THE WASHINGTON CONFERENCE OF THE INTERNATIONAL UNION OF GEODESY AND GEOPHYSICS - 1939.

The seventh General Assembly of the International Union of Geodesy and Geophysics was held at Washington, D.C., between the dates 4th and 15th September 1939 after the declaration of war in Europe. Though rumours of indefinite postponement were current in the Press, there was never any intention that the Conference should not be held according to plan.

The choice of Washington as the place of the seventh assembly was made at the sixth assembly, in Edinburgh, in 1936. The first five assemblies of the Union were held at Rome, Madrid, Prague, Stockholm and Lisbon. At Washington the invitation of Norway to the Union to hold its eighth assembly in that country, was formally accepted, for 1942 or as soon thereafter as conditions in Europe permit.

On August 30, the president and secretary of the Union, Dr. D. La Cour (Denmark) and Brigadier H. St. J.L. Winterbotham (Great Britain), after consulting the American Organizing Committee and other colleagues then in Washington, cabled to all adhering organizations that the assembly would be held, but that its activities would be confined to scientific matters only.

This decision was made because many of the expected delegates would be absent from the assembly, either because, having crossed to America, they had been recalled (as was the case with the whole French delegation and many of the British delegates, including most of those in the service of the Government), or, having started, did not proceed to their destination (as happened to the delegation from Germany, with the exception of one member who had travelled earlier to Washington), or had cancelled their journey before leaving.

The discussion of administrative matters and of the proposed amendments to statutes and also the election of new officers and executive committees were thus excluded from the original agenda.

The fears of world-wide cataclism, too soon turned into grim reality, no doubt influenced the attendance of European delegates; but the influx of representatives of the United States and Canada was correspondingly greater, and contributed to the success of the assemblies.

At present about 32 countries adhere to the Union, and 20 of these were represented at Washington: Argentine, Belgium, Canada, Chile, Colombia, Denmark, Eire, Finland, Germany, Great Britain, Greece, Holland, Japan, Mexico, Norway, Poland, Rumania, Sweden, Switzerland, and the U.S.A.

Visitors also were present from Bulgaria, Dominica, Hungary, India, the Philippines and Venezuela (non-members States).

The United States provided the largest section of members present, numbering approximately three hundred; the number of other members present was about ninety five; thus the Assembly was one of the largest yet held. The absence of French and Italian delegates, and Russian visitors as at Edinburgh was much regretted.

The International Union of Geodesy and Geophysics is composed of seven associations relating to Geodesy, Seismology, Meteorology, Terrestrial Magnetism and Electricity, Physical Oceanography, Vulcanology and Scientific Hydrology. Though there are a number of international organizations which deal with these earth sciences from various view points, there is only one which brings these together and treats them from the view point of the world as a whole. This is the International Union of Geodesy and Geophysics, which has been in existence since 1919 and which grew out of other organizations which came into existence as early as 1862. This Union is made possible through the financial support from the large number of member countries.

In accordance with the decision not to discuss new administrative questions, no schemes involving new expenditures were adopted. It was agreed to continue the financial management and programmes along the line heretofore followed, so far as the available funds allow.

The scientific meetings of the Associations were held at the George Washington University, the new and older premises of which, generously placed at the Union's disposal, proved very satisfactory and convenient. The absence of administrative business enabled the full time of the Assembly to be devoted to scientific discussion, including several joint meetings between two or more associations, such as are rendered desirable by the ever more closely interwoven problems in the different departments of geophysics.

At the end of the Assembly, when reports on the work of the seven associations were presented, it was agreed that the scientific discussions had been most useful and successful. Apart from the exchange, reading and discussion of scientific reports and papers, many of which have been circulated in full or as abstracts before hand, the associations were able to perform useful business in arranging for the continuance, in some cases with useful modifications or extensions, of international enterprises of geophysical importance, which they organize or support.

The Commission of Continental and Oceanic Structure advocating the use and value of geophysical methods in the attack upon the structural problems of oceanic and continental areas, outlines the significance of the exploration of the sub-oceanic lithosphere to fundamental problems in Earth Science. A few of the pertinent questions submitted were as follows :

" What are the boundaries between continents and ocean basins ? Are there sharp " borders " to the continental masses and ocean basins, or is there an essential structural and compositional continuity of the sub-continental rocks into the crustal material beneath one, or several, or all of the oceans? Another fundamental group of questions is raised by the known existence of numerous submarine canyons cut far below present sea-level.

" A knowledge of the seismic, geothermal, magnetic, and gravitational conditions in both oceanic and continental areas will be required to aid in the proper interpretation of these problems.

" The geophysical appliances and methods to be used in mapping the sub-oceanic lithosphere should be given adequate calibration-tests in regions of known structural conditions.

" The researches should proceed according to a comprehensive well integrated, and generally agreed upon programme, covering not only the conduct of the work, but the publication of results, to make certain that each worker and each agency participating will be able to take part effectively with satisfaction and without overlap upon other participants ".

Concerning the Section of Triangulation and Precise Levelling, the methods and instruments employed by various countries were discussed, strong emphasis being placed on light instrumental equipments for countries where transportation is often difficult. Improvement of signal lamps, at less than inital cost, was indicated through the use of fixed-beam automobile headlamps. An exhibition was given some 60 miles from Washington of the erection in a little over two hours of a 90-foot steel triangulation tower with tripod. These structures are dismantled after the observing is completed, transported forward, and used indefinitely with obvious economy where motor transportation very close to the site of erection is possible. The main camp at Frederick, Md, was also visited and gave an insight into the extensive organization and motorized equipment of recent survey developed sections of the U.S.A.

It was announced that the Canadian Survey had just completed across the tundra a connection to a tidal bench-mark at Churchill on Hudson Bay. Mean sea level in the Gulf of Mexico is now connected to mean sea level in Hudson Bay by lines of precise levels covering an extent of some 30° in latitude.

The members of the Association of Geodesy were given the opportunity to view the equipment and observational methods of the international latitude station at Gaithersberg-one of the world stations devoted to the quasi-periodic changes of latitude which are now accepted at the various astronomical observatories in the field work of precise geodetic surveys. Also a motorized unit with Brown gravity equipment.

Valuable and instructive visits to American Scientific Institutions also

took place during or before the Assembly, namely to the United States Bureau of Standards, the Department of terrestrial magnetism, the Geophysical Laboratory of the Carnegie Institution, the Cheltenham Magnetic Observatory, the National Geographic Society, as well as other places of note.

The president and general secretary of the Union were honoured during the Assembly with the doctorate confered by George Washington University.