BIOLOGY

Immunity Link to Thymus

➤ THE CAUSE of immunity in some people and not in others, whether natural or induced, points strongly toward a small gland known as the thymus.

The "clinching evidence" that the thymus is the key organ in the body's endless struggle to protect itself from foreign and harmful substances was reported to the Federation of American Societies for Experimental Biology meeting in Atlantic City, N.J., by Dr. Robert A. Good, research professor of pediatrics at the University of Minnesota, Minneapolis.

"We are getting much closer to understanding the whole process of immunity and its relation to disease," Dr. Good told the biologists.

Scientists foresee the transplanting of human organs, such as the kidney, and the exchange of blood cells between any two persons without the usual accompanying immune reactions, he explained.

Studying under a grant from the National Foundation-March of Dimes, Dr. Good and his associates found that the thymus is most likely the gland that produces and trains the cells which spread through the body carrying on antibody production.

Although scientists have puzzled for centuries over this gland, located just below the neck and behind the top of the breastbone, only recently has a flurry of research made it "one of the hottest of current medical questions," Dr. Good said.

The group at the University of Minnesota, for example, has shown that the removal of the gland from rabbits and mice only a few days after birth leaves the animals immunologically crippled. That is, they are not capable of producing antibodies in later life.

Furthermore, some of the animals' lymphoid cells, like those from the spleen, do not react properly when injected into other animals. Ordinarily, spleen cells from adult mice produce a great enlargement of the spleen when put into an immature offspring, Dr. Good explained.

This finding, he said, points unmistakably to the essential role of the thymus in producing lymphoid cells, teaching the cells body defense, and sending them to the various organs to form more cells in their genetic image.

After this is done, the gland begins to shrink, and by the time of adulthood it is quite inconspicuous with little or no function.

Dr. Good began studying the thymus after he noted that patients with agammaglobulinemia (a rare ailment) could not produce gamma globulin, the substance from which antibodies are fashioned. This disease occurs most often in children.

He also noticed that many of these patients also contracted a strange malady of the thymus known as thymoma, a growth similar to other non-cancerous tumors.

The strange relationship of these two rare conditions caused the researcher to think that there was some biological link, which could, perhaps, be true for other diseases.

Further studies revealed that rheumatoid arthritis, blood abnormalities, leukemia and Hodgkin's disease were all common in patients with agammaglobulinemia.

The Minneapolis team began removing the thymus from new-born rabbits. The results were seemingly conclusive.

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GERIATRICS

Aged Good Surgical Risk

➤ A VIGOROUS, optimistic octogenarian is a better surgical risk than a feeble, pessimistic patient who is many years younger, the American College of Surgeons meeting was told in Washington, D. C.

Three speakers pointed out the good surgical risk presented by most elderly persons. Life-saving surgery always should be performed, Dr. Stanley O. Hoerr of the Cleveland, Ohio, Clinic said, adding that "so-called elective operations" should be assessed more carefully.

Unless an operation is indicated by an emergency such as uncontrolled hemorrhaging, Dr. Hoerr said surgery should be delayed until the heart, lung, kidney, liver and brain of the patient are in the best possible condition.

Many happy patients in their seventies, eighties and nineties have been cured of breast, stomach or colon cancer, Dr. Hoerr pointed out, but as a rule, simple, short operations should replace complicated lengthy ones in the very old.

Dr. Brian Blades of the George Washington University, Washington, D. C., speaking on hiatal hernia in the aged, said that among 200 cases at the G.W.U. Hospital, 72 patients over the age of 60 were operated upon, 24 over 70 and four over 80, for repair of this type of hernia. There were no deaths.

In younger age groups, Dr. Blades explained, hiatal hernia may give distress and be incapacitating, but it is no threat to life unless hemorrhage or stricture develop. Older patients have a greater tendency toward severe vomiting, and if hemorrhaging or true organic stricture develops, the situation can be very serious.

Dr. Frank Glenn of Cornell Medical College, New York, said diabetes in geriatric surgery is a problem of increasing importance among the 17,000,000 Americans 65 years of age or older. There is a high incidence of diabetes mellitus among the elderly, he pointed out, and this may pose a threat in those requiring surgery.

Exact management, however, can control the dangers. The problem mainly centers about providing the body with required energy from glucose and insulin, which can be accomplished in most hospitals.

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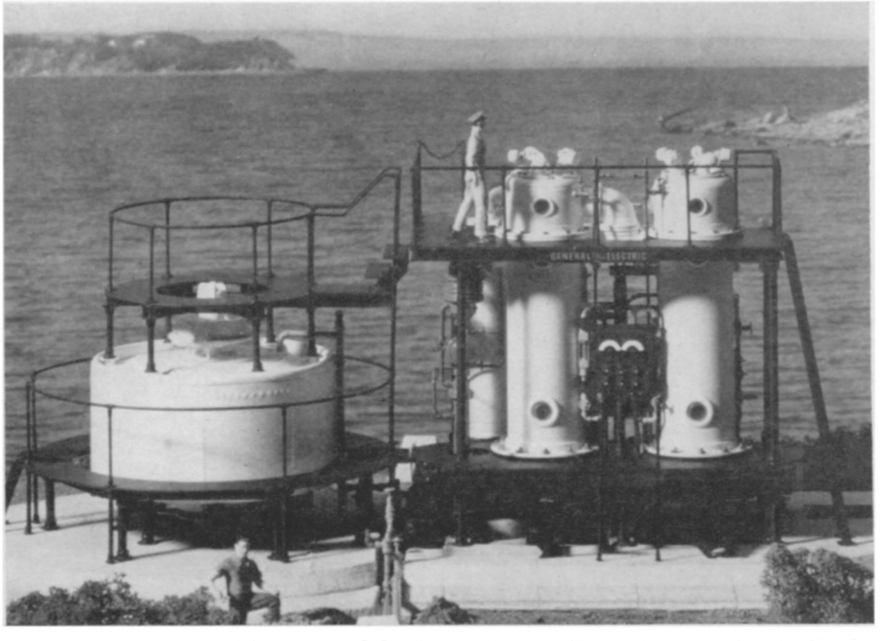

WATER CONVERTER—Model shows how pilot plant to be built by General Electric Company, Schenectady, N.Y., will look when constructed at U.S. Office of Saline Water's new test facility, Wrightsville Beach, N.C. Purpose of the plant is to explore large-scale conversion of sea and brackish water.