

granite contact. The largest lens seen, occurs near the centre line, about 500 feet from the southern boundary. Magnetite replacing limestone outcrops here, over an area 20 feet by 50 feet. The lode is probably considerably larger, as it is partially concealed. The magnetite is heavily copper stained, and is associated with serpentine, coarse asbestos, clinocllore, actinolite, and other secondary minerals. Two other smaller showings similar in character occur, one 200 feet, and the other 300 feet in, a westerly direction. A second group of magnetite lenses outcrops near the southern boundary of the claim, close to the No. 1 post.

The copper contents of the magnetite lenses on the Big Chief are considerable, but the average tenor is not known. No shipments have been made.

The claim has not been worked for some years, and the early development work consists only of a short tunnel, 20 feet in length, and a few shallow pits and trenches.

THE COPPER CLIFF.

This claim is situated on a small stream half a mile south of Hoodoo creek. It is underlaid partly by crystalline limestone and partly by hornblende granite, and both formations are cut by numerous porphyrite dikes.

The principal showing on the claim occurs at the northern contact of a small area of limestone with granite, and has been opened up by a short tunnel. The ore body is cut across, and partially destroyed by a large porphyrite dike. The section along the tunnel shows three bands of ore, each from 3 to 5 feet in width, separated by dike rock. The ores consist of bornite, and chalcopyrite, with garnet as the principal gangue mineral. Magnetite, tremolite, and various other secondary minerals are also present.

The value of the Copper Cliff ore body depends largely on the relative dips of the dike and the lode, and this could not be determined in the present limited workings.

THE NORTH STAR, KEEWENAW, ETC.

This claim is situated about a mile south of the Vale, near the extremity of a deep embayment of limestone in the main granite area. The workings consist of two pits, about 200 feet apart, each about 10 feet deep. One of these is sunk in an ore body about 6 feet in width, consisting mostly of magnetite and calcite, flecked through with grains of chalcopyrite and bornite, and enclosing occas-