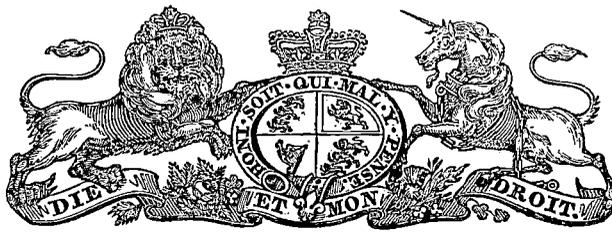


(No. 72.)



1857.

T A S M A N I A.

SUBMARINE TELEGRAPH.

CORRESPONDENCE.

Laid upon the Table by Mr. Colonial Treasurer, and ordered by the House to be printed, 3 February, 1858.



199, *Lonsdale-street West*, 14th December, 1857.

SIR,

I HAVE the honor to forward a Report of my proceedings on board H.M.S. *Victoria*, whilst determining the different lines of Soundings for the proposed lines of Submarine Telegraph.

On Tuesday, 27th October, left Port Phillip Heads and proceeded to Cape Otway, in order to determine the most suitable position for the shore end of the Cable on the Victorian side; and found the spot best adapted for that purpose to be a small sandy Cove where the Parker River empties itself, and about three-fourths of a mile to the eastward of Point Franklin.

I examined the spot in conjunction with the Superintendent of Telegraphs, (Mr. M'Gowan), and found it to be a gradually shelving beach clear from rocks, the depth of water within fifty yards of the shore being $3\frac{1}{2}$ fathoms coarse sand; and at half a mile distant, $18\frac{1}{2}$ fathoms with same bottom.

A course S. $28^{\circ} 7'$ E. was then steered for the north-west end of King's Island; a line of soundings at the same time showed the greatest depth to be 55 fathoms, sand and shells; this was got about the middle of the Strait. I beg to append a tabular list of soundings, &c., from which it will be seen they increased gradually to the greatest depth, and *vice versa*: no marked unevenness of the bottom was found, the whole distance across the bottom generally being composed of sand and shells. On reaching the north-west end of King's Island the inclement state of the weather obliged us to anchor in Franklin Roads.

On the 29th October, proceeded again to the north-west end of King's Island, and landed in a small sandy Cove, about one mile from the north end of the Island; and from observation and sounding, found it peculiarly adapted for landing the shore end of the Cable, the approaches being similar to those found at the Parker River.

I named this spot "Victoria Cove," being the connecting point between this Colony and that of Tasmania.

I would beg to observe that the places chosen for landing the shore end of the Cable, both at the Parker River and Victoria Cove, are only easy of access in fine weather.

The next position chosen in order to take the Cable from King's to Hunter Island was on the east side of the Island, at a place called Sea Elephant Bay; inside the Sea Elephant Rocks (*vide* Chart) ran a line of soundings from this spot S. 47° E., but from the inclemency of the weather this line was not at all satisfactory, and had to be run over again; also that the spot at first chosen on Hunter Island was found to be impracticable, and a small sandy Bay chosen further to the southward, (*vide* Chart); from thence the course was N. $33^{\circ} 45'$ W. to Albatross Island, leaving it about one mile to the westward, then making a course N. 47° W. for the point at Sea Elephant Bay.

The bottom between the sandy Bay and Albatross Island was found to be uneven, as will be seen by the tabular form, and will show, though the depths vary considerably, the substance of the bottom is the same as that found in the Straits; viz., sand and shells. The Bays both at King's and Hunter Islands chosen for landing the Cable are clear of rocks, with a sandy beach.

The next line of soundings was then run from the south end of Hunter Island to the main-land of Tasmania, about three miles from the northern extreme (*vide* Chart).

I again found the bottom very uneven, varying from 6 to $15\frac{1}{2}$ fathoms midway, (tabular forms annexed); the places for landing the ends of the Cable being on a shelving sandy beach, and the distance across from four to five miles, and bears S. $9^{\circ} 40'$ W.

Care has been taken in selecting the different places for landing the Cable to avoid, as much as possible, any indications of rocks or rocky bottom; and I am of opinion that no better spots could be selected for the purpose; and, with the exception of the Parker River and Victoria Cove, are indicated by Beacons.

I would beg to state that the shore portion of this undertaking, not being under my particular supervision, will, no doubt, be reported on by the Superintendent of Telegraphs (Mr. M'Gowan), to whom I offered all the assistance in my power, and would observe that, from the very inclement weather we experienced, the observations were greatly impeded. The bearings are all Magnetic.

I have the honor to be,

Sir,

Your most obedient Servant,

M. G. H. W. ROSS, *Commander R.N.,
Marine Surveyor.*

The Hon. the President of Land and Works.

*SOUNDINGS taken from PARKER RIVER, near CAPE OTWAY, to VICTORIA COVE,
North End of KING'S ISLAND.—28th October, 1857.*

TIME.	DISTANCE FROM SHORE.	DEPTH.	NATURE OF BOTTOM.	REMARKS.
	50 yards	$3\frac{1}{2}$ fathoms	Coarse sand	
	200 "	7 "	Ditto	
	250 "	10 "	F. S.	
	$\frac{1}{4}$ mile	14 "	F. S.	
	$\frac{1}{2}$ "	$18\frac{1}{2}$ "	C. S.	
10-30	$2\frac{1}{2}$ miles	$34\frac{1}{4}$ "	C. S. Sh.	
10-45	4 "	$39\frac{1}{2}$ "	F. S. Sh.	
11-5	5 "	$41\frac{1}{2}$ "	F. S. Sh.	
11-15	$5\frac{1}{2}$ "	43 "	C. S. Sh.	
11-35	$6\frac{1}{4}$ "	41 "	F. S. Sh.	
12-35	12 "	$45\frac{1}{2}$ "	S. Sh.	
1-20	$17\frac{1}{2}$ "	52 "	F. S.	
2-30	28 "	$55\frac{1}{4}$ "	F. W. S.	
3-30	38 "	55 "	S. Sh.	
4-20	..	53 "	S. Sh.	
4-50	..	$22\frac{1}{2}$ "	C. S. Sh.	Proceeded to anchorage.

*SOUNDINGS taken from VICTORIA COVE on the Bearing to PARKER RIVER.—
29th October, 1857.*

TIME.	DISTANCE FROM SHORE.	DEPTH.	NATURE OF BOTTOM.	REMARKS.
11-57		$8\frac{1}{2}$ fathoms	Sand	In boat.
Noon		$12\frac{1}{4}$ "	Sand	
		10 "	Sand	
		$9\frac{3}{4}$ "	Sand	
		$14\frac{1}{2}$ "	Sand	
		$17\frac{1}{2}$ "	Sand	
12-15		23 "	C. S.	On board <i>Victoria</i> .
12-30	1 mile	$24\frac{1}{2}$ "	Sand	
12-45	2 miles	$25\frac{3}{4}$ "	..	
1-	3 "	$32\frac{3}{4}$ "	C. S. Sh.	
1-20	4 "	37 "	C. S. Sh.	
1-40	$5\frac{1}{2}$ "	$41\frac{1}{2}$ "	C. S. Sh.	
2-00	8 "	$47\frac{1}{2}$ "	C. S. Sh.	Returned to anchorage.

SOUNDINGS taken between the South Point of HUNTER'S ISLAND and the TASMANIAN Shore.—21st November, 1857.

TIME.	DISTANCE FROM SHORE.	DEPTH.	NATURE OF BOTTOM.	REMARKS.
8-6	About 4 Miles.	4 fathoms	Sand.	
8-9		8 $\frac{1}{2}$ "	Ditto.	
8-12		13 $\frac{1}{2}$ "	S. Sh.	
8-15		15 "	Sand.	
8-19		21 "	Sand.	
8-24		18 "	Sand.	
8-29		12 $\frac{3}{4}$ "	Sand.	
8-34		15 $\frac{1}{2}$ "	Sand.	
8-39		6 "	Sand.	
8-44		13 $\frac{1}{4}$ "	Sand.	
8-49		11 "	Sand.	
8-54		8 "	Sand.	
8-59		2 $\frac{1}{2}$ "	Sand.	
9-4		1 $\frac{3}{4}$ "	Sand.	
9-9		1 $\frac{1}{4}$ "	Sand.	
9-14		3 $\frac{1}{2}$ "	Sand.	
		4 "	Sand.	
		3 "	Sand.	
		2 "	Sand.	
9-17		0 $\frac{1}{2}$ "	Sand.	

SOUNDINGS taken from Sandy Beach on West Side of HUNTER'S ISLAND to ALBATROSS ISLAND.—25th November, 1857.

TIME.	DISTANCE.	DEPTH.	NATURE OF BOTTOM.	REMARKS.
		31 $\frac{1}{2}$ fathoms	Sand.	
		6 $\frac{1}{2}$ "	C. S.	
		8 "	Weed, S.	
		9 "	C. S.	
		9 $\frac{3}{4}$ "	S. Sh.	At Ship's anchor.
4-5		16 $\frac{1}{2}$ "	F. S.	
4-20		25 $\frac{1}{4}$ "	F. S.	
4-35		15 $\frac{1}{2}$ "	C. S.	
4-50		30 $\frac{1}{2}$ "	S. Sd. Stones.	
5-5		38 $\frac{3}{4}$ "	S. Sh.	
5-20		32 $\frac{1}{2}$ "	R. R. S.	Returned to anchorage.

SOUNDINGS taken from ALBATROSS ISLAND to SEA ELEPHANT BAY.—27th November, 1857.

TIME.	DISTANCE FROM SHORE.	DEPTH.	NATURE OF BOTTOM.	REMARKS.
Noon.	5 miles.	35 $\frac{1}{2}$ fathoms	S. Sh.	
1-0	12 "	35 "	"	
2-0	18 $\frac{1}{2}$ "	29 $\frac{3}{4}$ "	"	
3-0	25 $\frac{1}{2}$ "	25 "	"	
4-0	31 $\frac{3}{4}$ "	13 $\frac{1}{2}$ "	C. S. Sh.	
4-40	35 $\frac{1}{4}$ "	12 "	C. S. Sh.	

*Office of the General Superintendent of Electric Telegraph,
Melbourne, 2nd December, 1857.*

REPORT of the General Superintendent of Electric Telegraph relative to the Survey for a line of Telegraphic Communication between Cape Otway, Victoria, and Cape Grim, Tasmania.

In accordance with the arrangements previously made for despatching H.M. Colonial Steam-ship *Victoria*, Captain W. H. Norman, upon this important service, Captain Ross, R.N., the Government Marine Surveyor, and myself, proceeded on board, and the vessel steamed from Hobson's Bay, on the 27th October, bound for Cape Otway, where I proposed to commence the work by obtaining a favourable point for landing the Cable, and to obtain a line of soundings from the place selected to the northern extremity of King's Island.

We arrived in the vicinity of Cape Otway at daylight on the morning of the 28th October, and having examined the coast for some distance, it was decided that the cove or inlet known as the Parker River presented the greatest facilities in point of accessibility of approach; and upon lowering the cutter and sounding carefully directly into the entrance from seaward, the depth was found to shallow very gradually from 10 fathoms within 400 yards off shore into $3\frac{1}{2}$ fathoms within 80 yards of the sand beach in the centre of the cove, the lead showing soft sandy bottom, mixed occasionally with shells at every cast. Although the coast for many miles on either side is abrupt and heavily rock-bound, yet our soundings showed no indication of the presence of any hidden danger, but rather presented a most favourable position in every way for laying down the Victorian end of the Cable. The Parker Cove was therefore selected as the best position for this purpose. The proper course having been indicated, the ship was steered in, as nearly as practicable, a straight line for the northern end of King's Island; soundings, by means of the patent sounding lead, being taken at proper intervals over the entire distance traversed, the particulars of which will be found in the Report and Chart of Captain Ross. The bottom would appear to be only very slightly undulating, quite free from rocks, and principally composed of fine and coarse sand, mixed at intervals with broken shells, presenting, upon the whole, no obstacle to the safe deposit of the Cable, and subsequent safety, from interruption, after having reached its final resting place.

Having approached a small sandy cove at the termination of our course about nightfall, and the position not being entirely favourable for anchorage, the vessel was steered for Franklin Roads, seven miles distant, where we anchored for the night. On the morning of the 29th October landed at the sandy cove; after sounding from within a mile and a half off shore to the beach, the position proved to be most favourable, as the depth shallowed very regularly from 10 fathoms downwards upon a good sandy bottom, free from rocks all the way to the landing. Boats may land at this point in safety during fine weather when the wind is at south or south east, but after gales from any quarter the landing is not free from danger, which indeed is the case on all the shores of this Island on account of the heavy rolling surf which, not uncommonly, sets in, especially after strong southerly and westerly winds. Having examined the country in the vicinity, and finding this sandy inlet to be the only available spot adapted for landing the Cable at the northern end of the Island, it was selected for that purpose, and named Victoria Cove, as likely to become the immediate connecting point between this and the Sister Colony of Tasmania.

As I considered it of much importance for the security of the line, and also desirable in an economic view, that the direction should be as nearly as possible straight between the two points named, having due regard to the nature of the bottom, depth of water, &c. I deemed it expedient to direct our course towards Sea Elephant Bay, which would bring us nearly in a direct line with the north-western bight of Hunter Island, where I proposed making a second landing, and taking advantage of eight miles of that Island to carry the line through to a small sandy cove nearly opposite Stack Island, and within four and a half miles of the northern coast of Tasmania, but first desiring to obtain some additional soundings for eight miles to seaward from Victoria Cove on a return course towards Parker River Inlet. These were obtained, and proved the bottom to be gradually deepening from $25\frac{1}{2}$ at two miles from shore to 49 fathoms at eight miles distant, the lead showing coarse sand and shells.

The weather having set in on the morning of the 30th October gloomy, with rain, squalls, and heavy gusts of wind from the south and west, little could be done after

anchoring in the Sea Elephant Bay, distant by land about eighteen miles from Victoria Cove. On the morning of the 31st, however, I landed in company with Captain Ross and a party of men from the *Victoria*, for the purpose of penetrating into the interior, and marking, at least, a portion of the course of direction through the Island; but owing to the dense scrub and heavy timber it was found necessary to cut a path in order to force a way to the nearest elevated point, and while engaged in this work it most unfortunately happened that a serious accident occurred through a falling tree striking Mr. Woods, midshipman, and resulting to him in a broken thigh. There being no medical aid nearer than Port Phillip Heads, I deemed it advisable to recommend Captain Norman to return, for the purpose of placing the sufferer in the care of a surgeon without delay, as the most proper and humane course under existing circumstances; it was therefore decided to adopt it. The vessel was therefore got under weigh immediately; and at an early hour on the following day, Sunday, November 1st, the patient was landed at Queenscliff, and the necessary arrangements were made, through the resident medical officer there, for the proper treatment of the case.

Finding, upon returning to Port Phillip Bay, that the consumption of coals had been greater than we had originally anticipated, and knowing that but a very small portion of the work had as yet been performed, Captain Norman considered it expedient to go on to Hobson's Bay for the purpose of obtaining a fresh supply; believing that he should be able to return with his ship by the afternoon of the following day (Monday, November 2nd), and then proceed. This expectation was not, however, realised, as owing to some unlooked for delay on the part of the Contractors the vessel was not coaled until the night of Wednesday, the 4th November, and could not get to sea before early on the next morning, when, having cleared the Heads at 7-30, we headed for Cape Otway with the intention of landing at Parker River Inlet; but the wind setting in strong from south west, and the sea being too rough, it was found impracticable: the course was therefore directed to Sea Elephant Bay, where we arrived about 11 p.m. On the morning of November 6 landed for the purpose of continuing the line of direction; and from this date until the 15th we were engaged in marking the course by theodolite, and examining the nature of the country through which it will be necessary to carry this portion of the land-line. The work was of the most laborious and toilsome character, owing to the dense scrub, heavy timber, and other obstacles in the path through which it was necessary to penetrate. The surface of the land for the first two miles was exceedingly uneven; but after crossing the lagoon which exists at this portion of the Island, the country became more level and the work less arduous. Owing, however, to the very trying weather with which we were obliged to contend, and the additional difficulties occasioned thereby, I considered it necessary to return to the vessel, the party having already experienced considerable hardship, owing to the almost constant rain and sleeping on the ground, &c. A beacon having been erected on the top of a high hummock about a quarter of a mile to the southward of the Sandy Point opposite Sea Elephant Island, to mark the position for landing the Cable, and show the line of direction towards Victoria Cove, it was determined to commence on Monday morning, November 16, soundings between this point and the north-western bight of Hunter's Island (known also as Barren Island); but a gale having set in from south west, accompanied by very thick weather and heavy rain squalls, nothing could be accomplished until the next day, Tuesday, the 17th, when the weather proving more favourable, although still unsettled, the soundings and nature of the bottom were ascertained, the course and details of which will be found in the Report and Chart of Captain Ross. In this line our efforts were also crowned with success in finding again, at moderate depths, a slightly undulating bottom, composed of sand and shells, free from rocks or foul ground of any description; the line passing about a mile eastward of Albatross Island, and terminating in a small sandy cove marked by a beacon placed upon the high ground immediately to the eastward of the entrance. On the 18th November left the ship at anchor between Three Hummock Island and the Hunter and proceeded in company with Captain Ross, in the cutter, taking provisions for six days, to the southern end of Hunter Island; and having examined the coast in that vicinity, a sandy bay, nearly opposite the lower end of Stack Island, was selected as presenting, in all respects, the most favourable position for landing the northern end of this last section of the Cable. A tent of sails was rigged on the beach, and on next morning (19th) the line of direction was commenced towards the north-western bight, continued at this during the day; but the weather having undergone a great change, and setting in at daylight next morning (20th), with a gale of wind and heavy rain squalls from the eastward, little or no progress could be made.

The 21st opening fine, with the wind light from the westward, it was decided to take the opportunity of obtaining soundings, &c., between the sandy bay already mentioned

and the most favourable spot on the north coast of Tasmania. The boat was, therefore, launched, and the bearing of a very distinguishable mark on the opposite coast having been noted, a course was steered, and the boat rowed across, soundings being taken at intervals of five minutes: the result of this examination will be given in the Chart and Report of Captain Ross before alluded to.

Having arrived at a high sand patch for which we had steered, and finding no other more favourable position for our purpose, a beacon was erected to mark the place which will readily be seen in following the channel up to the small jetty or landing place about a mile to the westward and two miles from Cape Grim. The indications of bottom were of the same favourable character as those already obtained between the north-western bight and King's Island, although the soundings were much shallower, and the tidal currents of considerably greater force than any previously met with. A sand bar was found to exist crossing our course when midway between the Island and Tasmania, on which was shown only 6 fathoms; but as the nature of the bottom remained unchanged, and the remainder of the depths presented a very regular appearance, I concluded that the shoal could not in any way interfere with the safety of the Cable; and as I subsequently learned from residents near Cape Grim that the shoal or sand-bar extended all the way eastward to Robbins Island, I did not consider it necessary to endeavour to avoid it by looking for a deeper passage.

Having thus concluded the marine portion of the investigation involved in preparing for ultimately accomplishing the safe deposit of the Cable, and its subsequent security, we returned to the southern Cove, and proceeded to mark out the line of direction towards the north-western bight on Hunter's Island, in which we were engaged until the 24th November. The weather, however, proving most inclement, wet and boisterous, and finding that the period was fast approaching when I must necessarily return to Melbourne to attend to the requirements of my Department, I deemed it expedient to return to the ship, which was effected at 9.30 p.m. on Tuesday, the 24th November. On the following day we steamed round the north end of Hunter's Island to the sandy Cove before referred to in the north-western bight, where we landed and erected a beacon mark already mentioned, on the high ground on the east side of the Cove; after which soundings were obtained from the middle of the beach in 3 fathoms to half a mile from shore, showing 3, 6, 8, 9, and 9½ fathoms respectively, the bottom being fine sand. Soundings were then taken on a course keeping a mile off the north-east end of Albatross Island, the result of which will be found in the Report and Chart of Capt. Ross. The weather having assumed a threatening aspect, and the day being too far spent to admit of the soundings being continued to Sea Elephant Bay, the steamer was taken to her former anchorage, where we remained for the night.

On Thursday, the 26th November, a gale of wind was blowing from south west with heavy rain, squalls, and thick weather, we could therefore do nothing; but on Friday, the 27th, the gale having abated, we were successful in obtaining a most satisfactory line of soundings to Sea Elephant Bay, the former soundings having been slightly objectionable owing to a deviation in the course, attributable to hazy weather, and the indistinct appearance of the leading land-marks on either hand, at the time of approaching the Island.

On the 28th November the weather became again unfavourable; and finding that nothing further could now be accomplished without much additional expenditure of time, and my official duties requiring my presence in Melbourne before the end of the month, I considered it the most advisable course to return without further delay. The steamer was accordingly headed for Hobson's Bay, where we arrived safely on the morning of Sunday, the 29th November, having been engaged upon this service a period of nearly five weeks.

The particulars of the distances, and the lengths of Submarine Cable, and land line, which it will be necessary to provide, are as follows:—

<i>Places.</i>	<i>Actual Distance.</i>	<i>Length of Cable recommended.</i>
	<i>Miles.</i>	<i>Miles.</i>
Cape Otway to Victoria Cove, King's Island.....	49	56
Victoria Cove to Sea Elephant Bay, (<i>land line</i>).....	18	
Sea Elephant Bay to North-west Bight, Hunter's Island....	48	55
North-west Bight to South Cove, (<i>land line</i>).....	8	
South Cove to Tasmania.....	4½	6
	127½	117

In recommending the lengths of Cable which I consider should necessarily be provided, I have been influenced by the consideration of the depths of soundings obtained,—the likelihood of the paying-out vessel, as well as the Cable itself, being more or less affected by the presence of the strong tidal currents which are found to prevail over nearly all portions of Bass's Straits, more particularly between King's Island and Hunter Island,—and the fact that any surplus portions of the Cables which may remain may always prove of great utility in carrying the line from Cape Grim to George Town, across the several navigable rivers which it will necessarily cross in its course,—also that in the event of damage to any repairable section of the Cable surplus remnants would prove of the greatest possible service,—and finally that, as ten to fifteen per cent. has been frequently allowed for margin in laying down Cables in other parts of the world, we can only err on the safe side in allowing the same, or even a rather wider, margin in the present instance, in order to meet all contingencies. The first two sections of the Cable might readily be laid down direct from the ship, aided by good boats at the respective landings; the third would require to be laid from a boat or barge capable of carrying 12 tons, and drawing not over 4 feet water.

For the land portion of the line on King's Island there is an abundance of very suitable timber, but the route will require much clearing (say sixty feet wide) to ensure the safety of the line throughout its entire length (eighteen miles) through this Island; and even to open the line of direction from the last position would, in my opinion, occupy a surveying party at least two months—the timber in some places being very heavy, and the passage through the scrub blocked up by decayed trees blown down by the winds.

On Hunter Island, although sufficient timber may perhaps be found to construct the line (eight miles), yet the clearing will be comparatively trifling, as the scrub is generally low and composed of a species of wattle, with occasional patches of tea-tree. I found excellent water on both Islands; and the party saw fewer venomous reptiles than I had been led to anticipate would have been met with, no accident of any description having occurred from this cause.

The best period of the year for effecting the safe deposit of the Cable would, in my opinion, be the latter portion of the month of December, when settled fine weather not uncommonly prevails for many consecutive days; and, to perform the work satisfactorily, the three sections of the Cable should not occupy more time in laying than one day to each,—there being good daylight during the period mentioned from before 4 A.M. until after 8 P.M.,—sixteen working hours could thus be obtained, and this should afford ample time in which to lay even the longest section, provided the weather be propitious.

As to the description of Cable to be employed, I have seen none which I think would answer the purpose better than one similar to that laid down in the Black Sea, between Varna and Balaklava, a specimen of which is in my possession; but as many improvements, or at least new forms of Cable, have lately been manufactured in England, I would beg to suggest that some good authority in the matter should be consulted there previous to ordering the quantity recommended, whose opinion should be taken as to the most suitable form, and the adoption of any improvements in the method of laying the Cable; the conditions of the contract to be the same as those stipulated in my Report of August 1st, 1856, addressed to Mr. Champ, at that time Colonial Secretary for Tasmania, with the exception of the 4th clause which might be omitted.

I have to express my thanks for the valuable aid rendered by Captain Ross in prosecuting the land portion of the survey. This gentleman gave his services with the necessary instruments for the purpose, and shared with myself and the party all the difficulties and discomforts which, in addition to the nature of the country, the continued inclemency of the weather threw in our way.

I cannot conclude this Report without availing myself of the opportunity of expressing my thanks to Capt. W. H. Norman, Commander of H. M. C. S. *Victoria*, and his Officers for the means afforded me for prosecuting all necessary enquiries, and obtaining every information likely to be of service upon the work in which I have been engaged; and from the experience which has been gained upon the present occasion, I consider that the *Victoria* would be eminently efficient and valuable if employed in aiding in the ultimate consummation of the great and important undertaking, the preliminary work of which has now, I trust, been satisfactorily terminated.

SAM. W. M'GOWAN.

*The Hon. the Commissioner of Trade and Customs,
Melbourne.*