

Molybdenite is of common occurrence, and is sometimes in excess of other metalliferous constituents. In some cases it probably replaces the ferro-magnesian minerals of the greisen veins. It usually occurs as slickensided coatings on joint-faces, and also appears as stringers sometimes nearly an inch in thickness, filling fracture-spaces in the vein-material, while again it is more finely distributed throughout the gangue. The oxide, molybdate, is frequently seen on weathered surfaces.

Zinc-blende has been observed in small amount in one instance, while scheelite and galena are said to have been found also.

*Description of the Outcrops.*—The principal veins exposed outcrop in the beds of Silver and Specimen creeks, and are known as the Mount Radiant and New Anaconda reefs respectively. Besides these, at least nine other outcrops of mineralised vein-material have been located, while indications of copper have been observed in many places.

*Mount Radiant Reef.*—This vein-formation outcrops in the bed and on both banks of Silver Creek, about 50 chains east of the trigonometrical station recently erected on Mount Radiant, and at an elevation of 2,780 ft. above sea-level.\* On the northern bank a small prospecting-drive shows the vein-formation to resemble a stockwork, the constituent veins varying in thickness from 4 in. to 3 ft., and the whole showing a total width of 1 chain. It is probable, however, that the north-eastern wall has not yet been reached. Prospecting-work has been carried on above the drive, showing conditions similar to those prevailing below. Indications of copper, bearing witness to the widespread nature of the mineralisation in this vicinity, are found 5 chains higher up the stream, and in the small branch stream above the drive. Owing to the nature of the outcrop its strike is difficult to determine, though the individual veins have a more or less north-easterly trend. It is probable, however, that the whole vein-formation has a north-north-west strike.

Molybdenite is here the most prominent mineral of economic value, but chalcopyrite is general, with a little bornite and stains of malachite. Iron-sulphides are also in evidence. The highest values are carried by a vein about 2 ft. 8 in. in width, split by a small "horse" of mineralised country; and appearing just at the entrance of the drive. In this vein both chalcopyrite and molybdenite are strongly developed, the latter along shear-faces sometimes 2 ft. to 3 ft. in vertical extension and nearly half an inch in width. It is frequently associated with pink orthoclase, which appears irregularly throughout the vein, but is by no means confined to the feldspar gangue. Chalcopyrite is seen in bunches and stringers, as well as in smaller particles, throughout the gangue. Samples from various parts of the formation assayed as follows:—

Locality.	Gold.		Silver.			Copper.	Molybdenum.
	Gr.	Oz.	dwt.	gr.		Per Cent.	Per Cent.
(1.) Country rock from face of drive ...	0.5	0	1	6		0.32	0.03
(2.) Vein near end of drive ...	...					0.74	0.08
(3.) Country rock between first and second veins	0.5	0	1	21		0.41	0.21
(4.) Vein at entrance to drive ...	6.0	2	8	13		1.20 <sup>5</sup>	1.76
(5.) Exposure above mouth of drive ...	15.0	0	13	2		0.46	0.82

*New Anaconda Reef.*—In the headwaters of Specimen Creek, and three-quarters of a mile above its junction with the Little Wanganui River, at an altitude of 1,850 ft. above sea-level,\* is the New Anaconda Reef. This is a well-defined vein exposed continuously for 2½ chains, but distinctly traceable in a north-north-westerly direction for 12½ chains, while large well-mineralised "floaters" indicate a probable further continuance for an equal distance. Its southerly extension is obscured by debris. It has a width in Specimen Creek of 25 ft., and strikes about 165° (true), with steep easterly dip.

The vein-material consists principally of quartz, though feldspar is common. The metalliferous contents are similar to those of the Mount Radiant Reef, but molybdenite is much less in evidence, copper minerals being generally predominant. The highest values, showing as irregular patches and stringers of chalcopyrite up to ¾ in. in width, are carried in a 6 ft. zone near the foot-wall of the vein. Elsewhere the metalliferous constituents are not so strongly developed, bunches of ore occurring at irregular intervals throughout the gangue.

The following results were obtained from samples selected from the New Anaconda Reef:—

Locality.	Gold.		Silver.			Copper.	Molybdenum.
	Gr.	Oz.	dwt.	gr.		Per Cent.	Per Cent.
(1.) South end of reef above creek ...	...					0.23	0.21
(2.) Highly mineralised band in creek, south end of reef	...	0	1	21		2.37	0.05
(3.) Across face, main exposure ...	1	0	8	9		0.25	0.03
(4.) Along face, main exposure ...	2	1	5	5		2.32	0.15
(5.) Face below sample 4 ...	4					0.90	0.05
(6.) Northern end, main exposure ...	2	0	18	7		0.41	0.25

\*Barometric heights.