

PROFESSOR ELVIN A. KABAT

It was in 1941 that Tracy Putnam, Professor of Neurology at the College of Physicians and Surgeons of Columbia University, walked into my laboratory there and said “I want an immunochemist”. “Fine!” I said, “I have two good ones available: one is very quiet, unobtrusive, fits in well, and occasionally comes up with good ideas; the other is very active, makes his presence known, will take part in everything going on, and is full of ideas.” “Stop there,” he said, “that’s the man for me.” And so Elvin Kabat was soon a well known neuroimmunochemist.

Elvin Kabat was born on September 1, 1914 in New York City. His mother complained that when he was naughty he would sometimes hold his breath until he was blue in the face. This was perhaps an early indication of his penchant for diving into difficult problems. He was graduated with high honors from City College in 1932, and came in 1933 to the laboratory in the Department of Medicine at The College of Physicians and Surgeons of Columbia University where Forrest E. Kendall and I were engaged in immunochemical research. As a heavily burdened laboratory helper and graduate student, he had soon read all our papers, mastered our techniques, and wondered why we had not applied our quantitative precipitin method to the more sticky problems of bacterial agglutination. As we were still fairly occupied with the theory and extensions of the precipitation reaction, we said: “You do it,” which he did. Elvin received his Ph.D. from Columbia in 1937, after earning more than one of them had university regulations permitted it. The real problem in those years was to slow Elvin’s pace a bit. He assisted greatly in the preparation of analytically pure antibody, which proved that antibodies were actually globulins, and as a Rockefeller Foundation Fellow worked in Uppsala, Sweden, with Arne Tiselius on the electrophoretic properties of purified antibodies.

After three years as Instructor in Pathology at Cornell Medical College, Elvin returned to P. and S. as Research Associate in Biochemistry assigned to Neurology, as already indicated. There, his work on the estimation of globulin in spinal fluid and the production of an experimental disease in monkeys resembling multiple sclerosis contributed greatly to knowledge of the nature of this disease.

During World War II, Elvin was Director of immunochemical studies on *Meningococcus meningitis* for the U.S. Army, as well as responsible investigator for three OSRD projects of the Committee on Medical Research, and was also Consultant to the Chemical Warfare Service. One of these projects on the immunochemical neutralization of the toxic effects of ricin, we did together. From 1947 to 1951, he was also Attending Consultant to the Veterans Administration Hospital, Bronx, New York, and was given the Eli Lilly Award in Bacteriology and Immunology in 1949.

In 1946, Elvin joined the then Department of Bacteriology and has been Professor of Microbiology since 1952, and in addition, Professor of Human Genetics and Development since 1969. In the meantime, he has piled up too many awards to mention here, as well as chairmanships of scientific committees, consultantships to WHO and other organizations, presidencies of scientific societies, and honorary memberships, domestic and foreign. Using his quick mind and incisive powers of thought, he has become a superb and often witty lecturer.

Elvin Kabat also shines as an author. His books on blood-group substances and concepts in immunology are standards in their fields, and Kabat and Mayer's *Experimental Immunochemistry* has been an indispensable pillar of support in innumerable immunological laboratories all over the world.

As for Elvin's scientific accomplishments, his nearly seventy papers on blood-group substances have clarified the chemical bases of their exquisite specificity and led to improvements in the theory and practice of transfusions. His use of inhibition reactions with oligosaccharides of different lengths for the study of the sizes of the combining sites of antibodies to dextran, blood-group substances, and other polysaccharides led him to examine the sequences of light and heavy chains of immunoglobulins which were then being initiated. A collaboration with T. T. Wu followed in a study of the amino acids involved in the combining sites and their steric relations. Before any high-resolution X-ray structures were available, hypervariable regions in both the light and heavy chains of antibodies were found, and it was correctly predicted that these would fold to form the combining sites with antigens. This work, with its important genetic implications, is now continuing, and Elvin spends two days a week at the National Institutes of Health in its pursuit. May he have many more years to continue this and other projects which his active mind is sure to devise!

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