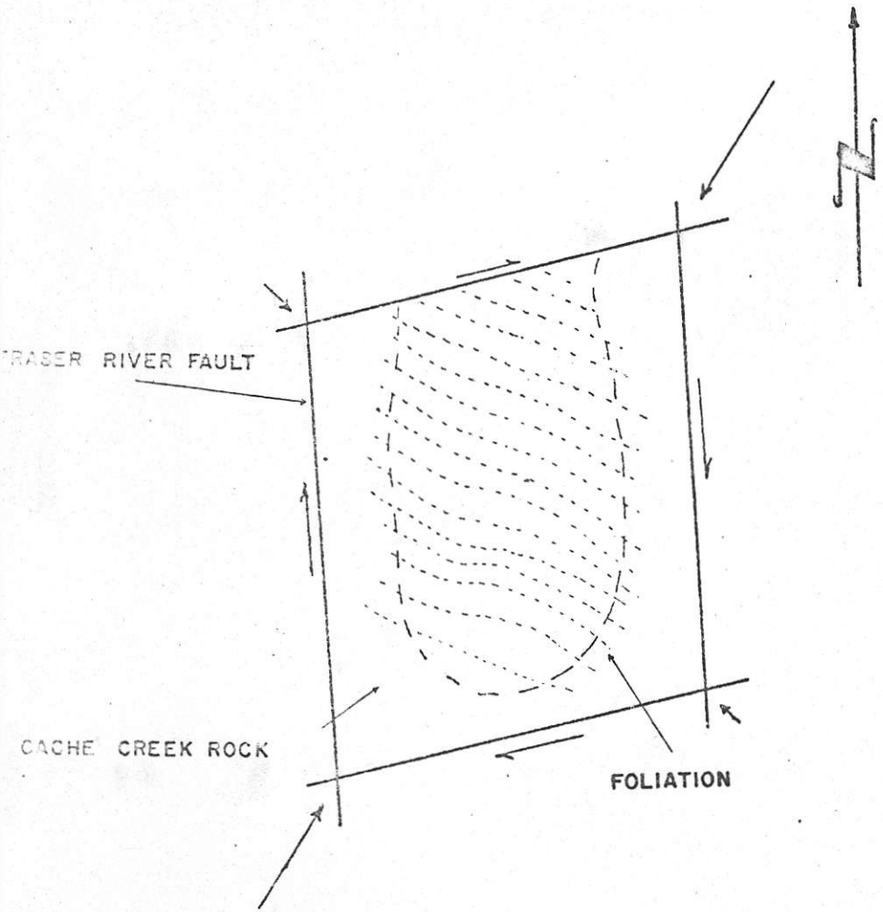
A HYPOTHESIS REGARDING THE DEVELOPMENT OF THE STRUCTURE AND MINERALIZATION IN THE GIBRALTAR MINING CAMP

The following hypothesis is presented as a simplified geological model which presents a possible explanation for the structure and mineralization responsible for the orebodies within the Gibraltar mining camp as we know it today.

The camp is assumed to be included in an INFERRED STRUCTURAL UNIT BLOCK. This block is bounded on the west by the Fraser River fault system, on the east by a parallel fault system between Granite Mountain and Beedy Creek and on the north and south by east-west trending fault systems related to the east-west Quesnel Structural Break.

All of the following steps are subsequent to the emplacement of the Granite Mountain Pluton into the enclosing rocks of the Cache Creek Group.

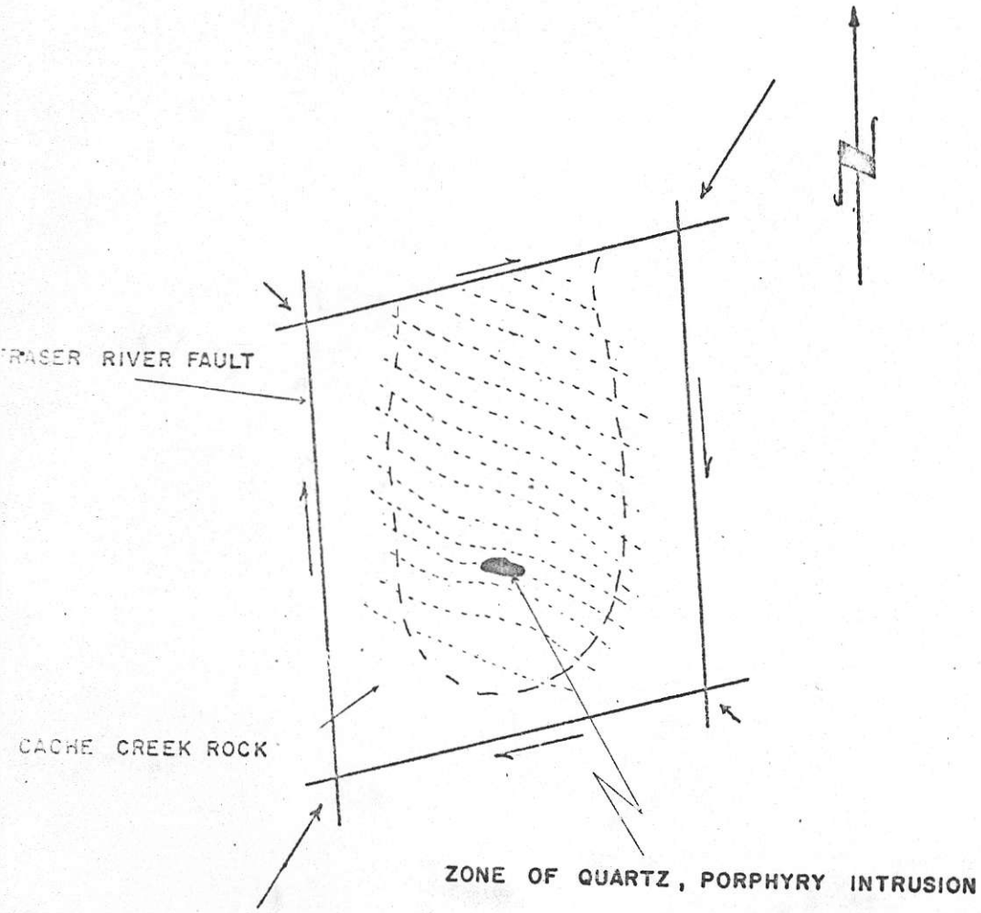


STEP I

Development of regional foliation and alteration by cataclastic deformation induced by regional forces acting on the inferred structural unit block.

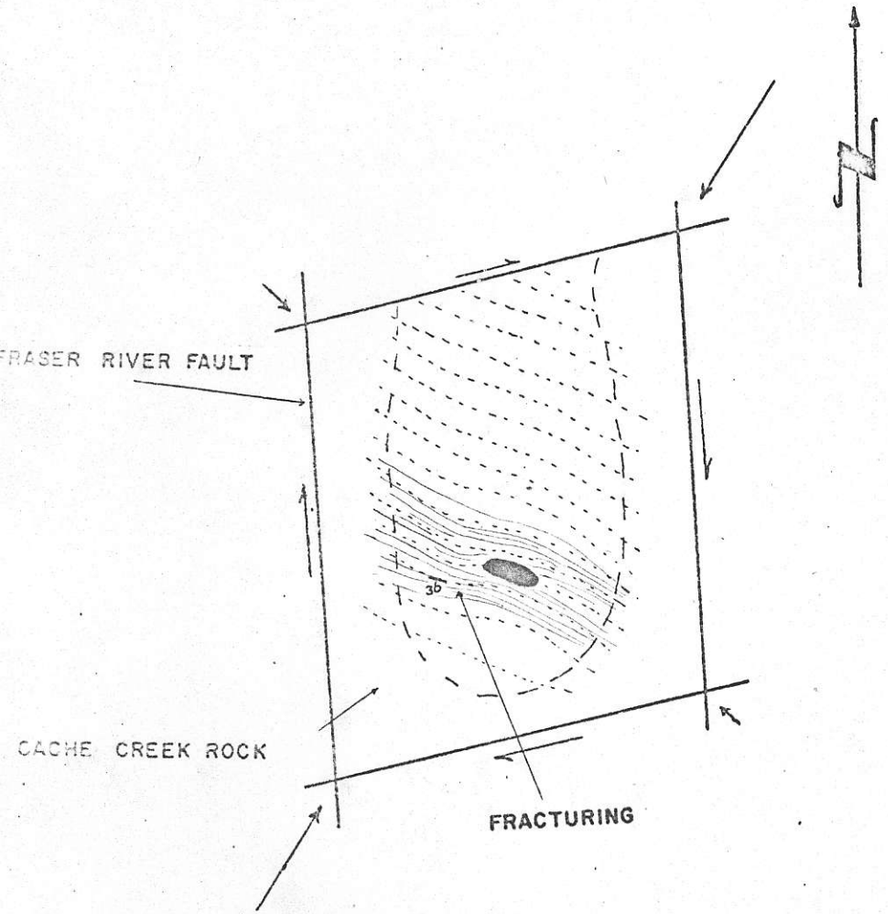
Overall attitude of foliation is approximately 110 Az/30 S.

The alteration is, within the Pluton, sauseritization and is compatible with the greenschist facies of metamorphism.



STEP 2

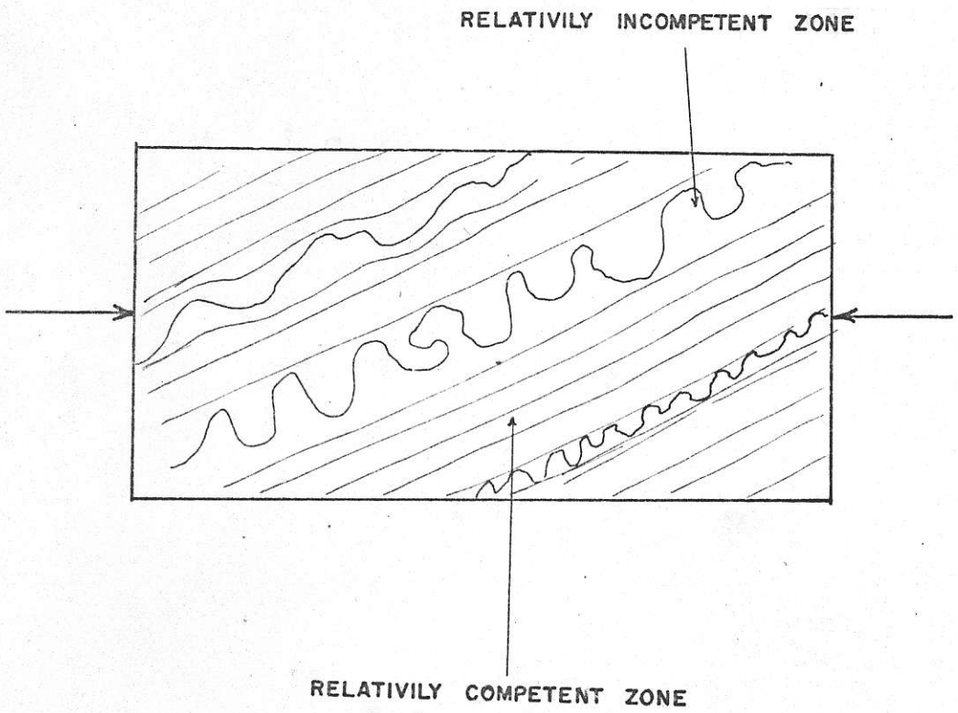
Intrusion of a swarm of quartz porphyry intrusions into the quartz diorite of the Granite Mountain Pluton. The outline of the zone forms a "core" zone which is generally concordant to the pre-existing foliation and structurally more competent than the surrounding quartz diorite.



STEP 3

Under continued regional stress very intense fracturing was produced in the relatively incompetent foliated and altered quartz diorite in the vicinity of, and along strike from the structurally more competent core.

The fracturing is parallel to sub parallel to the pre-existing foliation.

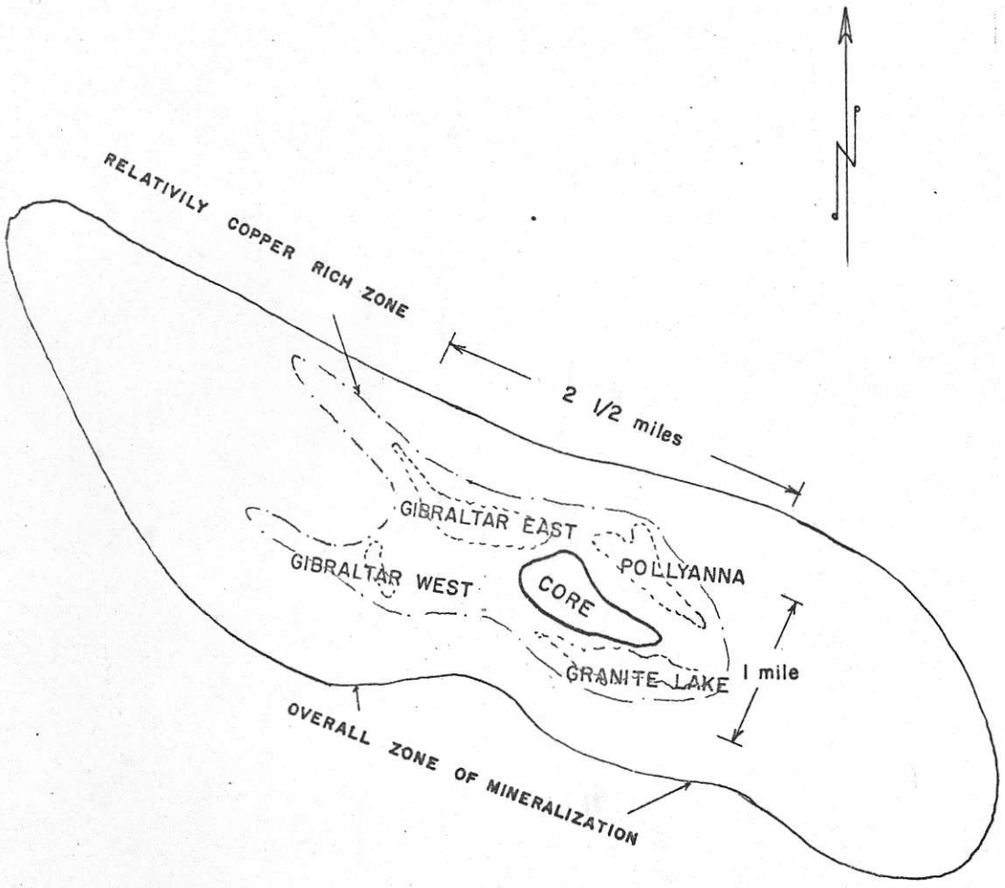


STEP 4

Under continued regional stress, intense small scale folding developed along the structurally weakest planes in the most heavily altered and fractured zones.

Scale of folding ranges from a fraction of an inch to at least 150 feet.

This step completed the "plumbing" system that was to host the following mineralization.



STEP 5

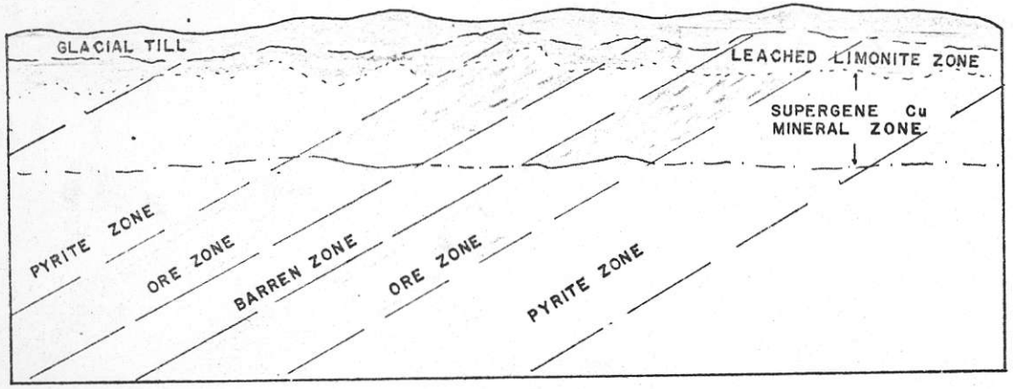
Mineralization

Mineralization gained access to the structurally prepared zone around, and along strike, from the core.

The vast bulk of the mineralization is pyrite. However, copper largely as chalcopyrite was deposited in a zone lying close to the essentially barren core. Where this zone is rich enough, the Gibraltar orebodies occur.

Four stages of mineralization are recognized.

STEP 6



After exposure by erosion, the ore zones were weathered over long periods of time. This produced a leached limonitic cap (barren) ranging up to 100 feet in thickness, plus a thick zone of supergene copper mineralization. The supergene copper zone is, basically up to 300 feet in thickness. However, supergene mineralization has been seen in diamond drill core from 500 feet or more.

Chalcocite is the most abundant supergene copper mineral present and occurs throughout the zone. "Oxide" copper minerals such as malachite, azurite and chrysocolla tend to occur near the top of the zone and in minor amounts in the leached cap as does native copper.

Minor amounts of covellite and the oxide cuprite occur throughout the supergene zone.

Subsequently, glaciation in geologically recent times covered the Granite Mountain area with a layer of glacial till and related debris up to approximately 200 feet in depth.

Glaciation left the bedrock largely unscathed. Thus preserving the limonitic and supergene copper zones.