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NOTES ON TASMANIAN COAL & SHALE.

COAL.

The coal seams are contained in three different rock systems viz. Permo-Carboniferous, Triassic and Tertiary. The rocks of these systems are generally horizontally bedded or dip at only slight angles, having been affected by block faulting and tilting and not folding.

Permo-Carboniferous. A maximum of four seams occur in this system and at horizons corresponding to the Greta and Tomago of New South Wales. The four seams occur at Preolenna only, and only one or perhaps two seams occur in the other fields, viz. Barn Bluff, Pelion, Mersey Valley and Mt. Cygnet. The thickness ranges up to two feet.

The coal is generally of a bitumenous type with a tendency towards the cannel type. At Barn Bluff & Pelion the seams contain lenses of cannel coal or oil shale.

Typical analyses are:

Analyses of Permo-Carboniferous Coals.

	Moisture	Volatile Matter	Fixed Carbon
Preolenna	1.52	32.46	52.30
Illamatha	13.58	36.28	45.30
Spreyton	13.42	35.06	46.88
Mount Cygnet	1.10	10.36	66.04

	Ash	Sulphur	Chalorific value (Gross B.T.U)
Preolenna	13.72	5.87	12,204
Illamatha	4.84	4.39	11,056
Spreyton	4.64	4.04	10,711
Mount Cygnet	22.50	0.41	11,336.

In comparison with other Tasmanian coals they have a low ash and low fixed carbon content and high volatiles and high sulphur contents.

The probable reserves are not high and the four fields have an approximate reserve of 15,000,000 tons.

Triassic. Triassic coals occur in the eastern, midland and south-eastern districts. The maximum number of seams is eight, but the maximum number appear to be present only in the eastern fields. The thickness ranges (with bands) up to 16 feet, and the seams being mined have thicknesses up to 6 feet.

The coals are generally of one type, viz. semi-

bitumenous, but slight variations occur from district to district. They have a high ash, high fixed carbon, and a low volatile and low sulphur content. The ash is mainly intrinsic and very little can be removed by washing. The composition is illustrated by the following table:

	Range Per Cent	Typical
Moisture	1 to 4	4.30
Volatile Matter	18 to 28	21.27
Fixed Carbon	42 to 60	51.84
Ash	15 to 30	22.64
Sulphur	0.2 to 0.6	0.60
Colorific value (gross)	9,100 to 12,133 B.T.U.	10,145.

The probable reserves are approximately 115,000,000 tons. About 100,000 tons are mined each year.

Tertiary. Tertiary coals occur at a number of localities but have not been opened up or mined. The seams do not exceed 4 feet in thickness.

The coal is of the brown coal type. Analyses are given in the following table:

Analyses of Tertiary Coals.

	Moisture	Volatile Matter.	Fixed Carbon.	Ash
Macquarie Harbour	20.8	33.45	33.5	12.25
Rosevale, West Tamar	15.1	39.1	29.2	16.6.

They are characterised by high moisture and fairly high volatile contents, low fixed carbon content and moderate to high ash.

Oil Shale.

Two types of oil shale occur in the State, viz. the black shales of Preolenna and Barn Bluff, and the Tasmanite shale of Mersey Valley, &c.

Both types occur at the Greta horizon of the Permo-Carboniferous system.

The black shales are of the cannel coal or kerosene shale type. They give a high oil yield on distillation of 90 gallons per ton and greater. The reserve of this type is however small as they occur as large lenticular bodies in the bitumenous coal seam.

The Tasmanite shale occurs in a number of fields in the Mersey Valley and adjacent districts with an outlying field at Oonah.

The shale is a greyish rock consisting of fine quartz, clay, &c. containing numerous small discs of

a resinous substance which yield oil on distillation. The average ash content ranges from 70 to 90% and the silica content of the ash from 68 to 72.5%.

The shale seam has a thickness ranging up to 6 feet but the average is about 5 feet. It consists of three sections, viz. top shale, middle band and bottom shale, the middle band being very low grade. The top shale averages 2 feet, the middle band 1 ft. 3 ins. and the bottom shale 1 ft. 9 ins.

The average oil yield per ton of the top shale is 36 to 40 gals., of the middle band 7 to 8 gal, and of the bottom shale 29 to 32 gals. The average of the top and bottom shale is 33 to 38 gals. and the whole seam 26 to 29 gallons.

The shale contains 2.6 to 2.7% of sulphur and the crude oil contains a similar amount.

The crude oil yields petrol, kerosene, tractor oil, diesel and fuel oil, and bitumen.

The reserves can only be approximately estimated and probably are between 30 and 40 million tons. Very little development has been carried out in many of the fields.

P.B. Nye (Sgd)
GOVERNMENT GEOLOGIST.

Mines Department,
Hobart.
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