

467 Have you met with many accidents to the work now in progress in the shape of damages?—Very few. We have a special account for repairs. I may explain to you that when these works were commenced it was impossible to get a contractor to undertake to construct the breakwater and maintain it, and therefore, on behalf of the Board, I accepted the responsibility of saying that the contractor's responsibility should cease as soon as he had completed a small portion of the work.

468. How much money has been spent upon repairs?—Only a few hundred pounds.

469. What is the nature of the bottom of the harbour?—It was formerly a hard rock, but now it is softer. The rocky bottom extended about 600 feet, but now it is very compact.

470. You have not been troubled with any sand in the foundations?—There is a uniform layer of fine sand at the bottom, but the sea removes the sand immediately in front of the breakwater.

471. Are you acquainted with the works at New Plymouth?—I have not been there since the breakwater was commenced, but I know the place where the works are.

472. And you know the exposed nature of those works?—Yes.

473. Would you consider it equally favourable with the condition of the works at Oamaru?—Yes, if the bottom were equally good. I do not think there would be any difficulty in constructing a breakwater there.

474. Do you consider the works at Oamaru would be exposed to gales of the same frequency and violence as those at Cape Egmont would?—Yes. I think the gales at Oamaru are as heavy as they are anywhere in New Zealand.

475. But are they as frequent at Oamaru as the north-west and south-west gales are at New Plymouth?—Yes, I think so.

476. Then the difficulties at New Plymouth would not be materially greater?—No, I think not, apart from the bottom: I do not know what the bottom is at New Plymouth.

477 Have you seen Sir John Coode's last report, dated March, 1880, on the New Plymouth Harbour works?—No. I may say that Oamaru is very well protected from the south-west by the Cape.

478. Then the progress they would make in the construction of the breakwater would be regulated by the weather, to a certain extent?—Yes, there is no doubt about that.

479. And if the works at New Plymouth are less sheltered than they are at Oamaru, there would be more delay?—Yes.

480. What is the weight of the cement which you use?—One hundred and twelve pounds to the bushel, there being not less than 1,000 to the $2\frac{1}{4}$ square inches.

481. What does that mean per inch?—About 440 lb.

482. You say that the total plant at Oamaru, including that belonging to the contractor, cost about £9,000?—Yes.

483. And if the cost of the plant at New Plymouth has been £37,000, would you consider the amount reasonable or excessive?—I think it excessive. I think about £10,000 worth of plant would be sufficient for work like that.

484. *Mr. Weston.*] Have you, on your works, all the plant that you require?—We have all the plant that we want except one small crane, which would be used for lifting purposes at the stacking ground. The cost of such a crane would be about £1,000.

485. *The Chairman.*] Will you look over the list of plant at New Plymouth and say to what extent you consider it superfluous?—At New Plymouth they have a 60-horse-power steam-barge which cost £3,272, and I do not think that is necessary. Then, again, there is a steam-launch afloat which cost £1,296, and which I do not consider necessary. Then there are three stone-crushers: I do not think that more than one of these machines is required. I do not see what use they can find for three concrete-mixers: we have only one of these at Oamaru, and it is quite sufficient to keep the works going. Then there are two 22-horse-power engines and boilers. I think a single eight- or ten-horse-power engine would be sufficient, with one locomotive. I think that on the whole Sir John Coode's estimate of the plant required is quite sufficient, and that all the other things mentioned in the list are superfluous.

486. Would the fact of their having to break up their stone at New Plymouth add materially to the cost of their plant?—Yes, it would increase the cost a little; but with three stone-breakers they would be able to crush the stone very cheaply.

487 What would be the difference between getting gravel from the beach, and quarrying stone and crushing it?—The quarrying can be done for 2s. 6d. per yard by us, but the Government do the hauling for us. The Government do not do the hauling in New Plymouth.

488. What would be the difference, supposing the hauling distance was the same?—I have always understood that crushing could be done by Blake's machines at 6d. per yard; but, of course, it would depend on the toughness of the stone.

489. Did I understand you to say that it cost 1s. 3d. per yard to put shingle into the wagon?—Yes, because the men lose a good deal of time in travelling with the trucks.

490. Now, I ask you again, what is the difference in cost as between gravel obtained from the beach at Oamaru, and stone that has to be quarried and crushed, irrespective of haulage?—I think about 1s. per yard would be sufficient.

491. You have seen Sir John Coode's design?—Yes.

492. On page 20 of the specifications, he shows the method which is to be adopted for the depositing of the concrete in bags on the ocean bottom?—Yes.

493. Now, knowing the time it takes to mix a given quantity of concrete and deposit it in bags, what would you think of the propriety of depositing 50 tons in one bag?—Of course you would require specially-sized boxes. I think you would require a hopper-barge to deposit large masses.

494. You would not contemplate lowering a bag of 50 tons of concrete by means of the cranes?—No, not by the cranes used for setting the blocks; but large masses have been lowered by means of a hopper-barge.

495. In depositing bags containing 14 tons with a crane, you can proceed without waiting for a smooth sea, I presume?—No; it is not safe to lower any weight into the water if there is a heavy sea.