

1889.

NEW ZEALAND.

FORMATION OF A HARBOUR AT POINT
ELIZABETH, WEST COAST

(REPORTS RELATING TO).

Return to an Order of the House of Representatives dated 3rd July, 1889.

Ordered, "That there be laid before this House copies of all reports by the late Mr. Balfour, C.E., Marine Engineer for the colony, Lieutenant Woods, R.N., Captain Payne, of Melbourne, Mr. Blackett, late Engineer-in-Chief of the colony, and any other reports, documents, plans, and papers relating to the formation of a harbour at Point Elizabeth, West Coast."—(MR. GUINNESS.)

[Extracts from Parliamentary Paper D.—No. 6B, of 1871.]

EXTRACT from a REPORT by MESSRS. BLACKETT and HECTOR, dated 21st July, 1871, on the Best Course for a Railway to connect the Coal-mines on the Grey River with a Shipping Port.

Port Curtis.

THE latter trip was for the purpose of judging of the capabilities of the bay north of Point Elizabeth for the construction of an artificial port, a suggestion that has been frequently made, and was even favourably reported on by the late Mr. Balfour (Report of the Marine Department, 1868). Mr. Balfour's opinion, however, appears to have been founded upon a report and chart furnished by the Marine Surveyor (hereto appended), which contemplates rather the construction of a harbour of refuge, capable of holding three or four vessels, than a port adapted for trading purposes.

Point Elizabeth is a promontory composed of limestone rocks, and is prolonged by a chain of rocky islets and a reef in a northerly direction for about a mile, whilst the general trend of the coast is about 20° to the east of north. A shallow bay is thus enclosed, having a shelving sandy beach, quite open to the heavy sea that frequently rolls in from the north and west. There is no doubt that with a large expenditure it would be possible to close the gaps between the islands by a sea-wall, and, by carrying it forward in a curve, afford a certain amount of protection from the above directions; or, what might be still better, to construct an independent wall within the shelter of the natural reef, and by this means form a harbour of limited extent. The objections to the formation of such works, however, would be, in the first place, the enormous expense. This would be greatly increased by the want of proper material, there being no stone within reach at all adapted for the construction of marine works that would be exposed to heavy seas. The limestone at the point, which has been suggested as available, is totally unsuitable, its resistance to the encroachment of the sea at that place being entirely due to the manner in which the strata are naturally placed, presenting a hard surface dipping at an angle of 37° to the westward, from which direction the heaviest swell rolls in. Secondly, the construction of a sea-wall between or within the islands and reef would not fail in a short time to lead to the filling-up of the bay, by preventing the scour which at the present time takes place through the passages, there being no large river entering the bay, or other means of maintaining a counteraction to the great accumulation of drift, which tends to obliterate the irregularities in the coast-line.

These considerations appeared to be so conclusive against our recommending an expenditure for works at this place that we did not think it necessary to require any exact surveys or soundings to be made.

EXTRACT FROM REPORT OF MARINE SURVEYOR.

I ALSO forward herewith a small sketch of "Port Curtis," being the bay formed by Point Elizabeth, a few miles to the north of Greymouth. Mr. Woods was instructed to procure a few soundings in the bay on the first available opportunity, and this sketch is the result.

The soundings show that there is an area of probably not less than a quarter of a square mile already partially sheltered, and with a depth at low water of two fathoms and upwards. Seeing that there is an ample supply of hard limestone on the spot, very fairly adapted for the construction of a breakwater, and that this bay is of perfectly easy access from the Grey coalfields, its future importance as a harbour will be sufficiently obvious; indeed, it is the only place on the west coast

which I am acquainted with where there are both natural facilities and abundant material for constructing a barless commercial harbour of very considerable dimensions, in direct and easy communication with very valuable coalfields. I hope during the present year to procure a careful survey of Port Curtis on a large scale.

J. M. BALFOUR.

Enclosure.

Mr. G. A. WOODS to Mr. JAMES M. BALFOUR, C.E.

SIR,—

Surveying Steam Sloop “St. Kilda,” 27th June, 1868.

I have the honour to forward the following report on the bay formed by Point Elizabeth.

The indentations of the coast-line between Point Elizabeth and the Cliffs, to the northward, form a small bay, which is partially protected by an island lying immediately off the Point, and one or two islets and rocks that stretch across nearly to the main land on the north side.

The passage between the first-named island (*a*) and the islet (*b*) is clear of rocks and shoals, with a depth of from four to six fathoms, but immediately after passing this line the water shoals rapidly, and in the centre of the bight breaks with considerable violence; half-way across between this break and the point, and under lee of the island, a depth of from three to four fathoms was found, but the bottom is uneven, requiring a careful survey and opportunities for observing the effect of northerly and north-west winds upon the space of water lying between the Point and the mid-bay shoal before any definite report can be made as to its capabilities for shipping.

If a rubble breakwater could be constructed from the inner side of the mid-bay reef towards island (*a*), and the passage closed between the Point and (*a*), then a small harbour would be formed, capable of holding three or four vessels. Presuming, however, that this expenditure would be undertaken mainly with the view of, making it a small harbour of refuge, it is necessary to make sure that the sea does not break across the entrance from (*a*) to (*b*) in seaward gales, as that would be fatal to any vessel attempting to enter between (*a*) and the end of the breakwater.

I have, &c.,

James M. Balfour, Esq., C.E.,
Colonial Marine Engineer, Wellington.

G. A. Woods,
Chief Marine Surveyor.

[Nothing can be found of any report by Captain Payne.]

[*Approximate Cost of Paper.*—Preparation, nil; printing (1,200 copies), 19s. 6d.]

By Authority: GEORGE DINSBURY, Government Printer, Wellington.—1889.

Sketch accompanying Report
by C. A. Woods dated 27 June
1898 on Bay North of Point
Elizabetta.



