

The Pollination of Grasses and Trees in the Auckland Province and the Occurrence of Seasonal Hay-fever.

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HAY FEVER—VASOMOTOR RHINITIS.

In a recent work, *Diseases of the Nose and Throat*, Dr. Cornelius G. Coakley, of Columbia University, states that the complaint commonly called hay-fever has in recent years been the subject of widespread investigation both as to its etiology and treatment. "While our knowledge of the subject has been vastly increased, there still remains much work to be done before we can explain all the various manifestations of this condition. We now know that the term 'hay-fever' is a misnomer, as neither hay nor fever are conspicuous factors in the disease." An individual may become sensitised to a given proteid, such as that of the pollen of certain groups of plants, mainly grasses and trees. He further points out that certain individuals, especially those of nervous temperament, become sensitised to pollen proteins or to a proteid substance ingested in certain foods. These persons, on being subjected to test, give a characteristic reaction. An abrasion or scratch is made on the skin, usually on the anterior surface of the forearm, and a solution of the suspected proteid is put on the scratch. If the person is not sensitised to the proteid used in the test no reaction takes place. If, however, he is sensitised, then a positive reaction does take place within a period of from five to fifteen minutes.

In taking a critical view of the available evidence relating to seasonal hay fever some differences of opinion exist on what appears to me to be a matter of fundamental importance. I have never carried out any experiments such as the skin test on the arm referred to above, hence I must quote opinions based on the experimental evidence of medical men.

TWO SCHOOLS OF OPINION. — There are two schools of opinion. In the one we find adherents of what is known as "group reaction." They hold

that the pollen of any species of a group, say the graminaceæ or compositæ, will produce a positive reaction if the person tested is sensitive to any one species of the group. This presumes that the pollen of closely-allied families of plants has in common a characteristic structural arrangement of the protein molecule. If a person is sensitive to Timothy grass pollen, for example, he will generally react to the pollen of any true grass.

The opposing school holds that these views are unscientific and unsound. From conclusions drawn from tests made they contend that differential results are obtained from the various species of the plant groups; yet the general experience is that group reactions hold in most cases. The ordinary pollacine put on the market contains the protein of Timothy grass.

It appears to me from an examination of the evidence available that an individual may be sensitised by the pollen of several members of a group, and the sensitisation depends on the presence of the pollen of the offending plants. The degree of sensitisation to any one species or number of species is probably dependent on the prevalence of one or several of the species causing trouble. Timothy, in the Eastern and Southern United States of America, is very widely distributed, and hence Timothy pollen is the common cause of early hay-fever. A less common species would not cause as much trouble.

To medical men the point at issue is of paramount importance, as attacks of seasonal hay-fever may be warded off by pre seasonal treatment, which consists of a series of subcutaneous injections with solutions of protein prepared from the offending pollen. Some weeks before the expected attack these are administered at regular intervals with gradually increasing concentrations. With grasses, any one pollen extract should cover all cases, if the views of the group-reaction school are correct. A pollen extract of a grass growing in Mexico, for instance, but not in New Zealand, would do quite well for a New Zealand patient. If,

on the other hand, the specific pollen proteid of one species or a group of several, though a limited number of species, is necessary for successful pre-seasonal treatment, then the case is different. For example, the pollen extract of Timothy grass, which is extensively used in America as a sort of blanket prescription for summer hay-fever, may

not be effective in New Zealand, where a patient was more exposed to the pollen of, say, ryegrass, cocksfoot, and crested dogstail, and others of our common species of grasses. I am powerless to supplement the views given. The matter, from the medical point of view, must be settled satisfactorily to make progress possible.