COMMONWEALTH OF AUSTRALIA.

MINISTRY OF NATIONAL DEVELOPMENT.

BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS.

RECORDS.
1952/66.

MICROPALAEONTOLOGICAL EXAMINATION OF SAMPLES FROM BORES IN NORTHERN NEW SOUTH WALES.

by

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14th August, 1952.

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Samples from four bores in the Great Artesian Basin of New South Wales were submitted for micropalaeontological examination, by the Water Conservation and Irrigation Commission of New South Wales.

These bores are:-

Bore No. 8213, T.N. Tym, "Trenton" Coonamble
Bore No. 8262, A.J. and J. Burns, "Montrose", Dubbo
Bore No. 8268, E.A. Hennessy, "Fair Oak", Dubbo
Bore No. 8272, Department of Agriculture, Wanaaring, Bourke.

The results of the detailed examination of these bores is given below.

Bore No. 8213, T.N.Tym, "Trenton", Coonamble

1630-1640 feet. Quartz grains and carbonaceous fragments.

1720-1726 feet. Quartz sand.

1767 feet. Ditto

1794-1796 feet. Carbonaceous sandstone, with abundant fragments of coal and plant remains indeterminate.

Only four samples were submitted from Bore No.8213. No microfossils were present but the abundant fragments of coal and plant remains at 1794-1796 feet suggest that the bore was in the Lower Cretaceous at this depth.

Bore No. 8262, A.J. and J. Burns, "Montrose", Dubbo

25-75 feet. Olivine basalt.

100 feet. Sandstone.

125 feet. Sandstone.

150 feet. Sandstone.

Six samples were submitted for examination from Bore No.8262. The samples from 25 feet down to 75 feet consisted of olivine basalt, most probably of Tertiary age.

The samples from 100 feet down to 150 feet consist of unfossiliferous sandstone. No evidence as to age is available.

Bore No. 8268, E.A. Hennessy, "Fair Oak", Dubbo.

25-250 feet. White to brown, fine-grained sandstone.

275 feet. Brownish-white sandstone with carbonaceous fragments.

300-350 feet. Grey carbonaceous sandstone and siltstone.

Fourteen samples were submitted for examination. The samples from 25 feet down to 250 feet consisted of unfossiliferous sandstone. Those from 275 feet down to 350 feet contained carbonaceous fragments and are most probably Lower Cretaceous.

Bore No. 8272, Department of Agriculture, Wanaaring, Bourke

280 feet. Fine-grained, glauconitic sandstone.

350 feet. Carbonaceous sandstone with numerous glauconitic grains, numerous foraminifera, especially calcareous forms, fragments of pelecypoda and ostracoda and a small indeterminate fish tooth.

Anomalina mawsoni
Apistomina sp. nov.
Haplophragmoides cf. globosa
Lenticulina australe
Lentineulina spp.
Marginulina australe
Marginulina cf. comma
Marginulina spp.
Marginulina bullata
Marginulinopsis cf. robusta
Marginulinopsis subcretacea
Robulus gunderabookaensis
Robulus warregoensis
Robulus sp.
Valvulineria infracretacea
Verneuilinoides schizea

400 feet. Carbonaceous siltstone with pyrite and abundant foraminifera calcareous tests common, and fragments of ostracoda.

Anomalina mawsoni
Dentalina linearis
Enantiodentalina sp.
Apistomina australiensis
Apistomina sp. nov.
Frondicularia cf. lorvi
Gyroidina loetterlei
Haplophragmoides sp.
Lagena laevis
Lenticulina crepidula
Lenticulina cf. varians forma recta
Marginulina australe
Marginulinopsis robusta
Pseudoglandulina humulis
Robulus gunderbookaensis
Robulus warregoensis
Robulus spp.
Valvulineria infracretacea
cf. Verneuilinoides

450 feet. Carbonaceous siltstone, with pyrite, abundant glauconite, foraminifera, (calcareous forms common), radiolaria and small fish tooth; also glauconitic replacement of foraminifera and radiolaria.

Ammobaculites sp.
Ammodiscus cretaceus
Anomalina mawsoni
Gyroidina loetterlei
Haplophragmoides globosa
Haplophragmoides dickinsoni
Haplophragmoides cf. neocomianus
Lenticulina spp.
Marginulina australe
Marginulina warreenesis
Marginulinopsis subcretaceas
Pseudoglandulina regularis
Robulus gunderbookaensis
Robulus sp.
Spiroplectammina edgelli
Valvulineria infracretacea
Verneulina howchini
Vernulinoides schizea

500 feet. Glauconitic siltstone with foraminifera, radiolaria, fish spines, and glauconitic replacement of foraminifera and radiolaria.

Ammodiscus cretaceus
Anomalina mawsoni
Globulina minuta
Gyroidina loetterlei
Haplophragmoides sp.
Lenticulina cf. tripleura
Lenticulina sp.
Marginulinopsis subcretacea
Robulus warregoensis
Robulus sp.
Spiroplectammina edgelli
Valvulineria infracretacea

550 feet. Grey carbonaceous siltstone with a few foraminifera, radiolaria, fragments of pelecypida and ostracoda.

Anomalina mawsoni
Lenticulina sp.
Neobulimina minima
Valvulineria infracretacea

600 feet. Carbonaceous sandstone with glauconite, abundant pyrite after glauconite and a few poorly preserved foraminifera, chiefly arenaceous forms.

Ammobaculites sp.
Bathysiphon sp.
Haplophragmoides cf.
Lenticulina sp.
Robulus sp.
Trochammina minuta

650 feet. Carbonaceous and glauconitic siltstone and sandstone with foraminifera, chiefly arenaceous forms.

Ammobaculites cf. goodlandensis
Ammobaculites minima
Amobaculoides romaensis
Bigenerina loeblichi
Haplophragmoides cf. chapmani
Siphotextularia cf. washitensis
Spiroplectammina cushmani

750 feet. Coarse carbonaceous sandstone with abundant pyrite and glauconite, foraminifera including replacement of tests by pyrite, fragments of wood and pelecypoda.

Ammobaculites sp. (Pyritic cast)
Ammobaculoides pitmani
Ammobaculoides cf. romaensis
Haplophragmoides cf. neocomianus
Marginulinopsis subcretacea
Pelosina sp.
Reophax sp.
Robulus warregoensis
Robulus sp.
Siphotextularia cf. washitensis
Trochammina sp.
Valvulineria infracretacea
Verneuilinoides sp.

800 feet. Carbonaceous sandstone with foraminifera.

Ammobaculoides minimum
Ammobaculoides pitmani
Bathysiphon sp.
Discorbis cf. floscula
Lagena laevis
Robulus sp.
Siphotextularia sp.
Trochammina minuta
Verneuilinoides cf. schizea

850 feet. Carbonaceous sandstone, abundant pyrite and a few foraminifera chiefly arenaceous forms.

Ammobaculoides minimum
Ammobaculoides pitmani
Ammodiscus cretaceus
Haplophragmoides sp.
Robulus sp.
Spiroplectammina edgelli
Verneulinoides sp.

900 feet. Hard, grey limestone.

950 feet. Carbonaceous sandstone with abundant pyrite and abundant small arenaceous foraminifera, chiefly crushed and partially replaced with pyrite.

Bathysiphon sp.
Enantiodentalina sp.
Globulina minuta
Haplophragmoides sp.
Robulus sp.
Siphotextularia washitensis
Spiroplectammina cushmani
Trochammina minuta

1,000 feet. Carbonaceous sandstone with numerous foraminifera, chiefly arenaceous species.

Ammobaculites sp.
Ammo aculoides minimum
Ammobaculoides pitmani
Ammobaculoides romaensis
Bucciorenata subgoodlandensis
Haplophragmoides sp.
Neobulimina minima
Robulus gunderbookaensis
Robulus warregoensis
Robulus sp.
cf. Siphotextularia (pyritic cast)
Spiroplectammina cushmani
Spiroplectammina edgelli
Trochammina minuta

This collection of fourteen samples from Bore No. 8272, is of Lower Cretaceous age. The samples consist of carbonaceous sandstone and siltstone. Glauconite is unusually abundant in some samples and the alteration of glauconite to pyrite is characteristic. A hard grey limestone is present at 900 feet.

Foraminifera are well represented in this bore and the majority of species are similar to those found in Bore No. 8264 (reported upon 11.7.52) which is about 30 miles to the north-west. Calcareous forms, especially species of the Lagenidae and Rotaliidae, are predominant in samples from 350 feet down to 550 feet and from 600 feet down to 1,000 feet the assemblage is dominated by arenaceous forms although calcareous species are still present.

The species of foraminifera present indicate that the samples from 350 feet down to 750 feet come within the second foraminiferal assemblage mentioned in the report on Bore No. 8264 (11.7.52) that is the one in which Valvulineria infracretacea and Anomalina mawsoni are the predominant species. Although Spiroplectammina cushmani which is prominent in the third assemblage in Bore No. 8264, does occur in the samples in Bore No. 8272 at the depth of 650 feet, it is suggested that samples immediately below 750 f et come into the third zone. This suggestion is based on the absence of V.infracretacea and A.mawsoni in all samples below 750 feet, that is, from 800 feet down to 1,000 feet.