

alteration are more plentiful, but not complete. Dykes of red porphyry, whose composition is closely that of the main body of intrusive, have had little effect on the country rock. These may be seen (Figure 4) in trenches 5, 7, 14. Occasionally they have caused a small amount of pyritization in the wall rock, but never any visible alteration. An exception is the dyke cutting trench No. 15. Flanking this dyke is a wide zone heavily mineralized with very coarse-grained pyrites, but the country rock is slightly if at all altered, and the pyrite, unlike that in other ore-bodies, is not auriferous.

Two dykes of what the miners term "grey porphyry" are exposed by trenches 10 to 13 (Figure 4). The outcrops of these dykes, which are lens-shaped, are about 100 feet long and 10 to 20 feet wide. In their composition they are intermediate between a pegmatite and the red porphyry. The amount of feldspar present is so high that they would unhesitatingly be classed as igneous rocks in the field or from the hand specimen, but under the microscope they are seen to be considerably more siliceous than the red porphyry. A large alteration of the feldspar to calcite has taken place. The dykes contain sufficient auriferous pyrite to yield values varying from \$3 to \$50 per ton, with an average of about \$10. The rhyolite tuff around and between the dykes has been only slightly altered, but has been somewhat pyritized over a distance varying from 10 to 25 feet from the dykes. The tenor, however, is low, on the whole \$2 per ton or less, although occasionally a high assay has been obtained, due no doubt to the accidental inclusion of a locally enriched portion in the specimen taken.

The ore-body indicated in Figure 4 at the south end of trenches 7 and 8, has at its centre a vein of pegmatite about 4 feet in width. This pegmatite is now badly rotted and weathered, but can still be seen to have been highly feldspathic, probably about 40 to 50 per cent feldspar, the remainder mainly quartz. The vein lies parallel to the bedding and the mineralized and altered zone is approximately 12 to 15 feet in width on the southeast side, and 7 or 8 feet on the northwest side. Beyond the mineralized zone the rock is altered, with only slight mineralization for 3 or 4 feet farther. The values in this lens of ore are among the best on the property, averaging from \$12 to \$15 per ton. The alteration in the mineralized and altered parts has been intense, fully 75 per cent of the rock having been replaced by calcite in the parts nearer the central vein of pegmatite.

Figure 5, which has been already described as a typical ore-body, also illustrates the general extent of the alteration and mineralization induced by a pegmatite containing about 8 per cent of feldspar. It will be observed that although the central vein averages nearly as wide as in the example just described, the total width of the mineralized zones on both sides of the vein is only 4½ feet, as opposed to 18 to 20 feet. The total width of altered rock with and without mineralization is only about 12 feet, as opposed to 25 feet or more. Values in the two cases appear to average about the same, and the intensity of alteration to calcite is slightly less.

In trenches Nos. 3 and 4, among others, narrow veinlets both of pegmatite and quartz may be seen. The quartz veinlets are never more than about an inch thick. In trench 3 a pegmatite veinlet one-quarter to one-half inch in width is surrounded by a mineralized and altered zone