

main seam, strike and dip conformably or nearly so therewith. The tunnel driven on these small seams is called No. 3.

Overlying these small seams, at a distance of 40 ft., comes the principal or main seam, on what is known as No. 4 working. About 7 chains below the junction of the two source-branches of the Waimanga this seam is exposed on the northern side of the valley, about 30 ft. above the bed of the stream. The coal strikes W. 25° S., and dips to the northward at an angle of 20°. Its exposure is along the eastern slope of the dividing-ridge between Golden Bay and the West Coast, between Cape Parewell and West Wanganui Inlet. Towards the E.N.E. the first exposure is seen in the locality already indicated, at an elevation of 50 ft. above the sea. Forty chains distant along the strike to the W.S.W. the coal is at an elevation of 250 ft. above the sea, near the saddle from which the drainage is westward towards the upper part of West Wanganui Inlet. The outcrop here shows coal of good quality, of a thickness of at least 7 ft. 6 in.

There is about 40 chains between the two extreme outcrops of this seam, and at both places the coal is of fully workable thickness. Towards the E.N.E., in the direction of the upper part of Puponga Inlet, it is reasonable to suppose the coal present as a workable seam for some distance beyond the east boundary of Mr. Joseph Taylor's lease, but the ground being low, the coal, overlain by alluvial or obscured in the low downs, is not seen at the surface, and will prove almost wholly below drainage-level.

From the saddle at the western end of Mr. Taylor's lease the coal strikes along the range, deeply cut into by creeks draining westward, and should be traceable on the sides of the valleys in that direction for some distance.

One mile to a mile and a half in this direction a saddle on a spur descending to the north-west lies in the strike line of the coal, and it is probable that the thicker seam now under consideration may extend as a workable coal to where the line crosses the said spur at a height of 400 ft. to 500 ft. above the sea. This is, however, a matter of speculation, and must be determined by further prospecting. Six or seven chains down the Waimanga Creek from the No. 4 working on Taylor's lease a small stream joins from the north. In the valley of this creek, in a position overlying the seam of No. 4 tunnel, a smaller seam, the highest known of the series of coal-seams, is exposed in the bed of the creek. This does not exceed 10 in. in thickness, and consequently is of no consequence as a workable seam of coal. This, like all the other seams in the vicinity, dips to the northward at an angle of 17°.

South-east of Taylor's lease, within 250 yards of the shore of Golden Bay, a small seam, dipping to the north-east, is exposed. A drive has been made on this, and the seam to some extent has been

worked, but is now abandoned, the thickness of the coal being too small, evidently, to pay.

Between this small seam on the shore of Golden Bay and the several seams on the lease held by Mr. Taylor the coal-measures form an anticline, and in the intervening space is probably present the coarse conglomerates that form the lower part of the coal-bearing series. These, if exposed along the crest of the anticline, are not of such a coarse description as are the same beds in the valley of Taupata Creek, some two miles to the south-west, and it may be that the lower and coarser conglomerates are not actually exposed.

The section displayed from the shore of Golden Bay, one mile south of Puponga Inlet, north-west across Taylor's lease to the west slope of the main ridge is represented by the accompanying sketch.

It is uncertain whether the small seam to the south-east represents the highest in the series or one of the lesser seams below the 8 ft. coal on the north side of the anticline.

Of the special matters to which my attention was directed, marked (1)–(4) in my instructions, what relates to the size and position of the seams has been detailed in the foregoing part of this report. Under heading of (2) I am asked to estimate the amount of coal that can be immediately worked. The developments on the lower seam are not such as to enable any estimate being made, and the disturbed state of the outcrops precludes the possibility of this except on the assumption that it strikes and dips conformably with the overlying 8 ft. seam. The lesser intermediate seams, and the overlying 10 in. seam, the highest of the series, not taken into consideration, there remains a total of 10 ft. of coal—about 8 ft. in the big seam and 2 ft. in the lower seam.

Towards the east the crop of the 8 ft. seam is at the water-level, and where it outcrops on the saddle at the west end of Taylor's lease the difference in elevation is 180 ft., the dip of the coal being 20°. Northward, the coal to the rise of the level-free datum would be 450 ft. at least, and, making some allowance for irregularity of the line of outcrop over the length of Taylor's lease, in this seam there should be level-free coal to the amount approximately of 120,000 tons. If the lower seams be considered workable a further 30,000 tons has to be added. Coal level-free to twice the above amount may be expected to occur within an equal distance along the western continuation of the seams beyond Taylor's lease; but in this case, the outcrops lying in broken country and on the west side of the range, without roads it could not be considered available for shipment in Golden Bay, and therefore cannot be considered as coal that can be "immediately available."

Eastward of Taylor's lease all parts of the main coal-seam must be considered as below the water-level, and therefore not immediately available in the sense of being level-free.