

Abstract

Following the discovery of coal in the Mersey-Don area in 1850, mining of coal continued intermittently until 1961. The coal is of Early Permian age and occurs in thin, faulted seams from 450-600 mm thick. Mining was by hand, using both bord and pillar and longwall methods of extraction. While low in ash content, the coal contains up to 5% sulphur. The thin and faulted nature of the coal seams, and the limited lateral extent of the coalfield, suggest that the area is of minimal interest for future exploration.

LOCATION AND ACCESS

This coalfield occupies an area between the Mersey and Don Rivers south of Devonport on the North West Coast.

The area of interest extends from Spreyton [DQ450360], five kilometres south of Devonport, in a southerly direction towards Railton [DQ520230]. Within this larger area, Burns (1965) has identified ten smaller centres of interest, these being the focal points of previous mining activity. These areas are: Tugrah (on the banks of the Don River) [DQ415338], Denny Gorge [DQ430337], Bott Gorge [DQ430310], West Spreyton [DQ448345], East Spreyton [DQ455343], Tarleton [DQ480342], Sherwood [DQ492338], near Nook [DQ450280], Dulverton [DQ500240], and at the mouth of Caroline Creek [DQ508320].

A number of sealed and unsealed roads provide adequate access to the various parts of the coalfield.

GENERAL GEOLOGY

The area has been examined by Milligan (1852), Selwyn (1855), Gould (1861), Stephens (1870), Thureau (1883, 1885), Twelvetrees (1911) and Reid (*in Hills et al.*, 1922).

The geology of the area is discussed in detail in Burns (1965), who gives the stratigraphy in the Mersey Coalfield as:-

Kelcey Tier Beds	180 m thick
Mersey Coal Measures	19-29 m+ thick
Spreyton Beds	48-176 m+ thick
Basal conglomerate	0-55 m+ thick

These four units belong to the Lower Division of the Permian Super-Group and are Permian in age.

The basal conglomerate is composed of sub-angular pebbles (ranging up to 50 mm in diameter) of white quartzite, schist and conglomerate. The matrix is feldspathic sandstone. The conglomerate is overlain by the Spreyton Beds which consist of interbedded siltstone, mudstone and pebbly sandstone. Horizons rich in shells are common. The Mersey Coal Measures overlie the Spreyton Beds and consist of (lithic) sandstone with minor mudstone and thin coal seams. The overlying Kelcey Tier Beds is composed of interbedded mudstone, pebbly mudstone, siltstone and sandstone (Burns, 1965).

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Jurassic dolerite has intruded the sedimentary sequence and now caps much of the higher ground in the coalfield. The coal seams, which are on average 450-600 mm thick, have been disrupted by faulting of probable Tertiary age.

The Mersey Coal Measures are of Early Permian (late Sakmarian-early Artinskian) age and pre-date the Artinskian Greta Coal Measures of N.S.W. (Noldart, 1975). An examination of microflora from samples collected in the vicinity of Tarleton (presumably near the Tarleton Colliery) and Illamatha (presumably near the Illamatha Colliery) was made by Truswell (1978) who concluded that the microfloral assemblages were probably as young as substage 3B (*i.e.* Bernaccian) in age (M.J. Clarke, pers. comm.).

The Tasmanite Oil Shale is not a lateral equivalent of the Mersey Coal Measures, occurring at a much lower horizon within the Parmeener Super-Group (Noldart, 1975) and is, in fact, Late Carboniferous (Tamarian) in age (M.J. Clarke, pers. comm.).

PREVIOUS MINING HISTORY

BOTT GORGE

In 1851 Messrs Dean and Cocker were en route from the Leven River to Launceston when they were benighted on a tier near the Don River and forced to spend one night as the guests of two burly timber splitters, Powell and Ayres. Dean noticed that the hut fire was fuelled with coal, and on the offer of five sovereigns, the timber splitters showed the two visitors where coal could be found. On reaching Launceston, Dean quickly formed a syndicate to work this find of coal. The Launceston Syndicate lost no time in purchasing some 690 ha of land from George Augustus Robinson and started prospecting work (Ramsay, 1958). This area, at the mouth of the Bott Gorge, was inspected by Milligan (1852), who records seeing fragments of bituminous coal in the channel of a tributary of the Don River, and three beds of coal from 250-400 mm thick in the channel of the Don River.

A shipment of 12 t of this coal was sent to Launceston in February 1853 on the cutter 'Mountaineer' and samples were exhibited. The Mersey Coal Company was formed by the Launceston Syndicate, raising 25,000 pounds as working capital from the sale of 1000 shares at 25 pounds each. William Dawson was engaged as surveyor and manager of the planned mines, the company sent to England for experienced miners, and the construction of a tramway and installation of mining machinery started (Ramsay, 1958).

The mining operations were visited by the Governor, Sir William Denison, in February 1853. Dean had disagreed with the extravagant and wasteful nature of the initial operations, and had since left the syndicate to go prospecting on his own.

The shaft, which was sunk to a depth of 100 m, was noted by Selwyn (1855) to be situated in fossiliferous limestone and shale, in which no coal would be found. Selwyn (1855) was of the opinion that all but 0.4-0.8 ha of the land held by the company was unprospective. The company dug an adit into an outcrop of coal, but the seam was cut off by a fault.

After spending nearly 20,000 pounds in fruitless endeavour, the company was wound up and the miners paid off in 1857. No further work was done in this area.

DENNY GORGE

Denny Colliery (1853-1854)

Dean formed a new company in late 1853 to work coal discovered on Mr J. Denny's land. The company rented the ground for 500 pounds per year, but after working for only one year and raising 3000 t of coal, difficult mining conditions caused by excessive faulting caused the operation to cease. Denny was awarded 1000 pounds compensation for non-fulfilment of the lease (Ramsay, 1958). The mine was known as the Denny Colliery and was situated on the east bank of the Don River near the mouth of Denny Gorge. Four shafts were sunk, although most of the production came from only one. The workings are described by Selwyn (1855), Gould (1861) and Burns (1957). Selwyn (1855) records that the coal seam was 660-710 mm thick.

Novelty Colliery (1938-1939)

A new mine was opened close to the old main shaft of the Denny Colliery in 1938. These workings were known as the Novelty Colliery and produced coal for only two years (1938-1939).

TARLETON

An experienced Welsh miner, Zephaniah Williams, was arrested on a charge of high treason in connection with the Chartist riots in Britain in 1848. Williams was transported to Van Diemens Land, but was later pardoned on the condition that he did not return to the United Kingdom.

Williams was introduced to the Mersey coalfield by Dean, who suggested he be appointed as manager of the Launceston Syndicate's initial operations near the Don River (at the mouth of Bott Gorge). However other syndicate members rejected Williams.

At the time (1851) Williams was engaged in mining coal at New Town. After his inspection of the Mersey coalfield he promptly sold his New Town mine and formed his own company of which he assumed the position of manager and returned to prospect in the Mersey coalfield. Members of Williams' company bought some 800 ha of land between the Mersey and Don Rivers. Prospecting work commenced by sinking a shaft south-west of the township of Tarleton. By late 1853 Williams had located various outcrops of coal and extravagantly sent to England and Wales for experienced miners as well as ordering the building of forty brick cottages for them and a cottage for himself (Ramsay, 1958).

The shaft, which was dug to a depth of 80 m, was barren of coal. Selwyn (1855) inspected the work and declared that the shaft was sunk in fossiliferous strata stratigraphically below the coal-bearing horizons, stating further that Mr Williams had no prospect "... of finding coal were he to sink for another thousand yards; he (Williams), however is firmly persuaded to the contrary" (Selwyn, 1855).

Williams' company opened up the Denison Colliery on one of the outcrops of coal. The coal was worked from a number of short adits. The ground was very faulted, with the faults generally running in a NW-SE direction (Gould, 1861). Operations had ceased by 1861.

A number of other shafts were sunk by Williams in the Tarleton area. These are described in Burns (1965). The coal-bearing area at the Denison

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Colliery is confined to a very small fault block (Twelvetrees, 1911).

Denison Colliery (1855-1859)

The Denison Colliery was worked from 1855-1859 by Williams and a syndicate partner, A. Nicholls. The Government provided an access road to the mine (Booth, 1962) and Williams constructed a jetty at which boats could load coal. Williams and Nicholls' partnership dissolved in 1859 with the two disputing ownership of their assets. Their affairs were eventually settled by arbitration and Williams left the coal mining industry to become a publican at Ballahoo and Tarleton (Booth, 1962).

Riley's Mines (1881-1900)

Areas south-west of the Tarleton township were worked by Riley. The initial workings (Riley No. 1) operated between 1881-1891. The later Spreyton No. 4 (1909) workings were adjacent to these early ones. A plan of the workings was made by Thureau (1883). From about 1883-1900 new workings south of the first were opened and named Riley No. 2. These are described by Burns (1965).

Spreyton No. 4 (1909-1916) and Spreyton No. 5 (1917-1923)

The Spreyton No. 4, close to Rileys first set of workings, was also known as the Spreyton, Allisons or the Mersey Colliery. Extraction in this mine was by longwall methods (Hills et al., 1922).

The Spreyton No. 5 was located a few hundred metres to the north of the No. 4 workings, and was worked by the same owners, the Allisons (Burns, 1965).

Southern Star (1931-1936)

Coal was extracted from three adits and the workings adjoined the old Denison Colliery to the west. The product coal was sold to the Goliath Portland Cement Company at Railton (Burns, 1965).

Coventry No. 1 (1931-1939) and Coventry No. 2 (1939-1946)

The Coventry No. 1 mine consisted of a single adit and was also known as the Tarleton Coal mine or Tarleton No. 1 pit. The Coventry No. 2 mine was situated east of the Coventry No. 1. The Government provided assistance to both operations by building tramways to each mine (Burns, 1965).

EAST SPREYTON

Russell Colliery (1867?-1899)

Coal was discovered in this vicinity by Williams in 1855, but production did not start until some time between 1867-1869. The mine was worked from a number of adits driven under the eastern face of the hill. A large number of small north-west trending faults were encountered in the workings. The mine was owned by T. Hainsworth (Burns, 1965).

Spreyton No. 1 (1902-03) and Spreyton No. 3 (1904-08)

This mine worked land adjoining the Russell Colliery on the south-west side and was also known as Allison's Coal mine or the Spreyton Coal mine. Coal was extracted from an adit. The Spreyton No. 3 was also operated

by Allison. A small area was worked from a low tunnel with a short tramway to the main road (Burns, 1965).

WEST SPREYTON

Don Colliery (1855-1883)

Following the failure of the Denny Colliery in 1854, W. Dean found coal on his own land (between the Don River and Deans Point) by sinking a shaft (Fenton, 1891) and promptly opened the Don Colliery. Coal was sent to Swan Bay (now Flour Mill Bay) using a tramway built for Dean's sawmill (Booth, 1962). After raising a small quantity of coal, Dean leased the mine to Williams. In 1857 three bore holes were put down to determine the extent of the coal and coal was proved over a small area (Gould, 1861; Burns, 1965). Williams then sank the main shaft of the colliery but two faults were encountered in the workings.

Spreyton No. 2 (1903-1904)

Spreyton No. 2 was located west of Figure of Eight Creek at Spreyton, adjacent to the Aberdeen Colliery. The mine was opened by Allison in 1903 and was also known as Allison's or the Spreyton Colliery. Coal was extracted from a single adit. This mine experienced difficulties with faulting and an influx of water (Burns, 1965).

Aberdeen Colliery (1931-1950)

Prospecting was done in this area by Teasdale in 1900 but no production followed this initial activity. The Aberdeen Colliery, situated at Spreyton, opened in 1931. Mining was from a single adit (Burns, 1965).

Illamatha No. 1 (1903-1942) and Illamatha No. 2 (1943-1961)

The Illamatha No. 1 opened in 1903 and produced on a small scale until 1922. Production resumed in 1924. Extraction was by hand using the step longwall method of mining. The Illamatha No. 2 was situated north of the No. 1 workings and operated by the same lessees, the brothers R., J.R. and C.A. Bound. Coal was extracted by bord and pillar methods from a shaft 25 m deep (Burns, 1965).

SHERWOOD

Alfred Colliery (1855-1883?)

In 1855 Thomas Johnson of Frogmore opened the 'Alfred Colliery' on his land, 1.6 km east of Tarleton. The seam was about 600 mm thick (Ramsay, 1958) and was worked by two adits driven into the eastern face of a hill (Gould, 1861).

The first loads of coal were raised on 30 May 1856. A celebration party was thrown at Frogmore House by Mr Johnson to mark the occasion ".... on which occasion the whole of his men together with a number of others were regaled with bread, cheese and ale. The coals were drawn by two teams of bullocks, sixteen in number, all tastefully decorated with ribbons, as well as the drivers and a flag was hoisted on each dray" (*Launceston Examiner*, 6 June, 1856).

The colliery was inspected by Gould (1861) and a section of a shaft at the Alfred Colliery was drawn by Thureau (1883). Descriptions of the

workings and various bore holes sunk around this mine are given by Burns (1965).

Mersey Colliery (1861-1890?)

These workings were situated a few hundred metres north of the Alfred Colliery, on a bluff overlooking the Mersey flood plain. The mine consisted of a number of adits driven into the cliff from the bank of Ballahoo Creek (Gould, 1861; Thureau, 1883; Hills et al., 1922; Burns, 1965). The colliery workings were confined to a small fault block (Burns, 1965). The mine was probably opened by Bennett, the lessee of the Alfred Colliery, in 1861, before being taken over by the Mersey Coal Company. The mine closed about 1890 (Burns, 1957).

TUGRAH

In 1862 coal was discovered on the east bank of the Don River near Barrington. The land was quickly acquired by Messrs Cummings and Raymond who commenced coal mining operations, sending away "considerable quantities to the Launceston market" (Fenton, 1891). Mining was from adits driven into a hill on the western side of the Don River between Tugrah settlement and Tugrah siding. Thureau (1883) states that the Don Coal Mining Company (which was formed by Messrs Cummings and Raymond) had raised some 25 000 t of coal during the 18 years from 1865 to 1883. Evidence of the mining activity was inspected by Burns (1965).

MOUTH OF CAROLINE CREEK

Sherwood Colliery (?-1861?)

This colliery, close to the mouth of Caroline Creek, was operated by W. Dawson. A tramway was completed over a distance of five kilometres, linking the mine with a shipping place.

At the time of Gould's (1861) visit the mine had closed in consequence of a disputed right of road. Gould (1861) records that "brilliant crystals of mispickel or arsenical iron pyrites are frequently found in coal in this colliery".

NOOK AREA

Nook (1855, 1931, 1938-1942)

Coal was found in 1855 by Richard Crompton on land owned by Alfred Nicholls, one of Williams' syndicate members. Nicholls asked the Government to spend 200 pounds on deepening Ballahoo Creek, then opened the Nook Colliery, which produced for only a short time (Booth, 1962).

A number of small collieries were opened in the Nook area in the 1930's. These were the Lucky Nook (1931), Botts (1939-1942), Bott's No. 2, (1938), G. Jeffrey (1938), H. Bott and Jeffrey Bros (1938-1939) and J. Bott (1939). Locations (where known) are shown in Figure 2.

DULVERTON

Two leases in this area were surveyed in late 1882. Thureau collected samples from the Dulverton Coal Mining Company's workings in 1883 for testing, and drew a diagrammatic sketch of the mine.

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A large number of small mines have been opened in the Dulverton coal field. The locations (where known) are given in Figure 2. The mines were: Dulverton (1931-1939); Lucky Hit (1931-1938); Hard-to-Get (1931-1937); Esk Bank (1931-1938); Black Beauty (1933-1944); Last Chance (1931-1933); Star (1934-1937); Dulverton Tribute (1933-1934); Brickyard (1935-1936); and Shephard and Party (1938) (Dix, 1979).

A pit was opened near Dawsons Siding by J. Allison in 1923. This was sold to the Mersey Valley Oil Company in 1924 but closed in 1925. Three small mines have operated near Dawsons Siding since that time. They are the Star (1931-32); McCreghan and Sons (1937-38) and Sheehans (1938).

COAL QUALITY

Analyses of coal samples from the coalfield are listed below:

	1	2	3	4	5	6
Moisture (%)	8.12	10.42	6.38	8.6	13.58	13.42
Volatile carbonaceous matter (%)	42.56	43.02	43.18	42.92	36.28	35.06
Fixed carbon (%)	44.04	42.56	44.94	41.40	45.30	46.88
Ash (%)	5.28	4.00	5.50	7.08	4.84	4.64
Sulphur (%)	4.56	3.48	3.52	4.81	4.39	4.04
Specific energy (MJ/kg)	29.0	28.7	30.0	28.7	25.6	24.8

1. Whole seam sample from Aberdeen Colliery, October 1943 (Department of Mines correspondence files).
2. Whole seam sample from Coventry Colliery, October 1943 (Department of Mines correspondence files).
3. Whole seam sample from Black Beauty Colliery, October 1943 (Department of Mines correspondence files).
4. Whole seam sample from Illamatha (No. 1) Colliery, October 1943 (Department of Mines correspondence files).
5. Run of mine coal from Illamatha (No. 1) Colliery, 1922 (Hills *et al.*, 1922).
6. Run of mine coal from Spreyton (No. 1) Colliery, 1922 (Hills *et al.*, 1922).

Coal from the early workings was used primarily as a domestic fuel, sold locally and shipped to Launceston. The coal produced from the 1930's mining activity was almost exclusively used by the cement works at Railton. Local industry, such as the Ovaltine factory and various brick-works, consumed the remainder of the production.

RECENT EXPLORATION

Since the last colliery to work in the field closed in 1961, the area has been examined briefly by various companies, with some interest being shown in the oil shale potential of the area.

FUTURE POTENTIAL

Whilst the quality of the coal is quite good, the sulphur content is very high and the seams extremely thin. Faulting caused problems in most of the collieries. The area is of limited interest for further exploration.

REFERENCES

BOOTH, B. 1962. *Ninety years of the Tasmanian coal industry*. B.A.(Hons) thesis, University of Tasmania : Hobart.

BURNS, K.L. 1957. *Geology of the Nook-Gunns Plains area*. B.Sc.(Hons) thesis, University of Tasmania : Hobart.

BURNS, K.L. 1965. One mile geological map series. K/55-6-29. Devonport. *Explan.Rep.geol.Surv.Tasm.*

DIX, M.J. 1979. Coal, in : JENNINGS, I.B. Geological atlas one mile series. Sheet 37 (8115S). Sheffield. *Explan.Rep.geol.Surv.Tasm.* 105-109.

FENTON, J. 1981. *Bush life in Tasmania fifty years ago*. Hazell, Watson and Viney : London.

HILLS, C.L.; REID, A.M.; NYE, P.B.; KEID, H.G.W.; REID, W.D. 1922. The coal resources of Tasmania. *Miner.Resour.geol.Surv.Tasm.* 7.

GOULD, C. 1861. Mersey coalfield. *House of Assembly Pap.Tasm.* 1861 (135).

MILLIGAN, J. 1852. Report on the coal said to have been found at the Don River and upon the west bank of the Tamar River, in Tasmania. *Pap.Proc.R.Soc.Tasm.* 2(1):90-106.

NOLDART, J. 1975. Triassic coal in Tasmania. *Monogr.Ser.australas. Inst.Min.Metall.* 6:300-301.

RAMSAY, C. 1958. *With the pioneers*. Mercury Press : Hobart.

SELWYN, A.R.C. 1855. Geological relations of some of the coal seams of Van Diemens Land. *Pap.Proc.R.Soc.Tasm.* 3(1):116-141.

STEPHENS, T. 1870. Remarks on the geological structure of part of the North Coast of Tasmania, with special reference to the Tertiary Marine beds near Table Cape. *Pap.Proc.R.Soc.Tasm.* 1868:17-21.

THUREAU, G. 1883. Report on the Mersey coal deposits. *Legislative Council Pap.Tasm.* 1883 (61).

THUREAU, G. 1885. Supplementary report on the Mersey coal deposits, with reference to further tests by means of boring through the carbonaceous strata with the No. 1 diamond drill. *Parliamentary Paper Tasmania* 1885 (64).

TRUSWELL, E.M. 1978. Palynology of the Permo-Carboniferous in Tasmania : An interim report. *Bull.geol.Surv.Tasm.* 56.

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TWELVETREES, W.H. 1911. The Tasmanite shale fields of the Mersey district.
Bull.geol.Surv.Tasm. 11.

[17 September 1985]

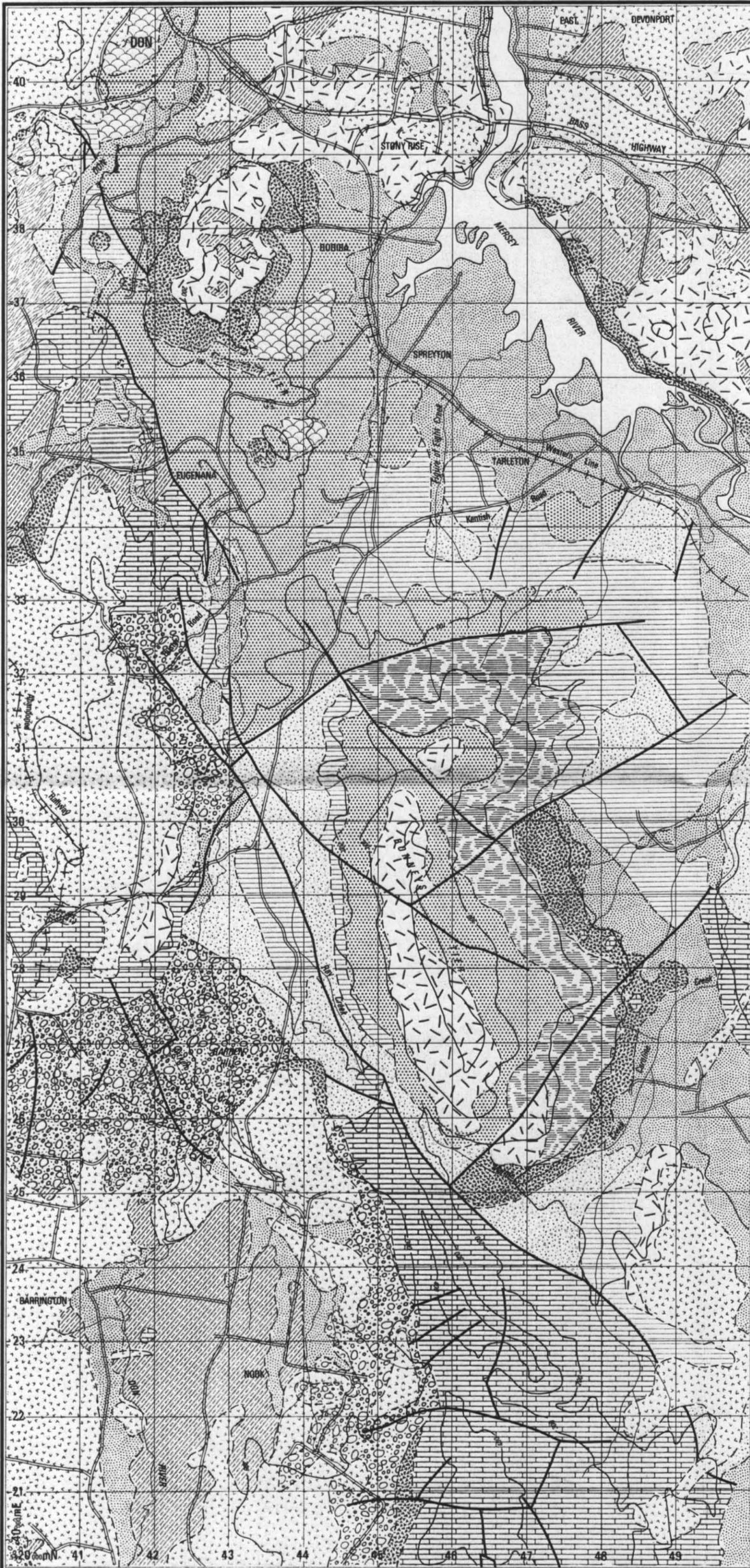
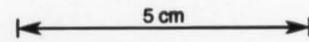
GEOLOGICAL SKETCH MAP MERSEY - DON COALFIELD

C. A. BACON

Geology adapted from Devonport and Sheffield 1:63360 map sheets



CONTOUR INTERVAL—100m



QUATERNARY

- Alluvium, beach deposits, marsh deposits and residual gravel
- Talus
- Zones of mass movement

TERTIARY

- Sediments
- Basalt

JURASSIC

- Dolerite

PERMIAN

- Kelcey Tier Beds and equivalents
- Mersey Coal Measures
- Basal Beds and equivalents
- Unassigned

DEVONIAN

- Eugenana Beds

ORDOVICIAN

- Limestone, sandstone and conglomerate

CAMBRIAN

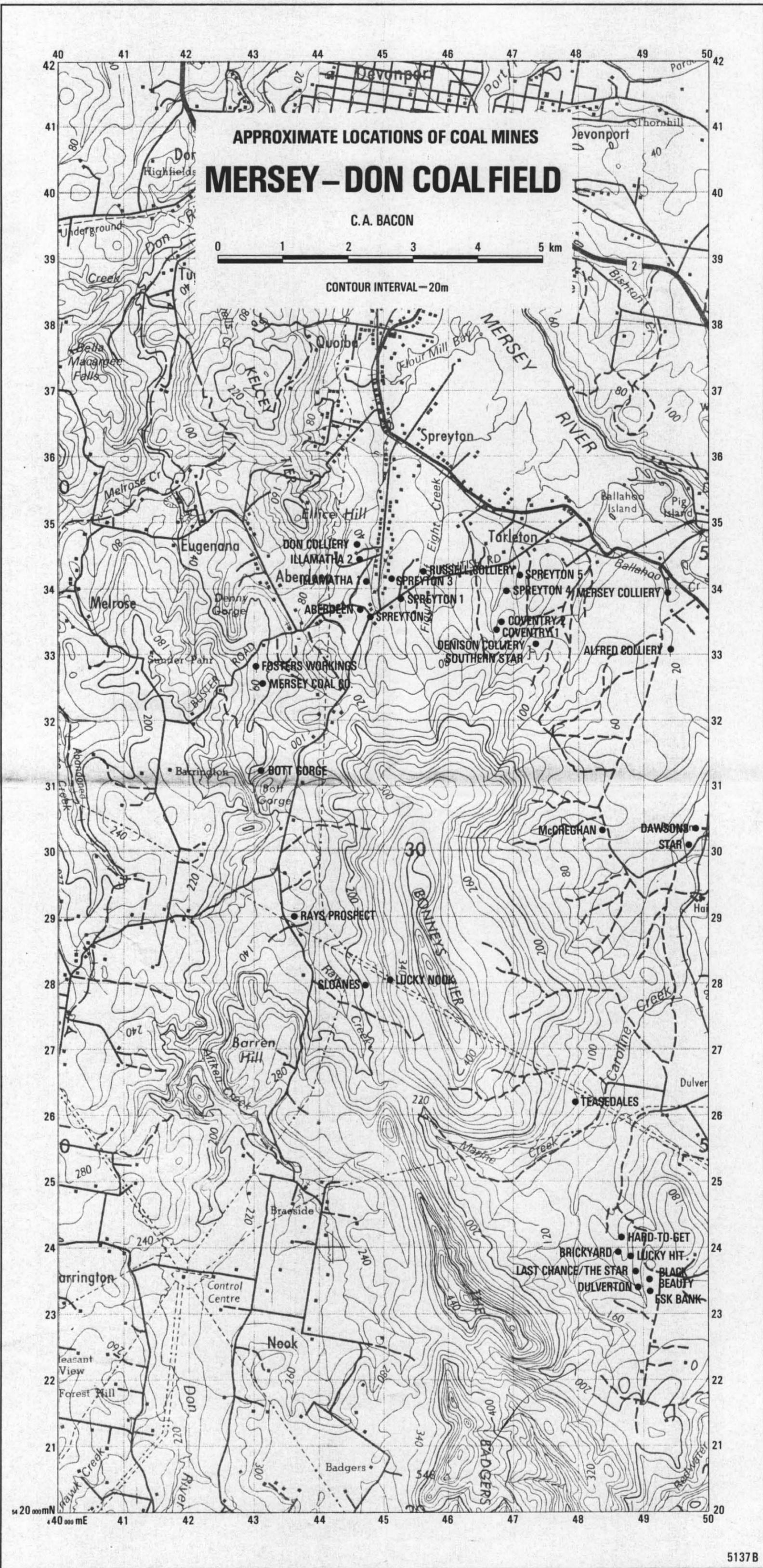
- Greywacke and conglomerate

PRECAMBRIAN

- Quartzite and garnet schist

--- Geological boundary

— Inferred fault



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Figure 2