

STUDY OF A FULL COMPENSATION. OF THE EUROPEAN GEODETIC NET

The Geodetic Association of the International Geodetic and Geophysical Union has undertaken a preliminary inquiry with reference to the study of a full compensation of the European geodetic net, and for this purpose sent on 1st May 1936 a circular letter addressed to the various States and including a questionnaire for the furtherance of this study. The questionnaire brings forward the following points:—

I.

- 1.— Country concerned.
- 2.— Has the 1st order triangulation been entirely or only partly established ?
- 3.— Date of its execution.
- 4.— Instruments employed for the measurement of the angles. (Mention the magnification of the telescope, the focal distance, the diameter of the objective, the degree of accuracy of readings on the circle).
- 5.— Method of observation used for the measurement of the angles.
- 6.— List of triangulation bases.
- 7.— Instruments used for measurement of bases.
- 8.— Date of above measurements.
- 9.— Were the rulers, wires or tapes used calibrated (a) in the laboratory, or (b) in the field ?
- 10.— Height to which base-lengths were reduced.
- 11.— Mean errors of base measurements.
- 12.— Mean errors of the sides at starting points of the nets obtained by the development of the bases.
- 13.— Were the latitudes, longitudes and astronomical azimuths determined ? In what points ? Laplace points. Differences between the geoid and the ellipsoid of reference.
- 14.— Mean errors of above determinations.

II.

- 15.— Mean errors of angles and directions at the various stations.
- 16.— Closing errors of triangles.
- 17.— Ellipsoid of reference used ?
- 18.— Form of the principal elements of the triangulation (closed or unclosed chains, nets, etc.).
- 19.— Methods adopted for the compensation.
- 20.— Were the conditions of Laplace taken into account in the compensations ?
- 21.— Differences between measured and calculated bases starting from another base.
- 22.— Discrepancies at closure of chains.
- 23.— Discrepancies obtained with and without the conditions of Laplace.
- 24.— Do the triangulation points still exist in the field ?
- 25.— Was the curve of the vertical considered when projecting the net on the geoid (at sea-level) ?

Replies to this questionnaire have been grouped in the Association's *Bulletin Géodésique* N° 53, January, February, March 1937. This number cannot fail to interest geodesists to the highest degree, for it presents as a widely comprehensive whole a table of modern 1st order triangulation and geodetical astronomy carried out in Europe, accompanied by first-hand information on the operations, obviating consultation of original treatises.

A summary of the present state of such work in Europe by Professor Dr. P. SAMEL, Bonn, appeared in the *Allgemeine Vermessungs-Nachrichten* N° 7 of 1st March, 1938 (Bad Liebenwerda-Prov. Sa.). The inclusive table of replies to the 25 points of the questionnaire is given for 21 European nations:— Austria, Belgium, Bulgaria, Czecho-Slovakia, Denmark, Estonia, Finland, France, Germany, Great Britain, Greece, Latvia, Lithuania, Netherlands, Norway, Poland, Portugal, Rumania, Switzerland, Turkey, Yugo-Slavia.

