

age, nearly £750,000 (\$2.1 million) each year on organizations to control the desert locust.

Swarms of the desert locust roam freely over a vast area of Africa, from the Atlantic coast through West African territories (including Gambia, Sierra Leone, Ghana, and Nigeria) to the Chad and Sudan republics, Ethiopia, Somaliland, and Aden Protectorate, as well as to Kenya, Tanganyika, and Uganda and across the Middle East to Pakistan and India.

The main concentrations vary from year to year, and some countries may be free for a period while others are so heavily invaded as to be unable even to defend their crops. The result is that, in spite of every effort on the part of territorial forces, only part of the swarms present in one season over the whole vast invasion area are killed. In the next year, another group of territories is invaded and their antilocus forces may be overwhelmed, while the forces in the temporarily more fortunate countries are standing idle, but still demanding funds in order to be ready for the next onslaught.

The present use of highly efficient antilocus forces for local defense only is the main cause of failure to reduce the current desert locust plague, which has continued, with only brief intervals of respite, for the last 20 years. The locust swarms move over hundreds and even thousands of miles, across frontiers which often present unsurmountable barriers to territorial antilocus forces.

Efficient Information

Major concentrations of locusts are now predictable, because of the efficient International Desert Locust Information Service, operated by the Anti-Locus Research Center in London, with support from the Food and Agriculture Organization of the United Nations. It would be possible, therefore, to move the technical personnel and equipment to any danger points and to attack the locusts in an area where a far-reaching victory, not merely a minor local success, would be scored.

Practical plans for organizing strategically important operations against the desert locust are being considered by FAO. They envisage a free exchange of antilocus forces across frontiers, so that help could be given to a heavily-engaged neighbor. This can be done, provided there is a previous general agreement on mutual help between

adjoining territories, and provided a strong and highly mobile antilocus reserve unit, which would give powerful support to local forces when necessary, is created.

Control of Two Kinds of Locusts

Such cooperation has already proved to be practicable and effective in the control of two other kinds of locusts which devastated Africa until recently. They are the migratory locust and the red locust, and their main areas of destructive action were to the south of the desert-locust region, in many of the most fertile countries in Africa. Scientific investigations showed that each of these species had main areas of outbreak, from which swarms spread over the greater part of the continent. Once these sources of invasion were discovered, agreements were concluded between the countries to establish and to maintain jointly an international control organization for each locust species.

These permanent organizations have now been in existence for some 15 years, maintaining a close watch on the locusts and killing the first small swarms that threaten to develop and to escape from the breeding areas. No such escapes have occurred since these organizations were formed.

The desert locust, unfortunately, presents a much more difficult problem. Since it has no narrowly delimited outbreak areas, its swarms migrate freely over enormous distances and breed wherever rain occurs. It is, therefore, not yet possible to hope to prevent plagues of desert locusts, but effective international and interterritorial co-operation can do much to reduce the danger to the rapidly expanding agriculture of Africa and the Middle East.

B. P. UVAROV

*Locust Research Center,
London, England*

Foundation Makes Grant for Woods Hole Research Vessel

Oceanographers are to have a new research vessel that is being provided through a \$3-million National Science Foundation grant to the Woods Hole Oceanographic Institution. The new vessel will replace the R.V. *Atlantis*, 28-year-old "flagship" of the institution's fleet.

The grant results from a foundation-sponsored series of informal conferences among government and private oceanographers to assess the problem

of inadequate vessels for oceanographic investigations. Because of the probability that NSF would be asked to support research-vessel construction, it made a grant to Woods Hole in 1958 to study capabilities and preliminary designs of various sizes and types of craft. This study, in turn, benefited from earlier studies made by the institution with funds provided by the Office of Naval Research.

A new and distinctive type of research vessel has been evolved from these studies, which combines the best features of seaworthiness and performance to be found in the "fat" trawler and the "lean" Coast Guard cutter. The new vessel will be able to operate under weather conditions too severe for all but one of the present Woods Hole vessels and is expected to be one of the most efficient and versatile research ships afloat.

The vessel will have an over-all length of 175 feet, a beam of 36 feet, and a displacement, when loaded, of 1040 tons. She will have an operating range of 7500 miles and a cruising speed of 12 knots. The ship's complement will be 37 people, of whom 19 will be scientists and the rest officers and crew. Preliminary design plans were prepared by the firm of M. Rosenblatt and Son of New York.

Public attention was focused on the needs of U.S. oceanography in February 1959 when the Committee on Oceanography of the National Academy of Sciences published a report, *Oceanography 1960 to 1970*. The report recommended that the United States Government, as well as private sources, should expand support of the marine sciences sufficiently to stimulate a doubling of basic research in the field within the next 10 years, and that several agencies, including the National Science Foundation, should assist in the financing of new research ship construction.

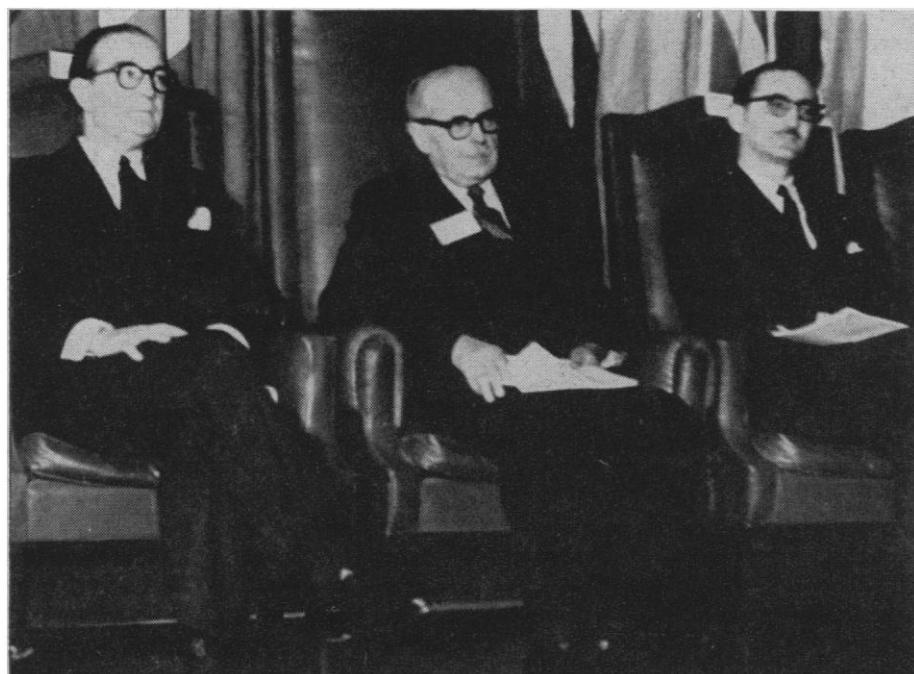
Actually, the National Science Foundation as early as 1956 had considered the advisability of providing financial support for the construction of oceanographic vessels. It was recognized that existing oceanographic vessels would require replacement, and also that the total "United States fleet" of oceanographic vessels would have to be enlarged. Because of the increasing importance of this field of science and the great cost of the vessels, it was early realized that the Federal Government would have to play a significant role.

The United States Navy has been a primary source of support for oceanography, both for basic research and for projects of a specific military nature. It has joined civilian oceanographers in urging increased foundation support. The Navy has also requested funds for constructing its own oceanographic research vessels.

Under the terms of the new NSF grant, the Woods Hole Oceanographic Institution will submit detailed construction plans for foundation approval. The agreement provides for NSF concurrence in plans for solicitation of bids, award of the contract, and inspection of construction. The institution will operate and maintain the vessel.

Houssay Heads Physiology Union

Bernardo Houssay, chairman of the National Research Council of Argentina, has been elected to serve for the next 3 years as president of the International Union of Physiological Sciences. He is shown here presiding over the opening session of the 21st International Congress of Physiological Sciences, of which he was president. It was later in the congress, which was held last August in Buenos Aires, that the International Union's general assembly elected him to the 3-year term. Houssay, who won the 1947 Nobel Prize in Physiology and Medicine, is director of the School of Medical Sciences of the University of Buenos Aires.



Bernardo Houssay (center), new president of the International Union of Physiological Sciences.

Grants, Fellowships, and Awards

Teacher fellowships. In order to encourage highly qualified secondary-school teachers to improve their competence by working at the graduate level in the various fields of science and mathematics, the National Science Foundation is again offering a program of summer fellowships for secondary-school teachers of science and mathematics. Several hundred awards will be made for study beginning in the summer of 1960 and continuing for as many as three successive summers. The program is being administered for the foundation by the American Association for the Advancement of Science.

Fellowships will be awarded to support individually planned programs of study in the mathematical, physical, and biological sciences acceptable by the fellowship institution toward an advanced degree in one of these sciences. Although fellows will not be required to pursue courses of study leading to an advanced degree, they will be required to pursue studies at that level.

This fellowship program is in addition to the foundation's support of institutes for teachers. In the institutes' programs, teachers are afforded opportunities to study in courses of instruction especially designed for groups of teachers. Institute participants are chosen by the staff of the institute according to locally established criteria. In the fellowship program, fellows may pursue individually planned graduate-level

study programs at institutions of their choice.

An applicant must (i) be a citizen of the United States, (ii) be a science or mathematics teacher in a secondary school (and have had 3 years' experience in that capacity), and (iii) hold a baccalaureate degree or its equivalent. Applicants will be evaluated by panels of scientists chosen especially for this task by the AAAS.

Stipends will be computed at the rate of \$75 for each week of tenure. Travel and dependency allowances will ordinarily be provided, and the foundation will pay for tuition and required fees.

Teachers should *not* submit their applications directly to the National Science Foundation. Rather, information and application materials may be obtained by addressing a request to Secondary School Fellowships, American Association for the Advancement of Science, 1515 Massachusetts Ave., NW, Washington 5, D.C. Completed applications must be received by the association by 15 January 1960.

Scientists in the News

William A. Hamor, senior director of research at the Mellon Institute, Pittsburgh, Pa., will retire on 31 December after 45 years at the institute. Hamor, who is a specialist in the literature of chemistry, is the author or co-author of nearly 200 articles and publications, including five books. During his years at Mellon he has also edited articles, books, and other publications.

In 1950 Hamor received the Pittsburgh Award of the American Chemical Society for "outstanding service to chemistry." Since 1947 Hamor has been editor of the American Chemical Society's Chemical Monograph series. In addition, he served on the committee that established the Priestley Medal and the committee that formed the petroleum division of the society. At one time he wrote a column on industrial developments for the then *Journal of Industrial and Engineering Chemistry*, which carried the first industrial news to appear in any of the society's journals. Later, for 6 years, he wrote annual reviews of industrial research development for *Chemical and Engineering News*.

Hamor has also been cited as an authority in the field of industrial hygiene. Early in his career he conducted research on the chemistry and toxicology of anesthetics, and later, research