

L3-84-SP

Lau Basin

Photo-micrographs,  
Prints & Negatives

# 5B





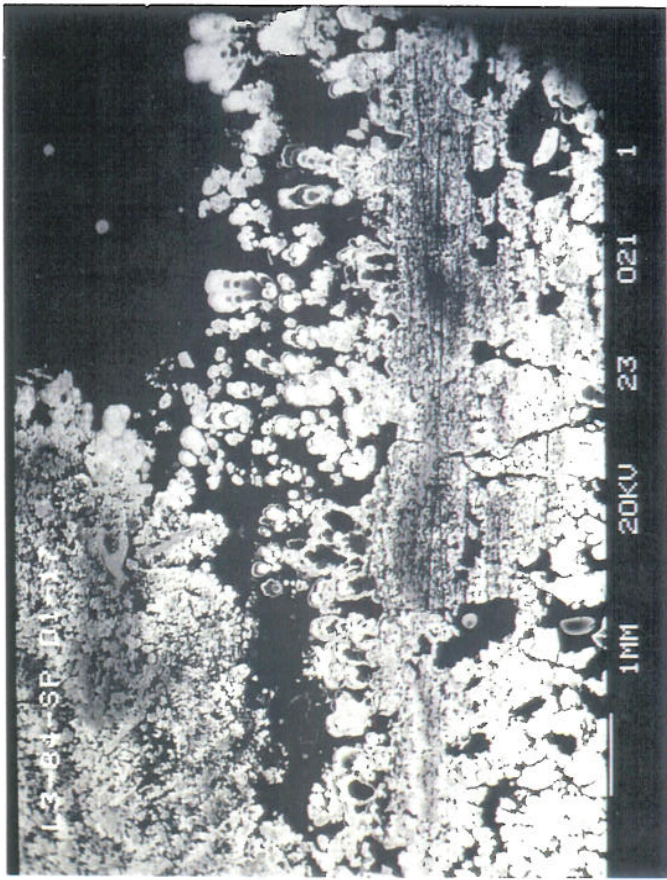


Photo 3

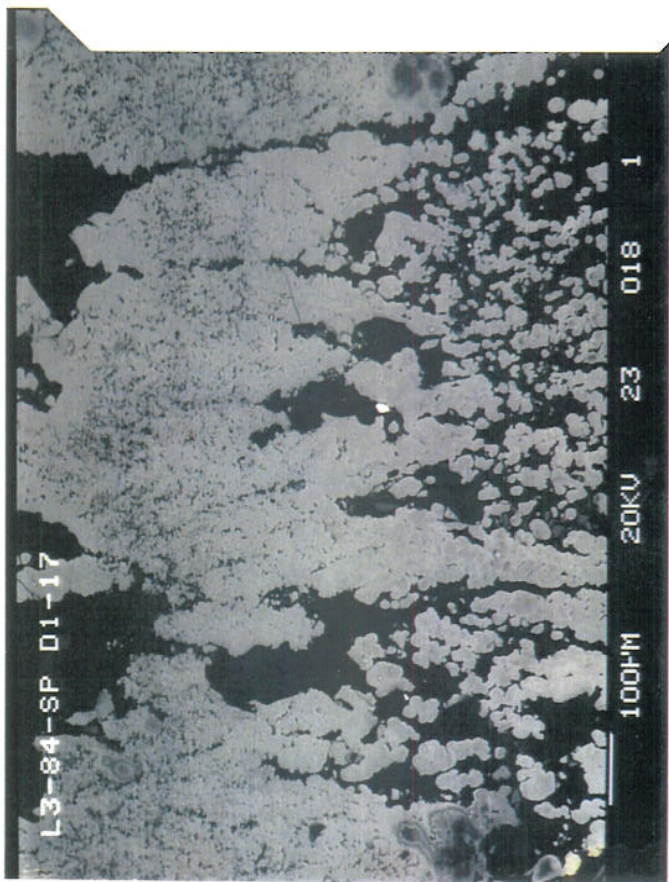


Photo 1  
 bright grains  
 Sb, S  
 Small Ca differences

Photo 4

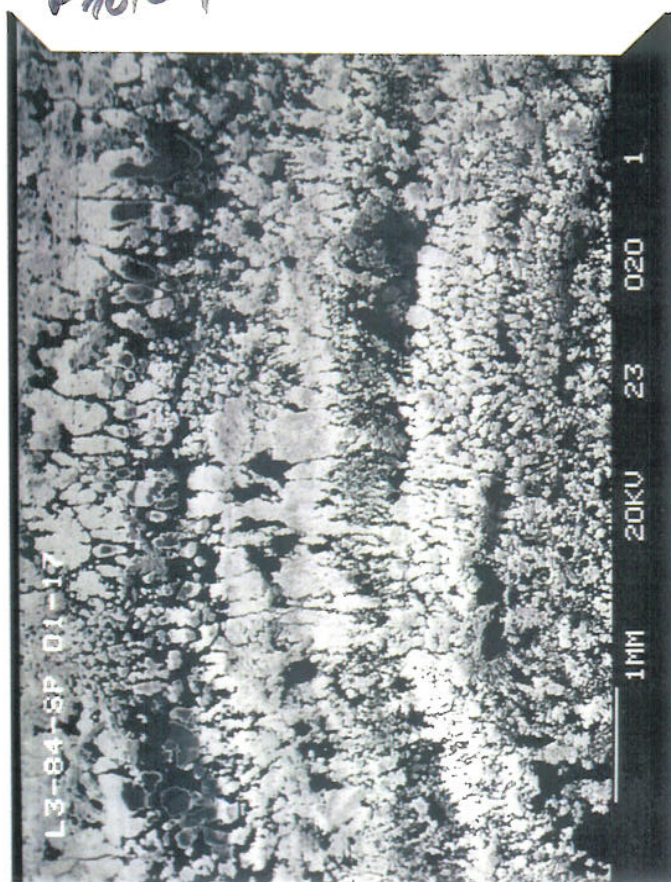


Photo 2



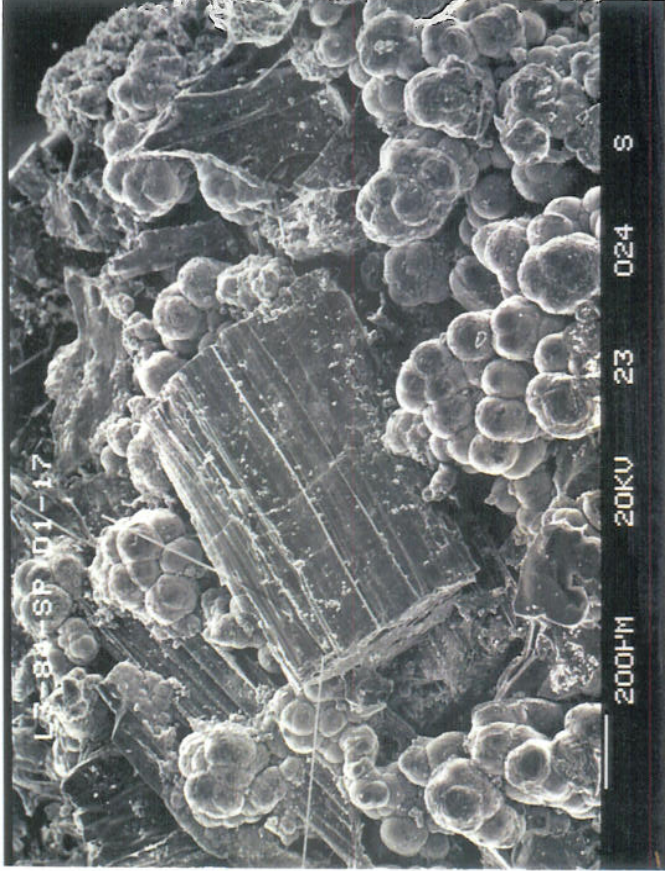


Photo 1



Photo 2 - Vol. Glass

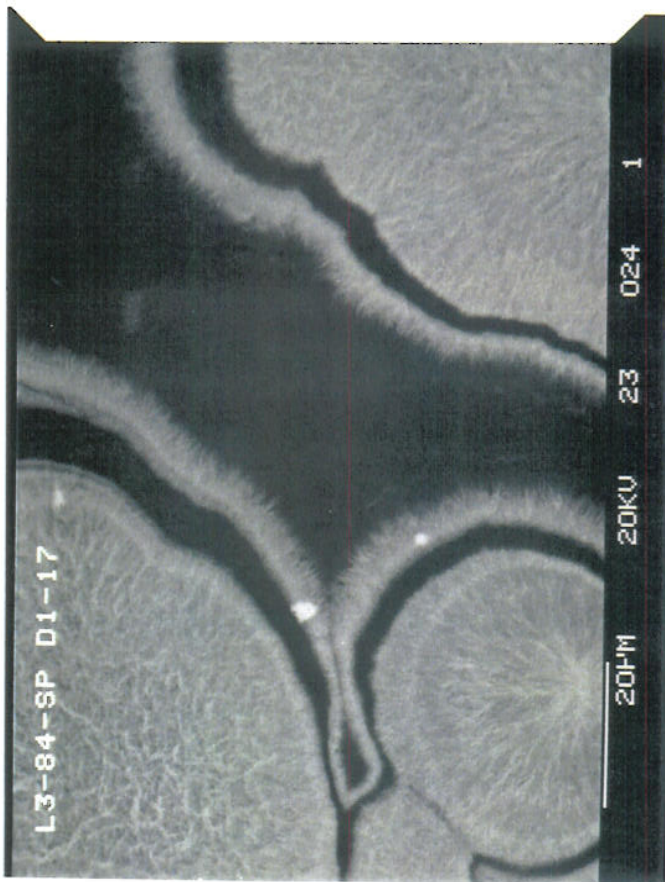


Photo 5

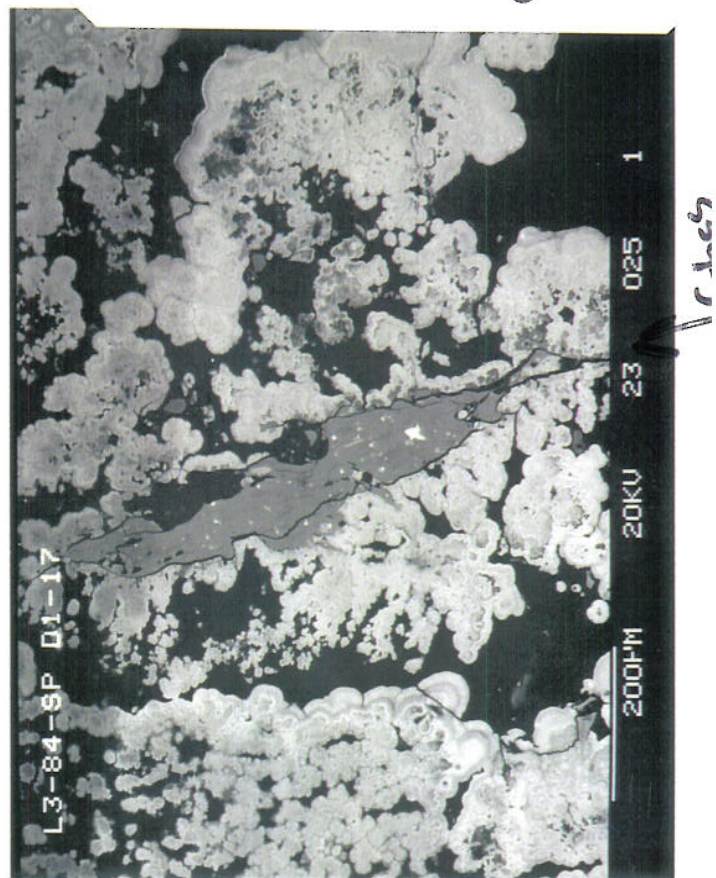


Photo 6  
Bright  
Ilmenite in Vol.  
Glass





L3-84-SP, D1-17, Polished Section - by

Photo 1: porous + massive layers

massive = columns + to bedding, so does porous layers, some columns go directly through massive layer & through porous layer into next massive layer -

BB1

Sb, S, grains, ~~and~~ stibnite? -

BB2

Zn, Si = grinding powder??, zirconium silicate -

Photo 2: more general than Photo 1 - 2-6 layers -

BB3 - only Fe (oxide or carbonate)

Photo 3: porous layers & layers w/ apparent lamination // to bedding - maybe due to polishing -

chemistry of growth from Photo 3

bright	oxtes	Mn <del>Fe</del> , Ca	
dark	Mn	→ Fe, less Ca, Cl, darker layers = more Cl	
bright	Mn only, Ca		some v. high Cl w/ no Na = = MnCl <sub>2</sub> ? , CaCl <sub>2</sub> ?

Ca doesn't vary -

Photo 4: Close-up, <sup>of #3</sup> of one of the growth forms -

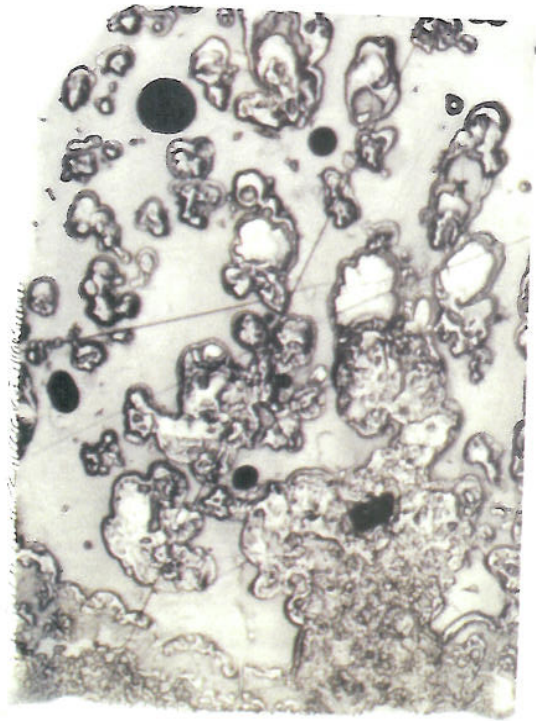
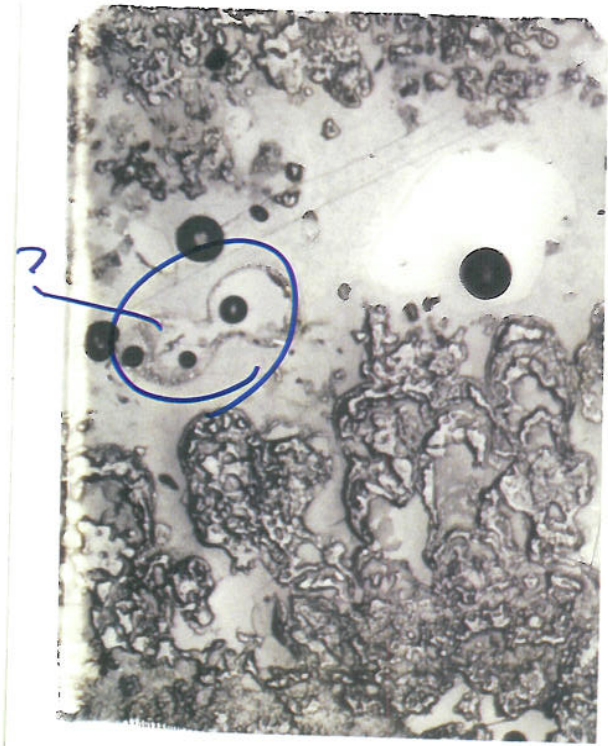
Photo 5: Close-up of 4 - crystals at side of growth form - about 2 μm long

BB4 - MnS ?? - on Photo 5; Mn, S, Ca<sub>2</sub>

BB5 - MnS " " " " "

BB6 - Fe Ti, Ilmenite, sitting in volc. glass -   
 - same w/ tetrahedral form -

Photo 6 - of BB6 volc. glass w/ many Ilmenite grains in Manganese Ilmenite maybe titanomagnetite - a cubic form -



SEM

III

→ organism like (?)

→ bubbles (upper layer)

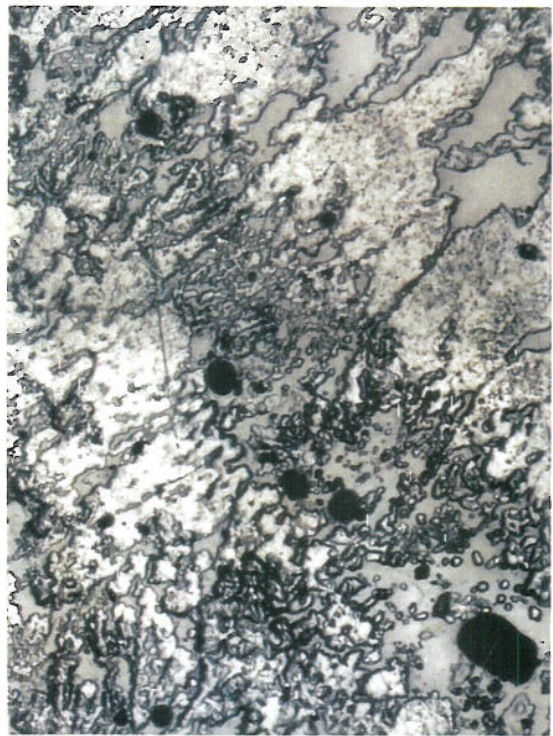
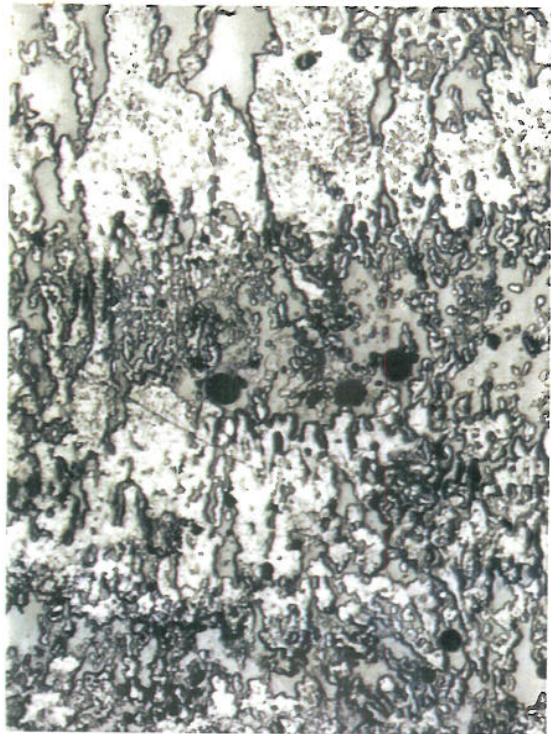
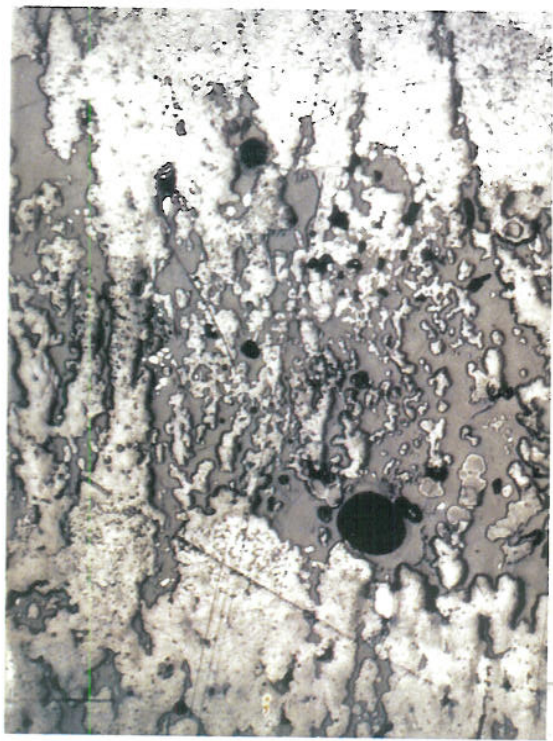
→ bubbles (recent ?) covered by  
Fe-Mn layer (?).

1) CA  $\lll$  Mn

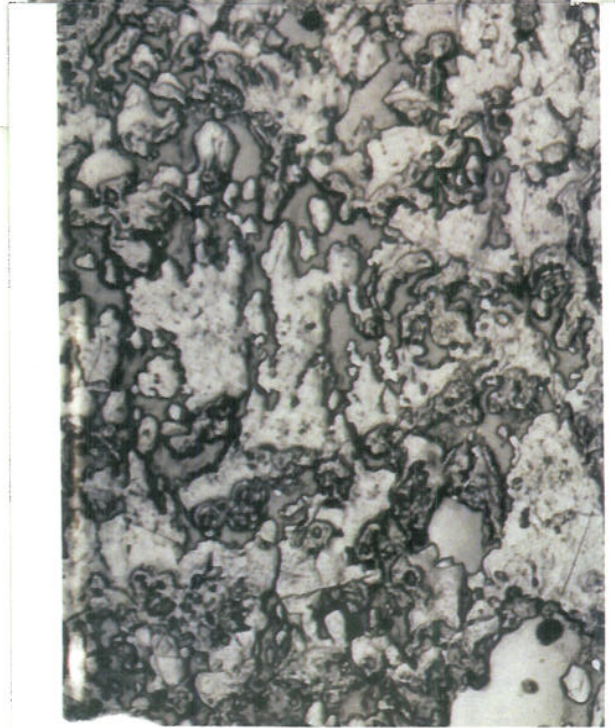
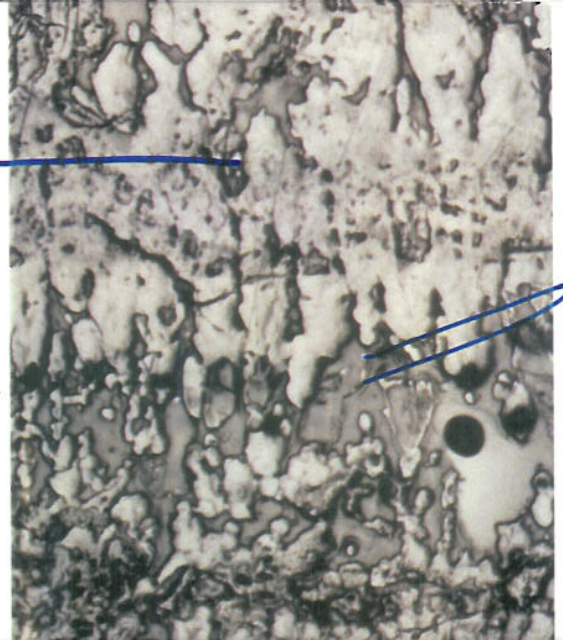
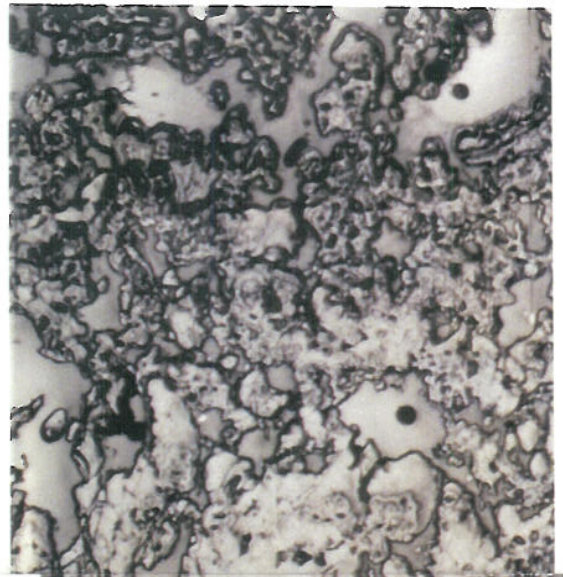
2) CA < Cl  $\lll$  Mn,  
CA K Cl



subglacial?

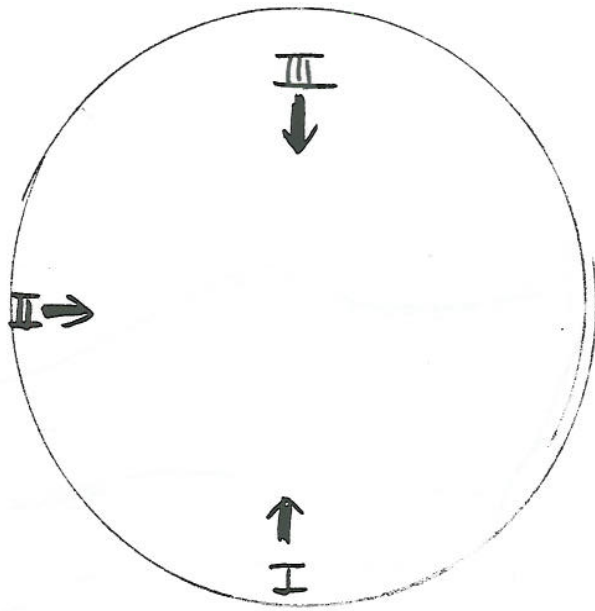






L3-84-SP DI-17





T: sequential Mn-layer (only photo)

→ scanning

→ elemental distribution (Mn, Fe, Si)

II: sequential Mn-layer with sulfide grains (?)

→ scanning

→ grain analysis

→ elemental distribution (Mn, Fe, Si)

III: organism like, bubbles

→ scanning

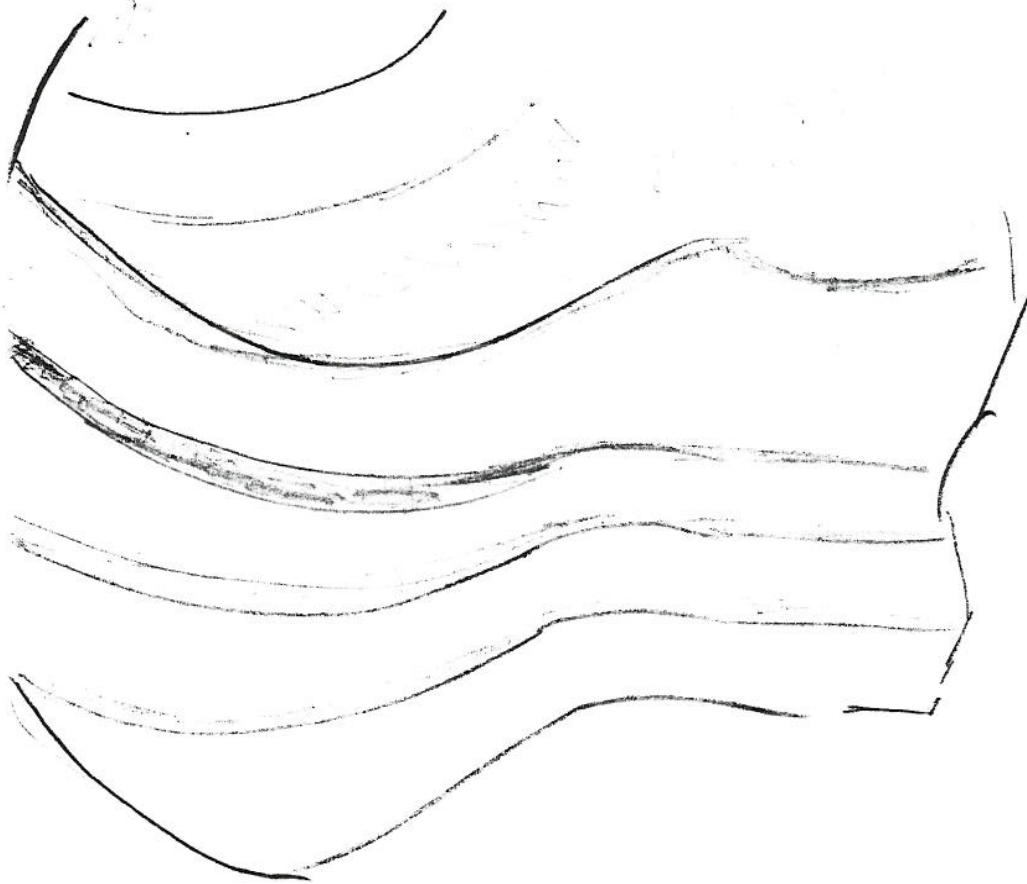
→ inside of organisms (silicates).

→ bubbles are covered by Fe-Mn?  $\leftarrow$  compo.  
 elemental distribution



thick

15 ~ 23 mm



o Typical hydrothermal deposit

- sequential thin layers

- high porosity in lower (beginning),  
gradually massive in upper (end crystallization)

- No organisms

