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A Note on Stratigraphy, related reddish or rusty appearing Areas and Mineralization in the Tatla Lake Area

A large number of reddish or rusty looking areas were identified on the colored aerial photos of a strip of approx. 1500 sq. miles near Tatla Lake. A geological map compiled from the physical features and other characteristics of the area as seen on the aerial photos denotes zones of rusty or reddish color, which could indicate the presence of sulphide mineralization in some cases, with associated values of copper, or other base metals. However, the rusty appearance on the aerial photos could also be caused due to the weathering of iron-rich rocks, or due to the inherent reddish, brownish or tan coloration of the bedrock underlying such areas.

In order to distinguish between the stratigraphic or lithologic causes of rusty or reddish looking areas from those due to the presence and consequent oxidation of sulphides, the following description of some of the map-units could be used as a guide-line in combination with keen observation. This note is solely based on Paper 68-33 of Geological Survey of Canada (Mesozoic and Cenozoic Geology of the Northeast Part of Mount Waddington Map-area by H. W. Tipper).

Stratigraphic Causes: Although map-unit 5 of Tipper (Upper Norian, part of TRn) contains 150' of interbedded purplish, maroon and greenish shales in beds 2'-3' thick, this is exposed only in an area 6 miles WNW of Bluff Lake. The thickness of this sequence is however negligible compared to the total thickness (+ 1710') of the entire map-unit comprising mostly of limestone, minor graywacke and some shale and should be distinguishable.

The map-unit 6 of Tipper (Upper Norian/Rhaetian, also included in TRn) overlying the above clastic unit has a prominent red bed sequence of reddish colored shale, siltstone and conglomerate. Most of the conglomerate beds are characterized by volcanic pebbles; the unit also has several sections of volcanic breccia and reddish, maroon or purplish tuff. The cumulative thickness of reddish colored sediments amount to about one third of the entire unit 6 (3,600').

Lower Cretaceous (Hauterivian) rocks has been divided into 2 units on the interpreted geological map from the aerial photos.

1. The lower sedimentary unit (map-unit 12 of Tipper) Khs consists mostly of shale, siltstone, graywacke and conglomerate. The beds of carbonaceous shale are common in upper parts of several sections, commonly just below the overlying volcanic rocks and rich in fossil plant fragments.

2. The upper volcanic rocks (map-unit 13 of Tipper) Khv are mainly pyroclastic. The breccia varies from dark to light green, grey and light mauve grey. In places, dark red-brown breccia-conglomerate, or purplish breccia is interbedded. The angular fragments of the breccia, 1/2"- 3" in diameter are green, grey and less commonly maroon feldspar porphyry with

stubby feldspar phenms. The breccia is fresh and unaltered except near faults and intrusions, where they are altered to dull green or gray rocks in which the fragmental nature is obscured. The volcanic rocks are mainly andesitic with minor dacite and basalt.

Along the contact of the Coast Plutonic Complex between the NW edge of the sheet 2 and Middle Lake, altered volcanic rocks of this map-unit (Khm) are epidotized and chloritized and cut by a stockwork of granitic and volcanic dykes so that their original character is obscured. This should be an interesting area for exploration.

In the area around Klinaklini River Valley, reddish brown to maroon breccia-conglomerate and purplish breccia occur high in the volcanic unit (Khm) consisting of greenish - dark gray tuff and breccia with thin beds of shale and siltstone. Similarly , a few thin rusty or gray weathering dark gray to black siltstone with poorly sorted graywakce occurs in the Hauterivian sediments of this area. Reddish breccia-conglomerate is also present in the area between Middle Lake and the creek 6 miles SSE of it.

The Kingsvale Group of Upper Cretaceous (Kca) is again divided into two sections; (i) the lower sedimentary section and (ii) the upper volcanic section. The sedimentary rocks are mainly interbedded soft brown to dark gray shales and siltstone, friable, sandy greenish gray graywacke and pebble conglomerate with finer clastics towards the bottom and coarser towards the top. Wood fragments are abundant throughout. The volcanic rocks are entirely pyroclastic with a few sills and dykes. Typically, the rocks are green, gray, reddish and purplish andesitic breccia in massive beds. Interbedded with the breccia are thinner beds of tuffaceous rocks varying in color from pale greenish white, deep maroon, gray and green. The beds of tuff stand out and give the volcanic unit a well-bedded appearance.

Sulfide Mineralization

The known mineral occurrences in the area lie southwest of the Niut and Tchaikazan Faults. About 12 miles up Ottarsko Creek several Au-Ag veins in Hauterivian sediments (Khs) and in small intrusive offshoots of the Cosat Plutonic Complex are known. Near Perkins Peak gold in arsenopyrite occurs in Hauterivian sediments (sheet 1). According to Tipper, small amounts of chalcopyrite, sphalerite and tetrahedrite are reported in many of the gold-silver prospects; consequently, such occurrences should not be neglected in prospecting for copper.

West of Tatlayoko Lake on Niut Mountain there is a conspicuous large rusty zone that is reported to contain a trace of gold and small amount of chalcopyrite and malachite.

About 5 miles east of Bluff Lake near a volcanic-granitic contact, a small

amount of bornite occurs in a narrow quartz vein.

Near the head of Nude Creek in the Triassic rocks (TRk) near the granitic contact, several small quartz stringers contain chalcopyrite and malachite.

An elongate granitic body (TKp) north of Homathko River, which has sharp contacts with the Triassic and the Cretaceous rocks, has baked the surrounding rocks and caused pyritization, particularly in the latter, which on weathering give rusty appearance. It remains to be seen whether this pyrite halo has any associated copper mineralization.

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