

During the day this may not be very distressing, but at night the mouth and throat get extremely dry and the sleep is disturbed. The voice becomes nasal in quality and in advanced cases, when the Eustachian tubes are obstructed, there may be deafness. It should ever be borne in mind by the practitioner that a very large proportion of all cases of deafness originate in chronic naso-pharyngeal catarrh. The general symptoms in these cases, particularly in children, are of the greatest importance, and have been considered more fully under chronic pharyngeal catarrh and mouth-breathing. Suffice it here to say that there is produced in children a characteristic facies, associated often with mental dulness and changes in the form of the thorax.

Atrophic rhinitis, which is also known under the names *coryza fetida* and *ozæna*, may be a sequence of the hypertrophic form. *Ozæna* is only a symptom, and is met with in many ulcerative conditions of the nostrils, particularly as a result of syphilis, foreign bodies, caries and necrosis of the bones, and glanders. Fortunately, the atrophic form by no means necessarily follows the hypertrophic stage. The cases are much more frequent in women than in men, and usually occur early in life. The mucous membrane is thin and covered with grayish crusts which, when removed, show a slightly excoriated surface, but true ulcers are rarely seen. The erectile tissue is completely atrophied by a process of slow connective-tissue growth, or, as J. N. Mackenzie calls it, a cirrhosis. The mucous membrane of the pharynx is usually dry and glazed.

The symptoms are most distinctive, owing to the horrible odor which comes from the nose, and of which, fortunately, the patient is himself unconscious, because the sense of smell is lost. The secretion, which is puriform, dries and forms large crusts, which are dislodged by picking or which gradually fall off. The cause of the offensive odor has been much discussed—whether it is due to a special organism or to specially favorable conditions for the growth and development of the germs of putrefaction. Probably the latter view is correct.

The *treatment* of hypertrophic rhinitis consists in the thorough cleansing of the nasal passages, the removal of the pharyngeal growths, and the reduction of the hypertrophied nasal mucosa. Operative procedures are necessary in a majority of the cases, and the practitioner should early call to his assistance the specialist. It is sad to think of the misery which has been entailed upon thousands of people owing to neglect of naso-pharyngeal catarrh by parents and physicians.

The treatment of atrophic rhinitis comes more properly under the special monographs.

III. AUTUMNAL CATARRH (*Hay Fever*).

An affection of the upper air-passages, often associated with asthmatic attacks, due to the action of certain stimuli upon a hypersensitive mucous membrane.

This affection was first described in 1819 by Bostock, who called it *catarrhus æstivus*. Morrill Wyman, of Cambridge, Mass., wrote a monograph on the subject, and described two forms, the "June cold," or "rose cold," which comes on in the spring, and the autumnal form which, in this country, does not develop until August and September, and never persists after a severe frost. Blakley studied its connection with the pollen of various grasses and flowers. The late George M. Beard made many careful observations on the disease. Until recently this form of catarrh was believed to result exclusively from the action of certain irritants on the mucous membrane of the nose, particularly the pollen of plants, which, as the experiments of Blakley showed, play an important rôle in the disease. Other emanations also may induce an attack, as in the case of the late Austin Flint, who was liable to coryza, or even asthma, if he slept on a certain sort of feather pillow. This, however, is only one factor in the disease. A second, most important one, was discovered in the condition of the nasal mucous membrane in these cases. Voltolini, of Breslau, in 1871, observed the cure of a case of asthma by the removal of a nasal polypus. Since that date the observations of Hack, in Germany, and particularly of Daly, of Pittsburg; Roe, of Rochester; John N. Mackenzie, of Baltimore; and Harrison Allen, of Philadelphia, have demonstrated the association of asthmatic attacks with nasal disease. Daly discovered that in a large proportion of the cases of hay asthma there was local disease of the mucous membrane of the nose, the cure of which rendered the patient insusceptible to conditions previously exciting the attacks. This has been abundantly confirmed. Still identical lesions exist in many people who never suffer with the disease, so that there must be a third factor, a neurotic constitution. In the etiology of hay fever, then, these three elements prevail—a nervous constitution, an irritable nasal mucosa, and the stimulus.

The disease affects certain families, particularly, it is said, those with a neurotic taint. The peculiarity may occur through several generations. It is certainly more common in the United States than in Europe, and much more common in the United States than in Canada. The United States Hay Fever Association now numbers thousands of members.

Dwellers in cities are more subject than residents in the country. The structural peculiarities of the nasal mucous membrane are those of hypertrophic rhinitis. Harrison Allen states that the inferior turbinated bones lie well above the floor of the nostrils, which renders the mucous membrane more liable to irritation from inhaled substances. Deflection of the septum, hypertrophy of the soft parts, and excessive hyperæsthesia, so that

the mere touch with a probe may be sufficient to induce an attack, are common conditions.

Symptoms.—These are, in a majority of the cases, very like those of ordinary coryza. There may, however, be much more headache and distress, and some patients become very low-spirited. Cough is a common symptom and may be very distressing. Paroxysms of asthma may develop, so like as to be indistinguishable from the ordinary bronchial form. The two conditions may indeed alternate, the patient having at one time an attack of common hay fever and at another, under similar circumstances, an attack of bronchial asthma. Of the immediate exciting causes of the attack, unquestionably in a majority of the cases coming on in the autumn there is an association with the presence of pollen in the atmosphere, but this is only one of a host of exciting causes. In certain persons the paroxysms may develop at any season from sudden changes in the temperature. An attack may even come on through association of ideas. The well-known experiment of J. N. Mackenzie, of inducing an attack in a susceptible person by offering her an artificial rose to smell, strikingly illustrates the neurotic element in the disease.

Treatment.—This may be comprised under three heads: First, since the disease appears in many instances to be a form of chronic neurosis, remedies which improve the stability of the nervous system may be employed—such as arsenic, phosphorus, and strychnia. Second, climatic. Dwellers in the cities of the Atlantic sea-board and of the Central States enjoy complete immunity in the Adirondacks and White Mountains. As a rule the disease is aggravated by residence in agricultural districts. The dry mountain air is unquestionably the best; there are cases, however, which do well at the seaside. Third, the thorough local treatment of the nose, particularly the destruction of the vessels and sinuses over the sensitive areas.

IV. EPISTAXIS.

Etiology.—Bleeding from the nose may result from local or constitutional conditions. Among local causes may be mentioned traumatism, picking or scratching the nose, new growths, and the presence of foreign bodies. In chronic nasal catarrh bleeding is not infrequent. The blood may come from one or both nostrils. The flow may be profuse after an injury, but is soon checked and is very rarely fatal. Occasionally profuse and fatal hæmorrhage occurs as a result of injury to the skull. In a remarkable case of this kind, coming on some weeks after the receipt of the injury, I found that there had been a fracture across the sphenoid bone and an erosion had taken place into the carotid artery, just where it runs closest to the sphenoidal sinuses. The young man had completely recovered from the effects of the injury, and the fatal hæmorrhage took place as he was stooping over to wash his face.

Among general conditions with which nose-bleeding is associated, the following are the most important: It occurs with great frequency in growing children, particularly about the age of puberty; more frequently in the delicate than in the strong and vigorous.

Epistaxis is a very common event in persons of so-called plethoric habits. It is stated sometimes to precede, or to indicate a liability to, apoplexy, but this is very doubtful.

In venous engorgement, due to heart or pulmonary disease, epistaxis is not common and there may be a most extreme grade of cyanosis without its occurrence. In balloon and mountain ascensions, in the very rarefied atmosphere, hæmorrhage from the nose is a common event. In hæmophilia the nose ranks first of the mucous membranes from which bleeding arises. It occurs in all forms of chronic anæmias. It precedes the onset of certain fevers, more particularly typhoid, with which it seems associated in a special manner. Vicarious epistaxis has been described in cases of suppression of the menses. Lastly, it is said to be brought on by certain psychical impressions, but the observations on this point are not trustworthy. The blood in epistaxis results from capillary oozing or diapedesis. The mucous membrane is deeply congested and there may be small ecchymoses. The bleeding area is usually in the respiratory portion of one nostril and upon the cartilaginous septum.

Symptoms.—Slight hæmorrhage is not associated with any special features. When the bleeding is protracted the patients have the more serious manifestations of loss of blood. In the slow dripping which takes place in some instances of hæmophilia, there may be formed a remarkable blood tumor projecting from one nostril and extending even below the mouth.

Death from ordinary epistaxis is very rare. The more blood is lost, the greater is the tendency to clotting with spontaneous cessation of the bleeding.

The *diagnosis* is usually easy. One point only need be mentioned; namely, that bleeding from the posterior nares occasionally occurs during sleep and the blood trickles into the pharynx and may be swallowed. If vomited, it may be confounded with hæmatemesis; or, if coughed up, with hæmoptysis.

Treatment.—In a majority of the cases the bleeding ceases of itself. Various simple measures may be employed, such as holding the arms above the head, the application of ice to the nose, or the injection of cold or hot water into the nostrils. Astringents, such as zinc, alum, or tannin, may be used; and the old-fashioned and sometimes successful remedy, a cobweb, may be introduced into the nostrils. If the bleeding comes from an ulcerated surface, an attempt should be made to apply chromic acid or to cauterize. If the bleeding is at all severe and obstinate, the posterior nares should be plugged. Ergot may be given internally or hypodermically.