

675851

Tee Tam Fire
West Gem
94M/8

Coppercap Formation (carbonates). The zone, which ranges in width from 180' to 250', contains up to seven bands of mineralized limestone and silty limestone. Thicknesses of the individual copper beds may vary laterally from a few inches to over 20 feet. At any one locality some of the 'copper beds' may be barren or missing. In general, however, the mineralization shows strong continuity for the entire four miles of strike length exposed.

Sulphides consist of pyrite, chalcopyrite, bornite, digenite, chalcocite and covellite, in order of abundance. Malachite and azurite are common in areas of leaching. Chalcopyrite is the most ubiquitous of the copper minerals and is found throughout the cupriferous zone as small disseminated grains. Bornite and chalcocite, and bornite-digenite are found only in the two lower copper beds.

The Redstone deposits are comparable with the classic strata-related copper deposits of the Kupferschiefer in East Europe, the Lower Roan Group in Central Africa, and the Nonesuch Shale in Michigan.

Although the copper-bearing formations of each deposit differ in lithology, in every case there are marked facies changes associated with deposition at the margins of a basin. The sections containing copper are restricted to a total thickness of less than 100 meters and the higher grade beds form extensive sheets; there is a pattern of mineral zoning in chalcocite - bornite - chalcopyrite - pyrite both upwards within the copper bearing sequence and laterally in a way that may be related to the paleogeographic margin of the basin.

LIARD FLUORSPAR MINERALIZATION - NORTHEASTERN BRITISH COLUMBIA
Woodcock, J.R., J.R. Woodcock Consultants Ltd., 1521 Pemberton
Avenue, North Vancouver, B.C.

Fluorspar mineralization is widespread in the Middle Devonian rocks of northeastern British Columbia, both in the northern end of the Rocky Mountains and in the southern tip of the Mackenzie Mountains.

Numerous small lenses and stringers of barite with minor associated fluorite occur in some of the dolomites of the Stone Formation. However the best concentrations of fluorspar presently known occur at the contact of the Dunedin limestone and the stratigraphically overlying Besa River shales. These deposits generally have associated barium carbonate minerals.

Good deposits occur on an anticline north of Liard Hot Springs. At this place fluorspar mineralization is widespread along the contact but of significant thickness only along faulted structures. The best mineralization occurs in a chaotic breccia which is interpreted as a solution collapse breccia. Mineralization includes fluorspar, witherite and barytocalcite. Some quartz, barite, bitumen and H₂S have also been introduced.

The mineralization north of Liard Hot Springs, with structural control related to Mackenzie Mountains structures is probably mainly of Tertiary age. The present day hot springs which issue from anticlinal areas near the Dunedin limestone - Besa River shale contact may be lingering thermal solutions which have formed the fluorspar deposits. They are anomalous in fluoride.

Some of the fluorspar deposits in the Rocky Mountain ranges near Muncho Lake and Stone Mountain occur in overturned folds where Dunedin limestone is above the younger Besa River shales. It is possible that this fluorspar mineralization was formed early in the tectonic history of the folding and thrusting and has been overturned into its present position. If this is the case, mineralization could have started early in the tectonic history of the Rocky Mountains and continued throughout the Tertiary.

MIOGEOCLINAL EARLY CAMBRIAN AND OLDER CLASTICS OF THE
COLUMBIA AND ROCKY MOUNTAINS

Young, F.G., Geological Survey of Canada, 3303-33rd Street
N.W., Calgary, Alberta

Predominantly clastic rocks of Early Cambrian and latest Proterozoic (Windermere) age comprise the basal part of a complex miogeoclinal prism of sediments up to 10,000 feet thick in the western Rocky Mountains and eastern Columbia Mountains. This clastic prism presumably formed at the western margin of the ancient North American continent and records the stabilization of the continental margin above the immature, deeper water Windermere sediments. The younger, shallow marine carbonates and shales of Middle Cambrian and later age mark the attainment of a stable craton-margin platform.

In the Rocky Mountains the prism is represented by the upper Miette and Gog Groups. The latter consists of alluvial