Joseph Burr Tyrrell

by F. J. Alcock

Joseph Burr Tyrrell, honorary president of The Canadian Geographical Society, has been selected as the subject of the first of a series of short biographical sketches of some of the more important geographers who have been responsible for securing the primary information for the making of the map of Canada. While perhaps best known as a geologist and geographer he has also served his country as an engineer and historian. Ninety-five years of age on November 1st, he is still active and takes a keen interest in the development which is now proceeding in regions where he pioneered.

Tyrrell was born at Weston, Ontario, graduated from the University of Toronto in 1880, and a year later joined the staff of the Geological Survey of Canada under Alfred R. C. Selwyn. The latter had succeeded Sir William Logan, the founder and first Director of the Survey, who had retired in 1869 shortly after Confederation.

Much of the new territory added at this time to Canada was entirely unexplored and it was to fall to Tyrrell's lot to play a major part in securing the first information about large areas of it.

Before being entrusted with independent assignments, Tyrrell served an apprenticeship under another of the great figures in Canadian geology, George Mercer Dawson. In 1883 these two carried out explorations in the Rocky Mountains from the American border north to Kicking Horse Pass crossing the range four times through different passes. In this work it was Tyrrell's task to keep a pace and compass survey of the traverses and to collect plants, fossils and other natural history material. It was a strenuous introduction to Survey work under a demanding though sympathetic chief.

During the three succeeding years Tyrrell was at work on his first independent task—mapping and studying the geology of the...
country north of Calgary and east of the Rockies. It was while so engaged that he discovered remains of dinosaurs in the Red Deer valley. These formed the beginning of the very extensive collection of fossil vertebrates in the possession of the National Museum at Ottawa.

The seasons of 1887-90 inclusive were spent chiefly in western Manitoba mapping an area comprising some 25,000 square miles. This region includes the lower portion of the mighty Saskatchewan River, parts of the Red, Assiniboine and other important streams, lakes Manitoba, Winnipegosis, and Dauphin, the two former each about 120 miles long, and the Duck and Riding Mountains where the Cretaceous rocks to the west terminate in a northeastward-facing escarpment. The main topographic feature of the region is Lake Winnipeg itself, 260 miles long, 60 miles wide at its northern end, and having an area of 9,094 square miles. The summer of 1891 was spent in the exploration of the principal streams entering Lake Winnipeg from the east. The mapping of all these waterways, with the study of the bedrock geology and also of the Glacial features and history was a most noteworthy accomplishment.

The next three years saw the explorations for which Tyrrell is probably best known. In 1892 he traversed a large area of northern Saskatchewan north of the Churchill River and between Reindeer Lake on the east and Athabasca River on the west. He mapped the Black, Cree, Foster, and Haultain rivers and Wollaston Lake. Wollaston is unique in that it lies on a divide draining by two outlets of almost equal volume whose waters flowing to the northwest and to the northeast reach respectively the Arctic Ocean by way of the Mackenzie and Hudson Bay by way of the Churchill. It was during this season while in the Lake Athabasca region that he gained information about a route to a great northward-flowing river and he decided that if he could secure permission he would endeavour to explore it the following year. The route would traverse a belt of country some 200,000 square miles in extent concerning which the only information available was that supplied by Samuel Hearne of the Hudson's Bay Company who had crossed it on foot over 120 years previously.

On June 21, 1893, a party consisting of J. B. Tyrrell in charge, his brother J. W. Tyrrell, and six canoe men left Fort Chipewyan at the west end of Lake Athabasca in three canoes and proceeded to the east end of the lake and up the Stone River to Black Lake which Tyrrell had mapped the previous year. From here he had but a crude Indian sketch to guide him to the northward flowing river. The first part of the route was through a chain of small lakes separated by swift portions of a southward flowing stream, which had its rise in a large lake to which Tyrrell gave the name Selwyn. From here a portage was found to another lake whose outlet was to the north, the sought-for Telzoa or Dubawnt River. Descending this stream marked by numerous rapids the party passed from the wooded belt into the barren tundra where one of the difficulties was to find sufficient fuel to boil a kettle. Just when provisions were about exhausted herds of barren ground caribou numbering thousands and covering many square miles were encountered. Enough were secured to replenish the larder and while the meat was drying the two Tyrrells wandered through the herds taking photographs. On August 7th, they entered Dubawnt Lake whose surface was covered almost entirely with ice and it was eleven days before they succeeded in finding the outlet. As yet Tyrrell did not know whether he was headed for the Arctic Ocean or for Hudson Bay but eventually the course swung to the east and on September 12th, he reached Hudson Bay at the mouth of Chesterfield Inlet. There now remained the four hundred mile journey in small canoes down the open waters of the Bay to reach the nearest trading post. With provisions exhausted, with the men suffering from frostbite, hampered by snowstorms and floating ice which cut the canoes, the party nevertheless finally succeeded in
reaching Fort Churchill. From here it was a journey of 800 miles by snowshoe and dog-team to reach the railway at Winnipeg and it was January 11, 1894, when Tyrrell reached Ottawa.

Undaunted by his experiences on this journey, Tyrrell the following field season crossed the region again by a different route. Proceeding northward from Reindeer Lake up the Cochrane River he crossed a height of land to Kasba Lake. Descending the Kazan River to Hearne’s Yath-Kyed Lake, he portaged across to the Ferguson River in order to avoid coming out again at Chesterfield Inlet and descended that stream to Hudson Bay. Once again he had the long paddle down the coast to Churchill and the trek on foot overland to the railway.

Tyrrell’s name is also immutably associated with another part of northern Canada—the Yukon. Sent first in 1898 to make a survey of its southwest part and to visit the new Klondike placer gold district, he later spent seven years there in a private capacity as a consulting engineer. More recently he has been chiefly concerned with mining developments in his native province.

As already stated, Tyrrell’s contributions were not merely in the field of exploration. His geological findings, particularly in the field of Pleistocene or Glacial geology, brought him world-wide recognition. His interest too in the history of the regions which he transversed is shown by his publications, particularly those relating to some of the great explorers of Canada. He has been the recipient of honorary degrees and numerous other distinctions. Among the latter may be mentioned the Back Medal of the Royal Geographical Society, the Murchison Medal of the Geological Society of London, the Daly Medal of the American Geographical Society, the Flavelle Medal of the Royal Society of Canada, and the Wollaston Medal of the Geological Society of London.