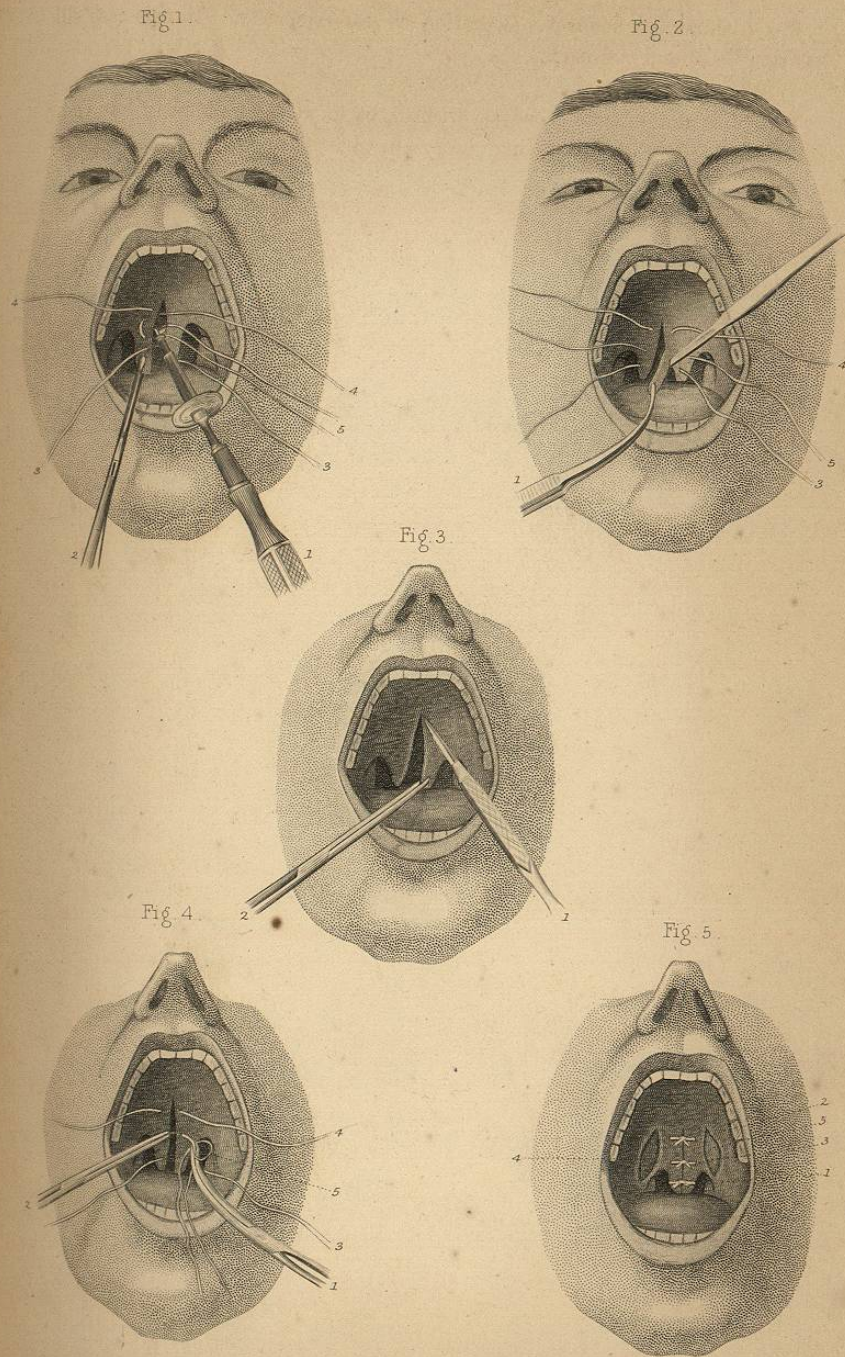


Fig. 5 shows Dieffenbach's operation of staphyloplasty. In this case silk has been used and ties made.

With the understanding now secured of the mouth, the pharynx, and their diseases and deformities, we may carry our observations from above forward through the nose.

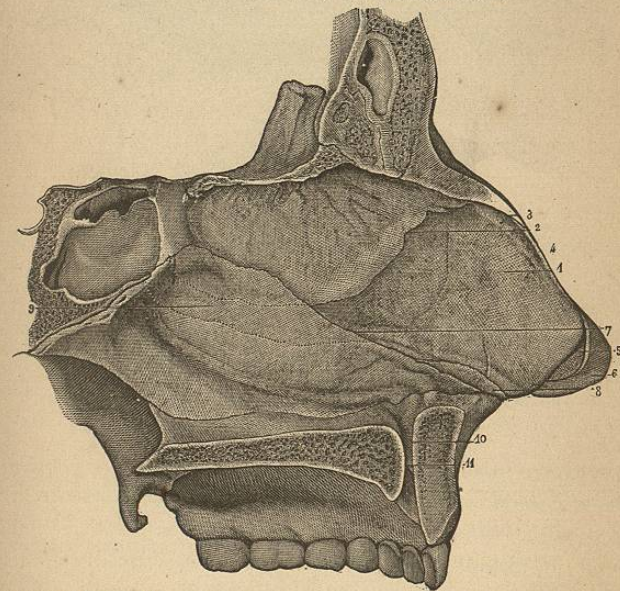


CHAPTER XLII.

THE NOSE AND ITS DISEASES.

Anatomy of Internal Nose.—The nose is a symmetrical organ, occupying the exact centre of the facial region. Looked at from below it is seen to be divided into two cavities, or canals, by means of a vertical septum. These canals are called nostrils, or nares (naris, singular); they constitute the nasal fossæ.

FIG. 417.—VIEW OF NASAL SEPTUM.

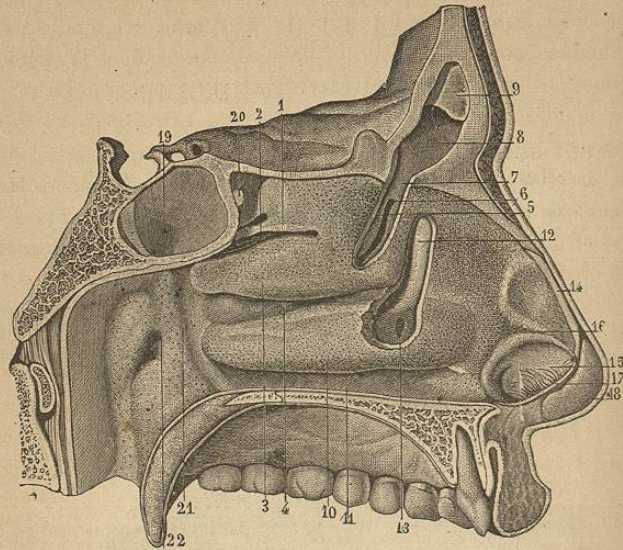


1, cartilage of the partition; 2, its junction with the nasal plate of the ethmoid bone; 3, its junction with the nasal bones; 4, margin of continuation with the upper lateral cartilage; 5, fibrous membrane connecting the cartilage of the partition with the lower cartilage; 6, inner portion of the left lower lateral cartilage; 7, anterior border of the vomer; 8, an accessory cartilage; 9, prolongation of the cartilage of the partition in a groove between the vomer and nasal plate of the ethmoid bone; 10, naso-palatine canal of the right side opening into the anterior palatine foramen; 11, palatine process, osseous floor of nose.

By the nasal fossæ is meant the whole inside of the nose. By a nasal fossa is understood either lateral cavity; the one being separated from the other by means of a division composed of bone and cartilage, known as the septum narium. Fig. 417, representing a vertical section of the nose, the septum being left in position and relation, affords accurate understanding of this anatomy.

The vault of the nose is supported, posteriorly, by the vomer and by the nasal plate of the ethmoid; anteriorly, by a cartilage. The vomer is a single

FIG. 418.—INSIDE OF NOSE (after Leidy).



OUTER WALL OF THE LEFT NASAL CAVITY.—1, superior turbinate process; 2, superior meatus; 3, inferior turbinate process; 4, middle meatus; 5, portion of the turbinate process of the ethmoid bone removed to show the orifice of communication (6) with the anterior ethmoidal sinuses; 7, communication with the frontal sinus; 8, left frontal sinus; 9, part of the unsymmetrical partition which separates the frontal sinuses; 10, turbinate bone; 11, inferior meatus; 12, lachrymo-nasal duct exposed by removing a portion of the bones; 13, its termination; 14, edge of the upper lateral cartilage; 15, outer part of the left nostril; 17, cut edge of the partition; 18, inner portion of the left lower lateral cartilage; 19, sphenoidal sinus; 20, its orifice; 21, pharynx; 22, orifice of the Eustachian tube.*

bone, ploughshare in shape. Above, it articulates with the rostrum of the os sphenoidum; below, with the crest formed by the conjunction of the palate processes of the maxillæ. The nasal plate of the ethmoid is simply a prolongation of the vertical lamina of that bone; it constitutes one-third of the partition. Posteriorly it articulates with the sphenoidal crest, inferiorly with the vomer, superiorly with the nasal process of the frontal bone. The cartilage constitutes the anterior portion of the division; its connection above is with two lateral cartilages, associated with the free edges of the nasal bones and nasal processes of the superior maxillæ, posteriorly with the vomer and ethmoidal nasal plate, and inferiorly with the vomer. (See cut.)

The inside anatomy of the nose, nasal cavity, or fossa, is to be thoroughly appreciated through a study of Fig. 418. Also is it to be suggested that, with aid of a pencil and this diagram, a student may draw figures of nasal

* The student will do well here to turn back to the special descriptions found on pages 39 to 42, inclusive of both.

polypi in position and relation, thus affording to himself thorough comprehension of a most important subject. (See also Fig. 427.)

The communication of a nasal fossa is with six cavities; above, with the frontal sinus, the relation being by means of the ethmoidal cells; behind, with the sphenoidal sinus; laterally, with the antrum of Highmore and the posterior ethmoidal sinus. The first of these communications is related with the middle meatus; the second and fourth with the superior meatus; the third with the middle meatus. Communication also exists between the nose and orbital cavity through nasal duct.

Each nasal fossa is of like form and characteristics. The irregularities seen upon the outer wall are resultant of the turbinated scrolls. These represent the meatuses, of which there are three,—superior, middle, and inferior. The common covering is mucous membrane.*

Each fossa is physiologically divisible into a superior and an inferior canal; an upper, which relates with the olfactory region (olfactory channel); a lower, which pertains to respiration (respiratory channel, Schneiderian region). The septum, described by Meyer as the agger nasi, is simply a duplication, or fold, of mucous membrane prolonged anteriorly upon the middle turbinated bone. Division of the common naris is made by action of the compressor naris muscle.

The functions of the nose divide it into four different aspects (Watson): 1, a sense organ; 2, a respiratory apparatus; 3, as a part of the face and of the mechanism of expression; 4, as part of the vocal mechanism.

Surgically studied, regard is to be paid—1, to the cavities and irregularities arising out of the presence of the scrolls; 2, the regularity or irregularity of the septum; 3, the peculiar thickness and softness of the mucous membrane lining the olfactory channel when compared with that found in the Schneiderian region; 4, association with the sinuses and orbit.

Diseases of the Nose.—Diseases of the internal nose named in the order of their frequency are:

1. Simple Nasal Catarrh.
2. Hemorrhage.
3. Ulcers.
4. Polypi.
5. Strumous Abscess.
6. Conditions associated with Ozæna.
7. Neoplasms.

1. SIMPLE NASAL CATARRH.—Simple nasal catarrh is the so-called "cold in the head;" the meaning of it lies in vascular perversion congesting the mucous membrane of the nose, particularly that portion associated with the

* Asymmetry of the nares relates with deflection in the septum, or is a natural inequality. Congenital interference in respiration has not by any means its constant cause in deviation of the partition.

olfactory channel. Fulness felt in the front and base of the forehead region finds explanation in the continuation of this membrane which lines the frontal and ethmoidal sinuses. Treatment lies in applications directed to the production of resolution. Such applications consist in hot foot-baths, and in the inducing of free catharsis, diaphoresis, or diuresis. A large dose of sulphate of magnesia dissolved in a goblet of water is an admirable remedy; to be taken at bedtime. A means in the second direction is found in tablespoonful doses of spirits of Mindererus repeated each fifteen minutes until free sweating is induced. Spirits of nitric ether is a reliable medicine in the third direction; the dose is a teaspoonful repeated each two hours.

A combination freely used by the author, being prescribed, indeed, in nearly all cases which he is called to treat, is as follows:

R.—Liquoris potassii citratis, ℥iij;
Spiritis ætheris nitrosi, ℥ss;
Antimonii et potassii tartratis,
Morphiæ acetatis, āā gr. j. M.

Dose from a dessertspoonful to a tablespoonful repeated each two, three, or four hours according to urgency.

An admirable plan to pursue with a view of breaking up a cold in the head consists in prescribing from twenty to forty grains of bromide of potassium in conjunction with five drops of tincture of veratrum viride; the two to be combined in a wineglass of water. To be repeated, if found necessary, after four or five hours.

2. HEMORRHAGE.—Nasal hemorrhage is direct or indirect; the first referring to a lesion of the fossa, the second being related with the sinuses of the dura mater, and with constitutional conditions. A division made by Watson* is: 1st, the traumatic, or lesional; 2d, the plethoric, or active; and, 3d, the adynamic, or passive.

Lesional epistaxis arises out of erosions and external injuries; the first may have the expression of a polypus, of an ulcer or, viewing it as a traumatic, may result from accidental injury to the part. The second is commonly associated with fracture of some portion of the osseous parietes of the part, compound in character, the opening being internal.

Plethoric, or active, epistaxis, is the hemorrhage so commonly met with in growing children of robust constitution; the expression is that of relief to vessels over-full. In the apoplectic it means rupture of a vein associating the brain sinuses with the nose; it is to be looked on here as a safety-valve, and, unless excessive, no attempt should be made to control it.

Passive epistaxis occurs in the depressed and ill-conditioned, it is not usually preceded by precursory molimen. The condition of defibrinization as existing in the typhoid condition is a common antecedent. Scurvy and purpura, as

* Diseases of the Nose.

noted by Watson, are other associations. The blood coming from this kind of hemorrhage is dark, serous, and lacks in coagulable quality.

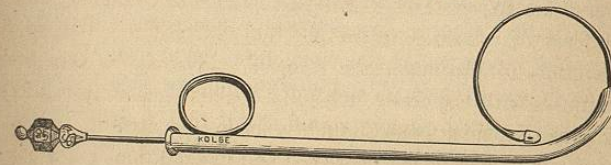
Traumatic nasal hemorrhage is commonly left to take care of itself. When excessive, the bleeding point or space is to be looked for, and if discovered, direct pressure is to be applied by means of a ball of lint-cloth which has been saturated with alum-water, or preferably, with phénol sodique. The search implies anterior rhinoscopy, which see.

Where the immediate seat of flow in traumatic epistaxis is not to be discovered the treatment is to be upon general principles. Holding the hands high above the head, after the manner of Negrier, while the bleeding nostril is compressed, will oftentimes control it. Ice-cold water drawn into the nares is a favorite means. Upright position. Hot foot-baths. Ice to nape of neck. Strong solutions of lead, or of phénol sodique, snuffed up the canal. Ice applied upon the external face of nose. Hot or ice bags to the spine (Chapman) with a view to stimulating the sympathetic ganglia. Tannic acid thrust into the nostril.

Ordinary means failing the practitioner is driven to operative measures; these imply the employment either of a Cooper Rose gum-tube, or Belloc's canula. The former instrument has never been used by the writer, but strikes him most favorably; a description of it by Watson is as follows: It consists of a gum-elastic tube about five inches long, with lateral perforations near the end, and covered with thin caoutchouc membrane in the form of a spirally-twisted bag for the last three or four inches of its length. The cavity of the bag can be injected with air or water from the gum-elastic tube, the end of which has fitted to it a piece of india-rubber tube for the purpose of connecting it with a syringe. This instrument is used by folding smoothly the membranous bag over the contained tube, and, after oiling, passing it along the floor of the naris until the pharynx is reached. The bag is now to be inflated, its inflation, before and behind, serving to close completely both apertures.

Belloc's canula, exhibited in the cut, is a means familiar to practitioners at large. To use this instrument the curled spring is withdrawn, and the

FIG. 419.—BELLOC'S CANULA. (See for application Fig. 436.)



instrument, being warmed and oiled, is passed along the floor of the nose until seen in the pharynx. A succeeding step forces the spring forward, which, as is recognized, must throw it into the mouth. The eye is now double threaded, the terminal end being retained without the mouth, the initial portion being

carried through the nostril by retraction of the spring and withdrawal of the canula. To the mouth end of the string there is now attached a plug sufficient in size to occlude fully the posterior naris. This plug is now drawn into place, being directed by a finger of the surgeon; its impaction against the outlet of the opening being secured by a second plug forced into the anterior naris and held in place by tying about it the double strand of which the common string is composed. This manipulation controls hemorrhage by clotting the blood in the canal. Removal of the plugs is to be effected with great care. For convenience in removing the posterior plug it is common to tie about it at time of introduction a second ligature which remains in the mouth, being fixed to the initial end related with the anterior plug, during time of treatment.

The use of the tampon, as here described, is attended with danger, both as to delay in its employment and results arising out of its use. The first refers to a procrastination in plugging, which has allowed the patient to become exsanguined beyond the ability of the system to recover. The second relates with irritative fever and to pyæmic conditions begotten of the confined and decomposing blood in the naris. This last involves lack of judgment, or otherwise carelessness on the part of the surgeon. In placing the anterior plug the knot retaining it is to be of a character easily untied. On the second day this plug is to be carefully lifted and the cavity syringed with permanganate of potash, or preferably, phénol sodique; disinfection attained the plug is put back in place, to remain until the following day, when it most likely can be dispensed with. The immediately succeeding day permits, most commonly, of the removal of the posterior plug. The withdrawal of the string through the clot is always a matter of concern as regard is had to the possibility of re-exciting the bleeding. Both as pertains to secondary hemorrhage and disinfection the writer has learned to rest strongly on the phénol sodique.

Nasal hemorrhage of active or plethoric character requires, in instances, a very immediate attention to constitutional conditions. Over-fulness of the stomach, and costiveness, are common associations. Nasal hemorrhage immediately after a hearty meal is apt to find quick cure in the production of free emesis. Costiveness is wisely treated by the administration of purgatives. Bleeding from the arm is a means of cure sometimes found a necessity in the hemorrhage of plethora. An important matter in the after-treatment relates with diet. Rare meats and much stimulating food are to be avoided.

Nasal hemorrhage of passive signification implies lack of resistive force on the part of the containing vessels, not excess in the propulsive power of the heart. A case of this kind shows a lymphatic temperament, atheromatous vessels, otherwise debility from disease or improper living. A case some years back under the observation of the author, the patient being a young man, had its origin fairly in excess of candy eating; it seemed as though a finger might be punched into the tissues at any point. Persons ill fed, syphilitic, or scrofulous are subjects of passive hemorrhage. Out of thirty

cases of diphtheria in an epidemic at the Stafford Infirmary (Watson) twelve were lost from passive hemorrhage.

Epistaxis of vicarious meaning is not to be meddled with without appreciation of exciting conditions. Common relations are with piles and with the menstrual period in women. The writer has had under his professional care for over ten years a lady who, whenever she misses the regular monthly menstruation, bleeds from either the lungs or the nose.

Epistaxis associated with the hemorrhagic diathesis finds its best treatment in the occasional use of quinine, iron, strychnia, and hydrochloric acid. The condition is commonly that of super-alkalinity of the blood combined with vaso-motor debility.

3. ULCERS.—Ulcers of the nose are of traumatic, scrofulous, syphilitic, or cancerous origin.

A traumatic ulcer implies injury done to the part by some accidental source of offence. A not infrequent cause of such condition, as met with in early childhood, has its existence in foreign bodies that have been thrust into the nostril. In congenital breaks of the hard palate ulcers of the Schneiderian nasal region are not uncommon, portions of articles taken as food lodging and proving sources of irritation. The escape of cotton plugs which have been inserted into the anterior nares is to be credited for much offence in the direction. Adenoid vegetation is another cause; the location of this ulcer is toward and in the naso-pharyngeal region; posterior rhinoscopy discovers it.

Treatment of ulcers of local signification arises out of the indications of each particular case; cure is commonly found in removing a source of offence. In the adenoid vegetations a nasal curette, dull or sharp, may be used. A plan of treatment more commonly preferred consists in locating the lesion and making daily applications to it of a powder composed of equal parts of iodoform and subnitrate of bismuth. Injections of zinc sulphate and chloral hydrate in the proportion of grains two of each to ounces one and a half of water are never out of place in nasal ulcerations.

Scrofulous ulcers are most frequently met with in yellow persons; diagnosis lies in collateral associations. It is perhaps never the case that a scrofulous ulcer of the nose is disassociated with an easily distinguishable dyscrasia. As a rule phthisis pulmonalis is found to exist. Scrofulous, tuberculous, or lymphatic ulcers, as sores of this class are indifferently to be termed, seldom, if ever, extend their ravages beyond the submucous tissue. A common location is the septum. A good local application in treatment of them is found in the formula last given. Another is tinctura calendulæ. Still another, particularly useful if odor be present, is phénol sodique much diluted. Where marked indolency exists the compound tincture of capsicum used in the proportion of five drops to a tablespoonful of water answers an admirable purpose. As constitutional medicaments unskimmed milk, cod-liver oil, and iodine in limited quantity are to be used. No better course of treat-

ment is to be prescribed for a person afflicted with, or tending toward, tubercle than the following: A sheet bath, prepared with Turk-island salt, immediately on rising in the morning; the act to be accomplished within a minute. Succeeding this is to be a self-rubbing of the skin until the surface is aglow. After this a goblet of milk containing a raw egg together with a tablespoonful of alcohol. This to be followed by a walk; breakfast finishing the performance. In the case of a patient weakened from disease the milk and egg are to be taken fifteen minutes before getting out of bed; bath and rubbing are to be given by a nurse; the tablespoonful of alcohol concludes the breakfast; exercise may be passive.

Strumous rhinorrhœa and ulceration as a disease of childhood is found in connection with hereditary taint, and in a dyscrasia related, as in the previous recital, with disease of the lymphatic system. The ulcers are of the pasty variety, the discharge commonly somewhat offensive. Obstruction of the nostrils exists in a swelling of the mucous lining and in the formation of yellowish scabs. Attention is to be directed in connection with strumous ulceration of the nose to a congestive infiltration of the membrane covering the inferior turbinated bone, which oftentimes results in a pouch-like projection of that tissue from the nostril, which, while it obstructs respiration, so simulates polypus in appearance as not infrequently to beget mistakes in diagnosis.

Treatment of scrofulous ulcers in children differs nothing from that just suggested. Importance is attributed by some to frequent removal of the scab, this being recommended to be done twice a day. To accomplish such removal glycerine and water in equal proportions combined with carbolic acid, one part of the last to sixty or eighty of the first, is highly commended by Watson: application is made with a camel-hair brush. A means used by the writer is cod-liver oil; this softens the scab nicely. Still another admirable local application is found in benzoated zinc ointment, to which have been added small quantities of iodoform; two grains of the latter to one drachm of the former. Where a general passive congestion of the parts exists the injection of zinc and chloral, noticed a few paragraphs back, will be found of great service.

Syphilitic ulcers are, in like manner with the scrofulous, recognizable by associations. A syphilitic ulcer is a dangerous sore; once started its ravage might not be stayed until mucous membrane, cartilages, and bone-structure are involved in a common destruction. The start-point of this ulcer, excepting when of primary signification, is commonly, if not exclusively, in the form of a gumma. The symptom first noticed is interference with free nasal respiration; a later sign is a thin muco-purulent discharge of offensive character; still later, greenish slimy clots are formed and thrown off. Ulcers associated with the tertiary form are most formidable.

Correct treatment is founded on general principles: the disease is syphilis, syphilis requires to be prescribed for; the local expression is a rhinorrhœa,

or coryza, associated with ulceration, local expressions demand exhaustive attention.

The offensive, and indeed poisonous, nature of the discharge relating with syphilitic coryza renders cleanliness a matter of special consideration. Nostrils so diseased are to be washed, disinfectants being used, several times daily. This is accomplished by a douche bath prepared by adding to the zinc-chloral water a required quantity of phénol sodique or Watson's chlorine-water; this last much diluted.

Application to ulcers is to be direct. To discover the seat of such ulcers anterior rhinoscopy is employed (which see).

Syphilitic ulcers of the nose are treated the same as those found in the mouth or pharynx (which see).

Neuro-paralytic Ulcers.—Ulcers of this class are to be looked for in conditions of paresis of the fifth nerve. Treatment is in stimulation.

Scorbutic Ulcers.—These are undoubtedly to be met with situated within and about the nostrils. Diagnosis and treatment refer to the general condition.

Glanders.—This is an ulcer of contagion. The period of incubation is commonly twenty-four hours. The primary nasal expression is a discharge of thick yellowish fluid streaked here and there with blood. The disease is almost necessarily fatal. (See works on Practice of Medicine.)

Cancerous ulcers of the nose are of fatal signification. They are recognizable in the giant granulations studding the surface. No cure is known. Treatment considers free excision of the part involved.

Nasal ulcers associated with the ordinary exanthems of childhood find proper treatment in that which considers the disease at large. The same is to be remarked of diphtheritic ulcers. Local treatment of the first class consists alone in the employment of simple soothing unguents or fluids. Ulcers of the last kind require that the exudate forming over them be both dissolved and disinfected. Watson's chlorine-water will be found invaluable.

4. POLYPI.—Polypus is the fourth most common disease of the internal nose. All polypi are to be looked on with concern as reference is had to the neoplastic meanings. Two general forms are met with: the gelatinoid and fibrous.

A gelatinoid polypus resembles closely, in color and general appearance, a common oyster; it is moist, translucent, occasionally jelly-like, infrequently fairly solid. Shape varies to a degree that places it out of the way of comparison, although, as a rule, the growth is pedunculated. "Pyriform" is the expression of form commonly used by writers.

The origin of this growth is almost invariably from the middle turbinated bone, while yet it is quite well known that it may spring from any part of the cavity, the nasal septum not excepted. Origin is single or multiple, one or several occupying a naris. Gelatinoid polypus, looked on as a mucous tumor, is to be esteemed as an hypertrophy of that structure, otherwise as a