

copper-ore mines in Utah, and the large quantity of ore exposed in surface outcroppings alone is evidently sufficient to suggest this method for mining operations.

In the floor of the adit on the 240-foot level the ore-body is quite as strong as on the surface, and there is every indication that it maintains its continuity to an undetermined depth below this level.

TEXADA ISLAND.

The property owned by the Puget Sound Iron Company is on the west coast of Texada Island; it extends from Gillies bay north-westward along the coast three miles and a half, and contains

3,094 acres of Crown-granted land. The original locations that make up the portion known as the "Iron Mines" comprise about 1,000 acres at the north-west end of the property, included in which are the three quarter-sections for which Crown grants were issued in 1874 by Lieutenant-Governor Joseph William Trutch to Henry William Hughes, Harry Trim, and Josias Charles Hughes. The Puget Sound Company, after acquiring these Crown-granted quarter-sections, had mineral locations staked over them in order to secure the precious metals as well as the base, and these locations have since been also Crown-granted. The most important occurrences of magnetite occur on the quarter-sections mentioned; they are named the *Prescott*, *Paxton*, and *Lake* mines, and belong to the contact-metamorphic type of deposits.

This mine is near the extreme south-western corner of the range of limestone hills that extend across Texada Island from Sturt bay, on the north coast, to the iron-mines within about half

a mile from the south coast, where the limestone contacts with igneous rocks, with porphyrite on the east, quartz diorite on the south, and porphyrite on the west. Lenticular masses of magnetite from 200 to 300 feet long occur at the contacts. The apparent continuity of the magnetite has been shown to a vertical depth of 670 feet below the highest outcrop to the northward at 820 feet elevation, with the ore showing 80 feet wide in the floor of the adit, 150 feet above sea-level, and the face in solid magnetite. The magnetite outcroppings occur on the steep side elevations from 200 to 820 feet above sea-level, with those above the third 520 feet occurring almost directly north from the mine-workings on the *Prescott* body and within a distance of 1,000 feet. The area in which the outcrops are enclosed measures about 1,500 feet north to south by about 1,000 feet east to west. The mine-workings are on four levels above the adit, at 150 feet elevation. These are called: Shaft level at 290 feet elevation; first level at 365 feet; second level at 465 feet; third level at 520 feet. The adit, which is 700 feet long, intersects the bottom of the shaft 475 feet from the portal. It is then driven northward through quartz diorite 380 feet, where a mineralized vein 4 feet wide is crosscut; the minerals in this vein are marcasite, iron pyrites, and some chalcopyrite. It strikes north-west and dips 54 degrees southward. After crossing this vein the adit is continued through quartz diorite to 600 feet from the portal, where the quartz diorite contacts with garnetite mixed with magnetite; this is crosscut for about 20 feet, then solid magnetite is exposed and crosscut 80 feet to the face, which is still in magnetite. An average sample across the face of this adit assayed: Iron, 66 per cent.; sulphur, nil; phosphorus, trace; silica, 3.3 per cent.

The shaft is 140 feet deep, sunk from 290 feet elevation, but as this was sunk in 1899 for prospecting and has never been used as a working opening, the ladders were in an unsafe condition and no examination could be made. The record of the work kept by W. H. Lee, the superintendent, shows that the shaft from the collar to about 70 feet deep passed through magnetite mixed with iron pyrites and some chalcopyrite in a garnetite, epidote gangue; then through quartz diorite to the bottom. A sample from the outcrop in which the shaft is sunk assayed: Gold,