Dredge 20

SE Babel Thuap I

USGS DREDGE LOG

SHIP/LEG F7-91'-WP

STATION # 27

DREDGE # D20

DEPTH INTERVAL(m) 2810 — 2490

DEPTH(m)corrected 2800 - 2650

DATE JD 211 LOCAL 7/30/91

TIME GMT 0626 - 0946 LOCAL 1426 - 1946

LATITUDE 7°20.56' TO 7°20.71

LONGITUDE 134°41.27' TO 134°41.21

TOTAL WEIGHT: DREDGE 200 kg mud - mostly [illegible] 30 kg Lms CRUST < 2

PERCENTAGE OF ROCK COVERED BY CRUST 100 of Lms exposed at seafloor

PERCENT BROKEN FROM: OUTCROP 100 TALUS 0

THICKNESS OF MN CRUST: MAXIMUM <1 MINIMUM [illegible] AVERAGE <1

DOMINANT SURFACE TEXTURE Smooth

SUBSTRATE LITHOLOGY (1) white carbonate ooze
(2) brown carbonate ooze
(3) Reefal Lms

NODULES PRESENT 0

REMARKS: 1 small boulder, [illegible] cobbles & 1 pebbles of reefal Lms embedded via [illegible] in the carbonate mud

USGS DREDGE LOG

Depth Interval 2810-2490

Julian Date 211

Cruise I.D. F7.91.WP

Local Date (m/d/y) 7/30/91

Station No. 27

Chief Scientist Hein/Ann

Dredge No. D20

Tech on Watch Walt

	On Station	Dredge on Btm	Dredge off btm	Off Station
GMT	0500	0626	0946	1036
LATITUDE	7°20.49	07°20.56	7°20.71	7°20.31
LONGITUDE	134°41.27	134°41.27	134°41.01	13440.98
WATER DEPTH	2530	? 2810	? 2490	—

Site Description and Target: Redoing D-19, which was lost East slope of Palau Island -

OPERATION*	GMT	DEPTH (m)	WIRE OUT (m)	TENSION	HDG/SPD	COMMENTS
Bag in the water	529	2450				
on bottom	625	? 2810	2827			Putting out scope
Scope is out	635		3300			taking up slack
Bite	709			2.2		Starting to drag
Bite	0719	2070		2.6 3T		
Broke	0725	2055		3.10		
Bite	0726	2055		2.91		
Bite	0730	2055		3T		
Broke	0733	2050		3.4		Combining uplines
Bite/Broke	0738	2045		5.96		
Bite	0740	2045		2.9		Hung up
Broke	0744			3.1		one another
Bite	0744			3.30	4, 5.25	Hung up
Broke	0749			0.6		
Bite	0757	2020		2.84	3.00	working
Bite	0800			3.00		
Bite	0801	2015		2.17	2.4	
Broke	0807	2010		4.78		

3360

1555 or .84 alon

*on/off bottom, bites, etc.

OTHER COMMENTS:

1746

2800 3300

10890000
7840000

Depth for on & off bottom are questionable - our depths from the 10KHz differed from the wire out at those times - wire out showed it to be deeper than we thought

OPERATION*	GMT	DEPTH (m)	WIRE OUT (m)	TENSION	HDG/SPD	COMMENTS
Bite / Broke	0808	~2010		3.1		
PAYING OUT	0813	2010	3320	7.4		Will try another pull having trouble!
Hung to move to better position	0828	~2015	3340			~ Bring in wire 40m
Backing down	0831	~2010	3309	3T		" make ~ Fell off
Holding position	0832	~2010	3300	3T constant		~ bring wire in
Tension incr	0845	2060	3100	4T		
"	0846	~2060		4.5, 4.75, 5.25, 5.75		
Broke off	0851	~2070	~2974	5.8		
Bite	0851	~2070		3.75, 4.75, 6, 7.6		Holding wire - Moving in to better position
Bring in wire	0855	~2070	~2939	7.6		Holding position
"	0900	~2150		5T		fell off last bite?
Backing down	0908	~2195	~2791	7.1		stopped bring wire in until Tension incr
still hung	0912			5.75 → up to		7.6
Hung up - backing down	0923		2702	Almost 8T		
Trying to pull	0936		2684			from the right of the line
Broke off	0942		2669	6.6		
off bottom	0946	2490?	2650			

*on/off bottom, bites, etc.

OTHER COMMENTS:

Dredge Sample Summary Sheet

Sample ID	Bulk CC	Layer CC	Pt & Au	Ree	OC	DPTS/TS	XRD	35mm Photo	Paleo	Archive
D20-1									2 X	
D20-2									2 X	
3										
4										
5					X	X(2)	X			
6										
7										
8						2 X	2 X			
9						X	X		X	

SAMPLE DESCRIPTION

SE Babel Muap I.

Cruise Id: F7-91-WP Size (cm): — Location: [redacted]

Sample Id: D20-1 Weight (kg): 0.8 kg Depth (m): 2800-2650

50 kg

49 kg discarded

Mn Crust Description

Surface Texture: —

Mn Crust Thickness (mm):

Min:_____ Max:_____ Ave:_____

No photo

Outer to Inner Layers (mm)

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

Comments and XRD Mineralogy:

Analyses

Subsample No.	Analysis	Layer Thick.	Wt.(g)
D20-1	Paleo		~36 g
	Paleo W/R.B. 7min		~80g

Substrate Description

Rock Type: Foraminiferal-nannofossil ooze

Description: Mod. stiff mud with a V. Pale yellowish brown. ~10YR 7/2 forams!

Biology (?):

Described by: J.S.

Subsampled by: J.S.

SAMPLE DESCRIPTION

SE Babelthuap I.

Cruise Id: F7-91-WP Size (cm): -- Location: [redacted]

Sample Id: D20-2 Weight (kg): 0.6 Depth (m): 2800 - 2650

150 kg
145 kg discarded

Mn Crust Description

Surface Texture: —

Mn Crust Thickness (mm):

Min:_____ Max:_____ Ave:_____

Outer to Inner Layers (mm)

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

no Photo

Comments and XRD Mineralogy:

Analyses

Subsample No.	Analysis	Layer Thick.	Wt.(g)
D20-2	Paleo w/ R.B.		22.9 gm 50 min after
	Paleo		18.1 gm

Substrate Description

Rock Type: Foraminiferal + nannoplankton ooze

Description: Very stiff v. pale orange 10YR 8/2 (off white)
lenses of light + dark grey forams

U.S.G.S kept 0.6 kg
KORDI kept 4.0 kg

Biology (?): —

Described by: G.S.

Subsampled by: G.S.

SAMPLE DESCRIPTION

Cruise Id: FZ-91-WP Size (cm): ~60 Cobbles Location: [redacted] S.E Babelthuap Island

Sample Id: D20-3 Weight (kg): ~8-10 Kg Depth (m): 2800 - 2650

Mn Crust Description

Surface Texture: Patina - granular eroded

Mn Crust Thickness (mm):

Min: Max: P Ave:

Outer to Inner Layers (mm)

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

D20-3

Comments and XRD Mineralogy:

Subsa

uncut

Substrate Description

Rock Type: Coral, foram, Mulluska Biolithite

Reef rocks!

50% HORDI
50% USGS

Description: Color varies creamy white, light peach to yellowish gray. Complete, partial + little recrystallization - good cell wall structures. ~ gastropod inner mold. - mostly reefal detrus bioclastic

Biology (?): encrusting forams

Described by: D. S.

Subsampled by:

Covered w/ D20-1

gastro

D20.3

SAMPLE DESCRIPTION

S. W of Babelthuap Island

Cruise Id: F7-91-WP **Size (cm):** 19.5 x 27.3 x 29.7 **Location:** [redacted]

Sample Id: D20-4 **Weight (kg):** ~ 14-18 **Depth (m):** 980 - 650

Mn Crust Description

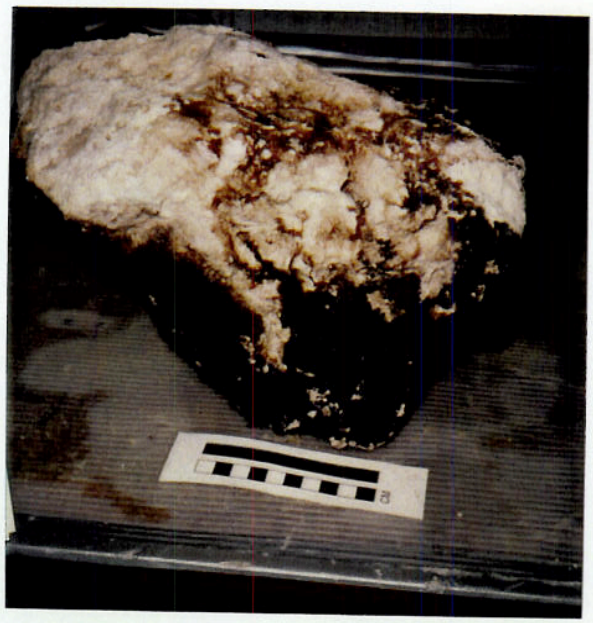
Surface Texture: Patina current smoothed to granular

Mn Crust Thickness (mm):

Min:_____ Max: P Ave:_____

Outer to Inner Layers (mm)

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



D20-4

Comments and XRD Mineralogy:

Substrate Description

Rock Type: Reefal Biolithite

Description: ~ coral, mullusk varies in color + recrystallization ~ creamy white, pale yellow, tan, partially recrystallized to mostly recrystallized

Biology (?): encrusting forams

Described by: A.S.

Subsampled by:

Covered with D20-1

Cut on Big Saw at Home

SAMPLE DESCRIPTION

S.W. of Babelthaupe Is.

Cruise Id: F7 91-WP Size (cm): 6.5 x 10.8 x 1¢ Location: [redacted]

Sample Id: D20-5 Weight (kg): ~1-2 Depth (m): 2800-2650

D20-5

Mn Crust Description

Surface Texture: Patina - smooth

Mn Crust Thickness (mm):

Min:_____ Max:_____ Ave:_____

Outer to Inner Layers (mm)

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

Comments and XRD Mineralogy:

Subsam

(2)

D20-5 OC, DPTS, XRD

~22 gm

40% [illegible]

60% [illegible]

O + C isotopes, XRD (Again)

6.52 g

Substrate Description

Rock Type: Limestone Breccia

Description: Clasts of coral + limestone fragments are cerented with Carb. fluorapatite ? dolomite - several episodes of ~~phosphitization~~ dolomitization pink, white, ~ grey

Biology (?): None

Described by: ΔS.

Subsampled by:

Various stages of recrystallization

SAMPLE DESCRIPTION

7 small cobbles or large pebbles

Cruise Id: F7-91-WP Size (cm): Location: [redacted] SE Babel Thuaup I.

Sample Id: D20-6 Weight (kg): ~2 Depth (m): 2800-2650

Mn Crust Description

Surface Texture: granular patchy Patina

Mn Crust Thickness (mm):

Min:_____ Max:_____ Ave:_____

Outer to Inner Layers (mm)

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

D20-6

Comments and XRD Mineralogy:

Subsample N

Substrate Description

Rock Type: Framework Reefal Limestone

Description: Off white to pale brown to yellow-brown mostly delicate species - 1 chain coral - recryst.

Biology (?):

50% USGS
50% HORDI

Described by: HEIN

Subsampled by:

SAMPLE DESCRIPTION

Cruise Id: F7-91-WP Size (cm): 5 large cobbles 30 small cobbles Location: SE Babelthuap [redacted]

Sample Id: D20-7 Weight (kg): ~25 kg Depth (m): 2800-2650

Mn Crust Description

Surface Texture: Granular To Smooth black Patina

Mn Crust Thickness (mm):

Min: <1 Max: <1 Ave: <1

Outer to Inner Layers (mm)

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

D20-7

Comments and XRD Mineralogy:

Su

Substrate Description

Rock Type: Reef bioclastic Limestone Biolithite

50% HORDI
50% USGS

Description:

Pale Brown - yellow stain on some moderate to extensive moldic porosity
Coral, algae, mullusks, others
Some minor to moderate recrystallization

Biology (?):

Described by: HEIN

Subsampled by:

D20-7

SAMPLE DESCRIPTION

Cruise Id: F7-91-WP Size (cm): ~15 Cobbles Location: S.W of Babelthuap ~~V3-91-NB~~

Sample Id: D20-8 Weight (kg): ~14 Kg Depth (m): 2800-2650

D20-8

Mn Crust Description

Surface Texture: Smooth Patina

Mn Crust Thickness (mm):

Min:_____ Max: P Ave:_____

Outer to Inner Layers (mm)

	Min	Max	Ave	Texture & Color
1		P		Black to Brown
2				
3				
4				
5				
6				

Comments and XRD Mineralogy:

Substrate Description

Rock Type: Clastic reefal limestone

Description: fine to coarse grained Mod. to strongly Recrystalized ~ gradationally recrystalized coral fragments ~ mullusk yellow, cream + tan in color

Biology (?): None

Subs

D20-8-1 T.S. Recry. XRD

D20-8-2 T.S. Pink clastic XRD

D20-8-1 O+C isotopes, OC
.1 | 17.23g
2.12g
and XRD (again)

Described by: A.S.

Subsampled by: A.S.

D20-8
1+2

SAMPLE DESCRIPTION

S.W.S of Babelthaup I.

Cruise Id: F7-91-WP Size (cm): 5x6.4x13.4 Location: [redacted]

Sample Id: D20-9 Weight (kg): >1 Kg Depth (m): 2800-2650

D20-9

Mn Crust Description

Surface Texture: —

Mn Crust Thickness (mm):

Min:_____ Max: — Ave:_____

Outer to Inner Layers (mm)

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

Comments and XRD Mineralogy:

Subsample N

D20-9 XRD, TS, Paleo

OC, O+C isotopes, XRD (again)

17.98 g 2.0 g

40 % 4ORDI

60 % USGS

Substrate Description

Rock Type: Micrite?

Description: fine grained, Pale yellow Brown with beds that are light reddish brown, casts of gastropods + lenses of shell fragments, Fe-Mn dendrites

Biology (?): None - minor moldic porosity in places

Described by: A. S.

Subsampled by: HEIN