

aeronautical charts (for which the preparation of base maps involves planimetry derived from tri-camera aerial photography and altimetry derived from radar measurements), flight manuals and electoral maps.

The Canadian Hydrographic Service is responsible for the charting of the coastal and inland navigable waters of Canada, the analyses of tides and tidal current phenomena and the investigation of water-surface elevations of the St. Lawrence-Great Lakes waterway. The resultant data are published in the form of official navigation charts, volumes of Sailing Directions, Tide Tables and Water Level Bulletins.

The Map Compilation and Reproduction Division prepares, draughts and reproduces maps, charts and plans for lithographic printing in multi-colour. The work includes the preparation and photo-reproduction of air-chart bases, the reproduction and printing of air information for aeronautical charts, the preparation and printing of topographical maps, and the reproduction and printing of hydrographic charts.

The Branch had 17 geodetic, 33 topographic and 20 legal survey parties in the field in 1953. Nine ships and six motor launches were engaged in charting operations.

*Geological Survey of Canada.*—The primary function of the Geological Survey is to obtain information on the geology of Canada that will be of assistance in the search for and development of mineral deposits. The results of its activities also provide a basis for the appraisal and conservation of Canada's mineral resources generally, including water supplies, for soil surveys and for the solution of geological problems that frequently arise in construction projects. Reports issued by the Geological Survey include: memoirs with fairly complete descriptive accounts of the geology of particular areas and accompanied, as a rule, by geological maps; bulletins dealing with problems rather than areas; papers issued as soon as possible after the close of the field season, treating separately of each area and summarizing the information acquired; and the Economic Geology Series reports, dealing in a comprehensive way with mineral deposits of a particular type. Coloured geological maps are issued on various scales from one inch equalling a few hundred feet to one inch equalling eight or more miles, the common standard scales being one inch to one mile and one inch to four miles. Preliminary maps showing the geology in pattern are issued shortly after the field season ends for those areas where the search for metals or minerals is active.

In 1953, the Geological Survey had 79 parties in the field, one more than in 1952. The work undertaken included an aerial reconnaissance by conventional aircraft in northern Ungava covering the northern continuation of the Quebec-Labrador iron belt, and the investigation of a folded belt of metamorphic rocks in northern Ellesmere Island, less than 500 miles from the North Pole.

The Regional Geology Division carries out geological surveys of the bedrock formations and associated ores and economic materials of Canada by means of annual programs of systematic investigations and geological mapping, mainly of areas that have been mapped topographically. It conducts airborne magnetometer surveys as an aid to regional geological mapping and prospecting.

The Palæontology Division carries out palæontological and stratigraphical investigations and studies that are of great importance in geological mapping, interpretation of structures, and exploration for natural fuels and minerals.