

683.6 N. 1594.5 E. (Sample-locality No. 1).—This locality is at the north-east base of Island Hill on the rising ground at the west side of the pakihi, where a band of arkosic sandstone makes a somewhat inconspicuous hummock on the gentle slopes. As a number of coal fragments showed in the surface soil a shaft was sunk, and for 20 ft. it revealed coal from a few inches below the surface to the bottom of the shaft, which had to be abandoned on account of water, while still in coal. The beds dip east at 40° approximately, so there is a minimum thickness of 15 ft. of hard, bright coal which contains a few small lumps of retinite. Though jointed, the coal is not crushed except for a small band 10 ft. below the surface, which may represent a band of soft carbonaceous shale along which has been a little movement. Surface trenching and small pits showed coal for 10 chains along the strike, and for 6 chains south of the shaft the seam apparently maintains its thickness though there appears to be some minor faulting interrupting its continuity.

614 N. 1522.5 E. (Sample-locality No. 3).—A shaft was sunk for 14 ft. in crushed coal at the western edge of the pakihi, where the prospecting track from Stockton to the upper Mackley reaches the pakihi. The coal and overlying sandstone dips 20° south-east, and from the crushing of the coal, the outcrop is in or adjacent to a fault. The shaft was abandoned at a depth of 14 ft. on sandstone. On a rough estimate the seam is 13 ft. thick.

590.2 N. 1509 E. (Sample-locality No. 4).—A cut in the south bank of a small intermittent stream 2 chains up from the Blackburn shows a coal-seam 6 ft. 4 in. thick, dipping south-east at about 10° . A micaceous sandstone forms the roof, and beneath the coal is 1 ft. of crushed sooty-coal or “holing dirt.” The floor is a carbonaceous micaceous sandstone resting on a fine-grained sandstone. The coal is hard, bright, and jointed, discoloured with clay for 2 ft. from the roof, and occasionally having a thin film of pyrites on joint planes. A crushed zone about 2 in. wide extends from roof to floor carrying surface water with clay and mud through the seam, so that the sample from here may be too high in ash to be representative of the seam. Small nodules of retinite are scattered throughout.

553 N. 1489 E.—A cut in the side of a small terrace showed 3 ft. of coal (total thickness not exposed) striking east of north, and dipping north-west at 45° . A minor fault downthrows the coal to the east.

Two chains east of this, slickensided coal with “cone-in-cone” structure outcrops in the small creek which is cutting its channel along a fault. In the Blackburn, 3 chains to the south, a seam at least 2 ft. thick dips at 10° north-west.

“Coal Island” is 30 chains south-west from these outcrops, and consists of a remnant 13 chains by 3 chains wide, of a coal-seam dipping north at 20° and 35 ft. thick. The same seam outcrops north-west across a headwater tributary of the Blackburn, but 4 chains beyond this it is cut off by the Blackburn Fault. This is the locality described in Bulletin No. 17, p. 151, where the coal outcrop “forms a ring round a flat-topped hillock, three-quarters of a mile west of Trig. Station J.” The maximum overburden to the coal does not exceed 20 ft., averages about 10 ft., and consists of shale overlain by gritty arkosic sandstone. On the opposite side of the valley south of “Coal Island” the seam has thinned to under 20 ft., sections across it outcrop showing thickness of 8 ft. to 15 ft. of coal, and at a point with co-ordinates N. 517 E. 1454 the seam is less than 5 (?) ft. thick. Coal is mentioned as outcropping here in the bed of a small creek draining into the Blackburn (Bulletin No. 17, p. 151). Eight chains south-west from this point the seam is 6 ft. 6 in. thick and dips southwards at 10° (584 N. 1504 E.). The section there exposed shows the following :—

Soil.									
Fine-grained sandstone	..	..	..	..	..	..	..	..	2 ft.
Carbonaceous shale	..	..	..	..	..	..	..	..	2 ft.
Coal	..	..	..	..	..	..	..	..	6 ft. 6 in.
Carbonaceous micaceous shale	..	..	..	..	..	..	..	..	1 ft.
Coarse sandstone and grit floor.									

539.3 N. 1492.7 E. (Sample-locality No. 6).—This point is at the southernmost end of the pakihi on the south bank of the Blackburn, where it makes an acute bend and flows through a ridge of the Brunner beds. The section shows :—

Soil, sand, and gravel, resting on an eroded surface of the coal	..	..	8 in. to 18 in.
Coal highly jointed with clayey streaks along joints; a little retinite	..	..	4 ft. 3 in.
Crushed coal band	..	..	4 in.
Clean bright coal, lower 15 in. extremely hard, a little retinite	..	..	2 ft. 4 in.
Stone band	..	..	1 in.
Hard dense coal, brilliant black lustre, a little retinite	..	..	4 ft. 9 in.
Sandstone floor.			

In all there is a total of 12 ft. 4 in. of coal, from which an overlying thickness of several feet of coal has been eroded. There is an occasional film of pyrite along joint planes and some of the coal has “cone-in-cone” structure with the axes of the coal more or less horizontal.

Three chains west of this, a cut in the hillside shows a thickness of over 40 ft. of coal, the floor being unexposed. Though this cut was made up to 8 ft. below the surface it failed to reach coal from which a representative sample could be taken, as soil and root-fibres have penetrated beyond the bottom of the cut. The coal is apparently unaffected by its long exposure to atmospheric weathering, the individual fragments being bright and hard on fracture. The coal is slightly crushed and drossy. Nine chains south-west from this cut the seam thins to less than 3 ft.

Northwards the coal crops out round the western and southern sides of the low hill on the north side of and partly encircled by the Blackburn, but it thins to 1 ft. 6 in. 12 chains north-north-east of the cut, and on the southern side of the hill it thins to 1 ft. at a point 12 chains east from the same cut. The outcrop could not be traced completely encircling the hill. The two following sections refer to outcrops in this area.