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BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

Records 1968/82

THE FORAMINIFERAL FAUNA AND AGE OF SAMPLES FROM THE WIDE BAY-OPEN BAY AREA, EAST NEW BRITAIN

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Forty samples collected by R.P.Macnab from the Wide Bay-Open Bay area, east New Britain, have been examined. The samples are from the area covered by 1:250,000 sheet SB56-2, and all have the prefix 6869; the ages range from Eocene to Pliocene or younger.

68690551A-C; 68690552. Creek west of Awungi Village (Lakit Range).

0551A. Foraminifera, algae, molluscan fragments.

Operculinoides sp.cf. O. rectilata Cole
Gypsina sp.
Planorbulina? sp.
Amphistegina sp.
Carpenteria sp. (fragments)
rare planktonic foraminifera

The species of Operculinoides in this sample is very similar to the species O. rectilata described by Cole (1954) from Pliocene to Recent beds in Bikini drill holes. Sample 0551A is considered to be Pliocene-Pleistocene in age.

0551B. Foraminifera, coral, algae.

Mainly planktonic foraminifera (Globigerinidae, rare Globorotalia); also Sphaeroidinella-Sphaeroidinellopsis and possibly also Pulleniatina
Operculinoides sp. cf. O. rectilata Cole
Amphistegina sp.
Lepidocyclina (s.l.) sp. (one specimen)

The planktonic foraminifera suggest an age younger than that indicated by the specimen of Lepidocyclina. This specimen is thought to have been derived from a reef to a fore-reef environment, and the sample is most probably upper Miocene or younger in age with derived lower or middle Miocene specimens.

0551C. Foraminifera, algae, coral, bryozoa, echinoid spines, gastropoda

Fragments of Lepidocyclina (?Eulepidina) and indeterminable smaller foraminifera. This sample cannot be accurately dated. Lepidocyclina occurs only as broken (?derived) fragments, and the sample could be the same age as 0551B, that is, upper Miocene or younger with derived lower or middle Miocene.

0552. Abundant smaller foraminifera.

Globigerinoides obliquus obliquus Bolli
G.quadrilobatus (d'Orbigny) immaturus LeRoy
Hoeglundina elegans (d'Orbigny)
Neoeponides berthelotianus (d'Orbigny)
N.parantillarum (Galloway & Heminway)
"Eponides" subhaidingeri (Parr)

Age: upper Miocene.

68690557A-B. Wash in a stream north of Awungi Village.

0557A. Corals, algae. Age not known.

0557B. Mainly planktonic foraminifera (Globigerinidae; Sphaeroidinella)
Amphistegina sp.
Planorbulina? sp.

Age: Pliocene-Pleistocene.

68690564; 68690565. From Bera River, close to Wide Bay.

0564. Foraminifera, algae, echinoid spines, molluscan fragments.

Planktonic foraminifera (Globigerinidae)
Elphidium sp.
Amphistegina sp.
indeterminate smaller foraminifera

Age: probably Pliocene-Pleistocene

0565. Abundant foraminifera.

Alveolinella quoyi (d'Orbigny)
Cellanthus craticulatum (Fichtel & Moll)
Neoeponides parantillarum (Galloway & Heminway)
Sphaeroidinella dehiscens dehiscens (Parker & Jones)
Globorotalia tumida (Brady)
Globigerinoides quadrilobatus immaturus LeRoy
Operculina sp.
Operculinoides sp.
Heterostegina sp. (one fragment)
Planorbulina sp.

Age: Pliocene or younger.

68690567A-B. Bera River headwaters.

0567A. Foraminifera, coral, algae, bryozoa, ostracod.

Miliolids and indeterminable smaller foraminifera. Age not known.

0567B. Foraminifera, coral, algae.

Nummulites sp. cf. N.pengaronensis Verbeek
Heterostegina sp.
Cycloclypeus sp.
Amphistegina sp.
Carpentaria sp. (fragments)
indeterminable smaller foraminifera.

The specimens of Nummulites in this sample closely resemble those figured by Cole (1957) from Eniwetok drill holes as N. pengaronensis. On this evidence the sample is regarded as probably Eocene in age; a more distinctive fauna would be required for a definite age determination. The sample seems to consist of compacted worn pebbles. This sections show the irregular stained outlines of the pebbles; foraminiferal specimens are generally well preserved except at the pebble margins, where they are worn and broken.

68690569A-F. From Mumus Creek, southern tributary of Mevlo River, near Wide Bay.

0569A. Foraminifera, algae.

Lepidocyclina spp. (including Eulepidina)
Operculina sp.

This is a lower Miocene ("e" stage) fauna; the specimens are poorly preserved, worn and broken, and are obviously derived. These volcanic sediments are considered to have been deposited during the "e" stage, or to be immediately post-"e" stage in age.

0569B. Foraminifera, coral, algae.

Lepidocyclina (Eulepidina) sp.
Heterostegina sp.
Carpenteria sp.
Spiroclypeus sp. (one specimen)
indeterminable rotaline genus.

The comments on the previous sample (0569A.) also apply to this sample.

0569C. Foraminifera, mollusca (gastropods, pelecypods)

Flosculinella sp.
Operculina? sp.
indeterminable rotaline specimens.

This sample is also lower Miocene in age, but is slightly younger than the previous two samples and is referred to the lower "f" stage.

0569D. Foraminifera, coral, algae.

Carpentaria sp.
Gypsina sp.
indeterminable rotaline genus.

This fauna is insufficient for a definite age determination.

0569E. Foraminifera, coral, algae.

Lepidocyclina (Eulepidina) sp.
Heterostegina sp.
Carpenteria sp.
Cycloclypeus sp.
indeterminable rotaline specimens.

This is a lower Miocene ("e" stage) fauna; the comments on sample 0569A also apply to this sample.

0569F. Foraminifera (abundant plantonic foraminifera), algae.

Orbulina universa d'Orbigny
Globorotalia cultrata (d'Orbigny)
G. tumida (Brady)
Globoquadrina venezuelana (Hedberg)
G. altispira altispira (Cushman & Jarvis)
Globigerinoides quadrilobatus (d'Orbigny)
sacculifer (Brady)
Specimens which are possibly decorticated Sphaeroidinella.
Baculogypsina? sp.
Pulleniatina primalis Banner & Blow.

Age: uppermost Miocene or early Pliocene.

68690573A-C. From Sai No. 1 River, north side of Sai Valley.

0573A. Foraminifera, coral, algae.

Flosculinella sp. (fragments)
Sorites? sp.
indeterminable smaller foraminifera.

Age: lower Miocene (lower "f" stage).

0573B. Very rare foraminifera, algae, coral, gastropods.

One fragment of Sorites? sp.

Age: not known.

0573C. Foraminifera, algae.

Operculinoides sp. cf. O.rectilata Cole
Amphistegina? sp.
Carpenteria sp.
Elphidium sp.

Age: Pliocene-Pleistocene (compare sample 0551A).

68690575A-C; 68690577; 68690579. From southern tributaries of the Sai River.

0575A. Foraminifera, algae.

Flosculinella sp.
Lepidocyclina spp. (small specimens and fragments).
Planktonic foraminifera (Globigerinidae; Orbulina?)
Sphaeroidinellopsis sp.
Planorbulina? sp.

Age: lower Miocene (lower "f" stage).

0575B. Foraminifera, algae, bryozoa.

Lepidocyclina (Eulepidina) sp.
Heterostegina sp.
Amphistegina sp.
Planorbulina? sp.
Carpenteria sp. (fragments)
Planktonic foraminifera (Globigerinidae; Sphaeroidinellopsis)
indeterminable rotaline specimens.

Age: lower Miocene ("e" stage).

0575C. Foraminifera, algae.

Lepidocyclina spp. (small specimens and fragments)
Amphistegina sp.
Heterostegina sp.
Planktonic foraminifera (Globigerinidae)
indeterminable rotaline specimens.

This sample is possibly lower Miocene in age, but a precise age cannot be determined. The foraminifera are generally broken, and set in unidentifiable planktonic detritus.

0577. Foraminifera, coral, algae.

Indeterminable smaller foraminifera; age not known.

0579. Foraminifera, algae.

Austrotrillina sp. cf. *A.striata* Todd & Post
Sorites? sp.
indeterminable smaller foraminifera.

Age: lower Miocene ("e" stage)

68690582A-D; 68690583A-F. Behind Matanakunei Village, Open Bay.

0582A and B. Foraminifera, algae.

Lepidocyclina spp. (including *Eulepidina*)
Heterostegina sp.
indeterminable rotaline specimens.

Age: lower Miocene ("e" stage).

0582C and D. Foraminifera, algae.

Lepidocyclina spp. (*Eulepidina*; *Nephrolepidina*)
Heterostegina sp.
Miogypsinoides? sp.
indeterminable rotaline specimens.

This is a lower Miocene ("e" stage) fauna. The sample seems to consist of cemented worn pebbles; the weathered outlines of the pebbles are clearly visible in thin section, with broken foraminifera at their edges. These beds probably are formed from cemented reef debris, but there is no faunal evidence to indicate that this weathering occurred later that the "e" stage of the lower Miocene.

0583A. Foraminifera, algae, echinoid spines.

Lepidocyclina spp. (*Eulepidina*; *Nephrolepidina*)
Carpenteria sp.
Heterostegina sp.
Halkyardia sp. (two specimens, derived)
indeterminable rotaline genus.

This is a lower Miocene ("e" stage) fauna, and this sample also seems to consist of cemented reef debris. The specimens of *Halkyardia*, although well preserved, are considered to be derived, as this is an Eocene genus.

0583B. Mainly a coral-algal limestone, with some rare foraminifera.

Amphistegina sp.
indeterminable rotaline specimens.

Age: not known.

0583C. Foraminifera, algae, bryozoa.

Lepidocyclina spp. (including Nephrolepidina)
Heterostegina sp.
Amphistegina sp.
Operculinoides sp.
Elphidium sp.

Age: lower to middle Miocene.

0583D. Small specimens and fragments of Lepidocyclina and fragments of Cycloclypeus in a matrix of macerated benthonic and planktonic smaller foraminifera. No age is given for this sample; the specimens of larger foraminifera are derived into a probable fore-reef environment, and the smaller foraminifera in the sample are unidentifiable.

0583E. Foraminifera, algae.

Lepidocyclina spp. (including Eulepidina)
Carpenteria sp.

Age: lower Miocene ("e" stage).

0583F. Largely algal and coral debris, with rare foraminifera.

Heterostegina sp.
indeterminable rotaline specimens.

Age: not known.

68690584 A-C; 68690585A-C. From Lakit Range.

These samples contain foraminifera, algae, coral, and molluscan fragments. The composite foraminiferal fauna is:

Amphistegina sp.
Operculina sp.
Heterostegina? sp.
Rare planktonic foraminifera
indeterminable smaller foraminifera.

Age: Indefinite, but probably Pliocene-Pleistocene.

REFERENCES

COLE, W.S., 1954 - Larger Foraminifera and smaller diagnostic Foraminifera from Bikini drill holes. Prof. Pap. U.S. Geol. Surv., 260-O.

COLE, W.S., 1957 - Larger Foraminifera from Eniwetok Atoll drill holes (Bikini and nearby atolls, Marshall Islands). Prof. Pap. U.S. Geol. Surv., 260-V.

ADDENDUM:

Flosculinella sp. has been identified during further examination of samples 68690579 and 68690583B. As a result of this, sample 68690579 is still regarded as lower Miocene in age, but is referred to the lower "f" stage rather than to the "e" stage. Sample 68690583B, for which an age had not been determined, is also regarded as lower Miocene (lower "f" stage) in age.