

BRITANNIA AREA

UBC

881472

Oct. 9/87

GEOLOGY OF BRITANNIA RIDGE - Maggie McColl

- M.Sc. thesis defense
- 3 field seasons
- support by Anacorda + Minnova

OBJECTIVES - core units from Britannia Mine → eastwards to Fury ck. - provide a strat. framework.

Prod. ~ 55 m tons of ore (80% stringer, 20% M.S.)
1905-1974 - production.

Host Rx.: Gambier Gp. - Britannia-Indian R. Pendant, within Coast Range Intrusm.

- late Jur. → early Cret.
- Middle Gambier Gp. on Britannia Ridge.
- mafic volcs. (Goat Mtn. Fm.) overlain by felsic volcs. (Britannia Fm.)
- contact metam aureole - 300 to 1200 m wide

Package 3 - "Hanging Well" Sequence, lithic tuffs
- 5 units (800m)
- dacite - rhyodac., seds (argill.)
- "fresh" varieties of Package 2

Package 2 - Arc "MINE" Sequence
- 5 units (800-1200m) Britannia Fm.
- Britt. ore bod
- dacitic tuffaceous flows + seds (argill.)
- Qtz.-sen. schist + sulphides; Green mottled schist → 500m

Package 1 "Footwall" Sequence
- Goat Mtn. Fm. (1400m) - back-arc
- 7 units
- ands., bsf; local rhyolite domes

STRUCTURE - Dip SW - monocline

- Whole Rock Chemistry - sub-alkaline - altered

MgO / CaO

- Fe, Mg vs Si plot = Calc-alkaline domain.

AGE DATING: Package 1 (K-Ar) - late Cret. 81.4 ± 3 Ma

Package 2 - L. Jurassic 148 to 163 Ma

VOLCANIC INTERPRETATION

- 4 major episodes of volcanism postulated

- a) extensive basalt \rightarrow b) rhyolitic domes \rightarrow c) mafic flows \rightarrow d) intrusive/extrusive dome complex
- \rightarrow subaqueous lavas \rightarrow plus sulphides (esp. flanks of domes)

\Rightarrow capped by argillite seq.

- ANALOGY: Kuroko deposits; Canadian Archean

QUESTIONS: Terrain? - Wrangellia
 Monger et al - part of Nooksak Gp. (i.e. not Wrangellia)