Meetings

International Union of Geodesy and Geophysics: 14th General Assembly

The 14th General Assembly of the International Union of Geodesy and Geophysics met in Switzerland 25 September to 7 October 1967. The four cities of Zurich, Lucerne, Berne, and St. Gall hosted its numerous meetings and activities. Highlighted among the Assembly's achievements were changes in the organizational structure of the Union and its associations, plans for the continuation or initiation of international activities, reports on scientific work in progress, and elections and special developments.

The opening and closing plenary sessions were held with appropriate addresses of welcome, responses, and closing words by the representatives of the country and of the Union. Joseph Kaplan was the president through this Assembly. The meetings of the Council and Executive Committee were expedited, and the plenary sessions moved smoothly.

Changes in Organization

Owing to the work of the Extraordinary General Assembly that met in Zurich on 23 September, changes in Statutes and Bylaws of the Association could be implemented at the beginning of the General Assembly. One of these changes was the decision to hold General Assemblies at 4-year instead of 3-year intervals. Concomitant with this decision, the seven associations and the various commissions and committees were urged to hold specialty conferences, singly or in cooperation, within the 4-year intervals.

Geochemistry was formally recognized by modifying the name of the International Association of Volcanology. It has become the International Association of Volcanology and Chemistry of the Earth's Interior (IAVCEI). The Council of IUGG also concurred in another change; the International Association of Physical Oceanography has now become the International Association for the Physical Sciences of the Ocean (IAPSO).

International Activities

Plans for new and continuing international activities were developed in scientific sessions and committee meetings. Of the 24 resolutions passed by the Council of IUGG and the closing plenary session of the Assembly that met in Zurich on 7 October, about half were related to international scientific cooperation. Among the most important items were the Global Atmospheric Research Program (GARP), phase III of the Upper Mantle Project (UMP), and the International Active Sun Years (IASY).

1) GARP. The Global Atmospheric Research Program evolved from the Committee on Atmospheric Sciences, established in 1964 under the International Council of Scientific Unions (ICSU). Under resolution 1802 of the 17th General Assembly of the United Nations, ICSU was invited to participate in planning an expanded program of atmospheric research in response to developments in space technology. The resolution urged strong and sustained world support for such a program from ICSU, its constituent bodies, and adhering national academies and research councils. Representatives of the World Meteorological Organization and ICSU's Committee on Space Research (COSPAR) at a joint study conference held last summer in Skepparholmen, Sweden, laid the groundwork for the program adopted, which will be administered by the IUGG.

2) Phase III of the Upper Mantle Project. There will be an increase in the number of nations participating in phase III (1968–70) of this program, which will emphasize studies of the rift system, island arcs, and continental margins. Deep drilling and multidisciplinary regional aspects will also be developed further. Work on the American Transcontinental Geophysical Survey between 35°N and 39°N will be continued and intensified.

3) IASY. The International Quiet Sun Years (IQSY) will have a logical follow-up in the IASY (1968–70), which will continue the active-sun studies begun during the International Geophysical Year.

4) Other activities. Other developments relate to new international volcanology centers, satellite geodesy, the International Ellipsoid and the instantaneous position of the poles, seismological studies and the continuation of the International Seismological Center in Scotland, cooperation in the assignment of radio-frequency bands, ocean-bottom heat-flow studies, support of the Federation of Astronomical and Geophysical Services (FAGS), methods of obtaining direction on satellite photographs, the geomagnetic network of the Southern Hemisphere, pollution of the oceans, the study of wind and waves in the stability of ships, and related problems.

Reports on Scientific Work

An adequate synopsis of the scientific highlights of the Assembly is a difficult undertaking. IUGG is a union of seven associations, each of which is almost a Union in itself for its own broad field. The reports of scientific work in progress covered the full spectrum of the geophysical sciences from the core of the earth to its outermost environs in space. The difficulty of assessing such a diverse range of material is further complicated by the fact that simultaneous sessions were held in four cities, although all plenary functions, of IUGG as a whole, took place in Zurich.

Zurich. All sessions of the Association of Seismology and Physics of the Earth's Interior (IASPEI), the Association of Volcanology and Chemistry of the Earth's Interior (IAVCEI), the Upper Mantle Committee, and the Heat Flow Committee, as well as most of the sessions of the Committee on Geochemistry, were held in the Federal Institute of Technology in Zurich. Most of the sessions of these committees were held jointly with the IASPEI and the IAVCEI. The symposia on rift systems, continental margins, and island

arcs were outstanding, as were some of the papers on focal mechanisms, structure of the core, sea-floor spreading, continental drift, and travel-time studies. There were also sessions on oscillations of the earth, microseisms, earthquake forecasting, magnitude and intensity scales, problems of geochemistry of the solid earth, and geothermal problems.

Lucerne. The Association of Geodesy and the Association of Meteorology and Atmospheric Physics met in Lucerne at the new facilities of the Kantonsschule. In geodesy, one of the impressive aspects was the many applications and extensive use of satellite geodesy. A rapidly developing field appears to be lunar geodesy, a specialty the geodesists call "selenodesy." The five sections of the Association of Geodesy are: (i) Triangulation and Trilateration; (ii) Precise Leveling; (iii) Geodetic Astronomy; (iv) Gravimetry; and (v) the Geoid. The importance of satellite geodesy was evident in all of these sections and in the reports from many countries.

The Association of Meteorology and Atmospheric Physics (IAMAP) had sessions on radiation, cloud physics, ozone, indirect sensing, dynamic meteorology, interaction between the air and the sea, the upper atmosphere, radar measurement of rainfall, atmospheric electricity, radiometeorology, large-scale atmospheric phenomena, climatological distribution of precipitation, meteorological problems of supersonic aircraft, ions, aerosols, and radioactivity, water balance in storm systems, and tropospheric and stratospheric tracers. The importance of the interactions between large-scale and mesoscale meteorological phenomena was stressed. To a very considerable extent these sessions reflected the rapidly growing and exciting plans for GARP. Many of the most interesting sessions dealt with the problem areas that are critical to the success of GARP; one goal being the attainment of useful forecasts for 2 to 3 weeks.

Berne. Sessions in Berne were held at the University, with the International Organization of Physical Oceanography meeting in the main building and the International Association of Scientific Hydrology (IASH) convening in one of the newer buildings of the Institute for the Exact Sciences. Reports in oceanography covered physical, geophysical, geochemical, geological, and even biological aspects. Sessions were held on the general circulation, surface waves, tsunamis, currents in the Indian Ocean, numerical methods in hydrodynamics, deep-sea tides, computers in oceanography, theories and experiments in diffusion, internal waves, and the physical properties of sea water.

The multicity arrangement of the Assembly probably imposed the greatest handicap on the oceanographers. They were forced to migrate to Zurich for sessions on continental margins and island arcs and to Lucerne for the joint sessions with IAMAP on the sea-air interface. Inevitably there were those who missed sessions important to their work.

The meetings of IASH indicated new widespread activity internationally in the field of river morphology. Aspects of snow and of ice in hydrology have also been widely investigated, as indicated by a number of papers. Much attention has been given to water-resources planning, and there has been a new look at the relationship of scientific hydrology to social and economic studies of water. Sessions were also devoted to surface water and its utilization, basic data concerning groundwaters, land-erosion problems, hydrologic tracers, water balance on watersheds, precipitation and evaporation, soil moisture and vegetation, glaciology, and hydrometry.

St. Gall. The International Association of Geomagnetism and Aeronomy met in the new facilities of the Hochschule für Wirtschafts- and Sozialwissenschaften. The highlights covered a broad spectrum of the two separate but thoroughly interinvolved fields of geomagnetism and aeronomy. New instrumentation of various types was reported, notably a portable gradiometer for the study of the fluctuation in the audio-frequency range, and digital recording equipment for recording geomagnetic data directly in machine-readable form. There were presentations of several new developments that contribute to the refinement of model-fitting in mathematical analysis and to the charting of the main geomagnetic field; related proposals were made for an International Geomagnetic Reference Field. It was reported that new results on satellite-borne magnetometers are making significant contributions. Several papers covered a study of the anomaly structure by means of ship-towed and airborne magnetometers, some of these bearing particularly on the sea-floor-spreading hypothesis. There were also two outstanding sessions on paleo- and archeomagnetism, which included some interesting new results. New studies are under way on the island effect, and induction and magnetotelluric phenomena. Reports were given on the study of solar and lunar diurnal variations especially the examination of new techniques presenting and separating the various constituents.

In aeronomy, one of the highlights was the symposium on high atmospheric drifts in which various movie-type presentations were made. Some were cinemas of cathode-ray tubes; others were a series of maps put together in sequence to give a movie-type effect. These movies also seemed to suggest an interesting research tool. There was a Special Events Symposium that included some excellent papers. In addition there were sessions on the world magnetic survey, solar-terrestrial and cosmic-terrestrial relations, geomagnetic and geoelectric instrumentation, conjugate-point studies, lunar effects, and secular variation in the main magnetic fields.

Elections and Special Developments

Ten new members were elected to the IUGG: The Democratic Peoples Republic of Korea, Iceland, Lebanon, Madagascar, Monaco, the Republic of China (Taiwan), Sierra Leone, Southern Rhodesia, Malaysia, and the German Democratic Republic. Nigeria missed election by a quirk in the voting rules requiring that a majority of those present vote. Although there was only one negative vote, there were many abstentions—a factor which affected the vote for Nigeria.

Newly elected officers of IUGG are: president, J. Coulomb (France); vice president, H. Kuno (Japan); general secretary, George Garland (Canada) (who was elected in 1963 for two terms); and treasurer, E. Andersen (Denmark) (re-elected). The members of the new Executive Committee are L. Constantinescu (Romania); T. F. Malone (United States); and A. Oboukhov (Russia). On the Finance Committee, Charles A. Whitten (United States) was reelected.

In the Associations, the Americans elected or reelected to office were: F. L. Culley, secretary adjutant, IAG; Jack Oliver, member of the Executive Committee, IASPEI; Sigmund Fritz, vice president, IAMAP; Leroy R. Alldredge, secretary, IAGA; Arthur E.

Maxwell, secretary, IAPSO; Gordon A. Macdonald, president, IAVCEI; and William C. Ackermann, vice president, IASH.

The 15th General Assembly will be held in 1971. Invitations were received from India, Russia, and France. As France has indicated its willingness to defer its invitation until 1975, the choice will rest on agreement between the other two countries.

In each of the four cities a reception was held by the American Delegation for the delegates from other lands. Three were receptions held in hotels; the fourth, in Zurich, was held in the form of a cruise on Lake Zurich.

There were some 2500 persons in attendance at the Assembly, about 600 of whom were from the United States.

The United States National Committee and Delegation suffered a great loss in the death of A. Nelson Sayre, general secretary of the American Geophysical Union. He was stricken on the last day of the Assembly (7 October) and died on 12 October in Zurich.

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Calendar of Events

National Meetings

March

10–12. American Soc. for **Abrasive Methods**, Philadelphia, Pa. (R. J. Mayer, ASAM, 330 S. Wells St., Chicago, Ill. 60606)

10–14. **Gas Turbine** Conf., Washington, D.C. (A. B. Conlin, Jr., Meetings Manager, 345 E. 47 St., New York 10017)

10–15. American Soc. of **Photogrammetry**/American Congr. on Surveying and Mapping, annual mtg., Washington, D.C. (W. B. Overstreet, 1819 Franwall Avenue, Silver Spring, Md. 20902)

11–12. **Phonocardiography**, American College of Cardiology, Chicago, Ill. (W. D. Nelligan, 9650 Rockville Pike, Washington, D.C. 20014)

11–13. American College of **Surgeons**, sectional mtg. for **Doctors** and **Nurses**, Williamsburg, Va. (Communications Department, 55 E. Erie St., Chicago, Ill. 60611)

11–13. New Tools for **Planning and Research Programming**, Commercial Chemical Development Assoc., Inc. annual mtg., New York, N.Y. (R. L. Chilenskas, Manager of Commercial Development, M & T Chemicals Inc., New York, N.Y.)

11–13. **Wildlife** Management Inst., 33rd natural resources conf., Houston, Tex. (Wildlife Management Inst., 709 Wire Building, Washington, D.C. 20005)

11–14. **Canaveral Council of Technical**