

# Vaccines in the Treatment of Asthma.

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WE cannot take up the consideration of asthma without paying tribute to I. Chandler Walker of Boston, whose work at the Peter Bent Brigham Hospital is the basis of our present knowledge and understanding of the subject. It was Dr. Walker who first definitely established the relationship between anaphylaxias and asthma and differentiated the four groups of sensitization—pollen, food, animal emanations and bacterial—as the principle factors in its etiology.

Just as sensitization may occur to the protein in pollens, foods, animal hair and dandruff, feathers, etc., so may sensitization occur to the protein in bacteria. Just what the mechanism of sensitization is, is a matter of conjecture. That it does take place is an established fact. As far as bacteria are concerned, sensitization does not take place to the whole bacterial body. It is necessary that the organism be split up into its component protein elements before sensitization can take place. This presupposes infection with the bacterium and an immune response during which the component proteins are set free. Then, the patient having the idiosyncrasy necessary for this peculiar phenomenon, is sensitized to these proteins. After that, every time the patient is infected with this organism, the liberated proteins are too much for his sen-

sitized tissue cells and he suffers protein poisoning, or anaphylactic shock, or an attack of asthma, which are all one and the same thing. The attack continues until his system has overcome the infection and eliminated enough of the toxic protein to bring its content down below his maximum tolerance. Then the attack ceases.

The symptom complex of an asthmatic attack, whether bacterial in origin or due to any other protein, is always the same, varying only in degree and intensity. In asthmas of bacterial origin, however, the elements of primary bacterial infection and later bacterial mixed infection, resulting from the lowered resistance induced by the asthmatic attacks, makes this group of asthmas a distinct clinical entity.

This group is characterized, in a general way, by the fact that attacks may occur at irregular intervals at any time during the year, and particularly in the spring and fall, when sudden temperature changes predispose to bacterial activity. During the summer months and in warm, equable climates, these patients are fairly comfortable. It is this class of asthmatics who are benefited by change to a warm climate. But, unfortunately, after a season or two, having become acclimated, they again become prone to infections, and their asthma returns.