

or so in that direction. A fault, probably reversed, therefore separates the coal-measures from the schists. Towards the end of his report McKay repeats his unfavourable opinion of 1887, to the effect that there is little probability of coal being found in payable quantities. (Rep. Geol. Explor. during 1878-79, No. 12, pp. 86-97, 1879.)

About the beginning of September, 1880, McKay again visited Shakespeare Bay and examined a coal-seam lately discovered on the west side of the valley at the head of the bay about 15 chains from the shore-line. The beds in which the coal occurred were observed to dip at very high angles, and near the coal-seam were striking north-north-east. Mr. Renfrew, who was in charge of the prospecting, stated that where laid bare at the surface the coal was 14 ft. thick. At the date of McKay's visit the shaft was 40 ft. deep, and coal showed from top to bottom in such a way as to convince him that the seam was more than 6 ft. thick. Near the shaft a prospecting-drift followed the coal for a short distance to the south-south-west. The seam was then lost (by faulting) or turned sharply to the east. As the drift had collapsed, McKay was not able to examine it. While admitting that a certain amount of coal could be obtained from the comparatively thick seam lately discovered, McKay concludes his report with a statement implying that there was little possibility of workable coal being found in quantity. (Rep. Geol. Explor. during 1879-80, No. 13, pp. 147-49, 1881.)

In 1881 a thick outcrop of coal was discovered on the eastern side of the Shakespeare Bay valley. In his progress report of 1882 Sir James Hector remarks that both he and Mr. McKay have frequently visited Picton, and every important step made in exploring the coal has been carefully observed. He gives sections along the east and west shores of Shakespeare Bay, showing that the coal-measures are much disturbed. The latest discovery is referred to as "Fell's coal." It had been explored, Hector states, by a short irregular excavation to a depth of 25 ft. The coal was from 6 ft. to 13 ft. in thickness. Attempts to trace it on the strike of the seam had not been very successful. Hector remarks on the good quality of the coal, and states that a considerable quantity could be profitably extracted by shallow workings. He says: "In this way, without much outlay of capital, a better knowledge of the deposits would be obtained, so that the proper method of opening up a mine could be decided upon, which is at present quite impossible." Finally, he stresses the necessity for extreme caution in projecting expensive shafts or other works. (Rep. Geol. Explor. during 1881, No. 14, pp. xiii-xvi, 1882.)

In August, 1881, McKay once more examined the Shakespeare Bay coal deposits, and as a result furnished a fairly exhaustive report, accompanied by two maps. (Last publication cited, pp. 106-15, and maps at end of volume.) He considered the discovery on the east side of the valley, close to the head of Shakespeare Bay ("Fell's coal"), to be important. At the surface the seam was 6 ft. thick, dipping very steeply to the east. At 25 ft. in a shaft sunk on its western side the seam was 13 ft. 6 in. thick, and according to Mr. Renfrew, manager for Mr. Fell, the lessee, existed for another 30 ft. down. To the north coal had been followed for 35 ft., but in that direction the coal thinned, and in the farthest point reached in a level had disappeared (? through faulting). The 25 ft. level from the shaft previously mentioned encountered, on its north side only, coal 15 ft. to 20 ft. west of the line of strike of the seam as observed at the surface. This was followed for 10 ft. to the north, but as the seam did not appear well defined the branch drift was discontinued, in McKay's opinion, prematurely. On the beach, north of Fell's outcrop, coal could not be detected. No attempt had been made to follow the coal to the south, but in that direction it would not live for more than 6 to 7 chains. McKay considered that about 9,000 cubic yards of coal was available for working at Fell's mine. Actually about 800 tons seem to have been extracted. The recorded output is 658 tons.

McKay states that on the west side of Shakespeare Bay a bore was put down to a depth of over 200 ft., limestone and traces of coal being found. A few yards to the south a shaft was sunk, and passed through coal dipping at a high angle to the eastward. According to information supplied to me by Messrs. Allport and Webster, this was probably McKenzie's shaft, which was 72 ft. deep. The coal, 6 ft. thick, was encountered in a short drift made from the bottom of the shaft. McKay also mentions an adit driven south-west and westward into the hill between the third and fourth branches of Laymont's Creek. This passed through greensands only. In the fourth branch of the same creek coal was observed at a height of 325 ft. above sea-level, striking N. 15° E. Here the seam was 8 ft. or 9 ft. thick, but the coal was interstratified with shaly bands.

At the time of McKay's visit in 1881 work at Pugh's shaft, on the east shore of Shakespeare Bay (near the boardinghouse erected some years ago by the meat-freezing company), had been discontinued, and prospecting was being carried on under Mr. Pugh's direction along the northern boundary of the coal-measures (close to where the Picton Freezing-works now stand). An adit on the Shakespeare Bay side of the narrow neck of land had been driven for fully 200 ft., and coal followed for the latter half of that distance. The coal occurred in a most irregular manner, the seam here thinning to a few inches, there swelling to 2 ft. or 3 ft. in thickness, in one place lying horizontal, in another standing vertical, and so on. Evidently the strata were much disturbed by faulting. A few tons of coal had been obtained in prosecuting the work, but no defined seam or large body of coal had been found. An adit had also been driven on the east side of the narrow neck of land on which the freezing-works stand. This passed through dark marly shales containing carbonized plant-remains and a few thin streaks of coal.

McKay also mentions that previous to his visit some unsuccessful prospecting for coal had been carried on at The Elevation, one and a half miles south-south-west of Picton. His report concludes with a number of rather obscurely worded statements, from which it may be gathered that, although he did not wish to condemn further exploration, he was not at all favourably impressed with the prospects of the Picton coalfield. The last paragraph of the report, however, states that a few thousand tons of coal can be profitably won from the large seam (Fell's) being opened on the east side of Shakespeare Bay. This prophecy, unfortunately, was not found to be correct.