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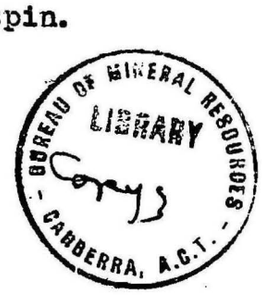
FORAMINIFERAL ROCKS FROM FIJI AND NEW HEBRIDES

by

Irene Crespin.



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Three rock samples, two from Fiji and one from the New Hebrides were submitted by the Geological Survey of Fiji for micropalaeontological examination. The samples contained foraminiferal assemblages of Lower Miocene ("f_1 stage"), Middle Miocene ("f_3 stage") and Upper Miocene ("g stage") ages.

Detailed examination of samples

1. Labassa, Vanua Levu

Ochreous to brown tuffaceous siltstone with abundant tests of larger foraminifera especially Lepidocyclina. The species recognised are as follows:

Anomalinella rostrata (Brady)
Alveolinella quoyi (d'orb.)
Amphistegina lessonii d'Orb.
Elphidium crispum (Linne)
Elphidium macellum (F. and M.)
Planorbulinella larvata (P. and J.)
Rotorbinella cycloclypeus (Howchin and Parr)
Operculina bartschi Cushman
Operculinella venosa (F. and M.)
Cycloclypeus inornata inornata Tan
Cycloclypeus indopacifica terhaari Tan
Lepidocyclina (Multilepidina) luxurians Tobler
Lepidocyclina sp. Form B.

The foraminifera other than the species of Cycloclypeus and Lepidocyclina, are well known species which range from Middle Miocene to Recent in Indo-Pacific deposits.

The two species of Cycloclypeus, C. inornata inornata and C.indopacificus terhaari, have both been recorded from the Fiji Islands by Cole (1945), and according to Tan (1932) are characteristic of deposits high in "f" stage in the Indo-Pacific area.

Megalospheric tests of Lepidocyclina are very common and belong entirely to the subgenus Multilepidina. Many thin sections have been examined and there seems little doubt that they represent the form L. (M) luxurians described by Tobler from Sumatra (1925-6). In 1934 Whipple described Lepidocyclina suvaensis from the deposits at Walu Bay (near the present site of the Shell Depot) at Suva. The nepionic apparatus of this species was typical of the subgenus Multilepidina.

Caudri (1939) regarded Whipple's species as synonomous with L.(M.) luxurians. Cole (1945) agreed with this. However, in 1945, Cole described two species from the island of Lau, Fiji, namely L.(M.) fijiensis and L.(Eulepidina) onataensis. Three figures (A, B, and C) of the latter form have nucleoconchs with trybliolepidine affinities and the fourth figure (D) with Multilepidina. All these variations in shape of the nucleoconch are given by Tobler in his figures

of L. luxurians and furthermore, these variations are present in the many sections prepared of the specimens from Labassa, Vanua Levu. The external features of Cole's two species are identical with the present forms as well as the shape of the lateral chambers. It is here suggested that L.(M.) suvaensis Whipple, L.(M.) fijiensis Cole and L.(E.) oneataensis Cole are conspecific with L.(M.) luxurians Tobler.

Fragments of microspheric tests are present and it is most probable that they represent the microspheric generation of L.(M.) luxurians.

The age of this rock is considered to be Middle Miocene, "f_3 stage" and is younger than the sample previously examined from Labassa, in which large tests of Eulepidina were found.

2. Valeni, Wailevu tilina, Savusavu Bay, Vanua Levu

Only small foraminifera were present in this sample.

Amphistegina sp.
Cassidulina pacifica Cushman
Cibicides mumdulus (Parker and Jones)
Elphidium crispum (Linne)
Globigerina bulloides d'Orb.
Globigerinoides trilobus (d'Orb.)
Globigerinoides conglobatus (Brady)
Globigerinoides sacculiferus (Brady)
Globorotalia menardii (P. and J.)
Gaudryina (Pseudogaudryina) sp.
Quinqueloculina lamarckiana (d'Orb.)
Pulleniatina obliquiloculata (P. and J.)
Orbulina universa d'Orb.
Sigmoilina sigmoidea (Brady)
Siphgenerina bifrons var.striatula Cushman
Spiroplectammina sp.nov.

This assemblage is regarded as Upper Miocene, "g stage".

3. Espiritu Santo, New Hebrides

Pebble from river. Dense grey fossiliferous limestone with calcareous algae and foraminifera and angular fragments of volcanic rock.

Foraminifera:

Calcarina cf.verriculata Chapman and Parr
Lepidocyclina spp.
Miogypsina sp.
Miogypsinoides sp.

On evidence available, this rock is regarded as Lower Miocene in age and equivalent of "f_1 stage".

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