

The axial-flow compressor, heart of Westinghouse jet engines, also is being adapted to other uses than in aircraft. A 2,000-horse-power gas-turbine, suitable for locomotive or industrial use, has demonstrated the soundness of its engineering design in more than a thousand hours of testing. On the basis of these tests, the company is proceeding to build two similar gas turbines for use in a locomotive designed to compete with diesels in both traction and industrial service.

In the gas turbine, fuel such as oil, gasoline or kerosene is sprayed into compressed air in a combustion chamber. The resultant hot gases expand tremendously against rows of curved blades which spin the turbine drive shaft. For locomotives, the turbine would generate electricity for application to driving motors. An axial-flow jet engine is one in which the air scooped in for combustion sweeps in a straight line from intake to exhaust.

Science News Letter, March 27, 1948

BIOCHEMISTRY

Find Anti-Insulin Enzyme

Insulinase, as this chemical is called, has been found to destroy insulin when mixed with it. May have important bearing on diabetes.

► **DISCOVERY** of an anti-insulin chemical in the body which may have an important bearing on diabetes was announced by Drs. R. H. Broh-Kahn and I. Arthur Mirsky of the May Institute for Medical Research of the Jewish Hospital, Cincinnati, at the Atlantic City meeting of the Federation of American Societies for Experimental Biology.

Insulinase is the name they have given this chemical. It is an enzyme which rapidly destroys insulin when mixed with it. It has been found in various tissues of the body. Liver, an organ whose function is markedly impaired in the absence of insulin, is especially rich in the anti-insulin enzyme.

Since the chemical rapidly destroys insulin, it might be responsible for

causing diabetes. An increase in the amount of insulinase in body tissues or an increase in its activity might destroy insulin being made in the body before insulin had a chance to perform its function of regulating sugar utilization. But, the scientists emphasized, their studies have not gone far enough for them to express an opinion on this point.

Meanwhile, possibility of helping diabetic patients in the future appears from one aspect of their work. The activity of the anti-insulin chemical, they found, can be lowered or destroyed by certain chemicals, among them copper and zinc salts. If further studies with animals show that this can be applied to man, it might lead to a decrease in the amount of insulin diabetics would need to take.

Science News Letter, March 27, 1948

MEDICINE

Stop Bleeding in Patients

► **A FEW** patients who might have bled to death because of an obscure disease are alive today, thanks to discoveries by a young University of Chicago surgeon.

Modestly and with true scientific caution, the surgeon, Dr. J. Garrott Allen, refuses to claim that he has saved any lives. But his colleagues at the university say he has. And the American Society for Pharmacology and Experimental Therapeutics at its meeting in Atlantic City awarded him its top honor, the John J. Abel \$1000 prize donated by Eli Lilly and Company.

"Lasting benefit" has come to some patients treated by the method Dr. Allen

discovered, the prize award announcement states.

These patients suffered from a bleeding disease that resembles but is not the same as hemophilia, the hereditary bleeding disease once known as the "curse of the Hapsburgs."

Atomic medical research, done for the Manhattan Project and the Atomic Energy Commission led to the discovery of how to control this bleeding.

Future victims of acute leukemia, as well as any potential victims of future atom bomb attacks may be helped by the discovery.

Bleeding is a troublesome feature of

acute leukemia that has obscured the true picture of what is wrong in this disease. Bleeding killed many atomic bomb victims who survived the blast effects of the bombing in Japan. Bleeding is part of the radiation sickness that may come in patients getting X-ray treatments. It is a threat limiting the usefulness of these treatments and the nitrogen mustard for leukemia patients.

This bleeding, Dr. Allen discovered in dogs who get big doses of X-rays, is due to release in the blood of an anti-clotting chemical. Previously, scientists thought the bleeding after X-rays was due to disturbance of the body's natural mechanism for making blood clot when it is shed.

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