at least, in the specific polysaccharides. This structural peculiarity, or multivalence, is not shared by lipins, and this may possibly be a factor contributing to the difficulty of demonstrating antigenic properties in lipins. The multivalence of the antigens is not necessarily confined to a single serologically active grouping, but may readily be a property of several such groupings, so that it is not surprising to find that a single, crystalline antigenic substance, such as egg albumin, may give rise to more than one antibody, or even a whole series of antibodies. And since there is every evidence that these antibodies are modified serum globulins they also afford the opportunity of recurrence of serologically reactive groupings, or multivalence, so that antibodies, even to a single crystalline antigen, may differ both as to the number and character of their reactive groupings. These relationships are reflected not only in the wide range of combining proportions between antigen and antibody—often a tenfold one—shown by quantitative studies on the precipitin and agglutination reactions, but also by qualitative and quantitative differences in the reaction between antigen and fractionally absorbed or precipitated antibodies.

In conclusion, our knowledge of the structure of antigens, while still fragmentary, has at least progressed to the extent that we possess some knowledge of their chemical character and some inkling of the chemical differences between antigens which may be expected to give rise to differences in serological specificity. We are also beginning to acquire precise data on other chemical substances which we have hitherto designated rather vaguely as antibodies, and there would even appear to be certain advantages in considering the reactions between the chemical substances known as antigens and antibodies as chemical reactions, complicated, it is true, but subject to the same laws as simpler chemical systems. Our young science of immunochemistry has thus demonstrated its utility and promise as a powerful aid in the solution of many of the most puzzling problems both in biology and in immunity to infectious disease.

SCIENTIFIC EVENTS

THE NORWEGIAN MEDICAL ASSOCIATION, 1886–1936

THE jubilee of the Norwegian Medical Association is being celebrated this year. According to an account in *The British Medical Journal,* the secretary-general of the association, Dr. Jörgen H. Berner, has written its history in an imposing work of 353 pages, with portraits of the men who have played the most prominent parts in the life of the association since its foundation. During the fifty years under review the history of the association may be said to have been the history of the Norwegian medical profession and of Norwegian medicine. At the present time there are more than 2,100 doctors in Norway, and most of them are members of the association. Only a little more than a century ago, in 1816, there were exactly 100 medical men, of whom as many as twenty-eight were medical students. The number of practitioners enjoying the title of doctor of medicine was limited to twelve, whereas there were fifty-two surgeons. There was hardly any private practice in those days, most of the doctors being medical officers of health or in the employ of the army. By 1885 the number of Norwegian doctors exceeded 600. The *Journal* states that they lacked elbow-room, and that this was one of the motives for the establishment of a medical association which would keep discipline within the ranks and see to it that the overcrowding of the medical profession did not lead to a lowering of any of its standards. Another motive for the foundation of the association in 1886 was the revolt of the medical profession, its younger members in particular, against what seemed the reactionary attitude of the Faculty of Medicine in the capital. Medicine was splitting up into specialties, each of which created new educational demands, and the university teachers were unwilling or unable, probably both, to meet them. During the past fifty years the association has not only maintained discipline within, but has also generously shouldered its responsibilities in such important social problems as those of quackery, nursing, cancer and tuberculosis. The outstanding figure in the history of the association from 1898 to 1924 was Dr. Rasmus Hansson, secretary-general from 1900 to 1924. The present secretary-general, Dr. Berner, is also editor, jointly with Professor Carl Schiötz, of the association's journal, *Tidsskrift for den Norske Laegeforening.*

THE BRITISH PUBLIC HEALTH EXHIBITION

THE fifth British Public Health Exhibition was opened by the Minister of Health, Sir Kingsley Wood, at the Royal Agricultural Hall, Islington, on November 16. The exhibition is held in conjunction with the annual Public Health Congress.

One large group of exhibits was concerned with the work of hospitals for nervous and mental diseases. In the entrance hall was a collective display by manufacturers who have supplied apparatus and equipment for Runwell Hospital, the architects of which are Messrs. Elcock and Sutcliffe. This hospital will serve the needs of the county boroughs of East Ham and