I think, in forming an estimate of the probable cost of this work, labourers' wages should be calculated at not less than 7s., and quarrymen's at 7s. 6d. per diem, and at these rates, if the same economy in working be practised as was observed at Holyhead breakwater—namely, 3s.5d. per cubic yard for the first 2,200ft., with labourers wages at about 3s. per diem, as given by H. Hayter, Esq., M.Inst.C.E., but according to Sir John Rennie, in his treatise on harbours, the cost of Holyhead rubble is stated at 5s. 6d. per yard—would give (according to Mr Hayter's figures) with wages at 7s. per day, 8s. per cubic yard, allowing that the cost of staging here does not exceed the cost of that used at Holyhead—namely 5d. per ton of stone. But I estimate the staging for the New Plymouth Breakwater will cost £40,000, or 1s. 1d. per ton, being at the rate of 1·46s. per cubic yard of stone. This item will give an additional charge against the stone of about 8d. per cubic yard, or a total cost of 8s. 8d. per cubic yard, or £236,166.

The foregoing only takes into consideration the difference of, between here and Holyhead, wages and cost of staging, but there are other items of expense which will show an equally wide margin of difference.

Again, there is yet another item of cost to be considered. I refer to the loss and re-erection of staging, and the displacement of material during heavy gales. I do not think it necessary to prove that the stone once shifted beyond the limits of the mound will be entirely lost to the work, and should this loss not exceed 5 per cent. the work may be considered fairly successful in this respect. This, then, will add 27,250 cubic yards at 8s. 8d., or £11,806 + £236,166 = £247,972, as the cost of the work to YY, without any accommodation whatever for loading or discharging, based upon the supposition that the quarry at Paretutu will prove as easy to work as the Holyhead Mountain. But this supposition is, I fear, open to grave doubts.

The quarries at Holyhead consisted of quartz, compact, with well-defined joints, the quarry faces having a height of about 120ft. In the proposed quarries at Paretutu (which must form the principal source of supply) we have exactly the opposite of these conditions—namely, excessive heights (exceeding 300ft.), the material shattered throughout, and no well-defined joints, with limited face and excessive stripping.

In the foregoing the figures are based upon the known cost of one of the largest works of its class in the world, costing £1,295,000 (Holyhead breakwater), and in a country where every facility was at hand to enable large works to be economically carried out.

In taking this subject into consideration, it may be of service to you to bear in mind the probable cost of an alternate section, for which purpose I beg to submit to you the following estimate for a western mole of concrete blocks and rubble combined, and also an estimate for the same work, but built entirely of concrete blocks.

Section A, from A to YY.—(Concrete Blocks and Rubble combined.)

	£
From A in Sir John Coode's plan to 9ft. at low water 87,000 cubic yards of rubble at, say 8s. 6d. per cubic yard	36,975
From 9ft. at low water to YY 1,610ft. of concrete blocks, 59,607 cubic yards, at £1 10s. per cubic yard	89,410
Staging from A to 9ft. at low water 726ft. in 25 bays	4,116
Plant ..	50,000
Preliminary charges Offices, sheds, &c. ..	10,000
Landing-stage and roadway ..	14,000
	204,501
Contingencies ..	10,000
	£214,501

Section B.—(Entirely of Concrete Blocks from A to YY, with 1,000ft. of Stage and Roadway).

	£
73,885 cubic yards of concrete at £1 10s.	110,827
Landing-stage and roadway	14,000
Plant	44,000
Preliminary expenses	10,000
	178,827
Contingencies ..	17,000
	£195,827

The price of concrete blocks, cost of plant, &c., is derived from the report on the Kurachee Harbour works by Mr W H. Price, M.Inst.C.E., read before the Institute of Civil Engineers, 9th November, 1875, and, as the report above referred to gives detailed cost of each particular part of a large work successfully completed, a better guide in the matter could not be obtained.

I may add that in estimating the cost of Sections A and B I have added 8s. 3d. per cubic yard to the cost of the concrete block-making and setting at Kurachee, so as to allow a very fair margin for contingencies.

The cost of Portland cement at Kurachee was £4 3s. 9d. per ton, landed here, the cost would be £4 2s. 6d.

Should your Board deem it expedient to go further into this matter I will prepare the necessary plans and detailed estimates of the probable cost.

The estimates herewith have been prepared from sketch sections and plans, which have enabled me to give you a reliable estimate.

I have, &c.,
J R. Rees,
Engineer to the Board.

The Chairman, New Plymouth Harbour Board.