

BRITANNIA

881474

TOP

Feet

Black argillite, silts tone, etc. ----- 500±

Intercalated grey and green argillite ----- 0-50

Mixed crystal-tuff and black argillite ----- 10-25

Plagioclase crystal tuff ----- 25-50

Dacitic pyroclastic flows with minor argillitic interbeds ----- 400+

← SORE

BASE

- ① Any gradation in grain size in crystal-
~~lithic~~ tuff (either lithic or plagioclase) to
suggest distance from source area
and/or direction. Not enough exposure to
say
- ② "Chlorite mottled schist" - origin?
Andesite with pyroclasts → chlorite?
- ③ Chlorite mottled schist with crowded
dacite porphyry clasts. Origin?
Fragmental?
- ④ Significance of argillite beds?
pyritic Sealoor muds? → reducing conditions
- ⑤ Dyke intrusions of andesite - "contemporaneous"
with pyroclastic flow rocks" - mineralized
- ⑥ 2 origins for qtz. (chlorite) sericite schist
a) isochemical metam. of black argillite
b) intense ductile shear of andesite or chlorite
mottled schist.
- ⑦ Any gravity sorting in pyroclastics. yes
- ⑧ Any evidence of relict glass? i.e. glass → chlorite

- ⑨ Any of ^{the} tuffs resembled weld^{ed} nature
i.e. rapid burial conditions. **Yes!**
- ⑩ Any suggestion of acid doming? **not really**
- ⑪ Chlonte? - ① from pyroclastic in and. ^{and dacite}
② pumiceous fragments
③ altered shale fragments
- ⑫ Spheroidal particles of unknown origin in argillites.
- ⑬ "Flattening" of fragments. Is this a real or apparent phenomenon? → due to ^{increased} growth or pressure
- ⑭ Boudinage + rotation = tension? → "increasing intensity" of fragments.
- ⑮ Xl tuff + Xl tuff bx \equiv same strat. unit as chlonte mottled schist.
→ from plag. comp., growth + qtz, alt'n.
- ⑯ Significance of Titanium
(i.e. leucopene in dacites outside shear zone; sphene, rutile in zone).
- ⑰ One zone alt'n. → qtz, pyrite, muscovite,
outwards! [+ anhydrite, gypsum, barite]
- ⑱ Scarcity of galena (Pb) significant? i.e. evolutionary trend of elements.
U → Pb decay with time?

- 19 Comparison with Shasta District, Calif.
 West Shasta (Cu-Zn) → East Shasta (Pb-Zn (Cu)) + Buchans
 ?
- 20 Trace elements
 No work eg. Co in pyrites [eg. world - 40ppm; Cyprus 400ppm] Normetal?
- 21 Sedimentation factor!
 (new mechanism to introduce Pb?)
- 22 Pyrrhotite? any? → where?
 as stringers in 'deeper' ore
 assoc. with ep. OR is there
 only pyrite only; 3 areas but
 no real zoning
- 23 Note! Absence of IRON
 (eg. Iron Fmn. etc.) pyritic shales,
 ⇒ abundant sulphur ∴ sulphides! suggest reducing
 environment.
- 24 Any pyrrhotite in pressure shadows
 on ends of pyrite xls.? No → qtz
- 25 Theory: sulphides deposited with volcanic
 exhalatives (ie. dacitic pyroclastics) + later remobilized
 + redeposited as sedimentary precipitates (in argillites)
- 26 Sulphur isotope data? None

(27) High ^{high water} water content in pyroclastic^s with associated chloride ions may be localized for remobilized sulphides.

(28) Significance of barite - should freeze in the isotopic composition of the open ocean
→ recover any Ag from it? No

Notes:

- ① Late qtz - carbonate (ankerite siderite) veins
- ② 4 structural elements
 - i) S_1 - strong penetrative foliation
 - ii) S_2 - weaker fltn. } not often seen
 - iii) S_3 - weaker fltn. }
 - iv) S_4 - kink folding
- ③ ore is mainly concentrated at contact between dacitic pyroclastics + argillitic seds. (tuffs?).
- ④ Good ore = 4-4½% Cu

IMPRESSION: Highly deformed! - Hard to make comparison with other deposits.