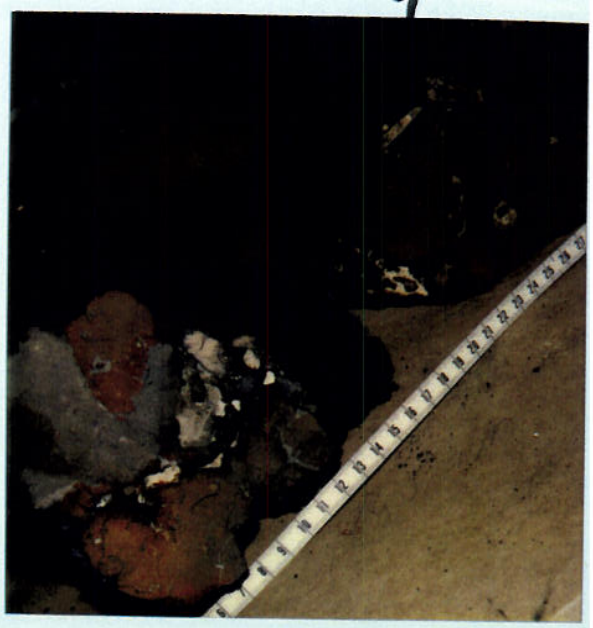
D28

SAMPLE DESCRIPTION

Cruise Id: ~~E7-87-SG~~ L5-83-HW Size: _____ Location: S. P. Lee Guyot

Sample Id: D28-A2 Weight: 7 kg Depth: 1400 m

Shark Tooth



D28-A2
L5-83-HW

Mn Crust Description

Surface Texture: Botryoidal

Mn Crust Thickness:

Min: 8 mm Max: 60 mm Ave: 20 mm

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.	0	3[illegible] mm	15 mm	laminated vitreous, friable layers
2.	8 mm	15 mm		dense w/ [illegible]
3.	(Crust broken [illegible] in many a[illegible]			
4.	making [illegible]			
5.				
6.				

Comments and XRD Mineralogy:

ANALYSES

Subsample & Type	Analysis	Weight
Mn crust	CC (Restor) Job # BZ89 6/88	
	and REG (Denver) Job = SW 32 6/88	
I 0-5 mm		8 gms
II 5-10 "		7? "
III 10-18 "		5? "
IV 18-25 "		CC= 10? gms
V 25-35 "		CC= 5 gms

Phosphate Study

Substrate Description

Rock Type: Volcaniclastic Breccia

Description:

2 types of basalt: 1st is highly altered porphyritic iron colored 2ND gray (presumably younger) with microphenocrysts these are cemented by phosphate and manganese

Described By: Jung-Keuk Kang 6/88 Subsampled By: Jung-Keuk Kang 6/88

SAMPLE DESCRIPTION

Cruise Id: L5-83-HW Size: biggest = 30x14x18 cm Location: S.P. Lee Guyot

Sample Id: D28-A3 Weight: 74 kg Depth:

Mn Crust Description

Surface Texture: botryoidal, smoothed botryoidal, + smooth.

Mn Crust Thickness:

Min: 1mm Max: 2mm Ave: 1mm

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.	1mm	2mm	1mm	massive, black
2.				
3.				
4.				
5.				
6.				

L5-83-HW

D28-A3

ments and XRD Mineralogy:

Substrate Description

Rock Type: Volcaniclastic breccia

Description:

Phosphate cement. Pebble-sized, massive, sorted angular, altered basalt clasts. Also clasts of basalt or Mn, very coarse to coarse sand size.

ANALYSES

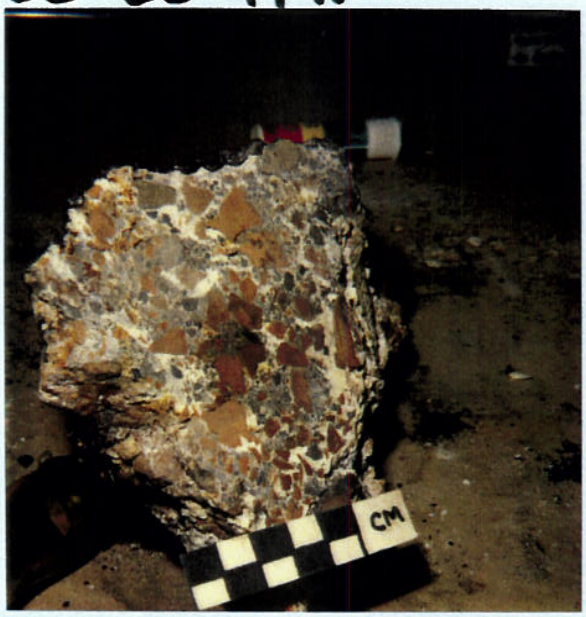
more pictures →

Subsample & Type	Analysis	Weight

Described By:

Subsampled By:

L5-83-HW



D28-A3

SAMPLE DESCRIPTION

Cruise Id: L5-83-HW Size: ______ Location: S.P. Lee Guyot

Sample Id: D28-A4 Weight: [illegible] Depth: ______

Mn Crust Description

Surface Texture: [illegible] smooth-botryoidal

Mn Crust Thickness:
Min: 1 mm Max: 2 mm Ave: 2 mm

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.	1 mm	[illegible] mm	2 mm	black
2.				
3.				
4.				
5.				
6.				

L5-83-HW

D28-A4

Comments and XRD Mineralogy:

Shark's teeth all over

ANALYSES

Subsample & Type	Analysis	Weight		
Bulk Mn crust	CC (Reston)	10g	6/88	Job # BZ89

↑ from submittal sheet.

Phos. Study

Substrate Description

Rock Type: Breccia

Description:

Lim[illegible] /Phosphatic matrix w/
~3% pebble-sized clasts of
subrounded to angular basalt & [illegible]?
layers of [illegible]/Phosphoric.
Re[illegible] [illegible] [illegible] w[illegible]
[illegible] [illegible] [illegible]
[illegible] foram sits.

Described By: Jung-Keuk Kang 6/88 Jung-Keuk Kang 6/88

SAMPLE DESCRIPTION

Cruise Id: L5-83-HW Size: _____ Location: S.P. Lee Guyot

Sample Id: D28-A5 Weight: _____ Depth: _____

Mn Crust Description

Surface Texture: Botryoidal

Mn Crust Thickness:

Min: [illegible] Max: [illegible] Ave: [illegible]

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.				
2.				
3.				
4.				
5.				
6.				

D28-A5
L5-83-HW

Comments and XRD Mineralogy:

[illegible]

Substrate Description

Rock Type: Breccias, similar to others in this [illegible]

Description:

ANALYSES

Subsample & Type	Analysis	Weight
Bulk Mncrust	CC (Rector)	10g 6/88 Job # BZ89 ← (from submittal sheet)

Described By: Jung-Keuk Kang 6/88

Subsampled By: Jung-Keuk Kang 6/88

SAMPLE DESCRIPTION

Cruise Id: L5-83-HW Size: 12×13×6 Location: S.P. [illegible]

Sample Id: D28-A6 Weight: 41 kg Depth: 1400

Mn Crust Description

Surface Texture: Botryoidal

Mn Crust Thickness:

Min: patina Max: 5mm Ave:

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.				
2.				
3.				
4.				
5.				
6.				

L5-83-HW

D28-A6

Comments and XRD Mineralogy:

ANALYSES

Subsample & Type	Analysis	Weight

Substrate Description

Rock Type: Sandy [illegible] mudstone being replaced by [illegible] [illegible]

Description:

clast of basalt [illegible] Mn [illegible]

Described By: J. [illegible] Subsampled By:

Sample Description

Cruise I.D: L5-83-HW

Sample I.D: Sta: D28-A7

Location: S.P. Lr. Guyot

15x8x6 cm

Size: _____ Weight: 8558

Mn crust thickness:

Total: min: 0 max: 2cm ave: 2mm

Inner crust: min: _____ max: _____ ave: _____

Outer crust: min: _____ max: _____ ave: _____

Surface texture: abraded

Internal structure: _____

layered: _____
laminated: _____
massive: _____
porous: _____
dendritic: _____
other: _____

Mineralogy (XRD): _____

Associated alteration, phosphorite, or hydrothermal deposits: _____

Substratum:

Rock type: Basalt

Description: Altered porphyritic basalt cobble with a glassy [illegible] (also altered)

Phosphorite cemented breccias w/in the crust

Mineralogy (XRD): _____

L5-83-HW
D28-A7

2cm

Analyses and subsamples:

analysis:	analyst:
Chemistry: bulk crust	
- Pt group	Floyd Brown - Reston
- Au anal	Dave McKown - Denver

Se Wong Chang took subsample 10/9

SAMPLE DESCRIPTION

Cruise Id: LS-83-HW Size: _____ Location: S.P. Lee Guyot

Sample Id: D28-A8 Weight: ~1 kg Depth: 1100

Mn Crust Description

Surface Texture: Botryoidal

Mn Crust Thickness:

Min: 3 mm Max: 10 mm Ave: 8 mm

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.				
2.				
3.				
4.				
5.				
6.				

ments and XRD Mineralogy:

Crust on all sides; nodule?

ANALYSES

Subsample & Type	Analysis	Weight

Substrate Description

Rock Type: Volcaniclastic Breccia

Description:

Altered basaltic debris cemented by phosphoride

Described By: JSchulz Subsampled By:

SAMPLE DESCRIPTION

Cruise Id: L5-83-HW Size: 16.5 x 7 x 10cm Location: S.P. Lee Guyot

Sample Id: D28-A9 Weight: ~1 kg Depth: 1400 M

Mn Crust Description

Surface Texture: Botryoidal

Mn Crust Thickness:

Min: Datum Max: 3 mm Ave: 2 mm

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.				
2.				
3.				
4.				
5.				
6.				

L5-83-HW

D28-A9

Comments and XRD Mineralogy:

ANALYSES

Subsample & Type	Analysis	Weight

Substrate Description

Rock Type: Siltstone, iron colored siltstone w/ "pods" of black siltstone (possibly Mn stained)

Description:

White veins of phosphate.

Siltstone showing signs of soft sediment deformation.

Described By: J. Schulz Subsampled By:

SAMPLE DESCRIPTION

Cruise Id: L5-83-HW Size: Location: [illegible]

Sample Id: D28-10 Weight: <1 kg Depth: [illegible]

Mn Crust Description

Surface Texture: cannot determine, crust is [illegible]

[illegible]

Mn Crust Thickness:

Min: patina Max: 10 mm Ave: 4 mm

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.				
2.				
3.				
4.				
5.				
6.				

L5-83-HW
D28-10

Comments and XRD Mineralogy:

ANALYSES

Subsample & Type	Analysis	Weight

Substrate Description

Rock Type: Volcaniclastic Breccia cemented w/ phosphate and carbonaceous foram sand

Description:

Described By: J. Schulz Subsampled By:

Sample Description

Cruise I.D: L5-83-HW Sample I.D: Sta: D28-11 Location: S. Pl. Lee Guyot

Size: 11x4x10cm Weight: ~1 kg

Mn crust thickness:

Total: min: ? max: 10 mm ave: 5 mm

Inner crust: min: max: ave:

Outer crust: min: max: ave:

Surface texture:

Internal structure:

layered:
laminated:
massive:
porous:
dendritic:
other:

Mineralogy (XRD): Crust was botryoidal mostly broken off so can not tell if it was thicker before thin sectioning

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: Phosphorite

Description: 3 colors of phosphorite brown ochre light pinkish buff and cream the 2 lighter ones probably replaced carbonate mud, the brown ochre replaced glauconitic sand
sharks teeth on bottom of sample

Mineralogy (XRD):

Analyses and subsamples:

analysis:	analyst:
XRD	C. Daniel
I: substrate	
Chemistry: bulk on bisque	

Sample Description

Cruise I.D: L5-83-HW

Sample I.D: Sta: D28-A12

Location: S P Lee Guyot

Size: _____ Weight: _____

Mn crust thickness:

Total: min: _____ max: _____ ave: _____

Inner crust: min: _____ max: _____ ave: _____

Outer crust: min: _____ max: _____ ave: _____

Surface texture: botryoidal, to abraded

Internal structure: _____

layered: _____
laminated: _____
massive: _____
porous: _____
dendritic: _____
other: _____

Mineralogy (XRD): _____

Associated alteration, phosphorite, or hydrothermal deposits:

Substratum:

Rock type: Volcaniclastic Breccias cemented with phosphate.

Description:

The larger pieces in a replaced sediment w/ preserved burrows

sharks teeth in one piece

Mineralogy (XRD):

D28 - A12
L5-83-HW

Analyses and subsamples:

analysis:	analyst:
XRD	C. Daniel
I: substrate	
Chemistry - bulk substrate	

SAMPLE DESCRIPTION

Cruise Id: L5-83-HW Size: _____ Location: S.P. Lee Guyot

Sample Id: D28-A13 Weight: _____ Depth: _____

Mn Crust Description

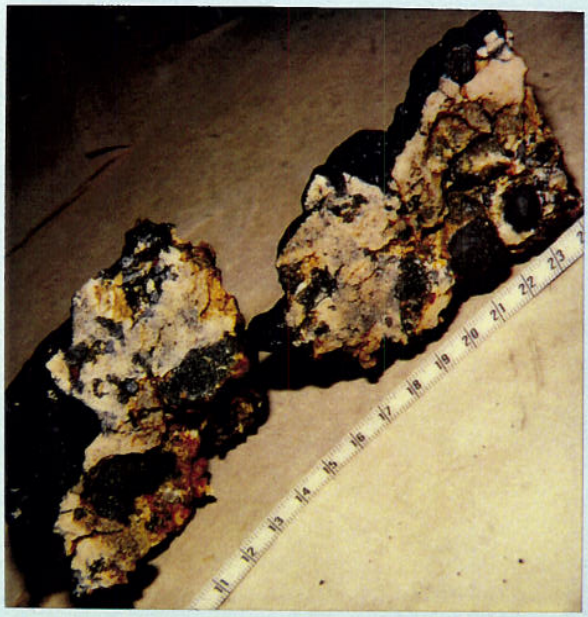
Surface Texture: Botryoidal

Mn Crust Thickness:

Min: _____ Max: _____ Ave: _____

Layers (Outer to Inner):

	Min	Max	Ave	Texture
1.				
2.				
3.				
4.				
5.				
6.				



D28-A13

L5-83-HW

Comments and XRD Mineralogy:

ANALYSES

Subsample & Type	Analysis	Weight
Bulk Mn crust	CC (Reston)	12g 6/88 Job # BZ89 (from submittal sheet)

Substrate Description

Rock Type: Volcaniclastic Breccia mn phosphate matrix

Description:

Vesicular basalt clasts, (fairly fresh)

Several pieces [illegible], similar to D28-A12

Described By: Jung-Keuk Kang 6/88 Subsampled By: Jung-Keuk Kang 6/88

SAMPLE DESCRIPTION

Cruise Id: LS-83-NW Size: 95x25x60 mm (~~cm~~) Location: S.P Lee Seamt

Sample Id: D28-46/D28A-14 Weight: 41 kg (kg) Depth: 1400 (m)

Mn Crust Description

Surface Texture: Smooth to Botryoidal

Mn Crust Thickness (mm):

Min:_____ Max:_____ Ave:_____

Layers (Outer to Inner)(mm):

	Min	Max	Ave	Texture & Color
1.	7	20		Vitrous à brittle
2.				
3.				
4.				
5.				
6.				

Comments and XRD Mineralogy:

ANALYSES

Subsample Number	Analysis	LayerThickness
D28-A14	Hg	Bulk 0-20 mm

Substrate Description

Rock Type: Volcaniclastic Conglomerate

Description:

Biology ?:

Described By: JSM Subsampled By: JSM

SAMPLE DESCRIPTION

C Id: L5-83-HW Size: 10 x 5.5 x 4.5 (cm) Location: S.P. Lee Guyot

Sample Id: D28-A15 Weight: 41kg (kg) Depth: 1400 (m)

Mn Crust Description

Surface Texture: Botryoidal

Mn Crust Thickness (mm):

Min: 4mm Max: 8mm Ave: 5mm

Layers (Outer to Inner)(mm):

	Min	Max	Ave	Texture & Color
1.				
2.				
3.				
4.				
5.				
6.				

L5-83-HW
D28-A15

ments and XRD Mineralogy:

Substrate Description

Rock Type: Phosphorite replacing a volcaniclastic sandy mud/siltstone

Description:

Biology ?:

ANALYSES

Subsample Number	Analysis	LayerThickness-Explanation

Described By: J. Schulz Subsampled By:

SAMPLE DESCRIPTION

Id: L5-83-HW Size: 30x17.5x17.5 (cm) Location: S.P. Lee Guyot

Sample Id: D28 Weight: 2.5 kg (kg) Depth: 1400 (m)

Mn Crust Description

Surface Texture: Botryoidal

Mn Crust Thickness (mm):

Min: 40 mm Max: 65 mm Ave: 45 mm

Layers (Outer to Inner)(mm):

	Min	Max	Ave	Texture & Color
1.				
2.				
3.				
4.				
5.				
6.				

L3-85-HW

D28

...ments and XRD Mineralogy:

In general inner crust layer is dense and outer crust is [illegible] laminae.

Substrate Description

Rock Type: Volcaniclastic Breccia w/ phosphorite cement

Description:

Biology ?:

ANALYSES

Subsample Number	Analysis	LayerThickness-Explanation

Described By: J. Schulz Subsampled By: