TR3-108-111

Coal Prospects of the Macquarie Plains and Plenty Areas

by A. B. Gulline

Introduction

The value of coal close to a paper industry in indicated by the interest shown by the Australian Newsprint Mills in the coal discoveries on Mt. Lloyd. For this reason a survey was made of areas of coal measures within easy reach of Boyer to determine the prospects of economic coal seams occurring in them. The areas examined are shown on the accompanying map.

Prospects

1. *Coal measures in the Macquarie Plains and Gretna area.*

The Triassic coal measures in this locality extend over approximately two and a half square miles. Near the south-western boundary shafts and an adit failed to reveal coal in economic quantities. The coal seam located was recorded as twelve to eighteen inches thick and not of good quality. As the adit and shafts are now filled in and the land has been cultivated, no samples of the coal remain, but a trace was seen near the site of the adit and shafts.

Examination of the whole area revealed a series of rocks consisting of felspathic sandstone, greenish shales and some dark grey and black shales. The area has been disrupted by several faults and as a result the strata are dipping from 5° to 30°. The dip is generally in a south-westerly direction. The faults and varying dips make calculation of the thickness of the sequence difficult. The rocks exposed are not characteristic of the coal-bearing portion of the Triassic coal measures, but correspond more closely to the lower beds of the coal measures. In the elevated part of the area the strata are the lowest of the coal measures lying just above the siliceous Knocklofty and Ross sandstones.

From the investigation of this area it may be concluded that:—

(*a*) The area is stratigraphically and structurally unsuitable for extensive occurrences of coal seams.

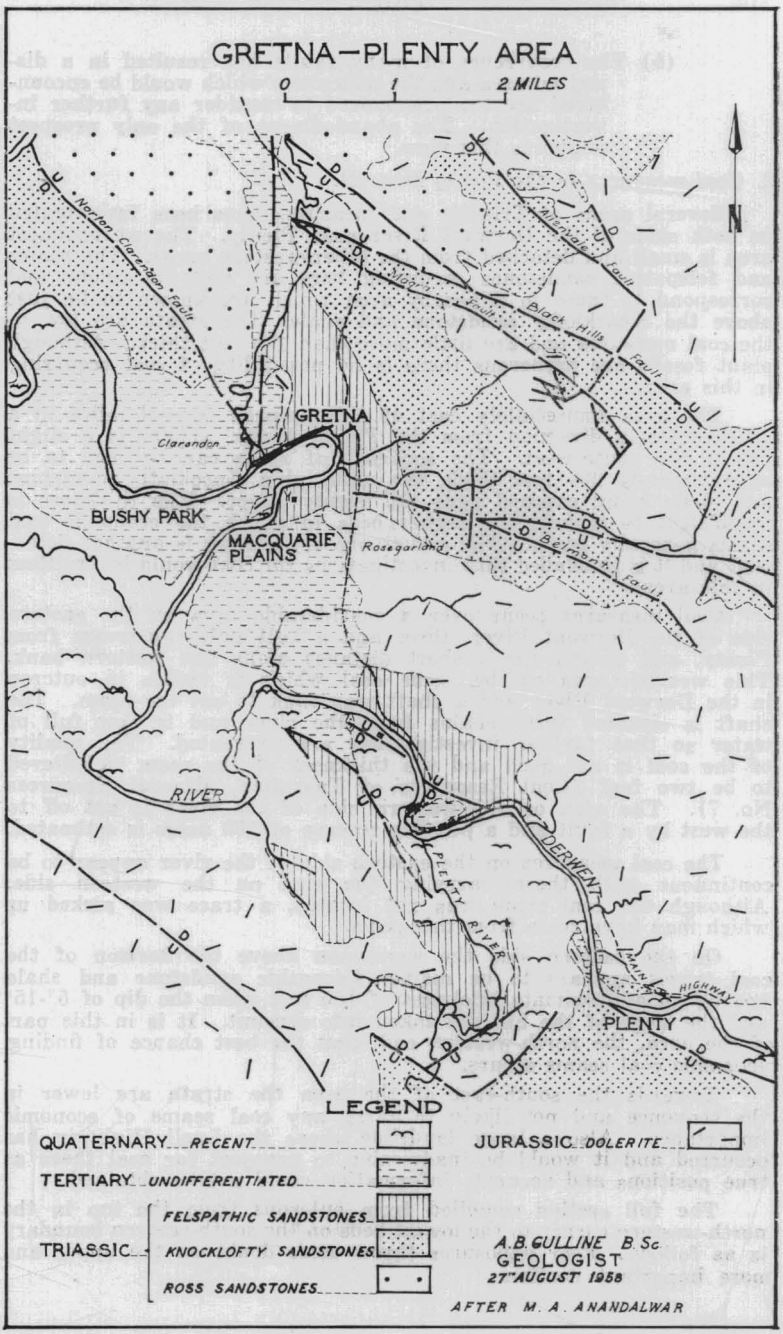
GRETNA—PLENTY AREA
0 1 2 MILES
N
Norton-Clarendon Fault
Millvale Fault
Black Hills Fault
GRETNA
Clarendon
BUSHY PARK
MACQUARIE PLAINS
Rosegarland
RIVER
DERWENT
PLENTY RIVER
HIGHWAY
PLENTY
LEGEND
QUATERNARY RECENT
TERTIARY UNDIFFERENTIATED
TRIASSIC
FELSPATHIC SANDSTONES
KNOCKLOFTY SANDSTONES
ROSS SANDSTONES
JURASSIC DOLERITE
A.B. GULLINE B.Sc.
GEOLOGIST
27TH AUGUST 1958
AFTER M. A. ANANDALWAR

Figure 23

(*b*) The occurrence of many faults has resulted in a disrupted area and the difficulties which would be encountered are too pronounced to consider any further investigation. The abandonment of the only prospect supports this view.

2. *Coal measures in the Plenty District.*

Several areas of Triassic coal measures have been investigated on both sides of the Derwent River near Plenty. The westernmost area is small and detached from the other western areas. The shales and felspathic sandstones occurring here are light in colour and correspond to those in a nearby area which are known to lie just above the Knocklofty sandstone and shale. The strata are low in the coal measures and are little more than 100 feet thick. Although plant fossils are numerous there is no possibility of coal occurring in this area.

The area immediately east of this extends several miles in a north-westerly direction from the Plenty River. There is a slight dip to the south-west. The sequence of rocks can be seen to be approximately 200 feet thick, the underlying Knocklofty sandstone and shale being exposed near the Plenty River. The thickness is insufficient to include the higher beds in which the economic coal seams generally occur. The occurrence of faulting is another deterrent and it is concluded that investigations for coal would be fruitless in this area.

Coal measures occur over a considerable area on the eastern side of the Derwent River, three and a half miles upstream from Plenty, and extend for a short distance along the western bank. This western area carries some coal which is visible in outcrop in the Derwent River and a shaft was sunk to cut the seam. The shaft is situated three chains from the river and is now full of water so that further investigations are prevented. The quality of the coal is not good and the thickness of the seam is believed to be two feet (Coal Resources of Tasmania, Mineral Resources No. 7). The area on the western side of the river is cut off to the west by a fault and a possible reserve of 160 acres is estimated.

The coal measures on the eastern side of the river appear to be continuous with those carrying the coal on the western side. Although the coal seam was not located, a trace was picked up which may have come from this seam.

On the eastern side the succession above the horizon of the coal traces appears to be mainly felspathic sandstone and shale having an approximate thickness of 100 feet when the dip of 5°-15° and the slope of the hill are taken into account. It is in this part of the area, the north-western end, that the best chance of finding economic coal seams occurs.

Towards the south-east of the area the strata are lower in the sequence and not likely to carry any coal seams of economic importance. Also a large landslide above the Lyell Highway has occurred and it would be inadvisable to prospect for coal there as true positions and accurate information could not be obtained.

The full section compiled from outcrops from the top in the north-western corner to the lowest beds on the south-eastern boundary is as follows. Poor exposures throw some doubt on the upper and more important portion.

Dolerite—transgressive intrusive boundary.

Approximately 100 feet—felspathic sandstone and shale which may include coal seams.
40 feet—felspathic sandstone and shale, including two feet coal seams.
45 feet—yellow shale.
60 feet—felspathic sandstone with interbedded yellow and grey shale.
12 feet—dark grey and carbonaceous shale.
45 feet—felspathic sandstone.
20 feet—black and grey shales.
15 feet—siltstone and shale.
2 feet 4 inches—carbonaceous shale.
1 foot 6 inches—hard siltstone.
16 feet—shale with sandstone and limestone lenses.
4 feet—carbonaceous shale.
12 feet—grey shale.
1 foot—black shale.
12 feet—grey shale.
1 foot—felspathic sandstone.
11 feet—grey shale.
1 foot—felspathic sandstone.
30 feet—grey shale with six-inch carbonaceous band.
10 feet—felspathic sandstone.
2 feet—shale.
10 feet—felspathic sandstone.
Dolerite.

Approximate thickness of coal measures 450 feet.

This is the apparent thickness of coal measures in the area and depends on the fact that no faults were seen which would alter this estimate. The position of these beds in the Triassic coal measures cannot be accurately determined because of the dolerite below and because of variations in characteristics between different coalfields. Hence correlation with the Langloh or Mt. Lloyd coalfields is difficult because of the lack of coal seams in the field under investigation.

Conclusions and Recommendations

1. Because of the stratigraphical and structural unsuitability of the Macquarie Plains-Gretna region for the extensive occurrence of coal seams, future prospecting in that area is not recommended.

2. In the Plenty district, the presence of one coal seam indicates the possibility of other seams occurring. It is suggested that surface investigation would supply confirmation or otherwise of this possibility. Any prospecting should be done up the hill on the eastern side of the Derwent River opposite the old shaft.