



PE990205

THE FAUNA IN FERGUSONS HILL NO. 1 WELL

A detailed examination has been made on all cores and rotary cuttings in the interval 200 feet to 4,000 feet from Frome-Broken Hill's Fergusons Hill No. 1 well. In addition, 6 sidewall cores from the interval 1,831 to 2,430 feet were examined.

200 - 1,554 feet

Very few foraminifera were isolated. The species present are all common species in the Palaeocene faunas of the Wangerrip Group of both the coastal section and the Latrobe No. 1 drilled section. No foraminifera diagnostic of particular horizons were isolated.

1,554 - 2,048 feet

Core 1 (1,554 to 1,574 feet) contained a sparse fauna of Ammobaculites scotlandensis, Haplophragmoides sp. A. and H. sp. B. Such a fauna is typical of the top of the Upper Cretaceous foraminiferal sequence in the Port Campbell area (see Taylor, 1964).

Core 3 (2,020 to 2,031 feet) contained a richer arenaceous fauna including the above species as well as Ammobaculites cf. fragmentaria, A. subcretacea, Bithyniphon sp., Haplophragmoides sp. C. and Reophax ? sp. Such a fauna is typical of the Paaratte Formation as well as the upper portion of the Belfast Mudstone where the foraminiferal fauna is apparently affected by restricted water circulation. This fauna is within Taylor's (loc. cit.) Zonule A.

Sidewall core at 2,032 feet is of particular interest as it contains a fauna similar to the above, but includes a relatively large Textularia which has affinities to both T. semicomplanata and T. trilobita (a new species by Taylor, 1964). The disappearance of T. trilobita and the appearance of T. semicomplanata is one of the features that marks the boundary between Zonule B and Zonule A. However, it has been noticed that there is a transitional form at the base of Zonule A. Taylor regarded this transitional form as a morphotype of T. semicomplanata although its initial chambers are similar to T. trilobita. As the transitional form is present at 2,032 feet, this horizon can be correlated with the basal horizon of the upper part of the Belfast Mudstone in the Port Campbell area. Such correlations are as follows:- Port Campbell No. 1 from 5,230 to 5,350 feet; Port Campbell No. 2 from 6,800 to 7,000 feet; Flaxmans No. 1 from 6,200 to 6,300 feet.

No older Cretaceous faunas (i.e. Zonule B faunas) were found in the section as the Maarre Formation was entered at 2,048 feet.

Therefore the equivalent of the Paaratte Formation and upper part of the Belfast Mudstone is present in correlating this section with the Port Campbell No. 2 section. The lower part of the Belfast Mudstone is missing, which is not unusual when it is realised that this lower portion is present only in Port Campbell No. 1 and No. 2, and Flaxmans.

Paragraph has been amended Report not included in this Report.

The Upper Cretaceous sequence in Fergusons Hill No. 1 is of the order of 200 feet thick, whilst that in Latrobe No. 1 is less than 280 feet thick. From the foraminifera present it is assumed that Upper Cretaceous sedimentation commenced in Fergusons Hill before it did in Latrobe No. 1. This is not surprising considering the close proximity of the Latrobe well to the Mangerrip Group - Otway Group contact at Point Margaret, which is $2\frac{3}{4}$ miles to the east. Taylor (loc. cit.) has already shown that the Upper Cretaceous sediments are progressively onlapping the Otway Group. This proximity to the margin also accounts for the condensed sequence in Fergusons Hill. The same sequence in Port Campbell No. 2 occupies 1,700 feet.

Paragraph has been amended Report not included in this.

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Reference:-

Taylor, D. J. 1964 Foraminifera and the stratigraphy of the Western Victorian Cretaceous sediments.
Proc. Roy. Soc. Vict., 77 (2).