

1979/29. A diamond drill hole at Mt Cygnet

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Abstract

A fully cored hole at Mt Cygnet [EN12611835], the type area for the Cygnet Coal Measures, proved 35.2 m of Cygnet Coal Measures rocks overlying 18.3 m of Ferntree Mudstone.

INTRODUCTION

Mining at Mt Cygnet ceased in the immediate post-war years and the Cygnet Coal Measures succession of the type area thus became unavailable for study. Banks and Naqvi (1967) attempted a re-definition of the succession this time based on local coast sections. This however led to some confusion as to the relationships of the Cygnet Coal Measures to the overlying Triassic sandstone sequences and to the underlying Ferntree Mudstone. It therefore became necessary to prove the relationships in the original type area at Mt Cygnet. The hole was sited in the neighbourhood of the old mines at EN12611835.

The hole proved all the coal-bearing sequence of the Cygnet Coal Measures to a depth of 35.2 m and then continued in Ferntree Mudstone to a final depth of 53.5 m.

Stratigraphically the hole showed that the Cygnet Coal Measures overlie the carbonaceous mudstones at the top of the Ferntree Formation and are not the lateral equivalents of these beds as previously thought. Information derived from the hole also showed that the Barnettts Member, supposedly of Triassic age, is in fact the lateral equivalent of the Permian Cygnet Coal Measures. The term 'Barnettts Member' thus becomes redundant.

Four thin coals were found in the sequence. Only one appears to have been worked and old workings were encountered at a depth of 17.7 m. A second coal, 200 mm in thickness, was found at a depth of 21.7 m. Two thin (50 mm) leaves of coal lie between the two thicker ones.

Details of the succession encountered in the bore follow.

REFERENCE

BANKS, M.R.; NAQVI, I.H. 1967. Some formations close to the Permian-Triassic boundary in Tasmania. *Pap.Proc.R.Soc.Tasm.* 101:17-30.

[23 July 1979]

GEOLOGICAL LOG OF CYGNET NO. 2 (MT CYGNET) DIAMOND DRILL HOLE

| Depth (m) | Description | Formation |
|---------------|--|-------------------------|
| 0.00 - 3.20 | Soil and clay, buff in colour. | SUPERFICIAL DEPOSITS |
| 3.20 - 4.00 | Dolerite black, fresh dark grey. | |
| 4.00 - 4.27 | Brown clay. | |
| 4.27 - 6.24 | Dolerite blocks and fragments and clay. | |
| 6.24 - 9.21 | Soft medium-grained sandstone with some feldspar and some highly micaceous bands. | |
| 9.21 - 9.90 | White cross-bedded medium-grained sandstone. | |
| 9.90 - 13.61 | Wispy-bedded, fine-grained micaceous quartz sandstone. | |
| 13.61 - 14.92 | Coarse-grained, cross-bedded, micaceous, carbonaceous quartz sandstone. | |
| 14.92 - 16.18 | Siltstone, dark-grey, laminated and irregularly laminated, micaceous, sandy towards the base. | |
| 16.18 - 16.76 | Sandstone, coarse-grained - carbonaceous and micaceous. | |
| 16.76 - 17.77 | No core - OLD WORKINGS IN MAIN SEAM | |
| 17.77 - 18.10 | Mudstone, black, carbonaceous, plant fragments throughout. | |
| 18.10 - 18.21 | Grey siltstone, massive - featureless. | |
| 18.21 - 18.65 | Hard fine-grained silty sandstone. | |
| 18.65 - 19.10 | Black carbonaceous mudstone, full of plant fragments. | |
| 19.10 - 19.30 | Black carbonaceous mudstone with plant fragments. | |
| 19.30 - 19.35 | COAL | |
| 19.35 - 19.45 | Black carbonaceous mudstone, full of plant fragments. | |
| 19.45 - 20.13 | Black carbonaceous mudstone with much plant debris. | |
| 20.13 - 20.18 | COAL - shattered and fragmented in core box. | |
| 20.18 - 20.67 | Black carbonaceous mudstone and fragmented mudstone. | |
| 20.67 - 20.92 | Fine laminated sandstone. | |
| 20.92 - 21.76 | Black highly carbonaceous mudstone. | |
| 21.76 - 21.94 | COAL and fragmented coal. | |
| 21.94 - 23.02 | Dark grey siltstone, micaceous and carbonaceous. | |
| 23.02 - 24.32 | Ripple-drifted-cross laminated, wispy bedded rapidly alternating fine sandstones and black siltstones. | |

GEOLOGICAL LOG OF CYGNET NO. 2 (MT CYGNET) DIAMOND DRILL HOLE (continued)

| Depth (m) | Description | Formation |
|---------------------------|---|---|
| 24.32 - 28.83 | Fine-grained ripple-drifted wispy bedded sandstone with wisps of siltstone. | ←CYGNET COAL MEASURES → FERNTREE MUDSTONE → |
| 28.83 - 29.04 | Siltstone with irregular lamination and fine sandstone wisps. | |
| 29.04 - 30.37 | Cross bedded fine-grained sandstone and siltstone. | |
| 30.37 - 35.20 | Massive, medium-grained micaceous clean sandstone. Siltstone partings in lowest 180 mm. | |
| 35.20 - 38.64 | Fairly massive dark grey siltstone no fossils no pebbles seen. | |
| 38.64 - 41.03 | Fine black mudstones - ??slightly carbonaceous. | |
| 41.03 - 42.03 | Dark grey siltstones, massive, featureless, veined. | |
| 42.03 - 48.88 | Grey bioturbate siltstones of normal Ferntree type. | |
| 48.88 - 53.51 | Bioturbate siltstone. | |
| Hole terminated at 53.51. | | |