

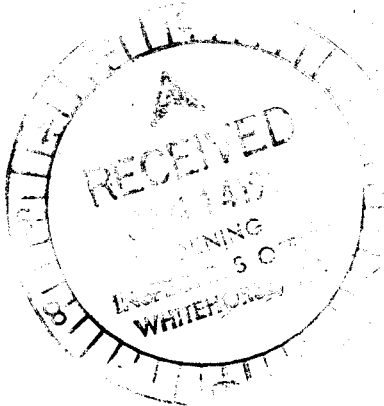
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GEOLOGICAL REPORT ON  
SLAB MOUNTAIN  
FAIRCHILD LAKE AREA, Y. T.

for  
CYPRUS EXPLORATION LTD.

by  
Dr. R. H. Seraphim, P. Eng.



August, 1968

Claims:

<u>Name</u>	<u>Record No.</u>
Slab 1 to 15 inc.	Y14628 to Y14642 inc.
Slab 16	Y14798
Slab 17 to 24 inc.	Y14790 to Y14797 inc.
Slab 25 to 28 inc.	Y14799 to Y14802 inc.

Location:

Near Bonnet Plume River about  
100 miles northeast of Mayo, Y. T.  
65° 49' North Latitude 133° 59' West Longitude  
64

Dates:

July 7 to July 12 inclusive (in field)

This report has been examined by  
Geological Evaluation Unit.  
Approved as to technical worth by:  
*[Signature]*  
RESIDENT GEOLOGIST

Approved as to cost in the amount of: \$3840.00  
*[Signature]*  
RESIDENT MINING ENGINEER

Accepted as representation work  
under Section 53(4) Yukon Quartz  
Mining Act.  
*[Signature]*  
COMMISSIONER OF YUKON

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ILLUSTRATIONS:

ENLARGED AERIAL PHOTO - (400 ft. = 1 inch). . .	(to accompany)
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SKETCH OF DRAG-FOLDING NATURE . . . . .	(facing page 6)

## SLAB MOUNTAIN

FAIRCHILD LAKE AREA, Y. T.

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### SUMMARY AND CONCLUSIONS:

A copper stained cliff, known as Slab Mountain, is located near the Bonnet Plume River in the Fairchild Lake area of the northern Yukon. The bedded rocks hosting copper mineralization, a band of thin bedded cherty and limey andesitic tuffs, lie sub-parallel to the cliff face. The band is 2,500 ft. thick; the portion containing appreciable copper sulfides is approximately 1,200 ft. thick, and exposed for 5,000 ft. of length. The copper sulfides are found chiefly along broken zones associated with drag folds, and these zones constitute perhaps 10% of the total volume.

REPORT ON  
SLAB MOUNTAIN  
BONNET PLUME AREA, Y. T.

INTRODUCTION:

Slab Mountain and vicinity were mapped, with the assistance of Carl and Keith Langlois, July 7 to 12 inclusive. The examination was to determine the nature and extent of the primary copper deposits which provide the conspicuous copper staining on the cliffs facing the Bonnet Plume River. The Area has undoubtedly attracted the attention of prospectors in the past in spite of the relatively remote location. However, the mapping and sampling reported herein probably constitute the most complete data, as no signs of previous work were found except for a picket in the peak.

LOCATION AND ACCESS:

The showings are within a mile or two of  $65^{\circ}$  N,  $134^{\circ}$  W, on a south-west facing cliff a half mile north of the Bonnet Plume River. The nearest fixed wing aircraft landing is at Fairchild Lake, about ten miles east of the mountain. The Bonnet Plume valley is broad, and locally well timbered.

The south-west face of the mountain contains most of the copper mineralization, and some of the miner-

alized areas could be reached only by experienced alpinists. However, a rope down a chimney facilitated access to the numerous sheep trails which traverse the face a few hundred feet below the peak. These trails can be followed, without mountaineering equipment being necessary, as long as one moved with care. Several gulleys, mostly filled with slide rock, extend from the base of the mountain up to the system of sheep trails. These, and the trails, give access to about half of the mountain face. The remainder can be inspected visually at the maximum range of about three hundred feet.

#### REGIONAL GEOLOGY:

Regional mapping by the Geological Survey does not cover the showing itself, but a large area commencing a mile or two to the north has been mapped at a 1 to 1,000,000 scale - G.S.C. Map 10, 1963. A northwest striking unit of lower palaeozoic carbonates, bounded by pre-cambrian phyllites, is shown underlying Slab Mountain. This interpretation may be valid as Slab Mountain itself is composed essentially of limy, distinctly bedded rocks, separated by a fault or unconformity from strongly schistose green and grey phyllites and dolomites which lie to the north. The beds in the area are predominantly steeply dipping, from vertical to about 60° southerly. The schistosity in the phyllites, however, dips gently to the north.

LOCAL GEOLOGY: (See accompanying maps)

The local stratigraphy is not defined, but it is assumed herein that the beds are predominantly right side up, i.e. southmost beds are topmost. The sequence mapped then is from north to south (bottom to top?):

- (7) A several thousand foot thick horizon of tan to grey dolomites and argillites which extends to the tops of the ridges which are north of Slab Mountain.
- (6) Green phyllite and flagstone, one to two thousand feet thick, with schistosity dipping northerly, and bedding dipping southerly. A diorite sill or dyke outcrops mostly within this unit.
- (0) Fault zone and/or unconformity (perhaps pre-cambrian to cambrian contact).
- (5) Amygdaloidal dark green to black andesitic flows, with beds a few tens of feet thick, and sequence a few hundred feet thick, exposed only on the east flank of Slab Mountain.
- (4) Limestone and limey tuff, beds a few inches to a few feet thick, and sequence about one thousand feet thick, grey weathering and with a "clinkery" surface.
- (3) Transitional to the above are green to cream thin bedded cherty and limey andesitic tuffs, locally copper-stained.

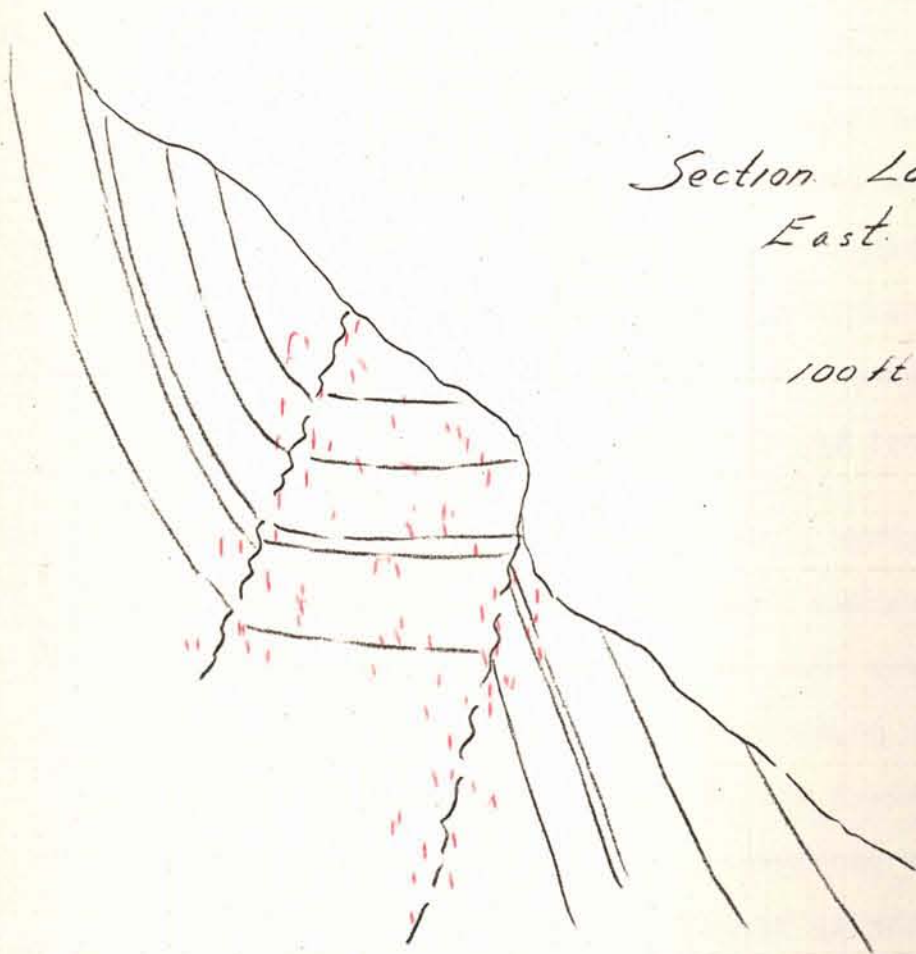
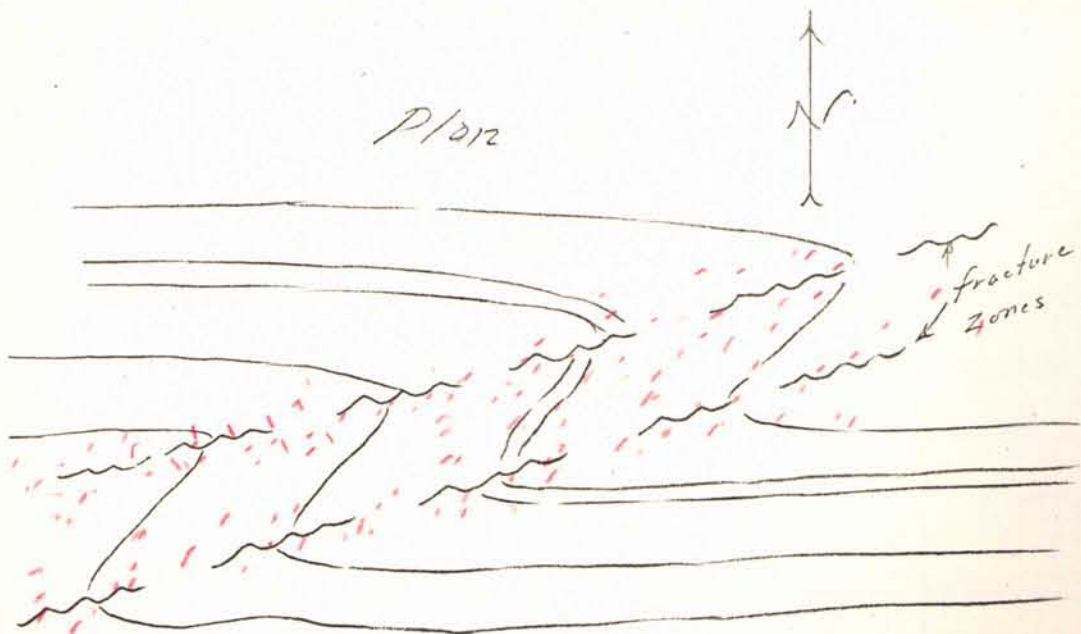
and host to most of the copper mineralization, thickness about 2,500 ft.

- (2) Transitional to the above are thin bedded argillites and quartzites, conchoidal fracturing, rusty brown weathering, thickness not known, but at least 3,000 ft.

The above described beds form a major Z shaped drag-fold with the continuing limbs striking about  $115^{\circ}$  and dipping in general steeply southerly, and the cross-limb striking almost north-south and dipping vertical to steep westerly. Minor drag-folds, in the same Z sense as the major drag-folds, are common. The folding has been so tight near the north-east axis that the rocks there, particularly the limestone and limey tuff unit, have brecciated. Fragments in the breccia zone are completely disoriented, and range in size from a few millimeters to several tens of feet in diameter.

The green phyllite and flagstone unit occupies a marked topographic depression between Slab Mountain itself and the more northerly dolomite ridges. The sparse outcrops of the phyllites are strongly schistose. The unit appears to transect the amygdaloidal volcanics. These data all lead to the conclusion that the phyllites harbor a strong northwesterly trending fault zone.

Fracture zones accompany the drag folded zones



in the thin bedded cherty and limey andesitic tuff horizon (the copper-mineralized horizon). Although the difficult access does not permit complete enough inspection to be certain, the relation is believed to be about as sketched on the facing page. Some of the fracture zones can be seen to extend several hundred feet in strike and dip length. (The average west face slope is about  $45^{\circ}$  thus exposures are partly plan and partly section). The fractures themselves make a rubbly brecciated zone from a few feet to about twenty feet wide. A few of the more incompetent parts of these zones have been eroded to form caves, which are coated with copper stain, and which the mountain sheep obviously consider their home.

#### MINERALIZATION:

The sulfides found are chalcopyrite and pyrite, with traces of molybdenite and cobalt sulfides. The copper stain is chiefly malachite, with a little azurite locally, and in one area a trace of cobalt stain was found.

The mineralization definitely appears best grade in and near the fracture zones which are associated with the drag folds as described above. The fractured rock extending for 10 to 20 feet or so on each side of the rubble zone itself in places carries as much copper as

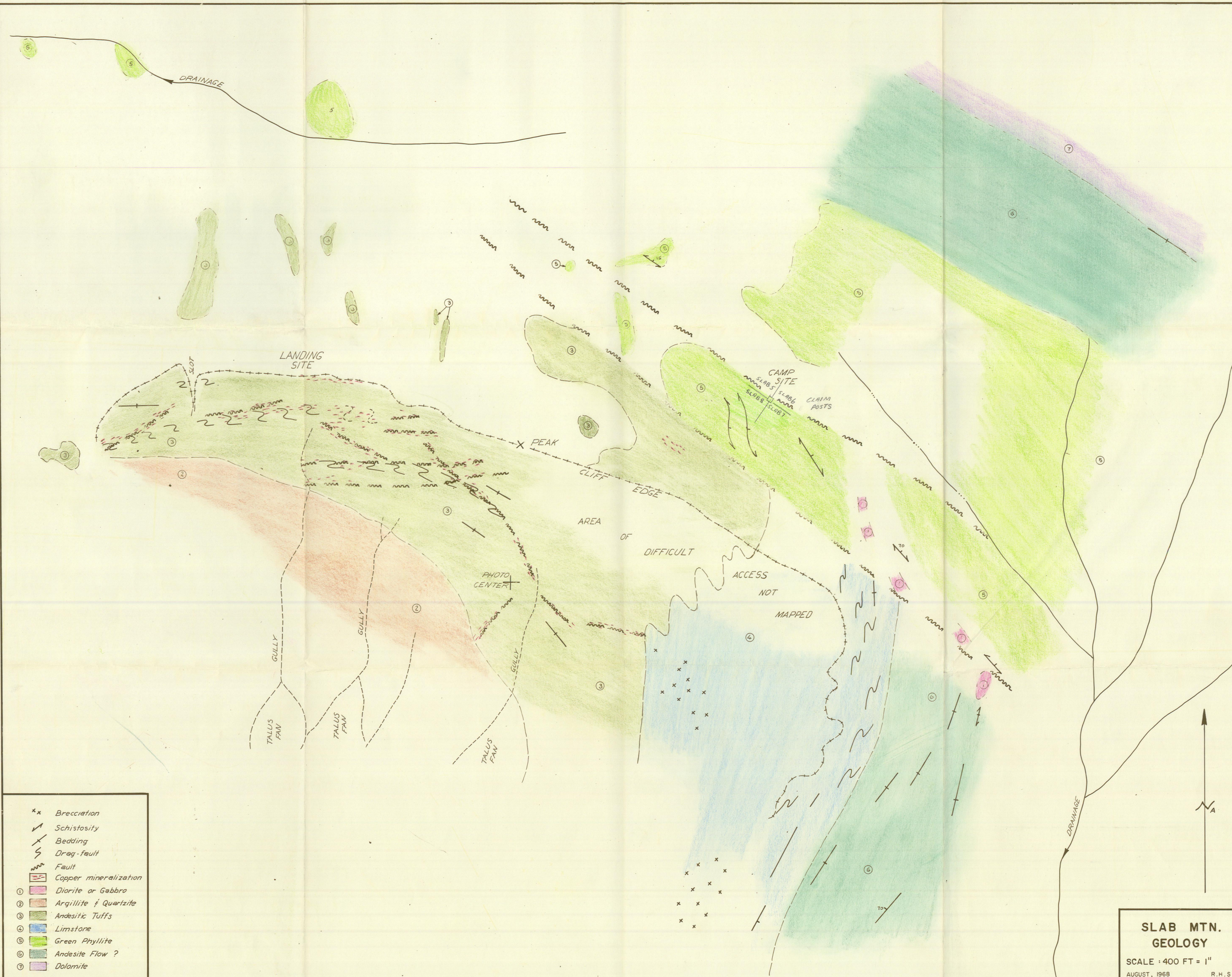
the rubble zone itself. Beyond this, the mineralization decreases in grade. Fine grained quartz and feldspar ? heal many of the fractures.

The copper mineralization is by far the most abundant in the thin bedded cherty and limey andesitic tuffs. A few copper occurrences were found in the phyllites and in the dolomites, but they are far too small to be of interest.

A handwritten signature in cursive script, appearing to read "R. H. Seraphim".

Dr. R. H. Seraphim, P. Eng.

August, 1968



- \*x Brecciation
- ↗ Schistosity
- ↘ Bedding
- ⚡ Drag-fault
- Fault
- ⊞ Copper mineralization
- ① Diorite or Gabbro
- ② Argillite & Quartzite
- ③ Andesitic Tuffs
- ④ Limestone
- ⑤ Green Phyllite
- ⑥ Andesite Flow ?
- ⑦ Dolomite

**SLAB MTN.  
GEOLOGY**

SCALE : 400 FT = 1"

AUGUST, 1968 R.H.S.