413. *The Chairman.*] Captain Sinclair says that if it is extended to the length proposed it will be dangerous except in fine weather: that the swirl of the sea and the sand would come in from the south-east, at the end of the pier, and in consequence of the pier being solid it would prevent the sand going back with the backwash?—I cannot go against the evidence he gives from his experience; but Mr. Thomson, the engineer, has reported that the measure of the amount of sand as formerly reported on was not correct.

The Chairman: Still, there is sand, because we have it already in evidence that it is banking up.

Mr. Whyte: If you saw the place you would say that it was very trifling.

414. *Mr. Graham.*] When Mr. Thomson was down here with his plans for your revision, what was the evidence given as to the quantity of sand?—I should like to read Mr. Thomson's report on the subject, and my memorandum upon his report, if that would help the Committee at all.

The same were read as follows:—

"Sir,— "Harbour Engineer's Office, Gisborne, 23rd October, 1885.

"The harbour surveys being sufficiently advanced, I have prepared a scheme for future works at Gisborne, and have been instructed by the Harbour Board to proceed to Wellington to submit it to the Government for approval, they having given me a letter to the Minister of Marine to that effect. There are two drawings, No. 1. showing the complete scheme, and No. 2 that portion proposed to be executed with our present loan.

"I arrived in Gisborne about the 1st of July, and since that time have made careful examinations of the tides, currents, and winds; also a minute survey of that portion of the bay shown on plan. Several series of sections have been taken, and the bottom probed with long steel rods to ascertain the depth of sand.

"It is rather more than seven years since Sir John Coode visited New Zealand on a tour of inspection. He was only able to call here for about an hour, and, unfortunately, could not examine the place for himself. From my own observations and inquiries, and as the result of the surveys, I have not the slightest doubt but that his report is founded on erroneous or insufficient information received; and it was only after coming to this conclusion that I felt justified in modifying his design. He practically says, from the information he has received as to the physical conditions of the bay, that he has come to the conclusion that it would be inexpedient, at any rate under the present circumstances of the trade of the district, to attempt to improve the entrance, which could only be done by long and expensive breakwater-piers, as the result would not justify the outlay. He then proposes a concrete root 550ft. in length at the boat-harbour, rising with a slope of 1 in 50 to the level of an iron bridge or viaduct 15ft. above high water, and stretching 1,400ft. seaward, which carries the railway to a small sheltering-pier, only 900ft. long, out in the sea. The estimate for the above is £195,000. The connection with town is not included, and would not be under £5,000; making a total of £200,000. Two cross-jetties shown on his plan are estimated at £51,000 extra.

"Had the conditions been as Sir John was led to suppose, there is no doubt that his would have been the only method for providing deep-water accommodation; but in that case it might have been more advisable to give up the idea of large vessels, and spend the money in making the river suitable for the coasting trade. The natural conditions, as we find them, are—the range of tide at springs is about 6ft.; the sea-bottom opposite the town is composed of papa rock covered with about 3ft. or 3ft. 6in. of sand. When clear of the immediate indraft of the flood-tide at the entrance there is no indication of currents which would carry sand or silt from the 'big river' towards Turanganui; indeed, there is very little indication of currents in any direction—and we carefully tried for them not only on the surface, but also below. The direction and whirl of the sea is shown on the plans. It breaks parallel to the beach. After the late heavy gales the river-channel set towards the west, passing close to the stem of the wrecked vessel. This was the result of the south-east sea throwing up the sand and forming a submerged spit from the east head, extending across the entrance. At last it extended the whole way, and the river then cut out a new channel straight out, that portion of the old spit on the west side being washed up and along the beach, or carried into the river by the flood-tide, as is usual with rivers on sandy coasts elsewhere. The Waimata and Taruheru Rivers have been examined, and I believe no practical deposit need be feared from them, the bulk of sand in the Turanganui coming in from the sea.

"The conditions being as indicated, I propose to construct a solid pier on the east side, being, in reality, a continuation of that bank of the river. This pier would extend seawards to the same extent, and be parallel to Sir John Coode's. It would be constructed in a somewhat similar manner, and be available for shipping for its whole length when depth permits. The object of this pier is not only for shipping purposes, but also to shelter the bar and intercept in future the sand thrown up by the south-east gales. At the foot of Peel Street a groin is shown projecting seawards. It is proposed to construct this from time to time as circumstances and funds permit, its object being to guide the ebb-current, form a tidal reservoir, and prevent any drift-sand between high- and low-water mark from being carried into the harbour. Ultimately, it would form part of a wharf when additional berthage was required.

"I may point out that the works as indicated will interfere in no way with the present shipping; that, although it is not the intention to do anything directly at present to improve the river, yet nothing is done which will prevent its being utilised in future, and indirectly the main pier will cause the bar to be scoured out probably to the papa, the result being that as the work goes out a substantial benefit will be obtained, and when completed the larger vessels will discharge at the pier and the smaller in the river.

"Future works are indicated in the plan. They consist of an extensive reclamation on the town side, with wharves extending from the cattle-yard seaward; of reclamation, with wharves, on the Kaiti Bank; of blasting and dredging the bar; and, finally, of carrying the outer end of Peel