# 13. DIATOM OCCURRENCES, DEEP SEA DRILLING PROJECT SITES 612 AND $613{ }^{1}$ 

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Samples from Sites 612 and 613 along the New Jersey transect were examined for diatoms, utilizing the processing methods of Abbott (1978) as well as heavy liquid concentrations. The diatom biostratigraphy at these two sites was difficult to interpret because of the apparent frequent reworking into a rare, poorly preserved, indigenous flora and the lack of stratigraphic markers. The actual numbers of specimens found per slide for each species are listed in Tables 1 and 2. Reworked species are indicated with an asterisk and are primarily of Miocene and Eocene age.

The presence of Pseudoeunotia doliolus in Core 612-1 and Roperia tessellata var. crenulatus in Core 612-2 (Table 1) suggests a Quaternary age for the first two cores at Site 612. A single specimen of Thalassiosira convexa encountered in Core 612-3 indicates an age no younger than late Pliocene and no older than late Miocene, assuming that the specimen is in place. No other biostratigraphically useful diatoms were encountered until Section 3 of Core 612-11. The occurrence of Denticulopsis hustedtii and Synedra jouseana in Sample 612-11-3, 5052 cm suggests a general Miocene age. Core 612-12 is barren. Cores 612-13 and 612-14 contain a middle to late Miocene assemblage characterized by Denticulopsis

[^0]hyalina, Goniothecum odontella, Hemiaulus polymorphus, Hemidiscus cuneiformis, and Rouxia californica. The calcareous nannoplankton evidence from the shipboard report suggests that this entire interval (Cores 612-11 through 612-14) is upper Miocene.

A single specimen of Pseudoeunotina doliolus in Core 2 of Hole 613 (Table 2) indicates a Quaternary age, but the remaining interval through Core 613-11 is barren of diatoms. Cores 613-12 through 613-19 contain Nitzschia reinholdii, Hemidiscus cuneiformis, Thalassiosira zabelinae, and many other stratigraphically longranging species. The diatoms indicate that this interval could represent anything from Miocene to Quaternary, but nannoplankton indicate an age no older than Pliocene. A number of reworked Eocene diatoms were also observed in this interval and are indicated on Table 2 by an asterisk. Eocene diatoms are common in Cores 613-21 and 613-22, and are probably indigenous.

## ACKNOWLEDGMENTS

I would like to thank Howard Harper and Steve Root for reviewing this note and Wylie Poag for the opportunity to examine this material.

REFERENCES
Abbott, W. H., 1978. Correlations and zonations of Miocene stratigraphy along the Atlantic margin of North America using diatoms and silicoflagellates. Mar. Micropaleontol., 3:15-34.

Date of Initial Receipt: 29 April 1985
Date of Acceptance: 2 August 1985

Table 1. Occurrence of diatoms at Site 612 (Hole 612).

| Core-Section, interval (cm) |  |  |  |  |  | C. marginatus |  |  |  | 0 0 0 0 0 |  | 合 |  |  |  |  |  |  |  |  | ${ }^{2}$ |  |  |  | $\begin{aligned} & \text { y } \\ & \text { 券 } \\ & \end{aligned}$ |  |  |  |  |  |  | $\frac{8}{3}$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & 1-3,50-52 \\ & 2-3,50-52 \end{aligned}$ | $\begin{aligned} & 2 \\ & 1 \end{aligned}$ | $2$ | 1 | 1 |  |  | $\begin{aligned} & 2 \\ & 4 \end{aligned}$ | 2 |  |  |  |  |  |  |  |  | 2 |  |  | 2 | 2 |  |  | 1 | 4 |  | $\begin{aligned} & 1 \\ & 1 \end{aligned}$ |  | 1 |  |  | 3 |  | Quaternary |
| 3-3, 50-52 <br> 5-3, 50-52 <br> 9-3, 50-52 <br> $10-3,50-52$ | 1 <br> 3 |  |  |  |  | 5 | 7 |  | 2 |  |  |  |  |  |  |  | 9 |  |  | 1 | $8$ | $1$ |  |  |  |  |  |  | 2 |  |  | 1 |  | Pliocene to late Miocene |
| $\begin{aligned} & 11-3,50-52 \\ & 13-3,50-52 \\ & 14-3,50-52 \end{aligned}$ | 1 | 12 |  | 1 | 1 | 9 2 | 1 |  | 1 | 19 | 1 |  | 2 1 | 1 | 1 | 1 | 1 | 1 | 3 1 1 |  | 8 2 |  | 1 |  |  | 1 | 2 |  |  | 6 3 8 | 1 | 3 | $1^{*}$ | late Miocene? |

Note: * indicates reworked species. Samples examined from Cores 4,6 to 8 , and 12 were barren of diatoms.

Table 2．Occurrence of diatoms at Site 613 （Hole 613）．

| Core－Section， interval（cm） |  |  |  |  |  | 3 <br> 0 | 言 E U |  | 告 है U | Coscinodiscus spp. |  |  |  | 先 |  |  | Gramatophora sp． |  | $\begin{aligned} & \text { y } \\ & \frac{1}{2} \\ & 0 \\ & 0 \\ & \text { 友 } \\ & 0 \\ & 2 \\ & 2 \end{aligned}$ |  |  |  |  | $\begin{aligned} & z \\ & \text { z } \end{aligned}$ |  |  | $\begin{aligned} & \text { 苞 } \\ & \text { 合 } \\ & \text { 会 } \\ & \text { d } \end{aligned}$ |  |  | sाpous d d ］e spxansand |  |  |  |  |  | 至 号 N |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 2－2，50－52 |  | 4 |  |  |  |  |  | 4 | 2 |  |  |  |  |  |  |  |  |  |  | 1 |  |  |  | 2 | 1 |  | 30 |  | 1 |  |  | 2 | 1 |  | 2 | $9 *$ | Quaternary |
| 12－2，50－52 <br> 13－2，50－52 <br> 14－2，50－52 <br> 15－2，50－52 <br> 16－2，50－52 <br> 17－2，50－52 <br> 18－2，50－52 <br> 19－2，50－52 | 20 $\begin{array}{r}2 \\ 1 \\ 11\end{array}$ | $\begin{aligned} & 1 \\ & 2 \\ & 1 \end{aligned}$ | 1 2 1 | $1 *$ | 1 | 7 | $2$ | $\begin{aligned} & 1 \\ & 1 \\ & 7 \\ & 1 \\ & 5 \end{aligned}$ | 2 | 5 |  | $3$ | 1 | 1 | $2^{2}$ | 1 |  |  | 1 |  | 6 | ${ }^{16}$ | 1 | $\begin{array}{r} 16 \\ 1 \\ 18 \\ 22 \\ 15 \\ 1 \\ 5 \\ 1 \end{array}$ | 1 | 4 | $\begin{array}{r} 43 \\ \hline 21 \\ 15 \\ 12 \\ 2 \\ 9 \\ 5 \\ \hline \end{array}$ | $1$ |  |  | 26 1 | 1 <br> 1 <br> 1 |  | 3 | $\begin{aligned} & 1 \\ & 1 \\ & 6 \\ & 2 \end{aligned}$ | $5 *$ | Pliocene－Pleistocene with Miocene and Eocene reworking |
| $\begin{aligned} & 21-2,50-52 \\ & 22-2,50-52 \end{aligned}$ |  |  | 1 |  |  | 1 |  | $\begin{aligned} & 2 \\ & 4 \end{aligned}$ |  |  |  |  |  |  | 1 |  | 1 | 4 | 6 1 |  | 8 | $\begin{aligned} & 1 \\ & 5 \end{aligned}$ |  | 12 |  |  | 39 22 | 2 | $\begin{aligned} & 2 \\ & 1 \end{aligned}$ |  | 1 | $\begin{aligned} & 3 \\ & 2 \end{aligned}$ |  |  | 2 | $\begin{array}{r} 17 \\ 3 \end{array}$ | mid－late Eocene |

Note：＊indicates reworked species．Samples examined from Cores 4 to 11 were barren of diatoms except for one specimen of Paralia sulcata（found in Sample $613-6-2,50-52 \mathrm{~cm}$ ）．


[^0]:    ${ }^{1}$ Poag, C. W., Watts, A. B., et al., Init. Repts. DSDP, 95: Washington (U.S. Govt. Printing Office).
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