News of Science

Foot-and-Mouth Virus Photographed

H. L. Bachrach and S. S. Breese, Jr., of the Plum Island Animal Disease Laboratory of the U.S. Department of Agriculture, report that they have purified, isolated, and photographed the foot-and-mouth disease virus. Their first electron micrographs of the virus show that it is spherical in shape and about one-millionth of an inch in diameter. This is the smallest of any of the viruses affecting animals—even smaller than poliovirus. These new findings about the physical makeup of foot-and-mouth disease virus are expected to speed research on the development of new and effective means of combating the disease, which has great economic importance to livestock production throughout most of the world.

Educational TV and IGY

Five new series of live television programs will be broadcast over the National Educational TV network beginning 28 Oct., with one of the series to be devoted to the International Geophysical Year. Inauguration of the new programs will constitute the second part of the cooperative effort by the Educational Television and Radio Center, Ann Arbor, Mich., and the National Broadcasting Company to bring national live programs exclusively to the noncommercial educational television stations.

In addition to the IGY programs, other series will be in the areas of American resources, current affairs, and the creative arts. The American resources series will explore the ways in which natural resources condition a population's way of life. Each of the series will include ten programs broadcast over a 10-week period on weekday nights at 6 P.M., Eastern standard time.

The IGY series will be directed to a general audience, but special attention will be given to making it meaningful to young people. Eminent scientists will appear, and close working relationships have been established with the U.S. National Committee for the International Geophysical Year. Visual resources will be drawn from film cleared for this use by the IGY, from remote coverage where activity is particularly important, and from specially prepared models and devices.

WHO Approves Fluoridation

The World Health Organization has reported that the use of fluoridated drinking water to prevent tooth decay is safe, effective, and practical. After having studied hundreds of fluoridation programs in 17 countries, a WHO committee has announced that the use of fluorine in drinking water supplies is approved by responsible public-health officials throughout the world.

In the United States 32 million people in more than 1500 communities are drinking fluoridated water. Sixteen other countries have begun similar programs.

The WHO committee report emphasized that results in all nations using fluoridated drinking water show remarkable uniformity. Dental caries in the permanent teeth of children decreased by about 60 percent, while in children's primary teeth the reductions ranged from 50 to 60 percent.

No other public-health procedure has had, during the initial stages of its application, such a background of study in terms of both time and expense, the report said. Without qualification or caution, WHO recommends the use of fluoridated drinking water wherever and whenever possible. It was suggested that treated water contain 1 part of fluorine for every 1 million parts of water.

Scientific Languages and Britain's New Secondary Technical Schools

Russian was recently selected as the second most important scientific language by the Hatfield School, one of England's new secondary technical schools. Further, at Hatfield German, rather than French, is now the first language for students receiving extensive science instruction.

Hatfield School is only 3 years old, for the technical schools are the newest of the three-part secondary-school system in Britain. Secondary education includes youngsters from the ages of 11 to 15. The oldest of the secondary schools are the grammar schools, which are college preparatory and have a program that is strong in the classics. Competitive examinations select the top 20 percent of the 11-year-olds who enter the grammar schools.

The Education Act of 1944 led to the establishment of the state-supported secondary technical schools. Like the grammar schools, these are selective in their enrollment; however, they differ in that they emphasize science rather than the classics, and their curricula bear a relationship to the industry or commerce of the particular region in which they are located.

The development of the technical school is coupled with the growing importance of technicians in English industry. Like the United States, Britain has a grave shortage of engineers.

The graduates of the technical schools usually go to work after completing their secondary education and their military service. But reaching the legal age for leaving school, now 15 but in the process of being raised to 16, does not mean the end of education for most of them. Many take further education 1 day a week at the county colleges on time released by their employers. The large enrollment in these free schools is closely related to England's efforts to raise the compulsory school age to 16 as soon as staff and facilities are sufficiently increased.

Industry Group Considers Formation of Nuclear Center

Four major United States companies have established a group of scientists and economists to study the technical and economic feasibility of building and operating a nuclear testing center with private capital. Announcement of this Nuclear Test Center Study Group was made jointly by the heads of the cooperating companies: ACF Industries, Inc., Kaiser Engineers, Lockheed Aircraft Corporation, and Phillips Petroleum Company.

The concept of such a center conforms with the desire of the Atomic Energy Commission and the Joint Committee on Atomic Energy to hasten the time when nuclear testing facilities will be built and operated with private capital rather than with Government funds. The services of the potential test center would be available to Government agencies, educational institutions, and both domestic and foreign industrial enterprises.

Among the many facilities that would be included in the center are a very high

neutron-flux test reactor and supporting laboratories. The Nuclear Test Center Study Group has established headquarters at 1625 I St., NW, Washington, D.C., under the direction of R. M. Jones of ACF Industries.

Seismological Coordinates for Underground Nuclear Test

The Atomic Energy Commission has released the following seismological information about the underground nuclear explosion that took place at the Nevada Test Site on 18 Sept. [*Science* **126**, 200 (2 Aug. 1957)]. Seismologists can establish the position of the blast by using the following: latitude 37° 11.7′ north, longitude 116° 12.2′ West; altitude 6611.43 feet above mean sea level.

CERN Synchrocyclotron Operating at Full Energy

The synchrocyclotron, first of the two high-energy accelerators being built by the European Organization for Nuclear Research (CERN) in Geneva for the use of European scientists, is now working at its full energy, according to C. J. Bakker, director-general of CERN. After little more than 2 years of work at the CERN laboratory center, the staff of the synchrocyclotron division, which is under W. Gentner, was recently able to conduct test runs with the machine at its peak output energy of 600 million electron volts. The internal current during the first runs was about 0.1 microampere. Later the current of high-speed nuclear particles is expected to be increased.

The CERN synchrocyclotron is the third biggest of its kind in the world. Slightly bigger machines are in operation at the Radiation Laboratory, University of California, Berkeley (U.S.A.), and at the Joint Institute for Nuclear Research at Dubno near Moscow (U.S.S.R.).

The other machine being built by CERN, the 25,000-million electron volt proton synchrotron, is still under construction. This accelerator is expected to be completed by late 1960.

Geographic Field Research Abroad

In 1958 the National Academy of Sciences–National Research Council will conduct, under the financial sponsorship of the Office of Naval Research, its third annual program of geographic field research in foreign areas. Since 1955, awards have been made to 18 young Americans to carry out field research on topics of their own choosing for periods ranging up to 14 months.

The objective of the program is to strengthen American geography by stimulating greater participation by young Americans in field research in areas outside of the United States. Support will be made in related fields, such as geomorphology, climatology, ecology, and pedology.

The program is designed primarily for graduate students who wish to conduct field research in connection with their doctoral dissertations, but investigators who have received the doctorate within the last few years are also eligible. More mature scholars may submit research proposals to the Geography Branch, Office of Naval Research, Washington 25, D.C.

The extent of financial assistance will vary according to need. The intent is to provide adequately for travel, field, and living expenses. Usually there is no stipend. A preference will be shown for field investigations of at least 6 months' duration. Recipients of support must agree to submit a detailed report of their investigations, suitable for publication, to the Division of Earth Sciences, NAS–NRC.

Applications for support of field work to be initiated before 1 Apr. 1959 must be submitted *before 1 Dec.* All applications or requests for further information should be addressed to: Foreign Field Research Program, Division of Earth Sciences, 2101 Constitution Ave., Washington 25, D.C.

Arctic Institute

The Arctic Institute of North America is offering field research support in 1958 for scientific investigations dealing with the arctic and subarctic regions of North America. Applications are invited by those who have demonstrated their ability to conduct research work of superior quality in some field of science.

Priority will be given to field investigations, although studies at one of the institute offices will be accepted. Proposals in the broad field of the earth sciences, in marine biology, and in physiology are especially desired. Facilities of the Arctic Research Laboratory at Barrow, Alaska, are available for a limited number of investigators for both summer and winter programs. The facilities include both housing and equipment.

Application forms may be obtained from the Arctic Institute of North America, 3485 University St., Montreal 2, P.Q., Canada, or 1530 P St., NW, Washington 5, D.C. Completed applications should be received *before 1 Nov.* Late applications will be considered in special circumstances only, if additional research funds become available.

The Institute is also in a position to award grants from funds provided by the trustees of the Banting Fund primarily to encourage Canadians, particularly recent graduates, in northern studies. Inquiries should be addressed to the Arctic Institute's Montreal office.

Geomorphology Journals

Publication of two leading journals in geomorphology, both of which were discontinued during World War II, has been resumed with the appearance of the *Zeitschrift für Geomorphologie,* under the editorship of Hans Mortensen of Goettingen, and the *Revue de Geographie Physique et de Geologie Dynamique,* under the editorship of J. H. Brunn of Paris. Each starts with a new series and initial volume for 1957.

More Animal Study Urged

The Institute of Laboratory Animal Resources has passed the following resolution urging the study of animal diseases:

"The Institute of Laboratory Animal Resources, cognizant of the need for a broader understanding of animal diseases, both for the practical purpose of providing medical and biological research with the best possible investigative animal materials and for the broader purpose of promoting research on animal diseases for a better understanding of biological and pathological phenomena in general, strongly urges the intensification of basic research in the field of animal pathology and, in particular, of the diseases of animals used in laboratory investigations and testing."

NBS Summer Program

The 1957 Summer Student Program at the National Bureau of Standards began on 2 July with the largest enrollment on record, 238 students in the Washington, D.C., area and 25 students at Boulder, Colo. This program, an integrated plan of laboratory work assignments, orientation, and special training, is designed and administered for the purpose of acquainting young physical scientists and engineers with the career opportunities and contemporary activities at NBS.

Of the 263 students, 120 were returnees from previous years and the remainder were new students. Eighty of the group are graduate students, combining summer-work assignments at the bureau with their advanced degree programs. Sixty colleges and 25 states were represented by the new group, with men outnumbering the women 8 to 1. In ad-