

"Mass media entail a heavy responsibility. A single misunderstanding communicated in a presentation to a large group of students can handicap the efforts of all the teachers who must deal with the students personally."

Acknowledging the concern of many educators lest the use of instructional film series seriously undermine the traditional and vital personal interchange between teacher and student, the board pointed out that, on the contrary, proper scheduling of recorded material can actually release a faculty for more individual contact with students than is now permitted by many teaching schedules. Further, it was the unanimous opinion of the board that in "an extended system of presentations offered in connection with a more or less conventional academic course . . . not more than half the time allotted to formal group instruction should be used for presentations [and] that such presentations should be devoted primarily to the exposition of basic ideas and principles. . . ."

Chairman of the Film Evaluation Board was F. A. Ficken, University of Tennessee. Other members were A. M. Gleason, Harvard University; T. H. Hildebrandt, University of Michigan; G. Hochschild, Institute for Advanced Study, Princeton, and the University of Illinois; J. D. Mancill, University of Alabama; and B. E. Meserve, State Teachers College, Upper Montclair, N.J.

In reporting to the Academy-Research Council, the board recommended the establishment of a standing committee on mathematical presentations to offer guidance to schools and film producers and to promote the participation of professional mathematicians in the program. The board also advised formation of similar committees in other fields of the natural sciences. Formation of such committees has already been undertaken.

Atherosclerosis Research

A baboon airlift from Africa to Texas began last month when the Southwest Foundation for Research and Education in San Antonio imported 20 baboons from Nairobi, Kenya, for research on atherosclerosis. The baboon is the only mammal other than man that is subject to the fatty deposits that characterize atherosclerosis. The foundation already has 30 domestically bred baboons. It plans to increase the colony to 1000 this year. The rapid expansion of the baboon program has been made possible by a recent gift to the foundation of \$50,000 by Douglas Marshall, a Houston oil man who is chairman of the Texas Heart Research Foundation.

Foundation scientists have joined with

investigators from three other institutions to form a group that is known as Cooperative Research on Atherosclerosis. The group includes research workers from Louisiana State School of Medicine, New Orleans; the Oklahoma Medical Research Foundation, Oklahoma City; and the Enzyme Institute of the University of Wisconsin.

Soviet Antarctic Station

Gordon D. Cartwright, meteorologist for the U.S. Weather Bureau, has returned to Washington, D.C., after spending 14 months on an International Geophysical Year assignment at the Soviet Antarctic IGY station at Mirny. Cartwright joined the Soviet expedition at Capetown on the 26 December 1956 and left it at Adelaide, Australia, on 4 March 1958. In describing his winter at the Mirny Station, where he was the only American among more than 100 Russians, Cartwright said:

"This was the most stimulating experience of my life. Antarctica by itself makes a vivid and lasting impression on anyone who touches it, and in addition I had an unusual opportunity to observe a group of Russians at work and off duty. I found them warm, hospitable, and with broad scientific and cultural backgrounds. They had a keen sense of humor and their differences of outlook were, of course, sometimes delightful and sometimes difficult to understand."

Cartwright joined in the regular weather analysis work at Mirny, where he was responsible for the preparation of daily upper-air charts covering most of the Southern Hemisphere. The IGY network of observing stations in the Antarctic has made possible for the first time in history the drawing of reliable weather charts of the South Polar regions. Hundreds of cloud photographs and several thousand feet of time-lapse color pictures of special cloud developments in the polar region were taken by Cartwright.

The Soviet expedition is operating in one of the most difficult and least known areas of the Antarctic. The interior stations are located near the central dome of the East Antarctic ice plateau at elevations near 12,000 feet. In establishing these stations the Soviet group was faced with two major problems: the "height-cold barrier," a combination of intense cold and great height that places exceptional strain on both men and equipment; and "soft snow," which can bog down the most powerful tractors and can make ski landings of aircraft highly dangerous except on specially prepared runways.

Cartwright reports that the height-cold barrier and soft snow prevented es-

tablishment last year of two stations the U.S.S.R. had planned in the deep interior. However, by a massive effort during the recent Antarctic summer, and by using new equipment designed on the basis of last year's experience, both stations are now in full operation.

The U.S.S.R. is now operating six scientific stations in East Antarctica. Mirny, which is the main station, is on the Antarctic Circle at 93° East Longitude. A second Soviet station is located on the edge of the ice sheet at Bunger Oasis, and a third station, called Vostok, is in the region of the south geomagnetic pole. The newest station, Sovietskaya, is near the so-called "pole of relative inaccessibility." Two smaller U.S.S.R. observation stations lie on the tractor route to Vostok and Sovietskaya. The leader of the Soviet expedition, Alexei Fyedorovich Troshnikov, is well known for his work as a hydrologist in Arctic regions. The chief meteorologist, Oscar Grigorievich Krichak, is a member of the Central Forecasting Bureau in Moscow.

Cartwright was especially impressed by the well-equipped ships, the *Ob* and *Lena*, which served not only as major transport ships for the U.S.S.R. expedition but also aided some of the most comprehensive oceanographic surveys and observation work ever made in Antarctic waters.

The scientific exchange in which Cartwright took part was so successful that U.S.A. and U.S.S.R. scientists have agreed that similar arrangements should be continued for another year. Morton J. Rubin, also of the Weather Bureau, is already at Mirny, where he will spend the next year doing meteorological work.

Atomic Clock Discrepancy

A discrepancy exists in radio comparison of British and American atomic clocks. These clocks, whose operation is based on the unvarying vibrations of the cesium atom, are accepted as the most accurate measurement standard available. The atomic clock, or Atomichron, has a possible accuracy down to one part in 10⁹. Last summer the frequency of radio signals controlled by the cesium standard at the National Physical Laboratory, Teddington, England, varied by nine parts in 10⁹ from the frequency of similar equipment in this country.

In an effort to solve the difference, two Atomichrons from the Army Signal Laboratories at Fort Monmouth, N.J., have been sent to Teddington for comparison. A third clock has been sent to Cruft Laboratory at Harvard University for radio checks with Teddington.

The Atomichron, which in terms of time has an accuracy of one second per 300 years, is of great importance to the

Army Ballistic Missiles Agency at Huntsville, Ala. One clock has been installed in the agency's Guidance and Control Laboratory, where the systems that steer rockets in flight are developed, and two others are used by the Missiles Firing Laboratory, the unit that launches the Army rockets from the Test Center at Cape Canaveral.

Vanguard to Last 200 Years

John P. Hagen, director of the Vanguard Project, estimated in a recent speech before the American Society of Newspaper Editors that the life expectancy of the Vanguard satellite was "at least 200 years." Shortly after the launching last month Hagen predicted that the 6-inch sphere would last for at least 10 years. Vanguard is on a steady course—405.1 miles from the earth at the nearest point and 2463 miles away at the most distant—and is circling the earth in 2 hours, 14 minutes, and 4 seconds. The change in orbit has been so small "that it is most difficult to measure," according to Hagen.

It is estimated that the Army's Explorer I, the first United States satellite, will last from 3 to 5 years. Explorer II did not orbit, and Explorer III was given a life expectancy of "at least two months" when it was launched on 26 March.

News Briefs

Children are still immune to poliomyelitis 3 years after their original inoculations with Salk vaccine. This finding was announced on 15 April in a report to the American Association of Immunologists by Gordon C. Brown, professor of epidemiology at the University of Michigan. Brown's report was based on a study of 139 children. He said that infants who had received smaller-than-average doses of the vaccine 3 years ago are still protected, too. The study also showed that the booster shot is the most important inoculation in the entire poliomyelitis series.

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Scientists who are working in the fields of aviation and space medicine but who are not physicians may now become full members of the Aero Medical Association in accordance with amendments to the society's constitution and bylaws adopted at the 29th annual meeting at the Statler Hotel, Washington, D.C., on 25 March. In the past, aeromedical scientists who did not possess the degree of doctor of medicine were eligible only to become associate members.

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The National Academy of Sciences has announced that the *IGY Bulletin*,

official monthly publication of the U.S. National Committee for the International Geophysical Year, is now available by subscription. The subscription rate is \$4. This will include all back issues, dating from July 1957, together with all future issues. (The *Bulletin* will be published at least through December 1958 and possibly through June 1959.) Subscriptions should be sent to the Publications Office, National Academy of Sciences, 2101 Constitution Ave., Washington 25, D.C.

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A new international vocabulary of lighting terms, the culmination of 20 years of study by a working party of the Commission Internationale de l'Eclairage, is now ready for distribution through the organization's United States National Committee. Printed in three languages—French, English, and German—the *International Lighting Vocabulary of the International Commission on Illumination* contains 530 terms, with definitions, as well as numerous symbols and formulas. The publication may be obtained for \$2.50 from Mr. T. D. Wakefield, Treasurer, U.S.N.C. Vermilion, Ohio.

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The American Phytopathological Society has for several years sponsored the publication of results from tests on new fungicides. The *Results of 1957 Fungicide Tests* for the first time has been printed privately and is issued as a single publication. Previously the *Results* have been assembled by combining reprints of serial articles published in *Agricultural Chemicals*. The *Results of 1957 Fungicide Tests* can be obtained for \$1 per copy from Dr. A. B. Groves, Department of Plant Pathology and Physiology, Winchester Fruit Research Laboratory, Route 3, Winchester, Va.

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Present knowledge of the geology and mineral resources of the continental shelves of North and South America is summarized in a report released recently by the U.S. Geological Survey. The report consists of a set of four papers, under the over-all title *An Introduction to the Geology and Mineral Resources of the Continental Shelves of the Americas*, by James Trumbull, John Lyman, J. F. Pepper, and E. M. Thomasson. Copies may be obtained for 75 cents each from the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C.

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Only 16 secondary schools in the United States—eight public and eight private—are now teaching the Russian language, according to a report by Helen B. Jakobson, head of George Washington University's Slavic languages department. However, all but seven states have at least one college or university offering Russian. By way of contrast, from 5 mil-

lion to 6 million Soviet students are reported to be studying English, and Russian is taught in 70 French secondary schools.

Scientists in the News

ROBERT B. BRODE has been named associate director for research at the National Science Foundation, effective in July. He will be on leave of absence from the University of California (Berkeley), where he has been professor of physics since 1932. He succeeds PAUL E. KLOPSTEG, who will continue to serve the foundation as a consultant. Klopsteg is president-elect of the AAAS.

ARTHUR E. LILLEY, assistant professor of astronomy at the Yale University Observatory, has been awarded the Bart J. Bok Prize for his work in radio astronomy. The award was made on 22 April at a Harvard University conference on radio noise. Lilley's work deals with measurements of the doppler effect in the radio spectrum.

The Bok Prize is awarded every 2 years to a student who has recently been awarded the Ph.D. in the physical sciences at Harvard or Radcliffe. It is given for "work in the area of Milky Way research by observational methods." The prize fund was donated anonymously in 1956 in honor of Bart J. Bok, longtime professor of astronomy at Harvard, and now director of the Mount Stromlo Observatory of the Australian National University.

JOHN P. SCOTT, chairman of the division of behavior studies at the Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Me., since 1945, and senior staff scientist since 1957, joined the department of psychology in the division of biological sciences of the University of Chicago on 1 April, as visiting professor for the quarter ending 30 June.

The following awards were made during the 95th annual meeting of the National Academy of Sciences, which took place in Washington, D.C., on 28 April.

HORACE W. BABCOCK, astronomer, Mount Wilson and Palomar Observatories, Pasadena, Calif., received the Henry Draper Medal "for his original and outstanding work leading to the discovery of magnetic fields in stars and also the general magnetic field of the sun."

MARK G. INGRAM, professor of physics at the Enrico Fermi Institute for Nuclear Studies, University of Chicago, received the J. Lawrence Smith Medal "for his work on the measurement of the ages of meteorites."

GUSTAV A. COOPER, head curator, department of geology, U.S. National Museum, Washington, D.C., re-