

lacks the capacity for making antibodies. Others may lack the T cell system. Some are deficient in both. Unless fairly heroic measures are taken—such as transplantation of bone marrow or thymus—these children usually die young. Other forms of immunodeficiency, now being discovered with increasing frequency, vary in their severity. Applying techniques for telling B and T lymphocytes and their subclasses apart, investigators are discovering persons deficient in one class of immunoglobulin but not others.

The chicken played a leading role in the discovery that the immune system comes in two parts. It began with work by Bruce Glick, who is now at Mississippi State University but at the time was at Ohio State University. Glick was removing an organ called the bursa of Fabricius from chicks to test the assumption that it plays a role in sexual development. (In chickens, the bursa is a lymphoid organ located at the posterior end of the gastrointestinal tract.)

One day a friend of Glick's asked if he could borrow some of his chickens for use in a class in which he was going to demonstrate features of antibody production. Glick obligingly donated some of his bursectomized birds, which, it turned out, produced antibody very, very poorly. In 1956, Glick therefore reported that bursectomized chickens are deficient in making antibody if, in fact, they can do so at all. His data were published in *Poultry Science* after *Science* turned his paper down on what were then probably the perfectly reasonable grounds that it was not of general interest. Glick's report languished in the world of poultry physiology for several years until Good heard about it from an associate.

Meanwhile, Noel Warner and his colleagues in Melbourne, Australia, also had been studying chickens. They put forth the idea that the immune system is dissociated, controlled in part by the bursa and in part by the thymus. Good, who until last January had spent his entire professional life at the University of Minnesota, and a younger colleague, Max Cooper, picked up Warner's idea. Cooper, now at the University of Alabama at Birmingham, recounts that, in a series of experiments, they surgically removed either the thymus or the bursa from young chicks and discovered that each organ is responsible for the production of a distinct line of cells; hence, T cells and B cells. "The idea of a two-compartment system seemed pretty clear," Cooper recalls, "because in the chick, we could take the immune sys-

tem apart selectively and then put it back together by replacing the cells we had taken out."

Although the results of these experiments were quite convincing, observations of a similar schism in patients clinched it. Says Cooper, "Once we knew what to look for, we could find

it in our patients, and then things fell into place."

And so it was learned that T cells pass through the thymus, where they differentiate and mature into competent lymphocytes. The B cells will mature into immunoglobulin-producing plasma cells.

Briefing

Health Appointees: Edwards, Sinatra; Maybe Cooper

After sitting vacant for more than 3 months, the office of the Assistant Secretary for Health in the Department of Health, Education, and Welfare (HEW) may soon be filled. On 13 March, the White House got around to announcing that the President has nominated Charles C. Edwards, commissioner of the Food and Drug Administration for the post.

Edwards, and everyone else in Washington who was interested, has known for weeks that he was slated to take charge of the health bureaucracy, but some greater bureaucracy apparently held up the official announcement.

Another presidential appointment of interest in the health field also came to light recently. Nixon has named Vice President Agnew's good friend Frank Sinatra to fill a vacancy on the advisory council of the National Heart and Lung Institute (NHLI). He will serve as one of five lay members of the council, which is also composed of 17 prominent physicians and scientists.

Sinatra's appointment apparently was made in December but was not generally known about until he sent a letter of acceptance to NHLI director Theodore Cooper just before the meeting of the council earlier this month. According to Cooper, who says he understands that Sinatra has been involved in health matters and philanthropic causes in the past, the NHLI played no role in the appointment. Sinatra was not present at the 3-day March meeting of the council.

Although the National Institutes of Health (NIH) has always operated with advisory councils, the heart council and the advisory board of the National Cancer Institute are particularly prominent and important bodies these days because of their role in setting policy for research programs of unparalleled

magnitude in biomedical science. Their function is to establish priorities for the expenditure of the hundreds of millions of dollars that are being funneled into the heart and cancer programs. Naturally, members devote a considerable amount of time to discussions about what is going on in research—about what the choices are—as they move toward policy decisions.

The advisory boards are high-powered bodies whose members are presumably chosen for their expertise in science, business, or matters of public interest. All members are appointed by the President.

A spokesman for Sinatra declined to comment on the singer's interest in the heart program or on his plans for attending future meetings of the council unless questions were submitted in writing.

A third appointment of considerable interest to the biomedical community is one that has yet to be made, and that is the directorship of the NIH. The top job at NIH has been vacant ever since the President fired Robert Marston in early December.

Although it is risky to speculate on such things, several people in the upper reaches of government believe that White House recruiters are leaning toward the idea of choosing someone from inside NIH for the position. If that is true, Cooper is likely to be the man they will pick.

Cooper has not been approached formally about heading NIH, but he has had some conversations with the brass that amount to interviews. Most significantly, he was asked to fly down to Florida a few weeks ago to talk with Nixon's close personal friend Elmer Bobst, who is chairman of the Warner-Lambert Pharmaceutical Company and a member of the cancer advisory board. Cooper apparently passed that test satisfactorily because, since then, he has seen HEW Secretary Caspar Weinberger and discussed "things" in general. But so far, nobody has offered him the job.—B.J.C.