be tumified, and exhibit the appearances of hyperthrophic rhinitis.

The *Prognosis* is not very favourable. Unless suitable treatment be commenced early and continued for a considerable time, the affection is likely to end either in hypertrophy or atrophy of the nasal mucous membrane, with their attendant unpleasant consequences.

The *Diagnosis* lies between polypi, polypoid tumours, and post nasal adenoid growths, but careful anterior and posterior rhinoscopic examinations will suffice to clear up all doubts. As MACKENZIE points out, the mere presence of rhinorrhœa is not sufficient of itself to establish the existence of chronic nasal catarrh, inasmuch as this particular symptom may depend on polypus of the antrum, or may be of reflex origin and due to injury or disease of the fifth nerve, to optic neuritis, or even to more remote sources of irritation.

*Treatment* must be directed towards the general health as well as towards the local symptoms. As regards the former, any dyscrasia present must be treated on general principles. Change of air, a warm and dry climate, absence from any known causes of irritation, and the treatment of any original malady on which the catarrh could depend, are in most cases essential. Local treatment must be continued

for a considerable time, but should not be too severe in character. Mild astringent washes and sprays are generally the best remedies. Among powders, I have used with advantage absorbants, such as bismuth, talc, and chlorate of potash. Nitrate of silver, applied in the form of a lotion, has been recommended by MICHEL. But in my experience all strong astringents or caustics are contra-indicated. They have the serious inconvenience of provoking a paroxysm of acute coryza, accompanied by headache, a flow of tears, and other unpleasant symptoms. I, therefore, prefer mild alkaline lotions applied frequently, followed by injections of carbolic (gr. v to ʒj) or salycilic acid (gr. x to ʒj). In several cases of late I have found benefit from mild currents of electricity applied to the nasal mucous membrane daily. Under this treatment the discharge has lessened, headache has disappeared, and general amelioration of all symptoms has ensued. The passage along the inferior meatus of a soft bougie which the patient may be taught to apply himself will often give relief. Local cauterization of the swollen tissues with the galvano cautery, which should be applied boldly, will often ensure a radical cure.

*Hypertrophic rhinitis* may be considered pathologically as a direct sequence of chronic nasal catarrh. It has received various names, such as "*hypertrophy of the mucous membrane*" (MACKENZIE), "*chronic hyperplastic rhinitis*" (SCHECH), "*chronic catarrhal rhinitis with hyperplasia*" (GREVILLE MACDONALD),

while MOURE considers it as a distinct pathological entity under the name of "hypertrophic coryza."

*Symptoms.*—The functional symptoms are much the same as those of chronic catarrh, with the important difference that nasal breathing is more obstructed. The obstruction of the nose is caused partly by accumulation of secretion, but much more by swelling of the erectile tissue of the inferior spongy bone. There is sometimes partial, at others complete loss of smell. The *timbre* of the voice is altered, and it becomes distinctly nasal. The predominant symptom is, however, disturbance of respiration. In children this obliges the mouth to be kept constantly open day and night, produces disturbed and broken rest, disordered dreams, dryness, of the tongue and pharynx, and a characteristic stupid and vacant appearance. The difficulty of respiration is more marked in damp weather. Hearing is generally affected. Deafness, associated with noises, and even severe inflammation of the middle ear, with discharge of pus and perforation of the drum membrane, are not uncommonly met with. When the pharynx is affected, cough and vomiting, especially in the morning, are common. The secretion during sleep becomes viscid, and cannot be removed without difficulty and pain. Slight or severe bleeding may occur, due, as BRESGEN has pointed out, to a condition of general congestion of the parts. To this congestion or engorgement is also due an unsightly redness of the point and back of the nose.

More general symptoms are a sense of weight over the brows, giddiness, mental inertia, and failure of memory. Nor must that train of obscure symptoms known as "nasal neuroses," to be mentioned later on, be omitted in connection with hypertrophy of the nasal mucous membrane. These reflex phenomena are manifold. It will suffice here to mention some of the more important—viz., *nervous catarrh*, the chief feature in which is a profuse, clear and thin discharge making its appearance at intervals; *Hay fever*; *An excessive secretion of saliva*; *Neuralgia* of the internal branches of the fifth pair of nerves; *Headache* and *sense of oppression* on the vertex; *Redness* and *œdema* of the nose, cheeks and conjunctiva; *Asthma*, *giddiness* and even *epilepsy*.—(SCHECH).

The *Diagnosis* is not always easy, more especially when the affection has been of long standing, when the hypertrophy is considerable, and when the mucous membrane has become pale and almost insensible to the touch. Under these circumstances the inferior turbinated bone may readily impose on an unpractised eye, and be mistaken, as I have often seen, for a mucous polypus. Attempts to remove such supposed neoplasms necessarily result in suffering to the patient and disappointment to the practitioner. Attention to the following diagnostic points will, however, preclude possibility of error. Simple hypertrophy is common to both nasal fossæ, is symmetrical, and occupies chiefly the inferior meatus. The polypi, as a rule, spring from the

middle or upper bones, or corresponding meatuses. The surfaces of polypi, moreover, are generally pencilled with minute vascular twigs. If the mucous membrane be simply hypertrophied, a wide base of attachment will be visible. Polypi are usually pedunculated, and with a probe the narrow point of their attachment can be followed upwards. The application of cocaine is of great diagnostic value in these cases. A solution of this drug (ten per cent.) applied to a hypertrophied mucous membrane will cause it rapidly to shrink; whereas polypi will remain unchanged. It must not, however, be forgotten that polypi and hypertrophied mucous membrane may co-exist; or that, as GOTTSTEIN has pointed out (Berlin Klin, Wochenschrift), it is scarcely possible at first to distinguish between the swelling produced by chronic perichondritis and that due to simple hypertrophy.

The chief rhinoscopic appearance in hypertrophic rhinitis is a reddening and velvet-like swelling of the mucous membrane (SCHECH), covering the inferior turbinated bone. This swelling is so excessive in many cases that the turbinated bone comes to rest on the floor of the nasal fossæ, completely obstructing the meatus, and possibly touching the septum. Sometimes the whole mucous membrane is relaxed, as though separated from the adjacent parts. In such cases it assumes a dull greyish aspect, while its sensibility is much lessened.

If the hypertrophy has invaded the posterior nasal

fossæ, the posterior extremities of the inferior turbinated bones will appear swollen. The mucous membrane will be no longer smooth and uniform, but rugged and uneven, presenting a mulberry-like appearance.

Its colour is sometimes pale grey, and shows distinctly against the mucous layer covering the soft palate and posterior nasal fossæ. These tumours rest on the superior surface of the palate behind the uvula and on the lateral portions at the orifices of the posterior nasal fossæ which they more or less completely block. Sometimes the septum is thickened, red and inflamed. The floor of the nose is as a rule unaffected. According to the intensity of the disease these different lesions may be united in the same individual, and co-exist on both sides of the nose. Some of them, however, may be on the inferior or middle turbinated bones throughout their whole length, or simply at their anterior or posterior extremities.—(MOURE.)

The *Prognosis* is generally favourable, and most cases may be cured by suitable treatment, especially in the early stages. If left to itself, however, hypertrophic rhinitis will probably pass into the atrophic form, giving rise to ozæna, or it may, on the other hand, give rise to polypoid growths, or even to mucous polypi.

*Treatment* in all cases of hypertrophic rhinitis should be guided by the severity of the symptoms. Perhaps at the present day, owing to improved in-

struments, and the comparative immunity from pain conferred by cocaine, there is a tendency among practitioners to adopt severe and radical measures of cure before milder ones have had a fair trial. In the commoner forms of the affection, injections and astringent sprays will be found sufficient, insufflations of nitrate of silver (grs.  $2\frac{1}{2}$  to starch  $\text{ʒj}$ ) have been recommended by BRESGEN, but must be used cautiously, on account of the extreme sensitiveness of the nose. About ten grains of this powder may be insufflated into each nostril alternately. From astringents, such as alum, bismuth, tannin, zinc, I have had satisfactory results. I generally administer them by means of the ordinary nasal syringe with my olive-shaped nozzle, or with a post-nasal syringe when necessary. Alkaline and astringent sprays are also useful, the object of this class of remedies being to cleanse as well as stimulate the mucous membranes. Medicated bougies and nasal probes, gradually increasing in size, are also of service. Dried crusts and scabs are best softened with vaseline, and then removed—the raw surfaces being subsequently painted with a solution of iodine and glycerine. General treatment, especially in children, must not be neglected, and any manifest dyscrasia should be combatted by medicines, change of air, sea bathing, etc.

In severe cases, however, the above palliative treatment is practically useless, and the removal of

the hypertrophied tissues becomes an absolute necessity. Fortunately, by the aid of cocaine, most operative procedures within the nasal fossæ can now be rendered painless. There should, therefore, be no hesitation in resorting to them as soon as the necessity has become apparent. There are three chief methods by which removal can be practised—viz., either by excision, with ecraseur or cutting forceps, by strong caustics, or by the galvano cautery. Excision may be carried out either with a JARVIS' "nasal ecraseur," or MORELL MACKENZIE'S instrument. (*See Figs. XXIV. and XXV., page 90.*)

BEVERLEY ROBINSON removed hypertrophied tissue by means of his toothed forceps. In all cases of removal by cutting, hæmorrhage may occur to some extent. If caustics be used a choice lies between several—*e.g.*, London paste (*i.e.*, caustic soda, and unslacked lime in equal parts [=] Throat Hosp. Pharmacopœia), glacial acetic acid, nitrate of silver, or chromic acid. In my own practice I much prefer either of the latter. A small fragment of chromic acid should be fused on to the end of a probe or glass rod, and then drawn in radiating lines over the hypertrophied mucous membrane. These lines, if sufficiently close together, will gradually become confluent. An alkaline lotion to remove excess of acid should be used afterwards. The above method is probably the best substitute for the galvano cautery, which, however, should always be preferred,

if at hand. If used at all, it should be used boldly and thoroughly, as only complete destruction, not mere surface burning, of the hypertrophied part can ensure a satisfactory result. Practised operators generally avoid the use of a protecting shield, but, if one be required, Dr. GREVILLE MACDONALD's may be recommended. The cauterizations should be punctuate or linear, and are best carried out by Lowenberg's electrode (*see* Fig. XXVII., page 92), which has the advantage of protecting the septum from scorching, either by the movements of the patient or by want of dexterity in the operator. The current should be used at a dull red heat. As a rule, five or six sittings are enough to insure sufficient loss of substance to restore the nasal fossæ to their normal calibre. The application of the thermo cautery is not painful, and the inflammatory action, in my experience, but slight. It is advisable not to heat the wire by the electric current until it is well within the nose, and to preface all cauterizing by an application of a ten per cent. or stronger solution of cocaine. This latter not only ensures the patient against pain, but facilitates operative procedures by inducing shrinkage of the mucous membrane, and thereby increasing the available space.

*Case 1.—(415.)*

“ Mrs. C. was sent to me from Oxfordshire, in December, 1887. The patient was aged 38, and

apparently in good health, but with a strong family history of gout, from symptoms of which she had occasionally suffered. For fifteen months previous to her visit she had experienced more or less stuffiness in the nose, and difficulty of breathing, which was worse at night, and in wet weather. Smell and taste were almost abolished. Patient was particularly susceptible to cold, and contracted catarrh very readily. There was slight alteration in the voice, but no deafness. The symptom, however, for which she more particularly sought advice was for a profuse discharge of watery fluid from the nose. She used from eight to ten handkerchiefs a day, and at times even more. The irritation to the skin of the lip and nose from the constant moisture was most distressing. Rhinoscopic examination showed the mucous membrane to be pale and sodden, with here and there slight abrasions. Various methods of treatment had already been applied, with but indifferent success. I found most benefit from strychnine and arsenic internally, with locally astringent sprays, and electricity. The latter was administered by the patient herself, once a day for fifteen minutes, and in both this and the following case appeared to give more relief than any other remedy. The treatment was persevered in till March following, when the patient wrote to say she considered herself cured.

*Case 2.—*

Mrs. C., of Banbury, was recommended to consult me relative to a profuse mucous discharge from the nose. The patient was about sixty years of age, had suffered from nasal polypi, which had been removed, from bronchitis, and at times from asthma. The discharge from the nose, with the consequent prostration, and loss of smell and taste, were the symptoms for which she sought advice. She stated that she frequently used eighty handkerchiefs a week, but that the attacks varied much in severity. Rhinoscopic examination was negative, merely showing a pale and sodden appearance of the mucous membrane, with some stumps of old polypi. The treatment recommended was iodide and bromide of potassium internally, with, locally, astringent sprays and warm alkaline injections. Electricity applied directly to the nasal mucous membrane appeared to give more relief than anything else. The patient first consulted me in June, 1888. She wrote on September 22nd that she was much better, and has written at intervals to say the improvement continues. Both in this and the preceding case the benefit derived from mild electrical currents was undoubted, more especially as many other methods of treatment had been previously tried.

*Case 3.—*

B. M., aged five years, was brought to me in May, 1888, suffering from slight deafness, together with

discharge from the nose, alteration in the tone of voice, and inability to breathe, except with the mouth open. This gave him a characteristically stupid appearance. The nose was frequently blocked with crusts, which were difficult to remove. Rhinoscopic examination showed the presence of hypertrophy of the turbinated bodies, and a thickened condition of the mucous membrane, covering the inferior turbinated bones. This had apparently been mistaken for polypus, and removal recommended. The parents were averse to operation of any kind. Treatment was therefore limited to arsenic and iron internally, alternated with syrup of the hyposphosphites. Locally, post nasal syringing was carried out once daily, with astringent injections and sprays. Under this treatment, marked improvement took place, not only in the nasal and aural symptoms, but also in the general health and intelligence.

## CHAPTER VII.

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### ACUTE PERIODIC CORYZA (HAY FEVER).

DEFINITION.—*An acute inflammation of the pituitary mucous membrane, occurring periodically, generally in spring.*

At the outset some objection may fairly be taken to the term "hay fever" as involving a hypothesis, which has yet not been fully established. For while most writers have with justice insisted on the undoubted fact that the pollen of certain plants will induce the specific attacks, they have not attempted to deny that the attacks may be also excited by other influences. Among such may be mentioned light, heat, and dust, local affections of the nose and throat, and probably influences generated within the central nervous system. MACKENZIE, of Boston, has proposed to call the disease "vaso-motor coryza," Sir ANDREW CLARKE (Cavendish Lecture, 1887), "periodic specific coryza," or "periodic nervous coryza"; but each of these terms involves, more or less, some theory as to the origin or causation of this affection.

The causes of hay fever may be considered under the two heads of predisposing and exciting. It is

more than probable that, were the predisposition absent, the exciting cause would have little real influence. This is shown by the fact that, although every individual is, so to speak, exposed to the irritation of pollen, only a small minority contract the disease; also, by the fact that some who, like gardeners, are most exposed to it, are least often affected, while others have contracted it at seasons when there could have been no pollen in the air. Hence, its presence must in part be due to some factor, which may in our present state of knowledge be supposed to be located in the nervous system. The facts, indeed, connected with the distribution of hay fever in any community are peculiar and interesting. Thus, race, temperament, education, manner of life, occupation, mental qualifications, have all a well-marked influence. While the natives of the North of Europe and those of the South are seldom attacked, the Anglo-Saxon race, in both its English and American branches—that is, English-speaking people—are very frequently so. It is said to be comparatively rare in Scotland, but common in all the States of America, and, hence, of wide climatic range. But, again, in America, Germans and French enjoy as great an immunity from it as in their own countries. The Negro race does not enjoy, as was once supposed, any particular freedom from it. Sex has a distinct influence. Out of a total of four hundred and thirty-three cases observed by PHOEBUS, WYMAN, and BEARD, only about one-third were females.

Hay fever is chiefly to be met with in nervous subjects, and in those whose circumstances in life are comfortable or luxurious. Thus, like gout, it is a disease practically limited to the wealthy. It is, however, not unknown among hospital patients. Education would also appear to exercise some influence, but, probably, only in connection with the general circumstances and surroundings of life. The inhabitants of towns are more frequently attacked than dwellers in the country; indeed, there is a remarkable immunity enjoyed by gardeners and agricultural labourers, although they are of all persons the most exposed to the specific influences which, no doubt, at times induce hay fever. Heredity is not without influence, especially among those subjected to the conditions of civilized life. Proof is not wanting that successive generations of the same family have been in turn attacked with the disease. Age, also, is a factor of some importance, for hay fever is met with almost exclusively under forty, but occasionally as late in life as sixty. MACKENZIE mentions two cases in children of the ages of two and three years, whose parents were likewise affected.

Among actually exciting causes, the first place must be given, though with some reservation, to the *pollen of plants*. The observations of BLACKLEY leave no doubt that the action of pollen on individuals possessed with the peculiar idiosyncrasy, or the local irritability, is the chief exciting cause of hay fever. The periodicity of the affection which comes in nearly

always at the season of the flowering of certain plants, such as the grasses, rye, oats, and barley, is a strong argument in favour of this view. In certain persons the smell (or pollen) of the rose or peach may produce the characteristic effects. Symptoms similar to or exactly like those of hay fever may also be induced by the trituration of drugs, such as ipecacuanha, lycopodium powder, digitalis, and hellebore. The smell, too, of horses, dogs, cats, and rabbits affect the mucous membranes of many persons (SCHECH). The intensity of the disease, according to BLACKLEY, bears some proportion to the quantity of pollen floating in the air.

*Pathology.*—While it may be conceded that hay fever is due in part to the influence of the pollen of certain plants, the actual mode in which pollen exercises its specific action is quite uncertain. Some authors have classed hay fever as a neurosis, due to simple irritation of the mucous membrane. This irritation would in turn excite dilatation of the blood vessels, with distension of the erectile tissue, and increased or altered secretion. Others (Dr. J. MACKENZIE) suppose that there exists a special sensitive zone in the inferior portion of the lower turbinated body, the atrophy, or destruction of which would cause all symptoms to disappear. There is every reason to suppose, at any rate, that in those subject to the affection, the nostrils are in an unhealthy and possibly catarrhal condition. Hay fever fortunately leaves no permanent structural lesions

behind it, though with each attack there is an increased predisposition to fresh ones.

*Symptoms.*—The disease is met with under two distinct types—the catarrhal and the asthmatic. The former begins with a sensation of itchiness and heat in the angles of the eyes, the nose and back of the throat. Paroxysms of sneezing, with mucous discharge, and a most distressing feeling of stuffiness, next ensue. There is often an abundant secretion of watery fluid from the nose, accompanied by a flow of tears, injection of the conjunctiva, and neuralgic pains. The eyelids occasionally become puffed, and are, with difficulty, closed. There is often distinct pyrexia, but this symptom varies according to the temperament of the patient and the severity of the attack. The neuralgic pains are often variable, both in character and intensity, sometimes localizing themselves in the frontal region, at others in the eyeballs, or back of the head. The above symptoms are all markedly intermittent. They may leave the patient suddenly, and during the intervals he will feel comparatively comfortable. Hay fever is occasionally accompanied by nettle-rash. The attacks are generally worse in those who live much in the open air and in the country. Dwellers in towns often contract the malady by a visit to the country at certain seasons. After having continued during a variable time, the attacks finally disappear, leaving no lesions, except, as already remarked, a tendency to similar attacks the following year.

The *asthmatic* type constitutes a more marked form of the affection, for to the preceding symptoms are super-added dyspnœa and secretion of bronchial mucus. The attacks take place generally during the day, when the patient is exposed to the action of pollen, or when he visits the country. In this form of hay fever the respiratory tract, as a whole, is affected, and obstruction of the nasal fossæ carried to the utmost. Anterior rhiniscopy shows merely a congested and tumified condition of the mucous membrane.

*Diagnosis.*—Hay fever might, at the outset, be mistaken for acute coryza. But the essentially intermittent character of the attacks, their coincidence with the flowering of grasses, their suddenness, and the extreme abundance of the nasal secretion, will reveal the true nature of the malady. In the asthmatic type the attacks take place during the day, instead of chiefly at night, as in true asthma. The prognosis is in all case favourable, and hay fever may be cut short, or warded off, by suitable treatment of the mucous membrane.

*Treatment.*—Innumerable remedies have been tried in hay fever with very varying success. Each case must be dealt with on its own merits, as the same remedies will not give relief to different persons, nor even sometimes to the same person in each attack. As far as possible, prophylactic measures should be adopted. In the hay season, residence in the country should be avoided, and those who can afford the

time may take a sea voyage. I am very strongly of opinion, however, from personal experience, that any sea voyage, to be certain in its action, must be an ocean one, in which the sufferer is conveyed many hundreds of miles away from land. Pollen, as is well-known, is borne on the air to great distances seawards, and a mere visit to the coast or a short Channel trip is practically useless, so far as warding off the affection is concerned. The nostrils may also with advantage be kept closed with GOTTSTEIN'S plugs of wadding, and spectacles fitting tight round the orbit or a veil may be worn.

Apart from mere prophylaxis, the indications for treatment are first of all to strengthen the general nervous system, next to soothe local irritability, and, lastly to remove the exciting cause.

As regards the first indication, the most hopeful remedies are those which give tone to the nervous system. MORELL MACKENZIE recommends an excellent pill containing valerianate of zinc (grs.  $\frac{3}{4}$ ) and asafoetida (grs.  $1\frac{1}{2}$ ). In my own practice I rely chiefly on quinine, nux vomica, Fellow's syrup of the hypophosphites, iron and arsenic, and in certain cases on the bromides of potassium or ammonium, and hydrobromic acid.

The second indication will be fulfilled by local treatment, and this is undoubtedly of great importance, for on it, more than on anything else, success will depend. The object to be attained may be either to allay irritability of the mucous membrane,

or to exhaust it; or, finally, to remove by operation any portion of the membrane itself which may be supposed to be the cause of the irritability (Sir A. CLARKE). Various drugs have been tried with varying success, such as atropine, morphia, aconite, and cocaine. The two former in the hands of Dr. MURHEAD ("British Medical Journal," July 3rd, 1886) gave excellent results. He used a hypodermic injection containing  $\frac{1}{20}$  grain of morphia, and  $\frac{1}{200}$  of a grain of atropine. Absolute relief followed in ten minutes. Dr. PAGET (*ut supra*) recommends twenty-five minims of a two per cent. spray of cocaine driven into each nostril and over the eyelids partly closed. This may be used several times a day. In my own experience cocaine is of great value. It should not be used in a strong solution, four per cent. being in all cases sufficient. I generally clear the nostrils of mucus first, and then spray them for a moment with a fine spray instrument, carried into the nostrils as far as possible. Cocaine may also be administered in the form of a solution. It should then be applied to the interior of the nostrils and soft palate with a camel hair brush. For bougies, Sir A. CLARKE recommends that  $\frac{1}{4}$  grain of cocaine should be dissolved in a mixture of gelatine and glycerine, and the bougies made of different sizes.

To subdue the local irritation Sir ANDREW CLARKE (Cavendish Lecture) recommends an application composed of glycerine of carbolic acid one ounce, hydrochlorate of quinine, one drachm, and perchloride of

mercury  $\frac{1}{2000}$  part; the whole dissolved together by the aid of heat. The nose should first be cleansed with boro-glyceride of the strength of one ounce to a

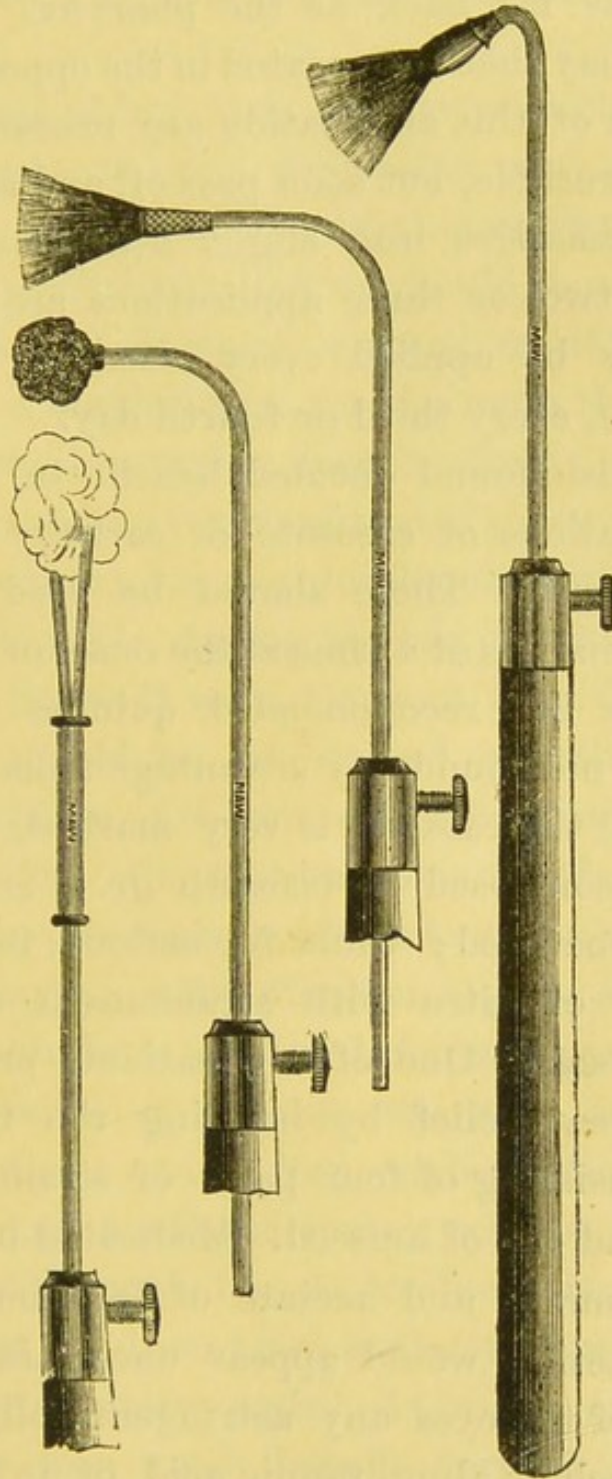


Fig. XXI.—NASAL BRUSHES.

pint of warm water. The brush dipped in the carbolic mixture should then be passed into the nostril, touching thoroughly its upper part, and subsequently its floor, as far back as the pharynx. The same operation may then be repeated in the opposite nostril. The effects of this application are necessarily somewhat disagreeable, but soon pass off, and at the worst resolve themselves into slight headache or cough. Generally two or three applications are necessary. These may be applied every alternate day, or, if badly borne, every third or fourth day.

I have also found decided benefit in many cases from inhalations of creosote or carbolic acid, or oil of eucalyptus. These should be used warm for about ten minutes at a time at the onset of the attack. HELMHOLTZ has recommended quinine injections, but I have not found any advantage from them. In cases where the catarrh is very marked, insufflation of a snuff composed of bismuth gr.  $\frac{3}{4}$  and morphia gr.  $\frac{1}{6}$ , may be tried; while for asthma, inhalation of the fumes of nitre with stramonium will relieve the paroxysms. One of my patients procured for himself great relief by inhaling the fumes of a powder consisting of four parts of stramonium, two of nitre, and one of aniseed. Medicated bougies containing bismuth and acetate of lead may be tried, but their action would appear uncertain. For the irritation of the eyes any astringent collyrium may be used, such as alum, tannic acid, or, in the absence of these, and as a domestic remedy always at hand,

cold tea. Local cauterizations, either with chromic acid or the galvano cautery, applied to the special zone of sensation, the supposed seat of the disease, have also been suggested, and practised chiefly in America.

In all cases of hay fever the diet should be liberal, as the disease is of a depressing and exhausting character. Daily exercise, early hours, very moderate indulgence in alcoholic liquors should be advised. A certain amount of moral courage on the patient's part is also a desideratum, for the more the affection is resisted the less trying does it become. Moreover, as a previous unhealthy condition of the mucous membrane is necessary for the development of hay fever, it is very advisable, during periods of rest, and when the disease lies as it were dormant, that the mucous membrane should be maintained or restored to a healthy condition. I therefore, as far as possible, treat patients before the annual attack shows itself. By this means, in many cases, it has been warded off. Careful syringing with alkaline lotions and sprays, the use of inhalants and of interrupted currents of electricity, with, of course, attention to diet and general medicine, will often enable patients to tide over the trying months of spring, without any manifestations of the malady. As to electricity, I am not aware that it has been tried in the treatment of hay fever on any extensive scale. In many cases I certainly have seen much benefit derived from mild interrupted currents, administered daily or every

second day by the patient himself. They should be used for about ten minutes to each nostril alternately, and probably act beneficially by exhausting the irritability of the part. Electricity, as a mode of treatment in hay fever, is well worth a trial; and though, like all other remedies, it may at times fail, it will, I believe, used either independently or in conjunction with other methods, yield a large percentage of successes.

As to the success of any given method of treatment, there is probably no class of cases so difficult to watch results in as in hay fever. If the patient is cured by the treatment he seldom returns, and still more seldom if he is not cured. The following cases are selected from about three hundred, which I have treated in the last eight years in private and hospital practice. They are selected chiefly as typical examples of certain methods of treatment, which in my hands have given fairly satisfactory results.

*Case 1.—*

Lady C. consulted me in 1887 for an acute attack of hay fever, the fourth from which she had suffered in as many years. The case presented all the usual symptoms in an aggravated degree, the discharge from the nose and eyes, and the frontal headache being very distressing. Various remedies had been tried, with only partial success. I prescribed full doses of arsenic and nux vomica internally, sprayed the nostrils with a four per cent. solution of

cocaine, and applied as strong a current of electricity as could comfortably be borne, for about ten minutes, to the nostrils. After the second visit this treatment succeeded in completely cutting short the attack, and up to the present (February, 1889), there has been no return.

*Case 2.—*

Mr. G. was recommended to consult me in spring, 1888. He had suffered for the last three years from regular attacks of hay fever complicated with asthma. The nasal mucous membrane was very irritable, the general health indifferent, and the nervous system depressed. Examination of the nose and pharynx, showed the usual congestion, turgescence and increased mucous discharge. In this case I prescribed fifteen grain doses of bromide of potassium, three times a day, cleansed the nostrils thoroughly, and sprayed with cocaine. This I intended to be preliminary to a more thorough treatment with glycerine of carbolic acid. The latter was applied at the second visit, in solution with quinine and perchloride of mercury, the sensation of the mucous membrane having previously been blunted by means of the cocaine. Three applications on alternate days were well borne, and resulted in the cessation of all symptoms.

*Case 3.—*

Mrs. N., aged 30, consulted me in 1887. She was a highly nervous subject, and had suffered periodically for the last five years with hay fever in spring, and

more or less nasal catarrh during the autumn and winter months. In fact, the attacks, though aggravated at certain seasons, were never completely absent. Various methods of treatment had been tried. At the time of her visit she was pregnant, and all severe treatment was therefore contra-indicated. In this case the indications were to soothe and strengthen as far as possible the nervous system, and induce a more healthy condition of the nasal mucous membrane. The former indication was fulfilled by valerianate of zinc and asafoetida, followed by arsenic and bromide of ammonium, alternated with hydrobromic acid. The mucous membrane of the nose was treated with spray of cocaine, and inhalations of creosote and oil of eucalyptus. Galvanism in mild currents with the expectation of exhausting irritability was used once a day. This treatment rapidly cut short the attack, which did not return in 1888.

## CHAPTER VIII.

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### ATROPHIC RHINITIS OR OZÆNA.

DEFINITION.—*A chronic inflammation of the mucous membrane of the nose, characterized by enlargement of the nasal fossæ, and accumulation in the enlarged cavities of crusts, having a peculiarly repulsive odour.*

Ozæna is an affection so common, and at the same time so serious from a social point of view, that clear notions as to its etiology, diagnosis and treatment are absolutely necessary. Though not dangerous to life, its consequences to the sufferers are sometimes very distressing. It has occurred to me on many occasions to meet with patients who, on account of this affection, have been gradually reduced from comfort to absolute indigence. They found it practically impossible to get or keep any remunerative work which required association with their fellow beings. In the upper classes the results, if not so manifestly disastrous, are melancholy enough. Patients are often at first unconscious of the infirmity themselves, but soon learn its existence by observation. The overpowering fœtor of the breath renders their society a burden to friends and

strangers, who both alike turn away from them. Such persons gradually become isolated. They dread meeting others, and often lead aimless and disappointed lives. Until a comparatively recent date all affections of the nasal fossæ characterized by foetor were grouped under the generic term "ozæna." Improved methods of examination of the nasal fossæ and diagnosis have however eliminated these errors, and have placed ozæna as a distinct symptom due to or associated with atrophic rhinitis. There need, therefore, be no difficulty in separating it from syphilitic, scrofulous or traumatic ulcerations of the nasal bones, which are also attended with foetor.

*Etiology.*—Among the causes which conduce to ozæna, constitutional dyscrasiæ, such as struma or syphilis, undoubtedly hold a chief place. Most authors mention the influence of hereditary syphilis, but this, though probable, cannot be considered as absolutely demonstrated. A debilitated or broken down state of the general health is also an important factor in the causation of ozæna. Among the large number of cases which I have seen in hospital and private practice, I cannot recall one in which there were not some traces of either anæmia, chlorosis, scrofula, or inherited specific disease. According to some authors ozæna, and, therefore, atrophic catarrh, is a direct sequence, a more advanced stage of hypertrophic rhinitis, or of ordinary chronic catarrh. This view is undoubtedly correct, as there is an evolutionary link between all three states. As re-

gards the age of patients, adolescence is the period when the disease is most common. It is seldom seen in elderly persons, though I have known cases as late as forty-five years of age. The female sex is more liable to it than the male, according to SCHÄFFER, in the proportion of nearly two to one.

Amongst immediately exciting causes of ozæna is the entrance of irritating vapours or dust, especially if from any cause such as undue patency of the nostrils, absence of vibrissæ, or a faulty direction of the nostrils, this entrance should be facilitated. Malformations of the bony framework of the nose, deviations of the septum, narrowing of the nasal passages, with obstruction to the removal of secretion, the relative smallness of the turbinated bones, or the disproportionate size of the nasal fossæ, are all factors in the development of ozæna.

The *Symptoms* are both subjective and local. Among the former, patients frequently complain of headache, pressure over the brows, impaired power of hearing, with noises in the head. Along with these there is often associated naso-pharyngeal catarrh, characterized by difficulty in swallowing, dryness of the throat, with a constant desire to clear it. There is, moreover, especially in children, a very characteristic type of countenance, exhibiting many of the signs of scrofula. The proper bones of the nose, instead of forming the bridge, are sunk below the level of the frontal bone, so that the nostrils are directed forwards instead of downwards.

The general appearance is often unhealthy and cachectic, as though the blood had been tainted by the impurity and foetor of the air inspired.



Fig. XXII.—STRUMOUS TYPE OF FACE IN A CHILD.

The sense of smell is generally diminished or destroyed, and patients themselves are, unfortunately, seldom conscious of any unpleasant odour. The secretion of the nasal mucous membrane is scanty, and dries in the form of crusts or concretions, which, unless removed, remain in the nose several days, but at length are expelled by more or less violent efforts. They are often of a dirty white or greenish colour, but in London are more usually black from the presence of particles of carbon in the air. These crusts when expelled give forth a pungent and nauseating odour absolutely unlike any other, and pathognomic of the disease. It is the same odour which patients diffuse around them,

and which forms the dominant and characteristic symptom for which they seek advice.

The cause of this foetor has been by no means satisfactorily explained. According to ZAUFAL, it is due to the abnormally large size of the nasal fossæ, whereby the force of the current of expired air—the air draught—is notably diminished. MICHEL, while partially adopting this explanation, considers that the secretions from the sphenoid and ethmoid sinuses are also at fault. In individuals with rudimentary inferior turbinated bones the ethmoid is imperfectly developed (ZUCKERKANDL), a fact which is in favour of MICHEL's theory. Others consider atrophy of the mucous membrane and degeneration of the mucous corpuscles with production of fatty acids, as the cause of the foetor (KRAUSE). LÖWENBERG, on the other hand, believes it to be due to the presence of a specific *coccus*; and ZIEM to a special ferment; while SCHECH sees “in the physical and chemical changes of the secretion the condition necessary for the occurrence of foetor.”

The *Diagnosis* is at once established by the peculiar and characteristic odour which will be readily recognised, and cannot be mistaken for the stench arising from a foreign body, diseased bone, or syphilitic ulceration. Any strong disinfecting lotion will remove the odour of the ozæna, but not of caries or ulceration. Moreover, the atrophy of the tissues, coupled with the absence of ulceration of the mucous

membrane, cartilages or bones, become distinctive and characteristic features.

The *Prognosis* is not, I think, so hopeless as many authors appear to think. Dry catarrh is, no doubt, a difficult affection to cure, but both it and ozæna may, especially in children, be radically cured. In adult life the stench of ozæna tends to diminish, and probably ceases altogether about fifty. But this cessation must necessarily mean the removal of the cause, and whatever that cause may be it is reasonable to suppose that as it disappears of itself, sooner or later, so appropriate treatment might hasten the removal. MOURE believes that not only can the disease be cured in early life, but that the enlarged and atrophied cavities of the nose may become normal once more. Ozæna, so far as the characteristic smell is concerned, can be completely kept in check by suitable treatment. Little is required beyond freeing the nose thoroughly from crusts, and using continuously for a varying length of time, either disinfecting tampons, or aromatic inhalations.

In the *Treatment* of ozæna, three distinct objects must be kept in view, viz., to remove the crusts and fœtor, to prevent the formation of concretions, and to improve the condition of the general health. The former of these is best fulfilled by the use of alkaline and detergent lotions. But as a rule, more force is usually required than in cases of simple catarrh, and not unfrequently a probe or forceps will be required

in order to dislodge and remove them. The nasal douche of WEBER or MAW (*see* p. 16) may be employed, but I have had better results from a strong stream directed through my bent nozzle (*see* p. 17) from a HIGGINSON'S syringe. The patient should be taught to direct the injection backwards towards the pharynx, not upwards. LÖWENBERG'S "nasal bath" may be useful at times, and consists simply in bending the patient's head back till the nostrils become the most elevated part, and then filling one nostril with the fluid, and allowing it to pass out through the other. This manœuvre is aided by the patient drawing a breath, so as to keep the soft palate raised. An excellent detergent lotion may be made with a spoonful of chlorate of potash to one quart of lukewarm water; or, if this be not at hand, then a mixture of chloride and carbonate of soda, about twenty grains to the ounce. Boro-glyceride is also a useful disinfectant. When, by the above treatment, the nasal fossæ have been thoroughly cleansed, disinfectant solutions can be used with more advantage. Of these there is a large choice, comprising boracic acid, carbolic acid, resorcin (gr.  $\frac{1}{2}$  to  $\mathfrak{zj}$  water), thymol, benzoate of soda, liquor carbonis detergens, etc. For hospital treatment, I find nothing better than a mixture of carbolic acid (gr. iv. ad  $\mathfrak{zj}$ ) with borax (grs. xii. ad  $\mathfrak{zj}$ ). HOVELL recommends a weak solution of perchloride of mercury, one part in 10,000, especially for the final spraying (GREVILLE MACDONALD). The second indi-

cation—viz., to prevent the formation of crusts—may be fulfilled either by the use of stimulating powders, such as nitrate of silver (grs.  $5\frac{1}{2}$  to  $\mathfrak{zj}$  starch) (SCHECH); or powdered red gum and starch, in the proportion of one part of the former to two of latter (MACKENZIE); or sanguinaria (one part in three of starch), or galenga (one in two) (BOSWORTH); or finely powdered resorcin, in the proportion of one part in fifty of boracic acid. (MOURE). In my own practice I use largely warm inhalations of eucalyptus oil. About ten drops of the oil should be inhaled from warm water, and exhaled through the nose. This simple procedure will remove the foetor for some time, and will enable a patient to attend to social duties with confidence for at least some hours. (See p. 19, Fig. XVIII.) I have also of late years used, with advantage, mild currents of electricity to the nasal mucous membrane. I direct one rheophore to be passed backwards into the nose, the other to be held in the hand, and an interrupted current to be transmitted once a day for about ten minutes. Sprays are also useful, more especially astringent solutions, such as tannin, alum, etc., rendered antiseptic by the addition of resorcin or carbolic acid, etc. GOTTSTEIN's treatment by tampons worn in the nostrils is often very successful.

Its *modus operandi* is, however, not very evident, but probably the plugs act either as a stimulant, and cause increased secretion, or (MACDONALD) by excluding air, secure absolute rest of the mucous

membrane. The plugs of cotton may be either plain or medicated with any ordinary disinfectant. The method of using them is as follows:—The nostrils having been thoroughly cleansed, a piece of cotton wool, about two inches in length, and from a quarter to half an inch in thickness, is introduced into the nostril. This may be best accomplished with a proper screw, but failing this, any tapering piece of wood will do. The plug is pushed as high up the nostril as possible, and must be in thorough apposition with the mucous membrane. It may be retained for a few hours at a time in each nostril alternately, or better still be worn the whole night.

The third indication, viz., that of improving the general health, must be carried out on general principles, and such medicines as FELLOW'S syrup of the hyposphosphites, cod liver oil, iron, quinine, arsenic, etc., prescribed as required. In my experience nothing succeeds better with young girls, who are so frequently the victims of this disgusting disease, than small doses of Liq. Arsenici hydrochl. in combination with strychnine and iron. This treatment should be persevered in for week or months. A visit to the seaside is also at times extremely useful.

Whatever remedies, however, for ozæna be prescribed at first, it is absolutely necessary that they should be varied at frequent intervals. Attention to this point will often ensure a large measure of success.

Moreover, the above treatment, as a whole, must be scrupulously carried out night and morning by the patient, for months, perhaps, in succession. With young girls the appearance of the catamenia often exercises an unfavourable influence on ozœna, aggravating both the discharge and the fœtor. It is also a matter of observation that in adult females, the odour is always most intense and obstinate just before or after the menstrual period.

The following cases are selected out of many, as showing the possibility of curing ozœna, either radically or by removal of the characteristic odour.

*Case 1.—*

Miss E. C., aged 36 (C.B. 227), consulted me at St. Andrew's Eye and Ear Hospital in November, 1888. The case was an unusual one in some respects. The patient was small and badly nourished, had never menstruated, had had no vicarious hæmorrhages, and had suffered from nasal fœtor for about twenty years. She had lost one employment after another, and on account of the ozœna could not get or keep any situation. She was in consequence reduced to absolute poverty, and this was naturally associated with mental depression and bad general health. On examining the nasal fossæ, they were found much enlarged, with the mucous membrane, and turbinated bones atrophied, and the characteristic crusts and concretions present. The sense of smell had been lost, taste impaired, and there was always more or less

headache, with at times itchiness in the interior of the nose. The general health was improved by tonics and liberal diet, and local treatment applied three times a day. This consisted in removing the crusts with a nasal brush, and by means of a syringe with lotion of borax and carbolic acid. Every four hours she was directed to inhale the vapour of eucalyptus, and in the intervals to wear cotton wool plugs in the nostrils. Under this treatment the stench gradually disappeared. Treatment was, however, continued, and she was directed to attend fortnightly. On her last visit (February, 1889) the interior of the nose was certainly healthier, while the foetor was quite checked, as shown by her having retained without remonstrances for over a month a situation as domestic servant.

*Case 2.—(214.)*

Miss C. B., of Tunbridge Wells, consulted me relative to a persistent bad smell in the nose, evident both to herself (which is unusual) and to others. There was discharge from the nostrils, interference with breathing, and partial loss of smell. She had been treated for ozœna, but on examination of the nasal fossæ the characteristic atrophy was wanting. On the contrary, the nostrils were more or less completely stopped by the pedicles of old polypi, and by bony growths. The latter extended in the right upwards from the septum, while in the left they formed a distinct bridge, above and below which a

probe could be passed. The case was not one of true ozœna, and though the foetor was well marked, it had not the characteristic and nauseating odour. Treatment consisted in detergent lotions and inhalations, the use of the electric cautery to the pedicles, and the subsequent removal of the bony growths. This completely relieved all symptoms.

*Case 3.—*

Miss B., aged 18, was sent to me from Folkestone in 1888. For the last two years she had suffered from unpleasant breath, of which she was however herself unconscious. Miss B. was a highly educated girl, fond of society, but morbidly sensitive as to the condition of her nose and breath. Examination showed slight atrophy, and some crusts, while the characteristic odour was present, but not in a very marked degree. The affection had shown itself first about three years before at the catamenial period. The treatment recommended was syringing twice a day with mild borax and carbolic acid lotions, aromatic inhalations, the use of GOTTSTEIN'S plugs medicated with eucalyptus, and iron and arsenic internally. Under this treatment the case, which was a very mild one, rapidly improved. I saw the patient in 1889; she had then lost all unpleasant odour, but still at intervals used the remedies as a matter of precaution.

## CHAPTER IX.

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### TUMOURS OF THE NOSE.

Tumours of the nasal fossæ may be roughly divided into benign and malignant. Examples, probably, of every tumour formation occurring elsewhere in the body can be found in the nose, but many of these are fortunately so rare as to be mere pathological curiosities. The commonest form of non-malignant neoplasm is undoubtedly mucous polypus.

#### MUCOUS POLYPUS OF THE NOSE.

DEFINITION.—*A benign tumour of myxomatous structure and usually pedunculated.*

*Etiology.*—The causes which produce nasal polypi are confessedly obscure. Polypi are more frequent in men than women, and occur, as MACKENZIE has shown, most usually in the decade between twenty and thirty years of age. They may at times be of

traumatic origin, but are also probably often due to any causes which induce or maintain inflammation of the pituitary mucous membrane. From this point of view they may be a pathological derivative of hypertrophic rhinitis. But mere chronic inflammation can scarcely be alone sufficient to produce them, seeing that children, who are more subject to persistent catarrh than adults, are yet not nearly so liable to polypi.

*Pathology.*—Mucous polypi are composed in part of the elements of the mucous membrane, from which they spring. They are invested with ciliated epithelium, contain a few small blood vessels, and are destitute of nerves. They consist chiefly of embryonic connective tissue. According to RANVIER and CORNIL, the cells composing their mass are first rounded, but subsequently become fusiform and stellate. The intercellular tissue is formed of stout and fine fibres, among which either connective or glandular tissue may predominate. In the former case, the polypi will appear as soft fibromata, in the latter as adenomata. They may occasionally be cystic and contain glands, but the cysts, if such, have no true walls. The contents of the cavities are, as a rule serous, but may become colloid, fatty, or mucous. Polypi in most cases exist as globular ovoid tumours, grey, semi-translucent and jelly-like. They vary in size from that of a mustard seed to a walnut. The smaller ones are pear shaped, but the larger take the

form of the cavity in which they have been developed. They are attached to the mucous membrane by a pedicle of varying size and consistency, which is often pearly and fibrous in appearance. They may, however, have a broader base and even become sessile and immovable.

The number of polypi present may be variable. They are seldom single and are often very numerous. I have frequently removed from thirty to forty from the nostrils of patients, but this number has in some recorded instances been much surpassed. Thus, cases are mentioned in which sixty-five and even eighty have been removed. Generally, both nostrils are affected simultaneously, and may be completely obstructed from front to back.

Polypi, on a cursory examination, appear to spring from the middle turbinated body, but ZUCKERKANDL has shown that they often have a deeper origin, viz., from the superior meatus or superior turbinated body. They may occasionally grow from the septum, or from the inferior turbinated body, or from the nasal roof, or from the outer wall, or from the floor of the nose; but such positions are unusual.

*Symptoms.*—The earliest symptoms of polypus are increased secretion from the nose, together with a sense of fulness and stuffiness and pain over the brow. As the neoplasm increases in size, interference with respiration becomes more marked. There is a constant desire to blow the nose, but though this may be done

frequently and even violently it gives no relief. The nasal secretion is not very marked at first, but the patient feels as if he had "a constant cold in the head." A sensation of something moving up and down the nostrils is often complained of, and occasionally a peculiar sound, described by DUPUYTREN as the "bruit de drapeau," may be detected. In proportion as the nasal fossæ become blocked all the above symptoms increase in intensity, more especially in cold and damp weather. In the later stages breathing is carried on entirely through the mouth, sleep is more or less disturbed, and marked by loud snoring, while swallowing becomes difficult from the necessity of breathing orally. For the same reason the throat is dry and irritable. If the polypi be large and numerous the spongy bones atrophy from pressure, the septum is displaced, the nasal bones are bulged out laterally, and the whole aspect of the nose and face altered. Occasionally the polypi protrude from the nostrils externally. Nasopharyngeal polypi give rise to alteration in the tone of voice and to the sensation of a foreign body in the pharynx. This induces a desire to vomit, and causes headache, drowsiness and partial deafness. Smell and taste are much impaired or completely abolished. Pressure on the naso-lachrymal canal may cause a flow of tears over the cheek, while by closure of the sinus dropsy of the antrum or empyema of the frontal sinuses may be induced. But if the polypi

occupy only one nostril, or do not completely fill both, many of the above symptoms may be absent altogether or present in a minor degree.

In most cases of polypus there is a remarkable train of symptoms referable directly to the nervous system. These are headache, giddiness, failure of memory, migraine, neuralgia, asthma and even epilepsy. They may not all be present in any given case, and will, of course, vary in degree in each. It is probable that the presence of these symptoms depends in a great measure on deficient aëration of the blood, owing to the absence of nasal respiration. Carbonic acid poisoning is in fact taking place slowly but surely, and causing a condition of vital depression and malnutrition. It has been observed that asthma occurs more frequently in cases where polypi only partially obstruct the nostrils. The occurrence of the attacks during sleep, and their absence in complete obstruction, when patients necessarily sleep with their mouths open, is an argument in favour of insufficient oxygenation.

External examination may in many cases suggest the presence of a polypus. The alæ of the nose may be dilated, and the nasal bones forced outwards. On examining the nostrils with a good light, one or more tumours will be seen occupying the nasal fossæ, and having a grey gelatinous appearance. During forcible expiration and inspiration the tumours will

be displaced. The probe will show their mobility, elongated form, and pedunculated attachment. If, however, the appearances observed are not sufficient to account for all the symptoms, a careful posterior rhinoscopic examination of the throat and naso-pharyngeal space should be made. If a mucous

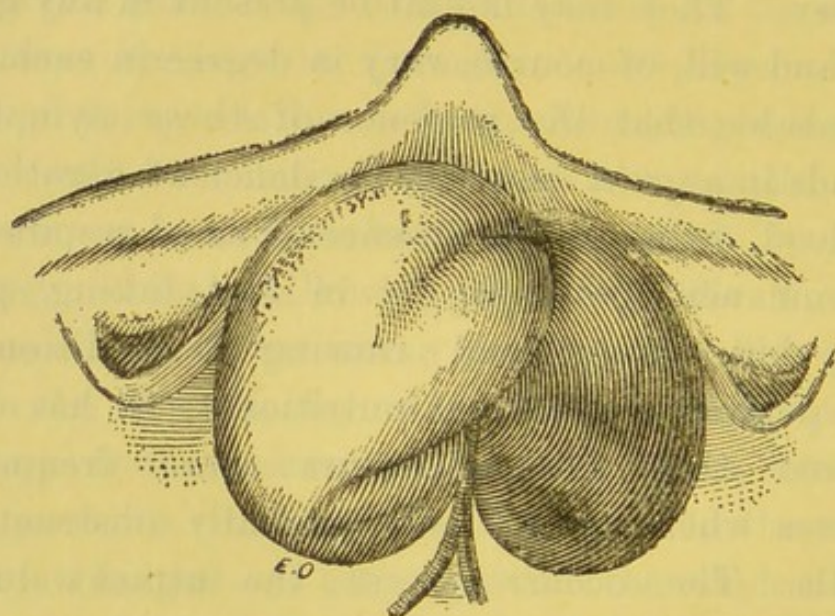


Fig. XXIII.—CYSTIC POLYPI, OCCUPYING THE POSTERIOR NASAL FOSSE.—RHINOSCOPIC IMAGE.

polypus be seen in this situation it will be almost certainly of considerable size, cystic, and filled with fluid. Such growths have, as a rule, little tendency to recurrence.

*Course and Duration.*—The progress of nasal polypi is slow but progressive, and they may gradually fill up and obstruct all the cavities of the nose, dis-

placing the septum and forcing the nasal bones outwards. They may also protrude beyond the nostrils, and extend posteriorly into the pharynx. Rare cases have occurred in which the pedicle has been ruptured by some sudden effort of sneezing or blowing the nose, and a polypus has been expelled. But as these tumours are almost always multiple no real alleviation is obtained from the removal of a single one. When of long standing cystic cavities may form, and these as they rupture from time to time give some little relief to the patient.

*Diagnosis.*—When polypi are sufficiently large to fill one or both nasal fossæ the diagnosis is easy; indeed, it is sufficient to see the tumours in order to recognise them. But the case is different when the neoplasm is only partially developed. Care is then required in order not to confound polypus with hypertrophy of the mucous membrane, with deviations of the septum, with foreign bodies in the nasal fossæ, and more particularly with thickening of the membrane covering the inferior turbinated bodies. This latter error is by far the most common, and is not unfrequently made. Attention to the following points are therefore important. Polypi though often bilateral are seldom symmetrical. The turbinated bodies form only one or two prominences, and are situated anteriorly and laterally. Again, the mucous membrane pits under pressure with a probe, while a polypus moves as one solid mass. If any

doubts should, however, still remain, they may be set at rest by the application of a ten per cent. solution of cocaine. This will have no effect on the polypus, but will cause the mucous swelling to disappear almost completely. A foreign body in the nose is generally accompanied with a profuse and foetid discharge. Deviation of the septum must necessarily be towards one side, leaving a large space on the opposite. Cancerous, fibrous, cartilaginous, or osseous tumours may be differentiated from polypi by their being harder, by causing pain and disfigurement, by readily bleeding on touch, and by the history of the case. Chronic abscess is situated, as a rule, on the septum, the base of the abscess corresponding with a similar one on the opposite side. Moreover, an abscess is not pedunculated. There is one more possible source of error, namely, a *meningocele* or hernia of the brain, and dura mater through the cribriform plate of the ethmoid bone. Such cases, however, are of extreme rarity.

The *Prognosis* is favourable, and a cure can always be ensured by suitable treatment. Polypi may however, when neglected, cause serious general symptoms, as already stated. If not thoroughly removed they are apt to recur, and in all cases continuous observation of the patient for several months is advisable.

The *Treatment* of polypi must be in the main operative. Medical remedies have indeed been tried from

a remote antiquity, and occasionally in the present day commend themselves to very nervous patients. Caustic insufflations and interstitial injections of tannin, bichromate of potash, chromic acid, acetic acid, chloride of zinc, and perchloride of iron, have all had their advocates. No doubt polypi can be destroyed by these means, but with more difficulty, delay, and pain, than by the ordinary surgical procedures.

The methods of removing polypi by operation are three, viz.: evulsion, abscision, and the electric cautery. Evulsion used formerly to be practised entirely with the forceps, and this method is still largely in favour with some surgeons. It is, however, painful, clumsy, and not free from danger. VOLTILINI writes that he has frequently seen "severe mutilations" from its use; MICHEL, that he has seen "luxations of the cartilaginous septum, fracture of the bones, and removal of portions of the turbinated bones," while ZAUFAL (the inventor of the wire snare) speaks of the forceps operation as "barbarous, obsolete, and unworthy of modern surgery." (Quoted by MACKENZIE.) My own experience with the forceps is not quite so unfavourable. I have, however, practically abandoned its use, and while not denying to the forceps certain advantages, I should myself, if the subject of nasal polypi, much prefer to be operated on either by the wire snare or the electric cautery. The disadvantages of the forceps are, that they are

painful to the patient, that they cause bleeding, and so obscure the field of operation, that they seldom remove the polypus as a whole, and that if used injudiciously they may inflict irreparable damages on the nasal tissues. It is, however, but fair to add, that many operators of large clinical experience and undoubted skill prefer them to any other instrument. In my own practice I reserve forceps for two classes of cases, the first where the polypi are situated very anteriorly and are easily grasped, and where the movements of the instrument *can be kept in sight*; the second, where the polypi are very large, and situated so far back that they cannot be snared. But generally in these latter cases operation through the mouth, with the retro-nasal forceps is preferable.

For ordinary cases of polypi I do not hesitate to say that the wire snare, either cold or heated by electricity, offers the best means of removal. I generally operate in the following manner:—The patient being seated on a low chair, the nostrils are dilated with the speculum and well illuminated by means of a frontal mirror. The polypi are then carefully examined with a probe and an estimate formed of their number and connections. A ten per cent. solution of cocaine is next applied by means of a fine nasal spray. By this not only is a better view of the growths obtained, but all pain to the patient is completely guarded against. The wire snare is then very carefully introduced into the nose in a

vertical direction, and made to grasp the most anterior and perhaps smallest of the polypi. Traction is made and the polypus removed slowly and gently, the same process being repeated until either the nostril has been cleared or until hæmorrhage so far obscures the view that a little delay is advisable. But very often, with care, only slight bleeding will take place. It thus becomes possible to work backwards, removing small polypi, until a large one is met with. This latter, when removed, will often give immediate relief, and restore the patency of the nostril. It is sometimes advisable after the removal of several polypi from one nostril to syringe it with an astringent solution, and to operate on the other side, returning to the former when the bleeding has ceased. A good deal may thus be done at one sitting. If the pedicle is narrow bleeding is slight, but more considerable when the attachment is extensive. Several operations will generally be necessary. The longer the time over which they are spread, the less trying will it be for the patient, and the less chance will there be of recurrence.

There are various kinds of snares in use, but they all act on the same principle. For general use, MACKENZIE'S cog-wheel (Fig. XXIV.) ecraseur is probably the best. JARVIS'S instrument (Fig. XXV.) is more powerful, but not so handy. I generally myself use the lighter and simpler snare of BLACKIE (of Boston) (Fig. XXVI.). The length of its curved

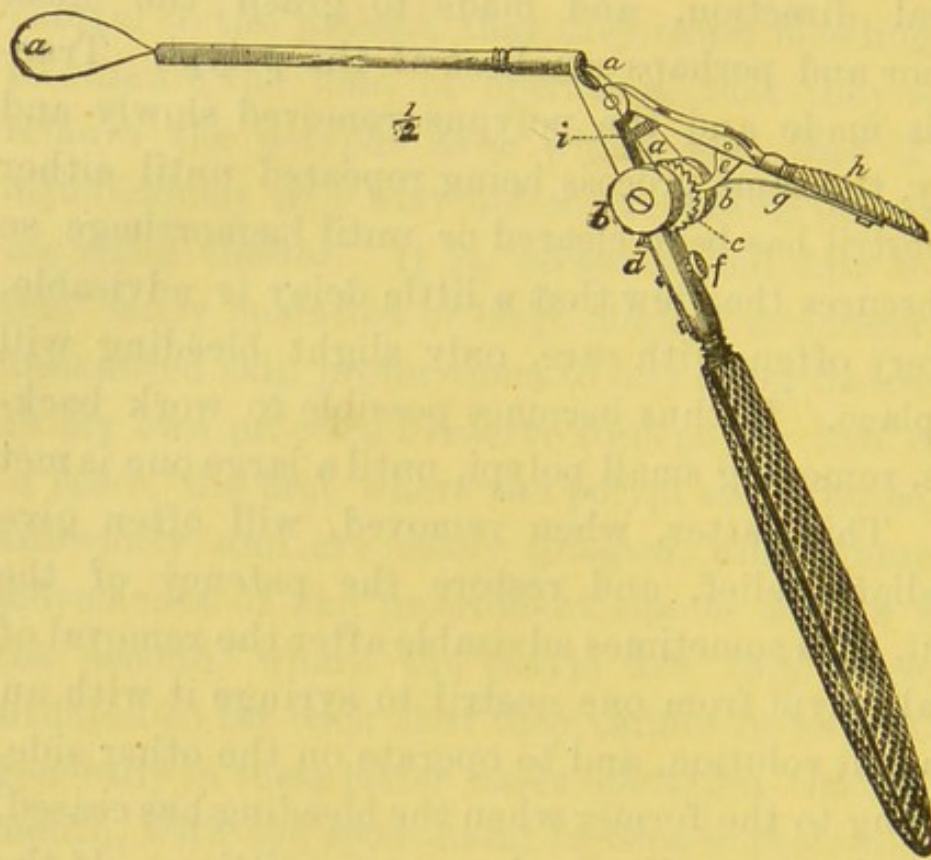


Fig. XXIV.—MACKENZIE'S ECRASEUR.

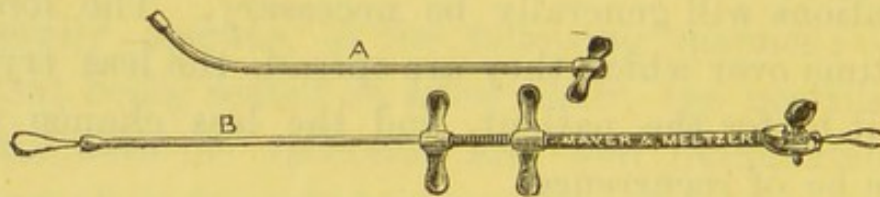


Fig. XXV.—JARVIS'S ECRASEUR.

stem permits us to seize polypi as far back as the naso-pharyngeal cavity. BARATOUX's snare is also a useful instrument, and has the advantage of enabling a large tumour to be grasped with a relatively small loop.

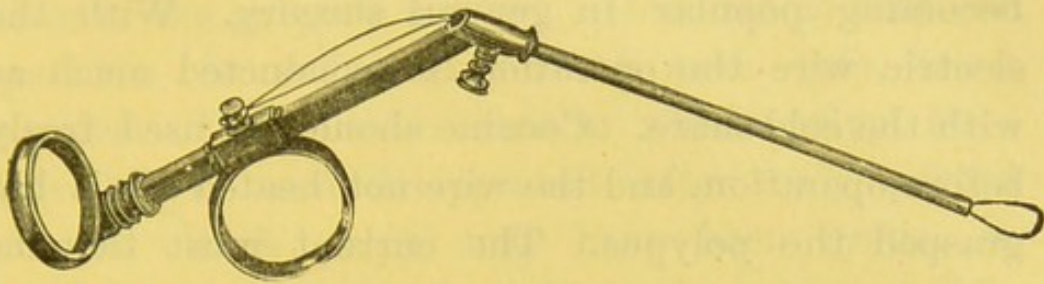


Fig. XXVI.—BLACKE'S POLYPOTOME.

Before throwing the noose over a polypus it may be steadied by a small forceps, or hook, but this manœuvre is seldom required.

If a very large polypus occupy the whole of the posterior nasal fossæ, it may be impossible to grasp it through the anterior nares. I have met with a similar difficulty in a case where, together with the polypus, there was also a bony growth in the nasal passage. In such cases it is best to pass the finger into the naso-pharynx, behind the soft palate, and endeavour to hitch the wire round the tumour, a procedure of some difficulty, or the polypus may be grasped by a forceps introduced post-nasally, or again by a snare of wire rendered incandescent by the galvanic current. Such cases are among the most difficult to deal with. No strict rules can be laid down for operating, as so much must be left to the necessities of each case, and the inventive skill and dexterity of the surgeon.

The galvanic cautery has much to recommend it, and will probably, in the hands of specialists, at any rate, gradually supersede all other methods. It requires, however, not only considerable skill to use, but also special apparatus, and this will prevent its

becoming popular in general surgery. With the electric wire the operation is conducted much as with the cold snare. Cocaine should be used freely before operation, and the wire not heated till it has grasped the polypus. The current must then be passed slowly, so as to sever the tumour at a dull red heat. In this way bleeding will be prevented. A platinum wire, which is always expensive and troublesome to procure, is not absolutely necessary, the ordinary iron or steel wire answering all purposes. Care must be taken not to burn the neighbouring tissues, but this can scarcely happen if the electric current be transmitted only when the polypus has been grasped.

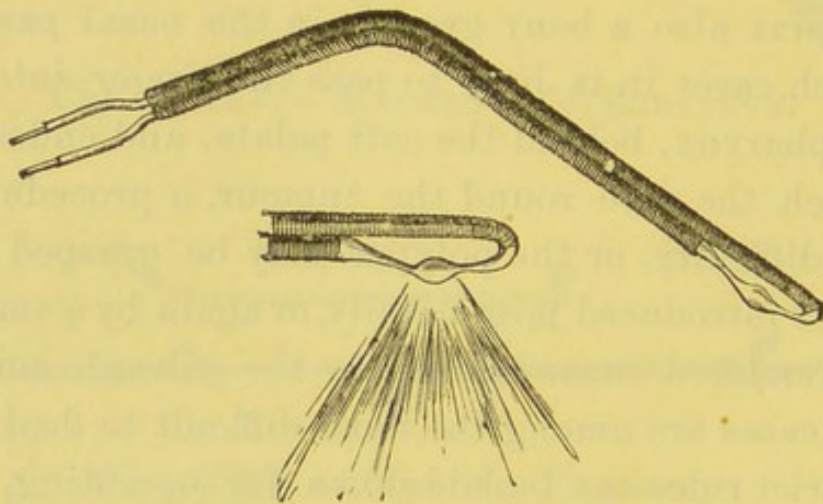


Fig. XXVII.—LÖWENBERG'S CAUTERY THEOPHORE.

Whether polypi will recur or not will depend a good deal on the after treatment. If there should be hæmorrhage it may be arrested with cold water, or a weak solution of perchloride of iron and alum. The peduncle should be touched with solid nitrate of

silver or the galvanic cautery. It is seldom that one operation is sufficient, several, as a rule, being required. I have seen cases in which polypi have shrivelled up and disappeared after only partial removal. Such polypi may have been cystic, or possessed merely of low vitality. It is always difficult to make certain of no recurrence, but the safest way is to clear out all visible growths, and cauterize the peduncles at intervals of several days. Patients also who have been the subjects of nasal polypi should be examined occasionally during the first two or three years after operation.

There is, however, a method of operation which, so far as recurrence is concerned, possesses certain advantages. This is removal of a portion of the bone to which the pedicle grows. It is not advisable that this should be attempted in the first instance, but in obstinate cases it has often answered well in my hands. Removal of the bone may be effected by the *ecraseur*, but better by the forceps, more especially by the "punch," or nasal bone forceps, devised for this purpose by Sir MORELL MACKENZIE.

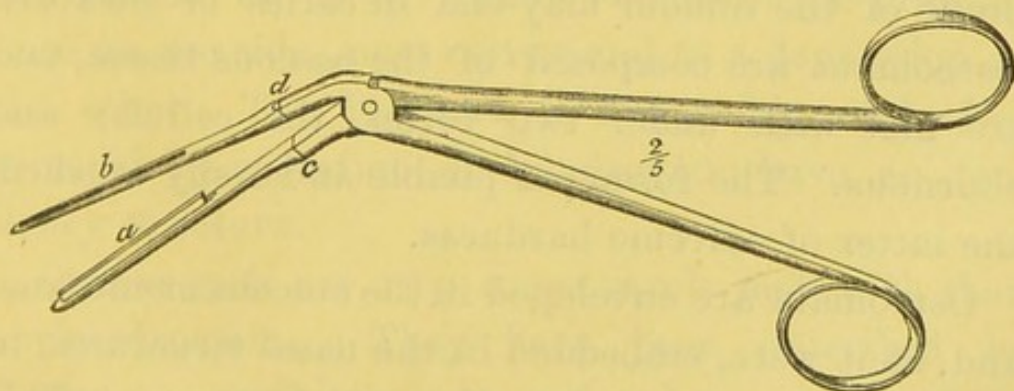


Fig. XXVIII.—MACKENZIE'S PUNCH-FORCEPS.

## BENIGN TUMOURS OTHER THAN POLYPI.

In addition to polypi, we also find in the nasal cavities various benign tumours, such as *Osteomata*, *Enchondromata*, *Osseous cysts*, *Papillomata*, *Angiomata*, and *Adenomata*.

*Osteomata* are bony tumours, covered by pituitary mucous membrane; they are generally either free and unattached, or attached only by a thin pedicle of bone.

The affection is rare, and occurs mostly in childhood. The earliest *Symptoms* are itchiness, slight epistaxis, coryza, and, as the tumour grows, interference with respiration and neuralgic pains from pressure. Examination will show a small pink tumour, covered by mucous membrane tightly stretched, and possibly ulcerated. The septum may be compressed towards the opposite nostril, and a considerable amount of deformity, extending to the cheek, may ensue. There may also be exophthalmos, and other symptoms referable to the eye, and due to mechanical disturbances of the orbit. Ulceration of the mucous membrane of the tumour may end in caries or necrosis. *Osteomata* are composed of the osseous tissue, and are met with under two forms, the cellular and eburnous. The former is pliable and easily crushed, the latter of extreme hardness.

*Osteomata* are enveloped in the mucous membrane, and, as it were, embedded in the nasal structures, to which they contract few, if any, adherences. This

materially increases the ease with which they may be removed. They generally grow slowly, and have no tendency towards spontaneous cure. The *Diagnosis* is in all cases easy, as the tumour, from its hardness and other characteristics, could scarcely be mistaken for anything else. The treatment is necessarily operative. An incision, as small as compatible with complete removal, should be made, and the tumour separated from its pedicle. This separation may be a matter of much difficulty, and necessitate in the eburnous variety either the chisel or chain saw. Hæmorrhage is generally slight after the operation, and there is no tendency to recurrence.

*Enchondromata* are very rarely met with. They occur chiefly in childhood, and occupy by preference the cartilage of the septum, or the junction of this latter with the floor of the nasal fossæ. The growths are covered by mucous membrane, are pink or grey in colour, and may attain the size of a small cherry. The main symptom connected with enchondroma is obstruction of the nostrils. It is just possible that an enchondroma might be mistaken for deviation of the septum, but in the case of the latter the prominence on one side must correspond to a depression on the other. The *Prognosis*, is favourable, and after removal by operation, enchondromata have no tendency to return.

*Osseous cysts* are even more rarely met with than enchondromata. They have been described by BAYES as cystic tumours, enclosed in a bony shell.

Their origin is probably from the osseous tissue itself, though sometimes they are formed between the periosteum and the bone. They are either unilocular or multilocular. The only possible treatment is excision or destruction by the galvanic cautery.

*Papillomata* are not so rare as either of the preceding growths. They may be considered as a form of nasal polypus. In size they vary from a pea to an almond, and their surfaces are covered with cauliflower excrescences. According to HOPMAN, they occur exclusively on the inferior turbinated bone. They are generally attached on a broad base and are rarely pedunculated. Treatment consists in removal either by the wire snare, or the galvanic cautery, or by strong nitric acid.

*Erectile tumours* are important, inasmuch as they may be the cause of violent hæmorrhages, sufficient to endanger the life of the patient. This tendency to hæmorrhage is indeed the characteristic symptom connected with them. Direct examination will show a small bright red growth, beating synchronously with the pulse. The best and safest treatment is destruction with the galvanic cautery at a *red* heat. In one case mentioned by VERNEUIL it was considered advisable to open the nose freely, and after destruction by the cautery, to use compresses and plugs saturated with perchloride of iron.

*Adenomata* are characterized by hypertrophy of the glands of the mucous membrane. While themselves benign, there is great danger lest they may

degenerate into epithelioma. Hence early removal is the safest course to adopt.

*Fibromata* occur very rarely in the anterior parts of the nose, but are more commonly met with posteriorly, where they form naso-pharyngeal polypi. The only treatment is removal. This may be attempted either anteriorly or posteriorly by avulsion, abscision or the electric cautery (MACKENZIE). Fibroma is a severe and dangerous affection, and may cause violent hæmorrhages. If the growth cannot be removed either anteriorly or posteriorly, it may be necessary to perform resection of the bridge of the nose (LICHTENBERG, "Lancet," 1872).

#### MALIGNANT TUMOURS.

It may be said generally that malignant tumours of the nose are very rare. *Sarcomata* usually spring from the septum of the nose, and might be mistaken for euchondromata; but the rapidity of their growth, the fact that they quickly fill the nasal fossæ, causing great deformity, and the presence of sanious and foetid discharge with ulceration, will remove all doubts as to their real nature.

*Carcinomata* present much the same symptoms and appearance as the sarcomata. In examining for these tumours, the possibility of a foreign body impacted for a number of years and causing an offensive discharge, must not be overlooked.

*Epithelioma* generally attacks the septum. The growths are pink, highly vascular, and extend rapidly.

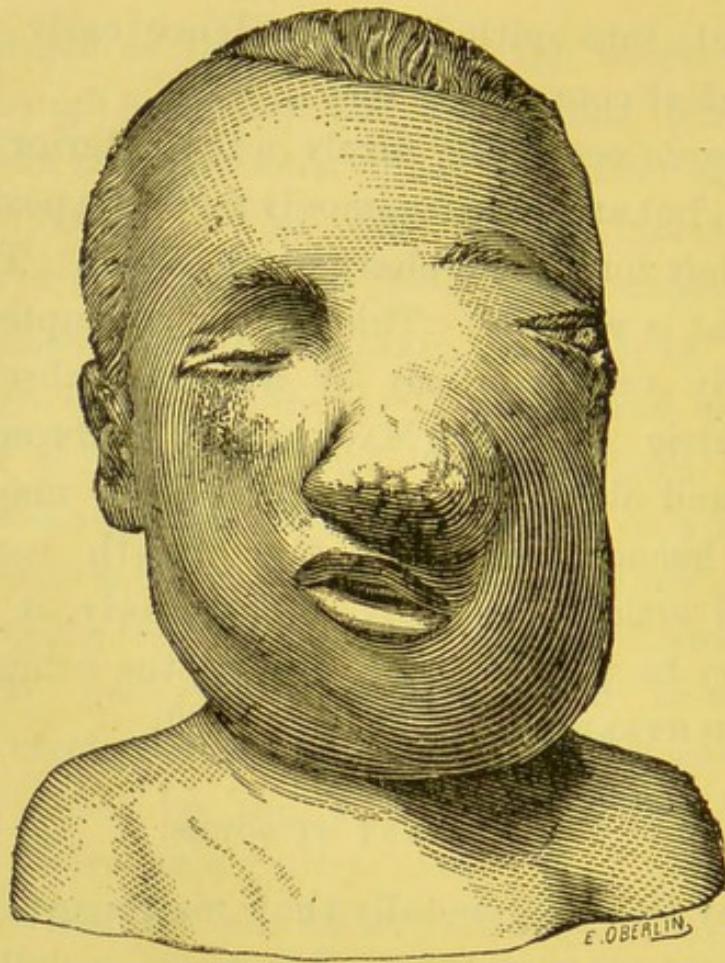


Fig. XXIX.—SARCOMA OF NASAL FOSSE IN CHILD,  
(after MOURE).

They occasion deformity, with ulceration, hæmorrhage and fœtor. The sub-maxillary glands are involved during the later stages. As regards the *diagnosis*, it may be said generally that when an abnormal growth is met with on the septum, which from its consistency cannot be euchondroma, or osteoma, nor from its progress an abscess, we may suspect a malignant tumour. The differential diagnosis between various forms of malignancy is of small moment, as practically the treatment is in all cases the same. It is, necessarily, wholly surgical, and

consists in removal. But before any operation is undertaken it is well to weigh the fact that the procedures are of extreme severity and difficulty, and while endangering life, do not preclude the almost certainty of recurrence. In cancerous growths of the nose the patient is frequently seen for the first time when all reasonable chances of an operation succeeding have passed away. In such cases palliative treatment of the more distressing symptoms can alone be recommended. Relief can often be given in a measure by the use of detergent and soothing washes, and the hæmorrhage kept in check by the application of the electric cautery to any bleeding points.

*Case 1.—*

Mr. K., aged 21, consulted me in January, 1889, for obstruction in both nostrils, with mucous discharge. At the date of his visit the symptoms had lasted about two years. Advice had been sought, but the true nature of the case had not been recognised, it having, apparently, been considered one of relaxed mucous membrane. On examination both nostrils were seen to be crowded with polypi to such an extent that they almost protruded externally, and had actually forced outwards the nasal bones, causing considerable deformity. The patient suffered constantly from general symptoms, such as frontal headache, difficulty in breathing, deafness and noises, with loss of smell, and partly also of taste. He was

very nervous and irritable, and dreaded any pain. Under these circumstances, I decided to operate, with the wire snare, at first only on the more anterior polypi. Cocaine was used freely, and at the first sitting five polypi were removed from the left nostril and two from the right. There was little hæmorrhage, and no pain. Eight days later, four more, including one very large growth, with a portion of bone attached, were taken from the left nostril, and this was accompanied by slight bleeding. The left nostril was now clear, a stream of water passing freely through it. The patient described himself as much relieved. Ten days later, the shape of the nose was perceptibly improved. In the right nostril, after removal of the more anterior growths, it was found that a bony ridge, running along the septum and projecting into the nostril, rendered it very difficult to snare the polypi situated posteriorly. By the aid of the index finger in the naso-pharynx this difficulty was eventually overcome, and all growths removed. The total number was thirty-one, two of which were of unusually large size. In some the pedicles were long and thick, but on the whole there was little disposition to hæmorrhage. Shortly after removal the patient breathed freely, and was able to sleep comfortably, lying instead of sitting up, and with his mouth shut. The after treatment consisted in syringing the nostrils with weak carbolic lotion, and touching with nitrate of silver any remains of pedicles which could be seen.

*Case 2.—*

M. C., a captain in the army, consulted me in September 1888, suffering from obstruction in both nostrils which was worse in damp weather, mucous discharge, hoarseness of the voice, partial deafness, noises, and giddiness. The general health was indifferent, and the patient's aspect anxious and anæmic. He had been operated on some years previously, and fourteen polypi removed. The operation had been performed with the forceps, had caused, as he expressed it, "agony," and much bleeding, and had evidently been incomplete. On examination, both nostrils were seen to be tightly packed with polypi, and obstruction to breathing was complete. I used the wire snare after applying cocaine. At the first sitting two large polypi were removed from the right, and one from the left nostril; four days later several small ones were removed from the left, and one enormous growth, the largest I have as yet seen, from the right. Hæmorrhage was slight, and throughout each sitting the mucous membrane was kept insensible with cocaine. No pain was complained of. After operation a stream of water passed freely through both nostrils. The improvement in general health which followed the removal was very marked. The patient called again at the end of February, when the nose was found to be quite free. The pedicles were treated with nitrate of silver. The above case, I think, fairly shows the superiority of the wire snare over the forceps. Apart from the ques-

tion of suffering to the patient and loss of blood, it is difficult to see how any forceps could have grasped and removed the large growth from the left side.

*Case 3.—*

Mr. H., aged 65, was sent to me from Peckham, in November, 1887. He had suffered in both nostrils with polypi for twenty-seven years, and had undergone several operations with forceps. Hearing was not affected, but taste and smell had practically been lost for several years past. All his symptoms were worse in wet and cold weather. He also suffered much from asthma, which he attributed to the presence of the polypi. Cocaine was used and no pain experienced, and but little hæmorrhage. He was operated on at intervals of ten days, and by February, 1889, both nostrils were clear, twenty polypi in all having been removed. As the nose became free the asthmatic symptoms disappeared, and the general health improved considerably.

## CHAPTER X.

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### SYPHILIS OF THE NOSE AND NASAL FOSSÆ.

DEFINITION.—*Various manifestations of the syphilitic poison in its primary, secondary, and tertiary stages.*

*Etiology.*—Primary sores of the nose are rare, though some cases have been recorded. The slightest abrasion at the entrance of the nostrils will serve as a passage for the specific virus. Catheterisation of the Eustachian tubes with infected and dirty instruments has probably been in some instances the exciting cause. Secondary accidents are rare in the anterior fossæ, but more common in the posterior, in the region of the fauces, and behind the soft palate.

The *Symptoms* vary according to the period of the disease and the severity of the attack. In cases of primary chancre the orifice of the nostril is blocked, and the sub-maxillary glands infected. In the secondary lesions the earliest manifestation is syphilitic catarrh. Small superficial ulcers, surrounded by a border of inflammatory tissue, will be found on the anterior portions of the septum and inferior turbinated bone, while posteriorly they may be localised behind the uvula and soft palate. The symptoms

complained of by patients vary with the position of the lesions. Thus, if the latter be situated anteriorly there will be a sensation of heat and discomfort, with slight mucopurulent discharge; if posteriorly, the disturbances will affect swallowing and hearing, and impart a nasal twang to the voice. Examination reveals the characteristic patches on the mucous membrane, with later on, ulcerations. Along with these appearances there will be the usual constitutional manifestations in other parts of the body. Syphilitic condylomata occasionally make their appearance on the border between the skin and nasal mucous membrane.

It is, however, in the later or tertiary stages that the ravages of nasal syphilis are most clearly manifest. The most widespread destruction of the nose, externally and internally, is by no means uncommon. Ulceration of the integuments may spread from without inwards, or from within outwards, destroying the tissues and forming ashy coloured open sores, with the characteristic indented edges and indurations. These ulcerations spread in depth and width and unless arrested, permanently destroy the shape of the nose. Flattening and collapse of the bridge, and partial disappearance of the whole organ, are not unfrequently met with. The internal lesions are however, the more common. Their earliest symptom is a gummatous infiltration of the mucous membrane, which is at first apparently harmless, and may readily be mistaken for chronic rhinitis.

Obstruction of the nose, disturbances of smell, increased mucous discharge and a change in the *timbre* of the voice are at first the only symptoms (SCHECH). Gradually, however, the discharge becomes thicker and more purulent, but not foetid. About this period examination will reveal ulcers on the septum and turbinated bones. The next stage is the presence of foetid discharge, sinking of the bridge of the nose, perforation of the septum, and caries and necrosis of the turbinated bones. The diseased bones can be seen as dark masses projecting into the nasal cavities and emitting a sickening stench (syphilitic ozæna). In these cases the discharge from the nose is generally abundant, and no amount of syringing with disinfectants can remove its foetor. If the vomer be attacked the bridge of the nose will fall in and become characteristically flattened; on the contrary, if the cartilage of the septum only is destroyed the tip of the nose will collapse.

The ravages of the disease do not, however, in the worst cases stop here, for they may extend to the lachrymal canal, or the ethmoid and sphenoid bones, and large pieces of these may be thrown off. Even the brain has been occasionally laid bare, and this has been followed by meningeal inflammation and death. The odour from syphilitic ozæna is peculiarly repulsive and disgusting, and cannot be removed by disinfectants. In its character and obstinacy in this respect it differs very distinctly from the odour of

true ozæna, and should not be confounded with it. On examining the nose in advanced cases of tertiary syphilis, deep foul ulcers with ragged edges and masses of diseased bone, of a dark greyish colour, can be seen. It is often necessary to dislodge them with a probe, when the characteristic grating sensation of dead bone will be felt.

The date of these various appearances after the primary infection is uncertain. But it may be said generally of nasal secondary lesions, that they show themselves a little later than the same manifestations on the skin and mucous membranes. They also follow the usual course of these lesions—that is, disappear rapidly when specific treatment has been followed. Tertiary symptoms may be at times premature, and may succeed, within a short interval, the secondary symptoms; but in general they show themselves several years, perhaps twenty, after infection, and when possibly the patient may have forgotten all about the original primary sore. The progress of the lesions is essentially variable. When met with in a patient debilitated by want or debauchery, or with an organically weak or strumous constitution, the rapidity with which syphilis may destroy the nasal tissues is truly astonishing. In other cases, however, more especially if proper treatment has been commenced early, the patient may escape with a few scars, or cicatrices, or a perforated septum.

The *diagnosis* of nasal syphilis during the early

stage of gummatous rhinitis is impossible, unless other symptoms be manifest elsewhere. Obstinate catarrh is always suspicious, particularly when associated with rheumatoid pains in the muscles of the shoulders, breast, and back (SCHECH). In such cases it would be proper to place the patient on specific treatment, without endeavouring unduly to establish a diagnosis by injudicious cross-questioning. More especially is this so in the case of married persons and of ladies, who may possibly have acquired a syphilitic taint without being aware of the fact. Ulcers, and especially disease of the bones, are generally signs of tertiary syphilis in adults, and so also is perforation of the septum. But I have known, in at least one instance, cruel injustice done by too positive a reliance on this last symptom. It should never be forgotten that perforation of the septum may be due to congenital deformity, to abscess, blood cyst, tubercular ulceration, and traumatic irritation. The latter cause is not uncommon among workmen in chemical manufactories. Lupus of the nose, commencing internally, may bring about the same distinctive changes as syphilis. Lupus, however, appears earlier, is distinguished by its tubercles, and attacks by preference the cartilages rather than the bones. Syphilis, moreover, is the only affection in which we meet with general destruction of the framework of the nose as a whole, including both bones and cartilages.

The *prognosis*, provided treatment is commenced

early, and the bodily vigour of the patient is unimpaired, is always good. It is necessarily more grave in tertiary cases, and may then be said to vary with the nature and extent of the lesions. It becomes gloomy in the extreme when the parts at the base of the brain are involved. In such cases death may result from meningitis, or from marasmus, dependent on the extent of the ulcerations.

The *treatment* should be both local and general, Syphilitic coryza will in most cases yield to syringing with alkaline and astringent solutions, iron and arsenic being prescribed internally. Condylomata should be touched with tincture of iodine, solid nitrate of silver, or chloride of zinc. In the tertiary stage, local treatment will consist in very careful cleansing and disinfecting with chlorate or permanganate of potash, or with any lotion of a detergent and deodorizing character, such as carbolic acid and borax, the latter used in a saturated solution. The foetor, in cases of nasal syphilis, is generally a most difficult symptom to subdue. Deep-seated ulcers should be touched with nitrate of silver, or iodiform in powder

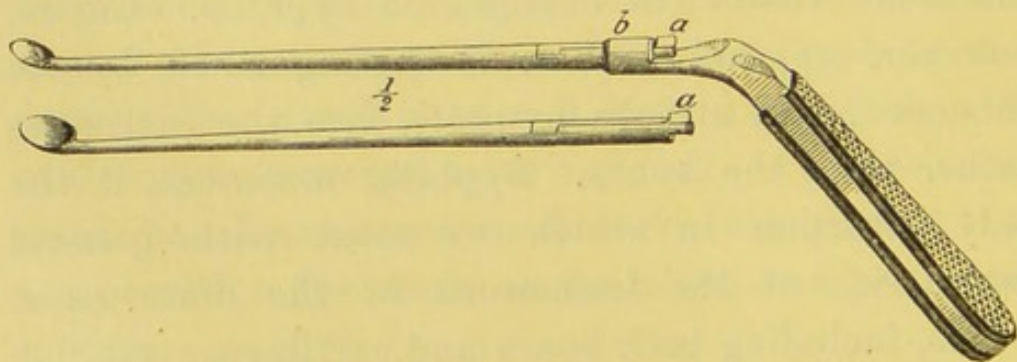


Fig. XXX.—NASAL CURETTES, OR SHARP SPOONS.

may be insufflated over them. Stimulating and antiseptic inhalations, such as eucalyptus, and oleum pini silvestris, are also of use. SCHUSLER and SÄNGER recommend scraping the ulcers and polypoid vegetations with a sharp spoon.

This method is not free from the risk of hæmorrhage, but it is said to have given good results in apparently hopeless cases where there was extensive destruction of bone. Probably the galvanic cautery would be safer and equally efficacious. Abscesses must be opened and necrosed bone removed with forceps, *if loose*. But on no account must tightly-fixed sequestra be pulled out forcibly, or any violence be used. If the diseased portions cannot be seen and removed by ordinary methods, and if the symptoms are urgent, it may be advisable to perform ROUGE's operation, which consists essentially in separating the nose from the face, turning it upwards, and so exposing the nasal cavities.

General treatment must consist mainly in the exhibition of iodide of potassium, in doses of from ten to twenty grains, three times a day. This treatment should be continued for some months, and if the progress made is not satisfactory, mercury may be resorted to. The liquor hydrargyri perchloridi of the Pharmacopœia is a convenient preparation, and may be prescribed with sarsaparilla. MACKENZIE recommends a pill of cyanide of mercury twice a day (℞ Hydrarg. Cyanid. gr.  $\frac{1}{10}$  sacch. lactis gr.  $\frac{3}{4}$  tragacanth q. s. M. ft. pil). It will often be found

advisable to alternate the remedies, changing from mercury to iodide of potassium, and *vice versâ*. If there be much constitutional debility present, tonic treatment should be prescribed. Change of air and a course of baths at Aix-la-Chapelle will often be found serviceable.

*Infantile syphilitic coryza* is an invariable symptom of inherited syphilis. It shows itself in conjunction with other signs of the dyscrasia, within the first few weeks after birth. It is generally associated with stoppage of the nose, with mucous patches, difficulty of breathing and suckling, and a more or less offensive mucopurulent or even sanious discharge. Necrosis of the cartilages and bones may follow. Other signs such as copper-coloured papules will appear simultaneously on the body, and will establish the diagnosis.

The treatment must be anti-syphilitic, and should consist of grey powder in doses of from one to two grains twice a day. Should this cause diarrhœa, one grain of Dover's powder, or an additional grain of chalk should be combined with each powder (MACKENZIE), or mercury may be administered by simply placing a drachm of mercurial ointment on a flannel bandage, and stitching it round the infant's thigh. This ought to be renewed each day for two or three weeks, after which iodide of potassium, with milk or cod liver oil, may be given. As regards local treatment, cleanliness is the essential point. The nose should be regularly cleansed with boracic and

alkaline solutions. Should difficulty be found in using injections or sprays, MACKENZIE's temporary sponge tampon, to plug the naso-pharynx, will be found extremely useful.

*Case 1.*—The following case is interesting, as showing the rapidity with which syphilis may destroy the bones of the nose. Mr. G., aged 40, consulted me in December, 1888. He had suffered from primary syphilis some years before, but it was only within the last few months that his nose had become affected. On examination, the septum was seen to be destroyed and the nasal fossæ filled with foul-smelling dark-coloured crusts. These could not be loosened by the syringe, so were removed with the probe and forceps. Patient was put on large doses of iodide of potassium and bark, and directed to syringe the nose with disinfectant lotions twice a day. After this treatment had been carried on for about a week the vomer, which had evidently been extensively diseased, fell back into the pharynx during sleep, and, according to the patient's statement, nearly choked him. The bridge of the nose then fell in. The nasal fossæ were now treated with iodoform and frequent syringing, which reduced the fœtor, but no attempt was made to scrape the ulcers, as some have recommended. Improvement has taken place gradually, both in the nasal and general symptoms.

## CHAPTER XI.

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### TUBERCULOSIS OF THE NASAL FOSSÆ.

DEFINITION.—*A deposition of tubercular matter in the nasal fossæ, which may soften and ulcerate.*

*Etiology.*—This affection is extremely rare, and is correlated with the presence of tubercles in the lungs or other organs. The *symptoms* are chiefly those of coryza; but recognition of the affection depends on rhinoscopic examination. Tubercles varying in size from a grain of millet to one of wheat, and yellow in colour, may be seen as isolated masses, chiefly on the septum, and turbinated bones. As elsewhere, the tubercles may soften and leave an obstinate form of ulcer. The surrounding mucous membrane will be more or less tumified, and covered with purulent secretion.

The *prognosis* is necessarily bad, and similar to that of tubercles elsewhere.

The *diagnosis* is founded on the appearance of the ulcers and the presence of other phthisical symptoms, the history and progress of the case being taken into account. The microscope will also give valuable aid, not only by showing the formation of the growth,

but also by demonstrating the existence or otherwise of the special bacillus of tubercles.

The treatment must necessarily be palliative, and will consist of detergent irrigations, followed if necessary by excision, scraping, or burning of the nodes with the galvanic cautery, the use of nitrate of silver and insufflations of iodoform with or without morphia. All operative interference will be aided by a preliminary application of cocaine.

## CHAPTER XII.

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### SKIN DISEASES OF THE NOSE AND NASAL FOSSÆ.

IMPETIGO SYCOSIFORM.—In adults it is not uncommon to find an eruption of impetigo round the nostrils externally, or within them at the junction of the skin and mucous membrane. The affection consists in a crop of small pustules, which in turn are replaced by ulcers. These latter are covered with greyish crusts, which later on drop off and are constantly renewed. The affection is very obstinate and often inspires patients with much anxiety. The *Treatment* will consist in anti-strumous remedies, such as cod liver oil, iodide of potassium, FELLOW'S syrup of the hyperphosphites, arsenic and sea baths. Locally, chlorinated washes and solutions of borax and weak carbolic acid (gr. ii ad ʒj), and sulphurous pomades are useful. These may be alternated with oil of cade, or oxyde of zinc, and what I have found very efficacious, an ointment composed of seven grains of yellow oxyde of mercury to an ounce of vaseline. The crusts may be removed by poultices, and the raw surfaces subsequently touched with nitrate of silver.

HERPETIC ULCERS: ECZEMA.—The *Symptoms* in the earlier stages of these affections consist of smarting,

burning or itching at the nostrils. The irritation so caused induces picking of the nose and formation of scabs. By raising the point of the nose the edges of the nostrils can be seen covered with greyish yellow secretion, and small ulcerations. On the septum and occasionally on the inferior turbinated bone there is a pustular eruption, sometimes covered with gelatinous pellicules. At other times, a kind of exfoliation of the mucous membrane takes place, similar to that witnessed in psoriasis.

The affection is slow and extremely obstinate, and though apparently cured may constantly return at intervals, and even at fixed periods of the year. The *Treatment* must be general and local, the former by means of arsenical remedies, and carefully regulated diet, with absolute exclusion of any substances likely to irritate, such as shell-fish, spices, mouldy cheese, curries, etc. The local treatment should consist in careful cleansing, with mildly stimulating lotions of borax, bicarbonate of soda and carbolic acid. These applications should be followed by a pomade of tar, oil of cade or yellow oxyde of mercury. Pain or irritation may be relieved by a four per cent. solution of cocaine.

LUPUS may occur in two varieties, either as lupus exedens or non-exedens. As a rule, the external portions of the nose are first attacked, and subsequently the internal. The disease shows itself as little red points which eventually develop into ulcers, with a foul smelling discharge. As the disease spreads it

may eat away the whole of the septum, alar cartilages, and even portions of the bones. Destruction goes on in one part simultaneously with healing and repair in another. In lupus non-exedens there is no ulceration, but retraction of the mucous membrane and underlying cartilages.

The *Diagnosis* is not always easy, as the affection may be mistaken for syphilis, or may be complicated by it. In its early stages lupus resembles epithelioma. The youth of the patient, his markedly scrofulous habit, the fact that the ulcerations heal at one point and break out at another and finally the failure of the iodide of potassium treatment will generally serve to differentiate lupus from syphilis.

The *Treatment* should consist internally in full doses of arsenic, together with anti-scrofulous remedies. Locally, vigorous cauterization of the diseased parts with chloride of zinc, fuming nitric acid, or the galvanic cautery should be practised, great care being taken to remove every particle of infected tissue.

**RHINOSCLEROMA** is a very rare affection and though not properly a skin disease, may be conveniently mentioned here. By HEBRA and KAPOSI it is placed among the neoplasms, as being allied to round-celled sarcoma. Others consider it as among the results of syphilis; while others again have surmised it to be of bacterial origin.

Rhinoscleroma almost always attacks the edges of one nostril and a portion of the upper lip. It appears

in the form of slightly raised patches, which are smooth on the surface and intensely hard. In one case which came under my notice, the integument was slightly red in colour, but in other cases it would appear to be unchanged. There is little or no pain, save slight tenderness on pressure. As the disease advances it spreads to the gums, lips, and cheeks, and generally to the whole internal nose. The pharynx may then become involved, and subsequently the larynx. If the hard nodes be excised they rapidly return. The subjective symptoms consist not so much in any disturbance of general health, as in the mechanical difficulties arising from the narrowing of the mouth and displacement of the nose; or if the pharynx be attacked from difficulty in swallowing, or if the larynx, from difficulty of breathing. In this latter case death may ensue from asphyxia. The *Prognosis* is not favourable, as the disease always returns. The *Diagnosis* is difficult, as rhinoscleroma resembles syphilis in many points, but differs from it in its chronic course, in the absence of softening or ulceration, and negatively by not being benefited by specific treatment. From epithelioma it may be distinguished by its smooth surface, hardness, and local character. The *treatment* can be only palliative, and will consist in dilatation of the nose by means of bougies of catgut, or laminaria, and destruction of the nodules by chromic acid or the galvanic cautery.

## CHAPTER XIII.

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### GLANDERS.

DEFINITION.—*A contagious disease communicated to men by horses suffering from the same.*

Glanders is fortunately a very rare disease, and is met with, almost exclusively, among grooms, coachmen, and others occupied with horses. The salient feature of the disease is the formation of pustules, followed by ulceration of the skin, nasal cartilages, and bones. The earliest *Symptoms* are secretion of a thin tough mucus, followed by swelling and redness. The mucous membrane is covered with scabs and ulcerations. There may subsequently be ulceration of the throat, larynx and tongue. The discharge from the nose, which is sometimes limited to one side only, becomes sooner or later, sanious and foetid. The majority of cases go on to perforation of the septum, necrosis, glandular enlargements, and death from pyæmia and exhaustion. The complaint may run a very chronic course, but in the acute form may terminate life within a week.

The *Diagnosis* is not easy unless a distinct history be obtained of contagion. The ulcerations bear a strong resemblance to those of syphilis, and may

easily be mistaken for them. The febrile condition associated with pain in and around the joints, the pustules on the face, and the failure of specific treatment should, however, indicate the nature of the affection. *Treatment* has so far proved of little avail. Remedies calculated to sustain the vital powers or allay pain may be given internally. Locally, cauterization of the mucous membrane with caustics, such as nitric or carbolic acid, more especially the latter, have been found useful. Weak detergent injections should also be used several times a day. Scrupulous cleanliness must be observed, and all dressings, &c., destroyed at once. It should not be forgotten that the disease may be conveyed from man to man. Judging by the analogy of anthrax, it has been suggested that by successive cultivations the virus of glanders might be sufficiently attenuated to justify inoculation as a means of prevention.

## CHAPTER XIV.

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### FOREIGN BODIES IN THE NOSE.

(INCLUDING RHINOLITHS AND PARASITES.)

Foreign bodies in the nose are met with chiefly in children and in the insane; they may, however, occur in sane adults as the result of wounds or accident. Once placed in the nasal fossæ inspiration favours their progress inwards, till eventually they become completely imbedded in the mucous membrane. Portions of food are sometimes driven from the larynx into the posterior nostrils, either by the act of vomiting, or by sudden efforts made to prevent food passing into the glottis. Once the foreign body has entered the nose it may remain there for a long period, and indeed the fact of its entrance may be completely forgotten by the patient himself. The substances usually introduced are beads, pebbles, fruit stones, and seeds, such as peas, beans, etc. The latter swell, and sometimes germinate, throwing out rootlets. The *Symptoms* which foreign bodies give rise to depend on the length of time they have remained in position, and also on their size and shape. They occasion at first increased secretion, more rapid breathing, with possibly attacks of sneezing. Later

on these symptoms may disappear, and the nose become so tolerant of the foreign substance, that little discomfort may be felt. Subsequently a mucopurulent and foetid discharge shows itself, and the nostril becomes impermeable. A dull sense of weight, and even neuralgic pains are complained of. Lachrymation, conjunctival congestion, and overflow of tears from closure of the nasal duct are also not uncommon. Ulceration, necrosis, polypoid vegetations, together with abrasion of the skin of the upper lip from the irritating discharge may make their appearance. The *Diagnosis* will depend in part on the history of the case. If this cannot be obtained, and it is often wanting, and if inspection anteriorly and posteriorly with the rhinoscope fails to show any foreign body, then the nose must be cleansed as thoroughly as possible, and a careful examination instituted by means of the probe. The pain of this may be much reduced by using a ten per cent. solution of cocaine, but if necessary, and it sometimes is with children, an anæsthetic should be given. A foetid nasal discharge is always a suspicious symptom in children, and in the absence of manifest cause may be set down to the presence of some foreign substance. The possibility of dead bone should, however, not be lost sight of.

*Treatment*, if the case is seen early, consists in passing a curette above and behind the foreign body, and gently forcing it outwards. The patient may assist by blowing down the nostril strongly. In

children, however, and in long-standing cases, something more is necessary. Syringing through the free nostril, and the use of forceps or other instruments in conjunction with the mirror, may be tried. Should these measures fail, it may be advisable to force the foreign body backwards towards the pharynx, and endeavour to grasp it with the post-nasal forceps. Either a plug or the finger should be kept behind the soft palate while this is being done, to prevent the substance falling into the larynx. An attempt may be made to crush it with a lithotrite or strong forceps. Should the life of the patient be in danger, and if all other measures have failed, opening up the nose by ROUGE's operation may become necessary. Indeed, cases of foreign bodies will often test the surgeon's skill and ingenuity to the utmost.

*Rhinoliths* differ from foreign bodies, inasmuch as they are formed within the nose spontaneously, instead of being introduced from without. Sometimes, however, a small foreign body, by becoming coated with lime, may form their starting-point. They are generally single, but may be multiple. Their size depends on the length of time they have remained in the nasal fossæ. They sometimes completely block up the nostril, and even cause deviation of the septum. They generally have the appearance and consistency of cement, and are friable and easily broken down. Treatment is the same as for foreign bodies generally.

*Parasitic Disease and Maggots.*—These affections may conveniently be considered here, as the symptoms they cause are essentially due to their acting as foreign bodies. In this country almost the only parasites met with are certain fungi, such as the *oidium albicans*, the cause of *thrush* in children, various kinds of mould, and bacteria in foetid secretions. Larger parasites, however, are common in tropical countries, and give rise to symptoms of the gravest nature, not unfrequently ending in death. The varieties usually found are the *ascaris lumbricoides*, earwigs, centipedes, maggots, and leeches. The Indian disease, “peenash,” is due to the eggs of the *lucilia hominivora*. In one case which occurred in a patient of my own, in New South Wales, both the nose and ears were infected with maggots from the common “bluebottle” fly.

The earliest symptoms are itching and sneezing, with later on a sensation of something crawling about within the nostrils. This is followed by stoppage of the affected nostril, by sanguineous or purulent secretion, by swelling of the face and eyelids, by giddiness, throbbing, headache, sleeplessness, and eventually exhaustion, coma and death. The *Prognosis*, however, is not always so unfavourable, for treatment, if commenced early, is generally successful.

In the case which came under my personal notice I had no difficulty in getting rid of the maggots by the use of glycerine, to which a little carbolic acid

had been added. This succeeded after syringing had failed. Various substances have been recommended, such as inhalations of ether, alcohol, benzoin, chloroform, infusions of tobacco, lemon juice, or oak bark, insufflations of iodoform, calomel, carbolic powder, thymol, or balsam of Peru, the latter applied directly with a brush. MACKENZIE, quoting DAUZAT, speaks highly of the value of chloroform inhalations, or, should these fail, of injections of chloroform water or even pure chloroform, after anæsthesia had been induced. (Diseases of Nose, p. 457.) Constitutional remedies are also necessary, both to induce sleep and to stimulate the patient's vital powers.

*Case 1.—*

Miss C. E., aged 23, was sent to me in May, 1886. She had suffered for the last three years and a half with obstruction in both nostrils, somewhat loose in the left. Examination showed that the nasal fossæ were filled with a mass of brownish friable material, which resisted syringing, but came away in small fragments when broken up with the probe. With some difficulty the mass was bored through, and a stream of lukewarm water injected post-nasally. This loosened the connections, and from each nostril I succeeded in removing in fragments a considerable quantity of material. On examination this proved to be chiefly phosphate of lime, and as there was no history of any foreign body the case was undoubtedly

one of rhinolith. There had been for some years an offensive discharge from the nostrils, and the general health had been indifferent, due probably to interference with nasal breathing. Removal of the concretion gave immediate relief. I saw the patient eleven months afterwards. Her general health was then good, while the nostrils had remained perfectly free.

*Case 2.—*

Miss J. M., aged 34, consulted me in October, 1888, complaining of a foetid discharge from both nostrils, associated with deafness, noises in the head, and extreme general debility. The nostrils were blocked, so that respiration was entirely by the mouth. There was a strong family history of struma, and several manifestations of it in the patient herself. The nostrils were carefully examined with the probe, and dead bone detected. At the first visit this was loosened from its connections, and subsequently removed. It consisted of the bony septum, with portions of the turbinated bones. The whole interior of the nasal fossæ was thoroughly cleaned out, so that a stream of water passed freely from one nostril to the other. I saw the patient subsequently in January, 1889. So far as nasal symptoms were concerned, she was then perfectly relieved from all discomfort, and breathed freely, but the sense of smell had not returned.

*Case 3.—*

Mr. E. consulted me in June, 1887, for what was supposed to be obstinate ozæna of twenty years' standing. He complained of weak general health, a foul smell from the nose, which was partly obstructed, and a mucopurulent discharge. All symptoms had become aggravated within the past eighteen months. On examination both nostrils were filled apparently with hypertrophied mucous membrane. The probe, however, detected the presence of either a foreign body or of dead bone. The latter proved to be the case, and a sequestrum was removed by the forceps. Hæmorrhage was slight, and recovery rapid, with relief from all previous symptoms of obstruction and discharge.

## CHAPTER XV.

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### DEFORMITIES AND IRREGULARITIES OF THE NOSE.

Deformities and malformations of the nose, whether congenital or the result of accident or operations, are numerous, and practically interesting. For not only do these anomalies destroy the symmetry of the face, but may interfere with the sense of smell, with respiration, with the secretion of tears, and with hearing. The nose itself may be double, or there may be absence of the nasal bones, or of the nasal process of the inferior maxilla, or of the whole nose. Fissures are often associated with cleft palate and hare lip. The nostrils may adhere together, and be obliterated, a not uncommon sequence of wounds, burns, lupus and syphilis.

Internally the most common deformity is a congenital narrowing of the nasal fossæ. The septum is not deviated but the nostrils are flattened laterally. Or the narrowing may be vertical, the nose being flattened and wrinkled on itself. This disposition of parts is generally correlated with a number of other deformities. For instance, the inferior turbinated bone may rest on the floor of the nose, the septum may

be more or less deviated, and the nostrils may face upwards and forwards. Sinking in of the external nose is frequently met with in cases of syphilis. Persons with abnormally narrow nostrils show a marked predisposition to chronic affections of the Schneiderian membrane. Local treatment, such as catheterizing or syringing, becomes difficult or impossible, hence the presence of this condition of nostril renders the prognosis in affections of the pharynx and ear less favourable.

The commonest malformation of the nose is deviation of the septum to the right or left. Within certain limits, some slight deviation is the rule rather than the exception, and artists and photographers are well aware that both sides of every face are slightly dissimilar.

But when the deviation is considerable it may project into the nostril sufficiently to close it, while the other nostril becomes unduly large. As long as this disproportion is not too marked there will be no unpleasant symptoms; but when the deviation is excessive there is always considerable disturbance, such as obstruction of nasal respiration, difficulty in removing secretion, and partial loss of the sense of smell. The voice becomes nasal, and as already remarked, the application of the Eustachian catheter and other operations become difficult or impossible.

In some rare cases the convexity is double. We thus find a deviation not unlike the letter S. If only one nostril be affected it will, in the majority of

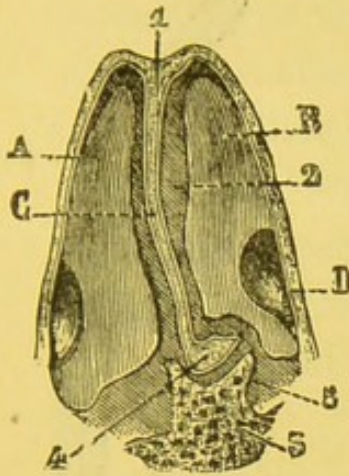


Fig. XXXI.

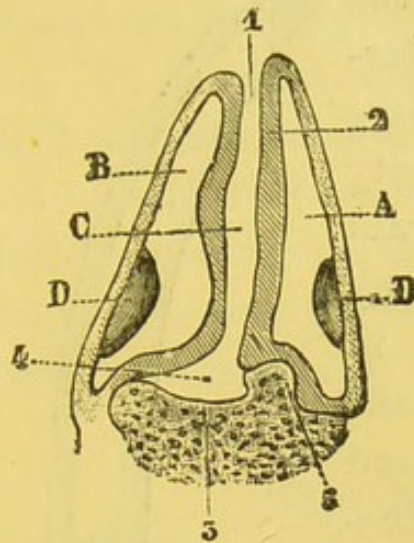


Fig. XXXII.

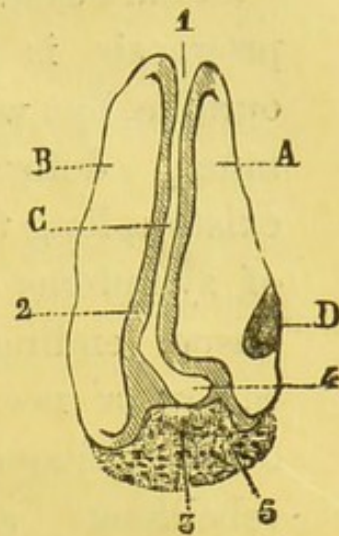


Fig. XXXIII.

Vertical sections of the cartilaginous portions of three different noses (LÖWENBERG). A, vertical section of right nasal fossæ; B, vertical section of left nasal fossæ; C, section of the septum; D, anterior extremity of inferior turbinated bone; (1) cartilage of the septum; (2) Schneiderian membrane covering its two sides; (3) bony portion of the septum; (4) lower curvature of the septum; (5) bony edge of the lower.

cases be the left. The septum may further be the seat of bony tumours, spines or ridges, or be connected by a bony bridge with the inferior turbinated bone. Such a condition bisects the nostril, and in one patient under my care rendered the extraction of polypi, from which he suffered, extremely difficult. In another case the end of the septum had apparently been dislocated from its connection with the maxillary bone, and formed a prominent spur, almost occluding the lower part of the opposite nostril.

In mild cases the prognosis is favourable, but where much deformity exists a long train of symptoms may ensue, ending in caries or necrosis of the cartilage, and rebellious affections of the ear and nasal canal.

The *Treatment* of all deformities, whether congenital or acquired, must be mainly surgical. In slight cases of membranous adhesion the parts should be separated and union prevented by the use of dilating bougies. In stenosis, sponge tents, laminaria, or metal probes, may be tried. As regards

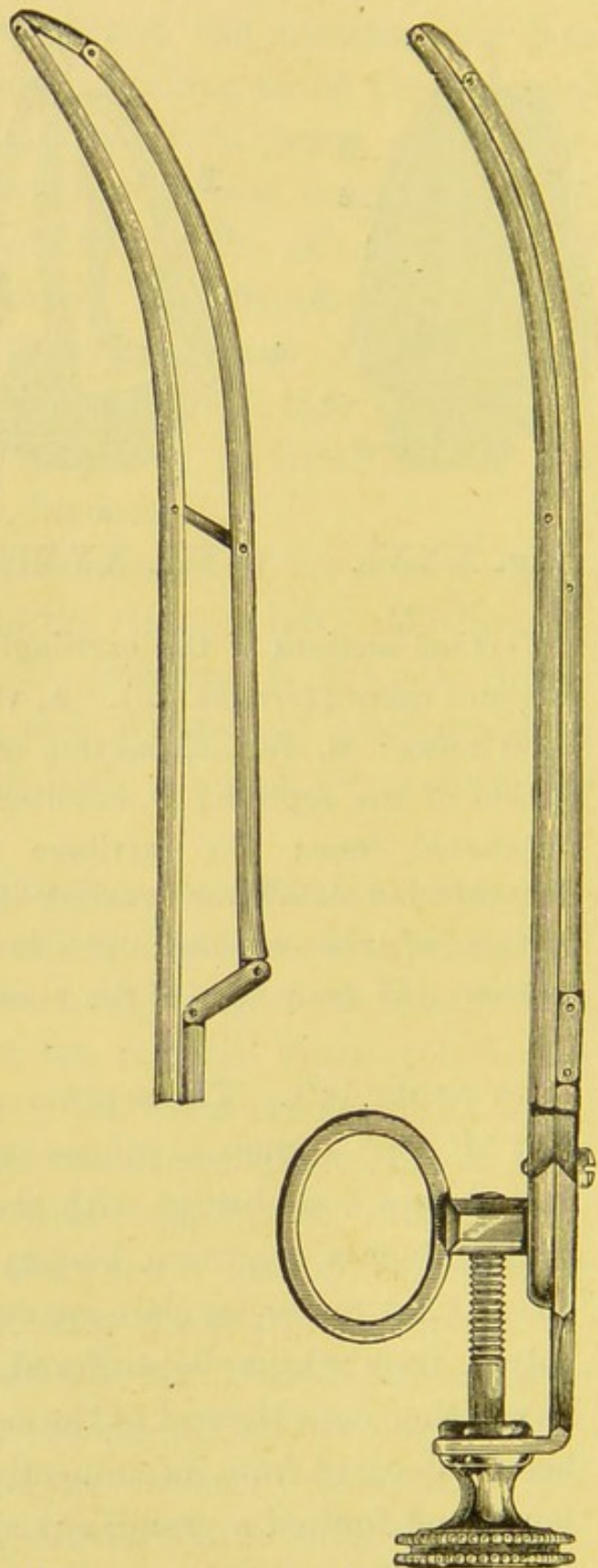


Fig. XXXIV.—WOAKES' NASAL DILATORS.

deviations of the septum, if slight they are better left without treatment. If, however, very disfiguring, or if they induce local or general disturbance, resection may be performed either with forceps or bistoury. MACKENZIE suggests fracturing the deformed portion with ADAM'S forceps, and then fixing the fragments by means of his splint. A portion of the septum may

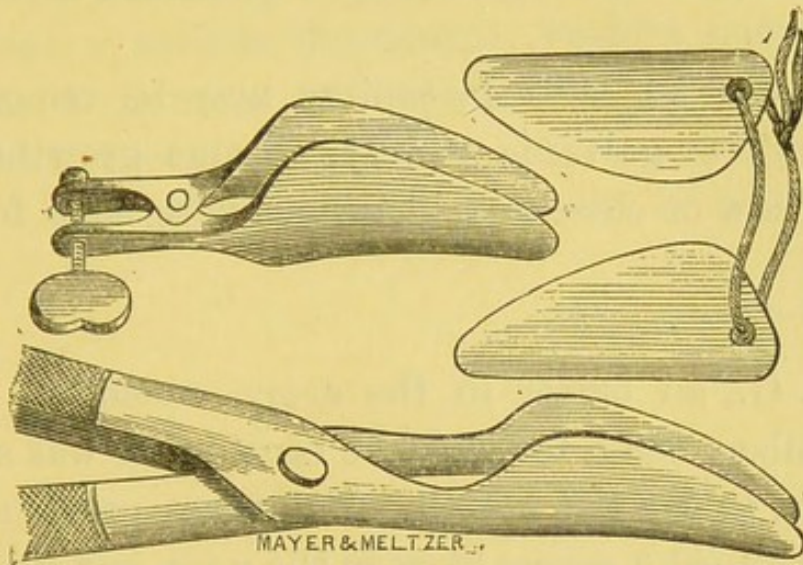


Fig. XXXV.—ADAM'S FORCEPS AND NASAL SPLINTS.

also be conveniently removed by BLAUDIN'S punch forceps, especially where the object is to eliminate a diseased part. HARTMANN and PETERSEN proceed by first removing the mucous membrane, then the desired portion of bone, and subsequently inserting into the nostril a thick indiarubber tube to keep the septum in position. ZURASZ has invented a compressor, which is secured on to the septum and left in position for three days. In some cases it may be advisable to leave the septum alone and resect the turbinated bones. Membranous adhesions of the

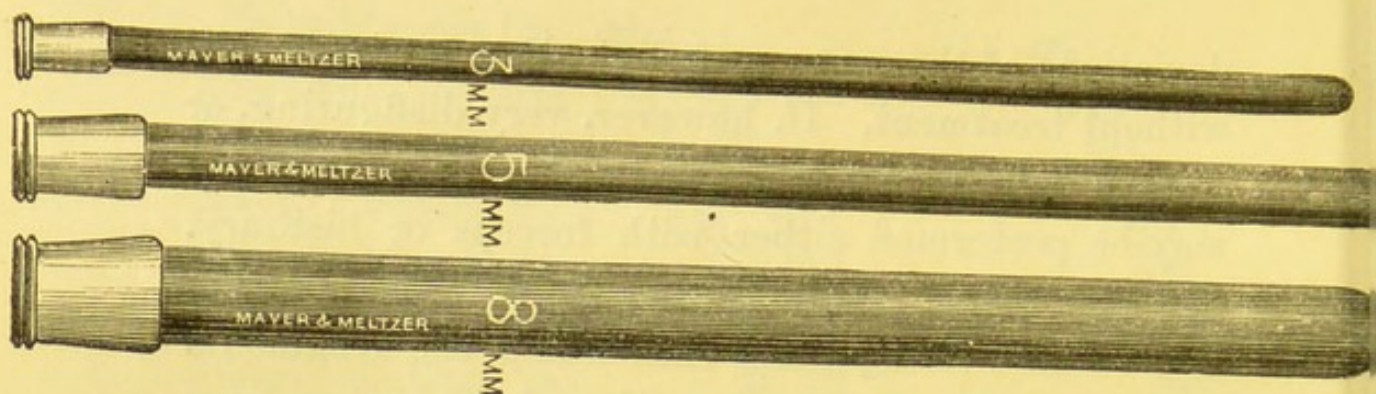


Fig. XXXVI.—MACKENZIE'S DILATING BOUGIES.

turbinated bones to the septum may be removed by the knife or galvanic cautery, osseous growths with a fine saw or chisel, cartilaginous with bone forceps.

*Case 1.—*

Mr. G., an officer in the army, consulted me in December, 1888, for what he considered was a bony tumour in the left nostril. Ten years previously, he had received a severe blow on the nose, and since that date the left nostril had been more or less blocked. On examination, the right nostril was found to be congenitally narrowed, while at the anterior portion of the left a hard growth covered with mucous membrane protruded from the septum and reached across to the opposite side. The growth was apparently cartilaginous and formed part of the septum itself, which probably at the moment of the blow had been partially separated from its bony attachments. Thus, while the septum as a whole was deviated there was a spur formed by an outgrowth, which completely occupied the lower portion of the left nostril. A

probe-pointed bistoury was passed underneath the outgrowth and made to cut upwards, separating the spur from the septum and considerably enlarging the nostril. Cocaine was used freely, and there was but little pain or hæmorrhage. Subsequent treatment was by dilation with nasal bougies, which the patient himself passed. The removal of the growth was satisfactory in every way, as it gave relief from what had been a serious discomfort, besides putting an end to a number of unpleasant symptoms, both general and local.

## CHAPTER XVI.

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### EPISTAXIS.

DEFINITION.—*Bleeding from the nose or sinuses connected with it.*

Owing to the exposed position of the nose, and its richness in blood vessels, due in part to its possession of erectile tissue, the organ is liable to severe hæmorrhages. These may be either traumatic or idiopathic.

Among the commonest traumatic causes are blows, falls, fractures, entrance of foreign bodies, violent blowing, catheterizing the Eustachian tube, and other surgical operations. Spontaneous or idiopathic hæmorrhage is more rare, but may be met with in both sexes at the age of puberty. It may also occur from engorgement and hyperæmia during whooping cough, from diseases of the heart, lungs, and liver, in acute affections, such as scarlatina, measles, typhoid fever or diphtheria, and in recurrent fever. In some of these cases, the primary cause is increased arterial tension, resulting in the rupture of small and badly-supported blood vessels. Habitual hæmorrhage is also met with, without disease of the mucous membrane, in unhealthy conditions of the blood, such as

hæmophilia, anæmia, chlorosis, pregnancy, leucœmia, and, according to some authorities, in scurvy, but that at least appears doubtful. There may also be nasal hæmorrhage in cases of general plethora in children or adults. Small varicose vessels, angiomas or erosions of the septum, naso-pharyngeal polypi, malignant tumours, and ulcers may also be causes. Vicarious epistaxis occurs at times, and may take the place of habitual discharges from the anus or uterus. Free hæmorrhage occasionally takes place under the mucous membrane, where the blood collects and forms hæmatomata, or blood tumours.

The *Symptoms*, apart from the flow of blood, are chiefly those of cephalic congestion, such as giddiness, throbbing, noises in the head and sleeplessness. The actual bleeding may be in a stream, or drop by drop from one or both nostrils. When it comes from the posterior part the blood flows through the nasal fossæ into the pharynx, and is swallowed. The quantity lost may vary from a few drops to several quarts. After these severe attacks patients remain pale and anæmic, and if often subjected to them may gradually succumb.

*Diagnosis.*—The first point is to establish the origin of the hæmorrhage, which may come from the lungs, stomach, or pharynx. Sometimes the bleeding point can be seen. The absence of vomiting will preclude hæmatemesis, and the history of the case, together with physical examination, will eliminate diseases of the lungs and heart. Hæmorrhage from

the pharynx may be recognised on inspection. If the hæmorrhage ceases on compressing the nostrils it is a sign that it comes from the anterior third of the nasal fossæ.

*Treatment.*—Some hæmorrhages must be looked on as emunctory, and therefore beneficial, and are best left untreated. This is more especially the case in plethora, hæmorrhoids, heart disease, and vicarious hæmorrhages. In the majority of cases the bleeding stops of itself, or may be aided by a few simple manœuvres, such as placing the patient in the erect position, cold affusions, holding up the arm corresponding to the bleeding nostril, sniffing up cold water, or the use of very hot ( $120^{\circ}$  to  $124^{\circ}$  F.) water, the insufflation of alum, tannin or matico leaf, and injections or sprays of tannic acid (gr.  $\times$  to  $\bar{3}j$ , or perchloride of iron (m  $\times$  to  $\bar{3}j$ ).

Sometimes, however, these methods are of no avail, and recourse must then be had to plugging. This should first be done anteriorly, and subsequently, if necessary, posteriorly. Anterior plugging may be effected by passing a piece of wadding about the length of the finger and half an inch thick into the nose, by means of GOTTSTEIN'S screw, or simply with a probe. Or, instead of wadding, folds of lint may be used, either dry or steeped in perchloride of iron. The lint is packed in until the nose is filled with a sort of graduated compress. Should this not prove sufficient, the posterior nares must next be plugged. This may be done by means of a BELLOCQ'S sound, if

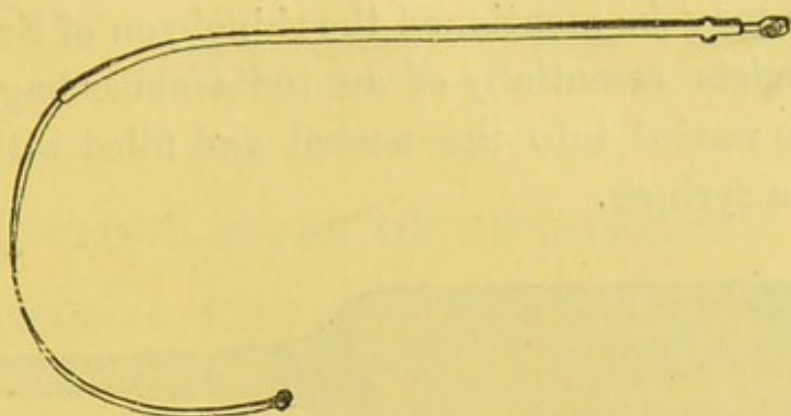


Fig. XXXVII.—BELLOCQ'S SOUND.

at hand, but if not an ordinary gum elastic catheter will do very well. A stout silk ligature should be passed through the catheter, and the instrument thus threaded pushed through the nostrils into the pharynx, where the thread can be seized with forceps and drawn out through the mouth. To the end of the thread a piece of dry wadding, about the size of a walnut should be tied some six inches from the end. By drawing back the catheter, the plug, with the aid of the forefinger, may be drawn into the naso-pharynx, and from there into the nasal fossæ. The short thread in the pharynx serves to draw the plug out. Plugging is not free from accidents, and should therefore be undertaken only when absolutely necessary; nor should powerful styptics, such as perchloride of iron be used, mechanical pressure being chiefly what is required. The plug should not be left in longer than from forty-eight to seventy hours, and must be withdrawn with gentleness, so as not to disturb the clot. Numerous instruments have been invented to facilitate plugging, among

which may be mentioned the rhinobyon of ST. ANGE. It consists essentially of an indiarubber bag, which can be passed into the nostril and filled with water from a syringe.

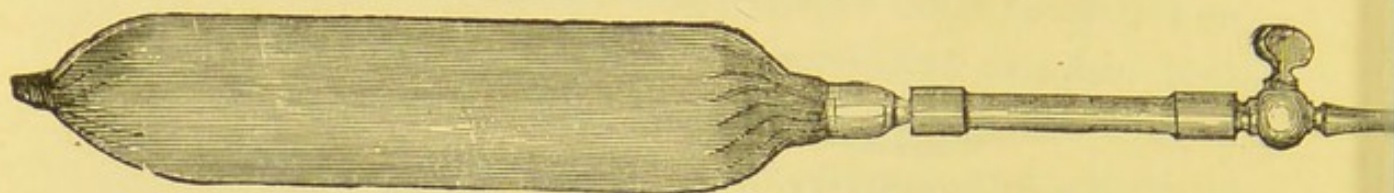


Fig. XXXVIII.—ST. ANGE'S RHINOBYON.

Constitutional treatment will often improve the condition of the blood and lessen the predisposition to hæmorrhage. For this purpose remedies such as iron, quinine, syrup of the hypophosphites, change of air, and generally whatever will improve health and vitality may be prescribed. The best internal styptics are ergot, which may be administered by the mouth (half a drachm of the tincture every three hours), or injected internally as ergotin (ten min. of a solution of one in five every four hours), iron, sulphuric acid, laudanum, acetate of lead and gallic acid. Plethoric persons may, with advantage, undergo a course of Karlsbad, Kissengen, Hamburg or Marienbad waters, or should take regularly some purgative mineral water or mild saline aperient. In desperate cases, where there is danger of fatal syncope, transfusion should be resorted to.

## CHAPTER XVII.

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### DISTURBANCES OF SENSIBILITY.

Disturbances of the nervous sensibility of the nose may be due either to interference with the fifth pair of nerves, or with the olfactory nerve. In the former case there would be loss of feeling; in the latter, loss or perversion of the sense of smell.

Functional disturbance of the fifth nerve is very rare, but when it occurs it gives rise to *anæsthesia of the mucous membrane*. The most pungent odours are not perceived, nor do they give rise to sneezing.

*Treatment*, should the disease depend on some central cause, is generally unsatisfactory; but mild electric currents are occasionally beneficial.

**HYPERÆSTHESIA** is more common, and shows itself by reflex actions, such as severe sneezing and itching. These may be induced by any slight irritant applied to the mucous membrane of the nose, eye, or more distant organs, such as the rectum. Nasal itchiness caused by the presence of tapeworm or ascarides has long been recognised. This condition often depends on an unhealthy state of the mucous membrane. *Treatment* should be directed to the removal of any cause of irritation, central or local, improvement of the condition of the mucous membrane, and, if necessary, removal of a portion of it by the galvanic cautery. For sneezing, **MACKENZIE** suggests large

doses of bromide of potassium with insufflations of morphia. In my own practice, I have frequently had satisfactory results from the use of iron and arsenic internally, with galvanism and inhalations of eucalyptus locally. Sprays of a four per cent. solution of cocaine are also useful.

ANOSMIA, or loss of smell, may be complete or only partial; in one nostril or in both; and congenital or acquired. A variety of causes may produce either total or partial anosmia, such as absence of the olfactory bulbs, injuries from blows, or compression or concussion of the brain, cerebral tumours, and insufficient nutrition of the mucous membrane, or excessive dryness of the same from paralysis of the fifth nerve. Paralysis of the seventh may also affect smell by paralyzing the dilator and contractor muscles of the nose and the orbicularis of the eye. Any cause which prevents odours entering the olfactory portion of the nose will also have the same effect, *e.g.*, polypoid tumours, hypertrophy of the mucous membrane, perforation of the septum, or presence of foreign bodies. To these may be added dryness of the Schneiderian membrane, careless or excessive use of the nasal douche, inhalation of excessively strong vapours, snuff-taking in excess, over stimulation of the olfactory nerves, and some authors add absence of pigment.

The *Prognosis* is not very favourable unless the cause, such as polypi, foreign bodies, or unhealthy mucous membrane can be removed. The *Treatment*

which I have found of most service has been mild currents of electricity and stimulating inhalations. In functional anosmia ALTHAUS shows that such an excessively strong electric current is necessary that the treatment is practically worse than the disease. The same authority also recommends insufflation of a powder composed of  $\frac{1}{24}$  of a grain of strychnia to two drachms of starch twice a day, increasing the strychnia if necessary to  $\frac{1}{12}$  of a grain, or subcutaneous injections of strychnine. Painting the mucous membrane with strychnia, grs. v. dissolved in olive oil ʒj may be tried (SCHECH).

HYPEROSMIA, or exaggeration of the sense of smell, is a pathological symptom sufficiently common in hysterical and anæmic persons, and still more frequently in pregnant women.

PAROSMIA, or perverted smell, is not uncommon, especially among epileptics. In these it frequently precedes the attack. It is met with in the insane, and in such patients has been shown in some cases to depend on actual lesions of the olfactory centres. It may also be induced by most of those causes which induce anosmia. The *Prognosis* of parosmia is favourable if associated with hysteria or pregnancy, or if dependent on material alterations of the mucous membrane. *Treatment* should be directed to remove any known exciting causes. Induced electric currents, insufflation of nitrate of silver, and suitable treatment of any neuropathic conditions will generally ensure some measure of success.

## CHAPTER XVIII.

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### NASAL NEUROSES.

DEFINITION.—*A series of general symptoms differing one from another ; but depending on some affection of the nasal cavities or mucous membrane.*

To VOLTILINI, of Breslau, belongs the credit of first showing the inter-dependence of certain dyspnœic symptoms and polypus of the nose. Subsequently a large number of other general symptoms have been traced to some abnormal condition of the nasal fossæ, or their lining membrane. Thus it has come to be recognised that affections of the nose, though apparently slight in themselves, may exercise an important influence on the general health. Certain diatheses, such as the gouty and rheumatic, appear more liable to these attacks. Besides polypi, such conditions as hypertrophied mucous membrane, foreign bodies, and chronic catarrh may induce attacks of asthma, neuralgia, cough, migraine, hay fever, brow-ague, and certain vasomotor phenomena, such as temporary redness of the cheeks and nose, giddiness, rhinorrhœa, and even epilepsy. Doctor JOHN MACKENZIE considers that the posterior portion of the middle and inferior turbinated bodies, with

the corresponding part of the septum, are the seat of these disturbances; whereas HACK considers they can only take place after the anterior part of the lower turbinated body has become turgid (MACKENZIE).

The duration and frequency of neurosal attacks are very variable. Sometimes patients may remain free for months; but, on the other hand, the attacks may recur frequently, and continue intermittently till removed by suitable treatment. As a rule, the prognosis is favourable. The *Treatment* will consist in removal by operation or medical treatment of the exciting cause. Cocaine in powder or solution, mild electric currents, inhalations, sprays, with internally, quinine, iron, arsenic, or bromide of potassium have in my own practice proved at times very beneficial.

## CHAPTER XIX.

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### DISEASES OF THE NASO-PHARYNX.

#### NASO-PHARYNGEAL CATARRH.

DEFINITION.—*An acute or chronic inflammation of the mucous membrane covering the posterior nostrils and upper wall of the pharynx.*

In this affection the acute form soon passes off and is comparatively unimportant. The chronic form is, on the contrary, very frequently met with, and its pathological importance is considerable. The affection is especially common in the United States of America, where it is known as “post-nasal catarrh.”

*Etiology.*—The causes which produce it may be either predisposing or direct. Among the first may be mentioned a strumous diathesis among children; gout and alcoholism in adults; the exanthemata, such as measles or scarlatina; and lastly, climatic influences. To a cold and humid climate its presence in England is chiefly due. In the United States, however, it is met with over vast extents of arid and parched territories, and may in that case be ascribed, at least in some degree, to the irritating effects of dust and heat. Sometimes it is attributable to the extension

of chronic inflammation from the buccal or nasal mucous membrane, as in chronic simple catarrh or atrophic catarrh. Tobacco smoking may also be a factor in its causation, more especially cigarette smoking, when the smoke is exhaled through the nostrils.

*Symptoms.*—The earliest symptom to appear is a disagreeable sensation at the posterior nostrils, limited to a spot which the patient cannot very precisely indicate, but which he places somewhere behind the soft palate. There is a sense of dryness present, combined with an unpleasant tickling and a feeling as though mucus were passing from the posterior nostrils into the throat. The accumulation of secretion in the pharynx provokes a constant desire to clear the back of the throat. This in slight cases may be accomplished, but becomes difficult in severe ones, and compels the patient to make violent “hawking” efforts, disagreeable alike to himself and others. The mucus is often tenacious, and the efforts to get rid of it may cause nausea and vomiting, especially in the morning on rising. In children the secretion may be more liquid, or even mucopurulent. It drops down from the pharynx into the œsophagus, and is not expectorated. If the naso-pharyngeal symptoms are severe they may be associated with slight hæmorrhage, and also with headache and pain in the back of the neck and upper part of the throat. The voice also becomes changed, being less resonant and distinct, and more nasal. Throat deafness, associated with

“buzzing” and “singing” noises in the head, due to obstruction of the Eustachian tubes, is frequently present. On looking into the naso-pharynx, moist yellow masses of mucus may be seen attached firmly to its posterior wall and sides. Examination with the rhinoscopic mirror will show that these masses extend as high as the basilar arch, and that the orifices of the tubes and fossæ of ROSENMÜLLER are filled with mucus or purulent secretion. Sometimes the mucus membrane is smooth and uniform as if varnished. If the surface of the pharynx be cleansed and then examined, the mucous membrane is seen to be red and congested, and to bleed on slight provocation.

In some cases the secretion may be abundant, and even purulent, and yet neither anterior or posterior rhinoscopy will reveal any changes. The lesions may then, perhaps, exist on the mucous membrane of the sphenoidal sinus.

The *diagnosis* may readily be established by rhinoscopic and digital examination. It is always of importance to discover the cause of the affection, and to recollect that syphilis may induce very analogous symptoms, both in its secondary and tertiary stages.

The *treatment* should be both constitutional and local. Diatheses, such as the scrofulous or gouty, must be treated on general principles. Tobacco smoking, and more especially cigarette smoking, should be given up. In cases of marked debility and deficiency of vital power, ferruginous tonics and

quinine, or arsenic, or syrup of the hyperphosphites are likely to be beneficial. BEVERLEY ROBINSON recommends cubebs, sulphur and ammoniacum. The former may be administered in tincture, with equal parts of tincture of orange (MACKENZIE), while sulphur may be conveniently prescribed under the form of Harrogate waters. The local treatment is equally important. The first indication is to remove the inspissated mucus and to cleanse the pharynx thoroughly by sprays and syringing, both anteriorly and posteriorly. A good lotion for this purpose is DOBELL's, composed of borax (3j), glycerine of carbolic acid (3j), soda bicarb. (5j), aquæ (oss.) It may be necessary in order to thoroughly cleanse the mucous membrane to use wadding or a brush passed behind the soft palate. Retro-nasal gargles—that is passing the fluid from the throat through the nasal fossæ—will be found useful. After the parts have been thoroughly cleansed I generally use powdered borax for insufflation, but persulphate of iron (one part to three of starch) and eucalyptus (one of the gum to two of starch) are also recommended by MACKENZIE. The diet should be light and unirritating, and alcoholic drinks should be entirely abstained from. Occasionally change of air, especially to the seaside, is beneficial. The subjects of post-nasal catarrh when travelling, or otherwise much exposed to dust or irritating vapours, should wear either respirators or some form of nasal plug.

## CHAPTER XX.

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### ADENOID VEGETATIONS.

DEFINITION.—*Glandular vegetations growing from the vault and sides of the naso-pharynx.*

*Etiology.*—The general causes which tend to produce adenoid vegetation are a lymphatic or scrofulous diathesis; cold and damp climates, acute exanthemata, and whooping cough, and probably heredity. The growths are often found associated with cleft palate. They are not uncommon in children, but rare in adult life, and scarcely ever found in old age.

*Symptoms.*—In very young children one of the first symptoms to attract attention is a difficulty of breathing, together with loud snoring during sleep. In older children this symptom becomes more marked. It is often associated with a change in the voice, which becomes “dead” and “toneless,” and a greater or less degree of deafness is also generally present. This latter symptom does not always attract sufficient attention, and may vary from slight to almost complete deafness, and be associated with tinnitus, perforation and otorrhœa. The difficulty of

breathing through the nose obliges the patient to keep the mouth constantly open. And this, combined with the deafness, gives the child a characteristically stupid appearance. Nor does the evil end here. The absence of nasal respiration induces anæmia, and more or less arrests development in the thorax, which remains flat and contracted. Taste and smell are also reduced. A difficulty is always experienced in pronouncing certain consonants correctly, *e.g.*, B is substituted for P, and D for T, and DH for FH. In adult life this may be the only symptom which remains, the others having disappeared with the physiological enlargement of the naso-pharynx correlative with puberty. Increased discharge of mucus is always present in the case of children, and may be associated with reflex cough, painful sneezing, and slight hæmorrhage due to efforts to clear the throat. The blood mingling with the sputum gives it a brownish tint. Most of the above symptoms are aggravated in cold, damp weather. Objective examination with the rhinoscope, which, however, is not always possible in children, will show a number of pale or bright red growths hanging sometimes like stalactites from the roof of the pharynx, but sometimes more resembling flat granulations. The soft palate may have a *convex* appearance, owing to its being projected forwards by the growths behind it. The growths may vary in size from that of a pea to that of a hazel nut. They may completely block the orifice of the Eustachian

tube, or may be grouped round it. They occur in order of frequency : (1) in the upper wall of the pharynx, (2) in the basilar arch, (3) in the fossæ of ROSENMÜLLER. They are seldom found in the septum. If they cannot for any reason be detected with the rhinoscope, their presence may always be established by the finger passed up behind the soft palate. According to MEYER, they convey the sensation of touching "a bunch of earth worms."

*Prognosis.*—Adenoid growths do not increase indefinitely, and in many cases undergo spontaneous atrophy. In severe cases they may cause permanent deafness. All other symptoms generally disappear on their removal. Once removed, they exhibit no tendency to recur.

The *Diagnosis*, as a rule, offers no difficulty, for if the growths cannot be seen with the rhinoscope, they can generally be felt with the finger. SEMON was, I believe, the first to recommend a plan which I have practised for several years—viz., to inject a small quantity of water up one nostril. If it does not flow out through the other freely, but comes instead through the mouth, it is certain that there is some obstruction in the naso-pharynx. Adenoid growths must be distinguished from naso-pharyngeal catarrh, with which, however, they may co-exist; from polypi, which are extremely rare before the age of sixteen, and from retro-pharyngeal abscess, by the presence in this latter of more acute pain, with difficulty of swallowing, and tenderness on pressure.

*Treatment.*—Like many other manifestations of the lymphatic temperament, adenoid vegetations have a tendency to disappear of themselves. If, therefore, small and not very troublesome, treatment may be limited to general therapeutics, such as carefully regulated diet, cod liver oil, iodide of potassium, iron, arsenic and quinine, sea bathing and change of air. As a rule, however, these remedies will not suffice, and the growths must either be removed or destroyed. This may be effected sometimes by caustics, such as nitrate of silver or chromic acid, introduced through the anterior nares on a probe by means of ZAUFAL'S speculum, or behind the soft palate with a holder bent at the proper nasal angle.

If the galvanic cautery be at hand it may be used by means of points or plates introduced post-nasally. The more usual method, however, of removal is by simply scraping the growths off either side with the finger nail, or with a scraper attached to the finger (Fig. XXXIX., DALBY'S cutting nail); or by means of



Fig. XXXIX.—DALBY'S CUTTING NAIL.

the cutting forceps of LOWENBERG. This latter is probably, on the whole, the safest and most convenient. MACKENZIE'S sliding forceps, also SCHECH'S,

VOLKMAN'S sharp spoon, or curette, and MEYER'S ring knife, or simply polypi forceps bent at the proper angle, are all serviceable (Fig. XXX.). Wire snares have also been successfully used by ZAUFAL, and DELSTANCHE. As far as possible, and when practicable, all these instruments should be guided with the aid of the frontal mirror. In children an anæsthetic is generally required. The re-action following the operation may be considerable and the hæmorrhage smart, but not dangerous, nor are styptic applications necessary or advisable. The after treatment consists of the use of ordinary antiseptic lotions. Respiration through the nose must be established as soon as possible. It is important, therefore, to make patients keep the mouth shut. During sleep this can be effectively managed by means of a band passing under the chin and tied over the head.

## CHAPTER XXI.

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### NASO-PHARYNGEAL POLYPI.

**DEFINITION.**—*Fibrous tumours springing from the nasal fossæ, or naso-pharynx, and sending prolongations into neighbouring cavities.*

**Etiology.**—Sex and age have an important influence on the growth of these neoplasms. They are almost, if not absolutely unknown in women, or beyond the age of thirty. They are met with chiefly in growing lads, between the ages of fifteen and twenty-five, and are fortunately excessively rare.

**Symptoms.**—The earliest symptom is a sensation of fulness in the nose, with perhaps slight bleeding, and more or less interference with respiration. The constitutional symptoms are a dull headache, localized in one spot, and marked drowsiness, with an overpowering desire for sleep. Later on there is a mucous discharge, an alteration in the voice, deafness with partial or complete loss of smell, and difficulty of swallowing. At this period the tumour may be felt in the pharynx, or seen with the rhinoscope. The third and last stage is that of deformity, which is pathognomic of this terrible malady. As the neoplasm grows, it may, like a wedge, open up the bones of the

face and base of the skull, the eye may be projected outwards, the palatine arch depressed into the mouth, the soft palate thrown forward, the temporal and zygomatic fossæ filled, and the whole countenance assume the hideous deformity known as "frog face" (Fig. XXIX.). The cranial cavities may gradually be invaded, and the brain itself compressed or forced out in the form of a hernia. There may be profuse hæmorrhages endangering the life of the patient. When death occurs it arises from exhaustion, or from compression of the brain.

*Pathology.*—The point of implantation of these tumours is still uncertain, but they probably spring from the periosteum of the basilar arch, or pterygoid process. The growths are attached to the mucous membrane by a broad base, are solitary, with rough uneven surfaces, and may attain eventually a considerable size. They appear as large fleshy masses, sending prolongations in various directions. In structure, the microscope shows them to be essentially fibromas. They are composed of yellow inelastic tissue which grates under the knife. They may pass through phases of retrograde evolution undergoing fatty or cystic degeneration, and even in rare cases disappearing spontaneously, but they never, like malignant growths, ulcerate.

*Diagnosis.*—In the earliest stages the diagnosis will lie between a malignant growth or a post-pharyngeal abscess. This latter may be recognised by fluctuation, pain on pressure, and general con-

stitutional disturbance. The former by the rapidity of growth, the implication of neighbouring glands, and by its tendency to ulcerate. The fact that the tumour is vascular, single, more or less voluminous, and attached by a broad base, will distinguish it from mucous polypus. The diagnosis once made, it will be advisable to discover as far as possible by digital or other examination, the size, attachment and offshoots, if any, of the tumour. The ophthalmoscope may here give valuable information.

*Treatment.*—The treatment is by operation, and several methods have from time to time been suggested and practised. Of these the chief are the so-called *simple methods*, viz., *exciccation*, *cauterization*, *compression*, and *excision* and the *composite method*. This latter consists in not attacking the tumour till it has been exposed by a preliminary operation, the object of which is to gain access to the naso-pharynx. These operations may be classed as *palatine*, *nasal*, and *facial*. The palatine method (NELATON) is by simple incision of the soft palate or division of the palatine arch. The nasal method (DUPUYTREN) consists in slitting the nose in a vertical line and separating the alæ; or, as in ROUGE's operation, by detaching the nose from the face and throwing it upwards, thereby opening very thoroughly the nasal fossæ. The facial method consists in resection of the superior maxilla. This is a bold and decisive operation, and well suited for the removal and radical cure of the largest growths. It may, however, result in great

deformity, which, however, can be more or less rectified later on by special appliances.

The detailed description of the above operations belongs to the domain of general surgery. They are among some of the most formidable procedures known in surgery, and necessarily not seldom prove fatal. In the treatment of naso-pharyngeal fibrous polypi, it is therefore of great importance that the neoplasms should be recognised early, and an attempt made to remove them while still small by the wire snare or galvanic cautery. Occasionally true malignant growths are found in the naso-pharynx. In such cases all treatment is necessarily of little avail.

