GENERAL SCIENCE

Science Will Need Support

Financial backing for basic research in "pure" science is seen as a critical post-war problem. Finding competent leaders for research important.

➤ RESEARCH in industry will not have any particular difficulty in finding support after the war, for its value has been thoroughly demonstrated. Basic research in "pure" science, without which progress in applied science soon bogs down, presents more critical problems, Prof. Hugh S. Taylor of Princeton University declared before the autumn meeting of the American Philosophical Society in Philadelphia.

Support from private sources is most desirable, in the opinion of Prof. Taylor. State support, he said, brings with it "the dangers of bureaucratic and political control, the problem of justification for support sought.

"The autonomy of science," he continued, "even in countries where science is free, is constantly endangered by such state support. To guard that autonomy in the new order of scientific research, to assure wise allocation of available funds to integrate research in physical science with the social and humanistic aspects of progress are the increasing responsibilities of the scientific and cultural foundations of the country."

Leadership for the new research will also present serious problems, the speaker pointed out: "The problem of direction of research is essentially one of finding research directors, experienced in the performance of research themselves and with breadth of training; but also with extraordinary qualities of leadership and inspiration, integrity and a selfless wisdom which draws from the research staff its maximum potentialities. The availability of competent directors will determine the success of the research institutes. The supply is low but the war effort may result in the discovery of enough for the immediate post-war era."

Science News Letter, November 27, 1943

Earth Radiations Ionize

➤ RADIATIONS from the earth put electrical charges on about as many particles in the air as do cosmic rays, tests in the vicinity of New York convinced Prof. Victor F. Hess of Fordham University, Nobel Prizeman in physics in 1936. Professor Hess tested the ionization (electrical charging) of the air with an instrument devised in the laboratories of the Carnegie Institution of Washington, exposing it over both water and grass-covered soil. Variations of ionization over land were twice as great as those over water.

Science News Letter, November 27, 1943

Salvaging "Lost" Cells

➤ HOW RED blood cells that have got "lost" into the body tissue spaces through injury to blood vessels are salvaged and put back into circulation was described by Prof. Carl Caskey Speidel of the University of Virginia, who also showed speeded-up micro-motion pictures of the process.

Salvage is accomplished by the lymph vessels, the thin-walled "second circulatory system" of the body, that normally bring back fluids and certain non-blood materials from the tissues and return them to the veins. To salvage "lost" blood cells, a lymph vessel grows a sprout toward the stranded cell; its tip encircles the cell and takes it in.

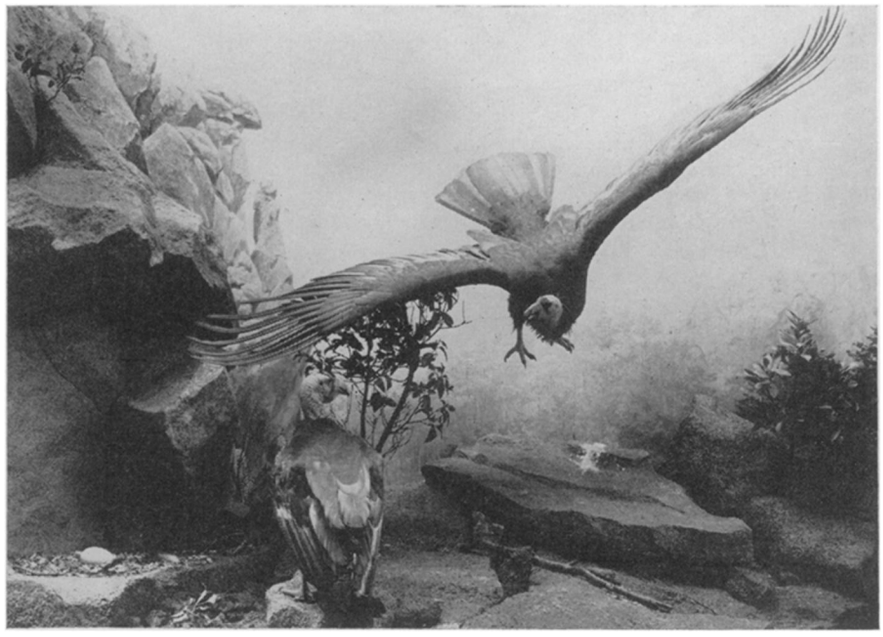
If a "lost" red blood cell is not thus rescued within two days it apparently counts as a "dead one" and is pounced upon and gobbled up by the white corpuscles that act as the body's scavengers.

Science News Letter, November 27, 1943

Condor Teaches Soaring

➤ LESSONS in efficient soaring technique, which may benefit future generations of aviators, were learned from the world's largest flying birds, the nearly extinct California condors, by John H. Storer of Waltham, Mass., one of the most active of American ornithologists, and passed on to his fellow-scientists at the autumn meeting of the American Philosophical Society.

Two types of wing-tip have been developed by soaring birds, Mr. Storer stated. One is pointed, and has reached a highly advanced stage in such birds as albatross and gull. The other presents a slotted surface to the up-currents, giving highly sensitive control, especially in strong but very localized currents such as are found in the mountains. The con-



INSTRUCTOR IN SOARING—The bird shown in flight in this California condor group, at the Field Museum of Natural History, illustrates the wings' tremendous spread and slotted surface tips. Scientists are learning principles of soaring to apply to aircraft from this bird, probably the world's most highly developed soaring bird.

dor, probably the world's most highly developed soaring bird, has the largest slots.

Mr. Storer showed slow-motion pictures of California condors taking off and in flight, showing in detail how they use their feather control surfaces. He also stated that he is at present carrying on wind-tunnel experiments with models based on these pictures.

Science News Letter, November 27, 1943

"Impossible" Hybrids

➤ REARING "impossible" hybrid plants on a synthetic diet including powdered malt extract was reported by Dr. Albert F. Blakeslee of Smith College. When some plant species are crossed, an embryo plant will start to develop but will soon die, producing a sterile seed, because conditions within the parent plant are not favorable to its continued growth. By very carefully dissecting out these microscopic beginnings of the new plants and transferring them to a glass dish containing the necessary nutrient elements, the otherwise doomed embryos could be induced to grow.

Dr. Blakeslee and his associate in this research, Dr. Sophie Satin, used various kinds of hybrid jimsonweeds in their experiments; but the principles involved apply to other plants, to obtain desirable hybrids which have heretofore been regarded as impossible.

Science News Letter, November 27, 1943

MEDICINE

Jaundice Has Sequel

Group of officers and enlisted men are suffering from a psychoneurotic condition following 1942 epidemic. Exhaustion, indigestion and instability are symptoms.

➤ SINCE the epidemic of jaundice in the U. S. armed forces in 1942, (*See SNL,* Aug. 8, 1942) a "sizable group of officers and enlisted men" have, apparently as a sequel to the disease, been suffering from a psychoneurotic condition, Maj. C. M. Caravati, chief of medical service of Percy Jones General Hospital, told members of the Southern Medical Association at the meeting in Cincinnati.

Chronic and unexplained exhaustion, a mild but constant aching under the ribs on the right side, digestive disturbances especially after eating fats, loss of weight and emotional instability are the outstanding symptoms of the condition, Major Caravati reported.

Most of the patients complained of these symptoms before they had recovered from the jaundice, but others apparently recover before the condition he reported sets in.

Thorough, careful examination of the patients failed to show any evidence of disease of the liver or any other organ.

The disturbance, Major Caravati believes should be considered as a change of physiology caused by an unfavorable reaction to a mild infection. Or it may have been caused by long confinement by illness which made the patients feel frustrated and depressed and even convinced some that they would be permanently disabled. Such injury to the emotional and mental make-up may have been sufficient to upset normal functioning of the body.

Science News Letter, November 27, 1943

Marihuana Won't Help

➤ HOPE that marihuana, often blamed for crime and insanity among its users who smoked it in "reefers" or "goofbutts," might help cure morphine addicts by relieving the withdrawal symptoms when they are taken off the narcotic drug proves false in the light of studies reported by Dr. C. K. Himmelsbach at the meeting of the Southern Medical Association. Dr. Himmelsbach is director of research at the Lexington, Ky., U. S. Public Health Service Hospital where alcohol and narcotic drug addicts are treated.

In the studies, "Pyrahexyl" compound, a synthetic drug reported to have considerable activity like that of marihuana or cannabis, was given by mouth and by injection into the muscles to bona fide morphine addicts in place of morphine. Even in amounts sufficient to produce marihuana effects, the compound did not appreciably relieve the morphine withdrawal symptoms.

Science News Letter, November 27, 1943

Blood Plasma Development

➤ THE DEVELOPMENT of blood plasma and the extended use of blood and blood substitutes for treatment of shock in battle injuries rank in importance with the development of the liver treatment for pernicious anemia and insulin for diabetes, Comdr. Edward L. Bortz, of the Philadelphia Naval Hospital, declared at the meeting of the Southern Medical Association.

He listed the following as a few of the achievements of wartime medicine: plasma, chemotherapy, transport of the wounded, prophylaxis, balanced nutrition, new blood fractions, sea water made into drinking water and anesthesia.

The new blood fractions are serum albumin, serum globulin and serum fibrinogen which Dr. Edwin J. Cohn, of

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