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MICROPALAEONTOLOGY OF FURTHER ROCK SAMPLES FROM PORTUGUESE TIMOR

by

Irene Crespin and D.J. Belford.

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Seven samples collected in Portuguese Timor by I.B. Freytag, were submitted by Timor Oil Limited for micropalaeontological examination. No stratigraphical information has been available and it has been difficult to give definite dating to some of the samples. The radiolarite samples TOL.859-2 and 859-5, are referred to the upper part of the Lower Cretaceous (Albian). The Globotruncana-bearing rocks, TOL.859-4 and 859-7, have been assigned to a definite position in the Upper Cretaceous sequence by one of us (D.J.B.) who has recently studied similar microfaunas in the Carnarvon Basin, Western Australia (Belford, 1959). Two samples, TOL. 859-1 and 859-3, contain an assemblage of minute Globigerinidae, which could not be determined specifically; they are tentatively referred to the Cretaceous. One sample, TOL. 859-6, is of Miocene age.

Detailed examination of Samples

Sample TOL.859-1. Field No.F4391A - Coast road, 1½ miles W. of the mouth of the Mota Cela River

Silty limestone with minute Globigerinidae.

Sample TOL.859-3. Field No.F4395B - Small Creek, approximately 3 miles E. of Betano Landing

Silty limestone with minute Globigerinidae.

These two samples are of similar lithology the first one is rather tougher. Minute Globigerinidae are present in both rocks, but because of the minuteness of the tests, it has not been possible to identify them specifically. It is possible that the rock may be Cretaceous in age.

Sample TOL.859-2. Field No.F4395A - Small Creek, approximately 3 miles E. of Betano Landing

Radiolarite with calcite veins. A thin section of this rock shows abundant tests of well-preserved radiolaria, about 90 per cent of the rock being occupied by these tests. Sections of Spumellarians and Nassellarians are represented. One discoidal form seems referable to Cenosphaera immanis Tan.

The following genera have been recognised:

Cenosphaera (abundant; large and small tests)
Dorysphaera
Lithomitra
Spongotripus
Sphaerostylus
Dictoymitra
Rhapolastrum
Porodiscus

Sample TOL.859-5. Field No.F4321A - Motta Maran (Betano), just S. of the Fatu Cuac road crossing

Slightly calcareous siltstone, with abundant radiolaria, both Spumellarians and Nassellarians.

The forms identified are:

Cenospaera cf. immanis Tan (common and large)
Cenosphaera sp.A (abundant)
Cenellipsis sp.
Ellpisoxphus cf. rugosus Tan
Eycritidium cf. brouweri Tan
Lithomitra cf. pseudopenguis Tan
Dictyomitra sp.A
Dictyomitra sp.B

These two samples of radiolarite are regarded as topmost Lower Cretaceous (Albian) in age. Some of the forms are comparable with species as yet undescribed from the Gearle Siltstone and Windalia Radiolarite of the Carnarvon Basin (Condon et al., 1956). Some seem to be referable to species described by Tan Sin Hok (1927) from the island of Rotti near Timor which are now considered to be of Mesozoic in age rather than Pliocene as suggested by Tan (Riedel, 1953). It is most probable that these radiolarites of Portuguese Timor are equivalent in age to the Lower Cretaceous radiolarian beds of northern Australia, where the age has been determined by the presence of zonal foraminifera and mega-fossils. Evidence in van Bemmelen (1949) suggests that the radiolarites in Indonesian Timor underlie the Upper Cretaceous Globotruncana beds.

Sample TOL.859-4. Field No.4395C - Small Creek, approximately 3 miles E. of Betano Landing

Calcareous shale with abundant Globotruncana and other planktonic foraminifera.

Foraminifera:

Globotruncana lapparenti lapparenti
Globotruncana lapparenti subsp.
Globotruncana sp.
Praeglobotruncana stephani stephani
Pseudogumbelina sp. cf. P.striata
? Pseudotextularia sp.
Rotalipora sp. cf.R.appenninica
Rugoglobigerina rugosa rugosa
Rugoglobigerina rugosa cf. rotundata

The age of this sample is regarded as Upper Cretaceous (Lower Turonian). The genus Rotalipora ranges from Albian to Turonian but Rotalipora appenninica ranges from the Cenomanian to Lower Turonian as does Praeglobotruncana stephani stephani. Globotruncana lapparenti lapparenti does not extend below the Turonian, neither does the Rugoglobigerina rugosa group.

Pseudogumbelina striata and the genus Pseudotextularia are known from the Senonian and younger beds.

The preservation of all specimens from this sample is the same, and there is no evidence to suggest that part of the fauna is reworked. It seems more probable that the previously known stratigraphic range of Pseudogumbelina is to be extended. (However, some workers refer the species

P.striata to the genus Heterohelix.) The present identification of Pseudotextularia is uncertain, but if confirmed the range of this genus will also be extended.

Sample TOL.859-7 - Fatu Cuac road, ½ mile W. of Ue Bua.

Marl with tiny lime and clay nodules. This sample has been examined in thin section. It contains abundant planktonic foraminifera, among which Globotruncana and Rugoglobigerina may be recognized. The age is Upper Cretaceous and it may be the same European equivalent as sample 859-5, that is Lower Turonian.

Sample TOL.859-6. Field No.F4407A - Low hill, on Fatu Cuac road, a little more than 1 mile N. of Betano landing

Silty limestone with planktonic foraminifera including Globigerina. No species could be determined from thin sections. The age of the rock is probably Miocene.

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