

1887.

NEW ZEALAND.

TOITOIS HARBOUR, MATAURA

(REPORT ON), BY THE COLONIAL MARINE ENGINEER.

Presented to both Houses of the General Assembly by Command of His Excellency.

The COLONIAL MARINE ENGINEER to the MINISTER having Charge of the MARINE DEPARTMENT.

SIR,—

Marine Department, Wellington, 23rd April, 1887.

In accordance with your instructions, I visited the Toitois (Mataura) Harbour in January last for the purpose of obtaining such information as would enable me to report as to whether any considerable improvements could be made at limited cost, the objects being to secure a permanently-increased depth of water on the bar at the mouth of the river, and to deepen the river itself at one point in its course, where a bar of shingle exists.

The Toitois Harbour is formed principally by the outflow of the Mataura River into the sea near the small township of Fortrose, which is about half a mile from the heads. The Mataura, as it approaches the sea, flows in a generally southern direction till within a few chains of the sea; it then turns sharp to the eastward, and flows in that direction for about three miles and a half to the heads, a narrow sandbank separating it from the sea for this distance. The river at the present time is navigable to a point (measuring by the bends of the river, which are very numerous in a portion of its course) about thirteen miles from the heads, at which point it has a width of 3 to 3½ chains, with depths of 6ft., 7ft., 8ft., and 9ft., the width increasing towards the sea to 5 chains or 6 chains, with depths varying from 9ft. to 12ft., and occasionally more. Of the thirteen miles mentioned above, the river, for about eight miles, flows through forest, with well-defined banks and regular depth. Over the lower four miles the course of the river is amongst sandbanks, with irregular and ill-defined channels. At a distance of about twelve miles from the heads a saw-mill has been established, and is at work; and this, with a few places where firewood is cut, furnishes the most of the traffic up and down the river, the trade being carried on in small vessels drawing about 6ft. At or near low water these cannot pass the shingle-bar mentioned above, which is situated about three miles and a half up, and just below where the river makes its greatest bend to the eastward, and on which at low tide there is only a depth of about 3ft. The removal, or partial removal, of this bar would assist the navigation of the river materially, and would lessen the cost of the timber produced at the mill by about 4d. per 100ft.—at least, so I was informed by the mill-owner. The bar extends for a considerable length—some 12 chains to 15 chains—the shallowest part being about the middle of this length.

I shall now describe what takes place at the entrance, and how it is affected under different circumstances. During the winter, and for several weeks after a flood, the channel at the mouth of the river and over the bar flows in a tolerably-direct course with a fairly-navigable depth on the bar, so that vessels can enter and leave the port with very little trouble; but during the summer, when the flow of fresh water in the river is reduced, and in the absence of floods, the bar becomes shallower and shallower, and the channel, instead of being tolerably straight, becomes very crooked, and in this state is dangerous to vessels attempting to navigate it, as the sea, except in very favourable weather, breaks over the outer spit or bar and tends to throw the vessel against the inner spit. This inner spit is merely a prolongation of the long strip of sand lying between the sea and the river, above described, which in westerly weather has a tendency, under the same natural forces which produced it, to grow or lengthen to the eastward until it overlaps the mouth of the river, producing a very crooked channel; and it is to the improvement of this channel that any works to be undertaken must be directed—namely, to render it impossible for the river to make such a channel, and to produce a straight, or nearly straight, southerly course for it past the eastern head. (This is composed of harder materials, and is not subject to any alterations in its position.) The depth of water on the bar under ordinary circumstances is at low water about 3ft., and at high water about 9ft., the channel inside varying from 12ft. to 9ft. up to the wharf, at the head of which at low water there is a depth of 7ft., the wharf itself being about 570ft. long, projecting at right angles into the river over a very flat foreshore.

Attached to this report are two maps, one (M.D. 1,328) showing the principal features of the river as described, and the other (M.D. 1,329), showing in dotted red lines the direction of a training-wall which, in my opinion, would preserve the channel of the river in a navigable form, and would tend to deepen and preserve the depth of water on the bar, as well as fix the position of the

channel over it. To effect this purpose it might not be necessary to build the whole length of the training-wall, which would be about 40 chains, as shown on plan: probably about one-half of this length at the lower end would be sufficient at first and until the effect was tried.

As to the cost of the works above described, I may give as an approximate estimate the following: (1.) Training-wall, say 24 chains, made of timber (totara), and strengthened where necessary with rock-work, £11,000 to £13,000; the same in rock-work, £13,000 to £15,000. (2.) Partial removal of the shingle-bar in the river by dredging, £1,000. It may be necessary to call attention to the perishable nature of a timber training-wall; but the cost of sheathing it with metal would be very considerable, probably £2,500 to £3,000.

The alternative proposal for the improvement of Toitois Harbour—namely, that of making a canal to it from the Bluff Harbour—is not, in my opinion, to be entertained. The distance between the two waters is great—about ten to twelve miles—and the construction of a canal would be very costly, as would be also the maintenance of it were it ever completed. The importance of Toitois Harbour is not great enough to warrant any large expenditure in such a direction.

I have, &c.,

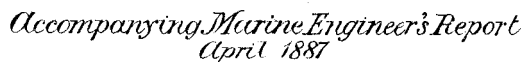
JOHN BLACKETT,
Marine Engineer.

The Minister having Charge of the Marine Department,
Wellington.

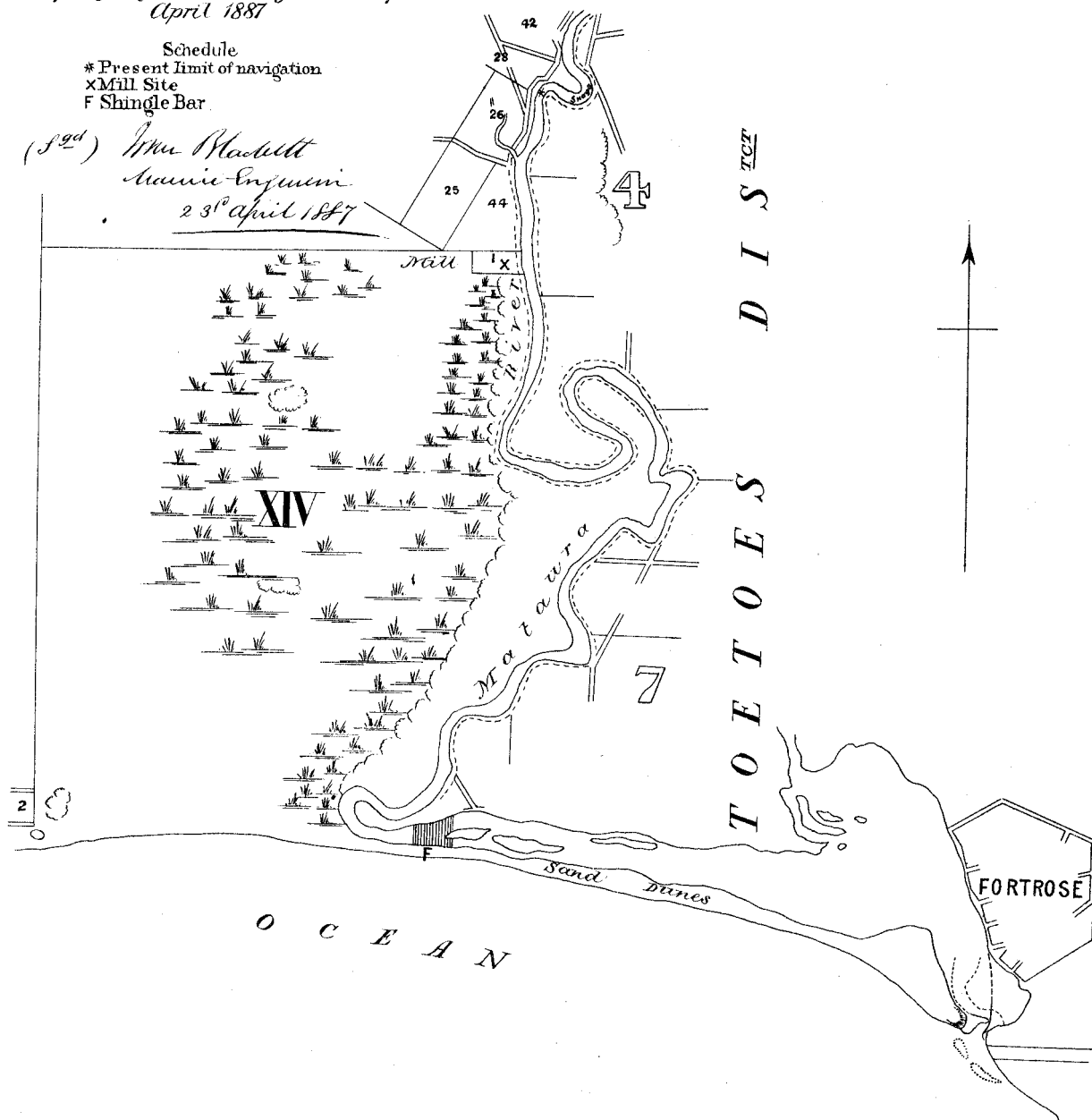
[*Approximate Cost of Paper.*—Preparation, nil; printing (1,275 copies), £1 1s.]

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DRAWING N° 1

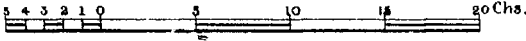


(S^{gd}) *Irma Madelitt*
Marine-Engineer.
 23rd April 1887



DRAWING N^o2

SKETCH MAP
OF
TOI-TOIS (MATAURA)
HARBOUR



Accompanying Marine Engineer's Report
(April 1887)

S^{gd} *John Maclellan*
Marine Engineer
23^d April 1887

