second is more advantageous on account of its lower elevation, which would cause the light to be less frequently obscured in foggy weather, when its guidance would be most needed. I may add that Captain Thomson, Chief Harbour Master of Otago, concurs in my opinion as to the description of light advisable, excepting as to colour, which question was not then raised; and Captain Sewell, Harbour Master at Oamaru, agrees with me, both as to position and description; both fully indorsing my opinion as to the utter uselessness of a coastal light at Oamaru. The respective sites are duly marked on the accompanying sketch and tracing.

Moeraki.—Off Moeraki, the soundings are not so regular as off Oamaru, and a dangerous reef, known as the Fish Reef, lies off the coast line, and projects beyond it. Vessels trading between Port Chalmers and the Northern ports pass very close to this part of the coast, and vessels bound to and from Oamaru and Timaru especially have to go very near the Fish Reef. Here, therefore, a coastal light is seriously needed, and I am of opinion that a light should be erected as soon as possible. With regard to the site, two offer themselves, both possessing certain advantages. The first would be on the extreme N.E. point of the Moeraki peninsula, which would give an elevation of 116 feet above sea level and an illuminating arc of 245°, *i.e.* from W. by N. round by N. and E. to S. by E. ¼ E. Of this, however, about 8° would be shut in by a hillock to a vessel approaching from the S.S.E., when close in. This is a very serious drawback. The second site would be on or near the S.E. point of the peninsula, not far from the Boat Harbour, with the highest portion of the Fish Reef bearing E. 50° S. This position would command the whole of the horizon from Vulcan Point to the South, to Look-out Bluff to the North, and from due S. to N. by W. ¾ W., and the altitude would be 60 or 70 feet. I have no hesitation in recommending this site of the two. The light need not be of an expensive description; probably all useful ends would be attained by a fixed light of the fourth order, varied by flashes and short total eclipses, which would not be likely to be mistaken for any lights in the vicinity. The site is comparatively level, and easy of access; a good foundation can be had, but the buildings would require to be of wood, as I could not discover any good stone near at hand. I am given to understand the ground is Native property. I may add that Captain Thomson fully concurs in the above suggestions. (See sketch and tracings.)

Cape Saunders.—I examined the proposed site, which is a tolerably good one, but the great altitude is a serious drawback: a light in this position would be wholly invisible during the dense fogs which so often prevail in that locality. During my visit the weather was constantly so thick that no observations could be taken, excepting as to height. Although the fog was so thick at the proposed site that it was impossible to see objects at a distance of 200 yards, on descending half-way down the hill it was, comparatively, so clear that I could see objects several miles off. As it appeared uncertain how long this foggy weather would continue, I did not detain the steamer any longer, but Captain Thomson, at my request, kindly undertook the necessary observations, from which the following information is obtained:—It appears that there is an available site about 150 feet nearer to the cape, and at about 70 feet lower altitude, or at an elevation of about 470 feet above sea-level. Of these two sites, Captain Thomson prefers the higher one, as it commands a larger arc of illumination to the northward. As, however, the additional space illuminated is only 1½ point, and over an area already guarded by the Tairoa Head light, I am disposed to regard the lower site as the more advantageous. I fear that even in this lower position the light often will be obscured in foggy weather; but as there is no other site available, possessing the needful arc of illumination, I see no alternative to adopting it. I would here observe, in reference to the Tairoa Head light, just mentioned, that if my suggestion be carried out, as to the erecting of a red light at Oamaru, the Tairoa light should be changed to white, instead of a red one, to avoid confusion; and when Cape Saunders and Moeraki are lighted, a fifth-order light would answer all purposes on Tairoa Head. This would enable the two keepers at present employed to be dispensed with or sent to other stations, as so small an apparatus easily could be attended to by the pilot staff. This would involve a considerable saving of expense on stores, &c. While referring to the fifth-order light, I would here remark that such a light can always be managed by a harbour-master or similar functionary, without the necessity of employing a permanent keeper, the simple trimming and lighting every evening being all that is required. Such lights should therefore be erected wherever needed; they afford great assistance to mariners, at very trifling cost. For ordinary coastal lights, where the sites are suitable, I consider a second-order dioptric light quite sufficient; but, in the case of Cape Saunders, I recommend a first-order light on account of its excessive elevation and consequent tendency to be obscured. I would also recommend that it should be fitted with dioptric holophotal apparatus so disposed as to limit the arc of illumination to 25 miles,—the extreme distance at which it could be of any possible use,—distributing the rays and full power evenly over that space. On reference to the tracing (marked A), it will be seen that, under the proposed system, the whole coast between Nugget Point and Timaru will be thoroughly lighted, and, with the single drawback that Cape Saunders light must unavoidably be too high, the plans suggested are complete and unexceptional.

Centre and Rugged Islands.—Leaving Cape Saunders, and passing Nugget Point southward, the question as the best method of lighting the entrance to Foveaux Strait next comes under consideration, According to your instructions, I conferred with the Harbour Masters at Port Chalmers and the Bluff, as well as with masters of vessels trading through the Strait. I was unable to see Captain Greig, as he happened to be away on duty when I visited Port William. The Bluff Harbour Master, Captain Thomson, advised a light on Rugged Island, if only one light were proposed to be erected, and my own opinion inclined that way until I had an opportunity of examining the various localities. The Otago Harbour Master, and the Chief Pilot (Captain Lowden) were of opinion that a light should first be erected in the vicinity of the south-west cape, being the point first sighted by approaching vessels. This opinion was indorsed by all but one of the captains I consulted. Proceeding to Centre Island, I found the landing a bad one, there being some swell on although the sea was comparatively smooth. This would cause difficulty in heavy weather. The island is about 300 or 400 acres in extent, not very broken, rising gradually from the sea to a height of 265 feet on the south side, where a capital site is available for a light, which would show all round. As, however, a light between the island and the mainland is not needed, another site was marked off a little to the south, where the rays of light could be all concentrated on the opposite side instead of part being wasted by being expended where no light is