

At page 204 of the same we read, "About a mile from its mouth the stream which drains into Puponga Inlet divides into two branches, one going towards Cape Farewell, and the other, which is locally known as Waimanga, trending south-west. Near the source of the latter, the length of which is less than a mile, there is an outcrop of bituminous coal. The seam is much obscured by surface detritus, but appears to be between 2 ft. and 3 ft. in thickness, with shale partings. Higher in the sequence several other smaller seams of coal, ranging from 2 in. to 6 in. in thickness, are exposed in the bed of the main stream."

These are the facts ascertained up till March, 1889, since which date, from about 1895 till the present time, prospecting has been carried on, principally in the valley of Waimanga Creek, showing that Mr. Park underestimated the possibilities of the field, and that there exists at least one seam of workable thickness and of good quality, the outcrop of which extends along the west side of the Waimanga Valley from the saddle at the source of the left branch to some 10 chains below the junction of the eastern branch of the creek.

This is higher in the sequence than any of the seams examined by Mr. Park, and at a distance of 70 ft. to 100 ft. this is overlain by a small seam, too thin to work, which also has been discovered since Mr. Park visited the district.

In all, over a distance of 20 chains, on a line N.N.W. to S.S.E., there are six or seven different seams, of which only two are capable of being worked, and of these only one with a reasonable hope of profit.

All but one of these seams (the highest) lie within, or partly lie within, the lease granted to Mr. Joseph Taylor and Mr. J. Walker in July, 1895. The thick seam (8 ft.) towards the south-west lies to the north outside Taylor's lease, and towards the east is possibly inside the lease; but the valuable part of the seam lies to the north, within the lease applied for by Mrs. A. Taylor.

#### COAL-SEAMS.

Mr. Joseph Taylor showed me outcrops or exposures of coal which he considered indicated no less than fifteen different seams, but I could not agree with him in every case that the outcrops were distinct seams. Six or seven seams at most were all that could be determined by me as being present within the lease now held by him. Of these, the lowest and furthest to the east is seen in the upper right-hand branch of the Waimanga, and by a series of dislocations and slips this is exposed in a manner that has led to the assumption that several seams are present. The coal seen in the tunnel driven eastward is known as No. 1 seam, and an opencast working has been made near the entrance to the tunnel, which exposes in nearly vertical superposition, first, close to the surface about 3 ft. of coal much crushed; second, underlying fully 2 ft. of clay is 2 ft. of coal. Under the second seam is 26 in. of clay, and beneath

this is No. 3 seam, 20 in. thick. No. 3 seam is underlain by 3 ft. of crushed shale, and this by coal the thickness of which could not be seen, but said by Mr. Taylor to be 4 ft.

From the face of this excavation the drive has been made for 300 ft. in an easterly direction. The first third of this twice exposes dislocated masses of coal, which in the manner of their appearance and disappearance indicate the presence of slipped ground. The inner half of this drive shows a seam of coal lying at a low angle, dipping westward, which may be *in situ*. The thickness of coal is between 2 ft. and 3 ft., but crushed and tender through movement of the seam itself, or through being in contact with overlying moving strata. Here I saw no evidence supporting the theory that more than one seam—and this less than 3 ft. thick—was present. The prospecting-works have been carried on in slipped ground, and the real value of this seam cannot be indicated.

A little higher up, and on the opposite or west side of this right-hand branch of the Waimanga Creek, is a natural exposure of coal, of which about 2 ft.—perhaps not the total thickness—is seen. This is the outcrop described by Mr. Park. Less than a chain downstream from the outcrop a tunnel has been put in, and the seam in this is 2 ft. thick, striking W. 30° S., and dipping N.N.W. at an angle of 18°. Near the natural outcrop coal also shows in the bed of the creek, but this is evidently slipped from the hill-slope on the east side of the creek valley. This seam on the west bank of the creek must be regarded as the same as that on the east side, and the conclusion is that so far only one seam of coal, from 2 ft. to 3 ft. thick, has been discovered in the valley of this the right-hand branch of Waimanga Creek.

About 5 chains below the junction of the two main branches, and abreast of the main working (No. 4), two small seams are exposed in the bed of the main creek, and 2 to 3 chains higher up the stream the same seams are again exposed. These are disturbed, since they do not conform in strike and dip with the main seam stretching along the left bank of the creek. They are too thin to work under any circumstances, and need not have been noticed here but for the fact that they are the thin seams mentioned by Mr. Park, and are considered of importance by Mr. Taylor.

Three chains above the junction of the two main branches of the Waimanga a short drive has been made on the west bank of the left branch, which exposes three small seams, the thickest of which is at least a foot, and might be a little more. This group of small seams is held within a vertical thickness of 8 ft. to 10 ft., and is thought, with the bands of fire-clay between, to be workable—at least, Mr. Taylor is sanguine on this point. They appear to me to be the small seams already described as twice appearing in the bed of the main creek, which now in their normal position, and underlying the