

the east coast of the North Shore, and render a landing at the White Beach impossible, and would secure the safe retreat of any troops sent to the North Shore for the defence of the town. Its low position, however, renders it unsuitable for a Moncrieff battery, and it would be therefore necessary to build an iron-plated fort mounting at least three guns, and the expense of this puts it out of the question.

Dismissing, therefore, this project as unattainable at present, the first consideration is to prevent a ship which has run through the outside defences, or has passed in under cover of the night, from lying in perfect safety in the harbour, and summoning the town; and that this is quite possible, more especially at the commencement of a war, will hardly be disputed.

*North Head.*—On the North Shore the only position worth attention is the North Head (216 feet above the sea), as all other points west of that offer no advantages over places on the south side, while they all have the disadvantage of not commanding the entrance of the harbour. The North Head is second only in position to the Bean Rocks for defending the approaches to the harbour. It is equal to the Bean Rocks for defending the eastern channel, but inferior to it for the defence of the north or main channel, which is the most important. A ship could also lie close under the head at the mouth of the harbour, quite out of sight of the guns on its summit, and shell the town in security. But the most important objection to a battery placed here is that it would be exposed to a boat attack, and would have to be always garrisoned. Altogether, the North Head is well adapted for the defence of the approaches to the harbour, but it defends the interior in a very imperfect manner, and it would be unsafe to trust the whole defence of the harbour to a position so liable to be surprised, for it is evident that if this was the only defence, an enemy could land on the North Shore, and after capturing the battery, could turn the guns on the town, and compel it to surrender without even entering the harbour; so that torpedoes even covering the entrance might be rendered quite useless.

*South Side of Harbour.*—On the south side of the harbour we have the points between Bastion Rock and Hobson's Bay; the two points in Parnell on either side of Judge's Bay and Fort Britomart. The points of land between Bastion Rock and Hobson's Bay, although commanding the whole of the interior of the harbour and well adapted for defending the entrance, have the fatal defect of being too far from Auckland to be rapidly supported against a landing effected at Kohimarama; consequently, with the small garrison that the Colony could afford, they would always be in danger of capture by the enemy. Their distance also from Stoke's Point, the farthest distance, perhaps, to which a ship might go, to take up a position against the town, is three and a half to four miles, a range which is too great for any guns that we are likely to obtain from the Home Government.

*Fort Britomart.*—Fort Britomart is well placed for defending the harbour, but is rather too far from the entrance, being about 3,900 yards from the North Head, and 2,800 from Stoke's Point. Its position in the town of Auckland is so far a disadvantage, that any shot missing the fort would probably tell in some part or other of the town; but, on the other hand, this defect is considerably neutralized by the security it gives against a boat attack, so that a single policeman would be a sufficient garrison.

*Parnell.*—The two points in Parnell on either side of Judge's Bay appear to me to offer superior advantages to any of the others. They are centrally situated, close enough to Auckland to be effectually protected from a land attack, and sufficiently distant so as not to draw the fire on the town. The point between Judge's Bay and St. George's Bay is 3,200 yards from the North Head, and 3,900 yards from Stoke's Point, while the point between Judge's Bay and Hobson's Bay is 2,800 yards from the North Head, and 4,400 from Stoke's Point. A rifled gun on each of these points would, I think, effectually prevent any wooden ship from entering the harbour.

*Distance at which Ships should be kept.*—The next consideration is, at what distance is it necessary to keep the hostile vessels, in order to prevent the town being shelled? No ship can approach nearer to Auckland than three miles, without entering the harbour. This distance is no doubt much less than the range of the present heavy rifled guns; but I think that the small class of privateers, from whom we are expected to defend the harbour, will seldom carry guns of such calibre as to inflict much damage at such a distance. It is not only the difficulty of procuring these heavy guns, but the ships would have to be built expressly strengthened to enable them to resist the recoil from such large charges of powder. In the last war the French seem to have thought a distance of 4,000 metres (two and a half miles) too great for an effective attack on the fort at the entrance to the Gulf of Dantzic; and at Alsen they thought that an attack at 3,000 metres (3,280 yards) would be useless, on account of the destructive fire of the forts. The shelling of an unarmed town from a secure position is however a very different thing from attacking a fort, and I am of opinion that it would be very desirable to keep off vessels to a greater distance. This might, I think, be intrusted to the Harvey torpedo. Fast vessels like the "Luna" and "Golden Crown" might, if armed with two or three of these torpedoes, easily prevent any ship from shelling the town, and that without much damage to themselves. An arrangement might be made with the owners of fast steamers by which the Government could, in case of necessity, take up these vessels and send them out with the torpedoes. If, however, the expense was not too great, a heavy gun mounted on the North Head, would very materially assist their operations, but by itself this gun could not prevent a ship from taking up a position off the White Beach and shelling the town from there, for a sunken gun on a Moncrieff carriage could not deliver its fire at a very low angle; another gun, however, mounted on the hill east of Mount Victoria, would overcome this difficulty.

*Recommendations.*—I would therefore recommend—

1. That the two 40-pounder Armstrong guns be at once withdrawn from the North Head, where they are almost useless and highly dangerous, and that for the present they be mounted *en barbette* behind earthwork parapets, one on each of the points on either side of Judge's Bay.
2. That Moncrieff carriages be applied for, for these guns; and that if they cannot be obtained, working drawings be got from England, and the carriages be made out here.
3. That six Harvey torpedoes, with a proportionate number of spare fuses (for experiment and practice), be procured from England.