is said, a comfortable balance in the treasury, wherewith to purchase another property.

THE TYEE OREBODIES.

Through the courtesy of Mr. Livingston I was permitted to visit and examine this property, accompanied by the superintendent, J. W. Bryant, to whom I am indebted for the sections given herewith. Fig. 3 represents a cross section through the orebody showing its relation to the synclinal or canoe-shaped fold of the inclosing rocks, and the post-mineral fault which cuts it. The other drawing, Fig. 2, is a longitudinal section through the orebody along its strike or course.

The deposit presents several features of unusual interest to mining engineers. In the first place the

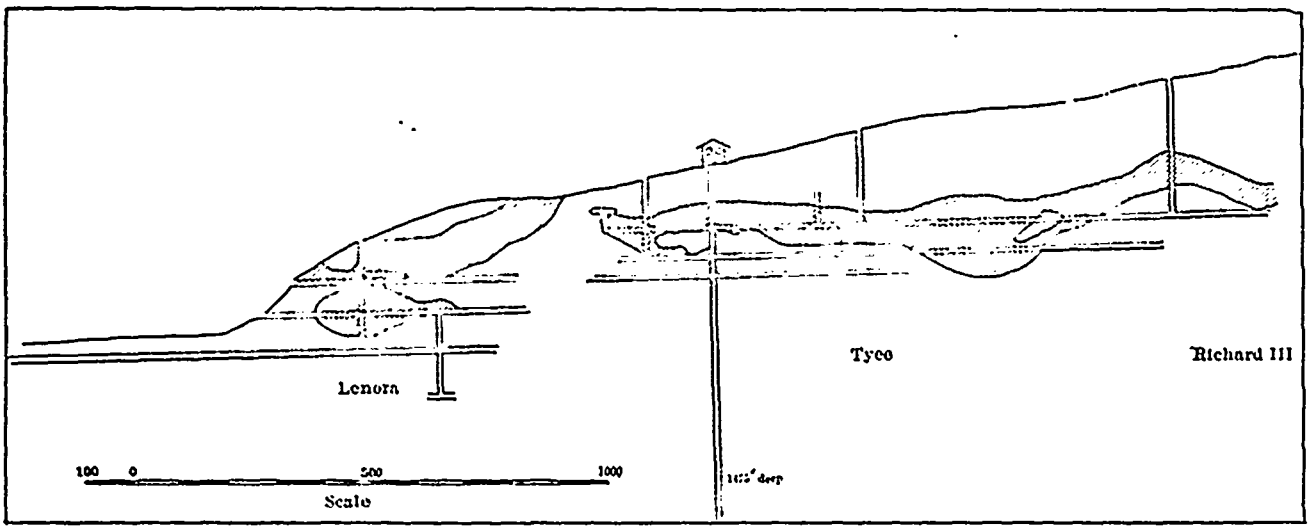

FIG. 1.

lenses, unlike most deposits of this so-called Rio Tinto or Kieslager type, do not come to the surface, or at any rate outcrop at only one small point, being covered by the encasing rocks. There is nothing to distinguish the ridge, or so-called hog-back, in which this deposit lies, from any other on the slope of Mount Sicker. The small inconspicuous area exposed was only found after forest fires had swept the ground and burned the dense timber, brush and moss to ashes that were carried away by heavy rains. Elsewhere the ore lens tapers upward as it does downward, and is completely enclosed in the schists. It is certainly not a surface deposit.

The orebody is, moreover, peculiar in its structural relations and mineralogic character. The ore consists of chalcopyrite, with pyrite, in a barite gangue. It occurs in a shear-zone or fault-zone, definitely traceable for a mile or more down the mountain slopes and across the Chemainus River. Throughout its course it contains disseminated particles of copper pyrite, which at some points reaches a copper content of 0.5 to 1 per cent., though no other orebody has as yet been found. This shear-zone, marked by whitened and by iron-stained rocks, traverses crystalline schists usually considered to be part of the Vancouver Island series of Dawson. The rocks seen about the mine show considerable variation. The lignite-bearing series is exposed near the mine, though tufaceous igneous rocks and granular igneous rocks, probably dioritic, cut through the prevailing green and gray schists. The latter rocks are well exposed but at the surface are altered by weathering. No detailed survey of the district has been made and the exact relations of the shear-zone to the rocks cannot be distinguished without it.

SURROUNDING ROCKS.

The rocks near the orebody are mainly green chloritic schists; pieces of this rock from the underground workings have the greasy look of a crushed and schistose serpentine. The gray schist of the ore zone proper is hard, silicious, thinly foliated and devoid of any mineral recognizable to the eye. The rock immediately adjacent to the ore is mainly a dark gray schist, the colour being due to graphitic matter.

According to an examination under the microscope made by E. H. Adye, the result of which has been kindly supplied me by Mine Superintendent J. W. Bryant, "it is quite inconceivable that such a rock can have had an igneous origin. * * * The finely divided opaque black matter is, of course, graphite, attesting an early phase of thermal metamorphism in an originally highly carbonaceous, argillaceous deposit which contained some sand. The last is evidenced by the presence of anthogonous (secondary) quartz. The rock also carries plenty of small scattered crystals of iron pyrite."

The diorite, which practically forms one wall of the orebody underground, is not schistose near the ore, but becomes so going northward, as shown by bands of schist varying from a foot to many yards in width that alternate with belts of solid diabase rock. To the unaided eye the schists generally seem to be altered greenstone formed from old tuffs, and sediment carrying lignitic matter, similar to the