DEPARTMENT OF THE INTERIOR
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Pliocene benthic foraminifer census data from Deep Sea Drilling Project Hole 606

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INTRODUCTION

The U.S. Geological Survey's PRISM Project is investigating the climatic and oceanographic conditions of the Pliocene. This study includes several elements: 1.) determination of sea surface temperatures using quantitative analysis of planktic foraminifer census data and stable isotopic analyses, and 2.) identify major oceanographic boundaries and water masses within the North Atlantic Basin using quantitative analysis of planktic and benthic foraminifer census data and stable isotopic analyses. This report is part of a series of open-file reports that have been, and will be compiled to provide the basic faunal data for future work. This report includes benthic foraminifer census data for 13 samples from DSDP Site 606 (Fig. 1). Latitude, longitude, and water depth of DSDP Site 606 are included in Table 1.

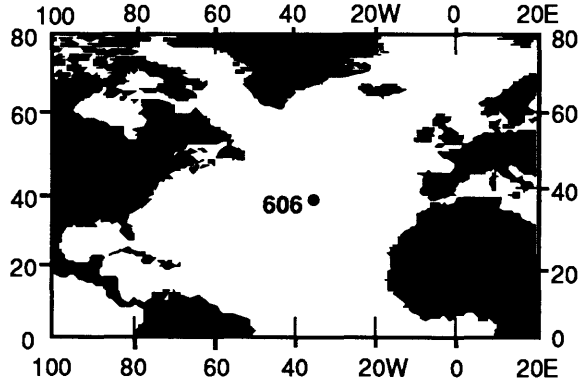

Figure 1 - Location of DSDP Site 606.

Table 1 - Latitude, longitude, and water depth (in corrected meters) for DSDP Hole 606 shown in Figure 1.

Latitude	Longitude	Water Depth
37°20.32'N	35°29.99'W	3007 m

METHODS

The samples used in this study were processed at Brown University using low temperature (isotope) techniques. Sediment samples were dried in an oven at ≤50° C. The dried sample was disaggregated and wet sieved at 63μm with warm tap water and about 2 ml of dilute calgon solution. The >63μm residue was dried at in an oven at ≤50° C. Many of the samples were treated with an additional wash of 10% H_2O_2 to further clean the specimens.

The >63μm size fraction was split into faunal and isotope splits using a Carpo sample splitter. The faunal split was picked for planktic foraminifers and benthic foraminifers (on which this report refers). Benthic foraminifer specimens were identified, sorted and glued to a standard 60 square micropaleontological slide.

BACKGROUND

DSDP Site 606 has been analysed for planktic foraminifers (see Dowsett et al., 1988 for census data). Faunal and oxygen isotopic analyses have been used to determine Pliocene sea surface temperatures at Site 606 (Dowsett and Poore, 1991).

Age constraints for Site 606 are based on a composite age model that includes DSDP Holes 502, 516A, 573A, 577A, 590A, and 606 (Dowsett, 1989). The samples chosen for the benthic foraminifer analyses are late early Pliocene to middle late Pliocene in age.

BENTHIC FORAMINIFER TAXONOMY

The taxonomy used to identify the benthic foraminifers from Hole 606 adheres in part with Loeblich and Tappan, 1988. Where possible, the identifications are based on comparisons made with previously published North Atlantic taxa. A number of taxa are not identified to species level and are referred herein as sp. or sp. #, to be identified later. In two cases species groups are referred to as follows:

Fursenkoina spp. This is used to define species of *Fursenkoina* that have rare occurrences at DSDP Site 606.

Nodosariidae. This group includes the unilocular and uniserial nodosarids identified from Hole 606. They provide little biostratigraphic or ecologic information and thus are placed into a single counting group.

Counts of the variables (species) tabulated for each sample are listed in Table 2. Also included is the total number of benthic foraminifers, sample, and depth in core. Samples are designated as Core Number, Section Number-Depth in Section (cm) (eg. 9-1,34 represents core 9-section 1, 34 cm depth). Depth in core represents depth of sample below the sea floor in meters.

ACKNOWLEDGEMENTS

I would like to thank Harry J. Dowsett and Debra A. Willard for their review of this document. I also thank DSDP and ODP for access to the samples. Brown University loaned washed samples that were used for this report.

REFERENCES

Dowsett, H.J., Gosnell, L.B., and Poore, R.Z., 1988, Pliocene planktic foraminifer census data from Deep Sea Drilling Project Holes 366A, 410, 606, and 646B. *U.S. Geological Survey Open-File Report* 88-654, 14pp.

Dowsett, H.J. and Poore, R.Z., 1991, Pliocene Sea Surface Temperatures of the North Atlantic Ocean at 3.0 Ma. *Quaternary Science Reviews,* 10, 189-204.

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Table 2 - DSDP HOLE 606

Depth in Core (meters)	70.39	75.52	80.58	85.11
Species\Sample	9-1,34	9-4,97	10-1,93	10-4,96
Anomalinoides sp.	17		5	
Bolivina pseudopunctata	5			
Bolivina decussata	16		17	5
Bolivina sp. 2	1	2		
Bolivina striatula				
Bolivina silvestri				2
Bulimina aculeata				
Bulimina alazanensis		24		10
Bulimina sp. 1	1			
Bulimina sp. 2				
Cassidulinoides porrectus				
Cibicides lobatulus	5		2	
Cibicides sp. 1	7		1	
Cibicidoides cicatricosus	3		4	2
Cibicidoides kullenbergi	2		2	1
Cassidulina islandica	27		14	
Edentostomina sp.		6		
Eggerella bradyi	7	3	1	5
Ehrenbergina trigona				
Ehrenbergina sp. 1				1
Epistominella exigua		19	22	4
Fursenkoina spp.		4	2	
Globocassidulina subglobosa	108	53	113	44
Gyroidinoides soldanii		7	5	6
Gyroidina neosoldanii			10	8
Lenticulina sp.		1		1
Laryngosigma hyalascidia	1			
Laticarinina pauperata				5
Melonis barleeanum		4	8	22
Melonis pompilioides	9	4	8	1
Nonion sp. 1	4	9		
Nonionella sp. 1	2		2	6
Nodosariidae	35	60	31	60
Nutallides truempyi	12	27	1	32
Oridorsalis umbonatus	73	8	17	8
Oridorsalis tener		24	13	7
Fontbotia wuellerstorfi	10	7	6	9
Polymorphina extensa				
Pullenia bulloides	11	7	11	12
Pullenia quinqueloba		1	2	2
Pullenia subcarinata	1	1	3	2
Quinqueloculina oblonga	7	4	4	

Table 2 - DSDP HOLE 606

Depth in Core (meters)	70.39	75.52	80.58	85.11
Species\Sample	9-1,34	9-4,97	10-1,93	10-4,96
Quinqueloculina venusta	4		7	7
Sigmoilina schlumbergeri	11	4		6
Siphotextularia sp. 1	5	3	3	8
Spiroloculina pusilla	3	3		2
Sphaeroidina bulloides		8	4	1
Stainforthia acuta		2		
Stainforthia complanata	5	5	5	4
Textularia abbreviata	1			
Triloculina tricarinata	1	1		
Uvigerina hispida		1		
Uvigerina cf. hollicki				4
Uvigerina cf. havenensis				13
Uvigerina peregrina				
TOTAL	423	304	339	305

Table 2 - DSDP HOLE 606

Depth in Core (meters)	89.86	95.43	103.97	110.85	120.61
Species\Sample	11-1,61	11-5,18	12-4,72	13-2,83	14-2,136
Anomalinoides sp.					
Bolivina pseudopunctata					
Bolivina decussata	16	12	3	40	12
Bolivina sp. 2		1			
Bolivina striatula			1		
Bolivina silvestri	10	12	17	1	2
Bulimina aculeata			5		
Bulimina alazanensis		3			10
Bulimina sp. 1					
Bulimina sp. 2					
Cassidulinoides porrectus					1
Cibicides lobatulus	1				
Cibicides sp. 1		1	3		
Cibicidoides cicatricosus	2	4	5	7	1
Cibicidoides kullenbergi	3			3	4
Cassidulina islandica					4
Edentostomina sp.	3	1	5		2
Eggerella bradyi	5		5	5	4
Ehrenbergina trigona				1	3
Ehrenbergina sp. 1		4			2
Epistominella exigua	11	18	19	9	28
Fursenkoina spp.	4	1	2	3	
Globocassidulina subglobosa	58	38	65	30	63
Gyroidinoides soldanii	11	16	7	23	17
Gyroidina neosoldanii	14	11	11	2	
Lenticulina sp.	1				
Laryngosigma hyalascidia					
Laticarinina pauperata	4	2	3		2
Melonis barleeanum	23	21	18	28	16
Melonis pompilioides	3	13	2	1	3
Nonion sp. 1					
Nonionella sp. 1	2	3	2		5
Nodosariidae	35	54	36	47	65
Nutallides truempyi	28	14	25	25	13
Oridorsalis umbonatus	15	20	21	9	4
Oridorsalis tener	7	1	12	9	4
Fontbotia wuellerstorfi	8	16	16	8	11
Polymorphina extensa					
Pullenia bulloides	1	8	7	13	8
Pullenia quinqueloba	2	3	7	5	3
Pullenia subcarinata	2	8	4	6	4
Quinqueloculina oblonga	2	3	8		5

Table 2 - DSDP HOLE 606

Depth in Core (meters)	89.86	95.43	103.97	110.85	120.61
Species\Sample	11-1,61	11-5,18	12-4,72	13-2,83	14-2,136
Quinqueloculina venusta	9	5	10	2	6
Sigmoilina schlumbergeri	4	4	11	1	3
Siphotextularia sp. 1	6	13	9	4	8
Spiroloculina pusilla	3	1		2	3
Sphaeroidina bulloides	11	14	3	2	
Stainforthia acuta	2	1	2		
Stainforthia complanata	3	4	11	13	6
Textularia abbreviata				1	
Triloculina tricarinata					
Uvigerina hispida				4	5
Uvigerina cf. hollicki	8	1	1		
Uvigerina cf. havenensis	3	8	1	9	9
Uvigerina peregrina					
TOTAL	327	348	363	323	341

Table 2 - DSDP HOLE 606

Depth in Core (meters)	126.61	137.93	147.52	157.12	164.65
Species\Sample	14-6,136	16-1,98	17-1,97	18-1,97	18-6,100
Anomalinoides sp.					
Bolivina pseudopunctata					
Bolivina decussata		29	28	10	2
Bolivina sp. 2	1			2	
Bolivina striatula	1				4
Bolivina silvestri					
Bulimina aculeata					1
Bulimina alazanensis		11		1	
Bulimina sp. 1				2	3
Bulimina sp. 2	3				2
Cassidulinoides porrectus					
Cibicides lobatulus					
Cibicides sp. 1			1	1	
Cibicidoides cicatricosus		2			
Cibicidoides kullenbergi	5				5
Cassidulina islandica	5	5		4	
Edentostomina sp.		2			
Eggerella bradyi	2	8	1	1	2
Ehrenbergina trigona		2			
Ehrenbergina sp. 1					
Epistominella exigua	4	15	12	12	19
Fursenkoina spp.		6		2	
Globocassidulina subglobosa	84	49	58	73	64
Gyroidinoides soldanii	17	16	18	14	26
Gyroidina neosoldanii		6	1	9	
Lenticulina sp.					
Laryngosigma hyalascidia					
Laticarinina pauperata	1	1	1		
Melonis barleeanum	23	20	31		17
Melonis pompilioides	11	5	10	5	
Nonion sp. 1					
Nonionella sp. 1	1	1	1	1	1
Nodosariidae	58	57	47	51	39
Nutallides truempyi	25	31	14	17	
Oridorsalis umbonatus	21	11	13	12	36
Oridorsalis tener					
Fontbotia wuellerstorfi	3	4	7	6	10
Polymorphina extensa				1	
Pullenia bulloides	17	13	25	17	21
Pullenia quinqueloba				6	
Pullenia subcarinata	8	4	2		
Quinqueloculina oblonga	3	8	3		5

Table 2 - DSDP HOLE 606

Depth in Core (meters)	126.61	137.93	147.52	157.12	164.65
Species\Sample	14-6,136	16-1,98	17-1,97	18-1,97	18-6,100
Quinqueloculina venusta	9	8	3	4	
Sigmoilina schlumbergeri	2	5	4		2
Siphotextularia sp. 1	6	6	7	2	3
Spiroloculina pusilla	4	2	6	8	4
Sphaeroidina bulloides		1	1		
Stainforthia acuta					
Stainforthia complanata	1	7	10	1	6
Textularia abbreviata					
Triloculina tricarinata					
Uvigerina hispida	3	5			
Uvigerina cf. hollicki		32	2	2	
Uvigerina cf. havenensis			8	7	5
Uvigerina peregrina	21				
TOTAL	341	379	323	272	279