

GENERAL SCIENCE

Scientific Freedom Urged To Promote Progress

► **FREE DISCUSSION** among research scientists in fields of importance to military strength is necessary if America is to keep ahead in new knowledge necessary to national security. Dr. Theodore P. Wright, Cornell vice president for research, warned at the dedication of the Cornell Laboratory of Nuclear Studies in Ithaca, N. Y.

In deciding what is to be kept secret, Dr. Wright declared that it should be realized that "all advanced nations will eventually develop by their own research the knowledge we are striving to keep from them, and within a short period of time."

Cross-fertilization of ideas facilitates advance, Dr. Wright said. The rate of advancement of science is retarded by the introduction of restrictions on the free dissemination of information, he emphasized. Even workers in different fields should have free opportunity for discussion.

"The nation on its toes passes on to next problems long before a mimic nation fully understands and can apply past secrets," he said.

All democracies must remain free from totalitarian restrictions, and the universities must aid military strength to assure this, Dr. Wright declared, adding that universities must aid the military establishment in every way practicable to insure their own basic freedoms.

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GENERAL SCIENCE

Seven Gain High Honors For Their Achievements

► **ACHIEVEMENTS** contributing to the nation's health have gained seven scientists the 1948 Lasker Awards of the American Public Health Association. Dr. George Baehr, president of the New York Academy of Medicine announced.

Dr. Baehr, chairman of the Association's Awards committee, named as winners in the scientific field, Dr. Selman A. Waksman of Rutgers University, and Dr. Rene J. Dubos of the Rockefeller Institute for Medical Research, jointly, for their work on antibiotics, and Dr. Vincent du Vigneaud of Cornell University Medical College, for studies of transmethylation and contributions to the chemistry of biotin and penicillin.

For outstanding administrative achievement, Dr. Martha M. Eliot of the U. S. Children's Bureau in Washington, and Dr. R. E. Dyer of the National Institutes of Health in Bethesda, Md., were also selected as winners.

The department of medicine and surgery of the Veterans Administration will receive the group award honoring especially Dr. Paul R. Hawley, former chief medical director, and Dr. Paul B. Magnuson, chief medical director, for their program of med-

ical care for veterans during the war.

The awards consist of \$1,000 each, and a gold replica of the classical statue, The Winged Victory of Samothrace, used in this instance as a symbol of victory over death and disease, for individual winners, and a silver statuette for group award winners. They will be formally presented Nov. 11 at the American Public Health Association's 76th annual banquet in Boston.

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AERONAUTICS

Find You Can Get Close to Jet Engine without Danger

► **IF YOU ARE** very careful, you can walk up to within two or three feet of the nose of a jet plane while its engine is turning at full power without danger of being sucked in by the intake.

Lieut. A. L. Hall, medical service corps, U. S. N., has just done it at the Naval Air Test Center at Patuxent River, Md. He was able to stand within two feet of the plane, a North American FJ-1 Fury. His reactions, he reports, were like those "caused by a 30-knot wind."

Heavy safety lines were attached to his body while he made the test. Other tests were made with a dummy figure, the size and weight of a man. The results, the Navy emphasizes, apply only to the type of plane used in the experiment. Twin-jet aircraft would have a greater danger area directly in front.

The tests apparently were made because of the speculation on the subject since a civilian mechanic was killed a year ago at the Muroc Dry Lake test center in California when he walked in front of a jet plane and was sucked in.

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ENGINEERING

New Technique Gives More Accurate Light Measures

► **MORE ACCURATE** light and exposure meters are being developed, using a new technique for building light-sensitive cells, the Illuminating Engineering Society was told in Boston.

Three new instruments using the cells were displayed by G. B. Buck, II, of the General Electric Lamp Department, Cleveland. He explained the new method consists of cementing proper lenses, and in some cases, filters to the cells. This corrects errors caused by both color and reflection, the engineer reported.

The new light meters included a pocket-size meter, low-range meter and a multi-range model. Accuracy of the small pocket meter was listed as within 10% for any color of light or angle of light incidence. The other meters are 100 and 10 times more sensitive, respectively, Mr. Buck said.

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IN SCIENCE

MINERALOGY

New Uranium Mineral Found in Belgian Congo

► **A NEW RADIOACTIVE** mineral containing the atomic bomb element, uranium, has been discovered in Africa and identified in New York.

The newly-discovered mineral was found in the Belgian Congo. J. F. Vaes, of Union Minière, Jadotville, Belgian Congo, sent samples to Dr. Paul F. Kerr, Columbia University geologist.

Laboratory tests by Dr. Kerr showed that the material is a previously unknown uranium mineral. It has been named "sengierite," in honor of Edgard Sengier, who directed wartime mineral production in the Belgian Congo.

Sengierite is found in small green crystals which cling to a chlorite-talc rock found in mines in the Belgian Congo. It is similar to the American uranium mineral, carnotite, except that sengierite is a copper uranium mineral, while carnotite is a potassium uranium material.

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AERONAUTICS

Helicopters Can Be Towed To Scene of Disaster

► **HELICOPTERS** can be towed in the air hundreds or even thousands of miles for use in rescue operations at a remote disaster such as a plane crash, it was proposed.

The U. S. Air Force Air Material Command at Wright Field, Ohio, has been conducting tow tests with helicopters, the semi-official AIR FORCE MAGAZINE disclosed. These tests point up the possibility of using helicopters at the scene of disasters almost anywhere on the earth, the journal indicated.

A large helicopter could take off vertically, with a line attached to the tow plane. When the tow plane had taken off, the helicopter would ease into autorotative flight with its engines shut off. In this way, the rescue helicopter could be towed great distances at high speeds.

When the disaster scene was reached, the helicopter would cut loose and begin rescue operations. It could be towed back by catching the tow line in the air or it could operate independently, if there were airfields in the area.

The Piasecki Helicopter Corporation, Morton, Pa., pointed out that its HRP-1 twin-engine helicopter might be used in such operations. This plane was described as the only transport helicopter now in production. It seats 10 persons or can carry six litters for rescue work.

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CE FIELDS

BOTANY

Grafts Made Successfully On Unrelated Plant Stock

► **SUCCESS** in making such "impossible" grafts as sweet clover on sunflower, cowpea on tomato, and tomato on geranium is reported by Dr. Louis G. Nickell of the Osborn Botanical Laboratory at Yale University. Hitherto it has been supposed that grafts would "take" only if stock and scion were closely related, as is the case with the tomato-on-potato grafts frequently made.

Most of the experiments described by Dr. Nickell were carried out with the sweet-clover-on-sunflower combination. Here the sweet-clover piece, or scion, was implanted in the pith of the sunflower stalk. Within a week there was good evidence that the grafts were "taking," and some of them remained in healthy growing condition for as much as five months. Microscopic examination of sections showed that permanent connections between the sap-carrying vessels of stock and scion had been made.

Details of the experiments are given in *SCIENCE* (Oct. 8).

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NUTRITION

Girl "Guinea Pigs" Aided In Study of Iron in Diet

► **SIX LIVELY** 13-year-old girls of assorted sizes are back in school after spending their entire summer vacations as "guinea pigs" in a food and nutrition research project at Cornell University. They helped scientists study how much iron a 13-year-old girl needs in her diet for good health. This is the first time such a project has been undertaken.

Being subjects wasn't tough, reported the girls—"it was a lot of fun, like a summer houseparty. Besides, we got an allowance of \$3.00 a week."

They slept two girls to a room in a college apartment, got up at 7:30, made their beds, and went for a short walk before breakfast. A series of rotating chores followed—dishwashing, keeping charts, etc. They played games, went on hikes, attended lectures and did almost anything except take into their mouths unauthorized food or liquid. That is why swimming was taboo. Lake water isn't properly distilled. They could spend one Saturday night at home, but had to take a box breakfast with them. If they got too thirsty while away, they could drink city water if they measured it carefully and reported the amount consumed.

They ate "high" daily—meat every day,

sundaes three times a week; all the lemonade and cookies (special kind) and enriched bread and jelly they wanted between meals—as long as everything was entered in the record book.

The adolescent sextet styled themselves the "Ferric six."

A year from now the scientists will be able to tell the world not only how much iron a healthy 13-year-old requires, but also how she responds to certain levels of calcium and nitrogen.

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AERONAUTICS

Floor Chute Allows Escape From New Navy Jet Plane

► **A FLOOR CHUTE ESCAPE** device features a new Navy twin-jet airplane now undergoing flight tests at the Air Force test center at Muroc Dry Lake, Calif. The plane is an all-weather fighter, suitable to operate from carrier decks, which can also be used as a long-range patrol or long-range escort fighter.

This escape chute is for pilot use should bailing out be necessary at high speeds. At lower speeds, bailing out is provided for through normal methods. Another important feature is speed brakes, consisting of two hydraulically actuated flaps which extend outward from the fuselage just forward of the tail. By the use of these, the pilot can quickly decelerate for slow carrier landing approaches, or for other purposes.

The new plane was constructed by the Douglas Company and is powered by two Westinghouse turbo-jet engines. It will be known as the ZF3D-1, or the Skynight. It is of conventional design, although it has square wingtips. Other details are not yet revealed.

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ENGINEERING

Mirror-Making Is Helped By Using Calcium

► **MAKING OF** special mirrors and other fine evaporation-coating jobs are helped by calcium and related elements serving as go-betweens in ironing out the incompatibility between the tungsten or tantalum heating coil and the gold, silver, copper and other coating metals. Left to themselves, these metals refuse to wet the coil when melted, but just drop off. However, William H. Colbert and Arthur R. Weinrich, both of Brackenridge, Pa., have found that by alloying a little calcium into the coating metal they can get it to spread out nicely over the heating coil, whence it is evaporated and so reaches the surface to be coated.

No less than eight patents, Nos. 2,450,850 through 2,450,857, have been issued on this process. Rights are assigned to the Libbey-Owens-Ford Glass Company.

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MEDICINE

Nine Out of Ten Rh Babies Saved by Transfusions

► **NINE** out of 10 Rh babies are now being saved from death by modern treatment, including replacement blood transfusion, Dr. Louis K. Diamond of Harvard Medical School announced at the New York Academy of Medicine graduate fortnight.

Before 1942, the overall mortality from this disease, he said, was about 40%. At that time treatment consisted of small transfusions, usually of the father's blood. In the following few years, with the use of Rh negative blood for these transfusions, the mortality fell to about 30%. Then when doctors began delivering the baby earlier in cases where the condition was known to be developing, the mortality dropped to almost 20%. In the last two years, using replacement transfusion, the mortality has dropped to about 10%.

In these transfusions, instead of giving small amounts of blood, all the baby's blood is drained and replaced with healthy blood. Only Rh negative blood should be used, Dr. Diamond cautioned.

While this takes care of the blood condition, other complications must be watched for and treated, Dr. Diamond said, "lest the anemia be cured but the patient succumb."

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AERONAUTICS

Civilian Airways System Is Inadequate for War

► **AMERICA'S** air traffic control system would offer "only moderate assistance to our military forces in time of emergency," a Civil Aeronautics Administration official warned the Society of Automotive Engineers meeting in Los Angeles.

The nation has the best air traffic control in the world, but it is inadequate for even today's civilian needs, declared Frederick B. Lee, deputy administrator of civil aeronautics.

Urging the development of all-weather flying, Mr. Lee said, "The split-second tempo of another war will brook no delays for weather."

"Our entire existence as a nation may hinge on the efficiency of the airways system actually operating at the outbreak of hostilities."

The CAA official described plans for an all-weather system for both civilian and military use, agreed upon in detail through the Radio Technical Commission for Aeronautics, and a 15-year program for modernizing and mechanizing the airways. This program, which will require until 1963 to complete, will cost more than \$1,100,000,000. But this cost is far less than the potential benefits, Mr. Lee emphasized.

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