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5. Data Report: Survey of Diatoms in Ocean Drilling Program Leg 207, Sites 1257 and 1258: Demerara Rise, Western Atlantic[1]

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INTRODUCTION AND METHODS

Twenty-eight core catcher samples were provided to the author by the shipboard party for evaluation of fossil diatoms. Samples are from Ocean Drilling Program Leg 207 Holes 1257A, 1257B, 1257C, and 1258A. The samples range from 50 to 112 meters below the seafloor (mbsf) at Site 1257 and from ~22 to 60 mbsf at Site 1258.

At Site 1257, samples range in age from middle Eocene (foraminifer Zone P14–13) to late Paleocene (mid-foraminifer Zone P4). At Site 1258, the samples range from middle Eocene (foraminifer Zone P11) to early Eocene (foraminifer Zone P5) according to the preliminary biostratigraphic reports (Erbacher, Mosher, Malone, et al., 2004).

All samples were processed at Florida State University Antarctic Research Facility. Treatment included acidization and sieving through stacked 38- and 63-µm sieves. Strew slides were made from each fraction and the catcher pan. A Zeiss Photoscope II microscope was used for examination of the prepared slides.

Samples from Holes 1257A, 1257B, and 1257C showed that most of the samples are barren of siliceous microfossils. Only a few radiolarians and fragments of radiolarians were observed (Table T1).

T1. Diatoms in selected core samples, p. 4.

[1]Gombos, A.M., Jr., 2007. Data report: survey of diatoms in Ocean Drilling Program Leg 207, Sites 1257 and 1258: Demerara Rise, western Atlantic. *In* Mosher, D.C., Erbacher, J., and Malone, M.J. (Eds.), *Proc. ODP, Sci. Results,* 207: College Station, TX (Ocean Drilling Program), 1–5. doi:10.2973/odp.proc.sr.207.115.2007
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RESULTS

Hole 1258A contained more abundant siliceous microfossils, both diatoms and radiolarians, but these were not of excellent quality, or sufficient quantity, to make a valid assessment of their stratigraphic significance (Table T1).

More detailed sampling of Core 207-1258B-1R was done by the shipboard party. Seven samples were taken over the length of 1 m of core where diatoms were observed to be common. Unfortunately, diatom preservation is not good in the core. Most of the weakly silicified diatoms are dissolved or fragmented beyond recognition. Along with common radiolarian skeletons, there are a few complete diatom frustules. Most of the identifiable diatom species are robust, heavily silicified forms that are typically among the last to dissolve. Radiolarians are much more abundant, as they are more heavily silicified and are thus better preserved.

Diatoms in Core 207-1257B-1R suggest an early Oligocene age (Table T2). The presence of *Coscinodiscus excavatus* v. *quadriocellata* suggests that the core is from the *Coscinodiscus excavatus* Range Zone of Fenner (1977). This zone is early Oligocene in age.

T2. Diatoms in Core 207-1257B-1R, p. 5.

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Table T1. Diatoms in selected core samples.

Core, section	Notes
207-1257A-	
7X-CC	Barren
8X-CC	Barren
9X-CC	Barren
10X-CC	Barren
11X-CC	Barren
12X-CC	Barren
13X-CC	Barren
207-1257B-	
2R-CC	Barren
3R-CC	Barren
4R-CC	Barren
5R-CC	Barren
6R-CC	Barren
7R-CC	Abundant diatom fragments
8R-CC	Rare radiolarian fragments
207-1257C-	
1R-CC	Rare radiolarian and diatom fragments
2R-CC	Radiolarians and fragments
3R-CC	Rare radiolarian fragments
207-1258A-	
3R-CC	Good diatoms and radiolarians
4R-CC	Good diatoms
5R-CC	A few good radiolarians
6R-CC	Barren
7R-CC	A few small radiolarians and fragments
8R-CC	Barren, but for one radiolarian fragment
9R-CC	*Trinacria* sp., few radiolarian fragments
10R-CC	No sample
11R-CC	No sample
12R-CC	No sample
13R-CC	No sample
14R-CC	Many small radiolarians
15R-CC	Good diatoms and radiolarians
16R-CC	Barren
17R-CC	Barren

Note: CC = Core catcher.

Table T2. Diatoms in Core 207-1257B-1R.

Core, section, interval (cm)	Relative abundance of diatoms	Floral notes	Zone	Age
207-1257B-				
1R-1, 5–6	C	Mostly fragments of diatoms and radiolarians. Diatom species include *Cosciondiscus excavatus* v. *quadriocellata, C. marginatus, Asterolampra praemarylandica, Trinacria* sp., *Cestodiscus convexus*, and *C. trochus.*	*Coscinodiscus excavatus* RZ	early Oligocene
1R-1, 15–16	C			
1R-1, 60–61	A			
1R-1, 75–76	C			
1R-1, 85–86	C			
1R-1, 90–91	C			
1R-1, 100–101	R			

Note: A = abundant, C = common, R = rare.