28 June 1957, Volume 125, Number 3261

SCIENCE

SCIENCE, founded in 1880, is published each Friday by the American Association for the Advancement of Science at Business Press, Lancaster, Pa. Entered at the Lancaster, Pa., Post Office as second class matter under the Act of 3 March 1879.

SCIENCE is indexed in the *Reader's Guide to Periodical Literature* and in the *Industrial Arts Index.*

Editorial and personnel-placement correspondence should be addressed to SCIENCE, 1515 Massachusetts Ave., NW, Washington 5, D.C. Manuscripts should be typed with double spacing and submitted in duplicate. The AAAS assumes no responsibility for the safety of manuscripts or for the opinions expressed by contributors. For detailed suggestions on the preparation of manuscripts, book reviews, and illustrations, see *Science* 125, 16 (4 Jan. 1957).

Display-advertising correspondence should be addressed to SCIENCE, Room 740, 11 West 42 St., New York 36, N.Y.

Change of address notification should be sent to 1515 Massachusetts Ave., NW, Washington 5, D.C., 4 weeks in advance. If possible, furnish an address stencil label from a recent issue. Be sure to give both old and new addresses, including zone numbers, if any.

Annual subscriptions: $7.50; foreign postage, $1; Canadian postage, 50¢. Single copies, 25¢. Special rates to members of the AAAS. Cable address: Advancesci, Washington.

The AAAS also publishes THE SCIENTIFIC MONTHLY.

Experiments in Concert

From July 1957 through December 1958 observers of 61 nations will participate in the International Geophysical Year to produce the biggest cooperative scientific venture in history. Geophysics is peculiar in its need not merely for vast masses of data, but for data obtained simultaneously in many different parts of the globe. Use of simultaneous measurements was first made in 1741, when Celsius (known also for his thermometer scale) of Uppsala, Sweden, suggested to the London instrument-maker George Graham that they watch their suspended magnetic needles on a common schedule, and so determine whether disturbances in a needle at a given place implied disturbances at distant places as well. On 5 April, unusual motions were observed at both Uppsala and London.

Magnetic storms and other magnetic variations were not studied on a large scale, however, until almost 100 years later, when Humboldt, the great traveler, observer, and impresario of science, persuaded scientists and governments to take part in a Magnetic Union. Under arrangements worked out in part by Gauss, investigators at 50 stations sat in wooden huts, recording the declination of magnetic needles—from Dublin to Göttingen to Nertschinsk to Van Diemen's Land in Tasmania to Philadelphia. Reports were published from 1836 to 1841. In 1839 the British Government dispatched two ships to antarctic seas to conduct magnetic research.

Humboldt noted that this project was "not without importance to seamen." Gauss agreed and added: "The search for the laws of natural phenomena is an end and has a value in itself for the natural philosopher, and a peculiar charm invests the recognition of order and harmony in happenings that apparently are quite irregular." Some years later, Maxwell, who was a boy attending Edinburgh Academy when the Union ended, compared it with Bacon's vision of "Experiments in Concert," adding: ". . . the scattered forces of science were converted into a regular army, and emulation and jealousy became out of place, for the results obtained by any one observer were of no value till they were combined with those of the others."

Direct inspiration for the present International Geophysical Year derives from the two earlier International Polar Years of 1882–83 and 1932–33. The period of 1957–58 was chosen because it is expected to be a good season for sunspots. Certainly, the boldest feature of the program will be the exploration of the upper atmosphere—by balloons to 50,000 feet or more, by rockets to 200 miles or more, and by the artificial satellites of the United States and the Soviet Union to perhaps 1500 miles. The resulting data should bear both on theoretical questions and on such practical matters as improved techniques of weather forecasting and long distance radio communication.

Unfortunately, new knowledge about our planet can be made to serve the needs of war as well as peace. But who does not hope that the close of the International Geophysical Year will see a climate more conducive to peaceful uses, and who does not hope that the cooperative effort itself will contribute to this change?—J. T.