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Mt. Lloyd and Upper Plenty Coal Prospects

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Prospecting for coal near Mt. Lloyd has been carried out during the past six years. Some coal seams were found. Tests showed the coal to be of reasonable quality but the thickness of the seams was on the borderline of economic mining. The interest of an industry in this coal led to further investigations and several areas were mapped and prospected. The purpose of this survey was primarily to estimate the extent of the coal seams, and to find whether there were any thicker coal seams in the areas.

Examination of the aerial photos indicated several areas of coal measures. These were interpreted in greater detail from a low altitude aerial survey. The reasonably accessible areas were then mapped and finally prospected by a field party. It was decided not to prospect the very remote areas of coal measures until and unless encouraging results were obtained in the closer areas.

The areas referred to are shown on the accompanying map.

No. 1 Area

The northern extremity of this area is accessible by road from Upper Plenty.

The top of the coal measures forms a physiographic level below dolerite. The level extends for approximately two and a half miles and the thickness of coal measures is constant at about two hundred feet. Green, brown and dark grey shales with carbonaceous plant remains comprise the lower 150 feet whilst the upper 50 feet are felspathic sandstone and shales. These coal measures are underlain by Ross Sandstone. Prospecting by Mr. L. Teakle failed to reveal coal in this region.

No. 2 Area

This area, situated to the north-west of the Mt. Lloyd post office, comprises the most northern occurrence of the coal measures on Mt. Lloyd. Here a considerable thickness of shales and felspathic sandstone occurs above the Ross Sandstone. The area is bounded on three sides by transgressive dolerite.

Traces of black shale were found but no outcrops or traces of coal were discovered. Because soil creep and surface slippage occur on the steep hillside no good exposures exist. The upper beds which contain the coal seams have been eroded. Therefore no coal occurs in this area.

No. 3 Area

This area forms a bench on the slopes of Mt. Lloyd and is referred to as the northern flat. In this locality there are approximately 600 feet of coal measures, of which about 100 feet occur above the level of the flat. The thick talus cover prevents good

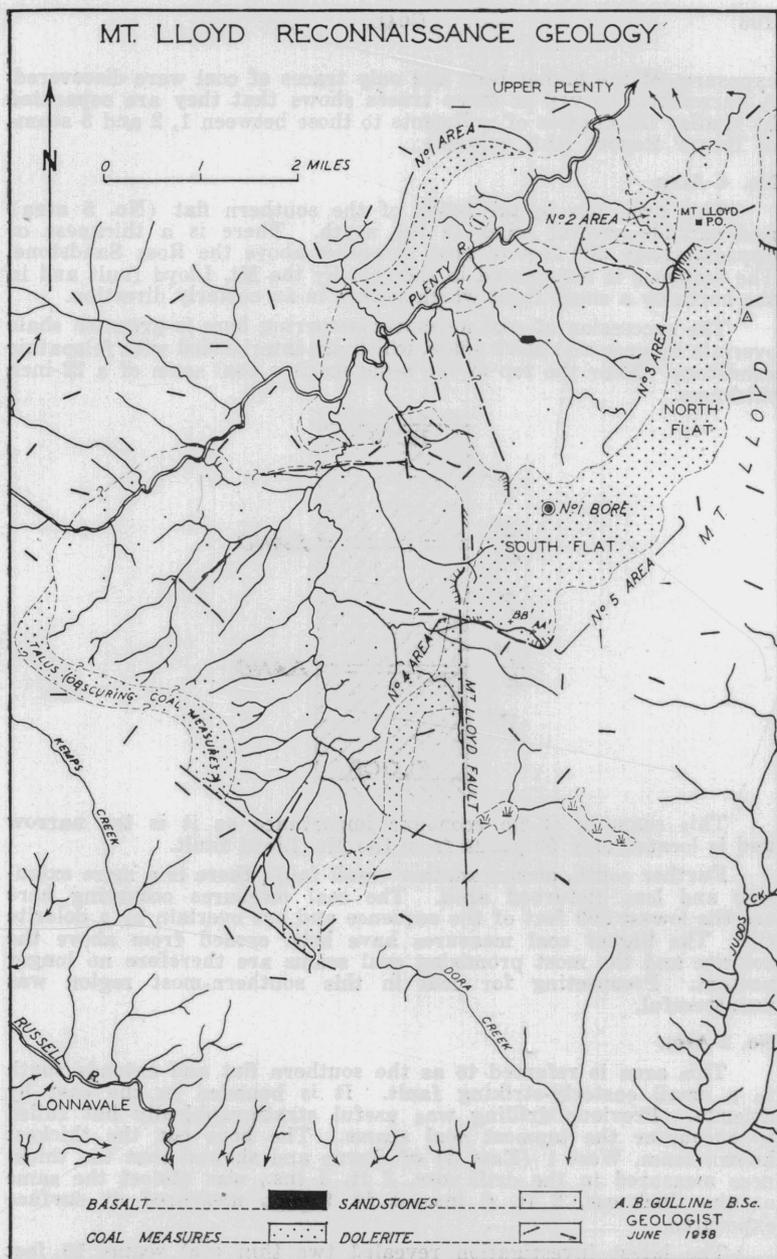
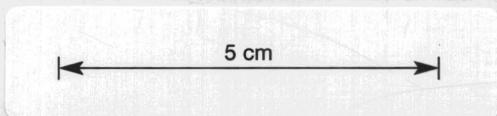


Figure 22

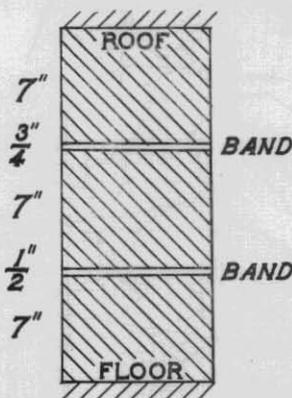


exposures of the higher beds and only traces of coal were discovered. A barometric survey of these traces shows that they are separated by similar thicknesses of sediments to those between 1, 2 and 3 seams of Burns' Report (this volume).

No. 4 Area

This area lies to the south of the southern flat (No. 5 area) and extends several miles to the south. There is a thickness of approximately 200 feet of coal measures above the Ross Sandstone. The sequence is terminated in the east by the Mt. Lloyd fault and in the north by a small fault which strikes in an easterly direction.

The succession of coal measures occurring here is greenish shale overlain by grey and black shale, which are interbedded with felspathic sandstone. Near the top of the sequence is a coal seam of a 22-inch thickness.



This seam is of no economic importance as it is too narrow and is located only 50 yards from the Mt. Lloyd fault.

Further south, across another small fault, there is a more extensive and less disturbed area. The coal measures occurring here are the lowest 200 feet of the sequence and are overlain by a dolerite sill. The higher coal measures have been eroded from above the dolerite and the most promising coal seams are therefore no longer present. Prospecting for coal in this southern-most region was unsuccessful.

No. 5 Area

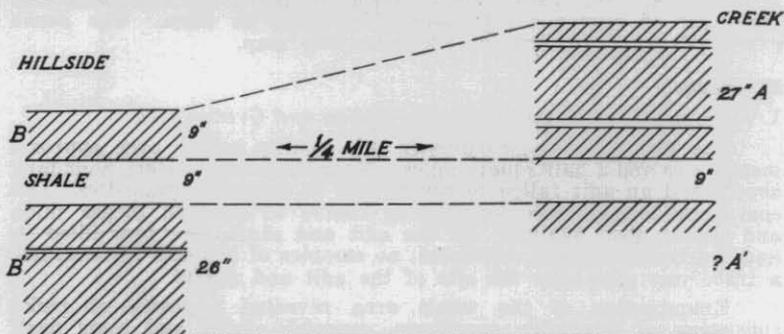
This area is referred to as the southern flat and extends south to a small easterly-striking fault. It is bounded in the east by dolerite. Previous drilling was useful stratigraphically but failed to encounter the topmost coal seams. The bore cut the thickest known seam, West 1 (East 3) of Burns and showed that the thickness measured in the drill core, 3 ft. 4 ins., was almost the same as the thickness, 3 ft. 6 ins.—3 ft. 9 ins., measured at surface exposures.

The latest investigation revealed two thin coal seams 10 feet apart which occur approximately 180 feet above the top of the Ross Sandstone. The thicker seam measures 22 inches and appears to be

identical with the 22-inch seam in area No. 4. There is a difference in height of about 80 feet between the seams in these two areas and this is a measure of the relative displacement of the beds after the occurrence of the Mt. Lloyd fault and the smaller easterly-striking fault. The smaller seam is 10 feet lower and is only six inches thick.

The previous investigations have revealed four major seams none of which corresponds with the 22-inch seam. As the 22-inch seam was not located by the drill it had apparently lensed out over the distance of one and a quarter miles separating its outcrop from the bore.

In a stream near the southern boundary of No. 5 area there are two coal seams, A and A', which are separated by about one foot of shale. The dip of these is 2° to 6° to the north-west. Two seams, B and B', are exposed on a hillside 20 chains to the north-west and about 50 feet lower altitude. These seams can apparently be correlated. Seam A measures 27 inches and has been tested. It is unsuitable for use as it has a low heating value and is high in ash (43%) (Hughes, 1952). A' outcrops less than one foot below A, but is underwater in the creek and could not be measured or sampled at this exposure. Seam B measures 9 inches in thickness and is separated from B' by 9 inches of shale. B' measures 26 inches and a 21-inch sample has been tested, giving a good heat value (11,860 cal.) and a low ash value (16.1%). However, these seams do not constitute an economic mining proposition as the combined thickness is not great enough in the hillside exposure. The thickness of A' is unknown and prospecting should be undertaken to determine this.



Further prospecting could be done in dry weather along this creek to try to locate other seams. Correlation may then be possible of these seams with those known in the north of area No. 5. Prospecting on the hillsides in the south of the area was unsuccessful due to dolerite talus cover but further efforts may reveal some seams.

Conclusions

1. This investigation resulted in the finding of one new seam which is not of economic importance.
2. Areas No. 1, 2 and 4 may be discarded as the coal measures are too low in the series to contain the promising coal seams.

3. No. 3 area is important in that the known seams can be expected to extend into it.

4. No. 5 area is the most worthy of attention and further prospecting here could determine the future of the field. However, it is necessary to camp for this work and drier weather should be chosen to enable prospecting in the southern creek.

5. From all exposures seen during the survey no indication of increase in thickness of the seams was obtained.

6. There is no cause for further drilling until a satisfactory coal seam is located by surface prospecting.