

was considered from the economic as well as from the health point of view that people in industrial towns and cities would gain by having longer periods of sunlight at their disposal for recreation. Canada adopted daylight saving time in 1918 but the Canadian Act lapsed at the end of that year. Since that date, however, most cities and towns have adopted daylight saving for varying periods in the summer months.

**Legal Authority for the Time Zones.**—Most of the regulations made in Canada concerning standard time have been passed by the provincial legislatures and the North-west Territories Council. Legislation, besides determining the boundaries of zones, regulates such matters as the times of coming into effect or expiration of Acts, ordinances, contracts and agreements, times of opening and closing registration offices, law courts, post offices and other public offices, times of open or close seasons for hunting and fishing, and times of opening and closing business houses and places of amusement.

## PART V.—GEOPHYSICS AND ASTRONOMY

### Section 1.—Geophysics\*

The study of the earth is divided between two branches of science—geology and geophysics. Geology is concerned with the observation and description of those rocks which form the surface of the earth, leaving to geophysics all investigations of the atmosphere and near-by space, the oceans, fresh waters, snow and ice, the earth's interior, its magnetic and gravitational fields and several studies of rocks which involve physical measurements, including the direction of their remanent magnetism, and measurements of the age of radioactive minerals.

The word geophysics first appeared at the end of the nineteenth century, but its development goes back to the time when primitive men first began to study the changes of the weather and the seas. In the second century A.D. the Chinese invented the magnetic compass and the first instruments to record earthquakes. Since 1920 its scope and applications have increased very rapidly and the science has received world-wide publicity as a result of the International Geophysical Year, 1957-58, in which Canada participated along with 66 other countries.

The chief branches of geophysics that are internationally recognized are seismology and the study of the earth's interior, meteorology, geomagnetism and aeronomy, physical oceanography, hydrology and volcanology. Lesser divisions include geochronology and tectonophysics.

In industry, petroleum and mining companies use electrical, gravitational, magnetic, radioactive and seismic methods of prospecting to direct drilling for deposits. Engineers use the same methods to investigate construction sites.

In the Federal Government, the Dominion Observatory, the Geological Survey of Canada and several other branches of the Department of Mines and Technical Surveys carry out extensive programs of geophysical investigation. So does the Meteorological Service of the Department of Transport. Geophysical work by provincial governments has chiefly consisted of the preparation of aeromagnetic maps to assist prospecting.

In Canadian universities geophysics has been taught at McGill and Toronto for the past 35 years, and since 1945 most of the other larger universities have started to give courses. There are Institutes of Oceanography at British Columbia and Dalhousie. Graduate courses in meteorology are given at Toronto and McGill. There are two geophysical institutes at the University of Toronto. Canada has been a member of the International Union of Geodesy and Geophysics since its inception in 1919.

Further information on this subject may be secured from the Secretary of the National Committee for Canada (NRC Associate Committee on Geodesy and Geophysics), National Research Council, Ottawa.

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