

## GENERAL SCIENCE

## Science Foundation Bills Again Before Congress

► THE establishment of a federal national science foundation this year is predicted now that identical bills understood to be acceptable to both Republican leaders and the President have been introduced into both houses.

The new bills remedy one of the reasons for presidential veto last session by providing for presidential appointment and Senate confirmation of the director of the foundation.

Sen. H. Alexander Smith, R., N. J., led a group of senators in introducing the bill into the Senate, while Rep. Charles A. Wolverton, R., N. J., introduced the bill in the House. The following senators joined with Sen. Smith in introducing the new bill S. 2385: Sen. Guy Cordon, R., Ore.; Sen. Chapman Revercomb, R., W. Va.; Sen. Leverett Saltonstall, R., Mass.; Sen. Elbert D. Thomas, D., Utah; Sen. Harley M. Kilgore, D., W. Va.; Sen. Warren G. Magnuson, D., Wash.; Sen. J. William Fulbright, D., Ark.

The legislative path of the new proposal has been smoothed by meetings of congressmen and at least tacit approval of the Bureau of the Budget. Scientists are expected to be united in their support.

*Science News Letter, April 3, 1948*

## METEOROLOGY

## World-Wide Weather Study Uses All Modern Methods

► A TEN-DAY world-wide weather study, which began April 1, is participated in by the United States together with 57 countries and will use all modern methods of securing meteorological information, the U. S. Weather Bureau revealed.

This program of meteorological research is under the sponsorship of the International Meteorological Organization, with headquarters at Lausanne, Switzerland. Plans were adopted for the observance of "International Aerological Days" by directors of the organization late last year. Dr. Sverre Petterssen, president of IMO's aerological commission, sent the program to the directors of meteorological services throughout the world in December.

In this they were requested to arrange for as many aerological observations as possible by the aid of radiosonde, self-recording instruments carried aloft by balloons; vertical ascents, balloon mete-

orographs, weather reconnaissance flights and commercial aircraft and pilot balloons.

The U. S. Weather Bureau, the Air Force Weather Service and the Navy Aerological Service will participate in the program. They will probe the air 11 miles or more above the earth to get maximum coverage for the first time since the war.

The upper-air reports from all services will be combined at a central point and, taken together with similar coverage by surface observations for the same period, will provide the basis for a composite global weather picture.

*Science News Letter, April 3, 1948*

## BACTERIOLOGY

## Swimming Bacteria Not Helped by Tail Wagging

► BACTERIA that swim do so in the manner of Bo-Peep's sheep, "wagging their tails behind them." Their real work of swimming is done by a twisting motion of the whole microscopic body of the bacterium, and what appear to be flagellae or swimming organs are mere accidental streamers strung out of the mucilage-like covering of the body.

This new interpretation on bacterial swimming is offered by Dr. Adrianus Pijper of the University of Pretoria, S. A., in a letter to the editor of *Nature* (Feb. 7). He states that in very critical observation of swimming bacteria, made under special lighting conditions, he has repeatedly seen what looks like a tail being passively dragged along, and taking no real part in propulsive action.

*Science News Letter, April 3, 1948*

## WILDLIFE

## Game Animal Population Gains 25% in Three Years

► GAME animals in this country are on the up-grade, U. S. Fish and Wildlife Service counts indicate. A compilation of game censuses from all sources shows an increase from 6,598,422 head in 1943 to 8,240,400 at the end of 1946, latest date for which counts are reasonably complete.

Deer greatly outnumber all other big-game animals, accounting for 7,375,200 out of the total. Other animals in numbers above 100,000 are elk, pronghorn, peccary and black bear. Populations of bison, grizzly bear, moose, bighorn, and woodland caribou are smaller; though some of these range up to 24,000 head.

*Science News Letter, April 3, 1948*

# IN SCIENCE

## NATURAL RESOURCES

## U. S. Producing Own Class Of "Displaced Persons"

► AMERICA is producing its own class of "displaced persons" by wasteful misuse of land and other natural resources, declares Guy Irving Burch, editor of the *Population Bulletin* (March).

"It is quite possible that the amounts of topsoil, forests, minerals and wildlife that the American people have needlessly destroyed by hasty exploitation could support as many as 40,000,000 human beings," he points out.

"If this is true, it may mean that there will be 40,000,000 fewer people in the United States than might have been had the American people taken proper care of their natural resources.

"The possibilities are that the number of displaced Americans may become even larger, because the United States still is exploiting its natural resources at a rate which is displacing about 175,000 people a year."

*Science News Letter, April 3, 1948*

## MEDICINE

## "Blue Baby" Operation Originators To Get Award

► THE "blue baby" operation which has restored hundreds of children to health has won for its originators the \$5000 Passano Foundation award presented each year by the Williams and Wilkins Co. medical publishers of Baltimore.

The award will be presented to Dr. Helen B. Taussig, associate professor of pediatrics, and Dr. Alfred Blalock, professor of surgery, Johns Hopkins Medical School, during the meeting of the American Medical Association on June 23 in Chicago.

This is the first time a dual selection has been made for the award, and the first time a woman has been named as a Passano award winner. Previous winners have been Dr. E. J. Cohn of Harvard, for his work on blood fractionation; Dr. Ernest Goodpasture of Vanderbilt for virus culture by the chick embryo method; and Dr. Selman Waksman of Rutgers for discovery of streptomycin, mold remedy for numerous diseases.

*Science News Letter, April 3, 1948*

# E FIELDS

## AERONAUTICS

### Navy Jet Fighters Train With Air Force Planes

➤ NAVY jet fighters will train with 50 Air Force Shooting Stars, the P-80 built by Lockheed, it was just revealed. These planes will be used in the jet-training program for Naval aviators prior to the delivery of Navy carrier-based jet fighters in quantity.

The training for the Navy aviators will be at land stations, and the pilots will become familiar with flight characteristics peculiar to jet planes, tactical and gunnery problems and navigational flights. The jet fighters that are designed for carrier operation have high speed like the Shooting Star and also high performance at low speed to enable them to take off from and land on the relatively short decks of carrier vessels.

*Science News Letter, April 3, 1948*

## RADIO

### New Type Communication May Have Military Uses

➤ A NEW TYPE of communication for certain military and civilian uses was described to the Institute of Radio Engineers meeting in New York by Harry Stockman, Watson Laboratories, Cambridge, Mass. It may possibly be employed in communication between airplanes, or from ship to ship on the ocean. There are other applications of military interest.

This system utilizes invisible waves of radio, infra-red rays, or of sound too high-pitched for the human ear. They are sent from an instrument and returned to the same instrument from a distant reflector. On the outward trip they carry no message. Returning, however, they bring signals with meaning.

The reflector provides a key part in the system. It is a signal-excited reflector, excited by the waves received, that changes, or modulates, the waves before returning them. This modulation may be done in one of many ways, Mr. Stockman stated. They were listed by him as position modulation, damping modulation, effective area modulation, doppler modulation, and interference, amplitude, directional, and polarization modulation.

The following coded or modulated

reflectors may be mentioned, he said. They are turrets of corner reflectors, rotating with a speed controlling the modulation frequency; corner reflectors with variation in the path length of the internal beam components; and corner reflectors with variation of the reflection angle of the beam components.

*Science News Letter, April 3, 1948*

## CHEMISTRY

### Carnauba Wax Has Rival In Yucatan Waste Pulp

➤ THE Brazilian carnauba wax, widely used in America for polishes and water-proofing, now has a humble Mexican rival from the Yucatan peninsula, the Armour Research Foundation of the Illinois Institute of Technology in Chicago has revealed. It is extracted from the waste pulp from which henequen or sisal fiber for ropes has been taken.

The new wax has properties similar to those of carnauba. It is hard, has a melting point of approximately 185 degrees Fahrenheit, and bleaches readily to an almost colorless material for industrial finishes and coatings. Some 10,000,000 pounds annually can be made from available sisal waste pulp.

The product is one of the results of the industrial development research program being conducted in Mexico by the research foundation. Its program is conducted under the sponsorship of Banco de Mexico, and is designed to create new Mexican industries as well as to provide international credits through exports.

*Science News Letter, April 3, 1948*

## GEOLOGY

### Deep Submarine Canyons Found off New Guinea

➤ GREAT canyons have been found in the sea floor off the coast of New Guinea, R. C. Sprigg of the Australian Department of Mines announced in the British journal, *Nature*, Feb. 14. Cut in a bottom of soft volcanic mud, they range in depth between four and five thousand feet.

Theory for their cause most widely accepted at present is that during the Pleistocene ice age in northern lands, when much of the water was taken out of the sea and locked up in ice sheets on the land, rivers charging down steep slopes became submarine currents after they entered the ocean, and thus carved deep channels in the bottom. Similar submarine canyons have been found off the coasts of North America and Europe.

*Science News Letter, April 3, 1948*

## ENGINEERING

### Miniature Air Motor Delivers One Horsepower

➤ A TINY compressed air motor weighing 22 ounces built at State College, Pa., will deliver one horsepower when operated on air at 300 pounds pressure per square inch. It is an improved model of a Scotch device.

The original motor was developed by J. Haythorne, Technical Experimental Establishment, Greenock, Scotland. Modifications were made in the design, and the drawings sent to the Ordnance Research Laboratory here at Pennsylvania State College. The Scotland model weighed eight pounds and delivered one-half horsepower when operated at an air pressure of 350 pounds per square inch.

The improved motor, built from the drawings, runs at a speed of 4,000 revolutions a minute and, when properly mounted, does not have objectionable vibration.

*Science News Letter, April 3, 1948*

## PSYCHOLOGY

### Half of Criminals Found To Have Physical Ailments

➤ FIFTY per cent of criminals have indigestion, Dr. David Abrahamson, psychiatrist at Columbia University, found from a four-year study of lawbreakers and their families.

The lawbreakers also suffer from heart trouble, nervous ills, skin trouble and respiratory diseases. Dr. Abrahamson believes all these can be traced to friction in the home.

"Family tension breeds criminals," Dr. Abrahamson concludes.

"Homes where there is bickering and nagging cause children to tighten up with resentment and hostility, resulting in their rebellion against authority and responding to the will of the gang."

Sometimes the criminal was treated cruelly in his home or failed to receive a normal amount of affection. In some cases he had dominating parents, in other cases weak ones. Sometimes a brother or sister was the favorite of the family and received more than a fair share.

Result: Jealousy, resentment, tendency to spiteful revenge and later not only criminal action but also illness of the kind in which psychological and physical elements are linked, as in stomach disorders, skin ailments and some kinds of heart trouble.

*Science News Letter, April 3, 1948*