PREVENTION OF HAY FEVER.

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It is interesting to note the immense progress medical science has made in the investigation concerning the etiology, pathology and therapy of that obscure disease called hay fever. A survey of the results achieved in the last few years, in connection with a brief historic review, is highly interesting and instructive.

Presumably the term "hay fever" originated in the early belief that the emanations of the new-mown hay are the cause of the disease. Hay fever is an ancient disease. The first case was reported by Battalus as early as 1565, although the early writers did not recognize it as a distinct ailment, until Dr. Bostock of London published a series of essays on the subject from 1828 to 1835, in which he describes it as a distinct, periodic, autumnal disease, which, according to his claim, is caused by the united efforts of *moist heat, sunshine, dust and fatigue*. Dr. Elliston of London opposed this theory and asserted that the affliction is caused by the pollen of some flowering plants. Dr. Phoebus of Germany considered ozone as the causative principle, while Dr. Pirrie advanced the theory of nervous origin, claiming that the ailment arises from the action of light and heat upon the central nervous, the cerebrospinal and sympathetic systems. The savant, Helmholtz of Germany, a hay fever sufferer himself, found some vibrios, certain micro-organisms, in his nasal discharges, which he claims to be the active cause of the disease. Dr. Blackly made extensive experiments with the pollen of flowering plants, and thus furnished conclusive evidence that the action of the pollen of certain plants upon the mucous membrane of the nasal cavity, are the exciting causes of hay fever, and that none of the other agents, such as heat, light, dust, ozone, or odors would of themselves cause the affliction. Others, again, believe that the inhaled pollen of the ragweed generates a certain toxin, which develops in the alkaline secretion of the nose, by a fermentative process, and thus forms the active principle and cause of the disease. Dr. Arnold maintains that it is not the healthy pollen which produces the disease, but some fungoid growth, which floats with the pollen.

Dr. Strangeway, in his highly interesting researches, furnished us with the points regarding the amount of pollen in the air. He considers the amount entirely too small to be able to cause an injurious, mechanic, medicinal or poisonous influence. He found but one ragweed to every square foot of surface. The elevation to which pollen floats is about 1000 feet, at which elevation, however, it will be found only in the proportion of one pollen to fifteen or twenty billion parts of air. Furthermore, he found but one grain of pollen for every thirty respirations. He concludes, therefore, that this small amount of pollen can not act as a direct irritant to the mucous membranes, and that a protoplasmic substance found in the pollen acts as a ferment, thus causing the formation of a toxin, which is the actual exciting cause of the disease.

The ingenious researches of Dr. Blackly gave the impulse to my experiments, principally, with the pollen of the much and justly blamed ragweed, hogweed, Roman wormwood (*Ambrosia artemisiifolia*). I found that by inhaling them through the nostrils, they will produce the symptoms of genuine hay fever.

However, not satisfied with this solitary proof, I requested the support of some of my friends, and they cheerfully submitted. To my satisfaction, I found that in every instance I was able to produce the aggravating symptoms of hay fever in a measure proportionate to the quantity of the inhaled pollen, as well as to the susceptibility of the individual thus subjected to this test. As a matter of fact, after this gratifying result, there was no doubt in my mind that the pollen of the ragweed is the principal cause of hay fever. However, its mode of action, or the changes it undergoes on the mucous membrane of the nasal cavity, notwithstanding my searching macroscopic and microscopic explorations and examinations, thus far, I have not been able to ascertain. Dr. Shoeney, a very efficient microscopist, is kindly giving me his assistance in this gigantic venture, and we flatter ourselves with the hope that in some future day our labors will be rewarded and crowned with success. However, as it is conceded nowadays that a certain morbid condition must be in pre-existence where the germs may find a prepared soil for their damaging action, this artificial hay fever was of but short duration, notwithstanding that in my own case I used no remedy to mitigate or abate the irritation. Considering, therefore, that every individual is exposed to the inhalation of this pollen, there can be no doubt that a morbid condition must be present where the seed finds a prepared soil for its development or generation.

My first essays on this subject were published in *The Therapeutic Gazette*, May, 1890, January, 1891, and December, 1892, and in *The Medical Summary* of Philadelphia, December, 1894. Therein I enunciated my theory and method of treatment. From the time I found the pollen to be the exciting cause of the disease, I concluded in a logical way upon the proper treatment. I conceived the idea of rendering the receptacle aseptic by preparing the soil for the reception of the pollen. Naturally, they will find no proper soil for a possible generation, propagation or development, destroying their existence in embryo, so to speak, and with it the real cause of hay fever. For this purpose I decided on the following treatment:

About two weeks before the onset of the disease I commence to irrigate or sterilize the nasal cavity and the post-nasal spaces with a harmless antiseptic solution, using the douche and atomizer. After giving a great number of antiseptics a fair trial, I decided on hydrozone, as the most innocuous and most powerful germicide. Hydrozone is a 30-volume aqueous solution of peroxid of hydrogen. At the beginning I use irrigation in the proportion of one ounce of hydrozone to 12 ounces of sterilized water. Nearing the period of the expected onset of the disease, I increase the dose to 2 or 3 ounces of hydrozone to 12 ounces of the sterilized water, according to the severity of the disease, using the douche, either tepid or cold, four times a day—morning, noon, evenings, and at bedtime—while during the intervals I use the atomizer, with a solution of hydrozone and pure glycerin, or sterilized water, 1 to 3, thus keeping the nares perfectly aseptic, during the entire period, and preventing the outbreak of the disease in consequence thereof.

In most obstinate cases, when there is still some irritation in the nasal cavity, I give the following prescription:

R Acid boracic	gr. xx	130
Menthol	gr. iv	26
Glyco-Thymoline	3ii	780
Sol. Eucaïn B. 4 per cent. q. s. ad . . .	3ii	6220
S.—Use in atomizer.		

As a rule this treatment was sufficient to avert the disease and keep the patient in perfect comfort.

With reference to hay asthma, my experience has not been so satisfactory. Statistically, I found 18 to 20 per cent. among my patients suffering from so-called reflex or hay asthma. Regarding the theory of the disease, I regret to say that the reflex theory does not agree with my experience in practice. The sensitive area, which is given as the cause of this reflex asthma, is situated, according to Dr. Sajous, "at the posterior end of the inferior turbinated bones and the corresponding portion of the septum," or according to Dr. John Mackenzie, "at the anterior extremity of the inferior turbinated bone." However, the closest rhinoscopic exploration would reveal no pathologic change in the parts aforesaid, and even the electric test would not bring about a reflex attack of asthma. Notwithstanding the missing of this "sensitive area," the reflex or hay asthma appeared on certain cloudy or muggy days, and the patient suffered just as severely as in previous days when hay fever could not be prevented, and displayed its full virulence. However, in the last few years I succeeded, in the milder forms, in averting the paroxysmal attacks, while in the severe cases, I found some remedies to mitigate and shorten the duration of the attack. In my observations of former years I found the duration of hay fever, as a rule, to be six weeks, of which there were two weeks of hay fever proper, two weeks of asthma, and two weeks of bronchitis. I found in this observation that the asthma is caused by an occlusion by a viscid mass of mucus, of one of the bronchial branches, right at the bifurcation. Sometimes I succeeded in dislodging this wedge with a large dose of Javanese ipecacuanha, and the asthma disappeared as if by magic. At other times, no amount of expectorants would effect a removal of this plug. Being aware of this fact, I reasoned that some remedy which would constantly keep the bronchial mucous discharges in a liquefied condition might prevent the occlusion of this bronchus; consequently I tried a number of drugs, until I found the terpin hydrate in large doses acting charmingly for this purpose. I administered it in tablets in 10-grain doses, every three to four hours, two weeks before the asthma period, and later, every two hours. However, if, in spite of this preventive treatment, a paroxysmal attack occurred in cloudy weather, I prescribed large doses of iodid of potash with some expectorant syrups and fl. ext. of quebracho, or grindelia robusta, with lobelia and belladonna, which usually sufficed.

In some rare, obstinate cases, I derived gratifying results from the application of Dr. Chapman's ice-bag to the spinal vertebra, from the cervical down to the lumbar region, leaving the bag *in situ* for an hour or longer, if required. Hot drinks with whisky or brandy have a beneficial stimulating effect at this period, and also the old-time remedy of placing both hands in hot water gives prompt relief. In the bronchial stage, a similar treatment to that used in the idiopathic form of bronchial catarrh is indicated.

In closing this paper, I wish to establish herewith my priority to the claim of having been the first to advocate irrigation and sterilization, in order to prevent hay fever, by rendering the parts aseptic. My

first article on this subject, under the heading "How to Prevent Hay Fever," was published in *The Therapeutic Gazette*, January, 1891.

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DENTAL SEPTICEMIA OF THE ANTRUM.

TWO CASES WITH OBSCURE SYMPTOMS.

Presented to the Section on Stomatology, at the Forty-ninth Annual Meeting of the American Medical Association, held at Denver, Colo., June 7-10, 1898.

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In presenting these brief notes on such a common subject, I ask the consideration of the Section because it seemed as though the period of life at which the disease occurred, as well as the obscurity of the cases for lack of the usual symptoms, would be of interest.

The cases would hardly come under the term "empyema," unless we accept that definition to be a chronic suppuration, as is usually described in the text-books. C. Heath, in his article on "Diseases of the Antrum," in the "Dictionary of Surgery," speaks of suppuration or empyema of the antrum as being "a form of chronic abscess, but with the peculiarity that the pus is seldom completely shut in, so as to produce distension." This statement may be questioned by some when we remember the bulging cheek, even with a copious nasal discharge.

Case 1.—The patient, aged 8 years, was first seen and treated for what appeared to be the usual spring discomfort—general malaise with slight symptoms of la grippe. The mother complained that the child was wakeful and would stay up all night, wandering into the bath room, which was the warmest room in the house, at the early morning hours, and play over the radiator instead of going to bed. On questioning why she would sit up, she said she could not sleep. After some days the mother became anxious and called a physician.

The main symptoms were fever, which varied in degree, more at night, ranging from 99 to 101; a muddy complexion; constipation; gastro intestinal irritation; headache, a trifle off and on; a reddening of the skin over the malar bone; extreme fetor of the breath; heavily coated tongue; no appetite nor thirst, and some nausea; the teeth and mouth showed neglect and were in a bad condition.

The left eye showed catarrhal signs, the conjunctiva being injected and watery. Beyond these symptoms nothing else could be obtained, and the child persisted in saying her teeth were not poor and she had no pain, which statements her family agreed with. The usual treatment by free elimination, mouth-washes and tonics was given and some benefit obtained. A few days later the cervical glands showed signs of swelling slightly on the left side, but were preceded by the submaxillary, and I was asked to see the case. The history as given above was repeated, with the addition that to me the cheek seemed swollen a trifle—the mother thought it natural. After repeated questioning I learned that "This is just the same kind of trouble she had last spring and also the year before, but the face swelled a little the first time, but the Doctor said it was only cold and the grippe and would go away in a day or so, which it did." The child staying awake seemed the dangerous symptom to the parents. The mouth seemed fairly clean. The gland was somewhat swollen and the cervical chain also. The teeth were carious, especially the temporary teeth—the upper on the left side. There was no soreness; never any toothache nor abscesses. On palpation, the cheek showed a slight difference in feeling and sensibility over the malar bone, compared to the right side. The temporary first molar was decayed badly but not at all loose. The gum around was reddened some and, judging the condition was septic, the temperature now rising 1 to 3 degrees, the erysipelatous coloring of the cheek, the general condition and lymphatic enlargement, I opened the temporary molar, found a little thick pus in the pulp chamber and advised extraction, which was done, when more pus came down. The alveolus was cleansed, syringed and probed for evidences of necrosis, but none found. Antiseptic washes were ordered and general remedies. After three days the patient showed more swelling of the cheek, the eye being half closed. The bulging was pronounced, and a globular swelling