

*NOTES ON THE YMIR MINE AND ITS MILL PRACTICE.

(By S. S. Fowler, S.B., Nelson.)

L YING north of the International Boundary, west of Kootenay Lake, east of Columbia River, and south of Nelson, and the outlet of Kootenay Lake, is a roughly quadrangular mountainous country covering about 1,450 square miles.



View of Wild Horse Creek Valley from Ymir Mine.

Occupying the central portion of this quadrangle is the drainage area of the Salmon River, a considerable stream which has its source within a few miles of Nelson, and flowing south joins the Pend D'Oreille near the Boundary.

This Salmon River country, covering about 900 square miles, was practically inaccessible until the construction of the Nelson & Fort Sheppard Railway in 1893, and it was not until the summer of 1896 that any considerable mining activity was manifest. The country, therefore, is possessed of a very brief history. Aside from the placer mining operations of 35 years ago, which were carried on near the mouth of Salmon and along the Pend D'Oreille, there is now no evidence of mineral location until about 1885, when some two years before the discovery of the Silver King near Nelson, by the Hall brothers, locations of quartz claims were made by these same men near the head of Wild Horse Creek, a small stream entering the Salmon from the northeast at the present town of Ymir, 18 miles from Nelson.

Nothing more appears to have been done for the next decade along the Salmon Valley, but, as stated above, in 1896 many claims were staked, and since then the district has made substantial progress. Today, aside from the property named in the title, the Fern, on Hall Creek, the Porto Rico, on Barrett Creek, the Yellowstone, on Sheep Creek, the Second Relief and Arlington on the North Fork of the Salmon, are considerable producers, or nearly in condition to produce, and there are many other properties throughout the district affording excellent prospects,

and indeed some of them have made small shipments of smelting ore.

Physically, the Salmon country is not complicated in structure. It is mountainous, but few of the mountains reach an altitude of more than 7,500 to 8,000 feet, and the summits are generally rounded. The creek valleys are deep, however, and glaciation appears to have been an important factor in determining the present topography. The glaciers, however, have, I believe, all disappeared, although in the Slocan country to the north there are many remnants of that powerful moulding agent to be seen.

The rocks which underlie the region being described, are predominantly of igneous origin. In a very general way it may be said that east of the Salmon the granites are in evidence, while to the west augite porphyrites, schists derived from them, some small gabbro bosses and large areas of tuffs and agglomerate occupy the field. But throughout these rocks may be seen considerable inclusions of sedimentary rocks, principally slates, except along and near the range which forms the watershed between the Salmon and Kootenay Lake, where there are thick beds of quartzites and some crystalline limestone, extending more or less continuously southwesterly into American territory. The country is a very interesting field for geological research, and deserves more extended study than can be given it for a long time. The Dominion Geological Survey sent a party into this field under R. G. McConnell during the summer of 1897, but little more than a general reconnaissance was accomplished, the shortness of the season and smoke from the forest fires usually causing an early return of the field parties.

As to the respective ages of the rocks hereabouts, the slates have not been traced to connection with the Kaslo series east of the Slocan slates, but from their lithological features one is inclined to ally them with that series, and if that is proper then the small slate areas of Salmon River are probably of Cambrian or pre-Cambrian age. The various basic igneous rocks may be of different ages, but Mr. McConnell places



Ymir Mine.

* Paper read before the September meeting of the Canadian Mining Institute.