

GENERAL SCIENCE

Science Reconversion

Senate subcommittee on war mobilization report makes recommendations to keep up the necessary scientific work for national welfare.

► TO AID the war-to-peace reconversion of scientific research and sustain the research and development necessary to national defense, health and medical care, industry, agriculture and business, the Senate's subcommittee on war mobilization headed by Sen. Harley M. Kilgore, of West Virginia, recommends in a report that Congress create a National Science Foundation as an independent governmental agency.

Federal research expenditures rose to \$706,000,000 in 1944, a ten-fold increase over 1938, the report states, while the total research investment by private organizations and government was over \$800,000,000. Before the war, the nation was spending between \$300,000,000 and \$400,000,000 a year for research, about a fifth of it governmental. Thus there would be a gap of from \$400,000,000 to \$500,000,000 if we revert to the prewar rate of research.

The proposed new central scientific agency of the government would take up some of this gap through use of public funds as well as "coordinate all such federally supported research and development work, utilizing so far as possible the existing resources of public and private research organizations, particularly nonprofit educational institutions and research foundations."

The National Science Foundation would be headed by a director appointed by the President and confirmed by the Senate. Fund allocations and other actions would be approved by a National

Science Board consisting of the director as chairman, eight Presidentially appointed members at large, and the Secretaries of War, Navy, Interior, Agriculture, Commerce, and Labor, the Attorney General, and the head of the Federal Security Agency or their representatives.

At least 20% of the annual research appropriations would be reserved for each of three fields: National defense, health and medical care, and basic sciences. At least half of the funds would be earmarked for non-profit educational and research institutions.

The new foundation would not itself perform research and development work, but would make funds available to public and private organizations already equipped and staffed.

The foundation would also be empowered to grant fellowships and scholarships in various fields of science in order to "discover and develop scientific talent, particularly in American youth."

"To protect the taxpayer's interest," the report states, "all research and development projects financed in whole or in part by the federal government should be undertaken only upon the condition that any invention or discovery resulting would become the property of the United States." The foundation would grant without charge nonexclusive licenses to persons or organizations wishing to use any such invention, discovery, patent or patent right.

Science News Letter, July 28, 1945

MEDICINE

Life-Restoring Method

► THE CLAIM that life has been restored in 12 of 51 fatally wounded Red Army officers and men is reported by Sergei Belayev in the *American Review of Soviet Medicine* (June).

The method used consisted in supplying oxygen to the lungs directly by a pulmotor and injecting blood not only into a vein but also into an artery of the arm in the direction of the heart. This is said to restore nourishment to the heart muscle.

The method was developed by Prof. V. A. Negovski, director of the laboratory of experimental physiology at the All-Union Institute of Experimental Medicine.

The case of Valentin Cherepanov, private in the Red Army, now alive after being declared dead by a physician, is reported in some detail.

He had been seriously wounded in the thigh and was brought to a field hospital unconscious and in a serious state.

He was placed immediately on the operating table but his condition grew worse. Heart action and breathing ceased and reflexes were absent. The surgeon's entry in the case history was:

"Death following shock and acute hemorrhage on March 3, 1944, at 14:41."

Three and one-half minutes later a specially trained group of doctors went to work on the soldier's body. One minute later, Mr. Belayev reports, his heart started to beat and after three minutes breathing started. Within an hour he had recovered consciousness, opened his eyes when his name was called, answered questions and asked for a drink of water. Today he feels perfectly well but is under observation at the All-Union Institute.

Less fortunate were some of the other 51 on whom the Negovski method was tried. In some life was restored but lasted only a few hours or days.

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CHEMISTRY

Wax-Free Lubricant Has Unusual Advantages

► A NEW non-petroleum lubricant for automobile, aircraft and other internal combustion engines has been developed and tested that is claimed to have unusual advantages over mineral oil, particularly in cold weather. Its properties are quite different in many respects from oils derived from petroleum. It is wax-free and can be made to any desired viscosity.

The lubricant is a product of Carbide and Carbon Chemicals Corporation and is now being produced in commercial quantities. Its use in engines has been studied for several years in a large number of vehicles. Large quantities are in use in military equipment, and, at the present time, sale of the material is limited to war uses.

No petroleum oils are contained in the new lubricant. It has a density approximating that of water. It is characterized by low change in viscosity with change of temperature. Carbon residue values are very low. Sludge and varnish formation in the engine is practically eliminated when the new lubricant is used, and wear of moving parts is in line with wear experience with ordinary mineral oils.

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Tetanus antitoxin, used to prevent lockjaw, is an antibody obtained from the blood of horses; unless renewed it gives the human body only ten days' protection.