

so far favourable as to establish that the coal can be used successfully; coals of much inferior quality are largely used in locomotives in Europe. The distance to Morley Creek Mine from the Winton Railway is about twenty miles; but I have reason to think that an outcrop of the same coal might be obtained at a less distance.

62. *The Chairman.*] Will you favour the Committee with such observations as you desire to make respecting the limestone and building stone existing in different parts of the Colony?—The best and most compact limestones which occur in accessible positions, and where coal is available for the purpose of burning them, is near Collingwood, where there is an abundance of very compact crystalline marble. Limestone is also obtained in the Dun Mountain. The quality that is intersected by the present line of Dun Mountain Railway, and brought to market, is not the best in the district. Near Shag Point there is also a very valuable range of blue crystalline limestone which makes excellent lime. On the West Coast there are veins of true crystalline statuary marble. The chief limestones which are at present used in the Colony are derived not from these older and better classes, but from the white tertiary limestones, which are extensively burnt in some parts of the country. The chief localities where this limestone is worked is at Tata Islands, in Nelson; the Amuri Bluff, for the supply of Christchurch; Oamaru and Waiholā, for the supply of Dunedin; and Forest Hills, for the supply of Invercargill. Limestone of an intermediate quality, and very useful, occurs in abundance in the neighbourhood of the coal mines at Whangarei and Kawakawa; and the tertiary limestone at Drury could supply Auckland, were it not for the difficulty of transit. At present Auckland is chiefly supplied with shell lime, and a small quantity is brought down from various points on the coast. Lime for agricultural use will be an essential to the profitable working of the greater part of the land in the Province of Auckland. Any of the above limestones are adapted for building stones; and perhaps one of the best building stones, taking into account the facility of working, is that which is quarried in the vicinity of Oamaru. A considerable quantity of this building stone has been exported from time to time to Melbourne, and been used there in the erection of public buildings. There is probably no stone that excels the Oamaru stone in its useful qualities. It is very soft and easy to work, and at the same time, if properly selected, it is not affected by atmospheric influences. Most valuable building stones are the granite rocks on the South-west Coast. These rocks, which are of the most enduring character and highly ornamental, occur in immense variety of colours and grain, and under circumstances that will admit of their being quarried and shipped with such facility that they may successfully compete with the supply of granite from any part of the world. Any settlement of the South-west Coast of Otago must be considered in connection with the development of this industry.

63. *Mr. O'Neill.*] Are you aware if any attempt has been made to test the value of these granites in Melbourne, where a large demand for supplies from Europe is said to exist?—No; the only granite that has been quarried in New Zealand is from Adele Island, in Blind Bay, for the supply of Nelson.

64. Could not the granite be easily shipped?—Yes; there is deep water alongside, and safe shelter. There is also good roofing-slate in the same district.

65. *The Chairman.*] Can you make any suggestions with the view of developing this particular industry?—I have previously advocated the formation of a penal establishment in Dusky Bay, having chiefly in view the profitable employment of the prisoners in this industry. The volcanic rocks of Otago Peninsula, Banks' Peninsula, and the vicinity of Auckland, are already largely used as building stones. They are easily worked and durable; but their chief defect is their porosity, the walls not keeping out the damp. Cement-stones occur in the lower part of the marine tertiary series, and in some cases are quite equal in quality to those which are burnt for the manufacture of hydraulic cement in Europe. They are most accessible at Moeraki, in Otago. Useful Roman cement might, however, be easily manufactured from some of the varieties of volcanic tufas that occur in both Islands.

WEDNESDAY, 27TH JULY, 1870.

James Hector, Esq., M.D., F.R.S., in attendance, and examination resumed.

66. *The Chairman.*] We purpose this morning taking up the reproductive interests of the Colony; and first with regard to animal productions, I wish you to give the Committee information that will be useful and beneficial to the Colony?—There is nothing that occurs to me about wool, hides, and tallow.

67. Can you give us any information with reference to the silk productions?—I think there is no doubt that many parts of the Colony are very well adapted to the growth of the silkworms and their food. The chief advantage which this country offers is the evergreen character of the vegetation, which would allow of mulberry leaves being gathered throughout a much longer period of the year than in other countries, and thereby greatly increase the produce of silk. My views on this subject have already been laid before the Assembly this Session.

68. Is it not a fact that experience shows that the growth of silk is only adapted to the system of small culture?—I believe it seldom succeeds when taken up as a business. It would not pay for a man to go into silk culture as a business. Where successfully prosecuted, the mulberry leaves are brought to market and sold like vegetables. The whole business is subdivided into a number of subordinate branches, and practised by small cotters. It pays very well to have a standing grove of mulberry trees for the supply of feed; and it pays persons who have spare labour, especially children, to undertake the rearing of the cocoons. There is no difficulty whatever in cultivating the mulberry.

69. *Mr. Graham.*] Can you give us any information as to the adaptability of the *Ailanthus* silkworms to this Colony?—I believe that generally the rearing of them has been a failure.

70. *Mr. Potts.*] Do you think the leaves of the Whau (*Entelin racemosa*) might be applied to the feeding of silkworms?—It has never been tried, so far as I am aware, but I should expect they would.

71. *The Chairman.*] You have been preparing a Report as the Chairman of the Fisheries Commission respecting the fisheries of the Colony: is there any information, in addition to that contained in the Report, which you could give to the Committee?—The general result of the inquiry is that we possess very valuable fisheries if they were developed. There are kinds of fish quite equal to those found on the coasts of Great Britain. Of all the chief British varieties, there are none which are not represented in our seas by closely allied forms.