

- Tormentine, N.B., to Carleton Head, P.E.I., and then conceived the idea of establishing telegraphic communications with Europe by way of Newfoundland. He enlisted the co-operation of the Newfoundland Government and the financial support of Cyrus W. Field, thus assuring the laying of the Cape Breton-to-Newfoundland Cable in 1856 and the Atlantic Cable in 1858.
- 1874** Alexander Graham Bell arranged an experiment for the first telephone message to be transmitted over a relatively long distance, thus proving that the telephone had commercial possibilities. The message was sent a distance of  $8\frac{1}{2}$  miles—one way—over wires lent by the Dominion Telegraph Company, between Brantford and Paris, Ont.
- 1883** The first working model of a revolving snow shovel, invented in 1869 by J. W. Elliott of Toronto, Ont., and further developed by O. Jull and the Leslie Brothers of Orangeville, Ont., was placed on trial in the Canadian Pacific Parkdale yards at Toronto. The rotary snow plows in use today are descendants of this shovel and are indispensable for rail operation in many parts of the world—from Archangel to the Andes. Canadians continue to be among the leaders in the design of various other snow-clearing and over-snow vehicles.
- 1884** Sir Sanford Fleming's system of international standard time measurements was adopted by the International Prime Meridian Conference held at Washington, D.C. Without this system, transcontinental time tables would be a nightmare of local time notations.
- 1892** Thomas Ahearn, a pioneer in the field of electrical engineering, produced the world's first meal cooked by electricity, during a demonstration of his new stove at the Windsor Hotel, Ottawa.
- 1901** Guglielmo Marconi succeeded in receiving at St. John's, Nfld., wireless signals transmitted across the Atlantic Ocean from England. This feat may be considered Marconi's greatest triumph, especially since it disproved the theory of some distinguished mathematicians that communication by means of electric waves would be impossible beyond the 200-mile range, owing to the curvature of the earth. Although this epoch-making achievement can by no means be considered *Canadian*, it had a direct bearing on Canada's early role in wireless telegraphy. When a telegraph and cable company claimed a monopoly to receive transatlantic signals in Newfoundland, Marconi gave up further tests and made plans to return to Italy via New York but, upon landing at North Sydney, he was persuaded by Johnston (then a newspaper editor and a Member of Parliament and subsequently Deputy Minister of Marine and Fisheries) and by G. H. Murray (then Premier of Nova Scotia) to consider a site on Cape Breton for his wireless base to Europe. Johnston and Marconi seem to have encountered surprisingly little resistance to their proposal of having the Canadian Government provide Marconi with the sum of \$75,000 for the erection of the Cape Breton station. Thus, one of Canada's great systems of communications got its early start.
- 1902-03** Ernest Rutherford (later Baron Rutherford of Nelson), Professor of experimental physics at McGill University, Montreal, and Frederick Soddy, then demonstrator in chemistry, developed the disintegration theory of radioactivity—"a staggeringly bold hypothesis to come from two comparatively young workers . . . it triumphed because, and only because, no other theory was capable of explaining the then known facts of radioactivity" (H. R. Robinson). Their investigations made McGill for the time being the world centre of research in atomic science and stimulated higher education throughout Canada.
- 1903** The world's first electrolytic lead-refining plant using the Betts cell process was installed at the smelter at Trail, B.C. Subsequent developments in the metallurgy of lead include a gradual improvement in roasting practices, culminating in double sintering, and the development of the slag-fuming process for the recovery of lead and zinc from blast-furnace slag.
- 1903** With the appointment of Dr. Charles Saunders (later Sir Charles Saunders) as Dominion Cerealist, Canada entered a new phase as an agricultural world power. Dr. Saunders and his co-workers developed the early-ripening Marquis wheat which played an important role in the opening up of the prairies. Subsequently, he was instrumental in developing Ruby, Garnet and Reward wheat adapted to special prairie conditions.
- 1903-32** Frederick Walker (Casey) Baldwin became internationally known for his work on hydrofoils, which permit boats to skim over the water at very high speed. The principles now employed in hydrofoil craft were first developed by Casey Baldwin. A Canadian Navy craft was named the *KC-B* in his honour.
- 1907** Alexander Graham Bell organized the Aerial Experiment Association at Baddeck, N.S. The other participants in this venture—the first aeronautical research establishment in Canada—were two young Canadian engineers, F. W. (Casey) Baldwin and J. A. D. McCurdy, together with two United States citizens, Thomas Selfridge and Glenn Curtiss. Outstanding among the many contributions made by this group was the invention of the aileron for lateral control.
- 1910** J. A. D. McCurdy, one of the world's outstanding aviation pioneers, transmitted a wireless message in flight, thus establishing the world's first aeroplane-to-ground communication. Operation of modern airlines would be unthinkable without the link provided by communications systems for the control of air transport.