

## THE STRATHBLANE AND HASTINGS COAL FIELDS

The investigation of these coal fields was undertaken to ascertain the character and quality of the coal, the thickness and extent of the seams, their accessibility with reference to topographic features and their location with reference to lines of transportation.

The fields consist of isolated areas of coalbearing rocks which once constituted parts of the main body of Trias-Jura coal measures, but which were cut off by surface deformation and erosion or by the intrusion of diabase. Apparently the diabase in breaking through the sedimentaries carried up large blocks of these rocks thereby completely dislocating the strata and dividing the great measures into comparatively small fields. The irregular degree and direction of inclination and the subsidiary faulting of the strata are due largely to the uneven outline of the intruding igneous rock.

The evidence now in hand indicates that the Strathblane and Hastings seams are diential. Their continuity, however, has been interrupted by Creekton Rivulet which has completely dissected the upper coal beds. In addition to the main seams there are indications of others at a lower horizon in these measures, but these have not been penetrated. The impracticability of tracing the beds from one locality to another in this and neighbouring districts renders exact correlation quite impossible at the present time.

Although the inclination of the strata varies locally both in degree and direction, the beds have a general rise towards the east, consequently the coal outcrops on the eastern flanks of the hills.

In this district, although there are massive sandstone layers within the coal-bearing rocks, the coal occurs mainly in beds of soft shale and clay underneath a felspathic variety of the sandstone members.

The Strathblane field lies about 4½ miles southwest of Port Esperance, an almost land-locked harbor possessing every facility for shipping. A tramway, owned by the Strathblane Timber Co., connects the pier with the mills in Creekton Valley between Hastings and Strathblane mines. The approach to the mines is very easy and tramway construction is comparatively cheap.

A considerable amount of development work has been done and some coal has been shipped from the mine to market. Many of the old openings were inaccessible at the time of investigation and not much reliable information could be gathered as to the character of the coal and the thickness of the seam at these points. However, in the main workings the horizontal tunnels were entered and the seam was sampled and inspected.

In some places the roof of the mine is felspathic sandstone, but over most of the area thus far developed the roof is hard fire-clay and attains a maximum thickness of four feet. The floor consists invariably of fire-clay.

The thickness of the workable coal varies only slightly in this mine and as a rule it appears to be about 3 feet. This seam has been prospected in several places along the outcrop to the south-east and north-east of the

mine and found to continue for a considerable distance with unimportant variations in thickness.

At the main workings on the west side of the hill in which the coal is found the dip of the seam is at a high angle ( $18^{\circ}$ ) to the north-east, but on the east side the general inclination has been reversed and the dip is toward the south-west. It is possible that the location of the trough would enable operators to work the seam to the rise on both sides of a tunnel to be driven along the strike. It appears, however, that the reversal of dip is more likely due to a complete dislocation of the strata, and if so, the workings on the east side cannot be connected with those on the west. Everywhere the beds are upturned at a very high angle and at least two faults have been located. These facts must be taken into consideration in the design of future operations.

A section of the seam at the main workings shows:-

Grey Fireclay Roof	
Carbonaceous Shale .....	6 inches
Clean, Bright Coal .....	3 feet 0 "
Clay Band .....	3 "
Clean Bright Coal .....	4 "
Grey Fireclay Floor.	

A sample of the 3-foot seam shows an ash content similar to that of Mt. Nicholas and Cornwall coal.

The coal is a hard, clean, rather bright variety of bituminous. It ignites readily in the fire, burning with a long yellow flame and leaving a friable, white ash free from clinker. Although the coal is not far from the igneous rock it has not suffered appreciable damage. It is used principally as a domestic fuel for which it is highly prized, but it is valuable also for steaming purposes.

The vertical partings of the coal are well developed and the cleat is distinct. Below the 3-foot seam a three-inch band of soft clay provides easy ground for holing underneath. Although the coal is fairly hard it breaks down readily and is easily separated from the roof stone.

From the data obtained it is quite impossible to arrive at even an approximate estimate of the quantity of coal existing in this area. Outcrops have been located from Creekton Rivulet along the eastern flanks of the hill for two miles, but the westward extension of the seams has not been determined. The undisturbed rocks are not well exposed in this locality, the surface being covered with boulders and soil derived from the masses of diabase capping the ridge to the west and north. The heavy forest and thick undergrowth clothing the hills adds greatly to the difficulties of examination. It is quite evident, therefore, that a considerable amount of exploratory work is necessary before an idea can be formed of the coal resources of this area and before the best sites for attacking the seams can be selected.

Hastings mine lies two miles south of Strathblane on the opposite side of Creekton valley. Here the coal

emerges from beneath its cover of younger rocks and outcrops on the east flank of a low hill where the beds have been sharply upturned and exposed by erosion. The coal measure strata dip north of west at an inclination of 23 degrees, a considerable variation from the prevailing direction in the seams of the Strathblane mine.

The mine was opened up many years ago, but its development has been slow and little coal has been shipped from it. Three seams have been exposed by means of tunnels. The Main or No. 1 seam is 37 feet above No. 2, which in turn is 27 feet above the lowest seam. On the main seam, which dips at a high angle (23°), an incline shaft has been sunk, it is reported, over 200 feet. It has been suggested that the Nos. 1 and 2 seams are identical but in faulted position because the former has not been intersected in the lower tunnel. The dissimilarity shown between the sections of these seams in such a short distance discountenances this idea.

A sample of coal was taken for analysis where the section was measured about 50 feet down the dip tunnel from the entrance. It consists of the materials forming the entire thickness of the seam including a 2-inch band of clay shale.

The seam at this point consists of:-

Hard, Flinty Coal .....	1 foot	0½ inch)	
Soft Stony Coal .....	3	"	} 4' 9½"
Clay Shale Band .....	2	"	
Firm Bright Coal .....	4	"	
Soft Stony Coal .....	4	"	
Firm Bright Coal .....	2 feet	8 "	

A firm, felspathic sandstone occupies the roof, and shale the floor of the seam.

No. 2 seam consists of:-

Black Clod .....	7 ins.)	} 2' 4"
Bright Coal .....	6 "	
Clay Band .....	1 "	
Bright Coal .....	1 foot 9 "	

Firm felspathic sandstone forms the roof, and grey fireclay, the floor of the seam. A sample of this seam taken at the point of intersection in the horizontal tunnel showed it to be good average Trias-Jura coal.

The lowest seam where exposed in the horizontal tunnel contains only 19 inches of marketable coal.

In every respect the coal in this mine is similar to that in the Strathblane.

There are here evidences of considerable movement resulting in displacements of the strata.

The seams have been exposed on many of the timber haulage tracks traversing Crisp's section and the country

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adjoining it to the westward, but there is insufficient data to enable an estimate of the quantity of coal in this area being made with any degree of accuracy.

From the foregoing it will be perceived that the quality of the coal is comparable with that of the most important fields of the Eastern districts. The mines are easily accessible from Dover and only 38 miles by water from Hobart. Having in mind these and other advantages it is difficult to understand why these mines have not received more attention.

(Sgd.) A. McIntosh Reid

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