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MICROPALAEONTOLOGICAL EXAMINATION OF ROCK SPECIMENS FROM PORTUGUESE TIMOR.

by

Irene Crespin.

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Eight samples from localities in Portuguese Timor were recently submitted by Oil Drilling and Exploration Limited for micropalaeontological examination. The majority of specimens contained foraminiferal assemblages typical of Tertiary rocks throughout the Indo-Pacific region. However, one specimen contained a Permian assemblage.

A description of the faunal content of these rocks is given below:

Sample 1. Suai (1)

Hard foraminiferal limestone with numerous tests of large foraminifera, (Pellatispira common).

Calcareous Algae: Lithothamnium sp.

Foraminifera: Aktinocyclina cf. aster Woodring
Biplanispira absurda Umbgrove
Crespinella sp. nov.
Discocyclina dispansa (Sow.) var. minor Rutten
Discocyclina cf. pratti (Michelin)
Eorupertia sp.
Globigerina sp.
Operculinoides sp.
Pellatispira orbitoidea (Provale)
Pellatispira rutteni Umbgrove
Rotorbinella sp.

This limestone from Suai contains numerous well preserved tests of the restricted Eocene genus Pellatispira, two species P. orbitoidea and P. rutteni being recognised. Another interesting form is Biplanispira absurda. These species of Pellatispira and Biplanispira were described from the Middle Eocene of Bornea. Other Middle to Upper Eocene genera are Discocyclina and Aktinocyclina. The genus Crespinella is also represented by a new species which may be similar to the new species which is found in the Eocene beds in the Carnarvon Basin, in the Eocene deposits of the Nullarbor Plains and of the Aldinga area of South Australia.

Pellatispira and Biplanispira are characteristic of the lower part of "a-b" stage (Middle to Upper Eocene) of the Indo-Pacific Tertiary letter classification, and it is considered that this limestone from Suai is Middle Eocene in age. These two genera have also been found in New Guinea. No record of their occurrence in the Eocene of Timor has been discovered but Eocene rocks containing Discocyclina and Borelis are recorded from Portuguese Timor (Van Bemmelen, 1949).

Sample 2. Suai (2).

Hard, micaceous, calcareous sandstone with no microfossils. No age can be suggested for this rock.

Sample 3. (Poloka (1).

Hard limestone composed almost entirely of spherulitic bodies. No fossils are present to indicate an age for this rock.

Sample 4. Matai (1)

Greyish siltstone with abundant well preserved, planktonic foraminifera, especially Globigerina, and radiolaria.

Foraminifera: Bulimina rostrata Brady
Globigerina rubra d'Orb.
Globigerinoides sacculiferus (Brady)
Globigerinoides trilobus (d'Orb.)
Globorotalia menardii (P. & J.)
Orbulina universa d'Orb.
Pleurostomella brevis Schwager
Pullenia tina obliqualoculata (P. & J.)
Robulus sp.
Siphonodosaria lepidula (Schwager)
Sphaeroidinella dehiscens (P. & J.)
Uvigerina hispida Schwager

Radiolaria: Acanthosphaera sp.
Perodiscus sp.
Rhapolodictyum sp.

The above assemblage of planktonic foraminifera is typical of the Mio-Pliocene deposits throughout the Indo-Pacific region. It is regarded as the equivalent of "g" stage of the Indo-Pacific Tertiary "letter" classification.

Sample 5. Matai (2)

(a) Fragmental crystalline limestone with the foraminiferal tests almost completely altered.

Calcareous algae: Lithothamnium sp. (in included limestone fragment).

Foraminifera: Globigerina sp.
Vaginulinopsis sp. (in included fragment).

This rock is so altered that it is difficult to assign a definite age to it. It is most probably Upper Miocene ("g" Stage).

(b) Coral: Coeloria singularis Martin

This coral is found throughout the Indo-Pacific region associated with Mio-Pliocene foraminiferal assemblages.

(c) Hard limestone with foraminifera, radiolaria, sponge spicules and ostracoda.

Foraminifera: Cornuspira sp.
Dentalina sp.
Frondicularia sp. aff. F. woodwardi Howchin
Frondicularia spp.
Geinitzina triangularis Chapman and Howchin
Nodosaria sp. aff. N.pozitcarbonica Spandel

Radiolaria: Canosphaera sp.
Acanthosphaera sp.
Dictyomitra sp.
Rhapolodictyum sp.

Spongida: Siliceous sponge spicules

Ostracoda: Bairdia spp.

This rock contained an unexpected microfauna of Permian age. A thin section cut in one direction contained abundant tests of ostracoda with a few ostracods and with foraminiferarare. When a section was cut at right angles to the previous one and a little distance from it, the Section contained numerous radiolaria, several rests of foraminifera but with ostracoda not so common. The radiolaria give no clue as to the age of the rock. The abundance of the ostracoda genus Bairdia suggested that it might be Permian. The Permian age was confirmed by the foraminifera. They consisted chiefly of genera of the family Nodosaridae, the most important of these being Geinitzina triangularis a well-known Permian species in both eastern and Western Australia. Geinitzina was first recorded in Timor by Schubert in 1915, when he described a new species G. chapmani. There seems little doubt however that the figure of this species represents one of the many variants of G. triangularis of Chapman and Howchin (1905).

Sample 6. Matai (3)

Dark grey siltstone with indeterminate casts of foraminifera.

This rock is most probably "g" Stage (Upper Miocene) in age.

Sample 7. Ranuc (1)

Cream foraminiferal limestone with numerous large foraminifera.

Calcareous algae: Lithothamnium sp. (common)

Foraminifera: Crespinella sp. nov.
Cymbaloporа cf. cushmani Cole
cf. Nummulites.
Pellatispira madaraszi Hantken
Pellatispira orbitoidea (Provale)

This limestone from Ranuc is very similar to that described above from Suai. It contains many tests of Pellatispira (P. orbitoidea and P. madaraszi) and several tests of a new species of Crespinella also mentioned in the sample from Suai. Furthermore, it contains a form closely resembling Cymbaloporа cushmani described by Storrs Cole from the Middle Eocene of Cuba. This rock is referred to "a-b" stage and is Middle Eocene in age.

Sample 8. Aliambata (1)

Hard, dense Globigerina limestone, with abundant planktonic foraminifera.

Similar hard limestones consisting almost entirely of planktonic foraminifera are found at different horizons in "f" stage (Lower to Middle Miocene) in Papua and New Guinea. However, comments by Van Bemmelen (1949) do not suggest the occurrence of rocks of this age in the Aliambata district.

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