

pose to it, nor does it in turn produce any of the other respiratory affections. Bosworth says, in 1889, that it is a generally accepted view that previous catarrhal affections powerfully predispose to the development of hay fever. A local morbid condition of the mucous membrane is probably present in all true cases of hay fever as a predisposing cause, and is, no doubt, brought about by an obstruction in the anterior part of the nasal cavity, giving rise to a diminution of air pressure immediately behind the obstruction in every act of inspiration. This process continuing for a length of time will necessarily result in a permanent dilatation of the blood vessels of the soft, spongy tissue covering the lower and middle turbinated bones, thus rendering the local conditions much more favorable to the production of the peculiar train of hay fever symptoms when the pollen is implanted thereon.

A psychical influence is believed by many to be a predisposing cause, and this is not the only disease that there are very good reasons for believing that the influence of the mind has a most powerful effect in precipitating. When we consider how variable the flowering time of certain plants is, owing to the great variations of the climate at the same time of year in different seasons, and yet, notwithstanding the peculiar regularity of the attacks in hay-fever subjects, there seems to be a considerable discrepancy between cause and effect. Nevertheless it may be in the main true that at that season when the atmosphere is most heavily laden with pollen, hay-fever patients may be more generally attacked, according to the experiments of Blackley; but when we know that in the case of John McKenzie (who was himself a sufferer), which was reported in the *American Journal of Medical Science*, 1886, where an attack of rose-cold was brought on by smelling an artificial rose, and also of an attack precipitated in a patient of his by looking at a picture representing a field of hay, there must be more truth than fiction in the influence of the mind doing its work as faithfully as pollen. When we consider the physiological or pathological condition of the nerve centres produced by this mental influence, we may be endeavoring to explore that "Darkest Africa" of our minds where eccentricity ceases and monomania begins

(2) *Exciting causes.* Hay fever affords a most striking proof of the fact that where so large a number of different remedies are suggested, there is more truth yet to be found out before a specific can be sought for, or named; and where so many exciting causes can be given as in this disease, there yet remains great uncertainty as to the true causative agent. Moist air, heat, sunshine, and dust are in themselves probably not true causes, but render the conditions more favorable for their development. The flowers of grasses, more particularly those of the anthrox-anthum, odoratum, geraniums, roses, heliotropes, and other sweet-smelling flowers, ragweed and ambrosia-artemisifolia, are probably among the chief causative agents. From the experiments of Blackley, of Manchester, there can be but little room to doubt that the true cause of the attack is to be found in the deposition of pollen of flowering plants upon the mucous membrane of the upper air passages. Blackley's experiments seem to confirm to a very great extent the theory of Bostock, that in dry, hot weather there is more pollen diffused in the air at the periods when the attacks generally come on—that is, from the last of May to the 10th of June for the spring variety (rose-cold), and about the 29th of August for the autumnal variety—with this difference, that Bostock believed the most air, heat, and sunshine to be the actual causes, when, no doubt, they were only the conditions favorable for its development. Is pollen the cause of the exacerbations, or is it the cause of the disease itself?

*Pathology.* The written pathology of hay fever is rather limited. The changes which take place are not those of an ordinary inflammatory process, the latter going through certain definite changes and ending in gradual resolution. In hay fever the outset may be gradual, but in the majority of cases it is quite sudden, and its termination the same. The natural physiological action of the nasal mucous membrane is a gradual process of exosmosis of a watery fluid, varying in different people from 8 to 12 ounces, or more, in 24 hours, the amount and character being regulated by the sympathetic system of nerves according to the atmospheric changes. In hay fever the impact of pollen produces a more or less complete paralysis of the nerves