

GEOLOGICAL POSITION.

The geological position of these ore deposits is shown by map I, which is a slightly modified copy of a map by the Geological Survey of Canada, from studies by Mr. R. G. McConnell. The elongated oval area of gabbro is surrounded by a border of varying width of augite and uraltite porphyrites and fine grained green diabases. The transition from the gabbro to the porphyrites is not well defined, and they are both from the same magma. Beyond the above border come alternating series of porphyrites, tuffs and slates, and beyond these are agglomerates.

The basic coarse crystalline and plutonic gabbro thus surrounded by borders which become more acid and finely crystalline, and finally pass into volcanic breccia and tuffs, indicates an ancient volcano centre. The gabbro area is the main plug or neck of lava crystallized at great depths and exposed by deep erosion. Its great age is indicated by this erosion and by the numerous alterations in the rock structure and in the rock minerals.

The active mining has been carried on not within the gabbro area but outside of it and in the porphyrites surrounding its western end. The principal mines are all included in the small group of claims shown near the edge of the gabbro and located on the flank of Red Mountain above the town of Rossland. Map No. II is a horizontal section through this group of claims at the approximate elevation of 3,530 feet above sea level. It shows the structure details exposed by the workings of the Le Roi, Centre Star, War Eagle, Josie, Number One and Iron Mask mines. These mines aggregate some 20 miles of total workings, and the principal depths attained are those of the War Eagle, 1,615 feet measured on the vein; the Le Roi, 1,361 feet, and the Centre Star, 1,289 feet.

On the west of these claims there is a belt of fine grained eruptives, probably porphyrites, which are in a schistose condition; having been so plated by pressure as to frequently resemble shale.

COUNTRY ROCK OF MINES.

Within the area of the claims the prevailing rock is evidently