study of earthquakes but it now includes investigations of the earth's interior by means of vibrational waves, which may be produced by explosions as well as by earthquakes. Meteorology deals with the atmosphere, and hydrology deals with the surface waters of the earth, excluding the oceans but including ice and snow. The study of the oceans, their currents and bottom profiles, forms a subject in itself—oceanography. Geomagnetism is involved with the earth's magnetic field and with many related phenomena, such as the ionosphere and the radiation belts that surround the earth. Finally, volcanology is the study not only of existing volcanoes but of volcanoes of the past and of the rocks they produced.

The seven fields all deal with the investigation of some major property of the earth. They may be considered as pure sciences but it is apparent that they all have applications that are vital to modern life. The findings of geodesy on the precise shape of the earth are needed for accurate maps. The search for minerals and oil by scientific methods makes use of the techniques of gravity measurements, seismology and geomagnetism. Meteorology obviously has great practical importance, and the contributions of hydrology to water supply problems and of oceanography to the fisheries are also very large.

An event of particular significance to geophysics in 1962 was the launching of the first Canadian satellite, *Alouette*. This satellite, constructed by the Defence Research Board, carried instrumentation for the study of the upper part of the region of the atmosphere known as the ionosphere. Information on the ionosphere is important in problems of radio communication and, while its lower boundary can be studied through observations made from the ground, it is only by the use of satellites that the top of it is accessible. It is appropriate, therefore, that the *Alouette* is known as a topside sounder. A second event of 1962, of particular interest to geophysicists engaged in the exploration for oil and minerals, was the meeting of the International Society of Exploration Geophysicists, held in Calgary, Alta., in September. This was the first meeting of the Society to be held in Canada and the important Canadian contribution to the program indicated the advances that have been made in the science of geophysical prospecting in this country.

The determination of precise positions and elevations, which forms the basis of geodesy, was continued by the Geodetic Survey, Department of Mines and Technical Surveys. Networks of triangulation, to provide the framework for accurate mapping, were extended in the Northwest Territories and in Quebec. An arc of triangulation was completed from Sept Îles to Schefferville in Quebec, and on to Nain in Labrador, to provide the first accurate positions in this remote but developing region. Lines of precise levels were extended in British Columbia, Alberta, Saskatchewan, Manitoba, Ontario and Quebec. One of the problems of the Geodetic Survey has been the designing of permanent bench marks to provide a record of elevations in muskeg areas. A new type, consisting of a tablet clamped to a copper rod, which can be driven to a depth of over 100 feet, is now being used and it appears that it will successfully withstand frost action and other possible disturbance. Measurements of the earth's gravity also provide information on the shape of the earth and on the location of concealed underground structures. The Dominion Observatory, Department of Mines and Technical Surveys, continued its active program of determinations throughout Canada. Readings were taken over a large area of the Gulf of St. Lawrence, using a special gravity meter lowered to the bottom and read from a ship. The Observatory began the distribution of a series of map sheets on which the results of gravity surveys are plotted. These will be of considerable use to groups who wish to use the information for geological interpretations.

The most detailed knowledge on the interior of the earth comes from the study of waves from earthquakes. The Dominion Observatory maintains a network of seismograph stations for recording these waves; eleven stations were in operation during 1962 and five others were under construction. In addition, a station at Montreal was operated by Collège Jean-de-Brébeuf and one near Edmonton was completed by the University of Alberta. In addition to providing information on the earth's interior, the recording of earthquake waves is important for determining the possibility of earthquake damage to structures in different parts of the country. The Department of Mines and Technical