

pinkish, and consists mainly of quartz and plagioclase. The attitudes of the dykes and sheets are unknown, except that most are steep.

The above-described rocks are altered most strongly where they are fractured and veined, chiefly in and around the stock. Quartz veins up to 1 inch wide and partly vuggy are numerous in parts of the stock, where they tend partly to form sets of sub-parallel veins in various directions. In the Hazelton rocks, veins are slender and less conspicuous. Rock adjoining the quartz veins is marginally bleached, or is pink because of orthoclase, or is otherwise altered. Minerals in veins partly containing quartz include orthoclase, actinolite, calcite, fluorite, and epidote. Veins of the orange-brown zeolite, stilbite are plentiful, and heulandite is possibly also present. Gypsum veins occur, and disseminated anhydrite was recognized in drill core from a depth of about 600 feet below the surface. Biotite formed by alteration is partly in veinlets, but is chiefly finely aggregated in porphyry and abundantly disseminated in hornfelsed strata adjoining the stock. Chlorite and sericite alteration is strongest near faults, in sheared rock containing abundant calcite veins that are mostly post-mineral in age.

All outcrops and drill-holes contain pyrite occurring as disseminations and fracture-fillings, and in quartz veins. Copper and molybdenum mineralization is earlier than some, if not all, of the pyrite, and is concentrated chiefly near the stock, where it is apparently best in the zone indicated on Figure 7. Chalcopyrite is the principal copper mineral and is locally accompanied by traces of bornite. Limited surface oxidation has in places produced small quantities of copper carbonates. Chalcopyrite, which is generally accompanied by pyrite, occurs partly disseminated in altered rocks and partly as coarsely crystalline coatings, nests, and blebs in quartz veins. Molybdenite occurs in smaller amounts as fine particles and streaks, in or near quartz veins, generally in the vicinity of chalcopyrite but in places accompanied only by pyrite. Magnetite in veins and other local concentrations apparently formed before the sulphides.

Many faults apparently of pre-mineral age are conspicuous in drill-holes but are poorly exposed on surface. A pair of curved northeasterly lineaments prominent on air photographs are inferred to be pre-mineral faults confining the stock closely (Fig. 7). The southern fault is intersected in four drill-holes and shows strong sericitic, chloritic, and calcitic alteration accompanied by sulphides. The northern fault may split into a number of small faults partly intersected by holes designated E and No. 3 respectively.

Dark diabase dykes of unknown attitude in the mineralized rocks are themselves unmineralized and only weakly sheared. (See Annual Report, 1963, p. 28.)

Whit (Kennco Explorations, (Western) Limited)* (53° 127° N.E.) Company office, 1111, 1030 West Georgia Street, Vancouver 5. C. J. Sullivan, president; J. A. Gower, manager. Since 1963 this company has held about 50 claims on the south slopes of Sibola Peak at elevations ranging mainly between 3,800 and 6,000 feet. The property is north of the Len group, about 6 miles distant by road. In 1964 work was directed by P. E. Hirst and included 6 miles of road construction, 15,000 lineal feet of trenching, geophysical surveying, and 1,177 feet of diamond drilling in 10 holes. A maximum crew of 16 men camped at Whiting Creek from June to September.

The property, which was visited in July before drilling started, is underlain by dark-green fragmental Hazelton volcanic rocks that are poorly exposed and appear

* By J. M. Carr.

7/2. - eye for po? to dip southward. Intrusive rocks include the Sibola granodiorite stock in the northwestern part of the property; porphyritic quartz diorite or granodiorite at Whiting Creek, and reportedly farther northeast near Comb Creek; and numerous later dacite porphyry dykes. These dykes are of several kinds, are in places closely spaced, and mostly strike northwestward or west-northwestward. Later, unmineralized and only slightly altered diabase dykes occur also with these strikes. Alteration and mineralization are extensive. The upper slopes are conspicuously oxidized to form widespread gossans, and the lower valleys of creeks draining the gossans are partly filled with stratified conglomerates and breccias of country rock debris set in a brown-red iron-rich clay matrix. These local deposits were probably formed in glacial lakes resulting from ice dams in Whiting Creek.

At localities spaced as much as 1½ miles apart on the property, chalcopyrite, molybdenite, and in places magnetite and specular hematite occur either together or separately as disseminations, streaks, and fracture fillings in rocks which mostly contain quartz veins. Pyrite accompanies these minerals and also occurs extensively alone or with very minor amounts of other sulphides in rocks that are quartz veined, silicified, or otherwise altered. Rock alteration is generally accompanied by pyrite and has produced minerals which include biotite, quartz, sericite, kaolinite, chlorite, calcite, and epidote. A strong tendency was noted for disseminated sulphide to replace secondary biotite and chlorite in the intrusive rocks. + Fluorite

Widespread fracturing probably indicates the existence of numerous faults. Mineralized faults were seen in several places; at Whiting Creek a chloritic fault strikes northward, dips to the west, and is several feet wide; elsewhere, some faults are sericitic and follow silicified, pyritic porphyry dykes of northwesterly trends.

Berg (Kennco Explorations, (Western) Limited)* (53° 127° N.E.) Company office, 1030 West Georgia Street, Vancouver 5. C. J. Sullivan, president; P. T. Black, engineer in charge at the property. The company holds the Berg group of 38 recorded claims between Nanika and Tahtsa Lakes, about 11 miles northwest of the Whit group.

The mineralization consists of pyrite, chalcopyrite, malachite, azurite, and molybdenite in fractures and disseminations associated with a feldspar porphyry stock. Work on the property started August 16th and stopped October 1st. An average of 17 men comprised the work crew. Three bulldozer tractors were used to construct a road and bulldozer trail for the 20 miles from Twinkle Lake to the property. Roads and drill sites were prepared, and approximately 40,000 cubic yards of rubble was excavated to form 22 trenching sites. About 190 rock geochemical samples were taken from the trenches. A total of 3,267 feet of NX wire-line diamond drilling was done at the stations. Transportation is by four-wheel-drive vehicle. The property was not visited.

Molybdenum

Jumbo* (53° 127° S.W.) Phelps Dodge Corporation of Canada Limited, 55 Yonge Street, Toronto; Vancouver office, 1112 West Pender Street, Vancouver 1. J. L. DeLeen, exploration manager; L. Kiss, engineer in charge at the property. The company holds 34 recorded claims between the Gamsby River and the Tsaytis River about 11 miles south of Seel Lake. The claims cover the contact area between metavolcanics and granite. An aplitic phase of the granite contains minor molybdenite and quartz. Four men were employed from August 26th until September 18th on 280 feet of

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