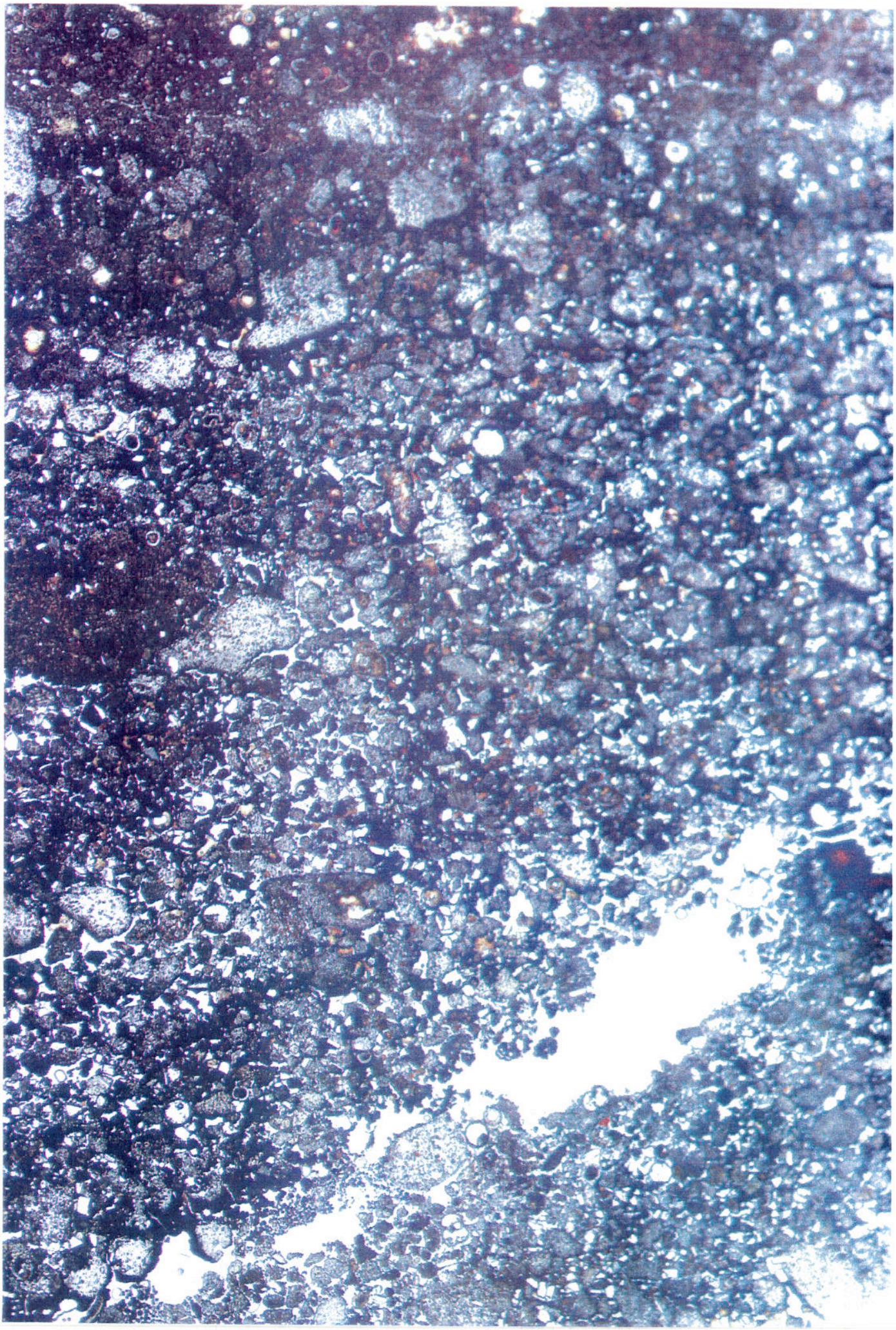
D8-2



D8-7

Petrographic Descriptions

Cruise ID TT192

Sample # D8-2

Stratabound oxide Layer

Stratabound oxide-replaced Sandstone

Stratabound oxide-cemented Sandstone ✓

Fe-Mn Crust

Mn Textures:

Dense
- Massive
- Laminated
  - Planar
  - Wavey

Colloform
- Columnar
- Laminated
- Aggregate Radial

Stockwork

Cementing Mn in PRL appears dense & massive, however under XRL colloform banding becomes apparent. XRL the bands are layers of light (brighter) Mn with layers of darker Mn between. The layers are not alligned crystalline but specular Mn. The [illegible] are very colorful (light reflecting off many tiny surfaces) the main colorful yellow. The massive [illegible] are grey to blue grey. The bright bands actually appear to be harder, they have taken to polishing better.

Crystal Form: Radial-fibrous Spherulitic Aligned Tabular Euhedral Void Fill

Grain Supported Predominantly

Cement Supported

Fracture Orientation

Fracture Fill

Porosity Very porous

Alteration and replacement of grains

Photo(s) Taken of

SEM:

Microprobe

Grain Counts

	Unaltered	Altered
Volcanic Rock Fragments		
Volcanic Glass		
Mineral Grains		
Pyroxene		
Olivine		
Plagioclase		
K-spar		
Amphibole		
Quartz		
Others		
Microfossils		
Others		
Matrix		
Pore Space		
Mn Cement		
Other Cements		

Transmitted Light

Two layers Fe-rich foraminiferal volcaniclastic sand and Mn cemented volcaniclastic layer. The Fe-rich layer of this sand is more clastic (pumice & a few lithics) than the Fe-rich layers in D8-12 and D8-22 glass is predominantly fresh.

Mn layer is poorly sorted, subangular clasts of pumice, mineral crystals, a few lithic fragments and forams. Poorly consolidated, for the most part clast supported.

There are Fe-rich, very fine grained (clasts or authigenic or matrix?) some xtallinity as there is optical extinction. In one such grain, which looks no different from the rest in plane light, there is ~~optical or~~ a crystal (long & sinuous) w/ high birefringe extinction is slightly undulated these clasts may be in part altered glass

There is a large clast ~4mm to 1cm which I think may be a rip up clast from the iron rich pelagic bed, this is not fully demonstrated in the thin section as the clast has altered with the Mn mineralization:

pelycepod (?) fragments