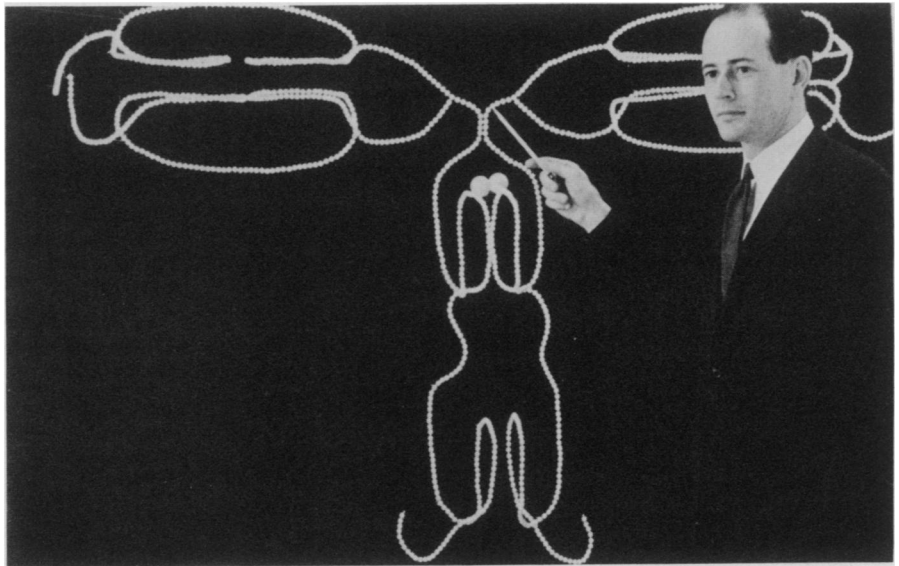


Honoring the decipherers of gamma globulin



Rockefeller Univ.

Edelman with his model of the 1,320-amino-acid molecule of gamma globulin.

One of the most intriguing puzzles of modern biology is the immune system by which the body recognizes and wards off bacteria, viruses and foreign tissues. A major aspect of this system is humoral response, by which antibodies (proteins) combine specifically with these foreign materials. Last week, the 1972 Nobel Prize for Physiology or Medicine was awarded to two scientists who have made outstanding contributions to antibody research. They are Gerald M. Edelman of Rockefeller University and Rodney R. Porter of Oxford University.

The American and British scientists are sharing the Prize largely for their unraveling of the complete chemical structure of gamma globulin, a key molecule in humoral immunity. Their work was reported in 1969 (SN: 4/26/69, p. 401). They analyzed material from a tumor known as a myeloma. Myeloma tumors produce pure immunoglobulin proteins, so that complete analysis of a gamma globulin molecule from this material was possible. Edelman and Porter worked separately, yet complementarily with this material. They used different techniques, for example, to cleave the two heavy peptide chains and the two light peptide chains from the gamma globulin molecule. Subsequently both determined the complete amino acid sequence of all four peptide chains, and showed how the chains were connected.

The final product, as they determined it, contained 1,320 amino acids, 19,996 atoms and had a molecular weight of 150,000. Total sequencing of such a molecule was a gargantuan feat.

This achievement, coupled with other immunological research by Edelman and Porter, the Nobel Prize Committee declared, "incited a fervent research activity in the whole world in all fields of

immunological science, yielding results and practical value for clinical diagnostics and therapy." For a century investigators have known that antibodies play a crucial role in the body's defense against infection, and in skin graft and organ transplant rejections. In the 1950's doctors could measure the amounts of antibodies in the blood. But it was not until Edelman's and Porter's

accomplishments that scientists really learned the structure of these large protein molecules.

After receiving the award, Edelman said, "We [Porter and I] both shared the same point of view—the only way to understand how the antibody molecule could recognize foreign substances was to determine something about its chemical structure." □

Ten Chinese physicians on tour of U.S.

The first visit to the United States in 22 years by physicians from China began last weekend with a busy three-day stay in Washington that took them to the National Institutes of Health, the White House, the National Academy of Sciences and the Smithsonian Institution. Before the month is out, the 10 doctors, including two women, will have visited New York, Boston, Chicago, Kansas City and San Francisco, where they will depart for home Nov. 1.

The visit is in response to an invitation to the China Medical Association on behalf of the NAS Institute of Medicine, the American Medical Association and the four American physicians who visited China in September 1971.

The visit is as much a symbol of the thaw in relations between the United States and China as it is a chance to exchange medical information. The Chinese doctors have been educated and trained essentially in modern Western medicine, as opposed to traditional Chinese medical techniques such as acupuncture.

On their first day in Washington, the doctors toured cancer wards and

laboratories at NIH and discussed treatment methods. The next day they met President Nixon in an informal 15-minute session, attended a seminar on heart disease at NIH, and were guests of honor at a banquet in the Great Hall of the Academy building. American physicians expressed admiration for the visitors' knowledge and understanding. "Their questions were right on the mark," said cardiologist E. Grey Dimond of the University of Missouri School of Health Sciences. Dimond was one of the four U.S. physicians who visited China last year, and he was instrumental in setting up this tour.

The third day the Chinese made two separate visits to the Smithsonian and conducted their first press conference. The press conference produced little substantive new information. (Leading causes of death in China: cardiovascular diseases and cancer. On alcoholism: "Not a problem in China. You are not apt to meet a single drunken man in the street." On birth control: "We have had certain success, but the problem has not been totally solved. . . . Our birth-control measures are free of