

this danger, and giving evidence as to the condition of this field, I thought it my duty to mention this danger. At Point Elizabeth they are having a survey made by which it will be possible to put down the coal-measures with more or less accuracy, but without a preliminary survey it is only a random guess as to the quantity of coal likely to be met with. There are several inland coal-areas.

1622. At Reefton?—The coal is not the same quality as that on the coast, but still it is a very valuable coal. The seams generally run with steadiness, and the total quantity of coal-bearing rock is very considerable; but back in the mountains, what between the denudations of the valleys and the manner in which the rocks have been dislocated in recent times, the coal-measures are by no means easily followed.

1623. Are there not some large deposits on the Totara field?—That is included in Reefton: it sets out from Reefton to Inangahua, and then it goes to Coal Creek. Between the Owen and Batou Rivers there is a considerable area of coal-bearing rocks, but to what extent the seams will be workable is hardly yet known. They opened one about 9ft. thick, in which they found a good smiths' coal; and in Papara they opened one which appeared at first to contain a good coal, but ran off into "slip" coal. Between the head of the Mokihinui and the Keramea there is a large area of plateau-coal which, in its formation, has been elevated to a high level, similar to Mount Rochfort. All these are coals of good quality, although the quality fluctuates a good deal. The area is not mapped-in, but it must be considerable. There are coal-measures in outlying patches along the coast, but they are not of sufficient importance.

1624. Have you made any extensive survey of the West Wanganui, in the Collingwood district?—That is all very well surveyed; all the different coal-crops, where it crops out of the surface, have been examined and laid down in maps. They are all described in the Geological Reports that are already published.

1625. Are the seams large?—Over the whole of the Collingwood district the seams are remarkably thin: what is worse, they are liable to "feather out," thinning off rapidly and passing into gravel and conglomerate. The field is not so much cut up by faults as the Buller, but there is that tendency suddenly to thin out, which is of much more frequent occurrence.

1626. Is it not likely that by deeper sinking you would get a more solid seam?—The faults affect the whole of the country. The whole thickness of the Buller measures, upon which the estimate of 100,000,000 tons was made, I do not estimate to exceed 1,600ft., and 1,200ft. of this is composed of coarse angular conglomerates in which coal seldom or never occurs, and, even if it did, it could not be successfully worked.

1627. You spoke of Golden Bay: did you allude to the place where the lagoon is?—No; I have recommended that a wharf should be constructed at Seaforth, where deep water runs in close, the only place where it is possible to put a wharf. A very simple wharf, like that at Petone, would answer the purpose. I have described it in one of my reports.

1628. Would that do for the whole of the Collingwood field?—Yes; it would do for the whole of the Collingwood field, instead of that line of railway to the township of Collingwood where there is a bar-harbour.

1629. Since the time you speak of fresh discoveries have been made that render the prospective yield to be very much greater than was thought at first?—Yes; I have here a rough estimate of all the coalfields in the colony. The areas come near enough, but to guess the tonnage contained in them is another thing altogether. One may, for convenience, make a rough guess, but it would not be at all reliable. The Buller contains 115,200 acres, including the Mokihinui, all at a low dip on the north side. I shall send this estimate in to the Committee.

1630. *Mr. O'Connor.*] Does that include the coal-bearing rocks up the river or only the reserve?—It goes up to Cascade Creek.

1631. Not to Macleay's Creek?—No; then it extends to Inangahua.

1632. What do you estimate as the thickness of seams?—The seams we have known up to the present time you may put down as 3yd. seams; in some cases they are thicker and in some thinner; that is about the average: if you take it all over it will make something like 1,038,000,000 tons: take the tenth part of that out and it makes 138,000,000 tons as the probable quantity of coal that is throwing away.

1633. You spoke of the Brunner Mine, and the great danger attendant upon working the pillars?—There is no doubt it will be a very risky matter if the pillars are worked to the rise. In this mine I do not think the coal has ever been worked much below the main water-level. I have no doubt the Mining Inspector is quite on his guard, and that he is quite aware of the enormous risk there is of a slip taking place before the roof settled on the floor. The seam was 26ft. thick, but near the fault it thinned to 18ft; through the fault it thinned to 12ft. The irregularities are in the roof, not in the floor; the floor is tolerably flat, the roof has been "waving," so that it depends on the variations in the roof. For many years I have had nothing to do with coal-mines, but I have always looked with suspicion on the working of that mine. It will require very great care in dealing with any of the supports to the roof. To take an extreme case, it resembles a ship shored up and ready for launching, as there is a great weight and sheering strain from the hill-top. If a slip occurred, the Grey River might be suddenly dammed back, but afterwards would force its way through, and do serious damage.

1634. Would not the lapse of time make the danger less?—Yes; but it has to be carefully watched, for, unless the abandoned workings are regularly inspected, which is not a very easy or safe thing to do, no one would know what is going on. The tendency of this bearing-down motion would be to crush the pillars. The floor I do not think would give way, but the roof would go by fracture: it is a hard, gritty sandstone, and if it goes at all it will go by fracture, and not by settling, as in the case of a shale roof. But the peculiar danger is in the shear or oblique and pushing-forward motion. I have thought it my duty to mention this to the Committee, although I have no doubt that it is well looked after, and that everything possible is done to prevent accident.