

FIELD WORK CARRIED ON BY THE GEOLOGICAL SURVEY DURING 1912

(Written for the Canadian Mining Journal.)

During the summer of 1912, the Geological Survey placed in the field over 40 independent and semi-independent geological parties. Special lines of investigation such as those in connection with the coal resources of Canada and the clay and shale deposits, involved field work over the whole country. The detailed study of the economic possibilities and the general geological structure of various special areas was continued as in previous years. A number of parties were engaged both in the east and west in exploratory work. A considerable portion of the field work of several officers was devoted to making preparation for the various excursions to be held in connection with the International Geological Congress which meets in Canada in 1913 for the first time and which, it is hoped, will prove of great importance to the country as a whole.

Besides the geological parties, five topographical parties were placed in the field in an endeavour to provide accurate topographical maps so necessary for the proper study of the geology of various districts. The value of such maps for many other purposes has long been appreciated.

As a part of its functions, the Geological Survey also carried on special investigation in connection with natural history and the various branches of anthropology.

During the summer of 1912 the field work was completed in connection with the making of a trans-Cordilleran geological section along the main line of the Canadian Pacific Railway. This important piece of work was commenced in 1911 and has been carried out under the general supervision of Mr. R. A. Daly. It is the third nearly or quite complete section of the Cordillera so far made. The first, along the 40th parallel of latitude, from the Great Plains in Colorado to the summit of the Sierra Nevada in California, was run about forty years ago by a United States Government party under Clarence King. The second, along the 49th parallel, from the Great Plains to the Pacific, was made under the direction of the Canadian Commissioner of the International Boundary Commission (1901-7); by his courtesy, the report will soon be issued in reprint form as Memoir No. 38 of the Geological Survey.

In order to hasten the completion of the study of the section along the line of the Canadian Pacific Railway, a number of field parties were engaged during 1912, on this work. Mr. J. A. Allan, in continuation of his work of the previous year, completed the section from Banff to Golden. Mr. R. A. Daly studied the geology along the railway route in the Selkirk Mountains and the Purcell mountain system. This was in continuation of the work already performed in 1911, and amongst other results obtained, the structure of the Purcells, hitherto unknown in the part north of Windermere, was worked out. Mr. C. W. Drysdale was engaged in the study of that portion of the section between Six Mile Point on Kamloops Lake and Lytton, while Mr. B. Rose made a special examination of an area about the west end of Kamloops Lake. Mr. Charles Camsell and Mr. N. L. Bowen studied the section along the railway line from Lytton to Vancouver.

The study of another geological section of prime importance, namely that along the Yukon-Alaska international boundary from the crossing of Yukon River

northward to the Arctic, was also complete in 1912. This work was performed in co-operation with the United States Geological Survey which undertook to map the geology between Porcupine River and the Arctic Ocean, while the remaining portion from Porcupine River southward to Yukon River was undertaken by the Canadian Geological Survey. Mr. D. D. Cairns completed in 1912 the geological mapping of this southern part.

Mr. R. G. McConnell made a special examination of the geological section through the Coast Range from Prince Rupert to Aldermere. He also spent a short time examining some of the gold-bearing quartz deposits that are being developed on Princess Royal Island and spent a longer period of time on Texada Island in connection with the recent mining developments there taking place.

Mr. C. H. Clapp engaged in field work on Vancouver Island, geologically surveying the area represented by the Sooke and Duncan map sheets. Certain bodies of gabbro in this general district carry copper sulphide deposits of prospective importance. The recent study of the field has led to the important discovery that there are a greater number of these gabbro bodies than hitherto supposed. Mr. Clapp also spent some time on Graham Island gathering information concerning the recent developments of the coal measures of the island. It was found that the coal, while of excellent quality, occurs in much smaller basins that was previously thought.

Mr. G. S. Malloch continued his examination of the Groundhog coal basin. The dimensions of the field are, roughly, 30 miles by 45 miles, but the coal-bearing horizon has been removed by erosion from a considerable portion of this area. Mr. Charles Camsell, besides engaging in the study of the section of the Cordilleras along the main line of the Canadian Pacific Railway, also studied a general section from Midway to Spences Bridge. An examination was made of the gold-copper deposits of Kruger Mountain at the southern end of Okanagan Valley, and of the gold-copper deposits on Independence Mountain in the range between Keremeos and Twenty Mile Creeks, Similkameen district. Mr. Camsell made a brief study of the copper deposits at Copper Mountain, Similkameen district, where the British Columbia Copper Company has been for the last year carrying out important development work. The result of this work has been to prove the existence of large deposits of low grade copper ore, which, if they can be successfully treated, will mean that a new and important copper producing field will soon be opened up. A brief study was also made of the Tertiary coal-bearing rocks of White Lake in Okanagan Valley.

Mr. A. M. Bateman made a preliminary examination of the economic resources of the Bridge River district. In this district, mining work is being carried on in the Cadwallader Creek section, where the gold-bearing veins, though small, are persistent and their gold content is sufficiently high to justify mining of the ore on a commercial basis. Mr. Bateman also made an exploratory trip from Lillooet to Chilko Lake. As a result of this trip, the eastern border of the Coast Range batholith, which is in many places an important mineral zone,