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RECORDS.

1961/31

MICROPALAEONTOLOGY OF SAMPLES FROM MATAI NO. 1. BORE PORTUGUESE TIMOR.

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Cuttings samples from the Matai No. 1 Bore were forwarded for examination by Timor Oil Limited, together with a sketch stratigraphical log of the bore. The labels on several samples received were damaged and illegible and the samples were discarded.

The section between 370 feet and 760 feet is shown on the stratigraphical column as block clay, with a small band of limestone between 615 feet and 625 feet. Smaller foraminifera are abundant including both indigenous specimens and specimens derived from pre-existing rocks. The fauna is uniform throughout the section and a composite list of the species identified is given:

Globigerinoides quadrilobatus quadrilobatus (d'Orbigny)
G. quadrilobatus (d'Orbigny) immaturus Le Roy
G. quadrilobatus (d'Orbigny) trilobus (Reuss)
G. quadrilobatus (d'Orbigny) irregularus Le Roy
G. ruber (d'Orbigny)
Globigerina bulloides d'Orbigny
G. subcretacea Lomnicki
Globorotalia cultrata (d'Orbigny)
G. scitula (Brady)
G. truncatulinoides (d'Orbigny)
Pulleniatina obliquiloculata (Parker and Jones)
Sphaeroidinella dehiscens (Parker and Jones)
Bolivinita quadrilatera (Schwager)
Pullenia bulloides (d'Orbigny)
Nonion pompilioides (Fichtel and Moll)
Cassidulina laevigata d'Orbigny
Ceratobulinina pacifica Cushman and Harris
Uvigerina sp.
Stilostomella lepidula (Schwager)
Bulimina aculeata d'Orbigny
Astrononion sp.
Hyalinea balthica (Schroeter)
Sphaeroidina bulloides d'Orbigny
Bulimina inflata Seuguenza
Bolivina robusta (Brady)
Laticarinina pauperata (Parker and Jones)
Hoglundina elegans (d'Orbigny)

The limestone band between 615 feet and 625 feet contains Amphistegina sp. and corals.

Derived specimens include Globotruncana spp. Rugoglobigerina sp. and Gümbelina sp. (Upper Cretaceous) and a keeled Globorotalia of a type characteristic of the Eocene. The beds between 370 feet and 760 feet are regarded as Upper Miocene in age, containing derived foraminifera of Upper Cretaceous and Eocene age.

At 760 feet the bore entered limestone, which continued to 830 feet. Small fragments selected from four samples in this interval contain larger foraminifera, indeterminate smaller foraminifera and algae. There is no evidence of any age other than Eocene for the limestone. The larger foraminifera include Discocyclina spp., Alveolina sp., Borelis sp. and Amphistegina sp; Miocene smaller foraminifera are also common in the cuttings. On the available evidence there are two possibilities:

(1) The Eocene limestone occurs as one large block as shown on the stratigraphical section, the presence of Miocene foraminifera being due to contamination of the cuttings.

(2) The Eocene limestone occurs as smaller blocks scattered throughout Miocene beds.

No samples are available from the red limestone occurring between 830 feet and 880 feet; this may also be a derived block. The bore then again entered clays containing small blocks of limestone. A Miocene fauna occurs in the clays, similar to that found between 370 feet and 760 feet. Fragments of limestone from the cuttings sample taken between 960 feet and 980 feet contain an Eocene fauna of Discocyclina spp., Pellatispira glabra Umbgrove and Amphistegina sp. One specimen of P. glabra was also found in the cuttings between 980 feet and 1,000 feet.

A sample between 1020 feet and 1040 feet, and a circulation sample at 1024 feet, were taken from a limestone which contains larger foraminifera, indeterminate smaller foraminifera and algae. Discocyclina spp. occur commonly, and Alveolina ovicula Nuttall is also present. The age of this limestone is also Eocene.

In the writer's opinion none of the limestones for which samples are available, except for the thin band between 615 feet and 625 feet, is in situ. If it were possible to core these formations during any future drilling operations, speculation on the nature of their occurrence would be reduced.

There is a gap in the samples between 1040 feet and 1300 feet. No microfossils have yet been observed in the samples between 1300 feet and 2000 feet, and the age of the beds is not known.