News and views

International Geophysical Year

MANY YEARS AGO it was realized that it would be very worth while to have certain kinds of observations made on a world-wide basis. There are many phenomena in nature which are of a world-wide character, and which require observations at several different stations simultaneously. Illustrations which come at once to mind include observations of the aurorae, terrestrial magnetism, ionospheric reflection of radio signals, earth currents, meteorology, cosmic rays, glaciology, and upper atmosphere studies. In 1882–3 and again a half-century later, in 1932–3, the scientific societies of the world agreed on a common program. The year was designated a Polar Year, arctic research being the main beneficiary of the international program on the first two occasions.

The results of this program were excellent beyond anticipation. The first Polar Year produced the discovery of the auroral zone and laid the foundation of our present understanding and world picture of terrestrial magnetism. The second yielded the first observations of the ionosphere in the arctic, discovered the polar ionospheric blackouts, permitted a numerical theory of geomagnetism to be evolved, and in increasing research facilities led to the establishment of the Geophysical Institute at the University of Alaska which has contributed so significantly to research in this region.

With the broadening of science, it has now become evident that many sciences require data from areas other than polar, and the next period in the observing cycle has been termed an International Geophysical Year. We shall refer to it as IGY. Actually IGY extends from July 1, 1957 to December 31, 1958. This period covers the approach to the maximum of the next sunspot cycle, a particularly fortunate and potentially fruitful occurrence. Each of the major scientific societies of the world has set up a committee to consider how the proposed work should best be coordinated to produce a maximum of useful results, what measurements should be made, where observing stations should be located, and a host of other allied problems.

In the United States, the coordinating agency is a U. S. National Committee set up by the National Research Council. Dr. J. Kaplan of the University of California at Los Angeles is its chairman. Each science has a reporter, who recommends to the committee the procedures within his own science which offer the greatest possibility of securing a maximum of significant information.[1] The U. S. National Committee will send delegates to report to the International Committee, formed by the International Union of Geophysics and Geodesy, organized under Professor Sydney Chapman, which will meet in Rome in the latter part of September 1954.

The international character of many of the observations can be illustrated by a few examples. Thus in meteorology it is not known whether there is a mass movement of air across the equator. In cosmic rays it is not known whether it is correct to assume that the intensity distribution at any elevation is symmetrical at corresponding latitudes north and south of the geomagnetic equator. Radio waves are also no respecters of political boundaries, and ionospheric studies likewise require that instruments shall be located with the world-wide aspects of the problem rather than with a particular nation in mind. The majority of the earth sciences are international in character and many illustrations in the field of aurora and airglow studies, geomagnetism, and glaciology will at once occur to the intelligent reader.

This year also provides a unique opportunity for a major antarctic expedition. Such an expedition, with several bases, is at present being organized and will have as its main objective the execution of the scientific program now being formulated.

As the plans progress, we will keep the readers of *Physics Today* informed of various developments. In the meantime, investigators who have programs which would logically fit into a world picture are invited to outline details and proposed arrangements with the present author, or with any of the reporters of the various fields.

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Science and Public Policy

THE THIRD ANNUAL REPORT[2] of the National Science Foundation, transmitted to the White House in November and sent by the President to Congress in January, summarizes the Foundation's

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[1] Reporters for the IGY are the following:
Aurora and Airglow, C. T. Elvey, Geophysical Institute, College, Alaska.
Cosmic Rays, S. A. Korff, New York University, University Heights, New York 53, New York.
Geomagnetism, E. B. Roberts, U. S. Coast and Geodetic Survey, Washington 25, D. C.
Glaciology, P. A. Siple, Office Quartermaster Corps, Department of the Army, Washington 25, D. C.
Ionospheric Physics, H. G. Booker, Electrical Engineering Department, Cornell University, Ithaca, New York.
Latitude and Longitude, G. M. Clemence, U. S. Naval Observatory, Washington 25, D. C.
Meteorology, H. Wexler, U. S. Weather Bureau, Washington 25, D. C.
Rocket Exploration of the Upper Atmosphere, J. A. Van Allen, Forrestal Laboratory, Princeton, New Jersey.
Solar Activity, S. B. Nicholson, Mt. Wilson Observatory, Pasadena, California.

[2] *The Third Annual Report of the National Science Foundation* is for sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., price 40 cents.