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Abstract

Schouten Island is located 1.6 km south of the Freycinet Peninsula. A large north-south trending fault divides the island into two geologically distinct parts. The higher relief of the eastern part, which is underlain by Devonian granite, contrasts sharply with the more gentle topography of the western part, which is underlain by Jurassic dolerite and Parmeener Super-Group rocks.

During small-scale mining activity in the 1840's coal was won from two adits and two shafts in the northern part of the island. The island was declared a National Park in 1967 and is therefore now exempt from provisions of the Mining Act, 1929.

LOCATION AND ACCESS

Schouten Island lies 1.6 km south of the southern tip of Freycinet Peninsula on the east coast of Tasmania. Access by boat is 19 km from Coles Bay or 24 km from Swansea. The principal anchorages for small boats are at Crocketts Bay or Moreys Bay on the northern coast of the island.

GEOLOGY

The island, which has an area of 28 km², has been mapped by Keid (*in Hills et al.*, 1922), Reid (1924), Hughes (1959) and Corbett (*in prep.*).

A major N-S trending fault divides the island into a rugged eastern part underlain by Devonian granitic rocks (mainly pink medium to coarse-grained adamellite), and a western part with subdued topography underlain by Jurassic dolerite and Parmeener Super-Group rocks. Quaternary deposits include recent coastal sand dunes, patches of windblown sand on coastal hills, and talus deposits fringing the extensive cap of dolerite west of the fault. Large recent landslides involving the dolerite and underlying Parmeener Super-Group rocks occur along the south-facing slopes of Milligans Hill, and the coastal plain in this area is underlain mainly by coarse dolerite blocks.

Permian rocks are exposed in a small area adjacent to the N-S fault on the south coast, and consist mainly of grey sandy mudstone, sandstone and dropstone conglomerate. A small outcrop of Permian mudstone also occurs on the fault zone west of Moreys Bay.

Triassic rocks are exposed in coastal cliffs around much of the western part of the island beneath the dolerite cap. A lower sequence of white, thick-bedded and cross-bedded siliceous sandstone, with some micaceous mudstone units and channel deposits, is overlain by, or faulted against, an upper sequence of grey lithic-feldspathic sandstone with interbedded carbonaceous mudstone and several small coal seams. The coal-bearing sequence occurs at sea level on the northern part of the island, where the coal workings were located, and has a N-S trending fault contact against the siliceous sandstone sequence one kilometre SW of Sandspit Point. The sequence on the southern part of the island is exposed mostly along the tops of the coastal cliffs, but is down-faulted to sea level east of Cape Faure by a series of NE-trending faults. The basal part of the sequence in the latter area includes some siliceous sandstone, and two small coal seams,

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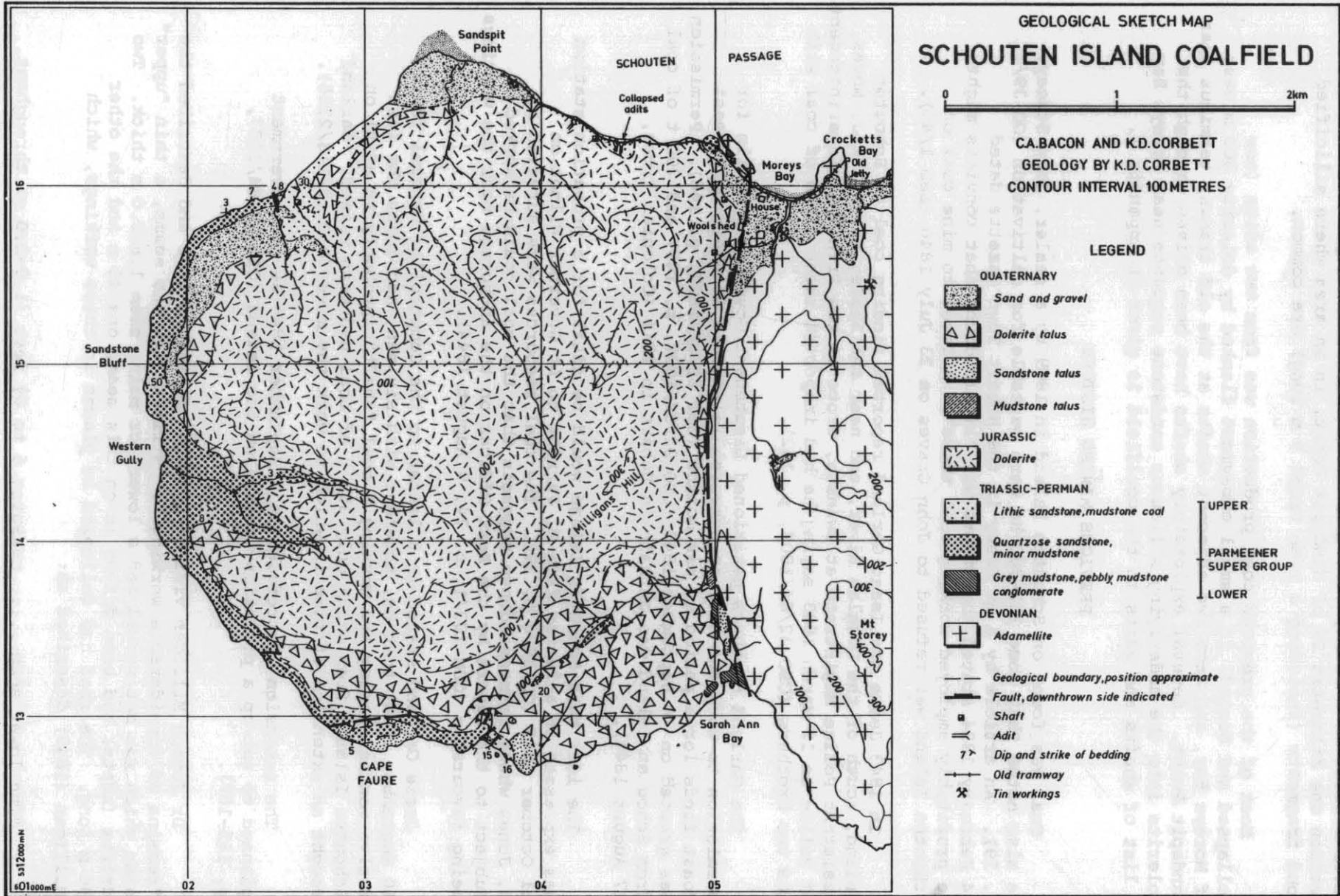
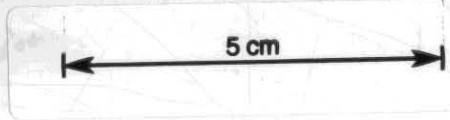


Figure 1



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380 mm and 150 mm in thickness, were recorded in a measured 18 m section. Several small coal seams, less than 200 mm thick, are exposed in the creek section one kilometre SW of Sandspit Point, in an area where silicified wood fragments (including a tree trunk 5 m long) are common.

Most of the previous coal production was from two adits (now collapsed and buried) in a small embayment flanked by dolerite 800 m west of Moreys Bay, and from two adjacent shafts at the old tramway terminus near Sandspit Point. Several exploratory shafts have been driven through the dolerite into the underlying siliceous sandstone sequence near Moreys Bay. A list of shafts and adits in the coalfield is given in Appendix 1.

PREVIOUS MINING HISTORY

Coal was found on Schouten Island in 1809 by a sealer, John Stacey. He also noted that some 200-300 ha were suitable for cultivation (GO 39/4 p. 29). An article by a Mr Busby in the Hobart Town Gazette dated 24 February 1824 stated that there was "little doubt that convicts might be profitably employed working coal there". A lease to mine coal on Schouten Island was refused to John Graves on 23 July 1840 (LSD 1/46).

In 1843 Jesse and Isaac Garland reported finding coal on Schouten Island, south of the Douglas River, and near the Apsley River. W.J. Noyes, Assistant Police Magistrate at Swansea, wrote to the Principal Superintendent of Police on 12 March 1843 saying he had inspected these finds of coal with the two brothers (CSO 22/84/1807, p. 142).

The Garland brothers petitioned Lieutenant Governor Franklin for permission to work the coal on Schouten Island and at their other east coast finds for a period of six months (CSO 22/84/1807, p. 146). Permission was granted on 16 September 1843 (CSO 22/84/1807, p. 149) and 200 t of coal from Schouten Island was on sale in Hobart in 1844 (Colonial Times, 27 August 1844).

The idea that Schouten Island would be ideal for a probation station was expressed in a letter from W. Jarrett to Lt Governor Wilmot on 11 October 1843 (GO 39/4 p. 39). The coal resources were surveyed by W. Jones whose correspondence suggests that the coal could be worked subject to the report by the Port Officer on the anchorage near the workings being favourable (CON 103/1, p. 74, 9 August 1844).

Jesse Garland stated in a letter to the Comptroller General (dated 10 September 1844) that he, together with six men, had spent the last twelve months opening and working a coal "shaft" (probably an adit) on Schouten Island, from which only 350 t of coal had been raised. Garland sought an extension of time in which to work the mine (CSO 22/113/2385).

The extension was refused on 9 September 1844 as the government planned to set up a probation station on the island (CSO 22/84/1807, p. 165-167).

Dr Joseph Milligan visited Schouten Island in 1848 and described the "remains of considerable workings". Milligan saw two seams, a thin "upper" seam which was not worked and a lower (or main) seam 1.8-2.0 m thick. Two drifts (adits) had been driven in on this seam, one 45 m and the other 90 m long. The roof had collapsed in places in these workings, which Milligan (1849) described as:

"The lower seam measures 6 to 6½ feet (1.8-2.0 m) throughout.

The old workings are of the following nature; one main drift a little above high water mark and nearly 6 feet by 6 feet (1.8 x 1.8 m), has been carried in the direction (SSW and WSW) or range of the seam for more than 100 yards (90 m). From this two branch galleries have been worked towards the crop so as to communicate around a massive square pillar. A narrow air course had been carried thence to the surface of the bank. The drift ended abruptly, and apparently in massive clay."

The Australasian Smelting Company was formed in August 1848 with the object of procuring copper or other ore to be refined in or near Van Diemen's Land (Hobart Guardian, 3 July 1850). The company applied for a lease to mine coal on Schouten Island for 21 years on 26 August 1848 (CSO 24/58/2076). Before the lease was granted, coal was illegally mined on Schouten Island, and 60 t was unloaded from the 'Lady Flora' and sold in Hobart. The lessee of the Government Coal Mine at Saltwater River, Alexander Clark, wrote to the Surveyor General on 16 November 1848 complaining about the newly arrived coal (CSO 24/78/2496).

A lease for seven years was granted to the company on 5 December 1848, on condition of payment of 2d/ton royalty on the coal mined (CSO 24/58/2076).

In 1849, offers were made by South Australian smelting companies to take 25 000 tons of coal per year for 21/- per ton (Denison to Grey, 18 May 1849).

The Australasian Smelting Company had a local board of directors (including Charles Swanston) and a committee in Adelaide (Hobart Guardian, 3 July 1850). The quality of Schouten Island coal was praised (Hobart Guardian, 10 July 1850). Swanston's company apparently formed the Schouten Island Coal Company to work the coal, and ten shares in the latter company were offered for sale in the Hobart Guardian of 16 July 1850.

Leases for coal were held from 1888-1892 by Signor A.G.D. Bernacchi and T. Bower. During this time Bernacchi extended the railway line, erected a jetty and sank at least one prospecting shaft. Bernacchi intended to use the coal on Maria Island, 25 km south of Schouten Island, as a fuel at the Maria Island cement works near Darlington.

Two leases were applied for in 1921 by A.L. Luttrell, who is reported by Keid (*in Hills et al.*, 1922) as having sunk a number of prospecting shafts on the island. Records of leases held by the Department show that these applications were not granted.

A lease for coal was held from August 1924 to December 1925 by J.A. Bernacchi-McRae. A lease for coal was held offshore, adjacent to the island from April 1978 to October 1979 by D.P. Denison.

COAL QUALITY

A sample of coal was analysed at the Museum of Practical Geology, London in 1850 (CO 1/78, p. 379). The sample was collected by Milligan in 1849 from the main (2 m) seam mined on the island.

The analysis results were:

Ash	27.17%	Sulphur	0.84%
Carbon	64.0%	Nitrogen	0.94%
Hydrogen	3.54%	Oxygen	3.50%

Reid (1924) noted that five coal seams had been found on the island. Samples were obtained from outcrops on the southern end of the island, near Cape Faure.

Reid (1924) reported that using the Segar Cove Method for determining the fusibility of ash, no softening of ash was observed at 1750°C. The coal was described as brittle, with a dull lustre and cuboidal fracture.

	1	2	3	4
Moisture (%)	9.0	6.5	4.2	2.5
Volatile carbonaceous matter (%)	27.94	28.46	19.10	16.10
Fixed carbon (%)	33.66	48.25	58.50	38.96
Ash (%)	25.40	26.41	18.20	42.4
Sulphur (%)	0.27	0.34	0.57	0.34

1. Spot sample from 'Eta Seam', 0.9 m thick.
2. Spot sample from 'Eta Seam', 0.9 m thick.
3. Spot sample from 'Theta Seam', 0.6 m thick.
4. Spot sample from 'Iota Seam', 0.3 m thick.

RECENT EXPLORATION

Hughes (1959) reported on the coal and tin prospects of the island, which was declared a National Park on 29 March 1967.

FUTURE POTENTIAL

The inferred reserves of black coal are very small, and being a National Park, the island is exempt from provisions of the Mining Act (1929).

REFERENCES

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CSO = records of the Colonial Secretary's Office
 LSD = records of the Lands and Surveys Department
 GO = records of the Governor's Office
 CON = records of the Convict Department

[10 August 1984]

APPENDIX 1

Approximate AMG references of shafts and adits on Schouten Island

SHAFTS

FP02621592	FP05101613
FP03831660	FP05051592
FP03861658	FP05081568
FP04301627	FP05001563

ADITS (COLLAPSED)

FP04421625
FP04451624