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MICROPALAEONTOLOGY OF SAMPLES FROM VARIOUS BORES IN

THE CARNARVON BASIN, WESTERN AUSTRALIA.

by

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West Australian Petroleum Pty.Ltd. recently forwarded samples from four bores for micropalaeontological examination. The Onslow Bore, Pelican Hill Bore and Brickhouse Bore were drilled several years ago, and the samples were obtained from the Geological Survey of Western Australia. The Peron Peninsula No.2 Bore was drilled during 1954-1955 by Davis Hankinson and Company.

The stratigraphal sequence of samples in some cases seems to be incorrect; those samples which it is thought are misplaced are indicated in the report.

PERON PENINSULA No.2 BORE

This bore is situated six miles from Denhan township, at a bearing of 93 degrees.

- Depth:-375 feet. Yellowish sandy limestone.
This sample contains very rare and poorly preserved foraminifera, which are not identifiable. The age and formational equivalent of the sample is not known.
- Depth:-457 feet. Yellowish glauconitic sandy limestone.
Abundant bryozoa and echinoid spines.
Foraminifera rare, very poorly preserved.
- Depth:-546 feet. White sandy limestone.
Abundant bryozoa and echinoid spines.
Foraminifera very rare, very poorly preserved.
- Depth:-525 feet. White sandy limestone.
Abundant bryozoa and echinoid spines.
Foraminifera common but very poorly preserved.

These three samples are probably of Palaeocene age, and equivalent to the Pirie and Wadera Calcarenites of the Giralda Anticline.

Depth:-750 feet. Grey calcarenite.

Foraminifera: Globotruncana arca (Cushman)
Polivina incrassata (Reuss)
Cibicides voltzianus (d'Orbigny)
Neoflabellina sp.
Polivinoides decorata (Jones)
gigantea (Hilterman and Koch)
Gublerina sp.
Anomalina velascoensis (Cushman)
Marssonella oxycona (Reuss)
Cibicides excavata (Brotzen)

This sample is of Upper Cretaceous (Maestrichtian) age, and the formation from which it was taken is equivalent to the uppermost beds of the Korojon Calcarenite.

Depth:-900 feet. Grey calcarenite .

Foraminifera: Globotruncana arca (Cushman)
Bulimina triangularis (Cushman & Parker)
Globigerinella aspera (Ehrenberg)
Gumbelina globulosa (Ehrenberg)
Verneuilina parri (Cushman)
Spiroplectammina grzybowskii (Frizzell)
Cibicides voltzianus (d'Orbigny)
Lagena hexagona (Williamson)
Neoflabellina sp.
Gavellinella sp.

Depth:-1040 feet. White calcarenite.

Foraminifera: Globotruncana arca (Cushman)
G. lapparenti Brotzen tricarinata (Quereau)
Globigerinella aspera (Ehrenberg)
Eouvigerina aculeata (Cushman)
Neoflabellina sp.
Stensioina sp.
Spiroplectammina grzybowskii (Frizzell)
Cibicides excavata Brotzen
Marssonella oxycona (Reuss)

These two samples are Upper Cretaceous (Campanian) in age, and the formation from which they were taken is equivalent to the Korojon Calcarenite of the Giralda Anticline.

Depth:-1338 feet ("a" and "b") White calcarenite.

Foraminifera: Globotruncana lapparenti lapparenti Brotzen
G. lapparenti Brotzen bulloides Vogler
G. sp.
G. ventricosa White
Globigerina cretacea d'Orbigny
Eigenerina compressiuscula Chapman
Clavulinoides cf. trilaterus (Cushman)
Goesella chapmani Cushman
Anomalinoidea sp.
Verneuilina parri Cushman
Marssonella oxycona (Reuss)

This sample is Upper Cretaceous (Santonian) in age, and the formation is equivalent to the Toolonga Calcilutite of the Murchison River area.

Depth:-1349 feet. Black siltstone with pyrite and ?siderite. This sample is contaminated with species from overlying beds. Arenaceous foraminifera present are probably indigenous, also one gastropod and a fish tooth.

Foraminifera: Textularia sp.

This sample is either basal Upper Cretaceous or Lower Cretaceous in age, and the formation from which it was taken is regarded as equivalent to the Gearle Siltstone of the Giralda Anticline.

Depth:-1368 feet: Black carbonaceous siltstone with pyrite. This sample is contaminated with species from overlying beds.

Depth:-1373 feet. Grey siltstone with abundant pyrite. Arenaceous foraminifera common.

Foraminifera: Ammobaculites cf. fisheri Crespin
Trochamminoides sp.
Textularia sp.
Gaudryina sp.
Ammodiscus cf. cretaceous (Reuss)

Depth:-1386 feet. Black sandy siltstone, with pyrite, glauconite and ?siderite.
This sample is contaminated with species from overlying beds.

These three samples are of Lower Cretaceous age, and the formation is equivalent to the Gearle Siltstone of the Giralia Anticline.

Depth:-1420 feet. Dark grey to black siltstone.
Abundant, poorly preserved radiolaria.

Depth:-1475 feet. Dark grey siltstone.
Abundant, poorly preserved radiolaria.

These two samples are Lower Cretaceous (?Albian) in age, and the formation is equivalent to the Windalia Radiolarite of the Giralia Anticline.

Depth:-1488 feet. Coarse grained glauconitic sandstone.
Unfossiliferous. Equivalent to the Birdrong Formation.

ONSLOW BORE

This bore is near the east bank of the Ashburton River, 13½ miles from Onslow, at a bearing of 250 degrees.

Depth:-110 feet 3½ inches. White fine-grained limestone.

Foraminifera: Austrotrillina howchini (Schlumberger)
A sp. cf. striata Todd and Post
Marginopora sp.
Abundant small foraminifera, mainly Miliolidae.
Rare mollusca.

This sample is from the Trealla Limestone, and may be referred to the "f1-f2" stage of the East Indies classification.

Depth:-136 feet 8½ inches. White calcareous sandstone.
Unfossiliferous. Age and formation equivalent unknown.

Depth:-173 feet 10 inches White dense sandy limestone.
?Bryozoa and very rare small foraminifera.
Age and formational equivalent unknown.

Depth:-193 feet 1 inch. White sandstone.
?Radiolaria, very rare and poorly preserved. Age and formational equivalent unknown.

Depth:-207 feet 10 inches Glauconitic sandstone.
Abundant poorly preserved radiolaria and fish teeth. ? Lower Cretaceous in age.
The lithology and fauna of this sample are similar to deeper samples in this bore

Depth:-207 feet 10 inches - 209 feet 4 inches.
Limestone conglomerate.

Foraminifera: Austrotrillina howchini (Schlumberger)
Abundant smaller foraminifera.

Both the sample from 207 feet 10 inches, and that from 207 feet 10 inches-209 feet 4 inches, seem to be out of sequence. The former is similar in lithology and fauna to the sample at 406 feet 8 inches; the latter has the same fauna as the sample from 110 feet 3 1/2 inches and may also be referred to the "f1-f2" stage of the East Indies classification.

Depth:-244 feet 9 inches. Glauconitic limestone.

Foraminifera: Globigerinella aspera (Ehrenberg)
Globigerina cretacea d'Orbigny
Gauebelina globulosa (Ehrenberg)
Globotruncana cf. ventricosa White
 G. sp
Globorotalites conicus (Carsey)
Barsonella oxycona (Reuss)
Verneuilina parri Cushman
Eouvierina aculeata Cushman
Spiroplectamina grzybowskii Frizzell
Gaudryina sp.
Dorothia sp.

This sample is of Upper Cretaceous (Campanian) age, and the formation is equivalent to the Korojon Calcarenite of the Giralia Anticline.

Depth:-406 feet 8 inches. Glauconitic micaceous sandy siltstone. Abundant small radiolaria, very rare arenaceous foraminifera, and fish teeth.

Depth:-442 feet 10 inches. Glauconitic siltstone. Abundant poorly preserved radiolaria, rare arenaceous foraminifera.

Depth:-654 feet 2 inches Glauconitic sandy siltstone. Abundant poorly preserved radiolaria, and rare arenaceous foraminifera.

Foraminifera: Haplophragmoides sp.
Hyperammina sp.

Depth:1298 feet - 1313 feet. Grey glauconitic siltstone with abundant pyrite. Arenaceous foraminifera common, also radiolaria, usually replaced by pyrite.

Foraminifera: Ammobaculites cf. fisheri Crespin
Haplophragmoides sp.

Depth:-1485 feet. Grey siltstone with abundant siderite. Very rare arenaceous foraminifera.
? Reophax sp.

The samples from 406 feet 8 inches to 1485 feet probably range in age from basal Upper Cretaceous to Lower Cretaceous. The formation from which the samples were taken is equivalent to the Gearle Siltstone of the Giralia Anticline.

Depth:-1568 feet. Grey radiolarite. Abundant poorly preserved radiolaria, very rare and very poorly preserved foraminifera.

Depth:1692 feet. Grey glauconitic radiolarite. Abundant very poorly preserved radiolaria.

These two samples are of Lower Cretaceous age, and the formation is equivalent to the Windalia Radiolarite of the Giralia Anticline.

PELICAN HILL WATER BORE

This bore is situated about 10 miles north-east of Carnarvon.

Depth:-200 feet-250 feet. Yellowish limestone.

Abundant bryozoa and common foraminifera, usually poorly preserved and incrustated.

Foraminifera: Vaginulina midwayana (Fox and Ross)
Coleites reticulosus (Flummer)
Cibicides voltzianus (d'Orbigny)

This sample contains abundant bryozoa and also some foraminifera common in the Palaeocene beds of the Giralda Anticline, but also has rare Upper Cretaceous species. It is probable that most of the interval is of Palaeocene age, equivalent to the Wadera and Pirie calcarenites with only the lower part extending down into the Upper Cretaceous.

Depth:-250 feet-280 feet. White calcarenite.

Foraminifera: Globotruncana sp.
Neoflabellina reticulata (Reuss)
Bolivinoidea decorata (Jones) gigantea
Hilterman and Koch
Siphonodosaria aspera (Reuss)
Cibicides voltzianus (s'Orbigny)
Spiroplectamina grzybowskii Frizzell
Allomorphina trochoides (Reuss)
Fronicularia macronata (Reuss)
Gavellinella sp.
Gyroldina sp.

This sample is of Upper Cretaceous (Maestrichtian) age, and the formation is equivalent to the uppermost beds of the Korojon Calcarenite.

Depth:-450 feet-500 feet. Grey calcarenite.

Foraminifera: Globigerinella aspera (Ehrenberg)
Spiroplectamina grzybowskii Frizzell
Verneuilina parri Cushman
Neobulimina sp.
Anomalina velascoensis Cushman
Bulimina triangularis Cushman & Parker
Marssonella oxycona (Reuss)
Dorothia sp.
Citharina geisendorferi (Franke)

Depth:-700 feet-750 feet White soft calcilutite

Foraminifera: Globotruncana cf. arca Cushman
G. ventricosa White
G. lapparenti lapparenti Brotzen
Quadrinorphina allomorphinoides (Reuss)
Cibicoides sp.
Citharina geisendorferi (Franke)
Neoflabellina sp. aff. praereticulata
Hilterman.
Spiroplectamina grzybowskii Frizzell
S. laevis (Roemer) var. cretosa Cushman
Lagena hexagona Williamson

Depth:-850 feet-900 feet White soft calcilutite.

Foraminifera: Globotruncana lapparenti lapparenti Brotzen
Verneuilina parri Cushman
Globorotalites conicus (Carsey)
Ammodiscus cretaceus (Reuss)
Cibicoides sp.
Gyroldina sp.

These three samples are of Upper Cretaceous (Campanian) age, the fauna is similar to that of the Campanian beds in the Murchison River and Shark Bay areas (Toolonga Calcilutite).

Depth:-1040 feet-1050 feet. White soft calcilutite.

Foraminifera: Clavulinoides cf. trilaterus (Cushman)
Bigennerina compressiuscula Chapman
Anomalinoidea sp.
Marssonella oxycona (Reuss)
Reussella sp.
Guadrinorhina allomorphinoides (Reuss)

Depth:-1050 feet-1105 feet. Light grey to white.
? glauconitic calcarenite. Foraminifera rare, very small.

Foraminifera: Globigerinella aspera (Ehrenberg)
Marssonella oxycona (Reuss.)
Anomalinoidea spp.
Stensioina sp. nov.
Ammodiscus sp.

These samples are of Upper Cretaceous (Santonian) age. The assemblage contains species common in the Toolonga Calcilutite and the Gingin Chalk.

Depth:-1150 feet-1200 feet. Dark grey siltstone with pyrite.
Arenaceous foraminifera common, radiolaria very rare.

Foraminifera: Textularia sp.
Ammodiscus sp.
Trochammina sp.

This sample is probably of Lower Cretaceous age, and the formation from which it was taken equivalent to the Gearle Siltstone of the Giralda Anticline.

BRICKHOUSE STATION No.1 WATER BORE.

This bore is on the Gascoyne River, about 10 miles east-north-east of Carnarvon.

Depth:-179 feet 3 inches. Reddish brown calcarenite.

Foraminifera: Heterostomella austinana Cushman
Stensioina sp.
Spiroplectammina grzybowskii Frizzell.
Marssonella oxycona (Reuss)
Gavellinella sp.
Anomalina velascoensis Cushman
Cibicides voltzianus (d'Orbigny)
Globorotalites conicus (Caray)
Dorothyia sp.

Depth:-295 feet. Gray glauconitic calcarenite.

Foraminifera: Globotruncana arca (Cushman)
Gumbelina globulosa (Ehrenberg)
Spiroplectammina grzybowskii Frizzell
Anomalina velascoensis Cushman
Cibicides voltzianus (d'Orbigny)
Marssonella oxycona (Reuss)
Cyroidina sp.
Gavellinella sp.
Lagena hexagona Williamson
Dorothyia sp.

These two samples are of Upper Cretaceous (Campanian) age and the formation is equivalent to the Korojon Calcarenite.

Depth:-553 feet. White soft calcilutite.

Foraminifera:- Globotruncana lapparenti lapparenti. Brotzen
G. lapparenti Brotzen tricarinata Quereau
Clavulinoides cf. trilobatus Cushman)
Bisenerina compressiuscula Chapman
Neoflabellina praerugosa Hilterman
N. ovalis Wedekind
Anomalinoidea sp.
Marsenella oxycona (Reuss)
Verruculina porri Cushman
Ammodiscus cretaceus (Reuss)
Glomospira sp.

This sample is of Upper Cretaceous (Santonian) age, equivalent to the Toolonga Calcilutite and the Gingin Chalk. It is suggested that this sample is incorrectly labelled; the correct position should be somewhere between the sample at 900 feet, and that at 1171 feet.

Depth:-576 feet. Grey calcarenite.

Foraminifera: Neoflabellina numismalis Wedekind
Marsenella oxycona (Reuss)
Dorothia sp.
Spiroplectammia grzybowskii Frizzell
Anomalina velascoensis Cushman

This sample is regarded as Upper Cretaceous (Campanian) in age. The assemblage is similar to that of the sample from 295 feet in this bore.

Depth:-900 feet. White soft calcilutite.

Foraminifera: Globotruncana cf. arca (Cushman)
Globigerinella aspera (Ehrenberg)
Gumbelina globulosa (Ehrenberg)
Cibicides sp.
Cibicides excavata Brotzen.
Gyroldina sp.

This sample is of Upper Cretaceous (Campanian) age. The assemblage is similar to that in the Campanian beds of the Murchison River and Shark Bay areas.

Depth:-1171 feet. Grey radiolarite.

Abundant, poorly preserved radiolaria.

This sample is equivalent to the Windalia Radiolarite, of Lower Cretaceous (?Albian) age.