



# Government Gazette

OF

## WESTERN AUSTRALIA.

[ Published by Authority. ]

No. 48.]

PERTH: TUESDAY, OCTOBER 29.

[1878.

No. 182.—C.S.O.

*Colonial Secretary's Office,  
Perth, 28th October, 1878.*

**H**IS Excellency the Governor has been pleased to make the following appointments, subject to the approval of the Secretary of State for the Colonies:—

ROWLEY CROZIER LOFTIE, Esquire, Registrar and Master of the Supreme Court, &c., &c., to be Police Magistrate, and The Magistraté of the Local Court at Perth, *vice* E. W. Landor, Esquire, deceased.

JAMES COWAN, Esquire, Clerk to Police Magistrate, Perth, to be Registrar, Master, and Keeper of Records, Supreme Court, and Registrar in Bankruptcy.

By His Excellency's Command,  
**ROGER TUCKER<sup>D</sup>. GOLDSWORTHY,**  
Colonial Secretary.

No. 181.—C.S.O.

*Colonial Secretary's Office,  
Perth, 23rd October, 1878.*

### Small Debts Ordinance, 1863.

**T**HE following Order, regulating the payment of Witnesses attending Local Courts constituted under the above Act, is, in accordance with section 74, published for the information and guidance of all concerned.

By His Excellency's Command,  
**ROGER TUCKER<sup>D</sup>. GOLDSWORTHY,**  
Colonial Secretary.

I, HENRY HICKS HOCKING, Attorney General of Western Australia, in pursuance of the powers in me vested as such Attorney General by section seventy-four of "The Small Debts Ordinance, 1863," do hereby make the General Rule and Order following, for and concerning the practice and proceedings of the Courts holden under the said Ordinance, and for the execution of the process

of the said Courts, and generally for carrying the said Ordinance into effect (that is to say):—

"Witnesses attending any of the said Courts, and entitled to be paid for loss of time and for travelling expenses, shall be paid according to the following scale:

	FOR LOSS OF TIME.	£	s.	d.	
Laborer, not exceeding	...	0	3	6	per diem.
Artificer, do.	...	0	6	0	„
Any other person, not being a laborer or mechanic...	...	0	7	0	„
Professional men (including Interpreters)...	...	1	1	0	„
Females, according to position, not exceeding two-thirds of the above scale.					

#### TRAVELLING EXPENSES.

Witnesses shall be paid at the rate of eight-pence a mile, one way.

In computing the compensation to be paid for loss of time, Witnesses summoned from a distance of fifteen miles or more, shall be entitled to receive one day's allowance for every fifteen miles (one way) that they may have to travel, beyond the allowance for every day that they may be in attendance at the Court. Witnesses summoned from a distance of less than fifteen miles, shall receive an allowance only for the day or days that they may be in attendance at the Court.

HENRY HICKS HOCKING,  
Attorney General.

October 16th, 1878.

I do hereby, with the advice of the Executive Council, approve the above Rule and Order, and do hereby direct that the same be notified in the *Government Gazette* for public information, and shall commence and have the force of law after the expiration of fourteen days from such publication.

H. ST. GEORGE ORD,  
Governor, &c., &c.

18th October, 1878.

No. 173.—C.S.O.

Colonial Secretary's Office,  
Perth, 11th October, 1878.

**T**ENDERS (in duplicate, endorsed "Tender for (as the case may be) Mail,") will be received at this Office until noon of Friday, the 29th of November, 1878, for the conveyance of the undermentioned Mails for one, two, or three years, viz. :—

1. From Vasse to Warren River (Brockman's) *via* Lower Blackwood, and *vice versa*, twice a month, on horseback.
2. From York to Youndegin, and *vice versa*, *via* Dangin, Carrolling, and Mount Stirling, once a week, on horseback.
3. From Gingin to Yatheroo, and *vice versa*, once every four weeks, on horseback.
4. From Bannister to Wandering, and *vice versa*, three times a month, on horseback.
5. From Champion Bay to Cheangwa, and *vice versa*, once a month, on horseback.

The arrival and departure of the Mails will be subject to instructions from the Postmaster General, and liable to alteration at any time during the year.

Two approved sureties will be required to join the Contractor in a guarantee for the due fulfilment of the duties contracted to be performed.

Special Forms of Tender, with conditions attached, may be had on application to the various Resident Magistrates, and at the General Post Office, Perth; and no tender will be entertained unless rendered on the prescribed form.

The Government will reserve to themselves the right to terminate the Contract at any time by giving three months' notice.

The Government do not bind themselves to accept the lowest or any Tender.

Further information may be had on application to the Postmaster General.

By His Excellency's Command,  
**ROGER TUCKER<sup>D</sup>. GOLDSWORTHY,**  
Colonial Secretary.

Crown Lands' Office,  
Perth, 25th October, 1878.

**NOTICE TO PASTORAL LESSEES.**

**T**HE attention of Lessees and Licensees of Crown Lands is called to the following particulars in the New Land Regulations proclaimed September 14th, 1878 :—

1. The minimum acreage of First Class Pastoral Lands for which Licenses can be granted under the New Land Regulations being 3,000 acres, no renewals of existing Licenses which are under this quantity will be granted for 1879, except in cases where from the interference of the boundaries of other holdings the area cannot be increased; in all other cases fresh licenses of not less than 3,000 acres will have to be procured.
2. In the Second Class Lands, *Leases* only are now granted and in blocks of not less than 20,000 acres. Present License holders under Class II will therefore at the beginning of next year have to apply for *Leases* instead of renewals of Licenses.
3. Failure of payment of rent by the 1st March in any year for any Lease or License (except Mineral Leases which are specially provided for), causes the forfeiture of such Lease or License without the privilege of afterwards making such payment with the addition of a fine.

**JOHN FORREST,**  
Acting Commissioner of Crown Lands.

Department of Public Works, Railway Branch,  
7th October, 1878.

**I** HEREBY certify that the first thirty-one miles of the Geraldton and Northampton Railway may be safely used for goods and mineral traffic.

**JAS. H. THOMAS,**  
Commissioner of Railways.

**WESTERN AUSTRALIA.**

Meteorological Observations for the week ending 21st October, 1878.

WIND Registered by Mr. Forsyth, Harbor Master, at Arthur's Head, Fremantle; altitude above the sea 55 feet, in Latitude 32° 02' 14" S., Longitude 115° 45' 12" E.

The other instruments registered are placed in the grounds adjoining the Survey Office, Perth; altitude above the sea 47 feet, in Latitude 31° 57' 25" S., Longitude 115° 52' 02" E.

**MALCOLM FRASER,**  
Surveyor General.

Week ending.	BAROMETER: Mean Reading corrected, and reduced to sea level, and 32 deg. Fah.	THERMOMETERS IN SHADE.				RADIATION THERMOMETERS.		RAIN: Amount in inches.	WIND.		DEGREE OF HUMIDITY, Saturation = 100: mean amount.	CLOUD: Mean amount.	EVAPORATION: Amount in inches.	
		Dry.		Wet.		Solar.	Terrestrial.		Horizontal velocity in miles, per 24 hours.	General direction.				
		Maxi- mum.	Mini- mum.	Maxi- mum.	Mini- mum.									
21st	30.041	75.9	59.8	65.7	53.1	134.9	50.6	0.21	486.94	N.W.	60	.5	4.8	1.18

Highest reading of Barometer 30.132 on 21st | Thermometers in shade. { Maximum Dry 81.0 on 16th  
Lowest do. do. 29.896 on 16th | { Minimum Dry 47.2 on 15th

The Observations are taken at 10 a.m., (excepting Barometer, which is registered at 12 a.m.)

**M. A. C. FRASER,**  
Observer.

No. 180.—C.S.O.

Colonial Secretary's Office,  
Perth, 23rd October, 1878.

HIS Excellency the Governor directs the publication of the following Notices to Mariners, for general information.

By His Excellency's Command,  
ROGER TUCKERD. GOLDSWORTHY,  
Colonial Secretary.

NOTICE TO MARINERS.

[No. 73.]

AUSTRALIA—WEST COAST.

CHAMPION BAY.

LIGHTS ON MOORE POINT.

The Government of Western Australia has given Notice, that on 19th March 1878, two lights were exhibited from a lighthouse recently erected on Moore Point, Champion Bay, viz.:-

The high light is a revolving white light, attaining its greatest brilliancy every forty seconds, elevated 110 feet above high water, and should be visible in clear weather from a distance of about 18 miles.

The illuminating apparatus is dioptric, or by lenses of the second order.

The low light is a fixed red light, visible from the northward through an arc of 28°, or between the bearings of S. 30° W. and S 53° W. Also visible from the southward through an arc of 23°, or between the bearings of N. 2° W. (on this bearing it leads 2 miles westward of African reef) and N. 25° W.

The illuminating apparatus is dioptric, or by lenses of the fourth order.

The lighthouse, painted white, is a round iron tower, in the form of a truncated cone. Position, lat. 28° 46' 50" S., long. 114° 35' 0" E.

[The bearings are Magnetic. Variation 4½° Westerly in 1878.]

By Command of their Lordships,  
FREDK. J. EVANS,  
Hydrographer.

Hydrographic Office, Admiralty, London,  
13th June, 1878.

This Notice affects the following Admiralty Charts:—Indian Ocean, No. 748a; Australia, general, No. 2750b; Cape Farquhar to Cape Leeuwin, No. 1050; Champion Bay to Cape Naturaliste, No. 1033; Houtmans Rocks, &c., No. 1723; and Champion Bay, No. 1723; Also, Admiralty List of Lights in South Africa, Australia, &c., 1878, No. 227; and Australia Directory, Vol. II., 1868, page 182.

NOTICE TO MARINERS.

[No. 85.]

AUSTRALIA—EAST COAST.

RE-EXHIBITION OF CAPE BOWLING-GREEN  
REVOLVING LIGHT.

With reference to Notice to Mariners, No. 166, of 27th December 1877, on the temporary alteration in Cape Bowling-Green light, pending the removal of the lighthouse to another position:—

The Queensland Government has given further Notice, that the lighthouse having been moved 120 yards south-west of its original position, the revolving light was re-exhibited on 15th April 1878, and the temporary light discontinued.

The light attains its greatest brilliancy every minute, and is elevated 70 feet above the mean sea level.

By Command of their Lordships,  
FREDK. J. EVANS,  
Hydrographer.

Hydrographic Office, Admiralty, London,  
1st July, 1878.

This Notice affects the following Admiralty Charts:—Australia, general, No. 2750a; Coral sea, Great Barrier reef, Sheet 1, No. 2783; Percy Islands to Whitsunday Islands, No. 317; Whitsunday Islands to Magnetic Island, No. 318; Also, Admiralty List of Lights in South Africa, Australia, &c., 1878, No. 301b; and Australia Directory, Vol. II., 1864, page 144.

NOTICE TO MARINERS.

[No. 94.]

AUSTRALIA—EAST COAST.

CAPE MELVILLE.

LIGHT-VESSEL NEAR CHANNEL ROCK.

The Queensland Government has given Notice, that on 6th March 1878, a light was exhibited from a light-vessel placed on the north side of Channel rock, north-west of Cape Melville:—

The light is a fixed white light, elevated 35 feet above the sea, and should be visible in clear weather from a distance of about 10 miles.

The light-vessel is moored in 14 fathoms water, with the following bearings, viz:—

Pipon islets beacon ... .. E. ¼ N.

Channel rock ... .. S. ¼ W.

Position, lat. 14° 7' 40" S., long. 144° 31' 30" E.

NOTE.—Vessels rounding Cape Melville should pass northward of this light-vessel.

[The bearings are Magnetic. Variation 5½° Easterly in 1878.]

By Command of their Lordships,  
FREDK. J. EVANS,  
Hydrographer.

Hydrographic Office, Admiralty, London,  
15th July, 1878.

This Notice affects the following Admiralty Charts:—Australia, general, No. 2750a; Coral sea, Great Barrier reef, Sheet 2, No. 2784; Cape Flattery to Cape Sidmouth, No. 2392; Also, Admiralty List of Lights in South Africa, Australia, &c., 1878, page 44; and Australia Directory, Vol. II., 1864, page 171.

Hydrographic Notice.

[No. 18.]

PACIFIC OCEAN.

NOTICE No. 41.

SOUTH-WESTERN PART.

FIJI ISLANDS.

The following information relating to the south-west part of the Fiji group of islands, has been received from Lieutenant W. U. Moore, commanding H.M. Surveying Schooner *Alacrity*, 1877. [See Admiralty chart of Fiji or Viti group, No. 2,691; Pacific S.W. sheet, No. 780; and Kandavu island, &c., No. 167.]

All Bearings are Magnetic. Variation 10° Easterly in 1878.

KANDAVU ISLAND.

Kandavu, with the smaller adjacent islands, situated to the southward of Viti Levu, form one division of the Fiji group, and are generally the first landmarks seen by vessels coming from the Australian colonies.

The island of Kandavu is of irregular shape, being about 32 miles in length E.N.E. and W.S.W., and varying in breadth from half a mile to 8 miles. At the Tavukie isthmus, it is nearly divided into two separate islands, the backbone range of hills entirely disappearing, and at Ndaku isthmus, it is only three-quarters of a mile broad, the range sinking to a height of 200 feet.

Kandavu is of volcanic origin, and has some high mountains, of which, mount Washington (Mbuke Levu, or the great Yam heap) is most conspicuous, rising to a height of 2,750 feet above the sea.

On the southern side the island is well wooded, but on the northern, or lee side, there is less forest, the trees in many parts giving place to grass.

Irregular coral reef surrounds the island (broken in many places opposite to fresh water streams), and in some parts takes the form of a barrier with navigable water inside.

To the north-east of Kandavu are a number of small islands and rocks, surrounded by coral reef, which is continuous on the eastern side for a distance of 25 miles, but has several passages on the western; this long stretch of coral is termed the Astrolabe reef. North of the Great Astrolabe reef, and separated from it by a deep channel, is the North Astrolabe reef, which encloses a lagoon, in the centre of which is a rock called Na Solo (The Stone).

The population of Kandavu including the adjacent islands is estimated at 7,500. In former days the island was noted for abundant supplies of food, and was much resorted to by whale and merchant ships for fresh provisions, but of late years scarcity has prevailed, and the natives in 1875, were in a measure dependent upon wild roots, creepers, &c., for subsistence. Cultivation is much neglected, and although fish is abundant, the rude method of fishing adopted by the natives prevents a sufficient supply being obtained to satisfy their hunger.

Land-mark.—In making Kandavu from the southward, mount Washington, situated near the western extremity of the island, is first sighted, appearing in the form of a truncated cone, which can be recognised in clear weather at a distance of 60 miles. The northern part of the summit is the highest, and attains an altitude of 2,750 feet.

Cape Washington is the extremity of a spur extending 1½ miles westward from mount Washington, taking the form of a rocky bluff, about 100 feet high, which is fringed by a narrow coral ledge.

Denham island, about 1½ miles S. by W. of cape Washington, is a low coral island, about 10 feet above high water, honeycombed by the sea, and having a clump of palm trees on its eastern end; it is connected with Kandavu island by a coral reef, which extends S. by E. from the clump of palm trees for nearly a mile.

Between Denham island and cape Washington the coast is bold and rugged, cliffs rising in one part to a height of 300 feet. In this vicinity the numbers of

headless palm trees show the violence of the gales which occur here during the hot months (December to April).

Mbuke Levu point terminates the spur on the south-west side of mount Washington. Between this point and Ngaloa harbour, the coast takes an easterly direction, and is irregular in outline, and fringed by coral reef.

Thickombia is a precipitous, dark, rocky, headland, 420 feet in height, appearing from a distance like an island, with trees on its summit. It is connected with Kandavu island by a sand spit, and bears from mount Washington, S. by W., distant about 2 miles.

A coral bank, having two fathoms over it at low water, and upon which the sea breaks heavily with strong winds, is situated half a mile South of Thickombia.

Tomba ni Ndavingeile is a bay on the east side of Thickombia, extending to Koro e Rangi, and is about 2 miles across, by  $1\frac{1}{2}$  miles in depth. It affords indifferent anchorage, as the eastern part of the bay is encumbered with numerous coral heads on which the sea breaks in blind rollers, and the swell curls round the reefs at the entrance of the bay.

The native town of Ndavingeile, situated at the head of the bay, is the capital of the district of Mbuke Levu.

Koro e Rangi.—The peninsula of this name, the south-east point of which bears E.  $\frac{1}{2}$  S., distant 3 miles from Thickombia, has, like the latter, the appearance of an island, being connected with the mainland of Kandavu, by a narrow sand spit, half a mile in length, over which the natives drag their canoes, to avoid the rough passage outside the reefs. The summit of Koro e Rangi, 520 feet high, is covered with grass, and slopes gradually down to the sea. Coral reef fringes its shores, extending S.W. by W.  $\frac{3}{4}$  W. from the south-east point for a distance of about 2 miles, and forming a dangerous spit, upon which the southerly swell breaks with great violence even in the finest weather.

Matanuku island, the southernmost of the Kandavu group, is 570 feet high, steep, covered with grass, and its south point bears from the south-east point of Koro e Rangi, East, distant 5 miles. The coral fringe forms a point which bears S.S.W.  $\frac{1}{2}$  W. distant  $1\frac{1}{2}$  miles from the summit of Matanuku island, and there is a village on its western coast. The coast between Matanuku island and Koro e Rangi has two considerable bights blocked with coral reef, which extends about a mile's distance from the shore; over it, a boat can pass at half tide, but only in the calmest weather. Similar reef connects Matanuku island with Kandavu.

A conspicuous tree is situated on the coast ridge E. by N.  $\frac{1}{2}$  N. of Koro e Rangi, about 350 feet above the sea, forming a good mark.

Tomba Ya-uravu, immediately eastward of Matanuku island, forms a harbor, 2 miles in length north-east and south-west, by about a mile in breadth, available for steam vessels, and affording anchorage in from 14 to 16 fathoms, muddy bottom. The entrance, however, is only 200 yards wide, and being directly open to the prevailing south-east wind, renders departure in a sailing vessel hazardous.

Upon the coral reef in the western part of Tomba Ya-uravu are five small islands covered with bush, and there is a conspicuous black rock on the coral fringe on the north side of the harbour. Between this anchorage and Ngaloa bay, boats can pass over the reef at three-quarters flood at spring tides and during light winds, but with strong winds the breakers extend close in to the beach.

Ngaloa harbour, eastward of Tomba Ya-uravu, is described in Hydrographic Notices of the Pacific Ocean, Nos. 26 and 32. The southern bend of the sea reef, at the entrance to Ngaloa harbour, bears E. by N., distant about  $3\frac{1}{2}$  miles from Uthuna Ya-uravu, which is the name of the southern extremity of the peninsula which divides Tomba Ya-uravu from Ngaloa harbor.

Korah-to-Sarra is a conspicuous peak, 1,643 feet high, of sharp conical shape, affording a good landmark for Ngaloa harbour. Ships making from Ngaloa harbor from the eastward should steer for this peak until the breakers on the sea reef are discerned.

Tavukie isthmus, at the head of the inner harbor at Ngaloa, is 900 yards broad, and is covered

with palm trees, through which a path has been cut by the natives for convenience in hauling boats across from one side of the island to the other.

Anda Tavie island marks the northern limit of Ngaloa harbor; it is 165 feet high, and surmounted by a mbaka, or banyan tree.

Tomba ni Soso is an irregular bay eastward of Ngaloa harbor, taking its name from the native village of Soso situated upon its eastern shore. To the south-eastward of Soso is Chomah, another village of importance. Paths lead from these villages through the forests, to the north side of the island, and to Kasaleka.

Na Korotu is a black conical hill 1,260 feet in height, in the backbone range of the island of Kandavu, overlooking Soso bay. This hill was cleared by a party from the *Alacrity*, a single tree being left on the summit, forming a conspicuous mark from both the north and south sides of the island.

Ndaku isthmus is situated at the head of Soso bay. The backbone range dips here to a height of about 200 feet, and the island is only 1,300 yards across.

A conspicuous clump of palm trees crowns the summit of the peninsula which forms the east side of Tomba ni Soso; they are 500 feet above the sea, and form a useful mark in passing along the coast.

Barrier reef.—Between Schooner channel of Ngaloa harbour, and Uthuna Ngara Levu (the point which terminates the peninsula on the eastern side of Tomba ni Soso) the Barrier reef makes a bight consistently with the coast, at the head of which bight is the Soso passage, 300 yards broad, and available for small sailing vessels, as the prevailing winds blow across it. The Soso passage bears N.E. by E., distant 6 miles, from the outer beacon upon Ngaloa island. Vessels can pass inside the barrier from Ngaloa harbour as far eastward as Uthuna Ngara Levu. Between Tomba ni Soso and Kandavu bay the reef joins the shore in several places. Vessels drawing 6 feet can pass over the reef at high water spring tides, if advantage be taken of the deeper pools, and ordinary whale boats can pass at a quarter flood.

Mount Challenger.—Several ridges run across the eastern portion of Kandavu island in different directions, their common centre being Mount Challenger, which is 2,180 feet high. It has a well-defined peak, is regular in outline, and of a dark color, being covered with forest.

Remarkable islet.—At a distance of  $2\frac{1}{2}$  miles east of Uthuna Ngara Levu is a small islet surmounted by a remarkable clump of palms, with two small rocks north-eastward of it.

Kandavu Town, situated in a deep bay 4 miles east of Uthuna Ngara Levu, is one of the largest in the island, and noted as one of the principal canoe building places in the Fiji group, supplying other islands less bountifully furnished with timber and workmen.

Coral reef.—The barrier reef extending along the south coast of Kandavu, forms a dangerous spur southward of Kandavu town, upon which the sea breaks heavily in the lightest winds. The southern extremity of this spur bears E. by S.  $\frac{1}{4}$  S., distant  $4\frac{1}{2}$  miles from Uthuna Ngara Levu.

Tomba ni Koro Levu is a deep bay 6 miles to the eastward of Uthuna Ngara Levu, affording anchorage at its head in 12 fathoms, mud, northward of a coral reef which is awash at low water.

Sailing vessels, however, should not enter this anchorage, as the entrance is narrow, and the prevailing south-east wind blows directly into it, rendering departure difficult.

Supplies.—A few Europeans have settled at Tomba ni Koro Levu, and fowls, eggs, turkeys, yams, and taro, can occasionally be obtained in small quantities. Fresh water is of doubtful quality, and not recommended.

Koro Levu passage into Tomba ni Koro Levu, formed by a break in the barrier coral reef, is about half a mile long south-east and north-west, by about 200 yards broad. There is a depth of 54 fathoms between the outer horns of the barrier, 28 fathoms half way through, and 32 fathoms between the inner horns. A current sets past the entrance

to the westward in strong trade winds, and the sea breaks with great violence upon the outside horns of the reef.

West islet, 25 feet high, with casuarina trees growing upon it, is situated about a mile south-westward of Koro Levu passage.

East islet is rocky, 69 feet high, and lies half a mile northward of Koro Levu passage.

**Caution.**—Should a sailing vessel resort to Tomba ni Koro Levu, warning is given, not to pass out to seaward through the Koro Levu passage, with the wind from S.W. through South to N.E., and the hour of departure should be timed, so as to allow of a good offing being made outside the reef, with the ebb tide.

The coast of Kandavu between Koro Levu and Uthuna Naingoro to the eastward of it, has two deep indentations and several small rocky islets.

The barrier reef between these two places has two breaks in it, the northern of which, called the Naingoro passage, is about half a mile long and 160 yards broad, and can only be used in daylight, and the finest weather, by steamships, or by small sailing vessels with a commanding breeze. In bad weather the sea breaks right across the entrance. This passage affords means of reaching the Ono channel, and thus avoiding the longer round of the Astrolabe reef. There is also a narrow channel inside the barrier, between Koro Levu and Uthuna Naingoro, which, at about 2 miles north-eastward of East islet, for a distance of 400 yards, narrows to a breadth of about 50 yards, and is about 4 fathoms deep, and should only be used by small craft under favorable circumstances.

The East coast of Kandavu from Uthuna Naingoro takes a north-westerly direction, curving round for about 6 miles into the bay called Tomba Kaivala. Two hills attract attention on this coast, one of a burnt appearance and 940 feet high; the other a densely wooded conical hill, 1,220 feet high, near to, and marking the entrance of Tomba Kaivala.

Ono channel, between Kandavu and Ono islands, is full of coral heads, and should not be attempted except in bright weather, and with the sun in a favorable position for seeing reefs.

**ONO ISLAND** is the largest of the detached islands of the Kandavu group, measuring  $4\frac{1}{2}$  miles in length by  $3\frac{1}{2}$  miles in breadth. The highest peak in the island, called Mbulu, is 1,160 feet above the sea, and is well defined and conspicuous. There is also a sharp peak near the centre of the island, 1,110 feet in height, and near the southern extremity, is a grassy hill 560 feet high, the range between it and the main part of the island dipping considerably, thus causing it to appear from a distance as a separate island. Ono is densely wooded on its eastern side, and partially on its western, and is surrounded by coral reef, which nearly joins the west side of the Great Astrolabe reef, the passage between being about 50 yards broad, and the depth, 17 fathoms, over a bottom of coral.

Fresh water can be obtained from a stream, on the north side of Ono island.

**Tides.**—It is high water, full and change, in the sandy bay on the north-west coast of Ono island, at 6h. Springs rise 6 feet, and neaps 2 feet 10 inches.

Vuro island, attached to the north-east point of Ono island by coral reef, is small, about 270 feet in height, covered with trees, and uninhabited.

Vuro lai lai (Little Vuro), is a rock 90 feet high, covered with bush, situated on the connecting reef between Ono and Vuro islands.

Yambu island is small, 170 feet high, thickly wooded, and bears N.W. by W., distant about  $1\frac{1}{2}$  miles from Vuro island. It is uninhabited.

Mbulia (or Blunt) island, the summit of which bears N. by E.  $\frac{1}{4}$  E., distant  $1\frac{1}{2}$  miles from Vuro island, is nearly covered with grass, and has a well-defined summit 460 feet high. There is a village on the south side of the island, and cultivation.

Yankuve lai lai (Little Yankuve) is covered with light-coloured grass, 210 feet high, and uninhabited; coral reef joins it to Yankuve. Stretching off the south point of Yankuve lai lai, in an easterly direction, is a reef of black rocks, having a boat passage through it, near the shore.

Yankuve (or May) island, is covered with grass, 400 feet high, and uninhabited. There is anchorage in 3 fathoms, sand, on its western side. Care must be taken in picking up a berth, to allow swinging room clear of a coral patch, which is nearly awash at low water, bearing N.W. by N., distant 1,200 yards, from the summit of the island.

Nmara is a grassy island, having a few trees growing upon it; it is 230 feet high, and uninhabited.

Yanu yanu eloma is a small grassy islet, 140 feet high.

Yanu yanu sau is a small grassy islet, 80 feet high, with a single cocconut tree growing upon its summit.

Dravuni (or Colvocoressis) island is about  $1\frac{1}{4}$  miles in length north and south, by about a quarter of a mile in breadth, and rises to a hump at either end; that to the south, about 350 feet above the sea, being the higher. The island is partially cultivated, and has a village situated upon its eastern side. Off the north-west part, there is good anchorage in 4 fathoms, sand, protected from the prevailing south-east wind.

Vanu Kula (or Reynold) island, is 250 feet high, and covered with vegetation. One bush, above the remainder, in the highest part of the island, appears in the distance like a button.

**GREAT ASTROLABE REEF.**—From the Niangora passage, the barrier reef takes a northerly bearing, without a break, for a distance of 25 miles, and has been named after the French exploring ship of war *Astrolabe*, which narrowly escaped being wrecked upon it on the night of June 5th, 1827.

The reef forms an elbow, which bears E.  $\frac{1}{2}$  S., distant  $3\frac{1}{2}$  miles, from Mbulia island (the easternmost of the islands stretching northward from Kandavu island), upon which the sea breaks heavily in almost all weathers. Northward of this elbow, the sea breaks lightly upon the Great Astrolabe reef, and it is therefore most dangerous to approach, especially at night.

On the west side the Great Astrolabe reef is much broken. Between the north extremity of the reef and the island of Ono, are three passes, through which a vessel might navigate, named respectively, the Usborne, Herald, and Alacrity passes; of these, the Herald is clearest. Southward of the Alacrity pass, the reef becomes split up into small fragments, among which navigation is difficult.

**NORTH ASTROLABE REEF** is situated to the northward of Great Astrolabe reef, from which it is separated by D'Urville channel, a mile wide. The reef encloses a lagoon, about 4 miles in length, north and south, by about  $3\frac{1}{2}$  miles in breadth, of oval shape, inside which, anchorage may be obtained in about 12 fathoms, over a bottom of sand and coral. There are two entrances on its northern side, called Beagle and Renard passages. Of these, the western (Beagle) passage is the best, the eastern (Renard) passage, being available only for small vessels in very fine weather. The tide rushes swiftly through these channels.

**Caution.**—The sea breaks lightly upon the North Astrolabe reef, and the set of the tide or current in the vicinity being uncertain, care should be taken to give it a wide berth at night or in unsettled weather.

North rock (Na Solo or the stone), situated near the centre of the lagoon enclosed by the North Astrolabe reef, is 10 feet above high water, and has its top covered with guano. Landing is easy upon the rock at low water, but difficult at high water, and with strong winds.

D'Urville channel, named after the captain of the *Astrolabe*, separates the North and Great Astrolabe reefs, and is about a mile wide. A sounding of 190 fathoms, coral bottom, was obtained in the middle of this channel.

**Caution.**—The sea upon the west side of the Great Astrolabe and North Astrolabe reefs seldom breaks, and it is difficult to distinguish these reefs at night, at which time, this neighborhood should if possible be avoided.

Astrolabe lagoon comprises the sheet of smooth water in which the northern islands of the Kandavu group are situated, and is navigable on a bright day, with a good look out from the mast head.

**Anchorage** is best in the Astrolabe lagoon on the west side of Yankuve and Dravuni islands, but as the greatest depth in the lagoon is 22 fathoms, temporary anchorage may be obtained in most parts of it, bearing in mind, that the lead is of little use in indicating the approach to a coral head, and that other dangers may exist besides those marked upon the chart.

**Alacrity rocks.**—The broken chain of reefs forming the western side of the Astrolabe barrier, is terminated by the Alacrity rocks, which form a dangerous cluster off the north-west coast of Ono island. The principal patch, upon which the sea breaks at low water, bears N.W.  $\frac{1}{2}$  W. distant 2 miles from Mbualu peak; near it are numerous coral heads.

**Mayo and Swanston rocks** are three dangerous coral heads at the mouth of the Ono channel (separating Ono from Kandavu island); of these Mayo rock bears S.W.  $\frac{3}{4}$  W. distant  $1\frac{1}{4}$  miles from Mbualu peak, and Swanston rocks, consisting of two coral heads close together, bear S.W. by S. distant  $2\frac{1}{2}$  miles from the same peak.

**TOMBA KAIVALA (Kaivala bay)** or, as it is sometimes called, Tomba Lawake, is situated on the north-east coast of Kandavu island, and forms a harbour about  $1\frac{1}{2}$  miles in length, by half a mile in breadth, where safe anchorage can be obtained in 16 fathoms over a muddy bottom. Near the south part of the bay, is a steep peninsula resembling an island, 320 feet high, connected on its south side with the coast of Kandavu island, by a mangrove marsh. Kaivala bay, is surrounded by mountains covered with forest from base to summit, of picturesque appearance.

In entering Kaivala bay, care must be taken to avoid two detached coral patches on the western shore, and a coral spit which stretches out for a distance of 400 yards from the east point of the harbour.

**Villages.**—There are four villages in the vicinity of Kaivala bay, namely, Kaivala on the west side of the bay, Lawake behind a grove of high mangroves to the south-west, Solo Tavine to the south, and Ninderi to the north-east.

**Fresh water** is easily obtained from a stream 200 yards south of the village of Ninderi. The natives are poor and no other supplies could be had in Kaivala bay (1876).

**TOMBA NI KASELEKA (Kaseleka bay).**—From Kaivala bay, the coast of Kandavu island takes a westerly direction for 2 miles to Kaseleka bay, which is small, but has sufficient room for small vessels to anchor. On the west coast of the bay is a large white patch on the cliffs, conspicuous from the eastward when the sun shines upon it. Off the mouth of the bay, to the northward, are two detached coral patches called the Malan patch and Kaseleka reef. The town of Kaseleka at the head of Kaseleka bay, is the largest in the island of Kandavu. Many of the natives here are Roman Catholics.

Fresh water can be obtained.

The coast from Kaseleka bay trends westerly, for 3 miles, to Yale point, which is rocky, and has two trees standing upon its edge. A coral reef extends for a third of a mile to the northward of the sandy spit which runs out eastward of Yale point, on the west side of which coral reef there is a boat harbour.

**Mount Yale**, the northern high peak of Kandavu, is well defined, with a tolerably regular slope on all sides, covered with light-coloured grass, and 1,180 feet high.

**Fresh water** can be obtained at high tide, from the stream which runs down from mount Challenger to Yale village.

**Anchorage.**—There is anchorage in 12 fathoms, coral and mud, off the east side, and about 2 cables distant, from the edge of Yale reef.

The coast from Yale point to Uthuna Moindule takes a general direction of S.W. by W.  $\frac{1}{2}$  W. for 9 miles, and is fringed with coral reef, having several outlying dangers outside it. There are two bays in between, called Naseile and Ndaku, off both of which an anchor can be dropped outside the coral heads.

The principal outlying dangers, are the Ham and Roofer reefs, situated at a distance of nearly a mile from the shore.

The most conspicuous hills near this part of the coast are Na Korotu and mount Chalmers, the latter being a square-topped hill about 1,400 feet high. There is also a conspicuous clump of palms on a spur of mount Chalmers, westward of which, the range of hills becomes densely wooded.

The **Asses Ears** is a well marked double peak over Uthuna Moindule, conspicuous from north-east and south-west.

The coast from Uthuna Moindule takes a S.S.W.  $\frac{3}{4}$  W. direction for  $1\frac{1}{2}$  miles to a well-defined rocky point, from whence it runs nearly straight for  $3\frac{1}{2}$  miles in a S.  $\frac{3}{4}$  E. direction to the Tavukie isthmus.

The natives of Malatta village, situated upon the Tavukie isthmus can be hired to drag boats across the isthmus to Ngaloa harbour.

Small vessels wishing to communicate with Wai Levu in Ngaloa bay often make for the north side of Kandavu island in strong trades, and anchor off Malatta.

From Tavukie isthmus the coast curves round in a westerly direction for about 2 miles to the John Wesley bluffs, which are a line of reddish cliffs about 500 feet high, and conspicuous from the northward.

**Malatta reefs.**—Stretching westward from Uthuna Moindule, and following the south-westerly trend of the coast, at a distance of about 2 miles from it, are the Malatta reefs. Vessels can enter between the barrier formed by these reefs and the shore, but the navigation is difficult, on account of the numerous coral heads.

**Tomba ni Tavuki (Tavuki bay)**, having the village of Tavuki situated near its head, is about a mile southward of John Wesley bluffs. The shore reef extends to a point a mile northward of the village, and there are numerous coral heads outside.

**Richmond**, known to the natives as Richmondi, is the next village on the north coast of Kandavu, westward of Tavuki, from which it is distant about  $2\frac{1}{2}$  miles.

For many years Richmond was the head quarters of the missionaries, but now takes a secondary place to the Navuloa station, situated at the mouth of the Rewa river in Viti Levu.

The mission station is marked by a conspicuous house, situated on an isolated hill, 400 yards from the beach of Richmond bay (Tomba ni Richmondi), which here indents the coast, and there is a large stone building on the lower ground.

**Hope reef** bears N.N.E.  $\frac{1}{2}$  E. distant 2 miles from the mission station at Richmond, and breaks at all times of tide.

**Tomba ni Richmondi (Richmond bay)**, just alluded to, affords protection for small vessels in nearly all winds.

The coast from Richmond bay takes a westerly direction for  $2\frac{1}{2}$  miles, and the backbone range of the island has, at distances of one and 2 miles inland from the north coast, two sharp rocky peaks elevated 1,260 and 1,460 feet respectively. At a distance of  $1\frac{1}{2}$  miles westward of Richmond village is the native village of Yawi. The shore reef here extends  $1\frac{1}{2}$  miles from the coast, affording protection to Richmond bay from the westward.

**Dawson reef** is detached and of coral, awash, about a quarter of a mile in extent, and separated from the shore reef of Yawi by a channel about a quarter of a mile wide, which abounds in coral heads. It bears N.E. distant  $5\frac{1}{2}$  miles from cape Washington, the coast between forming Tulaulia bay.

**Tomba ni Tulaulia (Tulaulia bay)** is the westernmost bay upon the north coast of Kandavu, and remarkable for the enormous size of the shingle found upon the coast of its eastern part. The western point of the bay is called cape Washington.

Anchorage may be found about the middle of the bay, off the village of Ndongai, in 10 fathoms, a quarter of a mile from the shore; and safe landing can be obtained through a boat passage in the narrow shore reef.

Upon the coral reef which extends from the east point of Tulaulia bay, there are three rocks several feet above high water.

**Wind.**—During the months when the south-east trade wind blows near Kandavu (April to October), the direction from which it reaches its greatest strength is between east and south-east, when it

sometimes attains a force of from 6 to 7; otherwise, as a rule, it is light.

Commencing at south, the wind often works round to north-east in the opposite direction to the way in which the hands of a watch travel.

The barometer from April to October stands highest for strong south-east trade wind, and its falling is indicative of the wind moderating and veering to the northward.

Hazy weather is generally experienced during strong trade winds.

#### VITI LEVU.—SOUTH-EAST COAST.

**SUVA TO LEVUKA.**—The distance upon the track a steam vessel should steer between the anchorages of Suva and Levuka is about 85 miles. After leaving Suva harbour, and when well clear of the reefs which protect the anchorage, steer to the eastward until Mokaluva island bears north, distant 3 miles, after which, the courses and distances to the southern entrance of Levuka harbour are—

N.E. by E. $\frac{1}{2}$ E. ...	14 miles
North ...	28 miles
N. by W. ...	2 $\frac{1}{2}$ miles.

The Delta of the Rewa is low and flat and without any distinguishing feature.

**CONSPICUOUS LAND-MARKS.**—Between Suva and Levuka the mountain of Na Komba Levu is a useful landmark, especially at night. It is rounded, of dark color, about 1,446 feet high, and is the south-eastern peak of Viti Levu.

Stone on reef (Na Vunivatu) is a mushroom shaped rock, about 5 feet above high water, on the southern reef, at the entrance to the Nasalai mouth of the Rewa. This large stone is conspicuous from the north-east or south-west, when seen clear of the land about the delta of the Rewa.

Mumbualau island is the only other conspicuous landmark between Suva and Levuka. It is of coral, narrow and low, being 2 $\frac{1}{2}$  cables in length in a N.N.W. and S.S.E. direction, by about half a cable in breadth, and is covered with cocoa nut trees, the tops of which are 90 feet above the sea. Situated half a mile inside the edge of the barrier reef (eastward of Mbau), Mumbualau island can be seen from the deck of a vessel at a distance of about 12 miles, and forms a valuable mark for making the Mbau coast (which is low and not easily seen), in thick weather.

**REWA ROADS** afford an open anchorage at the Nasoata mouth of the river Rewa, which anchorage is probably formed by the alluvial deposit brought down by that river. Small vessels can obtain protection from the ordinary trade wind under the point of the reef south of Nasoata island, but in selecting a good position for anchoring it should be borne in mind, that the reefs are very difficult to see, especially after rain, on account of the muddy water produced by the river. With strong trade winds, or during the hurricane months, this anchorage must be considered dangerous.

Port Nukulau immediately westward of Rewa roads is a preferable anchorage to the latter, as it is protected from all points of the compass. Sailing vessels, however, cannot leave Port Nukulau until the trade wind veers to the eastward of north, and it is also advisable to depart with the ebb tide. [H.M. Schooner "Alacrity" was wind-bound in this port for ten days, it blowing a double-reefed top-sail breeze from S.E. by S, to E. by S.]

Nasalai Mouth of the River Rewa has good anchorage protected from all winds, at Port Nasalai, in 8 fathoms, sand, about two-thirds of a mile S.W. of Stone on reef (Na Vunivatu).

Kamba Point is a narrow peninsula 3 miles long, and half a mile wide, standing out in relief, and appearing like an island, but without any remarkable feature. The tufts of palm trees which surmount Kamba Point are 160 feet above the sea.

Tomberua Passage leading into the Mbau waters is available for vessels of 11 feet draught. The channel passes between two half-tide sand cays, which are 300 yards apart.

Daveta ni Kalavo, or Rat Passage, near the island of Nanga Sautambu, is only of use for boats during fine weather. It is 380 yards broad, and has rocks between the inner horns of the entrance reef.

**MBAU WATERS** is the name given to the lagoon, in which the island of Mbau is situated. Sunken coral reefs are here numerous, the lead giving no warning when approaching these dangers, and it is probable that there may be patches of coral other than those marked upon the chart; great vigilance is therefore necessary in navigating.

By passing between Leluvia Island and Thanggalai, vessels of any size may navigate the Mbau waters as far as Viwa Island, but no directions can be given; and the vessel should be coned from aloft, with the sun astern.

**Indistinct objects.**—The islands of Teilau, Viwa, and Mbau are difficult to see until close to, being much the same height and color as the adjacent land.

Uthui ni Vanua is a perpendicular bluff of reddish color, 60 feet high, on the coast of Viti Levu, near the northern part of Mbau waters, and forms the most conspicuous object in this neighborhood; it is most distinct in the forenoon.

Teilau Island is about 500 yards long east and west by 150 broad, and has several palm trees growing on its ridge, making the entire height of the island 100 feet above the sea. It is uninhabited.

Viwa Island is nearly a mile long, by one-third of a mile broad, and is about 160 feet in height throughout. In 1877 there were 170 inhabitants, and an English missionary, whose house was situated on the north side of the island.

Mbau Island is small, and about 80 feet high. Ships cannot approach nearer to Mbau than 1 $\frac{1}{2}$  miles, but boats may reach the shore at all times of tide. The number of inhabitants in this island was 400 in 1877; among them being the Christianised chief Thackombau. The present governor or roko of Mbau, is Ratu Abel, eldest son of Thackombau (1877).

**Supplies.**—All necessaries are brought from the neighboring province of Tai Levu, and neither supplies nor fresh water can be obtained by ships.

Tomberua Islet is low and sandy, about 200 yards long by 100 broad, and covered with palms about 80 feet high. It is situated in a direct line between Mbau and Mumbualau islands, but nearer to the latter.

Boat navigation frequently takes place between Suva and Levuka. In leaving Suva by boat for Levuka, it is best to arrange to be in either the Lauthala or Nukulau mouth of the Rewa, soon after the flood tide makes, which will be favorable as far as the town of Rewa, after which, the river should be descended to the Navuloa mouth, with the first of the ebb, on account of shoal water off Toka Toka. The river being successfully passed through, steer for Tomberua island, and thence on to Moturiki and Levuka.

At half tide, ordinary whale boats can pass inside the shore reef on the eastern side of Moturiki island, but at low water, it is necessary to pass through the Nai Tasi passage, which however, breaks heavily in strong trades. In that case, a circuit to the westward of Moturiki must be made.

Large canoes from Mbau, take the Nai Tasi passage in fine weather, except at low water, when they proceed to Levuka outside the barrier reef.

Small sailing vessels go round to the westward of Ovalau, if the wind be blowing strong from a direction to the northward of east.

#### SOUTH COAST.—VITI LEVU.

Sailing vessels bound for Suva, during the trade wind months, from New Zealand or the Australian Colonies, should endeavour to make sufficient easting to enable them to pass to windward of the Astrolabe reefs, and thus obtain a commanding position for bearing down on the port. Steam vessels can make Mbuke Levu (Mount Washington), and passing close to Cape Washington steer through the Kandavu passage on a straight course for Suva. With the wind north of East, which is not infrequent, sailing vessels cannot lay through the passage, and in strong trade winds a surface current to the westward has been experienced in the neighborhood of the Mbenga barrier reef. In thick weather, however, when an approach to the Astrolabe reefs is attended with danger, or when the wind is from the westward, the

Kandavu passage is the best route. In beating, preference should be given to the south side of the passage.

On leaving Suva for the Australian Colonies, the Kandavu passage is the best route for all classes of ships, mount Washington affording an excellent point of departure.

**Landmarks.**—On making the south coast of Viti Levu in the neighbourhood of Suva from the south-east, the most conspicuous landmarks are Rama (thumb shaped peak) and Na Komba Levu (round mountain). After passing the north Astro-labe reef, a course should be steered for Na Komba Levu, thus keeping a little to windward, and the reef followed down to the entrance of the harbour.

**Proposed leading Marks and Lights into Suva Harbour.**—Leading lights set up in conspicuous white towers of wood are about to be erected at Suva. A north course, with the towers, or lights, in one, will lead through the passage.

**KANDAVU PASSAGE** is the name given to the broad deep channel which has for its limits,—on the south side, the islands and reefs of Kandavu,—and on the north side, Vatu Leile, Thakau Lekaleka, and the Mbengha barrier.

**VATU LEILE** is a low, kite shaped island, apparently of coral formation, and covered with palms, casuarina trees, screw pines and dense brush-wood. It is 6½ miles long, and varies from three-quarters of a mile to 2½ miles in breadth, its greatest height, which is towards the north and west, being estimated at 110 feet; the western coast on the face of its steep bluffs, shows curious indications of upheaval. The island slopes gently to the eastern shore.

As Vatu Leile presents a perfectly even and regular outline to the view, it is difficult to make out in thick weather or at night. A coral reef 300 to 600 yards broad and 3 feet dry at low water fringes the western coast, but the north and east coasts are protected by a barrier reef, which, opposite the principal village, forms an elbow 2½ miles from the shore.

The normal depth in the lagoon is about 4 fathoms, but there are several rocks off the northern shore, which render navigation unsafe at low water for vessels drawing over 10 feet.

**Off-lying Islets.**—Situated on the northern part of the barrier reef are three islets called Vatu Savu, Vatu Levu, and Vatu Lai-lai. Vatu Savu, which lies due north of Vatu Leile, is to be distinguished by having two palm trees growing on it. Vatu Levu, which is larger and more to the eastward, has eight palms, and Vatu Lailai is a bare rock (or more correctly, a collection of rocks close together), with no vegetation.

The population of Vatu Leile in 1877 was 265.

**Supplies.**—The only supplies to be obtained are kumalas (the Fijian sweet potato) and yams, both in small quantities. No good water can be obtained.

The Natives occupy themselves in the cultivation of the soil, one month of the year sufficing for gathering in the taxes, which consist of certain staked quantities of cobra and candlenut.

**Passages into Lagoon.**—There are two passages into the lagoon of Vatu Leile island, named the Weather passage, and the Lee passage. The Weather passage is suitable for the entry of sailing vessels with the wind between S.E. and E.N.E. It is 80 yards broad at the mouth, and forks at a distance of 150 yards from the outer horns.

The northern branch of the fork should be chosen. Some rocks with 3 or 4 feet of water over them lie in the channel, but by careful conning from the mast-head, these can be avoided, and vessels of 10 feet draught may enter at low water. No attempt should be made to enter with the ebb tide. The courses through are S.S.W. and S.W.

The Weather pass is 700 yards east of Vatu Lailai, and at the entrance Vatu Lailai and Vatu Savu are in one. A conspicuous boulder, one foot above high water, called Nai Rambo rambo is situated on the edge of the barrier, 400 yards east of the passage.

The Lee Pass is the best for the exit of sailing vessels in the trade wind season, if the wind is south of E.N.E., and is safe for both the entry and exit of steam vessels drawing not more than 10 feet, at any

time of tide. It passes 500 yards east of Vatu Savu (the islet with 2 palms) and is divided into two channels some few hundred yards from the entrance by a group of rocks. The eastern channel is the safest.

**Caution.**—The entrances into the Vatu Leile lagoon should not be attempted unless the sun is in a favourable position; and a good masthead lookout is imperative.

**Tides.**—During the stay of H.M. Schooner *Alacrity* in the north part of Vatu Leile lagoon, the flood set S.S.E. and ebb N.N.W.; the stream taking the same course along the western reef.

**Thakau Lekaleka** (the Flying fish shoal of Wilkes) is 8 miles E. b. N. of the southern extremity of Vatu Leile. It is nearly round in shape, and has a diameter of 1,000 yards. At low water it is awash, and there is generally a heavy break on it.

The Mbengha barrier is a long unbroken stretch of coral reef 21 miles in length, and varying in breadth from half a mile to 1½ miles, situated to the south, and south west of Mbengha island, and having a prominent elbow, 12½ miles S.W. ¾ S., of the highest peak. It is dry at low water, and breaks heavily only on the elbow just mentioned. Caution, therefore, is required in approaching it at night, or in thick weather.

The Nanuku reefs are a continuation of the Mbengha barrier as it trends north, and afford protection to the island from the easterly swell. There are passages through the Nanuku reefs, and between them and the Pratt reefs, which can be navigated with the ordinary precaution of a good masthead lookout.

The Cutter pass is very narrow, and should only be attempted with a fair wind and tide.

**Storm islet** is a sand cay, near the north-west extremity of the largest of the Nanuku reefs, 280 yards long and 80 yards broad. It is covered with bushes; cocoanut and other trees making its entire height 50 feet. The northern point of Storm islet is 3 miles N.N.E. ¼ E. of Mbengha peak.

**MBENGHA ISLAND** is of irregular shape with two deep indentations named Malamu and Kovanga bays, the former on its north-east, the latter on its western side. Neither of these bays can be recommended as harbors for sailing vessels on account of the baffling winds.

The greatest breadth of the island is 4 miles, and it has several high peaks; the northern, which is the highest and also most precipitous, being 1,430 feet above the sea.

**Population.**—There are eight villages, the principal of which is Wai Somo on the north coast. The total number of inhabitants amounting in 1877 to 680.

Portions of the island are under cultivation; and lemons and shaddocks grow wild in large quantities on the hills. The appearance of Mbengha is beautiful from all points of view, as it is clothed in foliage from the summits of the hills to the water line.

**Anchorage.**—Vessels can anchor anywhere round the coast of Mbengha; but the water is deep, and the bottom rocky and uneven.

**Tides.**—When at anchor between Storm islet and Mbengha, in July, the *Alacrity* found the flood tide setting to the south-east, and ebb to the north-west.

**SUVA HARBOR to THUVU HARBOR.**—From Suva to Koro Levu, the south coast of Viti Levu may be described as mountainous, densely wooded and well-watered. The highest mountains are in the neighborhood of Suva, one peak, Voma, 20 miles inland and N.W. b. W. of Suva, attaining an altitude of 3,960 feet.

This peak is clearly distinguishable from outside Suva harbor in clear weather, and would be a useful mark for observing (in a steam vessel) for deviation of the compass.

**Rainfall.**—The effect of being backed by such high mountains is to make Suva and the country to the westward a wet and misty locality, and while this, doubtless, is not a subject of regret to the planter, it is a serious inconvenience to the navigator approaching coral reefs, as to the existence of which the lead gives no warning.

**Climate.**—West of Koro Levu there is a marked change both in the character of the country and the climate. The hills being considerably lower and more



isolated; there is scarcely any rainfall, and the thick forests give place to grass and widely scattered screw pine trees.

Natives are clean and intelligent about Suva, but deteriorate to the westward, both in physique and manner of living.

From Suva to Navua river the general direction of the coast is south-westerly. An irregular chain of reefs lies parallel to the coast, forming four prominent elbows, two of which are 3 miles from the nearest part of the shore.

Ships can enter and anchor within either of the passages, but the best harbor is Tongoro, which is easy of ingress or egress, comparatively free of coral heads, and has anchorage ground of moderate depth, well protected from the prevailing winds.

**Landmarks.**—After passing Rama (Thumb peak) the most conspicuous landmark along this portion of the coast is Delai Mau, the highest peak of a short range, 11 miles W.S.W. of Suva. It is conical in form, of a dark color, covered with trees, and 620 feet high.

**Vei Vatuloa.**—The native town of Vei Vatuloa is the seaport of the Mimosi district, and is situated opposite to the passage of that name.

**Navua Roads** is the name given to the anchorage formed by the deposit from the Navua river. In westerly winds good shelter can be obtained west of the river, under the lee of the Rovondrau reefs in 4 fathoms mud.

**Navua river** is navigable for boats some four or five miles from its mouth. Above the plantation of Thalia and before coming to the junction with the Duemba, are rapids, over which canoes only can pass.

These latter, can be poled up to within a few miles of the town of Nimosi, which is situated under the mountain of that name.

For several miles on either bank of the Navua river, and for four or five miles in a direct line from the coast, there is a large tract of rich flat land apparently well adapted for the cultivation of sugar.

Several white men own property in this district.

**ROVONDRAU BAY.**—Two miles to the westward of the Navua River is Rovondrau bay, where there is good anchorage in moderate depth, well protected by the Rovondrau reefs from the prevailing south-east winds.

**Duemba river.**—Eastward of the anchorage in Rovondrau bay is the mouth of the Duemba river, a tidal stream, which joins the Navua, four or five miles from the mouth.

**Coral cay.**—The Rovondrau reefs terminate one third of a mile S.W. of a cay of coral grit, which stands one foot above high water, and is conspicuous in bright weather.

**MBENGHA PASSAGE** between the island of Mbengha, and the south coast of Viti Levu, is 10 miles long, and has for its limits—on the south side, the Pratt reefs, the Pearl rock, the Cæsar rocks and the Nisithi rocks; and on the north side, Naitata Flats, the Rovondrau reefs, Combe, Lake and Shark reefs, and the Serua reef. Between Shark reef and the Cæsar rocks, the passage is but little over one mile wide, the depth mid-channel being 150 fathoms.

**Landmarks.**—In passing through the Mbengha passage, the most conspicuous landmarks are Storm islet, Mbengha, Yanutha and Bird islet, on the south side of the passage:—The Rovondrau coral cay, the Shark's Fin hill, and a sand cay on the Shark reef, on the northern side.

**Directions.**—If bound through Mbengha passage, from the eastward pass within one mile of the Rovondrau coral cay, and steer W. b. S.  $\frac{1}{2}$  S., keeping well over to the Shark reef to ensure clearing the Cæsar rocks, which do not break. The Cæsar rocks are passed when Shark reef cay is in line with the Shark's Fin, after which a more southerly course may be steered, if necessary, to clear the Serua reef. A good masthead lookout, is, of course required here, as elsewhere in the vicinity of coral dangers. A glance at the chart will show that large vessels should not attempt the Mbengha passage at night, except in a case of emergency.

Pratt reefs are a group of coral patches, half-way between the north shore of Mbengha, and the Rovondrau reefs. In the centre of the largest patch is a sand cay, which is awash at high water.

**Pearl rock** lies W.S.W. distant 2 miles from the sand cay just mentioned, and consists of coral, with 3 fathoms over it at low water.

**Cæsar rocks** are two small coral heads which seldom break, 6 feet beneath the surface at low water, bearing N.E.  $\frac{1}{2}$  N., distant 2 $\frac{1}{2}$  miles from Bird islet.

There is seldom or ever any break on them.

**Nisithi rocks.**—Between the Cæsar rocks, and Thakau Nisithi, the bottom is foul, being strewn with rocks, about 6 to 12 feet below low water.

**Thakau Nisithi** is the name given by the natives to the coral reef, upon which is situated Bird islet (of Wilkes), which is a small sand cay, with a group of bushes on it, making its entire height, 4 feet above high water.

**MBENGHA LAGOON** is the name given to the sheet of smooth water which is protected by the Nanuku reefs, the Mbengha barrier, and the Yanutha reefs. Like other coral lagoons of this character the bottom is very uneven, and there are numerous coral heads and patches.

A general examination has been made of this lagoon, but it is possible that more dangers exist than are marked on the chart.

**Stuart islet** (of Wilkes), is 1 $\frac{1}{2}$  miles S.W. of the south-west coast of Mbengha. It is 320 yards long, by 240 broad, partially cultivated, but uninhabited.

**Yanutha island**, 8 miles W. b. S. of Mbengha peak, is one mile long by half a mile broad, steep on the north-west side, but sloping to the south-east, partially cultivated, and having about 150 inhabitants, occupying a village on the east shore. It has three peaks, the highest, which is the most eastern, being 450 feet above the sea.

**Anchorage.**—There is tolerable anchorage in 7 fathoms, sand, off the north-west coast, protected from the prevailing easterly wind. In steering to the northward from this island, a good lookout is necessary to avoid the coral heads between the Yanutha reefs and Thakau Nisithi.

**Yanutha reefs**, situated to the westward of Yanutha, are a continuation of the west leg of the Mbengha barrier.

**Frigate passage** between the Mbengha barrier and the Yanutha reefs, is 1 $\frac{1}{2}$  miles wide, with two coral patches in it, and is available for vessels of any size.

The coast from the Duemba river to Serua takes a general direction of W. b. S. for a distance of 11 miles.

The most conspicuous landmark is the Shark's Fin, an isolated hill halfway to Serua, resembling the dorsal fin of a shark, with the most abrupt descent inshore. It is covered with trees and 680 feet high.

**Combe reef** is extensive, awash at low water, and situated 1 $\frac{1}{2}$  miles W. b. S. of Rovondrau cay.

**Lake reef**, 1 $\frac{1}{2}$  miles W. by S. of Combe reef, is covered at low water, and less conspicuous than the latter.

**Shark reef** is 1 $\frac{1}{2}$  miles long. The western half of it is awash, but the eastern half is a few feet below low water. The sand cay on Shark reef is one foot above high water, and is situated 2 $\frac{1}{2}$  miles S.  $\frac{1}{2}$  E. of the Shark's Fin.

**Serua reef**, which affords protection to Serua harbour, is 4 miles long and 1 $\frac{1}{2}$  broad, and separated from the shore fringe by a narrow channel, full of rocks, which is only navigable for boats.

**SERUA HARBOUR** is thoroughly protected from all winds. Anchorage can be obtained in 16 fathoms mud, with the left extreme of Serua islet in line with Hog's back point bearing W.  $\frac{1}{2}$  S., and distant 1,200 yards, taking care to allow swinging room for clearing a rock with 12 feet on it at low water, which lies nearer to the islet, on the same bearing.

Serua town, which has 150 inhabitants, is situated between 2 hillocks (90 and 110 feet high) at either extremity of a small islet. A rude pier has been constructed at the north-east end of the islet. The town is clean and well kept. No supplies can be obtained.

**Water.**—The *Alacrity* obtained good water from a stream 1 $\frac{1}{2}$  miles north-west of the anchorage, at the rate of one boat load at each high tide.

The entrance into Serua harbour is about half a mile long, and 350 yards broad in the narrowest

part. A dangerous spit runs off the outer horn on the west side, having 2 and 5 fathoms on it at low water. The depth in mid channel is 36 fathoms.

The general direction of the passage is N.N.W. and S.S.E., and there is often a swell setting into the mouth of it.

**Caution.**—Sailing vessels are therefore cautioned against attempting to leave the port in the trade wind months, with the wind south of E.N.E., or with a flood tide.

A land breeze sometimes is experienced early in the morning, when there is a lull in the easterly breeze outside—but the *Alacrity* was wind bound here for ten days, and eventually had to beat out at considerable risk.

**Entrance mark.**—From between the outer horns of the Serua passage, the west peak of Yanutha island bears S.E.  $\frac{1}{2}$  S. distant 6 miles.

**Hog's back** is a round wooded hill  $2\frac{1}{2}$  miles west of Serua harbour. It is 800 feet high, and conspicuous from both east and west for many miles.

**Hog's back point** is the extremity of the ridge running down to the sea from the Hog's back. The fringing reef forms a prominent horn S.W.  $\frac{1}{2}$  W. of this point, distant from it over one mile.

From Hog's back point the general direction of the coast is W.  $\frac{1}{2}$  N. for  $25\frac{1}{2}$  miles, to Ngarandrandra point, from which it takes a direction N.W. b. W.  $\frac{1}{2}$  N. for 3 miles to Thuvu harbour.

The **Landmarks** most likely to attract attention along this portion of the coast are Loka Levu, Kongi, Butoni hill, Cannibal hill and mount Le Jeune.

The sandhills at the mouth of the Singatoko river are also useful in marking the progress of a vessel along the land.

The reef is of a "fringing" character with frequent boat openings, and varying in distance from the coast from one mile to 300 yards. For a distance of  $2\frac{1}{2}$  miles west of the entrance to the Singatoko river, there is no reef.

There are no outlying dangers.

Vuna niu, Sovi, and Thuvu are small harbours suitable for steam vessels, but unsafe for sailing vessels.

**VUNA NIU**, (also called Granby harbour) is open north and south with an entrance 360 yards broad, and clear of rocks. Inside, there is good anchorage in 8 fathoms mud, well protected. The western horn of the entrance projects to the south for a distance of half a mile from the mouth, and there is consequently a confused sea immediately outside the passage. Sailing vessels would find much difficulty in leaving this harbour unless favoured by a strong land breeze, which is not of frequent occurrence.

The entrance to Vuna Niu harbour is  $1\frac{1}{2}$  miles W. by S. of Hog's back point.

**Loka Levu.**—The high rounded, double, summit of the range of mountains to the north-west of Vuna Niu harbour is called by the natives "Loka Levu," or the "big wave" on account of its undulating appearance. It is covered with trees and 2,160 feet high.

**Kongi peaks**,  $4\frac{1}{2}$  miles W. by N. of Loka Levu, are two sharp summits, close together, and about the same height of 1,870 feet.

**Koro Levu** is a small native town with a boat harbour,  $10\frac{1}{2}$  miles W. by N. of Hog's-back point. This place may be said to be on the boundary line between the wet and dry climates of Viti Levu.

**Sovi harbour**,  $17\frac{3}{4}$  miles W.  $\frac{1}{2}$  N. of Hog's-back point, is clear of rocks, and 500 yards broad at the mouth. It is open to the South, and the swell rolls into it at times, making it an insecure anchorage for sailing vessels. Steam vessels can drop anchor in 7 fathoms sand. There is good landing for boats on the eastern side of the harbour, near a sandy point.

**The Singatoko River.**—The entrance to the Singatoko River is to be found at the east end of the sandhills, close to the fringing reef, which terminates at an abrupt, black, rocky point with casuarina trees growing on it. It is only 15 yards broad, and boats should not attempt to enter with an ebbing tide. Near high water boats can enter over the Korotonga Reef. When there is much southerly swell, the bar breaks heavily, and boats

cannot enter. The river is the boundary line between the Serua and Nadronga districts. It is navigable by boats for some distance from the mouth.

**Sandhills.**—For a distance of  $2\frac{1}{2}$  miles west of the entrance of the Singatoko River there is no protecting coral fringe, and the southerly swell breaks on the beach at times with great violence, throwing up quantities of sand, which is formed by the wind into conspicuous hillocks, varying in height from 20 to 190 feet.

**Cannibal Hill** is a well-defined peak  $5\frac{1}{2}$  miles inland, covered with grass, and 1,260 feet high.

**Butoni hill** is a triangular peak between Cannibal hill and the coast. It is covered with grass and 880 feet high.

**THUVU HARBOR**, also called Nadronga, is  $6\frac{1}{2}$  miles W. by N. of the entrance to the Singatoko river, from which it is hidden by Ngarandrandra point. The entrance is 350 yards broad, and there is anchorage inside in 5 fathoms, sand.

The harbor is open to the south, and therefore an undesirable anchorage for sailing vessels on account of the heavy swell which often sets into it, though the wind at the time may be blowing from the eastward.

Landing may be effected in almost any weather on Yanutha island which is on the east side of the harbor. Between Yanutha island and the main there is a commodious boat harbor.

The native town of Thuvu (often called Thüb) is the residence of the Roko Tui of the Nadronga district. It has 200 inhabitants.

**Supplies.**—The only supplies to be obtained are yams.

**Koromba**, or Pickering peak, is a conspicuous mountain, with sharp summit, N. b. E.  $\frac{3}{4}$  E., 17 miles from Thuvu harbor. It is 3,550 feet high.

**BOAT JOURNEY FROM SUVA TO THUVU.**—Boats passing inside the reefs between Suva and Serua have only two barriers to expect, namely, the reef between Suva and Namuka harbors and the Naitata flats, neither of which can be crossed until half tide.

Between Serua and Vunanin half tide is required, and three-quarters flood between Vunanin and Somo Somo.

For the remainder of the distance well found boats should go outside the reef. Inside the coral fringes there are a number of coral bars, called "Tetties," and flats of sand and mud, which cannot be crossed except at high water. When there is a southerly swell, large waves, called by the natives "lokas," set in over the edge of the reef after half tide, and wash into the beach with considerable force, making the passage for boats inside very hazardous unless skilfully handled.

No. 172.—C.S.O.

## IMMIGRATION.

Colonial Secretary's Office,  
Perth, 1st October, 1878.

**N**OMINATED Immigration being about to be resumed, any person wishing to apply for Free Passages from the United Kingdom for their friends, can obtain Forms of Application and all necessary information from the Immigration Agent at Perth, or the Resident Magistrate of the district in which they reside.

Applicants will be called upon to sign an agreement that such Nominated Immigrant will not cause any expense to the Government upon his or her arrival in the Colony.

Immigrants will also be called upon, prior to being furnished with a passage, to sign an agreement to remain three years in the Colony, or refund to the Colonial Government the cost of their passage from England.

By His Excellency's Command,  
ROGER TUCKER<sup>D</sup>. GOLDSWORTHY,  
Colonial Secretary.



CERTIFICATES—(Continued).

NAME.	ALLOTMENTS OR LOCATIONS.	£	s.	d.
<b>S</b>				
Slattery, Patrick ...	Wellington Location 280 ...	0	0	10
Salvado, Rosendo ...	Melbourne Location 226 ...	0	0	10
Scott, Robert Peel ...	Sussex Locations 111, 112 ...	0	1	8
Sims, John ...	Gingin Town Lot 6 ...	0	2	11
Steere, James G. Lee ...	Nelson Locations 130, 143 ...	0	3	9
<b>T</b>				
Twine, Alf. George ...	Avon Locations 810, 813, 766, 719, 720 ...	0	5	3
Twine, Henry J... ..	Avon Location 824 ...	0	13	0
Taylor, John ...	Do. 753 ...	0	2	1
Thomas, Joseph W. ...	Cockburn Sound Location 146 ...	0	0	4
Tonkin, M. E. & others	Do. do. 157 ...	0	0	11
Toll, Henry K. ...	Plantagenet Locations 175, 186 ...	0	1	8
Tracey, John ...	Geraldton Sub. Lots 46, 47 ...	0	1	0
Tapping, William ...	Perth Town Lot Y200 ...	0	0	5
Templars, Good (Guildford)	Guildford Town Lot 34A ...	...	...	...
Templars, Good (Busselton)	Busselton Town Lot 225 ...	...	...	...
Throssell, G. & others...	Northam Town Lot 146 ...	...	...	...
<b>V</b>				
Venn, H. W. ...	North Location 325 ...	0	0	8
Vinier, Charles ...	Victoria Location 914 ...	0	0	3
Viveash, Samuel W. ...	Avon Location 836 ...	0	0	5
Vincent, John, jun. ...	Roebourne Town Lot 119 ...	0	0	3
<b>W</b>				
Wesleyan Trustees ...	Northam Town Lots 93, 94 ... Fremantle Town Lots 595, 596, 597 ... York Town Lots 351, 352, 353, 354, 355, 356, 357 ... Albany Sub. Lots 75, 76, 77, 78, 79 ... Perth Sub. Lots 114, 115, 116, 117, 118, 119 ... Perth Town Lot Y262 ... Geraldton Suburban Lot 70 ...	...	...	...
Willis, Samuel ...	Avon Location 690 ...	0	0	10
White, William ...	Do. 832, 833 ...	0	5	3
Watts, Francis S. ...	Do. 758 ...	0	2	8
Whittington, James ...	Do. 780 ...	0	2	8
Ward, Alfred ...	Murray Locations 91, 106 ...	0	3	6
Withnell, John ...	North Location 4 ...	0	0	10
Wilkerson, — ...	Kelmscott Sub. Lot 56 ...	0	0	8
Wright, George... ..	Fremantle Sub. Lot 29 ...	0	0	4
Wenn, James ...	Bunbury Town Lot 109 ...	0	0	5
Williams, John ...	Victoria Locations 806, 884, 953, 954, 805, 886 ...	0	6	0
<b>Y</b>				
York, John ...	Swan Location 586 ...	0	1	1

F. HASTINGS JAUNCEY,  
Registrar of Titles.

17th October, 1878.

I HEREBY give notice that I have applied to the Swan Roads Board for permission to close the road on the East side, and parallel with the Chittering Brook, running through my property.

JOHN O'NIEL.

Swan, 16th October, 1878.

Department of Public Works,  
Perth, 28th October, 1878.

TENDERS (endorsed "Tender for Repairs and Alterations to the Poor House, Perth,") will be received at this Office until noon of Monday, the 11th November, from persons willing to undertake the Alteration and Repairs required to sundry of the buildings at the Poor House, Perth.

Tenders to state the shortest time required to complete the whole of the work.

The Government do not bind themselves to accept the lowest or any tender, and will require the guarantee of two responsible persons for the due performance of the Contract.

Forms of Tender may be had on application to the various Resident Magistrates, and at the Public Works' Office, Perth, where Specifications and full particulars can be obtained.

No tender will be entertained unless on the prescribed form.

JAS. H. THOMAS,  
Director of Public Works.

Comptroller's Office,  
Fremantle, 26th October, 1878.

CERTIFICATES of Freedom have been issued to the undermentioned convicts, whose sentences have expired:—

Reg. No. 8205 Simeon Blewitt  
" 9442 Michael Elliott

HIS Excellency the Governor has been pleased to revoke the Ticket-of-Leave of the undermentioned Convict:—

Reg. No. 10183 Charles W. Vincent.

JOHN F. STONE,  
Superintendent.

NOTICE.

I HEREBY notify that I have applied to the Swan Roads Board for permission to erect two swing gates upon the road passing through Swan Location No. 437, one on the east boundary line, the other on the west boundary line.

RICHARD COCKRAM.

Gingin, 5th October, 1878.

LAND SALES.

Crown Lands' Office, Perth, 28th October, 1878.

THE undermentioned Allotments of Land will be offered for Sale, at Public Auction, on the dates and at the places specified in the Schedule below, at one o'clock, p.m.

SCHEDULE.

Date of Sale.	Place of Sale.	Description of Lot.	Number of Lot.	Quantity.			Upset Price.
				a.	r.	p.	
1878.							
6th Nov.	York ... ..	York ... .. Sub.	76 ... ..	10	0	0	£2 per acre.
7th Nov.	Geraldton ...	Geraldton ... Town	395 ... ..	1	0	14	£15 per lot.
Do.	Do. ... ..	Denison ... Sub.	13 ... ..	2	3	0	30s. per acre.
Do.	Northam ...	Northam ... Sub.	52 ... ..	5	0	0	} £1 10s. per acre.
Do.	Do. ... ..	Do. ... .. Do.	79 ... ..	5	0	0	
Do.	Do. ... ..	Do. ... .. Do.	85 ... ..	5	0	16	

JOHN FORREST, Acting Commissioner of Crown Lands.