POISON MOUNTAIN PROSPECT
(92O/2W)

By E. W. Grove

INTRODUCTION

The Poison Mountain prospect, consisting of 262 units, lies approximately 84 kilometres north-northwest of Lillooet and 37 kilometres west of Big Bar. Road access is now via the Lillooet—Bralorne road, from Moha.

The discovery of placer gold was recorded on Poisonmount (Poison Mountain) Creek, near the headwaters of Churn Creek in 1932 (Richmond, 1933). These placer deposits lie between Buck and Poison Mountains and are northerly from the main mineralized zones which are found on the southerly slope of Poison Mountain, along the drainage of Copper Creek. It was also noted in Richmond's report that gold-bearing quartz veins cutting 'birds-eye porphyry' were found during the reconnaissance survey of Poison Mountain.

Assessment of the lode mineral potential started in 1935. Spotty work on the Copper Creek mineralization continued to 1970 when a major diamond-drill core program was undertaken by Canadian Superior Exploration Limited. No work was done on the property from 1972 to 1978. In 1979, Long Lac Mineral Exploration Ltd. drilled about 1 023 metres in five core holes which, when reviewed, indicated potentially economic values of copper, molybdenum, gold, and silver.

In 1980, Long Lac expanded its program to include 184 percussion holes totalling about 14 000 metres and 29 core holes totalling about 7 200 metres, as well as further geological studies. In addition, about 35 kilometres of the Lillooet road was upgraded and maintained to provide better access for service vehicles. Long Lac also operated a 20-man camp during the 1980 field season. The project manager was John Hogan and project geologist, Robert Brown.

GEOLOGY

The regional geology is not well enough known to detail the relationships between the Poison Mountain 'window' and the surrounding thick sedimentary sequence currently known as Relay Mountain Group of Jura-Cretaceous (?) age (Seraphim and Rainboth, 1976). The relatively isolated, steep-dipping, northwesterly trending sedimentary units at Poison and Buck Mountains include feldspathic sandstones, boulder conglomerates, and thin-bedded intercalated siltstones. At Poison Mountain, the members are largely sandstone/siltstone that have been intruded by two main types of granitic plutons. The oldest intrusion, a hornblende biotite granodiorite, extends northwesterly across the lower slope of Poison Mountain from Copper Creek to Fenton Creek. This pluton and the sedimentary country rocks are cut by a number of steep northerly trending hornblende biotite, porphyry dykes. These dykes are the birds-eye porphyry of MacKenzie (1920) and the Main, North, and East porphyry of Seraphim and Rainboth (1976). The presence of somewhat rounded inclusions of altered hornblende granodiorite in several of the porphyry dykes clearly demonstrates the sequence of intrusion. As noted by Seraphim and Rainboth (1976) and Pegg (1980), alteration associated with these various intrusive rocks is mainly formation of biotite hornfels in an

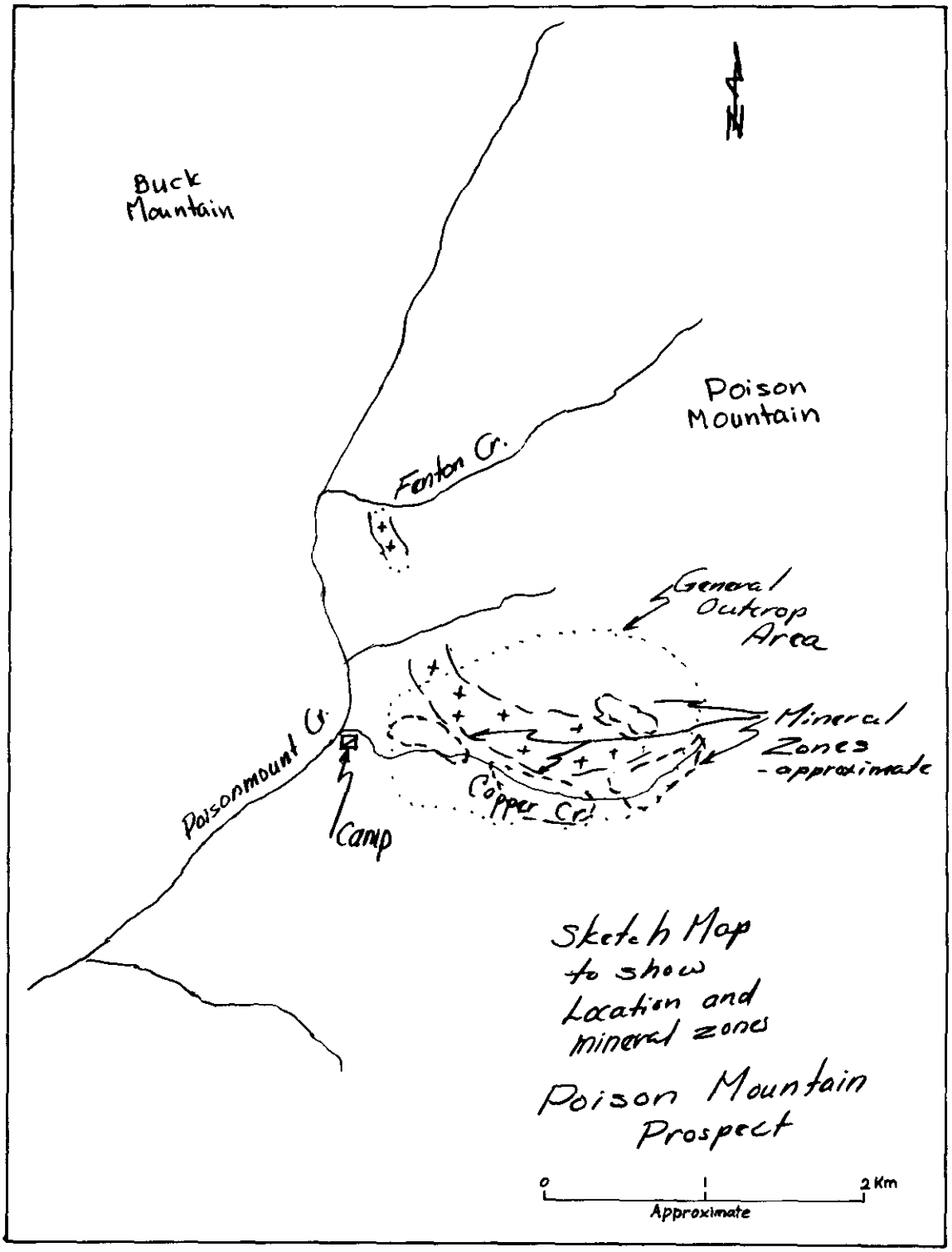

Figure 38. Sketch map of the Poison Mountain prospect.

almost complete aureole around the plutonic zone. Petrographic studies indicate that both plutonic phases were initially hornblendic but subsequently were pervasively biotitized. Rock ages are yet to be determined.

As indicated (Fig. 38), the sedimentary country rocks dip steeply and trend northwesterly across the property. One relatively thin boulder conglomerate member was traced from Fenton Creek toward Copper Creek, where it is cut off by the intrusive rocks and confirms the relatively simple country rock structure. The elongate granodiorite pluton generally sharply crosscuts the sedimentary rocks with an arcuate northwesterly trend. The north-trending porphyry dykes show irregular contact relationships with both the older granodiorite and the country rocks.

Less apparent structures, such as faults, are expressed as sharp lineaments. The northeasterly set of fractures or faults which cut across the Copper Creek area may be particularly important in that they appear to control zones of deep surficial weathering (kaolinization, etc.) that are now expressed by gullies. The relative importance of westerly, northwesterly, and northerly fractures remains to be determined.

Mineralization related to quartz veins in the porphyries (MacKenzie, 1920) included pyrite and native gold. Richmond (1933) also reported gold-bearing quartz but did not examine Poison Mountain because of snow. Exploration work since 1935 has shown the presence of pyrite, chalcopyrite, molybdenite, bornite, azurite, malachite, native copper, and cuprite, along with vein quartz, calcite, and gypsum with secondary sericite, chlorite, biotite, serpentine, kaolin, and hematite. The results of the work up to 1972 indicated a copper-molybdenum deposit of major size but subeconomic grade. The 1979 work confirmed this but also indicated a significant gold and silver content which increases the economic potential of the deposit.

Detailed drilling in 1979 and 1980 has shown that the copper-molybdenum, gold-silver-bearing mineralization is crudely confined to the hornfels/granodiorite contact. To date, four zones of above-average-grade mineralization have been outlined in which a crude parallel relationship between copper and gold content is apparent. Significant gold values have also been outlined in portions of the so-called 'barren' granodiorite, in which sulphide minerals are sparse.

Detailed mineral and trace element studies on the country and intrusive rocks currently underway may shed some light on the geochemical nature of this major gold-copper-molybdenum-silver deposit.

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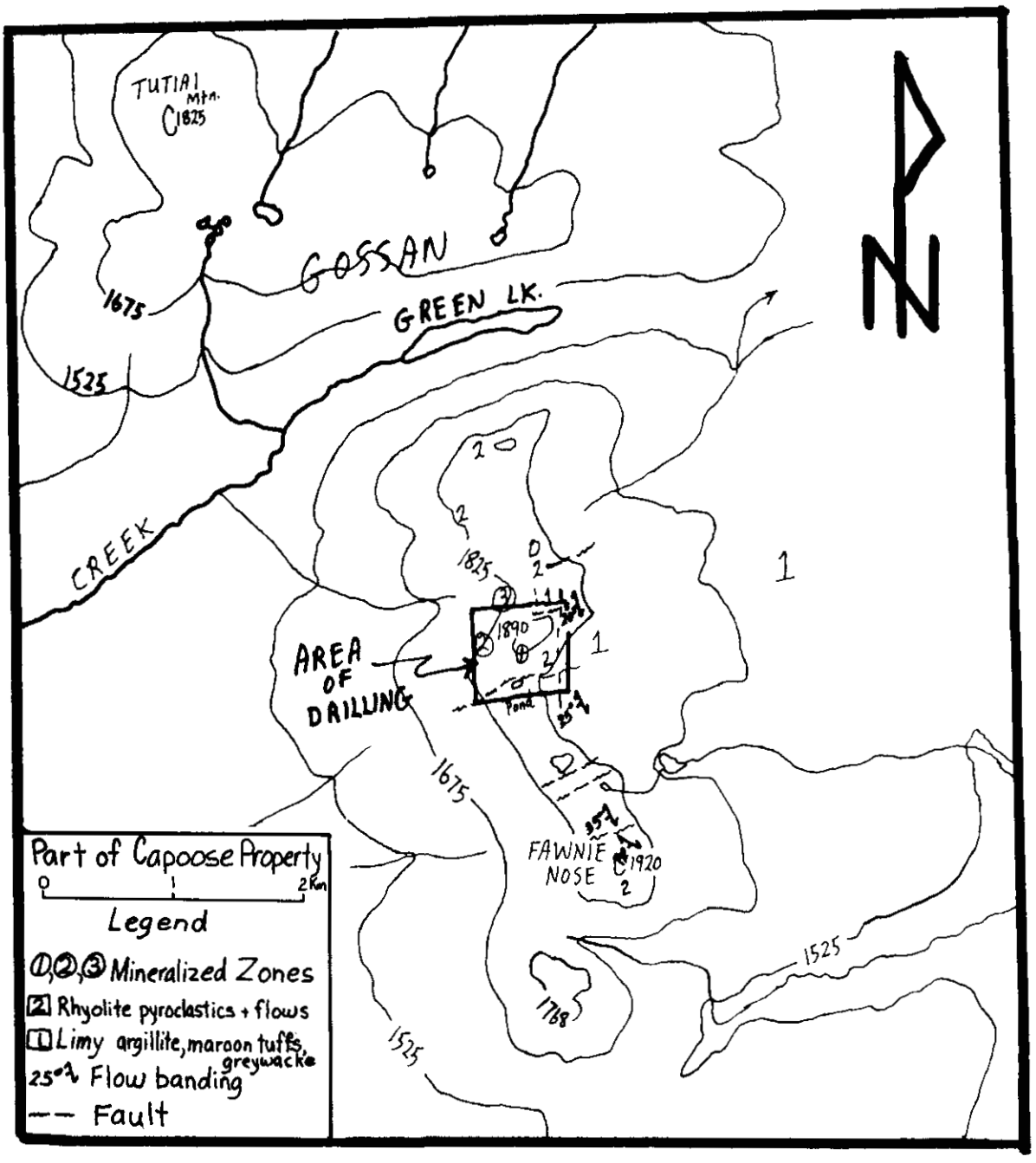

Figure 39. Sketch map of the Capoose property.