

In about an hour the patient's nasal mucous membrane was injected with a large dose of rye pollen and in a few minutes frequent sneezing, and swelling of the mucous membrane, together with other symptoms were only too manifest signs that the patient was not as yet immune. The feeling of general ill-health and discomfort were quite marked. About an hour later, however, the objective symptoms of the attack rapidly disappeared and the patient had a "fresh feeling" to which he was altogether unaccustomed after a hay fever attack. Seven hours after the injection it was found impossible to infect the patient even when large doses of toxin were used. By the next day this temporary immunity was completely lost. Clear serum from another rabbit, removed some weeks after the last injection, was added to a solution of pollen toxin in a test tube and drops of the mixture placed in the conjunctival sac of a hay fever sufferer. Though a drop contained more toxin than enough to bring on marked symptoms, no discomfort was experienced nor were there any objective symptoms. Further, a small dose of toxin was placed in the other conjunctival sac, and at once the usual symptoms of irritation and congestion set in. The patient was still liable, and the toxin had evidently been neutralized by the antitoxin without the body. This experiment was repeated many times and it was found that the antitoxin always neutralized the toxin but sometimes not completely. So, too, experiment showed that after applying the toxin to the conjunctival sac of a predisposed person, and so lighting up an attack, the application of the antitoxin serum locally, rapidly allayed the symptoms, both objective and subjective. The purely subjective symptoms disappeared very rapidly, the congestion naturally more slowly. In other experiments the antitoxin was not used till after the symptoms brought on by the toxin had become severe, and then too, successfully. In one case in which a half cubic centimeter of antitoxin was injected during a severe artificially produced attack, a sudden improvement occurred in fifteen minutes, which could easily be seen and its course followed by observing the changes in the swollen and badly congested conjunctival mucosa. This improved, till almost normal at the end of thirty minutes, again grew worse, but at the end of an hour appeared quite normal, and the patient had the same "fresh feeling" experienced by the patient in the experiment mentioned before.

Dr. Dunbar found that an antitoxin produced by the injection of rye pollen or toxin was able to neutralize solutions, or act as an antitoxin for the toxin of the other species of grass or their pollen. With this success, Dr. Dunbar interested the proprietors of a factory in the question and with the use of bones a stronger