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COMMONWEALTH OF AUSTRALIA.

DEPARTMENT OF NATIONAL DEVELOPMENT.

BUREAU OF MINERAL RESOURCES
GEOLOGY AND GEOPHYSICS.

RECORDS.

RECORDS 1958/32.

MICROPALAEONTOLOGY OF SAMPLES FROM THE YULE ISLAND, LAKEKAMU RIVER AND POPO AREAS, PAPUA

by

D.J. Belford.

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Twenty-four samples from the Yule Island, Lakekamu River and Popo areas were forwarded by Mines Administration Pty. Ltd. Samples from the Yule Island area were forwarded at the request of the Bureau of Mineral Resources, in an attempt to obtain larger foraminifera from the formations of this area; the remaining samples were forwarded for micropalaeontological study, and for the determination if possible of the environment of deposition of the samples.

A chart showing the different interpretations of the stratigraphy of this general area is attached; this chart is taken from a report by Stach (1941).

Results of the present examination are as follows:-

(1) Yule Island area

Five samples were collected from this area, Nos. 1826, 1830, 1836, 1887, and 1902. Samples Nos. 1826 and 1887, which are both yellowish sandy limestones, contain similar assemblages; No. 1826 was collected from a sea cliff 200 yards west-north-west of Pokama and No. 1887 from a sea cliff 3 miles north-north-west of Kairuku. Foraminifera are abundant, consisting mainly of Operculina, with rare Amphistegina, Elphidium and Rotalia; No. 1887 also contained fragments of Cycloclypeus.

Forms recorded are:-

Operculina ammonoides
O. bartschi
Amphistegina lessonii
Cycloclypeus sp.
Elphidium advenum
Rotalia sp.

Assemblages of this kind are known in this area from the top of the lower Miocene and the middle Miocene. These samples were taken from the Lavao Formation, from which other larger foraminifera indicating an "f3" age have been previously recorded (Stach, 1941). No diagnostic larger foraminifera were found during the present investigation, but the results of previous work indicate that these two samples are to be placed in the middle Miocene.

The remaining three samples from this area, Nos. 1830, 1836 and 1902, contain an assemblage of smaller foraminifera. Species recorded are:-

Sample No. 1830 Sea cliff below LMS Mission, Delena. Grey siltstone.

Globigerinoides trilobus
Globigerina bulloides
G. subcretacea

Globigerinella aspera
Orbulina universa
Sphaeroidinella seminulina
Bathysiphon sp.
Planulina wullerstorfi
Bulimina ovata
Cassidulina subglobosa

Sample No. 1836 Sea cliff, 250 yards north of LMS Mission, Delena. Yellowish calcareous siltstone.

Globigerina subcretacea
Globigerinoides trilobus
Orbulina universa
Globorotalia menardii
Astrononion sp.
Anomalina glabrata
Virgulina sp.
Quinqueloculina sp.
Uvigerina crassicostata
Loxostomum sp.
Bolivina tortuosa
B. quadrilatera
B. hebes
B. subreticulata
B. alata
Pseudogaudryina sp. 1
Pavonina flabelliformis
Trifarina bradyi
Ceratobulimina pacifica
Siphonodosaria insecta
Angulogerina sp. 1
Bulimina rostrata
Siphotextularia sp.
Tubulogenerina sp.
Alabamina tubulifera
Reussella spinulosa
Elphidium crispum
Rotalia beccarii
Cassidulina oblonga
C. subglobosa
Virgulina schreibersiana
Gyroidinoides soldanii
Siphonina tubulosa
Cyclammina sp.
Amphistegina lessonii
Operculina ammonoides
O. bartschi

Sample No. 1902 West of wharf at R.C. Mission, Yule Island. Brownish siltstone.

Globigerinoides trilobus
Globigerina subcretacea
Orbulina universa
Globorotalia menardii
Sphaeroidinella seminulina
Elphidium crispum
Uvigerina hispida
Reussella spinulosa
Pavonina flabelliformis
Bolivina tortuosa
B. hebes
Trifarina bradyi
Pullenia bulloides
Angulogerina sp. 1
Tubulogenerina sp.

Siphonodosaria lepidula
S. insecta
Pleurostomella alternans
Gyroidinoides soldanii
Cassidulina subglobosa
Pseudogaudryina sp.1
Ceratobulimina pacifica
Uvigerina schwageri
Anomalina glabrata
Pseudoclavulina sp.1
Siphonina tubulosa
Sphaeroidina bulloides
Eggerella bradyi

Stach (1941) found that in this area Uvigerina schwageri did not occur above the top of the Chiria Formation, and that Bulimina rostrata, Cassidulina oblonga, Angulogerina sp.1, Pseudoclavulina sp.1 and Ceratobulimina pacifica did not occur above the top of the Pupunina Formation. These two formations also contain larger foraminifera indicating an "fl-2" age, although none were found during the present investigation. These three samples are therefore regarded as "fl-2" age (upper part of lower Miocene).

(2) Lakekamu River and Popo areas

Four samples, Nos. 1002, 1003, 1004 and 1005 were collected 2½ miles north-north-east of the Olipai-Lakekamu junction. No. 1002 contained abundant smaller foraminifera, no microfossils were found in Nos. 1003 and 1004, and No. 1005 contained only very rare arenaceous foraminifera.

Sample No. 1002 Brownish siltstone.

Globigerinoides trilobus
G. sacculiferus
Globigerina bulloides
G. subcretacea
Orbulina universa
Globorotalia menardi
Bolivina tortuosa
B. hebes
Loxostomum karrerianum
Bulimina rostrata
Anomalina glabrata
Uvigerina crassicostata
Elphidium crispum
Gyroidinoides soldanii
Cassidulina subglobosa
Reussella spinulosa
Trifarina bradyi
Sphaeroidina bulloides
Pullenia bulloides
Eggerella bradyi

Sample No. 1005 Reddish silty sandstone.

? Haplophragmoides sp.

Mines Administration Pty. Ltd. tentatively suggested a Pliocene age for these samples. The writer regards sample No. 1002 as upper Miocene in age. Loxostomum karrerianum is a characteristic form of the "Loxostomum subzone" of the upper Miocene; it does not occur abundantly in this sample, but the fauna may represent some part of this subzone. It is not possible to suggest an age for sample No. 1005.

Several other samples were collected to the north-west and north-north-west of the Olipai-Lakekamu junction - Nos. 1006, 1008, 1009, 1010, 1012 and 1013. A Pliocene age was also tentatively suggested for these samples. No microfossils were found in them and no indication of their age can be given.

No microfossils were found in sample No. 1017, from the Bulldog-Wau road, about 8 miles from Bulldog. Sample No. 1019, from the western flank of the Kurai Hills, 5 miles south-east of Ululau, contained one specimen of Globorotalia menardii, which indicates only a general Upper Tertiary age, as the species ranges from the Miocene to Recent. No microfossils were found in sample No. 1020 from the same locality. Samples No. 1021 and No. 1023 were collected 7 miles south-east of Ululau; No. 1021 contained Cyclammina sp. and Trochammina sp., which do not indicate any definite age, and no microfossils were found in No. 1023. Samples No. 1027 and No. 1029 from the western flank of the Popo Anticline, 3 miles south-south-east of Popo Village, were also unfossiliferous.

Sample No. 1031 from near the culmination of the Popo Anticline, 3¼ miles south-south-east of Popo Village, contained abundant smaller foraminifera:-

Globigerinoides trilobus
G. sacculiferus
Globigerina subcretacea
Orbulina universa
Globorotalia menardii
Bolivina dilatata
Uvigerina peregrina
Bulimina marginata
Siphonodosaria insecta
Siphogenerina striata
Anomalina balthica
Pleurostomella alternans
Ceratobulimina sp.
Anomalina glabrata
Astrononion sp.
Gyroidinoides soldanii
Pseudoclavulina sp.1
Sphaeroidina bulloides
Cassidulina subglobosa
Pullenia bulloides

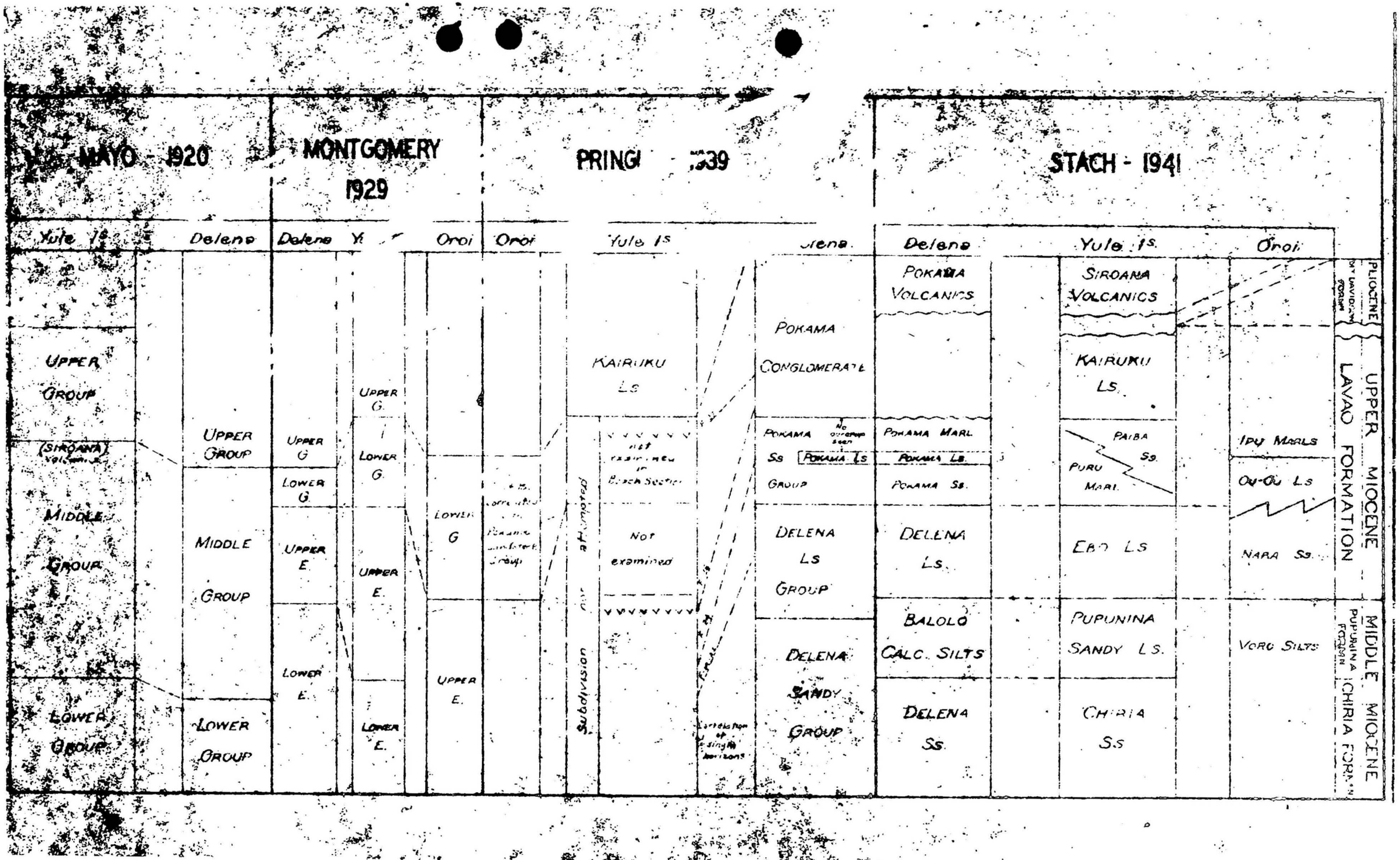
Age:- Upper Miocene.

Sample No. 1033, from the eastern flank of the Lesi Anticline, 8 miles south-south-east of Popo Village, was unfossiliferous.

The writer is not able to indicate the environment of deposition of these samples.

REFERENCE

STACH, L.W., 1941 Stratigraphy and Palaeontology of the Delena and Oroi Anticlines. Appendix I to Australasian Petroleum Company Report ME (unpublished).


MAYO - 1920
MONTGOMERY 1929
PRINGL ;39
STACH - 1941
Yule ls
Delena
Oroi
UPPER GROUP
(SIROANA Volcanics)
MIDDLE GROUP
LOWER GROUP
Upper G
Lower G
Upper E
Lower E
KAIRUKU LS
POKAMA CONGLOMERATE
Subdivision
Not examined
DELENA LS GROUP
DELENA SANDY GROUP
POKAMA VOLCANICS
POKAMA MARL
POKAMA LS
POKAMA SS
DELENA LS.
BALOLO CALC. SILTS
DELENA SS.
SIROANA VOLCANICS
KAIRUKU LS.
PAIBA SS.
PURU MARL
EBO LS
PUPUNINA SANDY LS.
CHIRIA SS
IPU MARLS
OU-OU LS
NARA SS.
VORO SILTS
PLIOCENE
UPPER MIOCENE
LAVAO FORMATION
MIDDLE MIOCENE
PUPUNINA FORMATION
CHIRIA FORMATION