

GENERAL SCIENCE

Keep Scientists on Job

If universal military training is begun, our technical manpower would render best national service by being assigned to work at research projects.

By WATSON DAVIS

➤ SCIENCE and technology will be mobilized along with men, materials and money in meeting the new world emergency now before the nation.

If selective service is put into effect again and universal military training is begun, careful planning will be necessary in order that some of the mistakes of the use of technical manpower in the last war are not made again.

Less regard was given in the United States to putting the scientist and engineer into the best place for national service than in most warring nations. Even some of the key research laboratories, such as those producing the atomic bomb, had to argue long and painfully with draft boards to prevent their essential draft-age men from being pressed into shooting services.

Full-scale researches on jet propulsion, atomic bombs, biological or germ warfare, and scores of other direct military developments are underway on a relatively large scale with Army, Navy and Air Force funds.

Military Funds for Research

More fundamental researches in all fields of science and technology—ranging from the sun to the brain—are similarly supported by military funds on a long-range basis.

These military expenditures for science and technology are coordinated by a Research and Development Board, headed by Dr. Vannevar Bush who directed the famous OSRD in the last war.

There will be an immediate demand if the draft is re-enacted to keep the scientists working on these projects at their research jobs, regardless of their age.

Scientists and military officials alike are expected to recommend that clear-cut Congressional authority be given selective service to keep the scientists at the jobs they and only they can do, regardless of decisions by local draft boards. In doing this America would adopt a principle that worked well in almost every other nation during the war, Soviet Russia included.

Universal military training presents a more difficult and critical problem from the standpoint of supply of technical manpower. During the last war, thousands of scientists of the future were lost because they were drafted and not allowed to undertake basic training in college that would lead to research careers. Many educators and scientists are opposed to universal military training in fear that it would remove the potential scientists from their training at the most critical time.

Nurturing Science Ability

People possessing rare science ability must be allowed to develop and use it. That is the argument. Wasting scientific ability would be just as unwise as using precious uranium for coloring glass instead of making atomic bombs. Demands will therefore be made in UMT discussions to protect by Congressional action the intelligent use of potential scientific manpower.

The passage of the National Science Foundation bill soon to be reintroduced

into Congress as a bipartisan measure may be speeded by the present emergency. Further delay in the establishment of a fundamental national science program would be illogical in the face of increased demands upon science both by the military needs and the nations to be helped by ERP.

Prompt establishment of a science foundation combined with the military research program underway would probably obviate the organization of a temporary research effort such as OSRD conducted during the war.

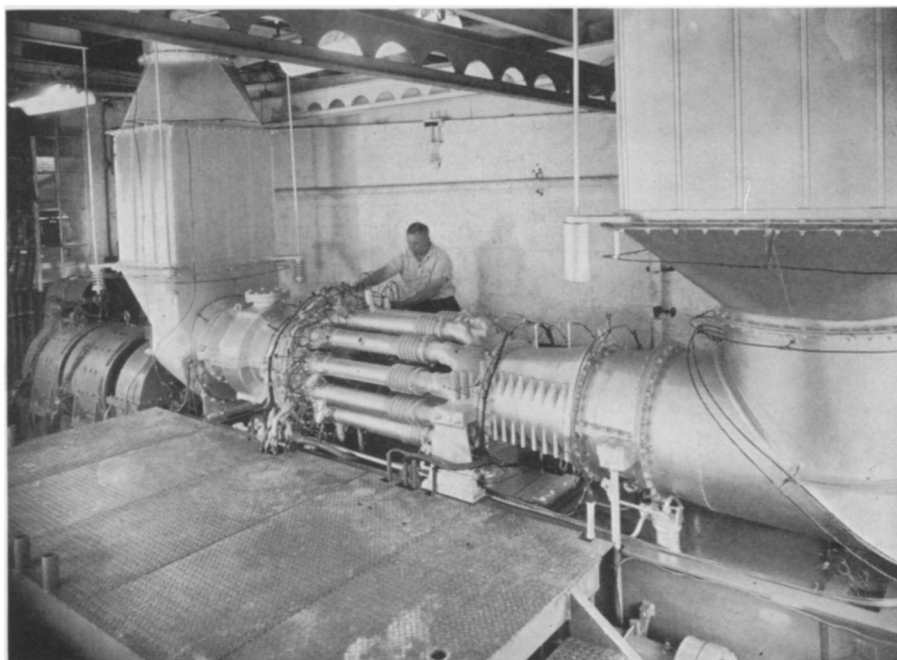
In giving aid to the 16 European nations under ERP, technical information will play a large part. One of the provisions specifically spelled out in the bill as passed by the Senate is the "procurement and furnishing of technical information and assistance."

Science News Letter, March 27, 1948

ENGINEERING

Adapt Jet Plane Research To Turbine Locomotives

➤ A MAINLINE railroad locomotive powered with a gas turbine electric drive, under construction in Pittsburgh by Westinghouse Electric Corporation, will make use of much of the knowledge gained in building jet propulsion engines for high-speed airplanes, the company revealed.



REVOLUTIONARY LOCOMOTIVE—Shown here tested under simulated railroad operating conditions is the heart of a possible "iron horse" of the future being powered with a 2,000 horsepower gas turbine.

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 mustards 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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