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Title of article Carbon and oxygen isotopes as diagenetic and strati-
graphic tools: Surface and subsurface data, Barbados, West Indies

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see Geology v. 5, P. 16 - 21

Contents 6 pages

<u>Appendix A</u>	
<u>Table A1</u>	<u>p. 1</u>
<u>Table A2</u>	<u>2</u>
<u>Table A3</u>	<u>3</u>
<u>Table A4</u>	<u>4</u>
<u>Isotope Standards</u>	<u>5</u>
<u>Table A8</u>	<u>6</u>
<u> </u>	
<u> </u>	

TABLE A1

DATA ON BARBADOS SURFACE SAMPLES¹

Locality	Metric Coordinates	Sample No.	Rock Type ²	δO^{18} o/oo PDB	δC^{13} o/oo PDB
BC	E60000 N71800	39	Subaerial crust	-5.19	-9.18
BG	E57900 N55750	19	Subaerial crust	-2.67	-6.61
BO	E68150 N46350	4b	Sandy matrix	-4.08	-6.87
BQ	E68400 N47400	4	Clean sand matrix	-4.04	-12.99
CLUFF	E56750 N74250	B-1	Matrix + Subaerial Crust	-3.26	-10.44
FA	E58000 N58270	2	Subaerial crust	-2.80	-11.18
GG	E57750 N54500	1a	Sandy matrix	-3.57	-6.50
GM	E58975 N53640	1	Clean sand matrix	-3.38	-6.71
GO	E59500 N53700	1	Sandy matrix	-3.57	-7.34
GV	E59300 N56100	1	Sandy matrix	-3.58	-5.20
HA	E59275 N53250	1	Sandy matrix	-3.89	-11.14
HE	E59675 N51250	1	Muddy matrix	-3.57	-11.00
XA	E78200 N56050	6	Subaerial crust	-4.23	-9.99
XG	E78600 N55950	1	Subaerial crust	-3.58	-10.45
XJ	E78350 N54400	5a	Subaerial crust	-1.83	-8.63
ZK	E68400 N49500	1	Clean sand matrix	-3.85	-6.43
AAT	E67250 N48900	1	Clean sand matrix	-3.23	-3.43
AHP	E54400 N71500	1	Subaerial crust	-4.09	-9.92

Allan/Matthews A-2

Allan/Matthews A-3

¹All surface samples are from the surface vadose diagenetic environment and are 100% low-Mg calcite.

²All isotopic analyses were performed on wholerock intercoral matrix samples.

Muddy matrix = wackestone and packstone
 Sandy matrix = packstone
 Clean sand matrix = grainstone
 Matrix = undifferentiated matrix
 Subaerial crust = caliche

DATA ON BARBADOS BOREHOLE 16 SAMPLES³

Sample No.	Rock Type	Depth Below Exposure Surface (m)	Diagenetic Environment	Carbonate Mineralogy ⁴			
				% Aragonite	% Low-mg Calcite	$\delta O^{18}/\text{oo PDB}$	$\delta C^{13}/\text{oo PDB}$
16-2-2	Muddy matrix	0-0.6		30	70	-2.87	-7.23
16-3-1	Muddy matrix	0-0.6		15	85	-3.07	-5.20
16-4	Matrix + subaerial crust	0-0.6		11	89	-3.78	-4.36
16-6	Muddy matrix	0.6-1.2	ALL SAMPLES FROM VADOSE ENVIRONMENT	5	95	-3.57	-4.10
16-7	Muddy matrix	0.6-1.2		14	86	-3.89	-4.71
16-9	Muddy matrix	0.6-1.2		12	88	-4.05	-5.23
16-12	Muddy matrix	1.2-1.8		0	100	-4.26	-3.69
16-15-1	Muddy matrix	1.2-1.8		27	73	-4.11	-3.11
16-19-1	Muddy matrix	2.4-3.0		28	72	-4.11	-4.19
16-20-1	Matrix	2.4-3.0		10	90	-3.88	-3.44
16-23	Muddy matrix	3.7-4.3		0	100	-4.15	-2.95
16-29	Muddy matrix	4.3-5.8		0	100	-4.20	-1.91
16-37-1	Muddy matrix	4.3-5.8		0	100	-3.92	-1.61
16-40	Sandy matrix	5.8-7.3	0	100	-3.88	-2.66	
16-45	Muddy matrix	5.8-7.3	ALL SAMPLES FROM VADOSE ENVIRONMENT	0	100	-3.73	-1.22
16-51-2	Sandy matrix	7.3-8.8		0	100	-3.94	-2.84
16-56-1	Sandy matrix	8.8-10.1		0	100	-3.96	-2.70
16-63-3	Muddy matrix	10.1-11.0		0	100	-3.91	-1.66
16-65-1	Sandy matrix	10.1-11.0		0	100	-3.69	-3.22
16-69	Muddy matrix	11.0-12.5		0	100	-4.01	-1.90
16-73	Muddy matrix	11.0-12.5		0	100	-3.78	-2.79
16-75-1	Muddy matrix	11.0-12.5		0	100	-4.05	-2.63

Allan/Matthews A-4

Allan/Matthews A-5

³ Locality E65650
N45750

Elevation: +33.5 m

⁴ Borehole rocks analyzed contain no high-Mg calcite or dolomite

5
DATA ON BARBADOS BOREHOLE 17 SAMPLES

Sample No.	Rock Type	Depth Below Exposure Surface (m)	Diagenetic Environment	Carbonate Mineralogy ⁴			
				% Aragonite	% Low-Mg Calcite	$\delta O^{18}/\text{oo PDB}$	$\delta C^{13}/\text{oo PDB}$
17-15-2	Muddy matrix	1.2-2.4	VADOSE ENVIRONMENT	0	100	-2.87	-5.53
17-17-1	Muddy matrix	1.2-2.4		0	100	-2.93	-4.85
17-21-2	Muddy matrix	1.2-2.4		0	100	-3.30	-5.14
17-31-1	Muddy matrix	2.4-4.0		0	100	-3.55	-4.46
17-33-1	Muddy matrix	2.4-4.0		0	100	-3.55	-4.29
17-35-1	Muddy matrix	2.4-4.0		0	100	-3.76	-4.50
17-38-4	Muddy matrix	2.4-4.0		0	100	-3.51	-3.66
17-45-1	Muddy matrix	4.0-4.6		0	100	-3.36	-4.72
17-54-5	Muddy matrix	4.6-5.5		0	100	-3.61	-5.20
----- Water Table 5.5 m -----							
17-57-1	Muddy matrix	5.5-7.0	PHREATIC ENVIRONMENT	0	100	-3.88	-1.95
17-64-1	Muddy matrix	5.5-7.0		0	100	-3.68	-2.27
17-67-1	Sandy matrix	7.0-8.5		0	100	-3.64	-2.53
17-69-1	Muddy matrix	7.0-8.5		0	100	-3.58	-2.04
17-70-1	Muddy matrix	7.0-8.5		0	100	-3.20	-3.61
17-74-1	Muddy matrix	7.0-8.5		0	100	-3.56	-2.12
17-77-1	Matrix	8.5-10.1	PHREATIC ENVIRONMENT	0	100	-3.31	-2.72
17-78-1	Muddy matrix	8.5-10.1		0	100	-3.06	-2.43
17-80-1	Sandy matrix	10.1-11.3		0	100	-2.83	-3.20
17-83-1	Sandy matrix	11.3-12.8		0	100	-3.04	-3.31
17-89-1	Muddy matrix	11.3-12.8		0	100	-3.10	-3.14
17-91-1	Sandy matrix	11.3-12.8		0	100	-3.23	-3.14
17-96-2	Sandy matrix	12.8-14.3		0	100	-3.20	-3.14
17-102-2	Sandy matrix	12.8-14.3		0	100	-3.19	-2.91
17-106-1	Sandy matrix	14.3-15.8		0	100	-3.20	-2.31
17-109-1	Sandy matrix	14.3-15.8		0	100	-3.34	-2.76
17-111-1	Sandy matrix	14.3-15.8	0	100	-3.44	-2.71	
17-116-1	Muddy matrix	14.3-15.8	0	100	-3.04	-2.60	

Allan/Mathews A-6

Allan/Mathews A-7

⁵ Locality: E63000
N46000

Elevation: +6.1 m

TABLE A4

DATA ON BARBADOS SUBTIDAL MARINE SEDIMENTS

Sample No.	Locality	Metric Coordinates	Depth Below Sea Level (m)	Carbonate Mineralogy			δO^{18} ‰ PDB	δC^{13} ‰ PDB
				% Aragonite	% High-Mg Calcite	% Low-Mg Calcite		
PDSE-5	Paradise Beach	E56250 N52350	1.5	68	18	14	-3.06	+0.36
PDSE-10	"	"	3.0	70	25	5	-3.13	+0.39
PDSE-15	"	"	4.6	82	16	2	-3.07	+0.52
PDSE-20	"	"	6.1	66	27	7	-3.33	+0.35
HLTN-5	Holetown	E55750 N58500	1.5	61	32	7	-3.08	+0.20
HLTN-10	"	"	3.0	60	33	7	-2.53	+0.90
HLTN-15	"	"	4.6	61	30	9	-2.84	+0.15
HLTN-20	"	"	6.1	61	32	7	-2.62	+0.49
GIBB-5	Gibbs Bay	E55250 N63000	1.5	55	36	9	-2.61	+0.28
GIBB-10	"	"	3.0	71	24	5	-2.56	+0.53
GIBB-15	"	"	4.6	65	28	7	-2.72	+0.27
GIBB-20	"	"	6.1	58	35	7	-2.68	+0.34

Allan/Matthews A-8

TABLE A5

	δO^{18} ‰ PDB	δC^{13} ‰ PDB
C. Emiliani's "B-1"	+0.29	+0.32
N. Shackleton's "Fletton Clay belemnite"	-0.24	+1.91
McMaster University Std. #3	-4.14	-1.06

TABLE A6

	δO^{18} ‰ SW-1	δC^{13} ‰ SW-1	No. of Replicate Analyses
B-1	+4.20	+2.16	4
Fletton Clay belemnite	+4.11	+3.69	5
McMaster #3	+0.12	+0.45	3

TABLE A7

	δO^{18} ‰ PDB	δC^{13} ‰ PDB
SW-1 relative to PDB using B-1	-3.91	-1.84
SW-1 relative to PDB using Fletton Clay belemnite	-4.35	-1.79
SW-1 relative to PDB using McMaster #3	-4.26	-1.51
Mean	-4.17	-1.71

Allan/Matthews A-10

ISOTOPE STANDARDS

Our laboratory standard, SW-1, was compared with standards from three other laboratories which have been related to the Chicago PDB standard (Table A5).

Table A6 shows the mean δO^{18} and δC^{13} values, with respect to our laboratory standard, SW-1, for replicate analyses of these standards.

The values for SW-1 relative to PDB have been calculated using each of the three standards. Results appear in Table A7. The mean values for carbon (-1.71 ‰) and oxygen (-4.17 ‰) have been used to compare all our samples to the PDB standard by the equation:

$$\delta_{\text{Sample/PDB}} = \delta_{\text{Sample/SW-1}} + \delta_{\text{SW-1/PDB}} + (\delta_{\text{Sample/SW-1}} \times \delta_{\text{SW-1/PDB}} \times 10^{-3})$$

Molecular mass ratio differences were converted to isotope ratio differences according to the method presented in:

Craig, H., 1957, Isotopic standards for carbon and oxygen and correction factors for mass-spectrometric analysis of carbon dioxide: *Geochim. et Cosmochim. Acta*, v. 12, p. 133-149.

TABLE A8
Data on Barbados Borehole 20¹ Samples

Sample No.	Depth Below Surface (m)	Wholerock ² Carbonate Mineralogy		Wholerock Intercoral Matrix		Brown Crust and Infiltration	
		% Aragonite	% Low-Mg Calcite	$\delta O^{18} / \text{‰ PDB}$	$\delta C^{13} / \text{‰ PDB}$	$\delta O^{18} / \text{‰ PDB}$	$\delta C^{13} / \text{‰ PDB}$
20-107	20.7-22.3	0	100	-3.44	-2.55		
20-132	23.8-25.3	7	93	-3.35	-2.45		
20-136	25.3-26.8	6	94	-3.24	-2.12		
20-139	26.8-28.3	0	100	-3.24, -2.96 ³	-2.02, -2.07 ³		
20-141	26.8-28.3	5	95	-3.13, -3.00 ³	-1.98, -2.10 ³		
20-144A	28.3-29.9	0	100	-3.12	-1.98		
20-146	29.9-31.4	30	70	-3.21	-1.72		
----- Lowstand Exposure Surface -30.2 m -----							
20-151	29.9-31.4	20	80	-2.48	-2.45	-2.86	-3.66
20-152	29.9-31.4	9	91	-2.48, -2.23 ³	-1.94, -2.10 ³	-2.65	-2.09
20-155	31.4-32.9	12	88	-2.51, -2.52 ³	-2.63, -2.88 ³	-2.16	-2.70
20-157	31.4-32.9	11	89	-2.76	-2.46	-2.60	-3.39
20-158	31.4-32.9	26	74	-2.50	-2.25	-2.16	-3.15
20-161	31.4-32.9	24	76	-2.59	-2.50	-2.80	-3.60
20-167	31.4-32.9	27	73	-2.56	-1.71		
20-183	34.4-36.0	18	83	-2.45	-1.64		
20-189	34.4-36.0	6	94	-2.40	-1.61		

¹Locality E62200, N46500.

²Borehole samples analyzed contain no high-Mg calcite or dolomite.

³Replicate analyses.

Supplement 1/1/1

GSA Depository # 77-2

Allan/Matthews A1

APPENDIX A

to accompany:

CARBON AND OXYGEN ISOTOPES AS DIAGENETIC AND STRATIGRAPHIC

TOOLS: DATA FROM SURFACE AND SUBSURFACE OF BARBADOS,

WEST INDIES

by

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TABLE A1
DATA ON BARBADOS SURFACE SAMPLES¹

Locality	Metric Coordinates	Sample No.	Rock Type ²	$\delta^{18}\text{O}$ ‰ PDB	$\delta^{13}\text{C}$ ‰ PDB
BC	E60000 N71800	39	Subaerial crust	-5.19	-9.18
BG	E57900 N55750	19	Subaerial crust	-2.67	-6.61
BO	E68150 N46350	4b	Sandy matrix	-4.08	-6.87
BQ	E68400 N47400	4	Clean sand matrix	-4.04	-12.99
CLUFF	E56750 N74250	B-1	Matrix + Subaerial Crust	-3.26	-10.44
FA	E58000 N58270	2	Subaerial crust	-2.80	-11.18
GG	E57750 N54500	1a	Sandy matrix	-3.57	-6.50
GM	E58975 N53640	1	Clean sand matrix	-3.38	-6.71
GO	E59500 N53700	1	Sandy matrix	-3.57	-7.34
GV	E59300 N56100	1	Sandy matrix	-3.58	-5.20

Locality	Metric Coordinates	Sample No.	Rock Type	$\delta^{18}O/_{\infty}$ PDB	$\delta^{13}C/_{\infty}$ PDB
HA	E59275 N53250	1	Sandy matrix	-3.89	-11.14
HE	E59675 N51250	1	Muddy matrix	-3.57	-11.00
XA	E78200 N56050	6	Subaerial crust	-4.23	-9.99
XG	E78600 N55950	1	Subaerial crust	-3.58	-10.45
XJ	E78350 N54400	5a	Subaerial crust	-1.83	-8.63
ZK	E68400 N49500	1	Clean sand matrix	-3.85	-6.43
AAT	E67250 N48900	1	Clean sand matrix	-3.23	-3.43
AHP	E54400 N71500	1	Subaerial crust	-4.09	-9.92

¹All surface samples are from the surface vadose diagenetic environment and are 100% low-Mg calcite.

²All isotopic analyses were performed on wholerock intercoral matrix samples.

- Muddy matrix = wackestone and packstone
- Sandy matrix = packstone
- Clean sand matrix = grainstone
- Matrix = undifferentiated matrix
- Subaerial crust = caliche

Table A2

DATA ON BARBADOS BOREHOLE 16 SAMPLES 3

Sample No.	Rock Type	Depth Below Exposure Surface (m)	Diagenetic Environment	Carbonate Mineralogy ⁴ % Aragonite	% Low-mg Calcite	$\delta^{18}\text{O}$ PDB	$\delta^{13}\text{C}$ PDB
16-2-2	Muddy matrix	0-0.6		30	70	-2.87	-7.23
16-3-1	Muddy matrix	0-0.6		15	85	-3.07	-5.20
16-4	Matrix + subaerial crust	0-0.6		11	89	-3.78	-4.36
16-6	Muddy matrix	0.6-1.2		5	95	-3.57	-4.10
16-7	Muddy matrix	0.6-1.2		14	86	-3.89	-4.71
16-9	Muddy matrix	0.6-1.2		12	88	-4.05	-5.23
16-12	Muddy matrix	1.2-1.8		0	100	-4.26	-3.69
16-15-1	Muddy matrix	1.2-1.8		27	73	-4.11	-3.11
16-19-1	Muddy matrix	2.4-3.0		28	72	-4.11	-4.19
16-20-1	Matrix	2.4-3.0		10	90	-3.88	-3.44
16-23	Muddy matrix	3.7-4.3		0	100	-4.15	-2.95
16-29	Muddy matrix	4.3-5.8		0	100	-4.20	-1.91
16-37-1	Muddy matrix	4.3-5.8		0	100	-3.92	-1.61
16-40	Sandy matrix	5.8-7.3		0	100	-3.88	-2.66

ALL SAMPLES FROM VADOSE ENVIRONMENT

Table A2 cont'd

Sample No.	Rock Type	Depth Below Exposure Surface (m)	Diagenetic Environment	Carbonate Mineralogy % Aragonite	Mineralogy % Low Mg Calcite	δO^{18} /‰ PDB	δC^{13} /‰ PDB
16-45	Muddy matrix	5.8-7.3		0	100	-3.73	-1.22
16-51-2	Sandy matrix	7.3-8.8		0	100	-3.94	-2.84
16-56-1	Sandy matrix	8.8-10.1		0	100	-3.96	-2.70
16-63-3	Muddy matrix	10.1-11.0		0	100	-3.91	-1.66
16-65-1	Sandy matrix	10.1-11.0		0	100	-3.69	-3.22
16-69	Muddy matrix	11.0-12.5		0	100	-4.01	-1.90
16-73	Muddy matrix	11.0-12.5		0	100	-3.78	-2.79
16-75-1	Muddy matrix	11.0-12.5		0	100	-4.05	-2.63

ALL SAMPLES FROM VADOSE ENVIRONMENT

3 Locality E65650
N45750

Elevation: +33.5 m

4 Borehole rocks analyzed contain no high-Mg calcite or dolomite

TABLE A3

5

DATA ON BARBADOS BOREHOLE 17 SAMPLES

Sample No.	Rock Type	Depth Below Exposure Surface (m)	Diagenetic Environment	Carbonate Mineralogy ⁴		$\delta^{18}\text{O}/\text{‰ PDB}$	$\delta^{13}\text{C}/\text{‰ PDB}$
				% Aragonite	% Low-Mg Calcite		
17-15-2	Muddy matrix	1.2-2.4		0	100	-2.87	-5.53
17-17-1	Muddy matrix	1.2-2.4		0	100	-2.93	-4.85
17-21-2	Muddy matrix	1.2-2.4		0	100	-3.30	-5.14
17-31-1	Muddy matrix	2.4-4.0		0	100	-3.55	-4.46
17-33-1	Muddy matrix	2.4-4.0		0	100	-3.55	-4.29
17-35-1	Muddy matrix	2.4-4.0		0	100	-3.76	-4.50
17-38-4	Muddy matrix	2.4-4.0		0	100	-3.51	-3.66
17-45-1	Muddy matrix	4.0-4.6		0	100	-3.36	-4.72
17-54-5	Muddy matrix	4.6-5.5		0	100	-3.61	-5.20
----- Water Table 5.5 m -----							
17-57-1	Muddy matrix	5.5-7.0		0	100	-3.88	-1.95
17-64-1	Muddy matrix	5.5-7.0		0	100	-3.68	-2.27
17-67-1	Sandy matrix	7.0-8.5		0	100	-3.64	-2.53
17-69-1	Muddy matrix	7.0-8.5		0	100	-3.58	-2.04
17-70-1	Muddy matrix	7.0-8.5		0	100	-3.20	-3.61

VAPOSE ENVIRONMENT

PHREATIC ENVIRONMENT

Table A3 Con't

Sample No.	Rock Type	Depth Below Exposure Surface (m)	Diagenetic Environment	Carbonate Mineralogy		$\delta^{18}\text{O}/\text{‰ PDB}$	$\delta^{13}\text{C}/\text{‰ PDB}$
				% Aragonite	% Low-Mg Calcite		
17-74-1	Muddy matrix	7.0-8.5		0	100	-3.56	-2.12
17-77-1	Matrix	8.5-10.1		0	100	-3.31	-2.72
17-78-1	Muddy matrix	8.5-10.1		0	100	-3.06	-2.43
17-80-1	Sandy matrix	10.1-11.3		0	100	-2.83	-3.20
17-83-1	Sandy matrix	11.3-12.8		0	100	-3.04	-3.31
17-89-1	Muddy matrix	11.3-12.8		0	100	-3.10	-3.14
17-91-1	Sandy matrix	11.3-12.8		0	100	-3.23	-3.14
17-96-2	Sandy matrix	12.8-14.3		0	100	-3.20	-3.14
17-102-2	Sandy matrix	12.8-14.3		0	100	-3.19	-2.91
17-106-1	Sandy matrix	14.3-15.8		0	100	-3.20	-2.31
17-109-1	Sandy matrix	14.3-15.8		0	100	-3.34	-2.76
17-111-1	Sandy matrix	14.3-15.8		0	100	-3.44	-2.71
17-116-1	Muddy matrix	14.3-15.8		0	100	-3.04	-2.60

PHREATIC ENVIRONMENT

Allan/Matthews A-7

⁵ Locality: E63000
N46000

Elevation: +6.1 m

TABLE A4

DATA ON BARBADOS SUBTIDAL MARINE SEDIMENTS

Sample No.	Locality	Metric Coordinates	Depth Below Sea Level (m)	Carbonate Mineralogy		% Low-Mg Calcite	$\delta^{18}\text{O}$ ‰ PDB	$\delta^{13}\text{C}$ ‰ PDB
				% Aragonite	% High-Mg Calcite			
PDSE-5	Paradise Beach	E56250 N52350	1.5	68	18	14	-3.06	+0.36
PDSE-10	"	"	3.0	70	25	5	-3.13	+0.39
PDSE-15	"	"	4.6	82	16	2	-3.07	+0.52
PDSE-20	"	"	6.1	66	27	7	-3.33	+0.35
HLTN-5	Holetown	E55750 N58500	1.5	61	32	7	-3.08	+0.20
HLTN-10	"	"	3.0	60	33	7	-2.53	+0.90
HLTN-15	"	"	4.6	61	30	9	-2.84	+0.15
HLTN-20	"	"	6.1	61	32	7	-2.62	+0.49
GIBB-5	Gibbs Bay	E55250 N63000	1.5	55	36	9	-2.61	+0.28
GIBB-10	"	"	3.0	71	24	7	-2.56	+0.53
GIBB-15	"	"	4.6	65	28	7	-2.72	+0.27
GIBB-20	"	"	6.1	58	35	7	-2.68	+0.34

ISOTOPE STANDARDS

Our laboratory standard, SW-1, was compared with standards from three other laboratories which have been related to the Chicago PDB standard (Table A5).

Table A6 shows the mean δO^{18} and δC^{13} values, with respect to our laboratory standard, SW-1, for replicate analyses of these standards.

The values for SW-1 relative to PDB have been calculated using each of the three standards. Results appear in Table A7. The mean values for carbon (-1.71 ‰) and oxygen (-4.17 ‰) have been used to compare all our samples to the PDB standard by the equation:

$$\delta \text{Sample/PDB} = \delta \text{Sample/SW-1} + \delta \text{SW-1/PDB} + (\delta \text{Sample/SW-1} \times \delta \text{SW-1/PDB} \times 10^{-3})$$

Molecular mass ratio differences were converted to isotope ratio differences according to the method presented in:

Craig, H., 1957, Isotopic standards for carbon and oxygen and correction factors for mass-spectrometric analysis of carbon dioxide: *Geochim. et Cosmochim. Acta*, v. 12, p. 133-149.

TABLE A5

	$\delta^{18}\text{O}/\text{‰ PDB}$	$\delta^{13}\text{C}/\text{‰ PDB}$
C. Emiliani's "B-1"	+0.29	+0.32
N. Shackleton's "Fletton Clay belemnite"	-0.24	+1.91
McMaster University Std. #3	-4.14	-1.06

TABLE A6

	$\delta^{18}\text{O}/\text{‰ SW-1}$	$\delta^{13}\text{C}/\text{‰ SW-1}$	No. of Replicate Analyses
B-1	+4.20	+2.16	4
Fletton Clay belemnite	+4.11	+3.69	5
McMaster #3	+0.12	+0.45	3

TABLE A7

	$\delta^{18}\text{O}/\text{‰ PDB}$	$\delta^{13}\text{C}/\text{‰ PDB}$
SW-1 relative to PDB using B-1	-3.91	-1.84
SW-1 relative to PDB using Fletton Clay belemnite	-4.35	-1.79
SW-1 relative to PDB using McMaster #3	-4.26	-1.51
Mean	-4.17	-1.71

Allan / Matthews A-11
Supplement 9/79

TABLE A8
Data on Barbados Borehole 20¹ Samples

Sample No.	Depth Below Surface (m)	Wholerock ²		Wholerock		Wholerock		Brown Crust	
		Carbonate Mineralogy	Wholerock	Intercoral Matrix	Wholerock	Intercoral Matrix	Wholerock	Intercoral Matrix	Wholerock
		% Aragonite	% Low-Mg Calcite	$\delta^{18}O$ / ∞ PDB	$\delta^{13}C$ / ∞ PDB	$\delta^{18}O$ / ∞ PDB	$\delta^{13}C$ / ∞ PDB	$\delta^{18}O$ / ∞ PDB	$\delta^{13}C$ / ∞ PDB
20-107	20.7-22.3	0	100	-3.44	-2.55				
20-132	23.8-25.3	7	93	-3.35	-2.45				
20-136	25.3-26.8	6	94	-3.24	-2.12				
20-139	26.8-28.3	0	100	-3.24, -2.96 ³	-2.02, -2.07 ³				
20-141	26.8-28.3	5	95	-3.13, -3.00 ³	-1.98, -2.10 ³				
20-144A	28.3-29.9	0	100	-3.12	-1.98				
20-146	29.9-31.4	30	70	-3.21	-1.72				
						Lowstand Exposure Surface	-30.2 m		
20-151	29.9-31.4	20	80	-2.48	-2.45			-2.86	-3.66
20-152	29.9-31.4	9	91	-2.48, -2.23 ³	-1.94, -2.10 ³			-2.65	-2.09
20-155	31.4-32.9	12	88	-2.51, -2.52 ³	-2.63, -2.88 ³			-2.16	-2.70
20-157	31.4-32.9	11	89	-2.76	-2.46			-2.60	-3.39
20-158	31.4-32.9	26	74	-2.50	-2.25			-2.16	-3.15
20-161	31.4-32.9	24	76	-2.59	-2.50			-2.80	-3.60
20-167	31.4-32.9	27	73	-2.56	-1.71				
20-183	34.4-36.0	18	83	-2.45	-1.64				
20-189	34.4-36.0	6	94	-2.40	-1.61				

¹ Locality E62200, N46500.

² Borehole samples analyzed contain no high-Mg calcite or dolomite.

³ Replicate analyses.