

which control this exosmosis, resulting in a complete relaxation of the large veins which compose the turbinated bodies. These veins being dilated admit of a free transudation of serum, the veins remaining in this condition as long as the pollen remains present, regaining their normal condition on the withdrawal of the exciting cause, the pollen affecting principally the venous sinuses of the turbinated bones involved in the respiratory process, the exacerbation being due to peripheral causes. Some writers believe that the peripheral effects are produced by a hyperæmic or anæmic condition of the nerve centres; this may be more than mere speculation or theory.

Symptoms. The symptoms are so well known that a mere mention of the most important may be all that is necessary. The attack is marked by a sense of irritation in the upper part of the nasal cavities; a sense of fullness over the bridge of the nose, with more or less violent sneezing; a burning or itching sensation in the roof of the mouth, referable to the upper surface of the soft palate. As the disease progresses the nasal membrane becomes swollen, and the passages more or less occluded, with a profuse watery exudation from the nostrils. The mucous membranes of the eyes, mouth, and ears sometimes participate in the congestion. This condition is produced about the fourth day; the symptoms abate somewhat at night, and are renewed in the morning. Asthmatic symptoms set in about the third week, with bronchial irritation.

Course and duration. In the majority of cases the attack begins about the latter part of August (autumnal variety); at this season of the year the pollen from the ragweed is more abundant. The next in frequency is that which occurs in June, known as rose-cold. The autumnal variety is almost exclusively American. Rose-cold is most prevalent in England, France, Germany, and other European countries.

Diagnosis. Its sudden onset and sudden disappearance will distinguish it from an attack of acute rhinitis, coupled with the violent and profuse watery discharge. In acute rhinitis the mucous membrane is red, highly congested, and pours out a less profuse mucus or muco-pus discharge, which is seen coating its surface in yellow flakes or masses. In hay fever the mucous

membrane, although swollen, never presents the bright red of inflammatory action, but has a bluish-gray tinge.

Treatment may be considered under three heads: (1) General, for the neurotic habit. (2) Local, or relief of diseases of mucous membrane. (3) Treatment of the exacerbations.

(1) For the neurotic condition, those remedies which our experience in other neurotic diseases lead us to use, *i.e.*, belladonna, zinc salts, strychnia, arsenic, quinine, phosphorus, bromides, iodide, and cocaine, given a few weeks before the attack, and continued through it, the cold spinal douche or ice-bag, to allay irritability and sleeplessness, and hypodermic injections of morphia.

(2) Diseased conditions of upper air passages. The treatment of the special affections which act as predisposing causes, such as naso-pharyngeal catarrh, deflections of the septum, polypi, hypertrophic rhinitis, or any obstructive diseases which tend to produce dilatation of the turbinated sinuses. Cauterization subdues turgescence and reduces hypertrophy. The galvano-cautery has been used with apparent success.

(3) Treatment of the exacerbations. Many local remedies have been tried, as douches for the nasal cavities containing quinine, salicylic acid, boracic and carbolic acid, and bichloride of mercury, the success of which has been almost equal to the benefits derived from the very much advertised and historical St. Jacob's oil and Hölman's liver pads, that when the mind had time to escape from the novelty of the new remedy the conditions presented themselves in about the same vigor as before their trial. Cocaine seems to be the only drug yet used that has given any definite and satisfactory results in the form of a local application for the relief of the exacerbations, by contracting the venous sinuses and relieving turgescence.

And, in conclusion, I hope I will be forgiven when I offer a suggestion as to the treatment of the exacerbations, a powder used as a snuff, and consisting of:

R—Menthol - - - grs. iij.
Morphiæ s., - - - grs. ½.
Cocaine - - - grs. i.
Bismuth carb., - grs. viij.

Ft. pulv.

This I have used for two or more years for