apprehend no danger unless within the immediate influence of the breakers. Not only are the seasons of rollers the same at St. Helena and Ascension, but they sometimes are simultaneous in occurrence. Rollers occur in the most tranquil season of the year, when the S.E. trade wind is often very light. They rise without any apparent cause, for as a rule the weather is fine and wind light, although the spray of the surf beating on the beach rises to the height of 50 or 60 ft. Many lives have been lost in consequence of boats being capsized; and at St. Helena, in February, 1846, thirteen vessels moored ½ m off shore were driven from their moorings and totally wrecked; the wharves and batteries also suffered considerable damage.

CHAPTER V.

WEST COAST OF AFRICA AND ADJACENT ISLANDS.

CAPE VERDE — SIERRA LEONE — FERNANDO PO — CONGO RIVER — BENGUELA — WALFISH, ELIZABETH, AND SALDANHA BAYS — TABLE BAY — CAPE GOOD HOPE.

(VARIATION AT CAPE VERDE, 19° W.; AT CAPE PALMAS, ANNO BOM AND CONGO, 20° W.; AT BENGUELA, 23° W.; AT WALFISH BAY, 27° W.; AT TABLE BAY, 30° W.)

Headlands or Islands on the W. Coast of Africa and in Gulf of Guinea, are sometimes seen by East India ships proceeding by the E. route to St. Helena: the following geographical positions therefore are given:—

North Cape Blanco, lat. 33° 8′ N., lon. 8° 36′ W., a white cliff 170 ft. high.
Cape Ghir (Agadir), lat. 30° 38′ N., lon. 9° 50′ W., a bold bluff 1200 ft. high.
Cape Noun, lat. 28° 46′ N., lon. 11° 3′ W.
Cape Juby (19 leagues to S.E. of the Canary Islands) is in lat. 27° 58′ N., lon. 12° 53′ W.
False Cape Bojador, lat. 26° 25′ N., lon. 14° 10′ W.
Cape Bojador, lat. 26° 7′ N., lon. 14° 29′ W.
River Ouro, South point of Peninsula, forming mouth, lat. 23° 37′ N., lon. 16° 1′ W.
Cintra Reef, lat. 23° 6′ N., lon. 16° 13′ W., at 2 m. to S.W. of point.
Cape Barbas, lat. 22° 20′ N., lon. 16° 45′ W.
Pedra de Galha Point Reef, lat. 22° 13′ N., lon. 16° 56′ W., at 2 m. off point.
Cape Corveiro, lat. 21° 47′ N, lon. 17° 0′ W.
South Cape Blanco, a white cliff about 100 ft. high, lat 20° 46′ N., lon. 17° 5′ W.

Numerous shoals lie off shore for 100 m. to S. of South Cape Blanco. Soundings off the Cape itself are a guide; ships should not shoal under 20 fathoms. But, at 50 m. S.S.W. from the Cape, the shoals are very steep-to, and should be avoided. The prevailing current sets to the S.

Senegal Light, in lat. 16° 1′ N., lon. 16° 31′ W., is a small *fixed* light, visible 6 m. It is shown at the French Government house on Ile de St. Louis. A better light is proposed.

CAPE VERDE LIGHT, in lat. 14° 44′ N., lon. 17° 31′ W., is *revolving* every 30 seconds; elevated 370 ft.; visible 27 m. There are two small Red lights to the E. of it

Cape Verde, the W. point of Africa, stands 100 leagues E.S.E. from Bonavista, the E. island of the Cape de Verde group. The French settlement, **Goree,** to the S. and E. of the Cape, affords shelter from all winds except S.E., which occur in the rainy season from July to Oct. (For Cape de Verde Islands, *see* page 39.) **Gambia River Light-house,** on Cape St. Mary, lat. 13° 30′ N., lon. 16° 41′ W., has a *fixed* light, 70 ft. above sea, visible 10 m Shoal water extends 15 m. to S.W., and more than 10 m. to W. of this light. **Cape Roxo,** lat. 12° 20′ N., lon. 16° 46′ W., has shoals also off it and **Cape Skyring,** where the talented R.N. surveyor of that name was murdered.

The Bijougas, or Bissagos, are a group of islands surrounded by shoals, lying off the rivers Jeba and Grande, between lats. 11° 0′ N. and 11° 40′ N. Their outermost shoal, called W. Breaker, is in lat. 11° 31′ N., lon. 16° 58′ W.

Tides. Near the Bijougas, H. W. at F. and C. of moon at 7½ h.; springs rise 8 ft.

SIERRA LEONE CAPE has a *fixed* Red light, 70 ft. above sea, visible 12 m.; in lat. 8° 30′ N., lon. 13° 18′ W. The rainy season here is from May to Sept., when S.W winds prevail. Tornadoes, blowing between E. and S.E., precede and follow this season. The Harmattan, or desert wind from N.E. to E., prevails in Nov. and Dec.

St. Ann Shoals front the coast to the S. of Sierra Leone, extending between 30 and 40 m. from Cape St. Ann, to lon. 13° 34′ W. The current, although W. outside, sets sometimes (the Guinea current) very strong to the E. near these shoals, rendering caution necessary in approaching during night, or in thick weather. **Cape St. Ann** the W. extreme of Sherboro Island, is in lat. 7° 34′ N., lon. 12° 57′ W., having off it a group called the Turtle Islands. The bank on which these islands are placed is connected with the shoals just described. From Cape Verde to Sherboro Island, soundings extend to a considerable distance from the land.

Cape Mesurada has a *fixed* light 240 ft. above H. W., visible 5 leagues, in lat. 6° 19′ N., lon. 10° 50′ W. This light is reported as indifferent, and not seen so far off.

Cape Palmas, lat. 4° 22′ N., lon. 7° 44′ W., is a rocky peninsula, about 75 ft. above sea, covered with houses on its E. side. The Cape should not be rounded under 28 fathoms. There is a *fixed* light on the Cape, 100 ft. above H. W. Variation of compass 20° W. H. W. at F. and C. at 4 h. 30 m. Rise of tide, 4 to 6 ft.

Cape Three Points, 110 leagues to E. of Cape Palmas, is in lat. 4° 45′ N., lon. 2° 6′ W.

Cape Coast Castle has a *fixed* light on Fort William, 192 ft. above H. W.; lat. 5° 6′ N., lon. 1° 14′ W. **Elmina,** hitherto the Dutch head quarters on the Gold Coast, is 3 leagues to the W. of Cape Coast Castle. The new colony of Elmina and Dutch Guinea has now (1872) been formally transferred to the British Crown.

Cape St. Paul, the W. extremity of the Bight of Benin, is in lat. 5° 48′ N., lon. 0° 56′ E.

Cape Formosa, in lat. 4° 15′ N., lon. 6° 10′ E., separating the Bights of Benin and Biafra, is very low, and no distinct cape, being merely the most prominent part of the delta of the Quorra or Niger. The coast from Cape Formosa extends 50 leagues to the E. to the head of Biafra Bight. To the N. and to N.W. of Fernando Po, are situated the rivers of Old and New Calabar. Vessels bound for them must anchor outside and wait for a pilot.

FERNANDO PO ISLAND, belonging to Spain, is in the middle of Biafra Bight, 19 m. from the mainland, and about 13 leagues W. of the great river Camaroons; the Peaked Mountain at its N.E. extremity is about 10,000 ft. high, and visible in clear weather 30 leagues; but a haze generally prevents it being seen so much as 3 leagues. This island is about 40 m. in length and 20 m. in breadth, or 30 leagues in circuit, inhabited by negroes, known to Europeans as Boobées; it is well watered, abounding with excellent yams, sugar-cane, and fruits. Cape Bullen, the N. point of the island, on the W. side of Maidstone Bay anchorage, is in lat. 3° 48′ N., lon. 8° 43′ E., and **Point William,** 5 m. further E., has now a small *fixed* light. Cape Barrow, the S. point, is in lat. 3° 13′ N., lon. 8° 43′ E (*see* Winds, page 64.)

Prince's Island (Portuguese Fort St. Antonio), in lat. 1° 39′ N., lon. 7° 26′ E., is about 40 leagues N.W. of the River Gaboon, and 37 leagues to the S.W. of Fernando Po. It is high, with the town and tolerably secure harbour of St. Antonio on the N.E. side, where bullocks, hogs, goats and water may be procured. There are several rocks and islets in the neighbourhood. July and August are here dry months, with S.W. breezes; the rainy season is from Sept. to March.

Tides. H. W. at F. and C. of moon at 4 h.; springs rise 6 ft., neaps 4 ft.

ST. THOMAS' ISLAND, 43 leagues N.W. of Cape Lopez, and 7000 ft. high, has its N. extremity in lat. 0° 24′ N., lon 6° 38′ E., and the islet off its S. end is on the equator. This island belongs to the Portuguese, and affords some articles of refreshment for ships touching at Man-of-War Road and Santa Anna de Chaves Bay on the N.E. side. The shore to the N. of the latter being rocky and steep, should have a wide berth in passing. The small islet of Cabras lies between these anchorages, at the distance of 1¼ m. from shore, having a channel of 2¼ fathoms inside it. The anchorage in Man of-War Bay is to the N.W. of Cabras Islet, in 10 or 12 fathoms good holding-ground, and in the tornado season is preferable to that of Anna de Chaves, on account of the facility of getting to sea with the wind at N.E., from which quarter tornadoes blow. To approach Anna de Chaves Bay, it is better to proceed round by the S. end of the island, because the current sets mostly to the N., and the winds prevail from S.

Light. Fort San Sebastian, on the S. side of Anna de Chaves Bay, has a small *fixed* light, visible 4 or 5 m.; lat. 0° 20′ N., lon. 6° 43′ E. Large vessels must anchor outside the Bay.

ANNO-BOM ISLAND, the N.W. point of which is in lat. 1° 24′ S., lon. 5° 36′ E., is about 60 leagues W. from Cape Lopez, and 33 leagues to S.W. of St. Thomas. Anno-Bom is now claimed by Spain, but she has no representative there. This island, which has two hills, the summits of which are 3000 ft. high, and often clouded, is refreshed by constant breezes, which render it healthy; it abounds with tropical fruits, domestic animals and poultry: the inhabitants are Roman Catholic negroes, but very ignorant; although not strictly honest in their dealings with strangers, they are well disposed; exchanging pigs, goats, fowls and fruits (being all the island affords,) for linen cloth, cutlery, needles, &c. The best anchorage is at the N.E. part of the island, off the village of San Antonio, rather over ½ m. off, in 10 to 15 fathoms, with De Fogo, the N. peak S.S.W. ½ W., and Turtle Island S.E. ½ S. The watering-place is to S.E. of this anchorage. Oranges are abundant. Anno-Bom has two rainy seasons; April and May, Oct. and Nov. Variation of compass 20° W.

Currents to N. of Anno-Bom are variable. To the W. of it the equatorial current sets to W.N.W.; in April and June nearly 1 m. per hour. To the E. of the Island they set between N. and N.N.E. Anno-Bom is always in the *equatorial*, whilst Prince's Island is always in the *Guinea* current.

AFRICAN COAST. Nearest point to Anno-Bom, 60 leagues off, is the low and woody Cape Lopez, in lat. 0° 36′ S., lon. 8° 43′ E. The whole of this coast, which is generally low to Angola, may be approached to 15 or 20 fathoms. In lat. 2° 10′ S. the bank of soundings deepens regularly from 16 fathoms about 3 leagues off shore, to 70 fathoms about 9 leagues off; then no bottom at 100 fathoms.

Loango Bay (river entrance), in lat. 4° 39′ S., lon. 11° 42′ E., is surrounded by red cliffs; and from the S. extremity, called Indian Point, in lat. 4° 40′ S., a reef projects nearly half-way across the bay, with 3 fathoms water on it; the extremity is about 4 m. off shore, with Indian Point bearing S.E. There is good anchorage within the reef in 4 fathoms, ¾ m. from shore; but surf prevents landing, except in canoes of the country.

Rollers are frequent and strong on this coast, especially at spring tides; they occur mostly during calms.

CONGO RIVER (Shark Point), in lat. 6° 5′ S., lon. 12° 12′ E., is wide, with rapid freshes running out of it to the N.W., particularly in the rainy season, which discolour the sea to a distance from land, and carry floating islands of trees and grass a great way out to sea. These freshes run sometimes 5 or 6 m. an hour, there being little or no tide; and as there is upwards of 100 fathoms water in the middle of the entrance, the difficulty of navigating it is great.

St. Paul de Loando, a city of considerable extent, in lat. 8° 48′ S., lon. 13° 13′ E.; the Citadel of San Miguel is on the S. shore of Bengo Bay, on an island 10 leagues long, which, with a peninsula of the main, forms a good harbour, that will contain the largest fleet in perfect safety. This is the chief settlement of the Portuguese on the coast of Angola, and the best place for a ship to obtain refreshments. The principal articles of commerce are ivory, gum-copal, orchilla, and bees' wax. Coals and marine stores are procurable, with live stock, vegetables and fruit.

Light-Vessel. Loando Island and reef form the N.W. side of the harbour. To the E.N.E. and ½ m. off the point of the reef, a light-vessel is moored, showing a small *fixed* white light. Ships pass to the N. of this.

Point Palmarinhas, lat. 9° 8′ S., lon. 13° 0′ E., is a low sandy cape, with clumps of palm trees, 8 leagues to S.W. of Loando Point. Along this Angola coast the *good* season is from May to Oct.; and the *bad* from Nov. to April; but March and April are the worst rainy months.

BENGUELA BAY. The Fort Flag-staff of St. Philip of Benguela, the chief Portuguese settlement on the coast, is in lat. 12° 34′ S., lon. 13° 24′ E. The extreme points extend from each other about 7 or 8 m; and the Bay is about 2½ m. in depth to the beach; the depth of water decreases gradually from 17 to 6 fathoms within a mile of the shore. This place was chiefly supported by trading in slaves, who were mostly carried to the coast of Brazil; but Benguela is now in a state of decay. As liquor-shops are numerous, captains ought to be careful in letting their seamen visit the town. Variation of compass 23° W.

Tides. H. W. at F. and C. of moon occurs at 3 h. 45 m.; tides rise 5 ft.

Cape Negro, the Pillar, in lat. 15° 41′ S., lon. 11° 58′ E., the S. limit of Portuguese dominion, is of a level, brown, sandy appearance, discernible when clear at 7 leagues' distance; but the atmosphere is generally hazy along this coast of Africa.

Port Alexander, Bateman North Point, in lat. 15° 44′ S., lon. 11° 57′ E., has from 14 to 20 fathoms water in it, and seems to be well sheltered from all winds. The Sandstone cliff of this port, which is 134 ft. high, and visible far off, is 4 m. to S.W. of Cape Negro. Dormer Bank, with 3 to 7 fathoms on it, lies N.E. by E. 1½ m. from Bateman Point; betwixt it and the Point is a clear channel of 20 to 24 fathoms.

Great Fish Bay.—Tiger Point, in lat. 16° 30′ S., lon. 11° 43′ E., is a narrow, sandy peninsula on the W. side of this Bay, which has even soundings from 12 to 6 fathoms, being a a spacious and safe harbour. No fresh water being procurable on the coast, from lat. 16° to 16° 31′ S., these bays are seldom visited except by whalers. The lowness of the land and almost constant thick haze make it difficult to recognise.

Cape Frio, in lat. 18° 23′ S., lon. 11° 57′ E., and more than 100 m. to S. of Gt. Fish Bay, is also low and sandy. The winds prevail from S.W., often strong and causing a heavy sea. The current sets constantly to N.

WALFISH BAY, Pelican Point, in lat. 22° 52′ S., lon. 14° 27′ E., is spacious and well sheltered, except from N. winds, which seldom blow here; and it is frequented by whalers. Soundings extend a considerable way off the coast, from hence to Cape Negro.

Hollam's Bird Island is about 9 m. off shore, in lat. 24° 37′ S., lon. 14° 27′ E. The Alligator Rocks, said to have breakers 18 m. off shore, to the S.W. of Hollam's, about 2 leagues, have of late years been searched for, in vain.

Spencer Bay, in lat. 25° 46′ S., has 5 and 6 fathoms water; but although sheltered by Mercury Island on the W. side of the entrance, it is rather exposed to N. winds.

ELIZABETH BAY is formed by Possession Island, which lies about 3 m. from the land, having a channel between them of 8, 9, and 10 fathoms; the S. point of this Island is in lat. 26° 58′ S., lon. 15° 13′ E. A ship may anchor under the Island, and be sheltered from W. to S.W.; but some sunken rocks lie 1 m. to S.E. of the N. point of the Island. This place is the boundary between the Kaffer and Hottentot countries.

Cape Voltas, in lat. 28° 44′ S., lon. 16° 32′ E., is to the S. of Orange or Giarep River; an extensive shoal projects from it, and to the S., adjoining the coast, there are several islets. Orange River, dry bar, is in lat. 28° 38′ S., lon. 16° 28′ E.

To the S. of Cape Voltas, soundings extend about 6 leagues off. There are no harbours for large ships till St. Helena Bay is reached. **Cape Donkin** is in lat. 31° 54′ S., lon. 18° 19′ E.

WINDS AND WEATHER—CURRENTS—ATLANTIC ROLLERS.

To the N. of Cape Verde, the usual winds are from N. and N.N.E. During the rainy season, July to Oct., storms come from S.E.; vessels, then in Senegal Road, will find it easy to get under way; returning to their berths with light S.W. winds which succeed the gale. Between Cape Verde and Sierra Leone, a regular change of wind and current takes place, according to the season; a N.E. or N. wind with a S.E. current from Oct. to May; S.W. winds with N. currents between June and Sept. In Goree Road, the winds are between N.E. and N.W. from Nov. to June; but squalls from S.E. come in the rainy season. At Sierra Leone the rainy season continues from May to Sept.; in the latter part, S.W. winds bring in the Atlantic rollers. Between Jan. and March, Harmattans (E. winds) prevail; nights and mornings are very cold, with a thick haze.

Along the coast of Sierra Leone and the Grain coast to Cape Palmas, N.W and N.N.W. winds prevail. From thence, across the Gulf of Guinea to Cape Lopez, the winds are generally from S.W. and S.; sea breezes, blowing towards the heated land. Thus, in S. latitude, they are observed near the land to take a more W. direction, often prevailing from S.W. and W.S.W. along the African coast between Cape Lopez and Benguela. As the distance is increased from the coast, the winds become more S.; the S.E. trade, from S. or about S.S.E., is often found in the Gulf of Guinea, by vessels more than 100 leagues from the coast of Africa. Between 7° and 15° S. latitude, some ships, however, have been perplexed with winds from S. and S. by W. until several degrees to the W. of a line drawn from Cape Good Hope to Cape Palmas; although this seldom happens.

Along the Coast of Guinea, from Cape Lopez to Sierra Leone, in Dec., Jan. and Feb., the **Harmattan**, a dry, parching E. wind sometimes blows. It may appear at any period of the moon, continuing sometimes only one or two days, at other times five or six, and has been known to last fifteen or sixteen days. There are generally three or four returns of it every season, and it usually blows moderately. On the coast of Sierra Leone its direction is from E.S.E., and the same towards Cape Verde; on the Gold Coast from N.E., and at Cape Lopez and the River Gaboon from N.N.E. The Harmattan is accompanied by a dark haze, and is a parching wind, destructive to vegetation, but purifies the atmosphere from infectious exhalations. Preceding and subsequent to the rainy season, on coast of Guinea, **Tornadoes** may be expected; these are hard squalls from E. and E.S E., accompanied with thunder, lightning, and much rain. In the Gulf of Guinea, faint breezes and calms are also frequent at various seasons of the year. In the fair season, on the coasts which embrace the Gulf of Guinea, land and sea-breezes prevail; but the winds blow almost constantly from the sea during the rainy season from May to Sept.

The Rains set in on coast of Guinea, and at Fernando Po in May, and continue till Oct. To the S. of the equator, on the coasts of Loango, Congo and Angola, the rainy season is later. At the River Gaboon, it commences at the end of Sept., and continues till Jan. In the Congo, it begins early in Nov., continuing till mid-April. Near Benguela there is most rain during Feb. and March.

Haze, more or less intense, envelopes the African coast at all times; during the Harmattan, it is very dense; and, though partially dispersed by tornadoes and the rainy season, returns with increased density when they cease. The deceptive effect of this haze is to make the land appear much farther off than it is. Refraction, produced by the heated atmosphere, hinders accuracy in taking observations of the sun.

Currents. The current, contracted in breadth between the Canaries and African coast, runs to the S., from 1 m. to 1½ m. per hour; onwards towards Senegal its velocity is less than ¾ m.; thence, augmented by the river ebb, it runs towards Cape Verde. Between that Cape and Sierra Leone, numerous tidal rivers are felt for some 20 leagues off shore. Outside of them, the Guinea current is felt.

Currents are variable on the Grain Coast; in the S.W. monsoon, when the sun is far to the N., they frequently run to the N.W., but from Dec. to May always, to the S.E. They set mostly between N. and E. across the Gulf, from Cape Palmas to Cape Lopez; this is a branch current from the Trade-drift, generally extending 100 m. from the coast, but sometimes to lat. 2° N. From lat 2° N. across the equator to lat. 1° or 2° S., the current frequently sets strong to the W.: this is mostly when the sun has great N. declination; at which time, with S.W. winds, the Guinea current attains its greatest rapidity.

About Cape Lopez, and from thence along the coast to the S., the current often sets to the N.; at other times it is variable, with strong ripplings near the rivers in the rainy season; when, by freshes from these rivers, added to a body of water driven towards the coast by the S.W. wind, it is turned backward, and forms a W. current to the S. of Anno-Bom.

Passing along the Gulf of Guinea, between Cape Mount and Cape Three Points, General Sabine, during his scientific voyage in H.M.S. *Pheasant*, in April and May, 1822, experienced 180 m. of the **Guinea current**, which, in the season when S.W. winds prevail, runs with considerable velocity from Cape Palmas to the E. part of Gulf of Guinea. The breadth of this current fronting Cape Palmas varies with the season, and has been found to extend to 180 m.; in its subsequent course to the E., it enlarges to nearly 300 m., and occupies the whole space between the land and the Equatorial current which runs in an opposite direction. The velocity off Cape Palmas and Cape Three Points, and in the vicinity of the land, in the month of May, was about 2 m. per hour; farther to the E., where the *Pheasant* crossed it, from Cape Formosa to St. Thomas, the rate was rather less than 1 m. per hour, and the direction a little to the S. of E. In the passage between River Gaboon and Island of Ascension, 1,400 m., the *Pheasant* was carried 300 m. in the direction of her course by the current. The Equatorial current commences much nearer the African Coast than is usually imagined, and the Island of Anno-Bom appears to be always in it; while Prince's Island experiences the Guinea current. St. Thomas being intermediate, is in turns subject to both currents.

But the distinction between the waters of the Equatorial and Guinea currents is the more remarkable; these streams, in contact with each other, flowing with great velocity in opposite directions, have a difference of temperature of 10° or 12°. Their course continues parallel to each other and to the land, above 1,000 m.; and, according as a vessel, intending to proceed along the coast in either direction, happens to be in the one or other of these currents, her progress will be accelerated or retarded from 40 to 50 m. per day.

Rollers. Off Senegal, a long swell generally rolls in. At the Bijouga Islands and Sierra Leone, the Atlantic rollers may be expected at the latter part of the rainy season; they curl in 5 fathoms and break heavily in 3 fathoms. Along the coast of Guinea, at Lagos and mouth of the Niger, even at the driest and best season, a long heavy swell rolls in. As the sun approaches the N. solstice, and S.W. winds come on, the rollers increase in violence; in July, Aug. and Sept., there is almost continuous rain with strong sea-breezes and heavy swell from S.W. Between May and Sept. is the time of worst rollers at the Gaboon and Congo Rivers; but, near Benguela, they occur throughout the year.

COAST OF SOUTH AFRICA.

St. Helena Bay, about 30 leagues to N. of Table Bay, and formed on the E. side of Point St. Martin, in lat. 32° 40′ S., lon. 17° 54′ E., is about 4 leagues deep, with regular soundings from 12 or 10 fathoms to 6 and 5 fathoms near the shores, the bottom mostly sand and shells. Berg River, a small stream, falls into the bottom of the Bay, having some springs near it, and a few houses on each side. Martin Rock lies in this Bay, 10 m. to E. of St. Martin Point. In summer the anchorage is safe, as S winds then prevail; but St. Helena Bay is open to N.W. winds. During winter, when N.W. gales are frequent, it is unsafe: these gales extend sometimes to the N. of this Bay.

Dangers lie off this rock-bound projecting coast between Cape St. Martin and Saldanha Bay. Britannia Rock, in lat. 32° 40′ S., lon. 17° 43′ E., is 14 m to N.W. by W. of that Cape. Others exist nearer to shore. Duminy Rock is 9 m. to S.S.W. of Britannia, and 6 m. off shore.

SALDANHA BAY is about 18 leagues to the N. of Table Bay. The Ship Rock, on the N. side, in lat. 33° 2′ S., lon. 17° 54′ E., is at the N. side of entrance. The entrance, about 2 m. wide, is between Malgassen Island (which lies about E.S.E. 1½ m. from Ship Point), and Jutten Island, to S. of Malgassen, and about N.E. by N. 1½ m. from Stomp Point. These low islands are not discerned when running for the Bay, unless a look-out be kept at the mast-head.

Marcus Island is nearly in mid-channel to the E. of Malgassen and Jutten. Eyland Point

lies 3 m. to N.E. of Stomp Point, and from it the coast runs about S.E. and S.S.E. to Salamander Bay. The chart of the Bay must be looked at to understand the positions of dangers and channels, which are to the S.E. of Salamander N Point.

Malgassen is nearly surrounded by sunken rocks; between it and the main, although there is sufficient water, the bottom is foul, and the N. shore from Ship Rock to Baviaan Bay is rocky, which, with a heavy swell, renders it an unsafe passage for a vessel. Between Jutten and the main there is a safe passage with 7 to 11 fathoms, sand and shells. The bottom is foul 100 yards off this island, and the same off the main; but the principal channel, between Jutten and Malgassen, has 22 to 13 fathoms, sand. Marcus Island may be passed on all sides within a cable's length. The widest passage, to the S. of it, is the best with a S. wind; for in summer, if you wish to anchor in the S. part of the bay, in order to sail out with a S.E. wind, you will be able to fetch the anchorage. From Eyland Point to Salamander N. Point, the shore may be freely approached with the lead going. In the S. part of Bay the best anchorage is to the E.S.E. of Eyland Point, in 6 to 7 fathoms. In the lagoon to the S. of Schapen Island there is a snug anchorage. The chart and lead must be guides in this part of the Bay.

Hoetjes Bay, which is the N. portion of Saldanha Bay, where a ship may be hove down, has regular soundings of 4 to 5 fathoms, sand and shells. The best anchorage is in 6 fathoms, with the natural granite pier, on with Marcus Island, bearing S. by W., where ships are completely sheltered. Good water is plentiful now. The Bay is well adapted for commercial purposes, and for ships requiring repairs; but it has no lights. Bullocks and sheep are at moderate prices. Plenty of fish may be caught with the seine in Reets (sandy) Bay: hook and line must be used in other places. The islands swarm with wild rabbits.

Tides.—The tides rise 6 or 7 ft. H. W. at 2 h. on F. and C. of moon.

Between Saldhana Bay and Table Bay regular soundings extend from the land several leagues. From Dassen Island to Robben Island, the depths are from 50 to 60 fathoms about 4 or 5 leagues off; and about 50 fathoms 10 m. to the N.W. of Robben Island.

Dassen or Coney Island, with centre in lat. 33° 26′ S., lon. 18° 6′ E., is about 8 leagues S. of Saldanha Bay, and midway from that to Robben Island; and 4 m. from the main. It is low and sandy; dangerous and rocky for a mile off on all sides, except the central part of E. side, where there is anchorage in 16 fathoms, with centre of island W. ½ S. In addition to the reef, a sunken rock lies S.S W. ½ W., 1½ m. off the S. end. There are from 20 to 26 fathoms close to the reefs on the W. side of this island, and 30 fathoms not far from the sunken rock.

Whatever guide the bank of soundings may be to ships beating between Saldanha and Table Bays, great caution is requisite when standing towards this island at night, especially if blowing fresh with a heavy sea on, when the difficulty of obtaining correct soundings is great. Between Dassen Island and Table Bay the water has a black appearance. At 2 or 3 leagues off shore an eddy current sets to the S.; when a little to the W. of the bank of soundings, it sets N.W. This part of the coast is of moderate height, and sandy near the sea; the interior is higher.

ROBBEN ISLAND, lying to the N. of Cape Town, at 5 m. N. by E. from Green Point, is a low, flat, island, bounded by reefs, and the sea breaks heavily upon the W. extremity of the rocky ground in fresh winds from S.W. to N., in 5 and 10 fathoms. The N.E. side of the island is free from danger, but the E. shore is fronted by a rocky shoal, which is well marked by an abundance of sea-weed. There is a landing cove on the S.E. side in fine weather, for convenience of the lunatic establishment, but the best landing is in Murray Bay, on the N.E. shore of the island. There is tolerable anchorage for a large vessel on the N.E. side of Robben Island, sheltered from winds between W.S.W. and N.W., in 8 or 9 fathoms, sand; with extremes of island bearing from N.W. to S.W. Small vessels may bring the S. point of island to bear S.W. by S. in 5 or 6 fathoms. Closer to the shore than this the ground is rocky. Murray Bay, which has a sandy beach, where landing can be effected, will bear W. by N. ½ N. from the anchorage.

Light.—Robben Island has a light-house at its S. end, in lat. 33° 49′ S., lon. 18° 22½′ E., which exhibits a *fixed* light, 154 ft. high, visible 20 m.; the light-house is 60 ft. high and has Red and White bands. Variation of compass 30° W.

The channel between Robben Island and the main (opposite Blauwberg, 745 ft. high), is 2½ m. in width, with soundings from 7 to 10 fathoms. To the E.S E. of Robben Island the shore has white sand-hills, 100 to 200 ft. high; it then curves slightly for 6 m. to Salt River. This coast is deceptive to vessels standing in at night or in hazy weather, from the resemblance the sand bears to the water. From this cause many vessels, *disregarding the lead*, have been stranded midway between Blauwberg and Salt River. This river, very dangerous in winter, being an extensive quick-sand, has two mouths: one at 3 m. to S.E. of Mouillé Point light-house; the other (best in winter) at 3½ m. to E.S.E. from Mouillé Point, is fronted by a rocky reef, about ¾ m. off shore. The sea

breaks over this spot in 3½ fathoms, after heavy N.W. gales. With this exception, the water shoals regularly from 8 fathoms to the sandy beach between Blauwberg and Salt River. The Tigerberg, a range of hills 1,300 ft. high, stands 5 m. within the E. sandy shore of Table Bay. Except Blauwberg, these are the only elevations in the bay N. of Table Mountain.

Whale Rock, with 6 ft., on which the sea breaks, except when very smooth and at high water, lies S. one mile from Robben Island. This danger is distinguished by the sea-weed, which adheres to the rocky bottom. Between the rock and the island there is a passage ¾ m. in width, with depths from 5 to 7 fathoms, rocky ground. This channel should never be attempted by a sailing vessel, except in emergency, as currents are sometimes strong and uncertain in their direction about the rock.

TABLE BAY is easily known by the high land, which, when seen from a distance at sea, appears like an island. Table Mountain, the most lofty part of this land, elevated 3,580 ft., is level on the top, and with a sheer drop at the E. end, till it joins the Devil's Peak, a rugged peak, 3,376 ft. high, and separated from the former by a gap. The N.W. end of Table Mountain also has an abrupt declivity uniting with the base of a conical mountain, called Lion's Head, which is about 2,160 ft. high, From the N. side of Lion's Head a ridge extends to the N.E., where it reaches to 1,150 ft. in height, and is called Lion's Rump, upon which is a signal station. This overlooks Green and Mouillé Points and the W. shores of the Bay. To the E. of Table Mountain and Devil's Peak, lies the low sandy isthmus between Table and False Bays. From Table Mountain towards the S. extremity of Cape of Good Hope, the land is high and uneven.

Lights. A square light-house stands upon Green Point, in lat. 33° 54′ S., lon. 18° 24′ E., the W. extreme of Table Bay, and 5 m. to S. of Robben Island. The light is *flashing*, every 10 seconds; elevated 65 ft.; visible 12 or 13 m. in clear weather.

A *fixed* **Red light** on Mouillé Point, the N.W. horn of Table Bay, and ¾ m. to E. by S. of Green Point, is 44 ft. above high water, and visible about 7 m. off in ordinary weather. The N. wharf has also a small *Red* light; the S. wharf has a small *Green* light, exhibited only during N. gales. **The Breakwater** extremity is also marked by a *Green* light, which is only seen from the Bay, and when bearing to the W. of a S. and N. line drawn through it.

Water. There are several water-tanks in Table Bay for the convenience of shipping; the water is excellent and abundant, and may be obtained without delay.

Time-Balls. The Cape Observatory is in lat. 33° 56′ S., lon. 18° 28′ 45″ E., about 1½ m. from the beach in the S. part of Table Bay. A ball drops from a flagstaff near it every day at 1 p.m. (Sunday excepted), Cape mean time; but as this is not visible from the whole anchorage, a time-ball has been established at Lion's Rump signal-station, to command the entire Bay, and it falls as near as possible with Observatory ball. By subtracting one second from time of signal at Lion's Rump it becomes identical with Observatory signal. The time of observation is at the commencement of the fall.

	h.	m.	s.
Lon. of the Observatory, E. of Greenwich, 18° 28′ 45″ E. ...	1	13	55
Greenwich time at 1 p.m. at the Cape	11	46	5

Winds and Weather. Summer at the Cape is from Oct. to April, when it is safe for ships to lie in Table Bay. N.W. gales are experienced here in every season of the year, but they seldom blow home in Table Bay from Nov. to May. Such a mountainous sea is forced into this Bay by some of these N.W. gales that the anchorage becomes exceedingly dangerous. Therefore a ship coming here in winter months ought to be furnished with good ground tackling, as many vessels, with their crews, have suffered, more particularly in June and July.

The prevailing winds in Table Bay and near the Cape of Good Hope are from the S.E. and S. during summer. S.E. winds blow more or less in every month, and generally bring settled weather. N.E. winds are less frequent than any, and never continue long. In May, June, July, and Aug., the W. and S.W. winds blow strong, attended often with fogs and cloudy weather; but N.W. winds are most violent in these months, frequently blowing in severe storms for several days, with a cloudy sky, and sometimes with lightning, hail showers, or rain.

When Table Mountain, in summer months, begins to be covered by a white cloud, it indicates a strong S.E. or E S E. wind. In Jan., Feb., and March, these winds blow sometimes with great fury over the Table and Devil Mountains, and through the gap between them. On these occasions vessels not well moored are liable to drive and bring both anchors ahead. Vessels have been driven from Table Bay by these S.-Easters with all their anchors down, not regaining the anchorage for five or six days. When Table Mountain is free from clouds the S.-Easters will be moderate, and a

gentle sea-breeze then generally blows in on the W. side of the Bay, while a fresh S.E. wind prevails on the E. side of it half-way across, during most of the day.

When strong S. winds are coming on, the tops of False Bay Mountains become covered in rapid succession from the S.; but seldom remain covered throughout the gale.

Temperature of the winter months,—June, July, and Aug.,—is 55°. The prevailing winds are from N.N.W. and W.; occasionally from S.W., and they are generally accompanied by rain. Hail-storm squalls are usually from S.W. As seen from the Observatory, the first indication of a N.-Wester is a mass of vapour rolling over Lion's Hill and enveloping the signal-station; also, the air feels damp, and a swell sets into Table Bay; the tops of the ridges bordering the shore in the direction of Hout Bay become covered, and next, but not always, Table Mountain.

Strong winds with squalls and showers, more or less heavy, follow these harbingers; and fogs, which now cover the elevations, are of the usual European cast. The duration of a N.W. wind fluctuates between two days and a week, sometimes ten days. Low fogs occasionally occur (above which the tops of mountains, high hills, and topmasts of ships are visible), and are dispersed by the heat of the sun. In the fair-weather season, regular sea-breezes from S.W. and W. prevail in the morning, and continue till noon or longer. These are followed by strong S.E. winds from the land, which blow fresh during the afternoon, and frequently till the following morning.

Tides. It is H. W., F. and C., in Table Bay at 2 h. 40 m.; the rise of tide is from 5 to 6 ft There is no sensible stream of tide, either in the Bay or on the adjacent coast. The time of high water, and its rise, is the same at Simon's Bay, and all bays along the coast from the Cape of Good Hope to Cape Agulhas.

A current, of from half a knot to 2 or 3 knots an hour, sets to the N. past Table Bay and Robben Island; but during winter months, when N.W. winds prevail, a current sets to S.E. into Table Bay, towards the mouth of Salt River, off which it divides; part going N. along shore past Blauwberg, the rest curving back to the W. round the shore of the Bay, past the Castle and to the N. towards the breakwater. In the summer season, particularly during S.-Easters a gentle stream sets round Mouillé Point to the S.S.E. into the Bay, and then out to N. along the Blauwberg beach, as in winter.

PORT INSTRUCTIONS. Vessels discharging or receiving on board much merchandise will be berthed by the port captain as close to the jetty or other landing-place as safety will admit. The vessel must then be moored with two bower anchors, with open hawse to the N. Vessels touching for water and refreshments may ride at single anchor in the outer anchorage; 70 or 80 fathoms of cable should be veered out, as the chance of fouling or starting the anchor or breaking the chain will thereby be much lessened. If riding by a hemp or coir cable, a stream or kedge should be laid out to steady the vessel; and the other bower anchor should be kept ready to let go. It is recommended that vessels be kept as snug as possible, for the periodical winds blow occasionally with much violence. The sheet anchor should be always ready for use, and strict attention paid to keep the hawse clear; the more so when the wind is expected from N.

The following signals will be shown when, from local experience and good barometers, a severe gale is expected. They should be promptly observed when made from the port office; and any neglect or departure from the foregoing instructions will be reported to Lloyd's agents, as also to owners of vessels disregarding signals.

General Signals.

White pierced blue, over union-jack.—Clear hawse, and prepare to veer cable.

Union-jack over white pierced blue.—Veer to a whole cable, and see the third anchor clear.

Blue, white, blue, horizontal, over union-jack.—Down top-gallant yards and masts, and point yards to the wind, and see everything clear for working ship as far as practicable.

Union-jack over blue, white, blue, horizontal.—Strike lower yards and top-masts, and rig in jib booms.

Union-jack over No. 3, white and red, vertical.—Shorten in cable to same scope as when first moored.

When it is considered necessary to make any of the above signals, it is strongly recommended that all commanders immediately repair on board their respective vessels, and that the above signals be answered by hoisting the answering pendant, or the ensign at the peak end or at any of the mast-heads.

The above signals will be repeated from the Lion's Rump signal-station.

Vessels having Marryat's code of signals can make their wishes known to their agents in blow-

ing weather, through the port office, and any assistance required will be strictly attended to. Vessels not having the code can make the following with their ensigns:—

1st. Ensign in the fore-topmost rigging.—I am in want of a cable.
2nd. Ensign in the main-topmast rigging.—I am in want of an anchor.
3rd. Ensign in the fore rigging.—I have parted a bower cable.
4th. Ensign in the main rigging.—I am in want of an anchor and cable.
5th. Wheft where best seen.—Send off a boat.

The Breakwater has a *fixed* Green light at its tip, which is 6 cables to S.E. of Mouillé Red light, and may be passed quite close. Anchorage is in 6 fathoms, about 4 or 5 cables to S.E. of the Breakwater, with the Red and Green lights in one. The South Wharf by the castle shows a *Green* light, which will only be lit during N. gales. Vessels parting from their cables during a N. gale, and unable to work out, should run for the light, and beach close to the S. of the castle ditch, the crews remaining by their vessels, by which means little or no danger of life is to be apprehended. It is also recommended that, in case of such vessels taking the ground, any after-sail that may have been set in running for the beach should immediately be taken in, keeping the foresail or fore-topsail set, as the case may be, until the vessel is firmly grounded.

The following signals may be made from the most convenient point to vessels that be stranded:—

In day-time, a number will be shown, white upon a black ground. At night, the number will be shown transparent.

No. 1. You are earnestly requested to remain on board until assistance is sent; there is no danger to life.

No. 2. Send a line on shore by cask, and look out for line from rocket or mortar.

No. 3. Secure the rope; bend a warp or hawser to it, for us to haul it on shore for the boat, or for us to send you a stout rope, to be made fast to some firm part of the wreck, that we may haul off a boat for bringing you on shore.

No. 4. Life-boat will communicate at low water, or as soon as practicable.

No. 5. Have good long lines ready for life-boat, and prepare to leave your vessel; no baggage will be allowed in the life-boat.

Answers to the above Signals.

By Day. A man standing on a conspicuous part of vessel, shall wave his hat three times over his head. By Night. A light will be shown over the side of vessel, where best seen.

DIRECTIONS. During summer, vessels should shorten sail before hauling in for Green Point, as S.E. winds blow hard on opening Table Bay. Ships entering, with a press of sail, have had to let all fly to save their masts. If obliged in a S.E. gale, to bear up from Green Point to seek shelter under Robben Island, care must be taken to avoid Whale Rock, and the vessel should anchor N.E. of that Island, as before directed, coming to under easy sail. With precaution, there is little probability of a ship losing an anchor in bringing up in this place of shelter. Should she part in trying to bring up during a S.E. gale, there is an open sea to leeward.

By Day. During daylight a vessel may round Green and Mouillé Points in 10 fathoms water; but her distance is not easily guessed when off these Points, which are low, and fringed with outlying reefs. It is, therefore, advisable to give them a berth of at least ½ m., until Mouillé Point Light-house (Black and White bands) is passed, when she may be boarded by the port-boat, and a berth given by the harbour-master. Should a stranger arrive without being boarded, he may anchor in 6 fathoms to the S.E. of the breakwater, with Mouillé Point and it in one, and the castle between S.W. and S.W. by S., and wait for a proper berth being pointed out. From this position the signal-staff on Lion's Rump will bear W.

Large ships may anchor in 9 or 10 fathoms, with Mouillé Light-house W. by N., Amsterdam Battery half open to left of the breakwater tip, and the Observatory S. by E. ½ E. Vessels in the summer season should moor rather taut, with 100 fathoms on the S.E. anchor, and 40 fathoms on the N.W.; in the winter with 100 fathoms on the N.W. anchor. In dark or hazy weather, ships should use the lead in standing into Table Bay; without doing so, some vessels have sailed upon Green and Mouillé Points without seeing land, whilst their masts were seen over a fog from elevated ground at the foot of Lion's Rump. Fogs that obscure the lights are frequently confined to low ground in the vicinity of Green and Mouillé Points, extending upwards only 100 to 150 ft. Therefore, it is advisable to send a mast-head man aloft, who will probably see land invisible from the deck.

The Lead should never be neglected in entering Table Bay, the average depth between Green Point and Whale Rock being 12 and 14 fathoms; and the mid-channel depth is greatest, 20 fathoms only, from which, towards the beach, soundings gradually decrease. The bottom is foul and rocky to the N.W. of a line drawn through Lion's Head and Rump; but E. of this it is clear, and a vessel may, if necessary, anchor in any part in from 8 to 10 fathoms, sandy bottom.

By Night. To enter Table Bay at night from the N.W., or outside Robben Island, the Green Point *flashing* light should be kept about S. by E. till soundings are obtained under 20 fathoms, at rather more than 1 m. from the light; then steer E. by S or E.S.E., not coming under 14 or 15 fathoms, till Mouillé Point Red light bears about S. by W., and Green Point Light W.S.W.; now steer S.E. by S., not shoaling under 9 fathoms at H W., or 8 fathoms at L. W., until the Breakwater Green light is seen on the starboard bow; then haul up to S. by E., passing it at 2 cable lengths, and anchor in 6 or 7 fathoms, about 4 cables to E S.E. of the breakwater.

Entering Table Bay from the N., inside Robben Island, keep Green Point Light about S.W. by S. until past Robben Island, with the **lead going.** In passing this island, soundings in 6 or 7 fathoms may be obtained, when the Robben Light bears between W. and W.N.W. When the water deepens to 11 or 12 fathoms, steer about S.S.W. for the anchorage. The light on Mouillé Point bears S.S.W. ½ W. from the fair way between Robben Island and the main. In beating between Robben Island and the main, the soundings shoal regularly towards the island. When approaching the main, it is necessary to tack at the first cast of the lead in 8 fathoms. It is not prudent to enter Table Bay by this channel, on account of the N. current. (*See* Tides, page 68.)

Entering the Bay from the S.W., a ship should not approach land nearer than 2 or 3 m., until Green Point Light bears S.E., nor pass that nearer than 1 m. in 15 fathoms. She may then steer E. by S., until Green Point Light comes abeam: not shoaling under 12 fathoms, till it bears S.W.; then haul up to S.E. When it bears W.S.W., steer S.E. by S., and proceed as before directed. The lead must be kept going, and the chart of the Bay consulted.

Strangers are recommended not to beat into Table Bay at night, especially in squally or thick weather. There is difficulty in judging the distance of lights situated under high land. Therefore, the prudent course for a stranger is to keep off and on outside till daylight, sufficiently to the W. of Green Point, to prevent being becalmed near the land, and being set in upon the coast by the heave of sea.

Vessels leaving Table Bay, bound N., should go out between Robben Island and the main. Current is almost constantly setting to N. through this channel, and in summer a fresh S.-Easter frequently blows, whilst at a few miles to the W. of the Island the wind is light and baffling under the lee of Table Mountain, or fails altogether.

The Cape peninsula, viewed from sea, appears high and rugged from Table Mountain to within 4 m. of Cape of Good Hope, where the mountain-chain terminates at Paulsberg. From Paulsberg to Cape Point the land is elevated and even, with the exception of two peaks at its S. extremity; on the S.E. peak the light-house now stands, more than 800 ft. above sea

From the W. end of Table Mountain, a high ridge of mountains, called the Twelve Apostles, extends in a S.W. direction, towards Hout Bay. They present a steep face to seaward, and are terminated by a conical hill, similar to the Lion's Head, but not so high, and having at its S. slope a conspicuous white sand-patch. To the S. of this, about 1½ m., rises a lofty rugged hill, called Suther Hill, with sharp peaks on its S. side, marking the N. point of Hout Bay, which is 12 m. from Green Point. From Green Point to Hout Bay the water is deep at a mile from shore; but with several outlying rocks within that distance. Two of these, to the N. of Camp Bay, are awash, with 7 and 9 fathoms water close around them. Vessels must therefore give the shore a berth of 2 or 3 m. in proceeding to and from Table Bay, for inside this distance the wind is baffling and light, from the close proximity of high land.

HOUT BAY, 12 m S.W. of Green Point, is an indentation in the coast-line, 2 m. in depth, and 1 m. in width at its entrance. The N. shore is low and marshy, with a stream of fresh water running through it. The Bay affords good shelter from all winds to ten or twelve vessels, and is safe to approach by daylight. The only dangers about the entrance show themselves, and in rough weather constantly break. The summit of a remarkable peak, Constantia Berg, upwards of 3,200 ft. in height, seen over the high cliffs, bearing E. ½ S., leads directly to the Bay. A few sunken rocks lie 3 cables off shore, to the W. of Chapman Peak (a high dark peak, the S.W. end of Constantia Berg range,) but they do not obstruct the safe navigation of the Bay.

W. and S.W. gales bring in a swell, which does not, however, endanger vessels lying here; it only causes them to roll, if at the outer part of the anchorage. This Bay has strangely been unnoticed as a place of shelter or refuge, especially to steamers. Sailing ships might need steam-tugs, on account of variable winds and strong gusts from the shore. The space inside available for

anchorage, in from 3 to 7 fathoms water, is over a square mile, and the narrowest part of the entrance is ¾ m. in width. There is abundance of fresh water, and the valley at the head of the Bay could produce refreshments for shipping. It is admirably adapted for a coaling station for steamers, especially during war.

Vulcan Rock, lying 1 m. off the N. point of Hout Bay, is awash at high water, and closely surrounded by sunken rocks. Between it and the shore the ground is foul, with shallow water, making it dangerous for a ship to attempt this passage. The *Abercrombie Robinson*, East Indiaman, having drifted close to the rocks in a fog, passed inside the Vulcan in 1831, with soundings from 8 to 13 fathoms; but this was a case of necessity.

Slangkop Point, the S. point of Hout Bay, lies 4 m. W.S.W. from Chapman Peak, the curved sandy shore between forming Chapman Bay. Immediately at the back of Slangkop Point, the cliffs rise to the height of 300 to 400 ft. The point is low at the beach and rocky, with sunken reefs extending W.N.W. for 1½ m.; the sea breaks over this rocky ledge only in W. winds, when there is usually a heavy swell. From Slangkop Point, for 5½ m. to the S. to Kromme River, the coast becomes higher and rugged; thence to Cape of Good Hope, it is 300 to 400 ft. above sea, and tolerably regular in outline.

CAPE OF GOOD HOPE. The S. extreme of the Cape peninsula has two sharp peaks, 1 m. apart; S.S.E. and N.N.W. from each other. Vasco de Gama, the N.W. one, is 880 ft. in height. The other is 800 ft. high, and surmounted by a light-house. Variation of compass, 30° W.

Light. Cape of Good Hope Light-house, standing on Cape Point, in lat 34° 21′ S., lon. 18° 29½′ E. of Greenwich, is of iron, 30 ft. high, and *White*. The light is *revolving*, of the first order, which shows a bright face for 12 seconds once every *minute;* 816 ft. above the sea, and in clear weather visible about 36 m. Vessels, coming from the N., will not see it when bearing S.S.E. ½ E.; then it is obscured by the intervention of Vasco de Gama Peak.

Vessels approaching Cape of Good Hope from the W. will, if the weather be clear, make Cape Point Light 36 m. off, unless it should happen to bear S.S.E ½ E. as above. Caution is therefore necessary when making the land at night or in hazy weather. Should it happen that a ship is found near the land at night, and the light not visible, she must be instantly steered to the S.W. until her position is ascertained by the light being seen. Were a N. course adopted, she might run on shore. If bound for Table Bay from the E., after rounding Cape of Good Hope and passing Slangkop Point, you should not shut in the light with that point, until Green Point Light become visible, which will be on an E.N.E. bearing. This course will lead about 2 m. to the W. of Vulcan Rock, off Hout Bay. A course for Table Bay may then be shaped with safety.

Cape Maclear S.W. Reef, which breaks only with a heavy swell, lies nearly 2 m. W. from the light-house.

Dias Rock, small, and about 12 ft. high, is detached from the cliff to S. of the light-house, but connected with the point by sunken rocks. Ships may round this rock at 1½ or 2 cables distant.

Bellows Rock is awash, and always breaks. The water is deep close to the S.W., except where there are sunken rocks about a cable distant. From it the light-house bears N.N.E. ¾ E. 2 m.

Anvil Rocks. These three rocks have probably 14 to 18 ft. water over them, with 15 to 20 fathoms close around. Breakers show upon them only at L. W., and with a heavy swell. The outer or S. rock has the light house bearing N.N.W. 1¾ m., and the Bellows Rock W. by S. about 1½ m. Vessels should not pass inside the Anvil and Bellows, unless with a commanding breeze.

The offing W. of the Cape peninsula has not been thoroughly sounded. At 4 m. from shore, between Green Point and Hout Bay, there is no bottom at 40 fathoms; but from Slangkop Point to the Cape the water is less deep. The depths vary from 24 to 10 fathoms, rocky bottom, at 1 to 2 m. off shore. The precaution, therefore, of using the lead when approaching the Cape should never be omitted.

As the wind seldom, if ever, blows from the E. or N.E., sailing vessels bound either for Table Bay or round Cape of Good Hope, should ensure a weatherly position to the N. or S., according to the season of the year. Vessels for Simon's Bay have been detained for many days by S.E. winds off the Lion's Head and Hout Bay, in consequence of making land too far to the N. during summer. The same winds would have been fair for them had they been 30 m. farther S. On the other hand, a vessel bound for Table Bay in the winter, will find difficulty in making her port from any position near Cape Point during the prevalence of N. and N.W. winds, notwithstanding the general prevalence of a N.N.W. current from Cape of Good Hope.

Vessels from the E. should not bring the Cape Light to bear more W. than N.W., which will clear all danger off Point Mudge and Cape Hangklip. A tongue of low land stretches from this

Cape to S.W. for nearly 1¼ m., rendering caution necessary in passing Hangklip in hazy weather, especially if bound into Simon's Bay.

Steam vessels usually pass between Dias Rock and the Bellows and Anvil Rocks, if bound into Simon's Bay from the W. To avoid the S.W. reef, off Cape Maclear, do not bring Bellows Rock to the S. of S.E. until Dias Rock bears E. by N., or until Cape Maclear is midway between the gap which separates the light-house from Vasco de Gama Peak and that peak itself; then steer so as to pass 1½ to 2 cables' lengths S. of Dias Rock. Should a vessel strike on any of the outlying reefs, and become in a sinking state, there is a small sandy cove between the light-house and Cape Maclear, in which she may be beached with greater safety than on any other part of the adjacent sea-coast.

FALSE BAY. The entrance between Cape of Good Hope on the W., and Cape Hangklip on the E., is 16 m., on a S.E. and N.W. bearing. The Bay extends to the N. inland about 18 m. There are several dangers in it. The middle and E. sides are considered free from danger, but the bottom is foul, and generally unfit for anchorage. On the W. shore of False Bay, at 2 m. to the N. of Cape Point, is Buffal's Bay, marked by a white sand-patch. On the ridge of hills behind Buffal's Bay a *black* beacon is erected, and shows out clearly as a mark for Whittle Rock. A *white* beacon, for the same purpose, also stands near the sea, just to the N. of the Bay. The depth of water is 4 or 5 fathoms, near the shore, and in a N.W. breeze a vessel may anchor off it in 8 to 10 fathoms; if unable to beat to windward, this is preferable to going to sea. There is a fishing establishment and a landing-place in the Bay. Smithswinkle Bay is 3½ m. farther N.; off both horns of this Bay rocks project ½ m. from shore. From this to Oatland Point, which is N.N.E. 7 m. from Cape Point, the coast is lofty and steep, the hills rising to the height of 2,200 ft. almost abruptly from the sea. Several rocks lie ½ m. from the shore, with deep water about them, the principal of which are off Oatland and Rockland Points. From Oatland Point to Noah's Ark, at the S. horn of Simon's Bay, the hills recede a little from the sea, and the coast is steep-to 3 cables from shore. On the summit of the hills, a mile to N.W. of Simon's town, a patch of rock has been whitewashed; and on the slope of Signal Hill, on the S. side of the Bay, a *white* beacon, with staff and ball, has been erected; these marks in line point to S.E. by S., the position of Whittle Rock.

Whittle Rock, a patch 3 cables across, with 12 ft. water at low spring tides on the shoalest spot, lies N.E. by E. 7 m. from Cape Point Light-house, and from Roman Rocks Light-house S.S.E. 6½ m. It seldom breaks, and then only with a heavy sea and at L. W. The marks for this danger are the beacons in Buffal's Bay in line bearing W. by S., and the whitewashed patch and beacon over Simon's Bay N.W. by W.

The Admiralty Chart of Table Bay to Cape Agulhas, No. 2082, should be in the hands of all captains likely to touch at the Cape of Good Hope.

SIMON'S BAY is 11 m. N. by E. from Cape Point and near the N.W. corner of False Bay. From April to Sept., when Table Bay is considered unsafe, ships usually put into Simon's Bay. Heavy S.-Easters cause a surf on the shore of the Bay, but ships ride safely. Although open to E. and N.E. winds, these never blow strong, so that it is a safe retreat for vessels at all seasons. Ships in this Bay receive refreshments and provisions from the interior and from Cape Town, distant 22 m. Water is obtained with ease in tank-vessels, and is excellent. A patent slip is now at work, on which ships of 1,500 to 2,000 tons may be hauled up for repairs. There is an electric telegraph to Cape Town, thence to Paarl, Stellenbosch, and Wellington. Simon's Bay is an accessible harbour in the winter months for distressed ships, and with the advantages of a patent slip and the projected dock, it has every prospect of taking rank as one of the first harbours in the colony.

Caution. There is a fish in Simon's Bay commonly called toad-fish; about 6 inches long; back dark, with deep black stripes; belly white, with faint yellow patches; it swims near the surface, and is a constant attendant on lines employed fishing. When taken from the water, it puffs out considerably. Should any portion of the fish be eaten, *death* ensues in a few minutes.

Time Signal. A circular disc, attached to a lever arm working on a mast, close to Simon's Town Telegraph Office, gives to vessels in Simon's Bay at the instant of 1 p.m., Cape Observatory mean time. At 55 minutes past noon the disc is raised to a right angle with the mast, and it falls at the instant of 1 p.m. The lat. of the Time Signal is 34° 11′ 30″ S., lon. 18° 25′ 45″ E., or in Time 1 h. 13 m. 43 s. E. of Greenwich, and it is 12 seconds W. of the Cape Observatory.

Iron and other vessels desirous of testing their compasses, to ascertain the local attraction, will find it convenient to use a conspicuous sharp peak near Cape Hangklip, instead of having a party on shore taking simultaneous observations. The true bearing of this peak from the anchorage is S. 71° E.; and as the peak is 22 m. distant, the bearing will not be affected by change of position of the vessel in any part of the anchorage.

ROMAN ROCKS LIGHT-HOUSE is on a rock out of water, surrounded by others awash, and by foul, rocky ground. It stands N.E. by E. ¾ m. from Noah's Ark, and exhibits a *revolving* light which shows a bright face for 12 seconds every *half-minute*; 54 ft. above mean level of sea, and in clear weather seen at 12 m.

Castor Rock, detached from Roman Rocks, lies N.N.E. ¾ E., 1¾ cables from the light-tower. It has only 15 ft. of water on it, and is marked by a beacon, with a flag, having the word "Rock." Between the Rock and light-house there are patches of 19 and 24 ft. water. To avoid these dangers vessels of large draught, passing to N.E. of the light-house, should give it a berth of 3½ cables before hauling into Simon's Bay.

Noah's Ark, a large flat-topped rock, lies off the S. point of Simon's Bay. From it, in a N.N.W. direction, for 3½ cables, the ground is shallow and foul, terminating with Phœnix Rock, which has but 3 ft. water over it; this danger is marked by a beacon, lying N.N.W. half a cable from it, with the word "Rock" on its flag. Close round Noah's Ark the water is deep, save on the N.E. side, where, at 30 yards off, there are 2½ fathoms. **Wharf Rock**, in 9 ft. of water, lies 130 fathoms E.N.E. of the Simon's Town jetty. It is marked by a buoy, with the word "Rock" on it.

Seal Island. a low rocky islet, ½ m. in length, N. and S., stands E. ½ S., 6½ m. from Roman Rocks light-house. It is surrounded by sunken rocks, upon which the sea usually breaks. **York Shoal,** a sunken rock, lies 1½ m. to S. of the island, upon which the sea only breaks in rough weather. **East Shoal** lies 3½ m. to S.E. of Seal Island. It breaks very heavily after N.W. gales, and appears to be extensive.

ANCHORAGE. A good berth for a large ship in Simon's Bay is about 1 m. off shore, with Noah's Ark in line with Cape Hangklip S.E. by S., and the North Battery N. by W. Vessels moor in this road N.W. and S.E. from May to Sept., with the stoutest ground-tackle to the N.W.; for this being the winter season, winds prevail from that quarter, and often blow in strong gusts over the hills. From Sept. to May, the S.E. and S. winds may be expected to predominate; then the best bower should lie to the S.E.

Winds.—From Oct. to April, S.E. winds generally prevail, but not longer than 5 or 8 days at a time, and succeeded by variable winds. In Simon's Bay, as in False Bay, it frequently happens that these winds, after blowing very strong for a day and part of the night, abate towards morning, and are succeeded by a land-breeze from W.N.W. By taking advantage to weigh with the first of this breeze, a vessel may sometimes get to sea before the return of the S.E. wind. If unable to accomplish this, the most prudent plan will be to return to anchorage in Simon's Bay, or, if so far out, drop an anchor off Buffal's Bay, where ships *have* ridden out strong S.-Easters.

The Muyzenberg (5 m. to N.E. of Simon's Town), capped with white cloud, is the precursor of a S.E. wind; if the Hottentot Holland range (on E. side of False Bay) is also capped, the S.-Easter may be violent and last long.

From May to Oct. N.W. winds prevail, frequent gales with rain. The S.W. wind (kloof) is cold and frequently rainy, coming in violent gusts down the hills. The wind scarcely ever blows from N.E., and never with violence.

Directions. Ships bound for Simon's Bay have frequently mistaken Muyzenberg (a mountain 2,000 ft. high, which rises at the N.W. corner of False Bay) for the high hill over the S. side of Simon's Bay, and have been stranded on Muyzenberg beach. Attention to the excellent lights, and keeping the lead going, should prevent this mistake. To the N. of Simon's Bay, there are four sand patches, conspicuous even at night, and in steering for that Bay they will be ahead, and on the *starboard* bow; whereas, if the vessel is steering for Muyzenberg beach, they will all be on the *port* bow. These remarks may appear unnecessary with the light on Roman Rocks; but yet several ships have made the mistake; one ran on shore, and several others were only saved by anchoring close to the beach, from which they were rescued by assistance from Simon's Bay.

Vessels from the W., bound for Simon's Bay, after rounding Cape of Good Hope, and having brought the S. end of the lofty Swartkop range (which is to N. of Smithswinkle Bay) to bear N.W. by W., should keep the light on Cape Point to the W. of S.W. by S., until Roman Rocks light bears N. by W., when they may haul towards it. By day, should the weather be hazy, and the marks for Whittle Rock indistinct, Chapman Peak brought on with Elsey Peak, on a N. by W. bearing, will lead clear but close to the W. of the Whittle. The Roman Rocks light-house, in line with Elsey Peak, bearing N. ¾ W., leads midway between the Whittle and Miller Point. By night this bearing of the light is the only guide.

Ships from the W. by day, outside the Anvil and Bellows, frequently run much further E. than necessary, to avoid the former rocks, when they do not show breakers. When Vasco de Gama Peak comes open E. of the hill on which the light-house stands, they will be to the E. of the Anvil, and may haul in N.N.E., and when Roman Rock light-tower comes in line with Elsey

Peak, bearing N. ¾ W., should steer for it, until Noah's Ark bears W.; the course should now be altered to N.W., till the block-house bears W. by S., by which time the port authorities will have boarded the ship, and will conduct her to a proper berth. If they are not on board, steer W. by N., and anchor in 9 or 10 fathoms, with the block-house bearing S. by E. The common channel for ships entering Simon's Bay is between Noah's Ark and Roman Rocks, 7 cables wide: but if the wind be N W., the passage E. and N. of the Roman Rocks must be taken, as it affords better working space. Entering in a strong S.-Easter, shorten sail, and have *all furled* when abreast of Noah's Ark; pass between it and Roman Rocks; then round to under spanker.

If it is intended to beat into Simon's Bay E. of the Whittle, the Roman Rocks Light should not be brought to the N. of N.W. by N., in order to avoid that rock; nor to the W. of N.W. by W., so as to give a berth to Seal Island and York Shoal; nor should the Cape Point Light be brought more S. than W.S.W. But in working either E. or W. of the Whittle, short tacks should be made, until certain of being within 5 m. of Roman Rocks Light.

With a leading wind, Roman Rocks Light must be brought to bear N. ¾ W., and opened on the *port* bow, so as to round it nearly ½ m. off. When the Light bears S.S.W., steer in W. for the anchorage, and bring up in 14 to 10 fathoms. At night, with a leading wind, all ships should pass to the E. of the Light, and haul round it to the N. and W.

Vessels bound to the eastward should leave the Bay when N.-Westers begin to blow; if bound westward in the winter season, they ought to remain till these winds are on the decline, and get under way when they shift to W., as it is probable they will veer from W. to S.W., S. and S.E., which will be favourable for doubling the Cape.

Caution is necessary in misty weather against mistaking the light on Roman Rocks for the light on Cape Point, as they are both revolving, and only 10 m. apart. The distinction is a difference of *interval* in revolution, the light on Cape Point showing its bright face every minute, and the light on Roman Rocks every ½ minute.

Tides. It is H. W., F. and C., in Simon's Bay, at 2 h. 44 m., springs rise 5½, neaps 3¾ ft., and neaps range 2 ft. There is little current perceptible here at any time.

Gordon Bay, on the N.E. side of False Bay, affords shelter from S. and E. winds. As it is quite exposed to W. winds, vessels can only lie there in the summer months.

CAPE HANGKLIP, a quoin-shaped hill, at the E. point of False Bay, makes as an island in approaching from the S. Its W. face appears to overhang from some points of view, and a conspicuous sand-patch extends half-way up its S.E. side. The Cape itself, about 1½ m. to the S. of this hill, is low, and a heavy sea always breaks upon it; but there are no outlying dangers further off shore than ½ m.

The coast-line between Cape Hangklip and Mudge Point forms a bight, in which is Palmiet River, a rapid stream in the winter season, but its entrance is always blocked up with sand. **Mudge Point** is low and rocky; a coast range of hills terminates near it in a square bluff, which is conspicuous. There are many sunken rocks off the W. angle of the point, which, with masses of kelp about them, form the S. side of D'Urban Cove, where there is good landing in E. and S.E. winds. The gig of H.M.S. *Birkenhead* landed (after the wreck) in a small rocky cove at the S. end of Sandown Bay, by a fishing station, but landing at D'Urban Cove is better and safer.

From Mudge Point the coast goes S.E. for 4½ m., then forms Walker Bay, having Danger Point at its S. extreme. The Bay is remarkable for immense tracts of sand and high sand-hills at its head, visible a long distance at sea. A long heavy swell always rolls into the Bay, and the water is deep within 1 or 2 m. of the shore.

DANGER POINT, S.E. ½ E., 28 m. from Cape Hangklip, is a tongue of low, hummocky land, projecting into the sea about 4½ m. from the base of Duinfonteinberg, a bluff hill, conspicuous from every point of view at sea. This point affords shelter from the S.E. gales of summer to ships of any size. Stanford Cove, a small rocky inlet, affords landing in E. and S.E. winds. It is in Walker Bay, 5 m. N.E. of Danger Point. There are several rocky patches off it, which, with the heavy swell, render it less available than Hydra Bay.

Birkenhead Rock, the cause of the loss of H.M.S. *Birkenhead* and 436 lives, lies about a mile from the pitch of Danger Point. There is a clear channel between it and the reef of sunken rocks off the W angle of Danger Point. The sea breaks with violence on the rock, but often at intervals of 15 and 20 minutes.

Hydra Bay, 2 m. to the N.E. of Danger Point, is the best anchorage under that point, as farther in the swell is heavier. The Bay is easily distinguished by a sand-patch which marks the face of the hillock over it. If coming in from the S.W. to anchor in Hydra Bay, Danger Point should not be approached nearer than 2 or 3 m., when the bluff hill of Mudge Point may be steered for until the sand-patch is well open, and the rocky spit projecting from Danger Point will be

cleared. Then haul up for the Bay, and anchor in 12 or 14 fathoms, about ¾ m. from the shore, taking care to give a wide berth to a 2-fathoms rocky patch in the centre of Bay, upon which the sea often breaks.

The anchorage is with Duinfonteinberg, E.S.E.; the extreme of Danger Point, S.W. by W. ¾ W.: and the sand-patch in Hydra Bay about S.S.E.

Dyer Island, the abode of numerous rabbits, gulls, cormorants, pelicans and penguins, S.E. by S. 6½ m. from Danger Point, is a low rocky islet, visible not far off. Geyser Island, 3 cables to S.E. by S. of Dyer Island, is smaller, somewhat higher, and the resort, in certain seasons, of seals, for killing which there was formerly an establishment on Dyer Island. These islands, with numerous rocks to the W. connected with them, form a natural breakwater, under which vessels of any size may find shelter in S. and S.E. gales.

From Danger Point to Quoin Point the coast is low near the sea, backed by bare, rugged hills of moderate elevation. A long, heavy swell constantly breaks on this inaccessible shore. About halfway between Dyer Island and Quoin Point, there are two rocks, 1½ m. off shore, least water 4 fathoms. The sea breaks upon them when there is any swell.

Dyer and Geyser Islands, being low and white, are with difficulty seen against sand-hills on the adjacent coast. In approaching them from the S., the danger to be avoided is the reef of sunken rocks to W. of them, upon which several of H.M. ships have struck, and dangerous in fine weather, when the sea does not break. It will be cleared by keeping Danger Point on with the valley in the high land near Cape Hangklip, until Geyser Island is in line with the Quoin. Then haul up for Duinfonteinberg, and when the Quoin opens to the N. of Dyer Island, steer for the Quoin, and anchor in 10 fathoms, with the following bearings:—

Anchorage. Dyer Island (extremes), from S.S E. ½ E. to S.S.W. ½ W.; Duinfonteinberg, N. by E.; the extreme of Danger Point, N.W. ½ N.; the Gunner's Quoin, S E.; and the nearest sandy point of the main-land bearing E. by S. The bottom is sand, and holding-ground good, but the reef affords no shelter from S W. winds, and the anchorage is safe only as long as the wind is not to the W. of S.S.W.

GUNNER'S QUOIN is a conspicuous bluff hill, 1000 ft. in height, and 20 m. to the N.W. of Cape Agulhas. Quoin Point, a projection of hummocky land, from the base of Gunner's Quoin, is fronted by sunken rocks to a distance of 1½ m. from shore, and distinguished, when seen from S., by two sand-hills near its W. extremity. Between Quoin Point and Cape Agulhas the coast is low and sandy, except abreast of the flat-topped range of Zoet Anysberg, where the shore is steep and rocky. The whole of it is exposed to the full force of the ocean swell, and landing upon it is impossible.

Winds. H.M.S. *Hydra* found tolerable shelter and smooth water, in a strong N.W. wind, at anchor under the lee of the reefs to the E. of Quoin Point; but dire necessity alone should lead others to try it, and only if provided with the best charts.

From Sept. to May (the Cape summer) the prevailing winds are from the S.E. These sometimes rise to gales at this season, and last for three days together, being followed by calms and light W. winds. The barometer is high and the atmosphere hazy during their continuance, with great dampness at night, and the tops of higher mountains are covered with a mantle of white, fleecy vapour. Eastward of Cape Agulhas they blow steadily from S.E. by E., but to the W. they are deflected by the land, and in False and Table Bays blow from S. or S. by E. In strength they vary at different places. The wind was light at Cape Hangklip, for instance, when ships were driving in a gale from the same quarter in Table Bay; on another occasion, a furious gale blew from S. by E. in Simon's Bay, when the *Hydra*, at anchor under Danger Point, had scarcely any wind.

From May to Sept. the winds are mostly from the W., with occasional breezes of short duration from the S.E. There is, on the whole, less wind in these winter months than in summer, although W. gales, whilst they last, are more violent than those from the S.E. The winter winds begin at W., veer to N.W., then back again to W. (when their greatest force is felt), to S.W., and S.S.W., with rain, when they moderate. Afterwards the wind goes to S., S.E., N.E., and N., and dies away. The falling barometer gives warning of their approach. (*See* BAROMETER, p. 78.)

Current. A current, setting to the N.W., about 1 knot per hour, is supposed to prevail constantly between Cape of Good Hope and Cape Agulhas. On two occasions, however, in the *Hydra* going from Simon's Bay to Cape Agulhas, an E.S.E. current of upwards of a knot an hour was experienced after passing Danger Point, and on one occasion she was set in the night to the E. quite past Struys Bay, to which the ship was bound.

Currents. During the survey of this coast, no current was observed in the bay, or about the coast 2½ m. from shore; but it was asserted by fishermen and residents at Struys Bay, that a strong current frequently sets to the W. round Northumberland Point. A ship, becalmed in the offing,

was seen from anchorage in Struys Bay setting to the E. more than a knot an hour. On two other occasions, close to shore, about 2 m. to the W. of Agulhas Light-house, the stream ran through a whole night steadily to the N.W. at 1¼ knots per hour. These changes may be traced to the effects of the wind.

Tides. The rise of the tide (about 5 ft.), H. W. at F. and C., 2 h. 44 m., at Simon's Bay, Dyer Island, and Struys Bay, are very nearly the same, and the stream of tide along the whole coast between Cape Hangklip and Struys Bay is inconsiderable and uncertain.

CAPE AGULHAS is the rocky projection, which is the most S. part of Africa. The features of the land about Agulhas distinguish it from neighbouring headlands. Viewed from a distance seaward, E. or W., the N and S. elevations resemble two oblong hummocks. The highest part is 455 ft. above sea, and its distance from the Cape 1 m. About 55 ft. above the sea, and ¼ m. to the N.W. from Cape Agulhas, the light-house is built, which shows well on nearing it from E. or W., but is difficult to see from S. against the higher land behind, particularly of an afternoon. Northumberland Point, a long league to E. of the light-house, forms the W. horn of Struys Bay. The whole of the beach from the W. of Agulhas promontory to Northumberland Point consists of rugged rocks, perfectly impracticable, even for a boat. A vessel touching the ground has not the slightest chance of escaping destruction.

Light. The light-house on Cape Agulhas, in lat. 34° 50′ S., lon. 20° 1′ E., is a round tower, with horizontal red and white bands alternately. It exhibits a *fixed* light of first order, placed at an elevation of 128 ft. above sea, and visible in clear weather 18 m., between the bearings S.E. by E., and round from seaward, till it bears W. only. Therefore a vessel by going too far into Struys Bay will lose sight of the light.

Caution. Vessels, approaching the Cape by night, coming from the Indian Ocean—having had (though not *yet* known to them) only *half* as much W. current, since previous noon, as they expected—might think they had passed Agulhas, and could stand to N.N.W. for Cape of Good Hope, when actually they were running into the shore to the E. of Struys Point, being out of the *range* of Agulhas Light. **The lead** only, on a dark night, could warn them of the danger. Steamers, in such circumstances, should steer right off shore till they see Agulhas Light, when they will be clear of dangers, and can stand on to W. with the Light just on starboard bow.

NORTHUMBERLAND POINT, 3 m. E. from Agulhas Light house, is low and sandy, with a dangerous ledge of rocks 1 m. S.E. from the Point, and a detached rock, 3 or 4 cables further to E. Thus the extremity of Northumberland Point Reef lies with the Light-house bearing W. by N., distant nearly 4 m. Nearer to the Light-house, it breaks in no place beyond ½ m.

Struys Point is the outer extreme of a number of sand-hills, to E. of Northumberland Point 11 m., and 15 m. from Agulhas Light-house. The sea breaks on rocky ground fully 3 m. seaward from the Point. H.M.S. *Gorgon*, in Feb. 1861, when rendering assistance to the *Miles Barton*, transport, wrecked near Struys Point, anchored in 4½ fathoms at about 1¼ m. off Hoop Point, which is about 2 m. E. of Struys. The shipwrecked troops were embarked in the *Gorgon* from a cove just to the E. of Struys Point. A fisherman stated that reefs (*blinders*) extend as far as 6 m. from Struys Point, having 3 fathoms on their extremity, and a channel of 6 fathoms between, the sea breaking upon them only in heavy S. gales. A vessel had been seen to pass inside, not being aware of the danger.

Struys Bay affords shelter in W. and N.W. winds, but is wholly unsafe in any wind from W.S.W. round by S. to E. It is between Struys and Northumberland Points. The shore of the Bay is low and sandy, with a line of sand-hills at back, varying from 50 to 150 ft. in height; some covered with dark bush, and the coast to Hoop Point is the same. There is no high land near it, like the hills N. of Agulhas.

Anchor in Struys Bay with a large stone house near beach bearing W. by S., and Northumberland Point, S.W., in 6 fathoms, sand. Here the bottom is clear, while to the W., and nearer to the reef, where water is smoother, the bottom is foul. The Light will not be visible from this anchoring-ground, owing to intervening land. The landing-place is a small cove to the N. of Northumberland Point, sheltered slightly; but not at L. W. The large stone-house, seen between the two storehouses, leads in between breakers.

Struys Bay has been the scene of several disastrous wrecks, and cannot be recommended, except as a temporary refuge in W. or N.W. gales. Vessels, taking shelter in this Bay in a N.W. gale, should put to sea immediately after it subsides, for the wind frequently changes in a few hours from N.W. to S.E. or S., in which case it is very difficult to work out, in consequence of the heavy sea that rises with these winds, which often breaks in the Bay in 7 and 8 fathoms water.

Coming from the Indian Ocean. A vessel should pass Struys Point at the distance of 5 m.

In clear weather Agulhas Light may be seen when 5 or 6 m. E. of Struys Point, and if the vessel there should chance to be close in shore (where the Light cannot be seen from mast-head), by steering even W. by S. she might run on the shoal off Struys Point. This happened to the *Queen of the Thames* steamer in March, 1871. To guard against this, when the Light is first seen, it should be brought immediately to bear W. by N.; and keeping this bearing of the Light, the vessel will be 2 m. to the S. of any danger off Struys Point.

Take care when approaching this land before the Light is discovered; for, in hazy weather, or from spray in a fresh breeze, at the distance of Struys Point (15 m.), the Light may be faint or altogether obscured, and the vessel may get within the line of danger. Therefore **the lead** should not be neglected; nor should any vessel shoal under 20 fathoms, without putting about immediately to the S. Like precautions are required in the daytime, particularly in foggy weather; for Agulhas high land may be invisible, while the sand hills of Struys Bay and breakers off Northumberland Point are distinctly seen On these occasions it is difficult to determine whether the vessel is to E. or W. of Struys Point, because the sand-hills hereabouts are all alike. Sailing-vessels, in particular, should adhere to these rules; for, if it fall calm, the heavy swell, which constantly rolls towards the shore, would carry them with it; and anchoring would probably be of no avail, on account of the rocky bottom and heavy swell.

Coming from Cape of Good Hope. The Agulhas Light will be first seen on a S.E. by E. bearing. Quoin Point bears N.W. ½ W. 19 m. from the Light, but the Light is not visible from it. Therefore, similar precaution is necessary for a vessel off Quoin Point Reefs (19 m. from Agulhas Light), as when to E of Struys Point. No ship should shoal under 20 fathoms. Steamers from Table Bay, going too fast to get soundings, should give Quoin Reefs a wide berth; a strong current, setting N.W. with (wind at S.), might catch them on the starboard bow, and set them near to Quoin Point, whence the Light cannot at any time be seen.

Variation of Compass at Agulhas, 30° W.

WINDS AND WEATHER.—ICE ISLANDS NEAR AGULHAS BANK.

From Sept. to April, the summer season, S.E. winds may be said to predominate near the Cape of Good Hope; and N.W. and W. winds from April to Oct., which is the winter or stormy season. But it must be observed, that the S.E. winds are more constant on and near Agulhas Bank during part of Jan., the whole of Feb. and March, than at any other time of the year. In April, also, they are expected, though in this month short gales from the W. frequently happen. In May, the winds between N.W. and S.W. prevail more than the S.E. and E. winds; sometimes blowing in hard gales along the edge of the Bank. In June, those from W. and N.W. are strong; during this month, and July and Aug., they blow with greatest force, producing very heavy seas; and were it not for the help of the W. current setting along the edge of the Bank, ships would find it very difficult to get round the Cape in these months. All ships from India, on their passage to Europe, reaching the E. part of the Cape Bank from April to Sept., should be in good condition if possible, and well prepared to resist bad weather; for they will be liable to encounter storms from W.N.W. to W.S.W., which may continue two or three days at a time, with short intervals of E. and variable winds. Many ships, by not being in condition to resist these gales, have sprung a leak, and have been obliged to bear away for St. Augustine Bay, in Madagascar, to repair their damages; several have anchored in the bays to the E. of the Cape in great distress; others have reached Simon's Bay with much difficulty, where they repaired their damages, and refreshed their crews, worn out with fatigue.

In Aug., the W. wind does not blow so constant as in June and July, although very hard gales of short duration may be expected. On Aug. 4, the *Anna* was near the E. part of the bank abreast of Algoa Bay, and got round the Cape of Good Hope on the 14th, having encountered a very severe storm of two days' continuance from W.N.W. and W., in lon. 24° E. W. winds are also frequent in Sept., Oct,, and Nov. Even in Dec. ships have been beating round the Bank against W. winds during the whole month, before doubling the Cape. They had sometimes very severe sudden squalls; but in general W. gales are of short duration in this season, although they blow very strong at times.

Notwithstanding what has been mentioned above relative to winds, it sometimes happens that ships get easily round the Cape Bank to the W. in every month of the year; many have been known to get round in May, June, July, and Aug., more speedily than others in Nov. and Dec.; for the winds are often different in one year from what they are in another, even in the same month.

Around the Cape Bank, as in the open sea far to the S.W., the S.E., and the S. of the Cape, the winds in changing seldom *veer* from N. to E., &c.; but mostly *back* from N.W. to W., to S.W.

and S. After blowing strong from N.W. or W., if the wind veer to S.W. and to S., it becomes light, or is succeeded by a calm. If a light breeze continue, it veers to the S.E., where it may keep for a considerable time, but probably not above a day if it be the winter season. From S.E. it backs to E. and N.E., then to N.N.E., and to N. In the vicinity of the Bank, the N.E. and N. winds are very transitory; but in lat. 39° and 41° S. from the meridian of Cape Agulhas, to lon. 45° or 50° E., the N.N.E. winds are often experienced in both seasons, and sometimes blow steady for a day or two at a time.

There are sometimes N.W. or W. gales near and upon the Cape Bank, which blow very hard, with a clear sky; but those most to be dreaded are generally preceded by heavy black clouds rising from the N.W. and W., with sometimes lightning issuing from them, or a noise of distant thunder; shortly after, the gale may be expected to commence by sudden gusts, and sometimes heavy showers of hail, or whirlwinds from the heavy dense clouds.

When the wind at S.E. or E.S.E. shifted to N.E., the Dutch commanders were directed by their Company to take in the mainsail. If lightning appeared in the N.W. quarter, they were to wear and shorten sail; for in the first case, they expected a hard gale at N.W.; and if lightning was seen in that direction, they thought the gale would commence in the sudden shift, or whirlwind, which might be fatal if they were taken aback.

The Marine Barometer is of great utility in announcing the approach of storms near the Cape Bank, by a considerable fall of the mercury. A careful attention to this instrument, combined with the knowledge which every navigator ought to possess, by observing the appearance of the atmosphere, the surface of the sea, or the heavenly bodies, will be sufficient to warn him of the approach of these storms. Although a fall of the mercury generally precedes a gale of wind in these latitudes, the glass is seldom disturbed by hard squalls of short duration.

In the vicinity of the Cape Bank, and in most parts of the S. hemisphere, the mercury rises with S. and falls with N. winds; these last proceeding from a warmer atmosphere, are more rarefied, consequently the mercury falls in the barometer, whereas S. winds coming from the frozen regions near the pole are more dense, and cause the mercury to rise. This ought to be kept in remembrance; for, when the wind was from the S.E., Captain Horsburgh several times observed the mercury to fall considerably before the wind changed to the N., and so he expected a gale; but the fall resulted only from the warm air, coming from the N., meeting and repelling the more dense air.

The average range of barometer in higher latitudes between 50° and 60° is about 1·5 inches; but, on extraordinary occasions, ranges of 2·75 and 3·0 inches have been recorded.

In the intertropical regions the range varies from 0·4 to 0·2 inches, and near the equator it seldom exceeds 0·15 inches, this small change being in great measure due to a regular diurnal variation. The average movement of the barometer within the tropics being thus confined within small limits, any interruption of the law may be deemed a warning of the approach of bad weather.

In the South Atlantic, the effect on the barometer of the veering of the wind, is as follows:—

With E., N.E., and N. winds, the barometer falls.
„ N.W. winds, the barometer ceases to fall, and begins to rise.
„ W., S.W., and S. winds, the barometer rises.
„ S.E. winds, the barometer ceases to rise, and begins to fall.

SOUTH ATLANTIC OCEAN—MEAN BAROMETRIC PRESSURE.

Latitude.	Jan., Feb., and March.	April, May, and June.	July, Aug., and Sept.	Oct., Nov., and Dec.
	Inches.	Inches.	Inches.	Inches.
0° to 5° S.	29·90	29·93	30·00	29·94
5 „ 10 „	29·94	29·98	30·03	29·99
10 „ 15 „	29·97	30·03	30·07	30·04
15 „ 20 „	30·01	30·07	30·11	30·07
20 „ 25 „	30·06	30·08	30·15	30·11
25 „ 30 „	30·06	30·09	30·15	30·11
30 „ 35 „	30·05	30·06	30·10	30·06
35 „ 40 „	30·00	29·93	29·98	30·02
40 „ 45 „	29·95	29·91	29·95	29·97
45 „ 50 „	29·75	29·71	29·84	29·71
50 „ 55 „	29·45	29·44	29·55	29·41
55 „ 60 „	29·24	29·25	29·27	29·14

From the Cape Bank to the meridian of the S. end of Madagascar, hard gales of wind happen in the winter season, accompanied with lightning, thunder, and much rain; which sometimes prove very dangerous to ships, particularly near the land. In storms off the Cape Bank, and to the E. of it, the sea is turbulent, and they are generally accompanied with a black overcast sky. When they are about to commence, and during their continuance, numbers of albatross, petrels, and other oceanic birds, are seen flying about; although, in moderate weather, few are perceived.

ICE ISLANDS, usually called **ICEBERGS,** have sometimes been mistaken for land by ships which went far to the S. Proceeding towards India, the *Carron* went in search of W winds, to lat. 42½° S., where the atmosphere became very cold, with almost constant fogs and sleet, the sea being covered with snow petrels, indicating that the vessel was not far from ice; they were therefore glad to return into lat. 40° and 39½° S. where she got speedily to the E.

Ships bound to New South Wales should be careful not to proceed too far S. in running down their easting; for in Dec., H.M S. *Guardian*, bound outward to that place, with stores, struck against an ice island in a foggy night, in lat. 44¼° S., lon 44½° E by account. She soon after nearly filled with water, and the chief part of the crew left her in the boats; but Captain Riou, and a few of the people, remained in the ship and suffered great hardships; she continued nearly full of water, and was tossed about a considerable time without a rudder, until discovered by a Dutch packet, and towed into False Bay, Cape of Good Hope, five weeks after this misfortune, where she was wrecked, by driving on shore, with several other ships, in a storm.

Ice islands seldom or never have been seen by East India ships when passing the Cape Bank in the parallels of 36° to 41° S.; yet it will be perceived, by the account of two ships, now to be narrated, that dangerous icebergs have been discovered near the Cape of Good Hope, almost in the warm temperature of the verge of current that sets to the W. along the bank; showing that greater caution is necessary than hitherto supposed, for it seems very probable, that some missing ships have been lost by striking against icebergs in the night, during tempestuous weather.

The French ship *Harmonie*, Captain Milchior, from Calcutta, bound homeward, in April, fell in with several clusters of icebergs, in lat. 35° 50′ S., lon. 18° 5′ E., some of which appeared to be 100 ft. above water and 200 ft. in diameter. She passed between two of them about 2 cables' length from the nearest large pieces of ice, upon which the sea broke violently. When among these icebergs, she spoke the Spanish ship *Constancia*, from Manila, bound to Cadiz. The French vessel passed one which seemed almost breaking up, as the surface of the surrounding sea was covered with small pieces of ice; some time after, in the dusk of the evening, she passed another iceberg, almost dissolved. The wind changed to the N.N.W. and N.W. in the night, and blew tempestuously all the following day, without any more ice being seen.

The brig *Eliza*, Captain Jucometti, from Antwerp, bound to Batavia, on April 7th fell in with five floating icebergs in lat. 37° 31′ S., lon. 18° 17′ E., having the appearance of church steeples, and apparently from 250 to 300 ft. high, which were passed within ¼ m.; and the sea broke so furiously against these enormous masses of ice, that at first they were thought to be fixed on some unknown shoal; but on sounding, no bottom could be found. Three weeks afterwards, the *Harmonie* and *Constancia* fell in with icebergs in a state of rapid dissolution, nearly on the same meridian, but 33 leagues more to the N.

It is rather remarkable that these icebergs were seen in April, which is the autumn of the S. hemisphere: whereas in March and April, which are the spring months of the N. hemisphere, the arctic or N. icebergs are usually observed, in the North Atlantic Ocean, to drift farther to the S. before they are dissolved, than at any other time of the year.

Ice Charts of the South Hemisphere have of late years been published under the direction of the Hydrographer of the British Admiralty, compiled from the voyages of Cook, Bellingshausen, Weddell, Foster, Biscoe, Balleny, D'Urville, Wilkes, and Ross, from various documents. This useful chart shows by symbols when ice-bergs have been fallen in with in different months. The graphic method is so well calculated to show at a glance where these serious hindrances to safe ocean navigation may at times be found, that we recommend all vessels, rounding the Horn or the Cape of Good Hope, to furnish themselves with these Admiralty charts,* from which we extract the following information:—

The greatest number of ice-bergs, hitherto sighted in the tracks of ordinary navigators, has been in Nov., Dec., and Jan.; and the least in June and July. Great caution should be observed in navigating the higher latitudes of the S. hemisphere in the late Spring and the Summer months. A greater probability also exists of falling in with ice-bergs in March and April than during Sept. and Oct. Diminished temperatures of both air and sea usually indicate their approach. Vessels should,

* *See* Admiralty Chart, No. 1241; Ice Chart of S. Hemisphere.

if possible, pass to windward of ice-bergs, to avoid the loose ice floating to leeward. The danger from contact with large masses of ice in the high S. latitudes, is far greater than was generally supposed before tracks were so multiplied.

This Polar chart, collecting numerous observations, defines as nearly as possible not only the boundaries of the pack-ice which encircles the S. Polar regions, but also the general limits of those vast disrupted masses or bergs, which, drifted by winds and currents to lower latitudes, have been found seriously to delay as well as to imperil navigation. The seaman must, however, bear in mind that, although ice-bergs have been actually seen, as marked on the chart in certain spaces, it does not follow that the same conditions invariably exist; for, while some years have been remarkable for great numbers, extensive spread and drift to lower latitudes, other years have been equally so for their scarcity or absence. Scattered masses of ice having been met with at nearly all seasons, especially in the vicinity of the S. capes of Africa and America, the careful navigator will not fail, when in those localities, to observe more than ordinary caution and vigilance.

SECTION III.

EAST AFRICA, ARABIA AND PERSIA.

CHAPTER VI.

CAPE AGULHAS TO ZANZIBAR.

ALGOA BAY—BUFFALO RIVER—NATAL—DELAGOA BAY—CORRIENTES CAPE—SOFALA—QUILIMANE—PRIMEIRA AND ANGOXA ISLANDS—MOZAMBIQUE—QUERIMBA ISLANDS—CAPE DELGADO—KEELWA—ZANZIBAR.

(VARIATION AT ALGOA BAY, 30° W.; AT NATAL, 27° W.; AT CORRIENTES, 22° W.; AT SOFALA, 19° W.; AT ANGOXA, 15° W.; AT CAPE DELGADO, 12° W.; AT ZANZIBAR, 10° W.

The Coast between Agulhas and Cape Infanta is low and sandy in some places.

Atlas Rock is small, not exceeding half an acre in extent; has 3 fathoms on it, and 6½ and 7 fathoms around it, at low water. It lies 2 m. off shore, in lat. 34° 37′ S., lon. 20° 23′ E., with Struys Point bearing W. ¾ S., distant 7 m., and a triple isolated peak inland N.W. ¼ W. The peak on this bearing appears like a cone.

Cape Infanta, nearly 800 ft. high, stands 16 leagues to E. of Agulhas Light. A deep bay extends to the W of Infanta to Hoop Point and Atlas Rock. A vessel might get into this, whence the Agulhas Light would not be visible, even from the masthead of a lofty ship (*see* p. 77.) To the S. of Cape Infanta, soundings of 30 to 40 fathoms extend 10 leagues off shore. Sebastian Bay and Breede River are to the N. of Infanta. Capes Barraconta and Leven form the next projection of this rocky and exposed coast, the latter being 25 leagues to E. by S. of Agulhas. **Cape Vacca** is about 8 leagues to E.S.E. of Leven Point, and 5 leagues W. by S. from Cape St. Blaize. Care must be taken in rounding this low Cape at night, as St. Blaize Light is not visible from it, even from aloft. **The lead** will be best guide at night or in thick weather. Never shoal under 30 fathoms.

CAPE ST. BLAIZE LIGHT stands 38 leagues to the E. by S. of Agulhas. A square, white tower, on the bluff of the Cape, exhibits a Red *fixed* light, 240 ft. high, visible from 12 to 15 m., in lat 34° 11′ S., lon. 22° 9′ E. The Blinder or Windvogel Rock lies about ½ m. off the E. end of the Cape, and the sea breaks heavily upon it at low water. **Mossel Bay,** on the E. side of Cape St. Blaize affords security to vessels during the winter months of May, June, July, and Aug., when prevailing winds are off shore. S.E. winds are then unfrequent, moderate, and of but short duration. From Sept. to April strong breezes from the N.E. occasionally prevail, bringing into the Bay a heavy break of sea. These, however, seldom continue thirty hours. Vessels with good ground-tackle may ride with safety, or, if desirable, beat out at the usually gradual commencement of the breeze, and clear the Cape in one good board. Moderate S.W. winds, even at this season of the year, are very common.

Aliwal, the town, standing on the N. side of Cape St. Blaize, consists of about 130 houses, an episcopal chapel, and a Dutch church; other buildings are in course of erection. The trade and produce of the interior have been opened to this port by a road called the Meirings Poort, through a gorge of the Zwaartberg mountains, and a thriving commerce is the result. The population of the town consists of above 1,000. The civil establishment is composed of a resident magistrate, a collector of customs, a district surgeon, and a small police force. There is a harbour-master, and an accredited agent for Lloyd's. Several mercantile houses are established, three hotels, and many provision and retail stores. Postal communication is maintained with Cape Town in 36 hours, by the mail cart, three times a week. Excellent water is conducted to a new jetty for the use of ship-

ping. Ships' boats may land either at the jetty or on the beach, there being no surf. No port charges exist.

Directions.—Cape St Blaise may be rounded closely, taking care to avoid Blinder Rock. On opening the Bay the town of Aliwal will be seen at nearly ¾ m. inside the Cape. The proper anchorage in Mossel Bay in summer is in from 4½ to 5 fathoms, clay, with the village bearing S., or with Blands jetty head S. ½ W., and the extremity of the Cape S.E by S. From Sept. to April vessels should not anchor in less than 6 fathoms.

The heaviest gales are from W.N.W. Winter gales commence from N.N.W. with heavy gusts, unsteady both in direction and force, then veering to W.N.W. or W. They blow very hard in continuous gales, with barometer low (29·6 inches); finally, shifting rather suddenly to the S.W., they subside with steady breezes and occasional showers. At this latter period, a swell sometimes sets round the Bay, but not endangering vessels or interrupting the landing of stores with light boats.

Tides. It is H. W. at F. and C. at Mossel Bay at 3 h., and the rise of tide is 7 ft

Knysna Harbour, entrance in lat. 34° 6′ S , lon. 23° 4′ E., has a depth of 18 ft. in it; only fit for small vessels. When the harbour is well open, bearing N., a village with two churches will be seen. There are two beacons for leading marks,—one on Fountain Point on the E. side, the other on the W. shore of Steenbok Island, within the harbour. A signal-staff is erected on Inner Obelisk Point, from which the following pilot signals are made with flags:—

White, blue..... The pilot boat is coming out.
Red ..... Ship is recommended not to attempt to come in.
White, red .... Ship may come in now. If waiting for the tide, a red pendant will be shown over the flag at a proper time for entering.
Yellow ..... Pilot boat cannot go out, but pilot is ready to receive ship within the bar.

Approaching Knysna Harbour from the W., steer for the S.E. rocks off the entrance; when the Harbour is well open, proceed towards Needles Point on the W. side of the mouth, until the two beacons come in line, which will lead up to Fountain Point. Pass close to this and steer for the rocky point between Green and Monkey Points, by which a depth not less than 3 fathoms should be maintained. When abreast of Green Point, haul in for a sandy patch close to the S of Rocky Point, and anchor to the S. of it in Best Cove. It is H. W. at F. and C., at Knysna Harbour, at 3 h. 45 m.; the rise at springs is about 5 ft.

Plettenberg Bay, on the N. side of Seal Cape (lat. 34° 6′ S., lon. 23° 25′ E), has anchorage in 9 or 10 fathoms, good holding ground, with Seal Cape bearing S. by E., sheltered from all winds, except those between the S.E. and the S., which bring in a great swell. **Whale Sunken Rock** (having only 6 ft.), lies nearly 1 m. to S.E. of Seal Cape.

Cape St. Francis, in lat. 34° 11′ S., lon. 24° 52′ E., and 25 leagues S.E. by E. from Seal Cape, should not be approached in the night, being low and sandy; formerly it was mistaken for Cape Recife. Dense fogs prevail hereabouts. By night, vessels should not shoal under 40 fathoms.

ALGOA BAY. Cape Recife, the W. point of Algoa Bay, has a light-house. In making this Cape from the W., the hummock called Recife Hillock, being higher than the light-house, is often plainly seen before the latter. In approaching from the S., Cape St. Francis has been mistaken for Cape Recife; but they may be distinguished by the hummock, which shows from a great distance as the termination of the coast-line in that direction, and by a remarkable strip of bare white sand, showing as a beach, to the W. of the hummock. A *Red* stone beacon stands 500 yards N.N.E. of the light-house, as a mark for Dispatch Rock. Two stone beacons, near Beacon Point, stand E. and W., 1200 yards from each other; they are each 25 ft. high, with a ball, and painted in bands of Red and White

Cape Recife Light. The light-house, in lat. 34° 2′ S., lon. 25° 42′ E., is a stone tower, with four horizontal White and Red bands. It exhibits a White light, *revolving* once in a minute, 93 ft. above sea, and visible from seaward about 15 m., between the bearings of E., and round by the N. to W. and S.W., and in Algoa Bay till it bears S.

Thunderbolt Reef lies about ¾ m. to S.S.W. of Cape Recife, and the sea generally breaks heavily upon its jagged rocks; but at high water and in fine weather this may not occur. There is an indraught towards this reef and the Cape, and no sailing vessel should attempt to approach either (except with a commanding breeze) within 2 or 2½ m. Soundings about the Cape and Reef decrease very suddenly from 10 fathoms. Vessels should slacken speed to get accurate soundings in rounding the Cape, and not go into less than 15 fathoms, by night or day.

A strong indraught will often be felt after passing Cape Recife and Thunderbolt Reef, and allowance must be made for it in shaping the course, either inside or outside Dispatch Rock, parti-

cularly if going inside, as foul ground stretches a long way off shore, between the red beacon on the Cape and Beacon Point; and sailing vessels, by not allowing for indraught, have often got on shore.

Port Elizabeth. A heavy surf constantly breaks on the beach of Port Elizabeth, and surf or whale-boats are generally the only boats which can effect a landing; but a jetty, at the mouth of Baaken River, is available at all times for ships' boats, except during strong S.E. winds. Water and refreshments are easily procured at moderate prices, and leaky and dismasted ships are sometimes hove down, repaired, and refitted at their anchorage off the town. A breakwater, to shelter small vessels, is in course of construction.

Harbour-Light. Port Elizabeth Light-tower, of stone colour, with a time-ball on its top, is erected near Donkin Monument, on the hill over the town. It exhibits a *fixed* light visible seaward when bearing between N.W. and S.W. Each extremity of the arc; viz., from N.W. to N.W. by W., and from S.W. to S W. by W. will be *Red*, and the intermediate six points *White*. The Light is 225 ft. above H. W., and visible in clear weather from a distance of 12 m. The **White** light kept in sight clears all dangers.

Anchorage. Inner anchorage off Port Elizabeth town, in about 6 or 7 fathoms, gray sand, may be taken with the S.E. angle of Fort Frederick bearing W. ¼ N., and the Bird Rock at Beacon Point S. ½ E. Outer anchorage for large vessels in 8 fathoms, similar bottom, with the above objects bearing W. ¼ S. and S. by W. The port captain determines the berths for merchant vessels, and ships of war need only take precaution in the summer season, when E. or S.E. gales may be expected, to anchor with plenty of room to veer. The holding-ground is good, and ships of war have ridden out these gales. **At night,** anchor in 8 fathoms with the harbour-light bearing W. ½ N.

Dispatch or Roman Rock (least water 8 ft.) should not be approached within 2 cables' lengths to the W. and N.W. From the shoalest part the Red beacon in line with Cape Recife Light-house bears S.S.W., and the two beacons on Beacon Point are in line. After rounding Cape Recife as above mentioned, the Red beacon will be first seen, and afterwards the two beacons on Beacon Point.

Riy Bank, E. by S., about 9 m. from Cape Recife, is about a mile in extent, and composed of foul ground, carrying from 6 to 10 and 14 fathoms of water. Therefore it is not exactly a danger impeding navigation, though it breaks with a long S. swell.

Winds and Weather. East and S.E. gales, which alone are to be apprehended in Algoa Bay, occur in the South African summer months; in the remainder of the year the wind seldom or never blows from these quarters, except in rare instances, when what is called *black* S.-Easter comes on, with rain and thick weather, of which the sky and sea give sufficient warning. The approach of summer gales is slightly foretold by the barometer, which falls before the increase of wind. A damp cold air also prevails, and a constant hazy appearance about the horizon, the upper parts of sky remaining clear. When signals to prepare for foul weather are made from the port office, where a barometer is kept, sailing vessels with doubtful ground-tackle should get under way, making their first tack towards St. Croix Island.

With the gale at its height a heavy breaking sea rolls in; but ships with plenty of cable have ridden easily; and the strong E. current, which prevails during these gales, probably assists to relieve the strain, with its powerful undertow.

Directions. Having brought the Light-house to bear N W, if intending to pass outside Dispatch Rock, steer about N. by E., to keep the Red beacon open to W. of the Light-house, until the two beacons (Red and White bands) are in one, or Beacon Point bears W.N.W.; then steer for the anchorage off the town.

There is seldom any advantage gained in passing between Dispatch Rock and the main land, and it is strongly recommended that no vessel should attempt it.

At night, coming from the W., no vessel should shoal under 30 fathoms, and care should be taken not to get into St. Francis Bay, whence Cape Recife Light, bearing to the S. of E. is not visible. Until the Light bears N.N.W., a depth not less than 15 fathoms should be maintained, and the vessel should go slow. The current sets strongly towards the reefs; therefore if a vessel find herself dropping upon them, she must haul to the S. Whilst steering N.N.E., going E. of Dispatch Rock, a vessel must not go into less water than 10 fathoms, or come within sight of the *Red* ray of Cape Recife Light, until the *Red* strip of Port Elizabeth Light is passed, and its *White* light seen bearing N.W. by W., when a N.W. course may be steered to anchorage.

Caution. As Port Elizabeth Light being higher may be seen sometimes by vessels coming from the E., before the light on Cape Recife, care should be taken not to bring it to bear to the S. of W. until Cape Recife *revolving* light be distinguished.

Tides. H. W. on F. and C., at Port Elizabeth, occurs at 4 h., and the highest rise at springs is barely 5 ft.; the tides are often irregular.

St. Croix Island, 9 m. to N.E. of Port Elizabeth, is of nearly bare rock, steep to the N.E., but less so on the opposite side, where some stunted vegetation grows. There is fair anchorage at about 3 cables from St. Croix Island in 10 fathoms, sandy bottom, with its W. peak bearing S. by E. In this position the heavy tumbling sea caused by E. and S.E. gales is considerably broken, but the extent of sheltered anchorage is very confined.

The Coast from Sunday River eastward is formed by a chain of sand-hills, which extend inland 1 m to 1½ m. Many of these hills rise to the height of 350 to 450 ft. above the sea, and are quite bare. At Woody Cape, 22 m. from Sunday River, the sand-hills are covered with dark bushes: and from it sandstone cliffs, fronted by rugged rock, extend along shore for 2 m.; when sand-hills are again met with, which reach as far as Point Padrone

Point Padrone, in lat. 33° 47′ S., lon. 26° 28′ E., is difficult of recognition from seaward. Rocks, over which at times the sea breaks with great fury, project to seaward nearly 1 m. About 2 m. to E. by S. there is a low sandy point, off which for 1 m., the swell was observed to break heavily. These are the only outlying dangers, the coast being approachable, even to the surf, in 7 or 8 fathoms; the depths decreasing regularly towards shore. Fresh water is found at Woody Cape and about Point Padrone, welling out from the base of sand-hills, just above H. W. mark. By digging into the sand, fresh water may be had nearly all along this portion of coast. Drift wood and fragments of wreck are found upon Woody Cape.

BIRD ISLANDS, a cluster of low rocky islets, E. ½ S., 30 m. from Cape Recife, and nearly S.S.W. 5 m. from Woody Cape, were dangerous to navigation before the erection of a light-house on the largest of the group, which has the appearance of a ship under sail. These Islands are the resort of numerous sea fowl, and are covered to the depth of several feet by an inferior kind of guano. It is 33 ft. above sea, 800 yards long, and 600 yards wide. No water is found on it, save in hollows of the rocks after rain. Eggs are abundant at seasons; a very palatable vegetable, not unlike spinach, grows on it. Fish may be had in plenty.

About ¼ m. to the N. of Bird Island, two other islets, called Stag and Seal, lying nearly E. and W., are connected at low water; but in fine weather a boat can pass between them at high water. Outside, or to the N.E. of these, a rocky bed, with 2½ and 3 fathoms, extends nearly 1 m. from the light-house, and terminates in rocks above water, called the N. Patch. To the W. of Seal Island are five black, rocky islets.

Bird Island Light-house, in lat. 33° 50′ S., lon. 26° 17′ E., is a white wooden pyramid, with a broad black belt in the middle. It stands on the S. side of the Island. It exhibits two *fixed* white lights, 61 and 51 ft. above H. W., visible 10 m. They are 18 ft. apart horizontally, and, when directly over each other, point to the Doddington Rock, upon a S.W. ½ W. bearing. The upper lantern has a shade on the N. or in-shore side, which renders the light invisible from the anchorage to N E. of these Islands, when bearing between S. by W. and W. by S.

The Doddington and E. and W. Rocks are three dangers lying within 1½ m. of the Bird Island Light, with it bearing between N.N.E. and E. The two former are awash, and the latter has 2½ fathoms over it; but the sea is seldom so smooth as not to break. Close around, the depths are 10 to 12 fathoms. Between these Rocks and the island the soundings are irregular, between 5 and 10 fathoms. During heavy weather, a tremendous sea rolls over the whole of this space, producing a surf truly terrific, the sea breaking in 8 and 10 fathoms water to seaward. It is necessary to give the Bird Island dangers a wide berth in passing, since it is difficult to distinguish between the sea that breaks in 10 fathoms, and that which rolls over the reefs. This is one of the most dangerous parts of the coast, especially to a stranger.

The Anchorage is on the N. side, but the holding-ground is not good, and the bottom uneven. Best anchorage is with light-house in line with N. patch, in 8 to 10 fathoms water. Vessels that load here with guano usually anchor with the black rocky islets about in line with Stag Islet, in 8 to 10 fathoms, as it is more convenient for boats to come off with cargo. It frequently happens that there is no landing, the rollers setting in during calm weather, as well as in a gale. After these have subsided, care is necessary in landing, as the sea sometimes breaks heavily and unexpectedly between the islands.

Tides and Currents. Near the Bird Islands no regular tidal stream was found, but a regular rise occurs. It is H. W. on F. and C., at 3 h. 15 m., with a rise of 6 ft. in Dec. At the anchorage the current sets in general to the E., and at one time, during a strong W. gale, it ran E. at the rate of 1½ knots an hour. It was, however, in two other W. gales, found setting to windward.

Kowie River, or Port Alfred, in lat. 33° 34′ S., lon. 26° 50′ E., admits small vessels drawing

8 ft., but rollers are frequently heavy. Cook Rocks stand 2½ m. to S E. of the river mouth. The course inwards is about N.N.W.

Great Fish Point is a projecting part of the coast, in lat. 33° 31′ S., lon. 27° 7′ E.

EAST LONDON. BUFFALO RIVER. The flag-staff at the entrance is in lat. 33° 1′ S., lon. 27° 55′ E. Ships proceeding to Buffalo River from the W. will find the coast from Great Fish River Point to Cove Rock even and sandy. The Keiskamma and several other rivers run into the sea on this part of the coast; are all bar rivers, over which a heavy surf is at all times breaking; and all so much alike, that it is difficult for a stranger to tell one from the other. A mark for making the Buffalo is Cove Rock, 6 m. to the W. of Hood Point, and when seen by a ship running close along the shore to the E., it appears like an island, quite black, and without vegetation, and joined to the main land by a low sandy neck, over which the sea breaks heavily after S. gales. When abreast of Cove Rock, the houses of East London and two flag staffs may be observed over Hood Point. Variation 29° W.

Light. A light-house stands on the reef at the S. side of the river; its base is square, in alternate Red and White bands. It bears E.S.E. nearly 400 yards from the flag-staff on the hill. It has a *fixed* White light, 45 ft. above H. W.; visible in clear weather about 11 m.; lat. 33° 1′ S., lon. 27° 55′ E.

Directions. Hood Point is low, and ships should give it a berth of at least ¾ m., for a reef extends from it, and a dangerous patch lies about ½ m. off. The best anchorage was found to be in 9½ fathoms, with Cove Rock just shut in by Hood Point, bearing W. by S., and the river open; light-house N.W. ½ W.; Reef Point N.E. by E. At the anchorage off Buffalo River, vessels generally lie broadside to the swell, rolling and straining much.

To land troops vessels should lie with a good scope of cable out. The port office has the Commercial Code of signals, by which communication can be made. Should the weather be fine, and the bar passable, surf boats will probably be at the outer buoy, from which to the ship a hawser should be run, as current at times sets too strong for boats to tow against. A Red flag, with a White square in its centre, is hoisted at the lower flag-staff when the bar is passable; at half-mast when it is dangerous; but hauled down altogether when impassable. However smooth it may appear, the bar should never be attempted by ships' boats.

Vessels from Algoa Bay to Buffalo River should leave at such a time that the latter half of the passage can be performed by daylight; but should the weather be fine, and Cove Rock not visible before dark, it would be better for a steamer to anchor off the coast in about 12 fathoms (with her steam up or nearly so), in preference to lying-to for the night, as the current sometimes sets 80 m. to windward against a strong S.W. gale in 24 hours. Sailing-vessels bound for the Buffalo would do well to secure a latitude half-way between Cape Morgan and Buffalo, bearing in mind that the current always sets to the S.W.

A strong current was always experienced setting along shore to the W. from 2 to 4 knots per hour. This current probably strikes against Great Fish River Point, which sets it off from the coast in a S. direction. The stream running out of the river after heavy rains, meeting the coast current at right angles, produces a very variable current at the anchorage. It is the opinion of coasting captains that the W. current runs 5 knots an hour in strong W. gales, and from 2 to 3 knots in moderate weather. An E. current is seldom known but in very fine weather.

Tides. It is H. W. at the Buffalo River entrance, F. and C., at 3 h. 45 m.; springs rise 4½ ft.

River Kei is in lat. 32° 41′ S., lon. 28° 26′ E., and 2 m. N.E. from Cape Morgan, which is a low point; but the land at the back of it rises into a somewhat remarkable hill, covered with grass and bushes intermixed. From the N. extreme of the sand spit, which partly forms the river's mouth, breakers extend seaward, to S.E., nearly a mile. On the bar the least depth found was 7 ft. at low water.

A remarkable sand patch, on the face of the dark hill on N. shore of the river, serves as a guide to the entrance; during heavy rollers the channel is impracticable. During flood tide the stream sets to the N. close in shore, and to the S. during the ebb.

Snag Rocks are three low, rocky islets, the S. and largest of which, called the Snag, is 20 to 25 ft. above the sea. All around these islets, which lie about ½ m. S. by W. from the river mouth, the sea breaks heavily; but this does not shelter the main beach, which is all rocky.

At nearly 1 m. off shore, near Kei River, the current was found invariably to set to the S.W., at the mean rate of 1½ knots an hour. At first quarter ebb, the stream from the River reached as far to S.E. as the anchorage, where it joined the coast current, and both ran to the S.W. together. During flood tide the influence of the stream was not sufficient to alter the general direction of the ship's head.

The Coast from Cape Morgan to Sandy Point, 15 m. N.E., affords no landing through the

heavy surf. At Bashee Point, in about lat. 32° 16′, a ledge of rocks, having a heavy surf upon them, extends off about ½ m. **Rame Head,** in about lat. 31° 48′ S., lon. 29° 14′ E., is a bold rocky point, sloping gradually, with a small rock at its extremity. To the W. of the Head, about ¾ m. off shore, is a shoal with from 8 to 10 fathoms on it. Brazen Head, about 5 m. to the N.E. of Rame Head, has from the E. the appearance of two distinct points densely wooded and very steep.

RIVER ST. JOHN, or UMZIMVUBU, has its entrance in lat. 31° 35′ S., lon. 29° 29′ E. A lofty table-topped mountain 1200 ft. in height, appears to have been cleft to its base, leaving a wedge-shaped gap in the centre, through which the river flows to the sea into Gordon Bay. Cape Hermes, the S. horn of this Bay, has a round grass-covered hill, 420 ft. above sea, and the N. horn has a similar hill, but not so large nor so high. The depth of the Bay is scarcely ½ m. From Cape Hermes the coast to the distance of 800 yards N. by W. is all rocky; it here joins a sandy beach, which runs to N. for ¾ m. to the spit at the river entrance. At the junction of this rocky and sandy coast there is a small nook, called Paul's Cove, where the boats of H.M.S. *Hermes* effected a landing, when the river bar seemed impracticable, from the heavy surf.

The bar of this River, being subject to change of position, small vessels which enter the River with merchandise are guided over it by a *shifting* mark upon the shore, at the back of a hut, which is built near the end of the spit, at the W. point of river entrance. There is a trading station about 9 m. from the mouth of the River, to which place the vessel employed as a trader carries her inward cargo. A surf boat and surf warps are employed in communicating with this vessel when outside the bar.

The Rainy Season prevails from Oct. to April, when great changes are produced in the channel already mentioned. The natives are of mild disposition, and upon friendly terms with European traders. During all but very boisterous weather, the River is practicable for surf-boats provided with necessary warps and buoys.

Anchorage can be taken in 12 or 13 fathoms, with Cape Hermes W.N.W., about ¾ m. off; and Porpoise Rock N. by W. ½ W., rather over 1 m off; but the bay is exposed to winds from E., round by the S. to W. During the flood-tide, which runs regularly, a strong current was found setting to S.S.W. along the sandy shore inside the breakers, and to seaward along the rocky shore in the direction of Cape Hermes. This current should not be forgotten in attempting to land with a flood-tide. Upon one occasion, it was found so strong that a cutter could barely stem it. Should a boat be swamped in the surf, it would be almost impossible for the crew to reach shore; and sharks are numerous and ravenous, both outside the surf and inside the river mouth.

Tides. It is H. W. on F. and C. at River St. John, at about 4 h.: the rise is 5 ft.

This Coast, from Rame Head to Waterfall Bluff, is faced with several high bluffs. The Waterfall, in lat. 31° 25′ S., is 200 ft. high; from it, about 6 and 12 leagues to E.N.E., there are two sand-bluffs; but beyond them, the Coast has no remarkable features, except False Bluff, which is 10 m. to the W.S.W. of Cape Natal.

Aliwal Shoal is dangerous, about a mile in length, in lat. 30° 15′ S., lon. 30° 50′ E., and lies in the track of vessels bound for Natal from the S.W. upwards of 2 m. off and parallel to the shore. It has from 2 to 6 fathoms on it, and 15 fathoms close-to all round, at L. W. From its shoalest part Cape Natal bluff bears N.E. by E., 25 m. off (of course not visible), and Green Point bears N.W. 2½ m. off. The water is deep inside the shoal; 15 to 12 fathoms being obtained close in shore.

Impulse Shoal, in lat. 30° 19′ S., lon. 31° 12′ E., was reported in 1860; but the position of the danger is given as *doubtful*.

Cape Natal is a high, wooded tongue of land, terminating in a remarkable bluff, which is easily made out, the coast to the N. being low for several miles. There are no outlying dangers in approaching it, and the water is deep close to land. The coast to S. of Cape Natal is of moderate elevation near the sea, and broken in several places by mouths of rivers and streams. The hills rise inland to a considerable height. Variation of compass 27° W.

PORT NATAL. A vessel intending to enter the Port, and in want of a pilot, should anchor in the road in 9 or 9½ fathoms, sandy bottom, when the flag-staff on bluff bears S.W. 1 m. A signal being made, Pilot will be sent off; or, if surf on the bar is too heavy, the fact will be signalled from the flag-staff. Anchorage in the road is safe so long as the wind does not blow directly on shore, which is seldom the case; but H.M.S. *Southampton* drove and was very nearly wrecked here during a gale from E.S.E.; when the wind is inclined to freshen from that quarter, with a long swell and high barometer, a ship should go to sea as soon as possible.

The Bar should on no account be attempted by a stranger, as the channel must shift till all harbour-works are complete. The stone pier, or groyne, on the N.W. side from D'Urban sandy point, is 2000 ft. long. A short wall with a *fixed* harbour-light, was proposed, from the base of

Natal Bluff, forming the S.E. side of the harbour, the entrance to which is nearly 200 yards wide, with 3 or 3½ fathoms at H. W., according to the season. W. winds and rains deepen the Bar between October and February, but in dry months (March to Sept.) sand accumulates.

Light. Natal Bluff has a light, *Revolving* every minute, elevated 280 ft., visible 24 m. in clear weather. Not visible from Aliwal Shoal, but to the N. of that danger, the light is seen from seaward bearing about N.E. by E., round by the N. and the W., till in Natal Bay it bears S. This Cape Natal *revolving* light is in lat. 29° 53′ S., lon. 31° 3′ E.

D'Urban Town stands 2 m. to N.W. of the light-house, and is a thriving place. Fresh water is sent off in large boats to vessels lying in the road outside the Bar. Refreshments of all kinds may be obtained at moderate prices in harbour. The chief exports are wool and ivory. The sugar-cane flourishes, and excellent sugar has been produced; also arrowroot and rice, ginger, turmeric, chicory, coffee and tobacco; of fruits, pine-apples, mangoes, bananas, sour-sops, lemons, chilies, &c., also thrive; as well as potatoes, European vegetables, and corn and oats. A life-boat and a steam-tug are kept at this port.

Tides. In the port of Natal, abreast the custom-house, the time of H. W. on F. and C is 4 h. 30 m., and the rise of spring tides is 6 ft. The ebb at springs on the Bar runs about 3 knots per hour, and between Sandy Point and the Bar about 2 knots. In the road, outside the Bar, the stream of flood sets to the S.W., and of ebb to the N.E. It is necessary to caution the seaman against the strong current which prevails on Natal coast, from 3 to 30 m. off land. It is uncertain both in direction and force, but generally sets to the S.W. at the rate of 2 knots an hour.

Coming from the N., Port Natal Bluff is most conspicuous; and the coast of Natal is generally of moderate height, interspersed with sand hills; in many places the shore is rocky, with deep soundings near it. Between Port Natal and Cape St. Lucia, soundings extend 3 or 4 leagues off, and 6 leagues off from Fisher River, which is in lat. 29° 16′ S., lon. 31° 33′ E., distant from Port Natal 15 leagues to the N.E., and Durnford Point is 8 leagues further.

Cape St. Lucia is in lat. 28° 32′ S., lon. 32° 28′ E., and 7 m. farther N. lies River St. Lucia, with a sugar-loaf hill on its S. entrance. The land of St Lucia Point has a series of bluff capes. From hence the coast runs 8 leagues to Cape Vidal, in lat. 28° 9½′ S., lon. 32° 38′ E.: thence nearly straight N.E. by N. for 44 leagues to the Island St. Mary or Cape Inyack, at the entrance of Delagoa Bay. This extent of coast from Cape St. Lucia was called Fumos by the Portuguese. It is generally composed of rather low land near the sea, and little frequented by Europeans. Several parts of this coast have no soundings except near the shore. Variation 25° W.

DELAGOA BAY, or Lorenzo Marques, is 5 leagues in breadth E. and W., and from N. to S. 14 leagues; but all the S. part is shallow and unsafe. Cape Colatto, in lat. 26° 4′ S., lon. 33° 1′ E., the S. boundary of the Bay, has a round-top hill not far within the point. Port Melville is to the W. of Elephant Island. Lorenzo Marques Fort, with a Portuguese garrison, stands in a swamp on the N. shore of English River, about 1½ m within Reuben Point. Shefeen Island is to E. by N. of that point, and to N.W. of Elephant Island.

Inyack, or St. Mary Island, is high, undulating land, near middle of which, on the E. side, there is a single hill with white spots; and the Island is separated from Cape Colatto peninsula by a narrow, rocky channel. The N.E. extremity of St. Mary Island, Point Inyack, is in lat. 25° 58′ S., lon. 33° 2′ E. A little to the N. of St. Mary there is another small one, called Elephant Island, from which detached shoals called Cockburn, Hope, Domett, and Cutfield, extend about 18 m. to the N. Between these shoals, there are narrow channels, with various depths of 5 to 7 fathoms. The bank of soundings extends but a small distance to seaward; and after getting bottom, the water shoals fast in running into the Bay; the bottom is rocky, with very irregular soundings, requiring care in a large ship. A ship bound into this Bay should keep boats ahead sounding, as the sands are said to shift with the tides, which are irregular. Outside the entrance, the general depths are from 5 to 7 fathoms, with 12 to 16 fathoms at 2 leagues off.

Pantaloon Shoal, in lat. 25° 46′ S., lon. 33° 5′ E., has 5 and 6 fathoms about 20 m. off shore. Great caution is requisite in this vicinity till more minutely examined.

Directions. An extensive reef runs out from Cape Inyack, and the Cockburn Shoals extend for 6 leagues to the N. of the Cape, with from 4 to 2 fathoms on them, and 5 to 7 fathoms in channels between them. It is not safe to pass through these channels, which are very narrow, with no other guide than soundings. It is better to stand at least 18 m. to the N. of Cape Inyack, which will clear the Cockburn, Hope, Domett, and Cutfield Shoals; then stand to the W. and the S.W., about 2 m. off shore for some 5 or 6 m.; hauling out to the S. to pass the E. of Shefeen Reef. To clear which, bring Mount Colatto over the L. W. part of Inyack Island, and just open of the W. point of Elephant Island, and with these marks run to the S. until Point Reuben (remarkable for some red cliffs immediately to the N.) bears W. by N.; this will lead clear of Shefeen Reef, which

projects 4 or 5 m. to the E. of that island, and between which and Hope Shoals the channel is 4 m. wide. Then steer for Point Reuben, and anchor in 6 fathoms, about 6 m. off it, bearing W. by N. ½ N., and the extremes of Shefeen Island between N. and N.N.E. Wait here till tide suits for entering English River. Point Reuben the N. point of the entrance, must be approached nearest in entering this river, where the depths are 3 and 4 fathoms at L. W. between the points, increasing to 7 and 8 fathoms about 2 m. inside. Ships may anchor 1 or 2 m. within the entrance, or 3 or 4 m. farther up, where the depths are 8, 9, and 10 fathoms. There is a good watering-place on the S. shore, opposite to the anchorage; and a little above Point Talloqueen, a long sandy point on the same side, there is a small rivulet, where the Portuguese have a resident; opposite this, on the N. side of river, the ruins of the Portuguese fort are visible.

Sailing into or out of Delagoa Bay, the shoals will generally be seen in clear weather from the mast-head; but it is advisable to keep a boat ahead sounding, as the sets of tide are not regular, and there are often strong ripplings. The depths above mentioned are at low water spring-tides. The bar of the river has 2½ fathoms at L. W.; ships ought, therefore, to cross it with the flowing tide.

English River extends a great way into the country, and is the only one navigable for ships of moderate size; for, although several other rivers fall into this bay, the shallow water on their bars prevents vessels of burden from entering. The largest of them is Manice (King George) River, on the N. side of the Island Shefeen. Mapoota River, at the S. part of the bay, has very shoal water. The Factory Flag-staff at English River is in lat. 25° 58′ S., lon. 32° 37′ E. A considerable trade was formerly carried on at these rivers for elephants' teeth; but few English ships, except whalers, now visit this bay. Although Portuguese still retain a little intercourse with the natives, ships which trade here ought not to place much confidence in them, particularly if boats are sent a great distance up the rivers with goods to barter; for in such cases the natives have been known to attack them, and massacre the crews. Elephants' teeth are procured in barter for India goods and coarse stuffs of various kinds. The bay abounds with fish, and inland the country is fertile, producing grain; bullocks, sheep, poultry, and other supplies may be procured, and also fruits, among which pine-apples and water-melons are the chief. Sugar-canes are also cultivated by the natives. This bay is much frequented by southern whalers, who kill here the black whale; but it is a very unhealthy place, being subject to jungle fevers, which proved fatal to many officers and men employed on the survey in H.M. ships *Leven* and *Barracouta*, under the late Admiral Owen; and some of the whalers have been disabled by the loss of nearly all their people. During the unhealthy season, from Sept. until the end of April, ships visiting this place will be liable to the pestilential scourge, if the people are employed on shore, or sent up any rivers, to trade in boats with the natives; and above all, during night, in the proximity of low mangrove swamps, near the banks of rivers. The country inland is mountainous, but low where it fronts the sea, adjacent to the rivers. On the coast to the N.E. of Delagoa Bay is Lagoa River, the entrance of which is in lat. 25° 20′ S., lon. 33° 13′ E.

Tides. H. W. at 5 h. 15 m., on F. and C. of moon, and rise of tide 12 ft. at the Portuguese Factory. At Shefeen Island about a half-hour sooner.

CAPE CORRIENTES (small rock), in lat. 24° 7′ S., lon. 35° 30′ E., bears E. by N. from Delagoa Bay, about 60 leagues. The coast, from River Lagoa to Zavora Point, runs nearly straight E., by compass, for 40 leagues, and has several rivers, the largest of which is Inhampura, in lat. 25° 11′ S., lon. 33° 34′ E., about 20 leagues from Cape Colatto; and Gold River, 16 leagues farther E. Inhampura Shoals extend from lat. 25° 12′ to 25° 10′ S., and from lon. 33° 39′ to lon. 33° 46′ E. Cape Corrientes has a hill over it, which may be seen 10 or 12 leagues; the coast about it is clear of danger, with deep water, the edge of the bank of soundings not extending above 3 or 4 m. off shore. The current generally sets round it to the S.W., and afterwards along the coast of Natal.

Cape Wilberforce, bears N.E. 5 leagues from Cape Corrientes; the coast then runs to N. about 8 m. to Barrow Hill Point, the S. extreme of Inhambane Bay; it consists of barren sand-hills, moderately high, visible 20 m.; at a distance appearing like chalky cliffs.

Inhambane Bay has not been yet minutely examined, but a few depths from 7 to 23 fathoms are given in it. The S.E. point is sandy, with a sand-hill over it, called Barrow Hill, in lat. 23° 45′ S., lon. 35° 33′ E. From this point the coast turns sharp round to the W., to the low point of Inhambane River, off which a reef of heavy breakers extends to N., about 7 m. This reef forms the W. side of the Bay, the anchorage being about 3 m. to the N. of Barrow Hill, in 7 or 8 fathoms. Between the low points which form the entrance of the river, the distance is about 5 m., but it is almost barred up with low sandy islands and banks; the channel is near the N.W. shore, round the N. point of the reef before mentioned, having variable depths from 2 to 12 fathoms; but it is narrow, and not frequented, except by small vessels. The bar should not be attempted without a pilot; if signalled for, a Portuguese will come off. There is a heavy sea on the bar during S. winds. **Inhambane Town, in lat. 23° 52′ S., lon. 35° 25′ E., is on the E. shore, about 15 m. up**

the river, where some trade is carried on by Portuguese in slaves, &c., having here a resident. There is a small fort and a few troops for protection. Ivory may be procured here; other products are coffee, cotton, indigo and sugar; oranges and lemons in great abundance.

The Coast. Between the sandy point and Cape Corrientes, the current sets strong to the S. great part of the year, which will oblige a ship to anchor near the shore, if the wind fail in steering to the N. The coast from Inhambane River extends about 50 m. N.N.E. to Cape Lady Gray, a headland, in lat. 22° 56′ S., lon. 35° 41′ E. Above that Cape it recedes to W. about 1 league, then trends N. for 50 m. about 150 ft. high, covered with dark bush, to Cape St. Sebastian; between them there are several rivers of small size, not navigable; the first, called French River, about 12 or 13 leagues to the N. of Inhambane, and another farther N., called Robbers' River. This part of the coast has in general a sterile appearance, with sand points at the entrance of rivers, and is high in some places, particularly to the N. of the latter river.

Zambia Shoal, with 3 fathoms, lies 3½ or 4 m. off shore, bearing about N. by E. 10 m. from Cape Lady Gray. Abreast of this Shoal, the cliffs are of reddish colour.

Cape St. Sebastian is in lat. 22° 6′ S., lon. 35° 32′ E.; the land over it being high, may be seen at 10 leagues. In approaching, it appears highest to the S., and there are no soundings at a greater distance than 2 or 3 m. from shore. From this Cape the land trends to the W., forming a bay, barred up with shoals between the Cape and Bazarouta Islands, and the whole of the Sofala coast from hence to Luabo River, the S. branch of the Cuama, is low and woody, with a sandy beach in most places.

Bazarouta Islands extend in a chain to the N. of Cape San Sebastian, and appear like one island in coming from the S. Cape Bazarouta, their N. extremity, is in lat. 21° 31′ S., lon. 35° 31′ E. A reef projects from it, covered at H. W.; a large cove is formed on the W. side of the N. island, called Bazarouta, or Punga Bay, where a ship might find shelter from E., S., and W. winds, and procure wood and water: it has from 7 to 15 fathoms water, but is lined by shoal banks on each side. **Marsha** (St. Carolina Island) in the Middle of this Bay, is the principal establishment of the Portuguese between Inhambane and Sofala, having a commandant and a military detachment. The entrance is from the N., a little nearer to the Great Bazarouta, or N. island, than to the main land opposite. There is no passage between these islands for ships. Great Bazarouta is about 15 m. long, N. and S., an undulating range of sand-hills from 100 to 200 ft. high. It is said to be steep-to, but the chart shows a rock more than ½ m. E. of the Cape. In hauling in for land N. of Bazarouta Islands, soundings decrease regularly on the bank, to 8 fathoms sand, about 3 leagues from shore; but ships running in to the S. of Sofala must be careful of several dangerous shoals, covered at half-tide, stretching far out from the coast, and lying directly in the way of ships coming from the S, bound into Sofala. One of these, **Inverarity Shoal,** is in lat. 20° 42′ S., lon. 35° 10′ E., and nearly 3½ leagues from the land.

Moromone Bay, 30 m to N. of Marsha, is the embouchure of the Govooro, which is a fine river with a bad entrance.

Cape Sabia, or St. Maria, bearing N.N.W. 40 m. from Cape Bazarouta, is the most prominent point of the Savey, or Sabia River Delta, which extends from Moromone Bay to Chulawan. All this coast is low, with creeks, and fronted with mangrove bushes. Soundings shoal quickly from 10 to 3 fathoms.

Chulawan, or Holy Island, low and sandy, but thickly wooded, appears joined to the main land, and its N. point is in lat. 20° 38′ S., lon. 34° 53′ E.; 5 or 6 m. in length, low, and covered with trees. Shoals projecting from the points of the island, and others detached, seem to render any navigable passage into the Sabia River impossible, except for boats.

Caution. Ships touching on little frequented parts of the E. coast of Africa ought to be careful in landing with their boats, for the natives have reason to be prejudiced against Europeans; French and English vessels, after enticing natives on board, have carried them away, and sold them as slaves. At Sofala, and other places where Portuguese reside, a guard is placed on board of any vessel that may touch there, to prevent illicit trade: but, by gaining favour of the commandant, trade may be carried on at most of these places. They are all under Mozambique Government, and all coasting vessels belong to that port.

SOFALA RIVER, 30 leagues to N. by W. of Cape Bazarouta, has a fort on N. side of its entrance, in lat. 20° 11′ S., and lon. 34° 46′ E. The land here is all low, but a few tall trees indicate the town and river; the latter cannot be entered by vessels of great burthen with safety, there being only 12 ft. water on the Bar at low tide, and the entrance is intricate. Large ships should not approach Sofala nearer than 3 leagues. Shoal patches of 2½ fathoms lie 2 leagues off shore. **Anchorage** for strangers is in 6 or 7 fathoms at L. W., with the fort N.N.W., about 8 m. off. A pilot is obtainable, but terms not known.

Tides. H. W. at 4 h., on F. and C., at the anchorage. Rise of tide on the springs, 19 to 22 ft.

Sofala Town is by the Fort, and has about 2000 inhabitants, with a Portuguese governor and small garrison. This is said to be the Ophir of Solomon. The trade is now insignificant; but by old Portuguese accounts, the vicinity produces gold, silver, copper and iron; pearls are found on the banks. Sugar-cane, rice, cotton and tobacco are cultivated. In moderate weather, at H. W. spring-tides, large ships might enter the river if the channels were buoyed. The channel, deficient of proper landmarks to guide a stranger, is between Sofala Spit and Matto Grosso Sand, off which the sea breaks at a quarter ebb. Bullocks and poultry may be purchased from natives on *moderate* terms, but not so if procured from the Europeans.

The coast above Sofala trends still N. about 15 m. into Masangzani Bay, into which Boozy River falls. There are many outlying shoals, and the land is low. Soundings of 5 fathoms extend nearly 3 leagues from land. Masangzani Point, the E. extreme of that Bay, is about 20 m. N.E. by N. of Sofala Fort.

Sofala Bank of Soundings extends more than 60 m. from the coast in the latitude of Sofala. Near river mouths the bottom is muddy, but in deeper water it is sandy. The verge of soundings extends nearly straight N.E. from Cape Bazaruto to Quillimane River. A safe rule is not to shoal under 15 fathoms by night along this low coast.

The coast, above Masangzani Bay, trends to E.N.E. about 80 m. to the W. mouth of the Zambesi Delta. Sand-hills fringe the shore, which are highest, about 200 ft., in lat. 19° 38′ S. About 34 leagues E.N.E. of Sofala, in lat 18° 57′ S., lon. 35° 56′ E., is the W. side of Luabo River, the S. mouth of Zambesi, or Great Cuama River; here spring-tides rise 22 ft. In this extent of coast the land is low, with sandy plains; and several small rivers fall into the sea. This coast is safe to approach into 8 or 9 fathoms, the soundings being regular toward the shore. The W. shore of the Luabo is very low, but trees cover the E. side. From Luabo River, the coast extends about 7 leagues E. by S., then turns again to E.N.E., which space comprehends the several entrances of the Zambesi River

THE ZAMBESI DELTA, comprises five mouths along 30 m. of coast; the W. Luabo; the Melambe; the Kongoni; the Zambesi, or E. Luabo; and the Muselo. From this last, the coast bends round to the N. for 20 m.

Shoals. Changes at times occur in sand-banks off the Zambesi. Luabo Shoals extend some distance to the E. The Elephant Shoals, in lat 18° 56′ S., 3 or 4 m. off shore, are the outermost of these dangers. A bank was reported by H.M.S. *Lily* in 1843, in lat. 18° 35′ S., lon. 36° 40′ E., with 3 and 6 fathoms; land just in sight from mast-head, and supposed about 14 m. distant. This was 20 m. E.N.E. of the Muselo mouth.

Kongoni Mouth is considered the best entrance of the Zambesi, and by it the expedition under Livingstone entered in 1861. Pearl Island, the E. side of the Kongoni, is in lat. 18° 53′ S., lon. 36° 11′ E. The Portuguese have a flag-staff on the W. side of entrance, and a beacon on Pearl Island. The Bar may be crossed with Beacon N. by E. ½ E.; and ships should anchor further out, on same bearing, in 6 or 7 fathoms, more than 4 m. off shore.

Current generally sets to W., causing ships at anchor off the Zambesi to lie with broadside to the usual S.S.E. wind, and consequently to roll much.

Tides. It is H. W. on F. and C. at 4½ h. Springs rise 12 to 15 ft., sometimes more. The ebb runs at springs 4 knots an hour off the Bar. At L. W. the river is generally fresh. In the rainy season—Oct. to Feb.—the river banks are sometimes submerged 2 ft. at high tide.

Muselo Mouth, with sand-banks off it, forms the most prominent point of the Zambesi Delta; but the surf is always heavy, preventing any attempt to effect an entrance; nor is the channel known. To N. of Muselo, there are three or four other mouths,—the Nameara, the Lindi, and Indian Rivers,—which doubtless are outlets of the Zambesi; but ships should not shoal under 9 fathoms in this bight.

QUILLIMANE RIVER, the N. branch of Zambesi, is 1 m. in width between Hippopotamus Point, on the W. side, and Point Tangalane on the E. This River is said to be 180 leagues in length; about 6 leagues up, on the N. shore, the first Portuguese factory was constructed. Senna, the principal settlement, in lat. 17° 30′ S., lon. 35° 44′ E., is, by the undulations of the river, more than 60 leagues up. The flag-staff on Point Tangalane is in lat. 18° 1′ S., lon. 37° 1′ E.; but the entrance is not easily known, land on each side being low, with cocoanut-trees; on the S. point there is a small sand-hill. There is generally a considerable swell on the Bar, which has 1½ fathoms on it at L. W., and the tide rises 16 ft. on the springs: H. W. at 4 h. 15 m. Inside the River the depths are 4 to 10 fathoms between the points; from thence to the town, are various shoal banks, and the Island Pequena about 4 m. inside the mouth. About 3 or 4 leagues up, fresh water may be had from a stream on the N. shore.

The Bar. A shoal bank projects to S.E. from each point of the entrance, contracting the Bar, which is about 3 m. outside the River's mouth, with 9 ft. on it. Being bound in, steer for Point Tangalane, on which the flag-staff, or a few cocoanut-trees, may be perceived, bearing about N.N.W., and the River's mouth will be seen open to the left. The current usually sets to the W. past the River mouth. Breakers run very high in bad weather on the tails of the sands, and it is proper to keep in mid-channel. The Bar is subject to changes, and caution is needed, as many accidents have happened to boats of H. M.'s ships on that station, and many lives have been lost.

Quillimane Town is about 5 leagues from the Bar, on the N. bank of the river, in lat. 17° 52′ S., lon. 37° 1′ E. Variation 18° W. When S. winds prevail, it is prudent to anchor in the road to the S. of Hippopotamus Point, in 4 or 5 fathoms at L. W., about 3 m. off shore, which point may be known by sandy spots to the S. In the opposite monsoon, the anchorage should be to the N. of the entrance, as the winds frequently blow strong in both monsoons, and the current runs along shore with the wind. From this river the Portuguese formerly exported slaves, elephants' teeth, and some gold. Provisions are scarce.

River Quizungo is about 42 leagues E. by N. from Quillimane River, in lat. 17° 2′ S., where trade is carried on by boats from Mozambique: between these there are other rivers of smaller size.

The Coast between Quillimane and Quizungo Rivers, is generally low, sandy, with jungle at the back. Capes Fitzwilliam and Edward, the first a yellow bluff, the latter a red bluff, are the most remarkable points; they are 6 m. apart, and Cape Edward is 33 m. W. of the Quizungo. Soundings gradually decrease towards the shore, but **several shoals** have been discovered in the line between Quillimane and the outer Primeira Islands. These shoals bear the names of the vessels which discovered them; the *Brisk*, in lat. 17° 55′ S., and lon. 37° 17′ E. (7 fathoms); the *Pantaloon*, in lat. 17° 44′ S., and lon. 38° 1′ E. (3½ fathoms); the *Acorn*, in lat. 17° 37′ S., and lon. 38° 13′ E. (2½ fathoms). Deep water surrounds these shoals, and probably others exist.

David Shoals (5 fathoms), have their centre in lat. 17° 30′ S., lon. 38° 36′ E., and outside of these, about 12 leagues to the S.W. of Fogo Island, there is a rocky bank, which Captain David Inverarity, who discovered these shoals in the *India* in 1802, crossed over in 6 fathoms rocks, with several discoloured spots to the N. of her, which appeared much shoaler, in about lat. 17° 39′ S., lon. 38° 32′ E. This bank is a little outside the verge of soundings, and is probably very dangerous. When on it, the land was not seen from the mast-head. Great care is requisite when navigating in this neighbourhood.

Many whales of the black kind are seen; and the land may be generally discerned in 20 fathoms water. The winds of Sofala and Zambesia prevail from S. and S.E.; but in Dec., Jan., and Feb., the N.E. monsoon extends along this coast, and the current frequently sets to the S.W.; at other times it is very changeable.

PREMEIRA ISLANDS (Ilhas Premeiras, or First Islands) lie adjacent to the coast, and are the S. islands of the long chain off the district of Mozambique. They are small, and surrounded by reefs, with passages between them.

De Silva Island, a barren sand-bank, 10 ft. high, in lat. 17° 18′ S., and lon. 38° 51′ E., and about 18 m. E.N.E. of the David Shoals, is the W. islet of the Primeiras. Reefs extend off it ¾ m. A ship may pass in 14 and 15 fathoms, between it and Fogo, keeping nearer to the latter.

Fogo, or Fire Island, is nearly opposite Quizungo River, in lat. 17° 14′ S., lon. 38° 54′ E. This is E.N.E. about 5 m. from De Silva, and being thickly wooded, may be seen about 5 leagues from deck. Breakers project from it about a mile on all sides but the N., where vessels may anchor in 10 fathoms, about 4 cables off, with the centre of Island bearing S. by E. to S. by W. **Crown Island,** of sand, and 20 or 30 ft. above the sea, bears E.N.E. 4 m. from Fogo. There is deep water round all these islets, and between Crown and Casuarina Island.

Casuarina Island is about 4 leagues E. by N. of Fogo, and covered all over with Casuarina trees; wood here is abundant, but no water.

CASUARINA ROAD is the best anchorage along this coast. Entering from the N., keep Casuarina (seen from mast-head) open to *Right* of Epidendron, to pass clear *inside* of Barraco reef, and the reef N.E. of it. Anchor in 8 or 9 fathoms, with Casuarina S.S.E., and Epidendron E.S.E.

Epidendron Island, in lat. 17° 4′ S., lon. 39° 9′ E., 3¼ m. E. by N. from Casuarina, and 6 m. S. of Macalonga Point, is also thickly wooded. It is also called sometimes Raza, Flat, or Palm-trees Island. These Islands have reefs on all but their in-shore sides. In passing inside the Islands, a ship ought to keep much nearer to them than to the main, and will then have about 8, 9 and 10 fathoms water. To the E. of Casuarina and Epidendron Islands, at 3 leagues' distance, there is no ground with 60 fathoms; **Barraco Reef** is said to be about 3 m. or more to E.N.E. of Epidendron Island; and another reef, on which the sea is said to break, lies 2 m. further in the same direction.

Moma Bank, or Island, about 30 m. E.N.E. of Epidendron, is a sandy island, in lat. 16° 47′ S., lon. 39° 34′ E.; and in the interval there are some reefs with breakers, between which and Moma there is a passage, and another with 8 and 10 fathoms water between the reefs and the Island. These Islands are all surrounded by extensive reefs. A bank with 5 fathoms lies 9 m. to S.W. by W. of Moma Island, and another shoal between them. Caldeira Point, or Black Rock, is 8 m. N by E of Moma Island. **Caldeira Island,** in lat. 16° 39′ S., lon. 39° 46′ E., the W. one of the Angoxas, lies about 10 m. E.S.E. from the Black Rock, and 14 m. to E.N.E. of Moma.

ANGOXA, or ANGOZHA ISLANDS, lie parallel to the coast, about the same distance from it as Premeira Islands. Ships may pass between them, also between them and the coast, in 8 or 10 fathoms soft ground, by keeping nearer the Islands than to the main; but it would be imprudent to run through these channels in the night. Hurd Island is 6 m. to the N.E. of Caldeira. Between it and Mafamade Island, are two dangers called Michael Reef and Walker Bank. Mafamade Island, 20 m. N.E. by E. of Hurd Island, has lofty Casuarina trees, many of them 150 ft. high, visible at 5 or 6 leagues' distance. It is in lat. 16° 20′ S., lon. 40° 4′ E.; a reef surrounds the Island, projecting farthest to the E. All these islands are small, none of them more than 2 or 3 m. in extent, and usually surrounded by reefs. To the N.W. of Mafamade, lies Angoxa River, the bar of which is very shallow, but frequented by the boats of Mozambique. Here the tide rises 13 ft.

Antonio Shoal, in lat 16° 8′ S., lon. 40° 12′ E., lies 12 m. N.E. of Mafamade. It has two or three sand patches on its S.W. end, and is nearly covered at H. W. Passing through, between the shoal and the main, a ship should not approach the coast nearer than 7 fathoms, nor deepen more than 11 fathoms in the offing.

Huddart Shoal is in lat. 15° 47′ S., lon. 40° 28′ E.; a dangerous rock, on which the sea does not break at H. W., about 8 leagues to the N.E. of Antonio Shoal, 6 or 7 m. from shore; to avoid which, a ship ought to keep in 20 fathoms water, or more, in passing along the coast at this place. When passing between Huddart Shoal and the main, from 3¼ to 5 fathoms is found.

Angoxa River, about 8 m. to N.E. of Mafamade, may be known by a clump of Casuarina trees on Monkey Island, on S. side of the entrance. Anchor off it in 7 fathoms L. W., with clump N.W. by W, Angoxa Point S.W. by W., and Mafamade S. by E., about 2 or 3 m. from shore. The town is a little way up the River. Natives are generally armed with spears and a few muskets, and are not to be trusted.

Mogincale Shoal, between lat 15° 33½′ S., and 15° 38′ S., lies 4½ to 5 m. off Mogincale River, which is a high part of the coast. Caution is necessary, as the sea breaks on it at L. W. spring tides, but there are 2 or 3 fathoms on it at H. W. Between Mogincale and Mokamba River, the coast should not be approached nearer than 20 fathoms, on account of another small shoal with only 3 fathoms, and about 3 leagues from shore: probably the Barracouta Reef, or rocky shoal, with only 7 or 8 ft. water, on which the *Firebrass* struck, in about lat. 15° 30′ S., and lon. 40° 38′ E., which projects about 2½ m. from Barracouta Point.

Bajone Shoal, in lat. 15° 27′ S., lon. 40° 42′ E., lies about 6 or 7 m. E.N.E. from Barracouta Point, and 4 m. off the main-land abreast, and is dangerous, though there is a passage inside of it for small vessels.

Bajone Point, in lat. 15° 12½′ S., lon. 40° 43½′ E, is a projecting headland, forming the S. point of Mokamba Bay. This Bay has very deep water in the centre, and apparently also on its N. shore, but its S. shore is lined with reefs. Off its N. point, called Point Sunkool, are coral flats, which extend E. to St. Jago Island, and from thence in a N. direction to the Island of Mozambique.

Port Mokamba is at the head of Mokamba Bay, about 7 m. N.N.W. of Point Bajone. Its entrance, which is upwards of a mile wide, is in lat. 15° 6′ S., lon. 40° 35′ E. Point Mudge, the S. entrance point, has a reef projecting from it 1½ m. to the E.; therefore, keep near to the N. side of the bay in approaching the Port, and borrow towards the N., or Mokamba Point, which is steep-to. About 2 m. inside Point Mudge, on the S. shore, is Point William, which has a detached rocky patch more than ½ m. off it. Mudge and William points in one clear Mudge reef. The Port, which opens inside of Point William, is a spacious circular basin, with various depths, from 15 to 5 fathoms, where ships may lie land-locked; but there are some shoals near the shore, and at the S.W. part of the harbour, fronting the River Tumonia. The peak of Mokamba is on the N. shore, half a league within the point of that name, and about 2,000 ft. high. Bring Mokamba Peak, when entering the port, to bear W. by N. ½ N., to clear the Peel Bank, 1¼ m. off Sancoul, on which reef H.M.S. *Snake* was wrecked. The bank, extending from the N. point of Mokamba Bay to Mozambique, is called St. Jago Bank, and is steep-to, rocky and very dangerous; the sea breaks on it in bad weather.

MOZAMBIQUE HARBOUR is one of the best on the E. coast of Africa; the land around is

mostly low near the sea, with topes of cocoa-nut trees in several places. Pao (round top) and Table (flat top) Mountains, the former about 22 m. to N.W., the latter 23 m. to the N., are remarkable in clear weather. The coast being very steep-to, soundings can be no guide. Therefore ascertain your latitude and longitude as often as possible in approaching Mozambique, for the currents are strong.

Sebastian Fort, at the E. end of Mozambique Island, in lat. 15° 1′ S., lon. 40° 47′ E., has a high flag-staff, and is the most prominent feature of the island, its walls being nearly 70 ft. high. Lorenzo Fort is at the S.W. end of the island.

Light. Two islands, St. Jago (wooded), and St. George (without trees), lie to the S. of the entrance. St. George, or Goa Island, is 3 m. S.E. by E. of Sebastian Fort, and nearly 2 m. to N.E. of St. Jago. A light-house on pillars is now being built on St. George, to show a *fixed* light, visible 14 m.

Cape Cabeceira, which bounds the harbour on the N. side, is a low bluff cliff with trees. A coral flat extends nearly 3 m. off it. This is called Pau Reef, or Cabeceira Shoal, and bounds the channel on the N. side. Near the N. end of this shoal, there is a small low island called Arbores, Tree Island, or Isle de Pau, with two smaller islets above a mile to the S. The S. head of Pau Reef bears about E. by S., and is distant 3 m. from Fort Sebastian.

The island of Mozambique, on which the city stands, is about 1¾ m. long, very narrow, and nearly midway between the entrance points of the inlet. On the N. side of the Island is the harbour, under the fort and town. St. Jago Bank, already mentioned, extends from Sancoul Point to St. Jago Island and Mozambique, and from thence to the main land; thus leaving no channel for shipping on the W. and S. sides of Mozambique Island.

The town is covered with buildings, and has a good landing-place in front of the Governor-General's palace. The population is about 7000. Coal is very dear, and only to be had in small quantities. Poultry, oranges and fruits of all kinds are plentiful. Fresh beef may be had at one day's notice.

This port depends on Madagascar and other places for supplies of provisions; bullocks are, therefore, not procurable under 15 dollars a head, and rice from 2 to 3 dollars per bag. Water is a scarce article when the harbour abounds in shipping, there being only two good wells, one on the Island, the other on the main; the rest are all brackish, the water in them being only fit for cooking. The articles exported are ivory, Colombo root, gold brought from Zeno and Sofala, the latter in small quantities; also ambergris, some amber, and cowries. Slaves have been exported in great numbers.

THE NORTH CHANNEL is said to have a coral knoll with 2¾ fathoms, but no directions are given about it. Entering the harbour, steer for St. George, giving a berth of ¼ m. to the N.E. end, from which projects a reef of rocks. Having passed this island on the N. side, steer N.W. by W. for the flag-staff of Mozambique Fort, keeping Pao Mountain open a little with the N. Bastion, if the wind is N.; and on with it, if the wind be S., which will carry a ship up with a low church at the foot of the N.E. angle; from which a spit projects to the E. about 300 yards, dry at L. W. spring-tides, and steep-to. The pilots have no mark for this spit, but guess their distance from the Fort and Cabeceira Shoal, which is generally discernible by green water on it. When Tree Island comes on with Cape Cabeceira, haul up N. by W. for the Narrows, allowing for tide, which runs strong here. When the wharf end opens of the fort wall, haul to N.W., steer along the N. face of the island, and anchor as convenient about 2 cables off. Within the harbour, the Leven Banks may be said to be the only obstacles to free navigation, and these are not 3 cables' length off the N.W. end of the island. Between them and Mozambique is the best and most commodious anchorage; the outer reefs are always sufficiently visible by day.

When approaching Mozambique from the N., do not let the S.E. point of St. Jago disappear behind St. George, or you will be too near the Cabeceira shoals. When entering by the North Channel, the Cabeceira reefs are always sufficiently manifest on the outside, but the rocky flat and the coral knoll are in the way of large ships. Bring the N. extreme of Mozambique Fort N.W. ½ W., or Pao Mountain, over the white buildings on Point Mapéte, nearly on that bearing: this will lead clear in through the Narrows; and when Kisumbo and its village are open to the N. of the fort, a ship may haul close round the foot of the fort and choose her anchorage. To avoid the S. point of the Harp-shell Spit, which extends a mile off shore, or Cabeceira sands, the Pao Mountain may be kept on, or but little open to the N. of the fort, until Tree Island be quite shut in with Cape Cabeceira, when the Pao may be brought on with the white buildings of Mapéte, as before directed.

The South Channel has two coral knolls with 3 fathoms, so large ships should avoid it. But this passage between St. George and St. Jago, with a S. wind, may be taken by small ships coming

from the S., it being nearer. Keep mid-channel between these islands until Tree Island is open to the W. of St. George, then steer for Cabeceira Church, or the N. angle of Mozambique Fort, if the wind is scant from the W., which will carry a ship over the sand-banks that lie to the W. of St. George Island, in 3 to 3½ fathoms at L. W. spring-tides; and having opened Pao Mountain with the fort, observe the former directions. The passage to the S. of Mozambique is only fit for boats.

Pilots. When inside of St. George Island, a ship may anchor and make the signal for a pilot. One generally boards vessels within 2 m. of Sebastian Fort, and will take you to the Inner Anchorage.

In the proper channel to the N. of St. George Island, the general depths are from 7 to 10 fathoms in passing the island, and from 6 to 8 fathoms in sailing from it to the fort, with Pao Mountain a little open from the N. Bastion. To the W. of the fort, the water becomes more shoal, the general depths being from 3 to 4 fathoms abreast the town, about 2 cables off, where the ships moor. When past the fort, a ship, in steering for the anchorage, should keep near the shore, on account of the **Leven** bank of sand, distant ½ m. from the town, with 2 fathoms on it at L. W. spring-tides. Ships may moor a little within the fort, before they come to the **Leven** bank, or betwixt it and the town, at discretion. From Mozambique Island the harbour extends in a N.W. direction for 5 m., and is about 1¼ m. in breadth between the banks which line each shore; the general depths being from 4½ to 6 fathoms at L. W. About 2 m. from the upper end of the harbour, there is a cove or inner harbour, with 4 and 5 fathoms water; and two rivers fall into it, near which are some villages and garden-houses.

Variation.—Tides.—Currents. Variation is at Mozambique, 14° W. It is H. W. on F. and C. of moon at 4 h. 15 m. The rise of tide 12 ft. The set of the tides is not noticed in the Admiralty directions, but they must greatly affect the steering. The current always runs to S. off this place, strongest in the N.E. monsoon.

The Winds on the coast about Mozambique are N. from Oct. to April, and from the S. during the rest of year.

Tree Island, or Isle de Pau, having straggling trees on its N.E. end, stands on the N.E. extreme of the shoal which extends nearly 3 m. to N.E. off Cabeceira Point.

PORT CONDUCIA, to the N. of Mozambique, from which it is separated by the peninsula of Cabeceira; is a fine-land-locked harbour, nearly 3 m. wide at its entrance, between Point Conducia and Kissangula, or Sombrero Islet; the shore on both sides is fronted with shoal banks to the mouth of Conducia River, which is 7 m. to the W. of Kissangula Isle. The depths are mostly from 8 to 5 fathoms, towards the W. part of the port, from whence the passage, having 3½ to 5 and 6 fathoms in it, winds between the banks on each side, round the N. point that forms the entrance of the river or inner harbour, which seems perfectly secure, with depths from 6 to 4 fathoms.

The Bay of Conducia is 6 m. wide at its entrance, between Tree Island on the S., and Quitangonya or Titangōnha Island on the N.; its general depths, as far as examined, appear to vary from 6 to 16 fathoms. If bound in to Conducia River from the N., haul round the S. point of Quitangonya, steering W. by S. ½ S. for Cape Conducia, which is the N.E. cliff and elevated ground of the peninsula of Cabeceira; and when the two little points (which are the only rocks to the W. of Sombrero Islet) bear N. by W. ½ W., and Table Mountain is open to the W. of them, a ship may steer in N.N.W. ½ W., and coast the N. shore, into anchorage as she may choose.

In entering Conducia Bay from the S., with a commanding wind to stem the current, round Tree Island as close as convenient, and steer N. by W. ½ W. for Table Mountain, just open of the pointlets; when Cape Conducia bears W.S.W. steer N.W. by N., and afterwards by the plan, the lead, and the eye, as convenient.

Quitangonya, or Titangonha, Island, is in lat. 14° 52′ S., lon. 40° 50′ E., forming the N. boundary of Conducia Bay. It is 6 m. to N.E. of Tree Island, and 3 m. to E. by N. of Sombrero Islet. **Table Mountain** is in lat. 14° 41′ S., and lon. 40° 40′ E.; and looks from a distance like a flat island.

Current. There is a perpetual current down the coast, and its greatest velocity is precisely from the island of Quitangonya to Cape Bajone, and close to the outer reefs; so that during the N.E. monsoon, ships desirous of entering Mozambique, or either of its adjacent ports, must make the land well to the N. between Cape Loguno and Quitangonya. But when a ship is within the line of outer reefs, the current will be no longer felt, and she will be in the tide-way only. The current is always weakest at spring tides, when they of course are strongest.

Port Velhaco, more sheltered than Conducia from N.W. winds, and situated to the N. of Quitangonya, has 4 fathoms in the entrance.

FERNANDO VELOSO BAY. The land near the sea is low at the back of Velhaco Point,

and takes a N. by E. ½ E. direction for 22 m. to Quisimajulo River. About 5 m. farther, **Cape Melamo,** in lat. 14° 25′ S., lon. 40° 52′ E., stands out, to the W of which lies Fernando Veloso Bay, said to be spacious and safe, with deep water from 7 to 20 fathoms, and affording good anchorage on the W. side, within the entrance. **Cape Mocuo,** the N. point of the above Bay, is 3 leagues to the N. of Cape Melano. Belmore Harbour is to the W. of the hilly land which stands to W. of Cape Mocuo. From hence it is about 10 m. to Point Loguno, a level headland, with cliffs about 80 ft. high, in lat. 14° 12′ S., lon. 40° 45′ E., abreast of which, projecting about 2 leagues from shore, is the dangerous **Pinda Shoal,** in lat. 14° 15′ S., lon. 40° 51′ E., making it prudent to keep 3 leagues from the coast in passing along here. Opposite to the N. point of this reef is **Memba Bay,** extending 4 leagues or more inland, with Tembo River at the N.W. angle. The water is very deep in the centre of the Bay, but it is said that ships may anchor in good ground on its N. side, sheltered from all winds, and find plenty of fish, wood, and water.

From Point Loguno to Sangone or Samooka River, is N. about 5 leagues; and from hence to Sorisa Point about 8½ leagues, from which point Mancabala Reef extends 6 m. to the S. About to 2 m. S. from the extreme of Mancabala Reef, **Indujo Reef** is situated, in lat. 13° 39′ S., extending E. and W. about a mile. Between these dangerous reefs there is a channel, with 5 and 11 fathoms water, and betwixt them and the coast the depths are from 7 to 10 fathoms. Almeida Bay is to the W. of Mancabala Reef, and affords safe anchorage in all winds in from 6 to 4 fathoms. The River Minsangegy is to the S.W. of Indujo Reef, about 3½ m., and near the point that forms the S. part of Almeida Bay. **Sorisa Point,** in lat. 13° 33′ S., lon. 40° 37′ E., is low and sandy. Variation 14° W.

The Coast, from Memba Bay to Sorisa Point, is generally level, about 200 ft. high a mile inland, and low at the shore. Several very remarkable hills extend inland, some of them being sharp craggy mountains. These peaks are the best mark for this part of the coast.

Point Badgely, or Pando Point, bears from Sorisa Point N. by E. 10 m., **Lurio Bay** being formed between them, with soundings of 15 to 5 fathoms. Lurio River, on the ebb tide, discolours the sea several miles off shore. From Point Badgely to Point Maunhané, in lat. 12° 56½ S., lon. 40° 38′ E., the coast extends N. and N.N.E. about 9 leagues, having soundings near it, but fronted by a reef, projecting in some places above a mile from shore.

POMBA BAY, sometimes called Memba, is 6 m. to the W. of Point Maunhané, and is 1¼ m. wide at the entrance. The N. point is in lat. 12° 55½′ S., lon. 40° 33′ E., being bold to approach, and the land on the S. side, which is all high, may also be approached within ¼ m. This Bay is an excellent harbour, opening into a large oblong basin, about 8 m. in length, N. and S., and 4½ m. in breadth, with depths mostly from 18 to 7 fathoms, decreasing towards the edges of the reefs and banks that surround the Bay. The course in is W. by N. ½ N., and when within the points, a ship may haul either to the N. or S., and anchor completely land-locked in 9 or 10 fathoms, good holding ground, about 3 m. to N.W. of the N. point, just touching Maunhané Point. A few bullocks, also poultry and vegetables may be got; and wood may be cut at Pomba, which is under the Sultan of Zanzibar. **Mutine Shoal** is a rocky patch, with only 3 ft., 2 m. within the entrance, W. of the N. point. There is another coral reef about a mile S. of the former. The W. part of the Bay is not to be approached within 1¾ m., being very foul and shoal; in hauling to the N. or S for anchorage, do not approach the E. land within ½ m., as a reef projects therefrom. H. W. on F. and C. at 4h.; springs rise 15 ft. neaps 11 ft. At 2¼ m. to the N.E. of Point Maunhané lies Imbo bank of soundings, where anchorage may be got in 9 to 16 fathoms.

Areemba Point, in lat. 12° 38′ S., lon. 40° 39½′ E., distant 6½ leagues N.N.E. from Point Maunhané, is the S. boundary of the Querimba Islands, as the first of these, Quipao, is united with the S. extreme of Areemba Point by a reef, which forms a cove or small harbour at the W. side of Quipao, with from 5 or 6 to 4 and 3 fathoms water. On the N. side of Areemba Point, betwixt it and the chain of reefs and islands to the N., there is a passage of 5 to 3 fathoms into Port Areemba, a harbour formed inside of the reef and island Quizeeva.

ASWATADA or QUERIMBA ISLANDS form a chain, extending along the coast from Point Areemba to Cape Delgado. A ship, in coasting along, ought to keep 5 or 6 leagues from the main, as several of the islands and reefs extend from it nearly that distance, and no soundings are in general to be had at 1½ or 2 m. distance from the edges of reefs.

The Bank of St. Lazarus is a very extensive shoal, extending from 12 leagues E of Ibo Island for nearly half way towards the peak of Comoro Island, and over nearly 20 m. of latitude, from 12° 2′ S., to 12° 20′ S. Several ships have sounded on different parts of it in 9 and 7 and 5 fathoms. Two vessels are said to have grounded in 3 fathoms. Therefore ships should avoid its limits; the lead will give sufficient warning of approach to danger. The existence of shoals, under the lee of the Comoro Islands, can well be accounted for, in the eddies of that perpetual current setting to the W. past Cape Ambre, the N. point of Madagascar.

The general direction of the Querimba Islands and Reefs, and the coast from Cape Maunhané to Cape Delgado, is *true* N., 45 leagues. In this distance there are 18 or 19 openings through the outer reefs into secure ports or convenient anchorages. The sea-faces of these islands and their reefs are very steep, having rarely any soundings alongside them; but for anchoring within the line between their seaward extremities, soundings may be expected in convenient depths. The dominion of the Portuguese seems to be acknowledged by the natives as far as lat. 11° S., but not to the N. of that, where the whole coast is subject to Seuheli chiefs, or to Arab usurpation.

The Querimba Isles are generally low, but some have a diversified surface of hill and dale. They were most of them in cultivation about a hundred years ago, but having been so long open to Arab and Malgash depredation, they have returned to their wilderness state; they are in general well wooded and easily seen from seaward. As no soundings are to be had near them, it is not safe to try to make them by night. Indeed this observation applies generally of the coast from Maleenda to Mozambique, with a few exceptions. The outer coral reefs of Querimba do almost all of them dry at L. W., or at half-tide, like those of Cape Delgado. The larger islands of this group are between lat. 12° 10′ S. and 12° 27′ S., and to these, rather than those farther N. towards Cape Delgado, the name of Querimba Islands belongs.

Foomo Island (the N. point, in lat. 12° 31′ S., and lon. 40° 39′ E.) is inhabited by Portuguese. It is connected with Quizeeva by a coral reef, which makes a small anchorage between these islands and the main; the entrance is between Quizeeva and Areemba Head.

Querimba, which gives name to the whole, is about 3½ m. in length, with a fort near the N. point of the island, which is in lat. 12° 24′ S. and lon. 40° 39′ E. Querimba was formerly the capital of the islands district. Montepes Settlement is to W. of it; the bay seems deep, but has been little examined. Quisanga Point forms the N. side of Montepes Bay, and projects towards Querimba and Ibo Islands.

Ibo Island is an establishment of the Portuguese, second only to Mozambique. The town has cocoa-nut trees and a white fort, which are at the N. part of the island, in lat. 12° 20′ S., lon. 40° 38′ E. This is the N.-most port of the Portuguese, and formerly a great resort of slavers. The population consists of Portuguese, Arabs, Banyans, and slaves. From mid-January to mid-March is the rainy and sickly season, Supplies are scarce. Ibo has a deep inlet on the N.W., and the S. part of the island is called Quirambo; this part being joined to the N. point of Querimba by islets and rocks. To the N. of Ibo there is a channel with 6 and 7 fathoms water, leading to anchorage inside reefs; this channel is bounded on the S. side by a reef projecting from Ibo, and on the N. side by Corea de St. Gonzalo Reef, which has another smaller channel between it and the reef that projects from the S. end of Matemo. The reefs may be perceived by discoloured water, and outside of them a ship may anchor in necessity, and also off the edge of the reef joining Ibo and Querimba, in calms. The anchorage at Ibo, partly exposed to E. winds, seems only proper for small ships drawing 14 or 15 ft., which might find good shelter by anchoring inside of Ibo reefs. It is H. W. about 4 h. on F. and C. of moon; rise of water about 7 ft.

Matemo Island, in lat. 12° 13½′ S., has straggling bushes, but no cocoa-nut trees; its centre bearing *true* N. from Ibo. Matemo has a channel between it and the main, affording convenient anchorage in either monsoon, with from 3½ to 7 fathoms water, and passages both to the N. and S., with 7 and 10 fathoms water in them. Das Rolas, is a small uninhabited island, 2½ m. to the N. of Matemo, having good anchorage in from 7 to 9 fathoms ½ m. off its S.W. side.

Mahato Island, in lat. 11° 59′ S., has also a passage for small vessels inside from the N., between it and the isles and reefs fronting Pangane Point on the main.

Sangane Point is 6 m. N. of Das Rolas, and Pangane Point is 5 m. further N. The passage between the latter and Mahato is only fit for boats.

The Coast from Ibo Island, in some places has undulations, forming large bays, with some safe harbours inside the islands and reefs The whole of the coast is low, with many small islands and reefs fronting it; a ship should, therefore, preserve an offing of 5 or 6 leagues in sailing along, to avoid the dangers in this space; more particularly as the land can only be seen at a small distance. The country vessels pass inside the islands and reefs, in sailing from one place to another. **Mattos Island**, in lat. 11° 49′ S., lon. 40° 38′ E., 10 m. N.N.E of Mahato, is on an extensive reef which projects 3 m. to N.E., about as far to S.W., and to Shanga Islet on the W. Between the latter and Peguin Point there is anchorage, with depths of 14 to 9 fathoms, to the N. of Pantaloon Shoal (2½ fathoms) lying about midway between Mahato and Mattos. There is also anchorage between the mainland and the isles and reefs of Mattos and Shanga, which may be entered either from the N. or S.

Zanga Islet, called also Passeros and Sparrow, in lat. **11° 38′ S., lon. 40° 35′ E.,** stands **10 m.** to N. of Mattos, on the great **Passeros Reef** which extends from the islet about **5 m. to E.**

and to S.E., and is dangerous, being 13 m. from the main land. This must be the reef on which the *Margaret* of Calcutta was wrecked; but Captain Georgeson's reported latitude was 11° 27′ S.

Point Vela, the S. extreme of Mazimba Bay, is 30 m. to N. by E. of Peguin Point. Minhouje Islet stands on the reef projecting 5 m. from Vela. Between this reef and those forming Minhouje Pass, there are good depths for anchoring. H.M.S. *Mutine* found a bank of 7 to 9 fathoms in 11° 25½′ S., at the entrance of the Minhouje Pass.

Numba and Mistunso are two islands on a large coral reef to E. of Mazimba Bay. Numba, the outer island, in lat. 11° 9′ S., lon. 40° 43′ E., standing 40 m. N. by E. from Mattos Island, is the highest of all the Querimba Islands, having hills of more than 300 ft. elevation. There is a passage into Mazimba Bay to the S. of Numba, but take care of the extensive coral reef (forming the N. side of the Luhamba Pass) to the E. of Zuno Islet, by keeping about 1 league off both Numba and Mistunso.

Port Mazimba, nominally under Portuguese control, has about 5 fathoms, muddy bottom, inside an island, Lupululu; but a native pilot is needed. Mazimba has a few exports to Ibo and Mozambique.

Amiza, about 6 m. to N. of Numba, the largest of the Querimba Islands, being nearly 8 m. long, E. and W., has low hills, and abundance of water, being well wooded. The Portuguese had an establishment here, but removed to Molurio, about 7 m. to W.N.W., in Maiyapa Bay.

Longa and Tikoma are two islands on a reef between Amiza and Cape Delgado.

CAPE DELGADO, in lat. 10° 41′ S., lon. 40° 40′ E., being rather a low point, is not easily distinguished from the islands to the S., the nearest of which, Tikoma Island, is about 4 m. from the Cape. The safe bay of Tonghy is formed on the W. side of the island of Tikoma. The channel into this bay is between the island and the Cape, with depths from 30 fathoms at the entrance, to 7 or 6 fathoms inside: the course in is W. by N. ½ N. and W. ½ N., and mid-channel is the best track, as a reef projects from the Cape, and another from the N.E. part of Tikoma 1½ m.; when round the latter, haul to the S.W. and anchor near the W. point of the reef that projects from the island; or in N. winds, a ship may anchor in the N.W. part of the bay in 5 or 6 fathoms, about 5 m. W.S.W. of the Cape, opposite to Minenene River. Tonghy Fort is 3½ m. to the W. of Cape Delgado, in the N. part of the bay.

The Coast, N. of Delgado. A reef projects from the cape into the sea 1¼ m., and from hence the land takes a N. by W. direction to Nzimbary Island, in lat. 10° 20′ S., on the N. side of Rovuma Bay. The S. side of that Bay, called Cape Rovuma, has an extensive reef, with the **Lyra shoal** off it, nearly 3 m. to N.E. of the wooded cape.

Rovuma River (said to have no bar) was ascended in boats by Dr. Livingstone for 150 m. in Oct., 1862. There is good anchorage in Rovuma Bay, off the N. or S. shore, according to Monsoon. From the N. point of Mizimbary Island, other smaller islands extend in a N.W. direction, about 6 m. parallel to the coast, chained together by reefs: thence the general line is N.W by W. to Lindy River. About half-way between Cape Delgado and Keelwa, near Lindy River, there is a remarkable mountain, with three elevated hummocks on it of an hemispherical form.

Monghow or Mungulho River, entrance in lat. 10° 8′ S., lon. 40° 2′ E., is about ¼ m. wide, and rather difficult of access, with from 14 to 7 fathoms in the fair channel; reefs project from the E. point of the river 1¼ m., and from the W. 1¾ m. This place is not easily distinguished, the village of Monghow is a little within the E. point of the River. The depths in the River are mostly from 8 to 12 fathoms up to the anchorage; and it is H. W. at 4¾ h. on F. and C. of moon. Wood is easily procured, but water with difficulty. The Arabs trade to this place for ivory, and slaves were sent from hence to Quiloa.

Lindy River, in lat. 9° 59′ S., lon. 39° 45′ E. (the Fort), about 5 or 6 leagues from Monghow, and 22½ leagues to the N.W. of Cape Delgado, is large, easy of access, with several villages on its banks; the principal of which is Lindy, with its fort on the W. side, where the River contracts to ¼ m. navigable. The land about Lindy River is high, averaging 700 ft. Mount Trinidad, about 1000 ft high, stands on the right bank of the River, about 6 m. to S. of Lindy Fort, which has an Arab chief subject to Zanzibar. The S. shore ought not to be approached close; mid-channel is the best track, when a little inside of Point Kiremba, or Querimba, which is the outer point on the N. side of River. The depths are over 40 fathoms in the entrance, decreasing quickly to 8, 5, and 4 fathoms, at 2½ m. from the village of Lindy. This appears to be an excellent harbour; but supplies are scarce; wood and water may be easily procured; the watering place is a little outside of Lindy, on the opposite shore, in a creek near Esmant Village. There is good anchorage in the outer bay wherever soundings may be had, and about a mile N. of Point Esmant (the S. point of Lindy Bay), is a very good stopping-place in 4 or 5 fathoms. It is H. W. at 4¼ h. on F. and C. of the moon, and the rise of tide is 12 ft. Variation 12° W.

The Coast, from Lindy River to Keelwa, extends N. ¼ E. 19 leagues, having some indentations, among which are Masoonga River, in lat. 9° 45′ S., lon. 39° 47′ E.; and Kiswara River, in lat. 9° 26′ S., lon. 39° 39′ E. The latter may be known by Piccolomini conical hill, about 500 ft. high, which is about 3 leagues W.N.W. from Kiswara Bay. The N. side of the Bay has table-land, 200 ft. high.

KEELWA, or QUILOA HARBOUR, is 4 m. in extent from N. to S., and on the N.W. end the town and fort of Keelwa are situated, in lat. 8° 57′ S., lon. 39° 34′ E. There are two passages into this port, which form two harbours, one to the N., called Port Beaver, and one to the S. of the island, having from 20 to 8 or 10 fathoms in the latter, and from 30 to 12 fathoms in the former; either of which may be chosen. Ships entering the N. harbour, the channel to which is about ½ m. wide between the reefs at the entrance, usually anchor at the N.W. part of the island, abreast of the fort and town. A bank of shoal water extends from the N.W. point of the island to the main land, having only 1 and 1½ fathoms on it at L. W.; but small vessels may pass over it at H. W., from the N. to the S. harbour, as the tide rises 13 ft. at springs and 9 ft. at neaps.

Port Pactolus, which is to W. of Songa Manara Island, is the S. harbour, having 9 or 10 fathoms. Pagoda Point, the N. end of Songa Manara, has a coral flat, with the Direction rocks (always visible) on it, stretching nearly a mile to N.E. On the other side, there is a smaller reef off Fishery Point, the S.E. extreme of Keelwa Island. Both Keelwa and Pactolus inlets extend a good way inland; both have in them several islets and shoals, with depths sufficient for ships of any size to a considerable distance.

The Entrance of Port Pactolus, between the reefs off Fishery Point (the S.E. point of Keelwa Island) and Pagoda Point, is ¾ m. wide. Enter at half-tide or L. W., and the way will be clearly seen. The most convenient anchorage is about midway from the S. shore of Keelwa Island, between it and Pactolus Bank; but vessels sometimes haul close within Pagoda Point, and anchor between it and Morice Island. Keelwa Island is nearly surrounded by a reef, and the points which form the entrances to the harbours have reefs projecting ¾ m. from them. Ukyera Reef, projecting from the N. entrance-point of Port Beaver, extends about 5 m. to seaward in an E. direction, and is quite steep on its E. and S. sides. It has many spots on it always dry, on some of which are trees, and the entire surface of the reef, which is very extensive, is either dry or awash at L. W. ordinary tides.

Cape Keelwa, in lat. 8° 54′ S., lon. 39° 36′ E., the N. entrance point, is readily known, being low and sandy, with several trees near it on the inner part of the reef. Soonga Manara, or Pagoda Point, is also low, and is situated in lat. 9° 2′ S., lon. 39° 37′ E. To the N. of Port Keelwa there are several hills inland, called Ganghera Hills; but all the coast about this harbour is low, covered with mangroves, which, retaining the mud, make banks and islands, rendering it unhealthy. Keelwa, formerly taken and held by the Portuguese, was found unhealthy, and so abandoned. It is now under the Sultan of Zanzibar. Water and provisions may be procured at this place, but few ships touch here at present. The natives have in general been considered unfriendly to strangers. H. W. on F. and C. at 4 h. 45 m. Variation 12° W.

Directions. Coming from the N., the sea-board of Ukyera Reef is as easily distinguishable by day as the shores of the land, and it may be coasted as close as convenient. Be careful to avoid the *Orestes* Shoal, which has 3 fathoms, lying off shore 5 m., and about 4 m. to N.N.E. of the S.E. tip of Ukyera. No soundings will be had near it until ½ m. off the S.E. point of Ukyera Reef, and half a league from the shore of Cape Keelwa; this is a convenient spot for anchorage sometimes in the N.E. monsoon, when there is not day enough to enter the ports. E. winds prevail here in the form of strong sea-breezes most of the year, and occasion a considerable swell from seaward, so that if the wind fall light, and a ship be embayed here, it is sometimes a difficult and anxious work to get out; this consideration gives more importance to the only ground, just named, where a vessel can possibly anchor. To enter Port Beaver, bring the fort just on with the N. extreme of Point Philip (the N.E. point of Keelwa Island), or bearing about W., until the cliffs of Cape Keelwa be shut in behind its S.E. extreme point, or be in one with it; then steer W.N.W. for the second break in the shore, N. of Point Emerika (the S. point of Cape Keelwa peninsula): this with open eyes will lead clear through the Narrows, when a ship may steer in mid-channel towards the fort. **Dangers.** There are shoals on N. part of Philip Reef, and on S. part of Cape Keelwa Reef, which form the Narrows, where the channel is not more than ½ m. wide. Strangers had better place a boat on each of these shoals for marks, and when within the Narrows, the cliff being open to the W. of the N.W. point of Philip, a ship may steer as she will, the N. shore of Keelwa Island being clean almost to the town, as is also Point Emerika; but the shores on the E. side of this point are foul, except near the N. cliff. A vessel when inside may choose her anchorage, but the most convenient depths are N. of the fort. To enter either Port Beaver or Pactolus, in the S.W. monsoon, or from the S., a ship should make the land about Rohanga or

Kiswara to the S., where the shore is very clean and land high and bold; and coast the reefs to N. and enter by eye, or when Fishery Point bears W. by N. she may steer for it until Morice Island bears S.S.W., and then proceed as before,

The Coast projects at Quiloa Point, about 7 m. to N. of Cape Keelwa, and thence a chain of reefs, with probably good passages between them, extends to Monfea Island.

Keelwa Kivinja is a town of importance, about 9 m. N.W from Quiloa Point, having sheltered anchorage about 2 m. N. of the town, with 5 and 6 fathoms, inside some reefs, but landing is bad, except at H. W. This town is the largest between Mozambique and Zanzibar, having a population of more than 12,000; and it is the principal place for export of slaves. The journey hence to Lake Nyassa occupies between a fortnight and three weeks.

Above Keelwa Kivinja, for 40 m. to Lufiji River, the navigation is obstructed by many reefs, as yet unexamined; but they break the ocean swell, and anchorage is found everywhere in from 8 to 6 fathoms. Navigation between them and the main may be attempted at L. W., with a boat ahead sounding. Songa Island is about 13 m. to N.E. of Keelwa Kivinja. Tree Island is 17 m. to N. of Songa, and the same distance to S.W. of Monfea Island.

Lufiji River Delta lies to the W. of Monfea Island, but is unsurveyed and little known. H.M.S. *Brisk* found a good mouth in lat. 8° 6′ S., having 3 fathoms on the bar at H. W., and deepening to 6 fathoms inside. Shoals lie off this to S.E., and Sunaya Island stands about 12m. to N.E. by N. The chart gives no soundings whatever about this part.

MONFEA ISLAND extends from lat. 8° 2′ S., to Point Moresby, the N. end, in lat. 7° 38½′ S., lon. 39° 58′ E.; it is narrow, and the first large island to the N. of Keelwa, but between them a chain of islands and reefs extends along the coast at the distance of 5 to 8½ leagues, with a channel inside for small vessels. Monfea is also fronted by a reef along its E. side, and by islands and shoals on the inside, between it and the main. There is anchorage on its S. and W. sides, betwixt the reef which extends from it, and the adjacent group of islands and shoals. Care is requisite in approaching the S. part of the island, on account of extensive and steep coral reefs. **Point Moresby** (26 leagues N.N.E. from Keelwa) is well wooded, and visible about 15 m.; its reef extends off about half a league, and shows plainly at half-tide. The E. face of Monfea Island is very deep-to. Kissomang, the W. point of Monfea, in lat. 7° 56′ S., and lon. 39° 38′ E., is about 9 m. from the main land. It is a great resort of slave dhows for water and supplies. During the S.W. monsoon, good anchorage may be had on the N.W. coast of Monfea, but not in the N.E. monsoon. The Island is said to be fertile, and to afford water and provisions.

The Coast. Between Monfea and Zanzibar there are several islands near the main, and a passage along the coast, inside most of them, fit for small vessels. Point Pouna, in lat. 7° 3′ S., lon. 39° 37½′ E., is a projecting part of land. **Motumoka Point** is 11 m. to the N. of Pouna in the parallel of Latham Island; from this point the coast takes a N.W. by N. trend, about 20 leagues, forming the Bight of Zanzibar.

Latham Isle, in lat. 6° 54′ S., lon. 40° 0′ E., called Foongo by Arabs, bears N. by E., 44 m. from the N. end of Monfea, and is a small, low sandy islet, with a rocky projection from the E. part, and usually high breakers on rocks around. A bank of soundings from 5 to 18 fathoms extends about 2½ m. to the N. of the isle, and to the E. 2 m., with from 6 to 25 fathoms on that part; but ½ m. from the W. side there are 28 and 30 fathoms. This Isle was discovered by the India ship *Latham*. It is about 10 ft. elevated above H. W. mark, formed of coral, and its surface is rendered flat by the dung of the numerous sea-fowl which resort to it. Except on the S.W. side, it is difficult of access; it bears E. by N. 22 m. from **Pouna Point,** the nearest cape of the main land. Soundings are not obtainable in mid channel. Variation 11° W.

Dar Salaam, or Mozozina, in lat. 6° 50′ S., lon. 39° 24′ E., is about 14 leagues to S. of Zanzibar, and 11 leagues W. by N. from Latham Isle. This is a new port established by the Sultan of Zanzibar, affording good shelter inside for large vessels. The approach to the harbour is between Sindo Island and the Goonja Isles, and when between them the red cliffs (about 80 ft. high) of Dar Salaam will point it out. The shoal water at the entrance is marked by two buoys, nearly 2 cables apart, E.N.E. and W.S.W. from each other. A vessel should not shoal under 5 fathoms near the buoys, and will find 9 or 10 fathoms water midway between them; when she must haul up S.W. by W., keeping the left or S. point of a long sandy beach about a point on the starboard bow, and not shoaling under 5 fathoms towards the coral reefs on either side of the channel, which may be clearly seen from aloft, or in passing the sandy point; abreast of which the large expanse of harbour is seen and the vessel may anchor in 5 or 6 fathoms.

Goonja Isles lie about a league off the African Coast, and 6 leagues to S.W. of Ras Kizimkaz, the S. point of Zanzibar. **Tom Shoal** lies 7 m. to N. of the Goonjas, but the channel between it and Kwaly Island is 7 m. broad.

ZANZIBAR, called **ZUNGBAUR** by the Arabs, the largest island on this part of the coast, has a considerable trade carried on by the Arabs from Muscat, who also trade to most of the harbours on the E. coast of Africa for ivory. The E. side of the island is lined by a reef, and on the W. side are several small islands and shoals; reefs also project from the N. and S. points. The island, which is well planted and very fertile, is 46 m. long, N. and S., and 18 m. in greatest breadth. The Bweny hills, at the S. end, are about 300 ft. high, but the general elevation of the island does not exceed 100 ft. It is under the dominion of the Sultan of Zanzibar, and has a British Consul. The town of Zanzibar, or Shangany, on a low neck of sand with a shallow harbour for native boats on its E. and S.E. sides, has a dense population of Arabs, Banyas and Seedees; the streets are narrow and dirty. The fort is on the sandy cape to S.W. of the town, but the houses are more conspicuous. The trade is mostly carried on by American and Hamburg ships, with occasionally French and English vessels. Bombay and Cutch kotias (dhows) pay annual visits. The exports are cloves, gum copal, orchilla-weed, cowries, ivory, horns and hides. The slave trade used to be a source of great wealth. It is now a depôt for provisioning H.M. ships. Native merchants can supply a limited quantity of salt meat and biscuit. Coal may sometimes be obtained. Wood is plentiful.

Port Zanzibar. The anchorage is sheltered from all winds by islands and banks, but the disasrous hurricane of April, 1872, should warn mariners to be careful where and how they place their tvessels. **Pilots** sometimes come off in answer to a signal. It is said that buoys have recently been placed on the Maja and Larkbree Shoals, to define Menai Channel, the best S. entrance of the harbour. (*See* Remarks on Zanzibar, Chapter 7.)

Water used to be procured in Freshwater River, near the old palace, at Mtony village, but this was bad, and brought sickness to Europeans. Good pure water may now be procured at Bubooboo, 3 or 4 m. to N. of Mtony, and casks (or even a boat at H.W.) can be filled under wooden spouts. There is good anchorage off Bubooboo River in 8 or 10 fathoms. From religious scruples, the natives will not permit European ships to receive a supply of water from wells about the town. This place abounds with refreshments, bullocks, goats, poultry, rice, dholl, cocoa-nut oil, &c., with a variety of delicious fruits. The governor makes a monopoly of the sale of these articles, charging exorbitantly for them; the inhabitants, when permitted, sell their articles more reasonably. They go always armed, and appear timid, except when a considerable number are together. Europeans not seasoned to the climate ought not to sleep on shore, if it can possibly be avoided.

Zanzibar Fort is in lat. 6° 9½′ S., lon. 39° 14½′ E; the N. point of the island, in lat. 5° 43′ S., lon. 39° 21′ E; Ras Kizimkaz, or S. point, in lat. 6° 27¾′ S., lon. 39° 33′ E.; Chuaka, or E. point, in lat. 6° 3¾′ S., lon. 39° 31′ E. H. W. at 4 h. 20 m. on F. and C. of moon. Rise of tide 9 or 10 ft. Variation 10° W.

Directions for approaching Zanzibar from the S.—After passing a good league on either side of Latham Isle, Pouna Point, or another N. of it, will be seen bearing S.W. by W., and farther N., land rising into two mounts. Then the S. part of Zanzibar, and the islands that skirt its S.W. side. The reefs are discernible all the way, and with a good look-out, it is impossible to run into danger. Large ships should pass about a league to W. of Kwaly and Kissewa, the former islet being 3 leagues to W.N.W. of that S. point of Zanzibar. When these islands are passed, and open clear of that S. point, Choomby will be seen, having two small rocks off its S.E. end, called the Twins; at the same time the two small Ukomby Isles, Walnut and Nut Islands, will be seen to the E.: Bawy, or Turtle Island, with the three islands that form the harbour of Zanzibar, on a clear day, being likewise in sight from the mast-head. **Ariadne Bank,** with 3 fathoms, lies about 3 m. to S.S.W. of Choomby, and the *Lily* shoal is between. Therefore run to the N.W. after passing Kwaly Island, until the red cliffs (which are 3 m. S. of Zanzibar Fort) begin to show themselves to *left* of Choomby. Then steer N. by E., with Choomby more than a point on the starboard bow. When abreast of that island, there are four channels by which a ship may proceed to anchorage off the town. At L. W., all of them are safe, and may be adopted at discretion, as the banks and reefs show themselves, and are then steep-to; but at half-tide the Menai Channel is the best.

Menai Channel.—To go through this channel, double Choomby at ½ m. distance: when the N. extreme bears E., steer N.N.E. in from 15 to 18 fathoms, at which time French Island will be seen from the mast-head, nearly on with the point of the town. On this course the soundings will decrease gradually to 9 or 8 fathoms, until Nut and Walnut Islands are in one. With Bluff Point bearing S.E., and the Town Point N.N.E. ½ E., nearly on with French Island, the Middle Ground shoal, if at half tide, will be seen awash, or at high tide the shoal water over it right ahead about ½ m. distant, and Menai Bank (which lies 1 m. to W. of Maja Point) will appear on the starboard bow, about ½ m. To pass between the S.E. Larkbree shoal and that off Maja Point, haul up N.E.,

keeping Chukwany Point on the starboard bow, on which course there are from 7 to 9 fathoms until the latter point bears E. by S.; then a ship will be past all danger and may steer for Town Point, Chapany Island being nearly on with it. She will thus pass more than 1 m. off the sand bank at the E. end of Great Larkbree bank. This sand bank bounds the W. side of a very narrow passage, named *Imogene* Channel, to distinguish it from that named Menai Channel, but it should not be tried without a pilot. The pilots trust to the eye, shoals being visible at half tide, and at all other times from mast-head. The country vessels, large and small, enter or depart by the S. passage, according to the season.

In the S.W. Monsoon, it is better to make the land about Point Pouna, from which steer N. or N. by W. to make Kizimkaz; then steer N.W for Kwaly Island, and pass it and Kissewa, at a convenient distance. When approaching Choomby Island from the S. by E. or S.S.E., beware of the *Lily* rocky shoal and Ariadne Bank S.S.W. 3 m. from Choomby Island Pass about ½ m. to W. of Choomby; then (to avoid a 4-fathoms patch), steer N. about 2 m. till Kumbeny Hill comes over Booya Point. Then, about N.N.E. with Chukwany, a point on the starboard bow, until Choomby bears S. ½ W, and Chakwany from E. by N. to E.N.E.: then steer N. ½ E. with Chapany just shut in with Shangany, and when Chakwany bears E.S.E., steer as convenient for any required berth. In coming in or going out, the Little Larkbree Sand, if seen, will be a sure guide, the channel being between it and the Maja Bank. Little Larkbree sand-bank is generally dry: is 4 m. N. by E. of Choomby Island, and 1½ m. W. by S. of Chakwany Point.

Directions for entering Zanzibar Channel from the N. A ship intending to touch at this place during the N.E. monsoon in Dec. and Jan., should steer for the N. part of the island, giving it a berth of at *least* 1 m., to avoid a rocky ledge; and when off the N.W. end, two islands will be perceived near each other within the N. point. Tumbat the S. island, is of considerable extent N. and S.; the other, Moina, is small, and lies close to the N. point of Tumbat; if it be late in the evening, she may anchor near the W. side of Tumbat, in muddy ground, from 17 to 20 fathoms. In running along the W. side of Tumbat, the soundings are regular, at 1 or 2 m. from the island, and the course about S. by W.; but about 3 m. to the W. of its N. end there are over-falls of 9 or 10 fathoms on Tumbat Bank, which in some parts has 5 and 7 fathoms, and is supposed (though not examined) to extend towards Alek patch, which lies 10 m. to the W. of Moina Island. There is a good passage inside Tumbat Island, passing ½ m. to E. of Benoth Islet, then S. to Kokotoni village, and W.S.W. towards Oswawemba Point. The shore between these two last places is thickly inhabited. Benoth Islet is 4 m. to S.E. of Moina, and may be approached from a distance when bearing between S.S.W. and S S.E.

From the N.W. end of Zanzibar, called Sandy Point, or Point Oswawemba, a bank is said to lie in a S.W. direction from 2 to 5 m. from the shore, having on it 2 fathoms fine sand; H.M.S. *Gorgon*, in 1864, passed over this bank on several occasions, in 6 and 7 fathoms; discoloured water makes it generally visible To the S.S.W. of this, other shoals and Baudin Rock make it necessary to keep within 2 m. of the island. When past these banks there are regular soundings along the W. shore to the three islands, Chapany, Chango, and Bawy, situated to the N. of the town. Outside of these a ship may anchor, or go into the inner harbour at once; the dangers are generally visible, particularly at L. W.; and the pilots use no marks to carry ships into harbour.

English Pass, between French Island and Mtony village, is the best approach from the N. When you come near the E. island, called Chapany, or French Island, you will see the bank extending from it, which is partly dry at L. W., and by projecting nearly half way across, towards Zanzibar shore, makes the channel very narrow. Recently the edge of this bank has been marked by buoys. There is also a bank projecting a small distance from the village of Mtony, and forming an elbow along that shore. When you come near this bank, the S. point of Zanzibar Town will be open with Chapany. When Chapany and Chango Islands are in one, you are abreast the bank, and will have 6 fathoms, one or two casts; when the islands appear open of each other, you are past the shoal part, and may then steer for the S. point of Zanzibar, leaving an elbow of a bank near the shore on your port hand.

Anchor within a mile of the town in 7 fathoms mud. The S. point of Zanzibar will then bear S. by W., with Choomby, a distant island, a little open; the flag-staff on fort, or Governor's house, S. ¾ E.; the fresh water river, E. by N. 4 m.; Chapany Island, N.E. ½ N., and the N.W. end of Zanzibar just visible between Chapany and the islet Kebandiko which is on the same reef. The reef environing the islands is mostly dry at L. W.; and at H. W. only navigable by boats. The island of Zanzibar in sailing along has a beautiful appearance, and is everywhere woody.

French Pass, between Chango and Kebandiko, is only 2 cables wide. No directions are given, except to keep nearer to Chango. At L. W. the reefs, dry in some places, define the channel.

Grand Pass. This channel to the W. of Chango, seems safe, by passing that island on the W. side at a little more than ¼ m. distance, as **Morgan rocky patch** lies rather more than a mile to N.W. of Chango Island. Chango reef extends nearly 2 m. S by W. of it. **Chango Knoll,** its S. extremity, lies midway between Zanzibar Town and Bawy Island. Give the reef a berth, by keeping rather more than mid-channel towards Bawy Island, and when abreast of this island, or on the transit-line between its N. end and Zanzibar Fort, haul up to S.E., and then to E., for anchorage abreast the town.

Soundings. After leaving Zanzibar for Pemba, the *Menai* struck soundings on **Leven Bank,** lat. 5° 39′ S., lon. 39° 20′ E., in 14 fathoms, then had from 6½ to 13 fathoms uneven ground; then suddenly lost soundings in steering out E.S.E.

PEMBA, called **Keddree, or Ul Huthera** (Green Island) by the natives, extends 12 or 13 leagues, nearly N. by E. and S. by W. The Point Kegomatchy, N.W. point, being in lat. 4° 52′ S., lon. 39° 44′ E. Cape Hay, the N.E. point, in lat. 4° 54′ S., lon. 39° 53′ E., has a fringing reef 1 m. to E. and to N., and anchorage to the W. of that in Port Wanveeka (the space between Pemba Knolls and Cape Hay) in 7 or 8 fathoms, sheltered against the S.W. monsoon only. The S. end of Pemba, **Said Point,** in lat. 5° 29½′ S., lon. 39° 42′ E. bears E.N.E. 8 leagues from the N. point of Zanzibar. This channel has never been thoroughly sounded, but is believed to be deep and safe, except near Leven Bank.

Pemba Island is low, well wooded, and fertile; rice is cultivated and carried to Zanzibar: the E. shore is nearly straight, N.N.E. and S.S.W., and lined by a reef, requiring caution when near it in the night, being steep-to: the W. shore is irregular and deeply indented in its outline, having a chain of islands and reefs fronting it, by which several bays and harbours are formed. The chief of these, Chak-Chak Bay, is inside Mesal Island, in lat. 5° 15′ S., lon. 39° 44½′ E., from whence a channel leads to Port Cockburn, on the N. side of a long narrow peninsula that separates them. Port Campbell, or George, is in lat. 5° 4′ S., having also a channel leadiug from the former harbours, which channel extends inside the chain of islands and reefs nearly to the N.W. end of Pemba, and there are several gaps in this chain, affording passages to the harbours inside. **Pemba Channel.*** There is a broad channel betwixt Pemba and the main, but it is contracted to 4 or 5 leagues by reefs and islets projecting 2 to 3 leagues from the main land in some places, and very steep-to. The current in the channel appears to run with great force, violently agitating the sea. Even in Dec., when the northerly monsoon is at its height, the current runs nearly 1 knot per hour to the N.; but in the S.W. monsoon, fully 3 knots to the N., past Zanzibar and Pemba. **Pemba Knolls,** a labyrinth of coral rocks, lie off the N. end of Pemba, 5 or 6 m. off the shore, which is very shoal between Cape Hay and Kegomatchy Point. Arab dhows find anchorage amongst them in the S.W. monsoon. On the W. side of the N.W. point, a ship may (it is said, but the chart does not show such a place) anchor opposite to the small sandy bay; but a reef of 2 m. extent to the N.E. must be avoided.

Tides. H. W. at Mesal Island, at 4¼ h. on F. and C. of moon; rise 12 ft.

THE AFRICAN COAST, from Dar Salaam (page 99) trends to N.N.W., 11 leagues to Cape Thomas, to the W. of which there is a deep bight, but little sounded or known. Currents, which sweep up past Delgado to the N. for nine-tenths of the year, must bring much earthy matter from the mouths of such rivers, as Rovuma, Ruhuhu, Lufiji, Kingani and Pangani. In the still water in-shore of Zanzibar Island, much silt must be deposited; shoals doubtless abound there. The chart shows that shoal patches have been found in every track hitherto made by ships; of these we mention **Tom Shoal Breakers,** at 2 leagues N. by W. of Goonja Island; **Ross and Albert Reefs** to the N.W. of Cape Thomas; **Emerie Shoal** (6 ft.) at 1 league off the main, in lat. 5° 53′ S.; **Mazeewy Shoals,** scattered over 12 m. to S.S.W. of Mazeewy Island, which is in lat. 5° 30′ S., lon. 39° 9′ E., and 4½ m. to the S.E. of Pangani Bay. Thence to the N.N.E. for 15 leagues, the coast is fronted by the **Waseen Reefs,** which lie from 1 to 2 leagues off shore; they are said to have good depths inside them, but are steep-to along their sea-face.

Waseen Cape, in lat. 4° 39′ S., lon. 39° 30′ E., to the N. of Waseen Island, bears N.E. by N. 18 leagues from Mazeewy Island, and N.W. ½ N. 6½ leagues from Kegomatchy, the N.W. point of Pemba. There is safe anchorage in all winds in the narrow channel between Waseen Island and the Cape, but the latter must be borrowed upon, because a shoal extends 2 m. to E. of the island. Waseen Peaks, about 2,500 ft. high, stand 4 leagues to N.W. by N. from the Cape; they may be seen in clear weather for some 15 leagues. Tanga and Chala Bays are but little known.

* *See* **Admiralty Chart, No. 664; E. Coast of Africk, with Zanzibar and Pemba.**

CHAPTER II.

ZANZIBAR TO SOCOTRA AND ADEN.

MOMBAZA — JUBA ISLANDS — MUKDEESHA — RAS HAFOON — GUARDAFUI — SOCOTRA ISLAND — ABD-AL-KOORY — RAS FEELOOK — MEYT ISLAND — BERBEREH — ZEYLA — TEJOOREH — OBOKH — PERIM ISLAND BAB-EL MANDEB — RAS ARRAR — ADEN — WINDS AND WEATHER — POPULATION — TRADE.

(VARIATION AT ZANZIBAR, 10° W.; AT SOCOTRA, 2° W.; AT GUARDAFUI, 3° W.; AT BERBEREH, 4° W.; AT PERIM, 4½° W.; AT ADEN, 3° W.)

Zanzibar and Pemba Islands, with the African coast opposite, have been described in the preceding chapter. Our knowledge of this coast is but small, but gradually increasing. The great rivers Zambesi, Rovuma, Lufiji, and other minor ones, still require to be explored, and their deltas more accurately laid down upon our charts. **The Coast,** from Delgado to the equator, was formerly called Zanzibar, or Zungbar, but the name only properly applies to the island, though the coast also belongs to the Sultan of Zanzibar.

Mombas, or Mombaza Island, lies 16 leagues to the N. of Pemba, and is about 3 m. long from N. to S., and about 1½ m. broad, nearly filling the large basin formed by the main land, and having a channel on each side leading to interior ports. The main entrance is about 1½ m. wide between the outer reefs, which, together with the S. end of the island, form the outer bay or Road, which has in general from 6 to 9 fathoms water, with some deep holes of from 18 to 35 fathoms, and a shoal patch with less than 4 fathoms. This Road is convenient in the N.E. monsoon, the water being generally smooth, but in the S.W. monsoon a considerable swell sets in. The channel on the N.E. side of Mombas Island, which leads past the city, terminates in the harbour called Port Owen Tudor, at the head of which are entrances to several rivers. The W. channel does not continue round the N.W. end of the Island, but bending suddenly to W., opens into the larger harbour of Port Reitz.

The city, castle, and fort are on the N.E. side of the Island, where ships may procure refreshments: fresh water may be got from wells about a mile above the city, on the E. shore, and the anchorage is safe. Between the two reefs which form the entrance, the depths are from 6 to 10 fathoms, nearly the same to the city, and deepening afterwards along the E. side of Island; on the S. side of the Island, between it and the S. reef, the depths are rather greater, and this part may be called the Southern Harbour. Mombas Island is like a huge castle encircled by a moat, and the contiguous land is low and woody; a pillar on the E. end of Island, or the fort flag-staff, in lat 4° 4′ S., lon. 39° 43′ E., may be perceived in passing, but the city is obscured by trees: there are three remarkable hummocks, to the N. of this place, by which it may be easily known.

Mombaza Port, although safe inside, is difficult of access, on account of extensive reefs which contract the entrance to about 2 cables, with from 8 to 16 fathoms between reefs. Run in with the castle bearing about N.N.W., and follow along the E. side of Island, rather under 1 cable length from it, up to the town, where anchorage may be taken in mid-channel in 10 or 12 fathoms. The natives are not always friendly to Europeans. Since the Arabs and natives expelled the Portuguese from ports on this part of the coast, few European vessels touch at any of them. Zanzibar is preferable to other ports, if a ship be in want of water or other refreshments: there is less chance of treachery, and being under the Sultan, and having English and French Consuls, it is more civilized.

Leven Reef runs parallel to the coast about 1 m. off shore, to N.N.E. of Mombas entrance; the channel, inshore of it, is navigable for small vessels.

Winds. During the N.E. monsoon, the sea breeze sets in daily at E. by N. in the forenoon, lasting fresh till sunset; afterwards hauling round to a light land-wind from N. by E., which is steadiest after sunrise till about 8 a.m., the best time for running out.

Tides. H. W. on F. and C. occurs at 4 h.; ordinary springs rise 12 ft; high springs 14 ft.; neaps 8 or 9 ft. Ebb and flood run nearly equal times, at springs from 2 to 3 knots.

Quilife River, situated in lat. 3° 38′ S., lon. 39° 59′ E., is an excellent harbour inside. **H.M.S. *Ariel* was piloted in by a native, and never got less than 8 fathoms. Pilots may be obtained**

by sending to the town. Anchorage may be had in 10 fathoms, about 1 m. within the mouth; but you get the sea-breeze better if anchored just inside the entrance reefs; this is of importance for the health of the crew. Sheep, goats, and fowls may be had at a village on the N. side of the River entrance. **Owyombo River,** in lat. 3° 24′ S., appears large, but little is known about it.

Port Maleenda is formed by Leopard Reef on the outside, which is 2½ m. off shore, and other reefs contiguous to the main, having depths of 4 to 8 and 9 fathoms. Leopard Reef (the S. end), in lat. 3° 17′ S., about 6 leagues E. by N. from Quilife River, extends about N. by E. and S. by W. 2½ m. in length, having high breakers on the shoal parts. All the shore to the W. seems bounded by other reefs, nearly dry.

Vasco da Gama's Pillar, in lat. 3° 13′ S., lon. 40° 11′ E., is on the N. end of a flat peninsular rock, which serves as a pier for a small cove only fit for boats.

Formosa Bay, about 9 leagues in breadth, and 3 or 4 leagues deep, has soundings from 16 to 8 and 6 fathoms; the S.W. point, Ras Gomany, is in lat. 3° S., lon. 40° 19′ E.; and Ozy, the N. point, is in lat. 2° 37′ S., lon. 40° 39′ E,, having the Ozy detached reefs fronting it, and extending 4 or 5 m. to the S.W., with depths of 14 and 16 fathoms near them. There are also reeefs in the W. part of the Bay 4 to 5 m. off shore, in the stream of 8 fathoms. The Ozy River appears to have its source near Mount Kenia (18,000 ft. high), and nearly 40 leagues to the N. of Mount Kilima Njaro (20,000 ft. high). From Formosa Bay, the coast extends in a N.E. by E. direction, all rather low; and to the S. of Patta there is a chain of five islands covered with trees.

Lamoo Town and Castle, in lat. 2° 16′ S , lon. 40° 56′ E., are 10 leagues to N.E. of Ozy Reefs, and about 3½ leagues to the S.W. of Patta, on the E. side of Lamoo Island, which is separated from Manda Island by an arm of the sea, forming a secure harbour for small vessels, although the entrance is intricate. Lamoo Bay, to the S.W. of Lamoo Island, has from 4 to 10 fathoms, with partial shelter during the N.E. monsoon. In the outer part of the Bay, about 2 m. S.S.W. of Kattow Point, the S. point of Manda Island, is a 2¾-fathoms patch, called Kattow Knoll. The rocky islet of Kinyeka, stands about 7 m. to the S.W. of the entrance to Lamoo Bay. The channel into the river is narrow: a ship desirous of entering should sound it, and place boats or marks on the shoal points; no trustworthy pilot can be had.

PATTA, in lat. 2° 9′ S., lon. 41° 2′ E., is built on a mud flat, which is overflowed at H. W., having a boat-channel through it to the town. The bay is protected by extensive reefs, which stretch along shore at 2 and 2½ leagues from land, having narrow passages between some of them. The middle passage has from 7 to 3 fathoms water in it, and was frequented by English ships formerly, when they traded to this place for cowries, ivory, &c. The Portuguese used the channel that lies 4 m. more to the W.; to the E. there is a winding channel with 3 fathoms water on the bar, said to be dangerous during the S.W. monsoon from April to the latter end of Aug.

Patta Bay is bounded on the N.E. by the reefs and sands of Seewy, on the S.W. by Manda Island, and to seaward by the Pesarly, Egava, and other reefs. The shores of the Bay are all very low, but the S.E. shore of Manda Island has sand-hills of moderate elevation, its E. point being a bluff headland, faced by a sand-flat which extends towards the W. rocks of Egava. Kizingaty Island, which lies 2 m. E.S.E. of the town of Patta, is 2 m. in length from E. to W., and its S. face has a barrier of rocks a little separated from the shore. Patta E. Cliffs, which are 2 m. farther to the E., also present a similar structure. Pesarly outer rocks have some heads which never cover with the tide; these rocks are very bold, and extend about 1½ m. from N.E. to S.W. The Egava Reefs are two patches, which have some rocks always above water, and joined by a rocky ledge which is always covered. The N.E. Egava is 2 m. W. of the S.W. Pesarly Rock, and the S.W. Egava 2½ m. farther and nearly in the same direction. Two m. S. by W. of the N. Egava is the outer reef of Patta, a patch of which dries towards L. W.; it is steep on all sides and having a deep channel, nearly ¾ m. wide, between it and the flats of Egava. The outer 4-fathoms' banks are more than half a league S. by E. and S.E. by S. from the outer Patta Rock.

Coming from the N. with the N.E. monsoon, Seewy Reef may be coasted in from 12 to 14 fathoms; not bringing Kwyhoo Peak to the E. of N.E. by N. until the W. extremity of Patta E. Cliffs opens to the S. of Seewy Reef. The Reef may then be coasted at a convenient distance and depth by the lead.

To avoid the N. middle patch of 3½ fathoms, between Pesarly Ridge and Seewy Reef, pass to the E. of it, with the W. extreme of Patta E. Cliff bearing N.W.; the channel between it and the S.W. end of Seewy Sand is a clear ½ m. wide. But many may prefer to sound on this middle patch towards H. W.; the passage between it and the N. Pesarly Rocks is well open; a ship may steer as she will and choose any berth in Patta Bay, taking care to avoid the 1½-fathom knoll; or steer for the E. cliffs of Kizingaty Island from any part of the pass or channel between Pesarly and Seewy Reefs, until the N. rocks of Egava are on with the sand-hills upon Manda Island,

bearing about S.W. by W. She may anchor anywhere between the flat which extends near ½ m. to S. of Kizingaty Cliffs and the N. rocks of Egava. This part of Patta Bay is called Khor Egava.

A ship in the N.E. monsoon, entering Patta Bay by the channel S. of Pesarly Rocks, may coast that ledge as close as convenient; remembering that the rocks of Pesarly Ridge are covered at half-flood; and haul into the Bay, round their S. end, steering for the E. end of Kizingaty; she may pass over or on either side of the middle patch of 3½ fathoms, which is about mid-way in this pass.

In the S.W. monsoon, a vessel sailing into Patta Bay, after rounding Ras Kattow, the S. part of Manda Island, may steer N.E. by N. for the outer reef of Patta, and coast that on either side as convenient; then steer for the Pesarly Rocks, until the town of Patta is bearing N.W. by N., when she may steer for the E. end of Kizingaty, and proceed as before directed. The soundings are 30 and 32 fathoms about 5 or 6 m. outside the reefs, and 9 or 10 fathoms close to them. Inside, near the inner edges, the general depths are from 5 to 7 fathoms, shoaling towards the Island. The proper anchorage is within the reefs, near Kizingaty Island, which lies to the E. of Patta, in lat. 2° 8′ S.

Tides. It is H. W. at 4½ hours on F. and C. of the moon; rise of tide 9 to 11 ft. Variation 8° W.

Kwyhoo Bay, or Road, is an anchorage at a large inlet about 3 or 4 leagues N.E. of Patta. The entrance of the inlet is about 5 m. wide between Seewy Point to the S.W. and the S. point of Kwyhoo Island to the N.E. The S. end of Kwyhoo Island projects to the S.W. in a long narrow point, having a ledge of rocks, and beyond the rocks lies Boteler Ledge, of dry rocks; Boteler Bank is 2 m. to the S. of the ledge. The entrance to Kwyhoo Bay is between Boteler's Bank and the N.E. end of the Seewy Reefs. The Bay has from 4 to 8 fathoms water. Kwyhoo Island is faced by high sand-hills, and near its S.W. end is a remarkable peak, upwards of 200 ft. above the sea. Kwyhoo Bay, in the S.W. monsoon, affords best anchorage under Seewy Reef, which lies about 2½ m. E. from Seewy Point; but without chart or pilot ships in general should not try it; and the chart will be a better guide than most pilots to be had here. Kwyhoo Knoll, of 5 fathoms, lies E. ½ S. of the Peak, 3 m. off shore; lat. of Peak 2° 0′ S., lon. 41° 18′ E.

THE JUBA, or DUNDAS ISLANDS, are a chain of hundreds of islands and rocks, fronting the coast from Kwyhoo, nearly to the equator; the coast trending nearly straight, N.E. and S.W. They are generally narrow, having their length parallel with the shore, from which they are rarely distant more than 2½ m., and may sometimes be mistaken for the main land; there are reefs stretching out from, and uniting many of the islands, with fine bays or harbours among them: but, in many parts near the edge of the bank, are coral spots of 3 fathoms. The outer edge of the bank of soundings is 4 and 5 m. from the shore, and steep to; the depth decreasing from 20 to 13 fathoms at one cast in standing on it, when a ship should immediately tack.

Durnford Port and River are situated about the centre of that coast which is fronted by the Dundas Islands. The remarkable hilly peninsula of Boorgal is on the N.E. side; and between the ledge of rocks extending from the S. point (called Foott Point) of this peninsula, and Hood Ledge, which terminates the reefs lining the S.W. shore, is the entrance-channel to the port. It is about 3 cables wide, with 5 and 6 fathoms water, and the bar (which is ½ m. further in, between two sand-heads) has 3½ fathoms, at L. W. springs; and from 8 to 10 fathoms higher up towards the River. There are some habitations on the W. side, the largest village being 6 m. from the entrance.

The sand-heads on each side of the entrance dry at spring-tides; the E. sand-head lies about ½ m. W. by N. from the S. point of Boorgal Peninsula, and the W. one about a mile from the same point in the same direction. There is a small island on the W. sand-bank, called Joyce Island, and on a point higher up some ruins, opposite which on the E. side is Deep-Water Point. About 2 m. higher up the river, on its W. shore, is Point Henderson, and off it Duncan Island. There is a 2-fathoms patch about ½ m. inside the E. sand-head, which should be passed to the W. Ships may steer in between the entrance-ledges of rocks on a W.N.W. course, crossing the Bar in 3½ fathoms L. W., until Point Henderson just touches Deep-Water-Point bearing nearly N.W. by N., which is the mark for clearing the patch; when the centre of Joyce Island is brought to bear W., keep in mid-channel.

Between Foott Point and the E. sand-head there is a very snug little anchorage and harbour in the N.E. monsoon, named Port Foott. The **Rozier Bank,** 1½ m. in extent, S.W. and N.E., with 3 fathoms on it, off shore 2 m., lies 7 or 8 m. to S.W. of Port Durnford. Round the N.E. point of Boorgal is a deep bay, called Port Johnes, and described as a commodious harbour still in use by coasting craft; but a coral patch, of 2 fathoms, lies 1 m. to E. by S. from the

N.E. point of Boorgal Peninsula. The S. point (Point Foott) of Boorgal Peninsula is in lat. 1° 13′ S., lon. 41° 54′ E. H. W. at 4¾ hours on F. and C.; rise of tide 12 ft. Variation 8° W. About 4 leagues N.E. of Durnford there is another river, between which and Toola Island there appears to be anchorage; and 4 leagues farther the River of Shamba, fronted by the long narrow island of Thoala, which shelters the anchorage.

Kiama Island, or Doubt Rock, is in centre of a pass, in lat. 0° 40′ S., lon. 42° 20′ E.; at 2½ m. more to the N.E. lies Kismayo Island, having on it three white patches; and within these islands and the others to the S.W. there is an inner passage for small vessels, having various soundings, from 7 to 2 fathoms sandy bottom. Kismayo Island has a village on the N.W. side, and near to its S. point, in lat. 0° 40′ S., there is a channel nearly a mile wide, with from 4 to 6 fathoms, leading to a spacious bay or harbour, where ships may anchor in 4 or 5 fathoms close to the S.W. part of that Island, or inside the rocky islets that project from the N. point of Kiama, and which bound the S. side of entrance. This anchorage appears to be the best for large vessels of any of the harbours to the N. of Port Durnford. About a mile S.E. from Doubt Rock is a corally bank of 2 and 2½ fathoms.

Dædalus Shoal, consisting of several rocky patches, with 4 and 3 fathoms, in lat. 0° 24′ S., lon. 42° 36′ E., about 3½ leagues S.S.W. from Juba River, and about 3 m. off shore, near some islands which form a bay within them. The Blanket Shoal lies W. by S. 1½ m. from this shoal, with 2 to 4 fathoms on it. The coast hereabout is low, with sand-hills facing the sea in many places, and the surf runs high upon the shore, except where it is sheltered by islands or projecting headlands.

Govind, or Waveenda River is called **Joob** or **Juba** by Arabs, and by former navigators **Rogues River,** or **Rio dos Fuegos;** the entrance is situated in lat. 0° 14′ S., lon. 42° 39′ E. Juba Town is composed of a few huts, situated on an eminence about a mile inside the river's entrance, which has a bar on which the surf beats high. It is H. W. at 4½ hours, on F. and C. of moon, and the tide rises 9 or 10 ft. Variation 7° W. Boats may pass over the bar at H. W. during the fair season; but the perfidy of the natives should deter European ships from visiting this place. H.M. ships *Leopard* and *Dædalus* being very short of water, anchored here, expecting to procure a supply of this necessary article, or other refreshments; two boats upset in the surf, and although the natives at first appeared in a supplicating manner, they soon collected in numbers from behind sand-hills, assaulted with their spears the boat's crew, and killed Lieut. Moars with several of the men; the remainder of the crews were chased by the savages along the beach 8 or 9 m. to the S., where they were taken up after sunset, in a small bay, by one of the boats that followed them along the beach. It was off the three islands which form this small bay that the *Dædalus* struck on the coral shoal, after having run down to pick up the boat containing the men who escaped massacre. Whether this hostility still continues, we have not been able to learn; but, away from the influence of the Sultan of Zanzibar, the natives are not yet to be trusted. The coast, up to Ras Hafoon, is only known to us by the running survey of Admiral Owen, executed half a century ago.

Currents and Winds. In the latter part of Nov., Dec., Jan. and part of Feb. the currents set along this coast to the S.W., frequently 2 m. an hour, and the wind prevails generally fresh at E.S.E. by day, veering to E.N.E. and N.E. at night. Had Admiral Blanket's squadron stood out into the open ocean, they would have got out of the strong current, which runs along the coast in soundings, and have been able to beat up to the Red Sea against the monsoon. Between Zanzibar and the equator, the current in March began to set to the N.E.

"The East African Pilot," by Captain De Horsey, R.N., gives us the best notions about the currents of this coast. The S.W. current of the Indian N.E. monsoon, seldom goes below Port Durnford or the Juba Islands. But, from Dec. to March, this S. current meeting the N.E. current (which runs all the year round past Cape Delgado and to the N. past Zanzibar) an off-set E. current is produced, setting towards the Seychelles Islands; and it continues thence on this E. course because there assisted by the N.W. monsoon, which then prevails at those islands and the Chagos Archipelago. When the sun has crossed the equinoctial on its N. journey, the S.W. monsoon along this coast of Africa follows in about a month, and by end of April or beginning of May, the N.E. set will be fully established towards Socotra. In June, July and Aug., the rate of N.E. current along this shore has been registered at 4 knots an hour.

THE COAST. From the entrance of Juba or Govind River to Brava, the coast extends N.E. ½ E., about 38 leagues. It is rather low and sandy, with a few little bays; a high surf beats against the shore; but soundings along it are more regular than on the coast of Zanzibar, and ships may approach in many places within 2 or 3 m. of shore. H.M.S. *Wasp* (1865) reports that a **coral reef** extends along the shore between Juba and Brava, at from 1½ m. to 2 m. off shore, and it is steep-to.

Brava, in lat. 1° 7′ **N.**, lon. 44° 3′ E., is a town close to the sea, belonging to Arabs, and seems well built; close to it lie several small islets or rocks, which break off the sea, and about a mile to the S. of the town, on a small peninsula, there is a pagoda or tower, resembling a light-house. Inside the outer islets, called Barette Rocks, the country boats lie sheltered in 3 to 2½ fathoms water. Ships may anchor outside in 7 or 8 fathoms water, or in greater depth; but the road is exposed to a heavy swell, which rolls in with winds from seaward. The bank of soundings is distinctly marked by the colour of deep ocean blue, changing suddenly to green; and further towards land, as suddenly to dirty yellow. The tide rises 8 ft., and it is H. W. on F. and C. at 4 h. 30 m. Variation 6° W. About 10 leagues to the S.W. of Brava, there are several high white sand-patches near the shore. From Brava the coast extends nearly E.N.E. about 34 leagues to Mukdeesha. Between them the coast is bold to approach, sterile, sandy, destitute of trees, with a few islands near it in some parts; but it abounds with cattle and goats, and has on it the towns of Torra, Mongooya, Marka, Jillip, Horealy, Denan and Gezerat; the latter is in lat. 1° 53′ N., lon. 45° 7′ E., and nearest to Mukdeesha.

MUKDEESHA, or MAGADOXA, in lat. 2° 2′ N., lon. 45° 25′ E., is the principal town on this part of the coast of Africa, easily known by 2 or 3 remarkable mosques or minarets, resembling towers, but which are tombs for the dead; there is also to the E. of the town a large copse of trees, but no river. A reef of coral rocks fronts the town, extending 3 or 4 m. to the E., within which is a narrow channel with 10 or 12 ft. water at low spring tides, and having a sandy beach inside, where landing is good; but, with fresh S. winds, the passage between the reefs will be dangerous for boats. The lead will obtain no ground at the distance of 3 or 4 m. from the shore. The inhabitants of these towns, like those of Juba, may not be much trusted yet by Europeans; formerly they were very treacherous. Fresh beef, good sheep and goats are plentiful and cheap. Most of the Arab dhows visit this place in their coast navigation to exchange sugar, molasses, dates, salt-fish, &c., for ivory, hides and gums.

Warshek Point is in lat. 2° 30′ N., lon. 46° 7′ E.; to the N.E. of which a reef stretches fully a league S.S.W. from the rocky beach of the point next N.E. of Warshek; and to the S.W. the shore is skirted by rocky reefs for nearly 3 leagues. Upwards of 2 m. from shore lies the dangerous shoal of Warshek, inside of which the *Leven* passed in 1825, without seeing or having any indication of it until announced by the lead; but when clear of it breakers were seen; and it is supposed there must be less than 3 fathoms water on it, as the *Leven* passed over in 3½ Immediately to the W. of this shoal commences the **Warshek Reef,** which fronts the shore for 6 or 7 leagues at half a league off. The *Leven* coasted this reef from ¼ to ½ m. outside, sounding with upwards of 40 fathoms. The shores inside the reefs are rocky. From Mukdeesha to Ras Aswad is about 70 leagues, and the general direction of coast about N.E. ¾ E. Variation 5° W. To the N. of Mukdeesha about 4 leagues, a chain of hills extends from thence several leagues farther in that direction; and there is a bay with white sand-hills, and a range of small islands, steep-to, near the shore. Farther to the E., there is another bay with white sand-hills, and a bank lines this coast, having on it very irregular soundings. A ship, in standing on the edge of this bank, should tack after getting soundings, for the depth decreases suddenly from 40 to 10 and 3 fathoms coral, in some places. The coast is in general a sandy soil, rather low and sterile. The prevailing winds in March are from S.E. and E.S.E., with a set to the S.W.; the current then changes, and sets afterward to the N.E.

Ternate Shoal, in lat. 3° 15′ N., projects about 2 or 3 m. from a point of low land, otherwise destitute of any distinguishing marks; soundings of 18 and 20 fathoms are near it, on the outside, and the sea breaking upon the shoal first points it out. Between Ternate Shoal and Ras Aswad, the coast is mostly low, with soundings close to shore. The entrance of the *doubtful* River Doara is supposed to be in about lat. 4° N.; but no river was seen when sailing near the coast.

Ras Aswad, or Black Point, in lat 4° 30′ N., lon. 48° 1′ E., is a point of low black cliffs projected from sand-hills over the beach into the sea; it has low land near it to the S., but Ul Hherab, or the "mountainous country," lies to the N., seen in clear weather 9 or 10 leagues. The *Ternate* had soundings of 20 and 30 fathoms in coasting along near the shore in this part, but no additions have been made to our knowledge of it during half a century.

Ras Awath, in lat. 5° 33′ N., lon. 48° 40′ E., is about 24 leagues N.E. ½ N. from Ras Aswad, and fronted by a reef; the coast forms a small concavity between these headlands, with soundings of 20 to 40 fathoms, 2 or 3 leagues off shore. Some hills extend from Ras Awath a little way to the N., and afterwards **the coast** (called by Arabs, **Sef Tweel**) becomes low, with sand-hills in some places, taking a direction about N.E. by N., with soundings within a few miles' distance, of 18 to 10 fathoms; and from 25 to 40 fathoms at 3 or 4 leagues off.

Ras-al-Khyle, or Moro Cobir Point, *i. e.* Serpent's Head, in lat 7° 43′ N , lon. 49° 45′ E.,

is formed of three distinct cliff points, and is the S. extreme of Negro Bay. The land to the S. is moderately high, but **the coast** to the N. of Ras-al-Khyle, called by the Arabs, **Hazine,** or "rough ground," is low and rocky to a great extent. From Ras Aswad to this place, the land is generally sterile, of an even appearance when seen at a considerable distance, but is little frequented by Europeans. The *Leven*, in hauling off shore for the night, struck soundings on a 6-fathom knoll when the N. point of Ras-al-Khyle bore about W.S.W. about 6 m. A close examination of the soundings near this point was not made; but it merits further attention, although the pilot was not aware of any danger on this part of the coast. Variation 3½° W. near Ras-al-Khyle.

Ras Mabber, or Cape Stand-off, in lat. 9° 29′ N., lon. 50° 50′ E., is fronted by a reef, and the contiguous land is usually rather low. The name of the Cape indicates the practice of the Arab coasters bound to the N., who always run out from this point with the S.W. monsoon, in order to round Ras Hafoon, and avoid the dangerous intervening deep bay, a needful precaution. Ras Mabber has good anchorage in 6 fathoms on its N. side, the coasters frequently stopping there for water Soundings do not extend far from shore.

Ras Hafoon, or The Surrounded, formerly called Cape Orfui, in lat. 10° 27′ N., lon. 51° 22′ E., is a peninsula from 400 to 600 ft. above the sea, joined to the main land by a low narrow isthmus of sand, shells and mud, which extends 3 leagues E. and W., forming a deep bay, with good anchorage on either side, according to the season. During the N.E. monsoon, the Arab coasters lie in the S. bay, where wood, water (said to be bad) and refreshments may be procured. The peninsula, said to abound with cattle, sheep, camels and horses, is under the Mijjertheyn Somauli tribe, whose territory extends from Ras-al-Khyle round the N.E. point of Africa to Bunder Ziádeh. They are friendly to strangers, and may be trusted. The S. point of this promontory of Hafoon is high and flat like a barn, which appears at a distance separated from the Cape land.

Caution. Several ships have been embayed to the S. of the Cape in the night; one is said to have been lost and others had difficulty in beating out. Caution is therefore necessary in thick weather, or during the night. The best indication of a dangerous approach to land is the change in colour of the water on the bank of soundings. The prominence of this Cape also causes a marked alteration in the direction of the ocean swell when a ship is near it, in either N.E. or S.W. monsoon. The soundings about 3 m off are from 40 to 50 fathoms. Variation 3° W.

Khor Hardeah. On the N side of Ras Hafoon, is an extensive basin or harbour, about 20 m. in circumference, and 2 m. wide at its entrance, but it affords shelter for small vessels only, as there is but a depth of 1 to 1½ fathoms inside. During the S.W. monsoon, every year, a fair is kept at Khor Hardeah by merchants coming from Makalleh on Arabian coast, and from the Mijjertheyn bunders or ports, who haul up their baghalahs on the beach, when they arrive at the end of May. A brisk trade is then carried on in gums, ostrich feathers, hides, ivory and ghee; much ambergris is also on sale, but at a high price. Elephant hunting is followed by those who have guns. Asses in great numbers are procurable for five or six dollars each. But Khor Hardeah is most unhealthy; its shores are covered with decomposed vegetable matter, which, if disturbed, gives out a sickening gas. Yet many fishermen live there, and become accustomed to it.

RAS ASIR, or AHSEER, called by mariners, **Cape Guardafui, or Assair,** the N.E. point of Africa, 900 ft. high, and about 28 leagues to N. of Ras Hafoon, is in lat. 11° 51′ N., lon. 51° 16′ E. The coast between them forms two large bays, separated by the bluff headland of Ras Ally Besh Quail, in lat. 11° 9′ N.; on the N. side of which, in Gubet Banneh, a vessel might anchor in the S.W. monsoon, in 7 fathoms; off the village, and about 3½ m. W.N.W. from the N. tip of the headland; there appears to be a plentiful supply of fresh water in these bays. Soundings of from 20 to 40 fathoms come within 2 leagues of the shore, between Capes Hafoon and Guardafui.

The headland of Ras Jered Hafoon, or Shenareef (10 m. S. of the N.E. Cape of Africa), is a mountain 2500 ft. high, rising from the water in four steps. To the W. and S.W. of Shenareef, the plateau of the African high land attains an elevation of 5000 ft., that may be seen a great distance. The bank of soundings for the deep-sea lead extends about 5 m. off Hafoon; 10 m. off Ally Besh Quail; and 15 m. to the E. of Ras Ahseer; but only 2 m. due N. of that Cape. There is good anchorage in the Bay to the N. and W. of the Cape, in from 8 to 10 fathoms, during the S.W. monsoon; but little will be gained by anchoring here. At Bunder Feelook, about 43 m. further to the W., plenty of fire-wood may be procured. The trade and inhabitants of this coast are described at page 120. Wahdy Tohum is a fertile valley, 7 m. to S. of Cape Guardafui, full of large mimosa trees, with a stream of water. The natives resort to it in great numbers, and will bring bullocks, sheep, and fire-wood to the Bay on the W. side of the Cape, but there is no anchorage off Wahdy Tohum. Excellent water might also be procured from the stream, but its carriage would be expensive.

SOCOTRA, THE BROTHERS, AND ABD-AL-KOORY.

SOCOTRA ISLAND, extending E. and W. 70 m., its greatest breadth 22 m., is generally composed of high mountainous land and granite peaks, which, abreast of Tamareed, are more than 4000 ft. high; seldom free from clouds. There is a low plain between the base of the mountains and the sea, varying in width from 2 to 4 m., excepting at Ras Felink and Ras Sharb, which rise up out of the sea. The S. side of the Island is arid and barren like Arabia, exposed to the force of the S.W. monsoon, which has blown up the sand into hills parallel with the beach, and in some places has spread it 3 m inland till stopped by the mountain barrier. This plain on the S. side of the Island is called Nowkad, and affords pasture for flocks. The hills on the N. side of the Island have a thick and luxuriant vegetation The plain about Tamareed has several beautiful fertile valleys, and oxen are numerous hereabouts. Vast flocks of sheep and goats are found all over the Island. These and the date groves furnish the principal means of support to the inhabitants, but they look also to imports of dates from Muskat.

Excepting a few of the headlands that have projecting reefs, the shores of the Island are bold to approach, with soundings at a considerable distance in some places. There are several anchoring-places, which may be used according to the prevailing monsoon; but none affording shelter at all times. The S. side of the Island, having few inhabitants or refreshments, and not good water, is not convenient for ships. The bays of Gollonseer and Sharb at the W. end of Socotra afford good shelter in the N.E. monsoon; and so does Bunder R'dresseh at the E end of the Island. Tamareed Bay has a swell in the S W. monsoon and violent gusts from the hills. But Deleeshi Bunder is best between June and Sept. Fikeh Bunder is good in the fine weather season, from Feb. to May; and is frequented in April for fresh water by trading boats from India. The Island has two wet seasons, June to Aug., and Nov. to Jan. During the S.W. monsoon, a vessel may find shelter from the sea in all bays on the N. side of the Island, to the E. of Ras Kadarma. These are Koormeh, Kathoob, Tamareed, Deleeshi, Gurrieh and Fikeh: but as the wind blows in violent gusts from the mountains, good ground-tackling is necessary; the anchorage being usually on a narrow bank of sand or rocky bottom, which has a steep declivity to the N., out of soundings. Of all these anchorages, Bunder Deleeshi is the only one which the natives call perfectly safe during the S.W. monsoon, and very smooth water.

Winds. The winds, most dangerous along the N. side of the Island, are expected between Nov. and Jan.; when, at the setting in of the N.E. monsoon, the squalls blow violently several days from N.N.E., with rain and a high sea, rendering it almost impossible for anchors to hold. Captain Haines experienced one of these N.E. gales so late as the 23rd Feb., 1834, while surveying on the S. coast From Feb. to May is the fine-weather season, when the anchorages on the N. coast are considered safe. In June, July and Aug., the natives say the wind blows constantly in violent gusts from hills on the N. coast; while at the low belt of Nowkad, on the S. coast, the wind is more steady and less violent, with, however, a tremendous sea and surf. In these months rain falls in showers, but much less than that with the squalls of Nov., Dec. and Jan. In Sept., Oct., and part of Nov., light land and sea-breezes are experienced; late in Nov. the wind becomes gradually more settled from the N.

Tides. The tides are very irregular, sometimes running 16 hours in one direction, and at other times only 6 hours, depending much on the strength of winds and currents. The flood sets to the W. on the S. coast, and to the E. on the N. coast; and the ebb in opposite directions. H. W. on F. and C. between 7 h. and 8 h. on the S. coast, and about 8½ h. at Tamareed. Rise and fall from 6 to 8 ft. Currents around the Island are chiefly dependent on winds. Between the Arabian coast and Socotra, a W.S.W. current, of 40 m. per day, was experienced in Jan.; and in March an E. one of about 30 m.

Tamareed, or Hadeboo Bay, on the N. side of the island, where the chief resides, also called by the Arabs, Belád-al-Sultan, is 10 leagues distant from Ras R'dresseh, the E. Cape; it is the most eligible place for getting refreshments, Tamareed being the principal town, but the anchorage is indifferent. A point of sand shelters the E. anchorage, which is about 1 or 1½ m. off shore, in 10 to 13 fathoms sand and coral, with the town bearing S. or S. by W. On the N. coast, in coming from the E. towards Tamareed Bay, two white sand-hills may be perceived; the W. one is much the larger, and about 4 m. to the W. of it is the town, over which are high craggy granite peaks, from 3000 to 4000 ft. high, visible 7 leagues off. When the Bay is approached in the S.W. monsoon, the coast should be kept a-board from the E. end of the Island, as the wind blows in gusts off the high land. No ground is got with 100 fathoms line within 2 or 3 m. of the coast from the E. point of the island to Ras Howlaf; but to W. of that headland, and fronting the Bay,

the bank extends farther off shore, with gradual soundings from 5 to 20 fathoms. Bullocks, goats, sheep and fish may be procured here at reasonable prices, and good water, which runs from the mountains into a sandy valley among date-trees, about ¼ m. from the town, which is in lat. 12° 39′ N., lon. 54° 0′ E. The natives are poor, and hospitable to strangers: rice is an essential article to barter with them for refreshments Good aloes may be procured; and at times, dragons' blood in small quantities; grapes, water-melons, pumpkins, oranges and plantains, may be got in March and April, and plenty of dates in June.

Ras Koormeh is about 3 leagues to the W. of Tamareed, and may be known by a few rising sand-hills near it: a reef projects off it about 300 yards, and along shore to Ras Tahal, about 2 m. to the E. The small bay and village of Kathoob are about 3½ m. to the E. of Ras Koormeh, which bay is more sheltered from the S.W. monsoon than that of Tamareed.

Ras Kadarma, in lat. 12° 42′ N., lon. 53° 38′ E., bearing W. by N. ½ N. 13 m., from Ras Koormeh, terminates in a low point from a bluff close to it, and thence the coast runs W. ½ N. for 4½ m. to Ras Bashuree, and 2 m. further W. to **Ras Samaree,** the most N. part of Socotra, where the mountains are nearly 2,000 ft. high, and almost perpendicular from the coast-line in some places, with a rocky beach. A pyramidal rock, nearly 150 ft. high is joined to Ras Bashuree by a narrow neck of land, about 50 yards in length. Soundings extend off Bashuree about 2½ m. out from the coast; but towards Ras Kadarma not more than 1 m. off.

Ras Gollonsier, about 4 m. to W.S.W. of Ras Samáree, forming the E. point of Gollonsier Bay, may be known by four small granite peaks on it, and by the hills near them being in some places covered with sand. Between Ras Gollonsier and Ras Samáree the coast is fronted by a shoal extending a mile off shore, dry at L. W. in some parts, with patches of 2 fathoms near its edge, to which the soundings gradually decrease.

Gollonsier Bay, which affords anchorage in the N.E. monsoon, is formed by the bluff cape Ras Bedoo to the W, and Ras Gollonsier to the E. The village of Gollonsier, about a mile to the S. of the cape, is small, not containing 200 inhabitants, but has a plentiful supply of wood and water, sheep and goats: a few fowls, beans, and pumpkins also, but no bullocks. The Mosque is in lat. 12° 41½′ N., lon. 53° 30′ E. The best anchorage is in 4 fathoms L. W., with the N. granite peak on Ras Gollonsier N.E. by E.; the Mosque S.E. by E. ¼ E.; off the sandy beach or best landing-place 800 yards. A shoal spot of 2½ fathoms lies nearly 2 m. to W. of the village. The soundings under 10 fathoms (which depth is not 1 m. from shore) are irregular with over-falls; and the fringing reef extends nearly 3 cable-lengths off shore.

Tides. H. W. at 7 h. 20 m. on F. and C. of moon; rise and fall 8 ft., and the flood sets to the E. This bay affords no shelter from the S.W. monsoon.

Ras Bedoo, in lat. 12° 40′ N., lon. 53° 24′ E., terminating in a bluff about 300 ft. high from the Jebel Marlee Mountains, forms the N.E. boundary of Gubet Sharb, a fine bay, with regular soundings and no danger beyond 2 cable-lengths from the shore To the N. of Ras Bedoo, no soundings were got at the distance of a mile; but to the W. of it soundings of 20 to 34 fathoms extend several miles, rocky bottom, and good fishing-ground.

Saboynea Islet, in lat. 12° 39½′ N., lon. 53° 11′ E., bears from Ras Bedoo W. ¼ S. about 4 leagues; and from Ras Sharb N.W. by W. 9 m. It is a white granite islet, of considerable height, in extent about 800 by 150 yards, and may be seen more than 20 m., at which distance it resembles two ships under sail.

Sharb Bay, 7 m. in extent, between Ras Bedoo and Ras Sharb, has good shelter from the N.E. monsoon, though exposed to the S.W. Although generally smooth in the N.E monsoon, strong gusts of wind sometimes blow from the high land, requiring great caution when under sail. The best anchorage is in 10 fathoms, about ¾ m. off shore, over a clear white sandy bottom, with the points of the bay N. ½ E. and S.W. by W. ½ W., and the **Ears** Peaks, S.W. by S., off some mangrove-trees, close to which is a lagoon of salt water, rising and falling with the tide, although separated from the sea by a bank of sand 400 yards in breadth. The village of Marthain Gibboose, where some good water is obtained from wells, consists of a few huts only, and the whole Bay has about 150 persons, who live in caverns; they are very poor, subsisting by their flocks and fish.

RAS SHARB, the W. cape of Socotra, in lat. 12° 33′ N., lon. 53° 19′ E., is a bold cape, the end of a mountain called Jebel Sharb; on which, at 3 m. to the E. from the cape, stand two remarkable peaks like **Ears,** which are 1480 ft. above sea. A reef extends from the cape about 300 yards. A depth of 14 fathoms is found at ½ m. off, and no bottom at 4 m.

The coast from hence extends S.E. 18½ m. to Ras Katahuee. The soundings along this part are usually sand and rocks, without danger; but about a mile from it, a 6½-fathoms bank lies parallel to the shore; this is not above ½ m. in breadth, having 8 and 9 fathoms inside of it, and the same depths outside, increasing to 17 fathoms about 3 m. off shore. This part of the coast

affords shelter from N.E. and N. winds; and anchorage inside the narrow bank, in a little bay at the sand-hill, called Gubet Ney, or Bunder Ney, with 4 fathoms water close to shore, at the N end of the rocky cliffs, where there is a small village, about 6 m. from Ras Katahnee.

Tides. The ebb tide along this side of the island runs S.E. 1 m. per hour; rise and fall 7 ft. on the springs; H. W. at 7 hours on F. and C. of moon, very irregular.

Ras Katahnee, in lat. 12° 22′ N., lon. 53° 33′ E., is a bold, bluff headland, 1455 ft. above sea, and has the same aspect from E. or W. A chain of mountains, called Jebel Kueireh, nearly of equal height, extends from it 5 m. to the E., and continues nearly to the E. end of the island, excepting a few passes, by which the inhabitants go to Tamareed. This chain in most parts rises like a wall from the low land, between its base and the sea, which belt is from 2 to 4 m. broad, and called Nowkad by the natives. This low land affords good pasturage for numerous sheep and goats; but the people were found very timid, always retreating with their flocks to the mountains, when wished to be communicated with. But, having a native of the island on board, the surveyors effected a conference, and a good supply of sheep and milk was obtained from these harmless people.

The S. coast between Ras Katahnee and Ras Felink is bold to approach, with soundings of 12 to 20 fathoms, extending from 4 to 6 m. off. Several reservoirs receive the drainage from the mountains, the water obtained by digging wells being brackish. One of these reservoirs at Wadi Felink, 3 leagues to the W. of Ras Felink, where the sandy beach terminates in rocky cliffs facing the sea, is supplied by a fine stream of fresh water running through the low land, the basin being separated from the sea by a bank of shingle. Here, during the fair season, Feb. to April, a ship might easily procure fresh water, by anchoring in 7 fathoms; also sheep, if caution is taken in communicating with the inhabitants; otherwise they will retreat to the hills.

Ras Felink, about 54 m. to the E. of Ras Katahnee, and about 6 m. W.S.W. of Ras R'dresseh, forms in a bluff cape, when viewed from the S.W.; but on a near approach, a low point is perceived to project from it nearly a mile, off which a reef extends to the S.E. about 400 yards, between which and Ras R'dresseh the coast forms a bay, with regular soundings, decreasing gradually to the shore.

Bunder R'dresseh is an anchorage formed to the S.W. of that cape, where a vessel might anchor in 9 fathoms sand and rocks, in tolerably smooth water, during the N.E. monsoon, with the outer small patch of rocks off R'dresseh, bearing E. by S.; the low point N.E. ½ E.; and the high bluff of Mom, W. ¼ N. The channel between the detached reef and that projecting from the point has depths of 7 to 9 fathoms, but being less than ½ m. wide, with rapid currents or tides, causing strong ripplings, it would be imprudent to pass through it, except with a strong leading wind, as there is no ground at 90 fathoms to the N.E. of this intricate channel at the distance of ½ m. from the shore of R'dresseh.

RAS R'DRESSEH, in lat. 12° 34¼′ N., lon. 54° 31′ E., is the low E. cape of Socotra, forming in two small rocky points, which are nearly a mile distant, bearing N. and S. of each other. A reef projects ¼ m. from both, and at the distance of 1 m. to the N.E. you have more than 80 fathoms water, so the lead is not a guide in approaching the island from the E., the N.E., and the N. About a mile S.E. of the cape is a detached shoal, some of the rocks of which are above water.

Ras Mom (Socotrean), or Ras Mutlar (Arabic), Cape E., in lat. 12° 34′ N., lon. 54° 27′ E., is a remarkable bluff mountain, 1920 ft. high, sometimes from its form called the Dolphin's Nose. It terminates the high chain that extends the whole length of the island, and is seen in clear weather at a considerable distance, when the low extreme of Ras R'dresseh, about 4 m. farther E., is not visible.

Bunder Fikeh, about 2¼ m. to the W. of Ras R'dresseh, and under the lofty bluff of Ras Mom, is a bay formed on the W. side of a small sandy point from which a reef projects 1 m. This place forms a small anchorage, protected by the reef from E. winds; where the small vessels from Cutch, or other places, stop to procure water in April and May on their pilgrimage to Jiddah. Water is got from a well near the village, or from a spring which issues between the two E. sand-hills. The best anchorage is with Mom Bluff W.S.W.; the outer break of the reef N.E.; Ras Dome W. by N. ½ N. in about 12 fathoms. In approaching this anchorage caution is requisite, for the sea does not show the reef by breaking upon it, unless with a strong wind or heavy swell, and close to it there are 5 fathoms water, but 400 yards off no bottom at 60 fathoms. The village is small, with about 50 or 60 poor, timid and inoffensive inhabitants, living in huts, or in excavations.

Ras Dome, W. by N. ½ N., 10 m. from the E. point of Socotra, is a sharp projecting cape, about 250 ft. high. To the E. scarcely a shrub is seen, except at the sand-hills mentioned as a

watering-place, where there are a few trees; but to the W. of Ras Dome, both the hills and valleys appear verdant, interspersed with small villages, of 20 or 30 inhabitants, who live on their flocks and fish, and supply good sheep or bullocks at a fair price. **Ras Hamadara** bears W. by N. ¼ N., distant 7¾ m. from Ras Dome, between which are the three date-groves of Thuereh, Clayf and Tamereh, with a fine fresh-water pool near Clayf.

The Coast, from Ras Dome to Ras Dehamree, trending W. by N. 10 m., is low near the sea, with little rocky capes and sandy bays. The high land stands about 2 m. back from the beach, and is more than 1000 ft. high. The bank of soundings project only from ½ m. to ¾ m. from it. Off Ras Hamadara, there is a rocky shoal nearly dry; with a narrow channel of 5 to 7 fathoms between it and the shore-reef that projects 300 yards from the point.

Bunder Gurrieh is a small bay on the E. of Ras Dehamree, where a vessel might anchor in 6 to 10 fathoms water, sand and rocks, from ¼ to ½ m. off shore, with the extreme point of the cape bearing N.W. by N., or N.N.W., where she would be well sheltered from the S.W. monsoon. Inland there is a fresh-water stream, with numerous date-trees growing on its banks.

Ras Dehamree, a narrow, low, projecting neck of land, is 6 m. E.S.E. from Ras Howlaff On it are two remarkable hillocks, the N. one about 130 ft. high. On each side of this cape there is a small anchoring-place; that of Bunder Gurrieh, already mentioned; and the W. one, called Bunder Debenee. No soundings with 280 fathoms line were got ¾ m. N. from Ras Dehamree, nor is any obtained until within a few hundred yards of it. Close to the extreme point there is a rock, and a rocky spit of 2½ fathoms projects from a small rocky point to the S.W. of the former. A small vessel might anchor to the S.W. of the same spit in 3 or 3½ fathoms, close in shore, with the point bearing E.N.E.; but the bottom is coral rock.

Bunder Deleeshi is formed between Ras Dehamree and a small point near Ras Howlaff, on which stands a little ruined mosque or tomb. Soundings extend across this bay a considerable distance from shore, which is safe to approach, and affords the best sheltered anchorage on the coast of Socotra during the S.W. monsoon. In the centre of the bay there is a sand-hill, with a creek ½ m. to the W., called Khor Deleeshi, salt and shoal at the entrance, but a fine fresh-water stream inland, with date-trees on its banks. The sand-hill, bearing S. or S. by E., is a good mark for the best anchorage, in 7, 8, or 9 fathoms water, from ¼ m. to ½ m. off shore.

Ras Howlaff, before mentioned in describing Tamareed Bay, is nearly 3 m. W.N.W. of the above ruined mosque, and bears from the mosque of Tamareed N.E. by E. nearly 5 m. It is a low projecting cape, rising towards the interior, and forming undulating sand-hillocks, covered with prickly bush: fronting the sea, it has small rocky points, with intervening sand beaches. The anchorage on the W. side of Ras Howlaff is preferable to Tamareed Bay; yet with the wind at E.N.E. a considerable swell rolled in, but not so much as abreast of the town, where there was a breaking sea at the same time: neither was landing so difficult as in other parts of Tamareed Bay.

THE BROTHERS are two islands to S.W. of Socotra, and on the same plateau of soundings. Depths of 15 to 20 fathoms are found to E. of these islands for more than 30 m., but this part was not thoroughly examined. The channel between the Brothers has soundings ranging from 20 to 25 fathoms.

Jezirat Derzee, the E. Brother, is about 3 m. in length E. and W., with an even table top, 970 ft. above sea. Its E. end is 27 m. S. of Ras Sharb, the W. point of Socotra. On its N. side there are soundings of 13 fathoms about 1 m. off, but it is steep-to on other sides. The bank of soundings extends about 13 m. to the S.

Jezirat Sumheh, or the W. Brother, 9 m. W. by N. of Derzee, is 6½ m. long, E. and W., and less than half that breadth. The E. end is broad, but the W. end narrows to a sharp point, off which a reef extends ½ m. The island is high, and tabular for half its length. The highest part, near the centre and about a mile from the S. shore, is 2440 ft. above the sea. Off the S.E. side, are two small rocky islets. A reef projects ½ m. from the N.E. side; off which, about 1½ m, there is a small bank with 13 fathoms; between the latter and the reef 22 fathoms is found. The bank of soundings extends 15 m. to S. of Sumheh, and 25 m. to W.S.W.; but, midway between it and Abd-al-Koory, the depth is over 100 fathoms.

ABD-AL-KOORY ISLAND, midway between the W. end of Socotra and Cape Guardafui, is a high rugged island, 6½ leagues in extent E. and W., but narrow, with a hill 1670 ft. high near the centre, and another on the E. part of the Island, 1500 ft. high. The W. half is not so leevated, only 500 ft.; and to the W. of the central peak the island is quite low, appearing from a distance like two islands. It is inhabited by people miserably poor, having little food and indifferent water. Admiral Owen anchored in H.M.S. *Leven*, in a fine bay, with a coral bottom, directly at the W. point of the high mountain on the S. side; but this place affords no refreshments for ships, although above sixty persons contrived to exist upon its barren soil.

Ras Anjireh, the N.E. point of the island, in lat. 12° 11′ N.,and lon. 52° 22′ E., is rocky, with a sand-hill. An extensive shoal, having from 3 to 12 fathoms, called Bacchus Bank, extends from the N.E. point in that direction for 4½ m.

Ras Khaisat-en-Naum, the W. extreme of Abd-ul-Koory, is in lat. 12° 14′ N., and lon. 52° 3′ E. Soundings off this end are very deep, 25 fathoms at 1 m. off, 40 fathoms at 2 m. off; then over 100 fathoms: but a bank with 24 fathoms is found 8 or 9 m. W.N.W. of this cape.

KAL-FAROON, or Salt's White Rocks, lat. 12° 26′ N., and lon. 52° 8′ E., are two rocks, standing up out of the sea. They occupy a space about 7 cables long, N.E. and S.W., and 2 cables broad. Each has a lofty peak, 280 ft. high, and one or two hills of less height. They are covered with guano and look very white; birds in great numbers resort here. By day they are visible 15 or 20 m.; but at night are difficult to distinguish. They are 12 m. N.N.E. of the W. end of Abd-al-Koory, and situated on the N. side of a large bank of soundings with 10 to 20 fathoms.

Tides. H. W. here at 8 h.; rise of tide 6 to 8 ft. on F. and C. of moon. Flood sets to N., and ebb to S., from 1½ to 2½ knots per hour, between all the islands. Variation 2½° W.

CAPE GUARDAFUI TO STRAITS OF BAB-EL-MANDEB.

(Variation at Guardafui, 3° W.; at Perim Island, 4½° W.)

From Ras Ahseer, or Cape Guardafui, (*see* page 108) the coast extends 10 leagues W.N.W. to Ras Ullooleh. In the bay, to the W. of the former cape, will be found good anchorage in S. winds, but farther W. the bottom appears rocky and the soundings irregular. At Moyah Booah, 6 m. to the E. of Ras Ullooleh, there are wells of good water. Mountains, 1300 to 1600 ft. high, border the sea, except in one or two sandy bays.

Ras Ullooleh, or Alooleh, in lat. 12° N., lon. 50° 46′ E., is very low, with a narrow entrance near its extreme to a lagoon of considerable extent, called Khor Gulwainee, into which a river falls. There is a village, Bunder Ullooleh, on the W. side of the lagoon, where cattle and an abundance of fire-wood may be procured The water at this place is bad.

Ras Feelook, Ras-al-Feel, or Cape Felix, in lat. 11° 57½′ N., and 8 m. W. by S. from Ras Ullooleh, is a hill 800 ft. high, shaped like an elephant; it projects far into the sea, and the circumjacent land being low, gives it the appearance of an island. It may be seen at 15 leagues' distance in clear weather, and there is very deep water within a ¼ m. of it. There is a deep bay on the W. side of Ras Feelook. At **Bunder Feelook,** a small village with a fort, 10 m. S.S.W. of the Cape, there is good anchorage in 7 or 8 fathoms; and fire-wood may be obtained in any quantity. Ras Feelook is generally called by natives, Ras Belmook

Bunder Marayeh is the principal town on this part of the coast, and is situated 8 m. to the S. of Bunder Feelook, in lat. 11° 43′ N.; it has five forts, and affords an abundant supply of cattle, water and fire-wood. The natives at all these towns are civil and friendly to strangers.

Ras Goree, or Cape St. Peter, is in lat. 11° 30′ N., lon. 49° 44′ E., and 20 leagues W.S.W. of Ras Feelook. It is the termination of a ridge of lofty mountains 4600 ft. above the sea There is a fort and village on its W. side, and about 12 m. to the E. is **Bunder Khor,** where a river, carrying salt water 5 m. inland, falls into the sea. It is navigable for small boats as far as the town, about 4 m. There is a fort on the W. side of the entrance. Soundings extend off the coast hereabouts from 1½ to 3 m. About 7 m. W. of Ras Goree is **Ras Antareh,** a high rocky cape, forming the foot of the lofty mountain, Jebel Antareh, 5000 ft above the sea. The soundings deepen rapidly from the Cape. From Ras Antareh the coast trends W. by S. ½ S., 36 m. to Bunder Ziádeh, the W. limit of the Mijjertheyn, and the E. limit of the Wursoongli Somauli tribes. Bunder Ghazim is 12 m. to the E. of Ziádeh.

Ras Hadahdeh, bearing W. by N. 20 m. from Ziádeh, is a rocky cape 300 ft. high From it the low sandy point of **Ras Gahm** bears W. 18 m. From Ras Gahm the coast trends W. by S. 27 m. to Ras Gulwainee. From Ziádeh to Meyt, the limestone mountain range, Jebel Wursoongli, 6,500 to 7,000 ft. high, backs the coast at a distance of 10 to 15 m. There are several towns along the coast, at all of which water, fire-wood, and cattle are to be procured. **Ras Gulwainee,** in lat. 11° 8′ N., lon. 48° 1′ E., is in a bight of the coast between Ras Gahm and Ras Suereh, which capes are 50 m. apart. Soundings extend off the coast from 2 to 4 m.

Ras Suereh, a low bluff point, is 50 m. W. of Ras Gahm; along this coast, undulating hills intervene between the lofty mountain range and the sea. Bunder Jedeed, about 6 m. W. of Suereh Cape, is the W. boundary of the Wursoongli Somauli tribe, who are said to be not always civil to strangers.

MEYT, or BURNT ISLAND, called also Bird Island, Ais or White Island, in lat. 11° 13′ N., lon. 47° 16′ E., is a high barren rock 430 ft. high, of white aspect, being covered with birds' dung. It is 16 m. W. by N. from Ras Suereh, and 6 m. off the nearest shore. The coast is moderately elevated, with soundings near it, and the channel between Meyt and the main is 5½ m. wide, free from danger, with depths of 13 to 32 fathoms. The edge of soundings extends 3 m. to the N. and W. On the S. side of the Island there was found a remarkable cove, or natural dock, sufficiently large to admit a ship of 300 tons in security, by clenching the ends of a cable through holes of the rock; the remains of two clenches of cables were affixed to the rock in 1801; and part of a hemp cable was found in 1844. There appears to be no danger near the Island, except at the W. point, where a reef projects out about a cable's length, with a sunken rock, having over it only 12 ft. water.—(*See* SAILING DIRECTIONS, pages 117 and 122.)

E. Ras Kateeb, a low rocky cape, bears S.S.W. ½ W., 11 m. from Burnt Island; and, at 7 m. further to S.W. is a rocky point at the foot of Jebel Meyt, a hill 1,200 ft. high; the tomb and town of Meyt lie 2 m. to the E. of this hill. The lofty range of mountains, Jebel Wursoongli (6,000 to 7,000 ft.) standing from 5 to 7 leagues from the sea-coast between Ras Antareh and Meyt, terminate in Pyramid Peak (6,170 ft.), about 5 leagues to the S. of Meyt tomb.

Meyt Tomb lies S.W. by S. 17 m. from Burnt Island, and soundings off it are very deep, within a mile of the shore 70 fathoms. Between it and Ras Ankor (Ungar) about 18 leagues, a deep bay is formed, called Gubet Rakoodeh; here the soundings extend off shore about 2 m.: Sugar-loaf Hill, 990 ft. high, is in lat. 10° 40′ N., lon. 46° 16′ E., and 6 m. to S. of Ras Ankor. Ankor (Ungar) Peak, 3,700 ft. above sea, stands 7 m. further to the S. From Ankor, the coast goes W. by N. to **Ras Khanzir,** 24 m., in lat. 10° 52′ N., 3 m. to S.W. of which is Karram. The coast then trends W.S.W. 32 m. to **W. Ras Kateeb,** a sandy point, 4½ m. to N. of Seyareh Peak; and 24 m. further to W.S.W. is Berbereh. The hills 2 leagues at the back of Ras Khanzir are nearly 1,800 ft. high; and, at 5 leagues to the E. of Berbereh, they are 2,600 ft. above sea.

Seyareh, a small village, 2 leagues to S.W. of W. Ras Kateeb, need only be noticed as the place whence, in the fair season, the wealthy Berbereh merchants obtain a supply of good water.

BERBEREH, in lat. 10° 26′ N., lon. 45° 1½′ E., or 47 leagues due S. of Aden Back Bay, is situated on a low sandy shore, which extends to the W. and N.W. as far as Zeyla, backed by a range of mountains. The small port or bay is formed by a hook of sand projecting to the W. a little more than a mile, affording shelter in from 6 to 9 fathoms. This place, although little known to Europeans, is frequented by trading vessels from the coast of Arabia and adjacent parts; but the natives ought not to be trusted. The English brig *Marianne*, belonging to Mauritius, was attacked by some of the Somauli tribes in 1825, when several of her crew were murdered, and the vessel plundered and burnt. The captain, mate, and other survivors escaped to trading dows which were at anchor near them, were carried to Mocha, and from thence to Madras. In 1855 Burton, Speke and Herne of the Indian Army, and Stroyan of the Indian Navy, were treacherously attacked in the night; all were severely wounded, the latter was killed. Since that sad event, the chiefs of adjacent tribes have been bound under a penalty to prevent such deeds. Caravans pass between this port and the interior of Abyssinia.

Berbereh Town is at the E. end or head of the harbour, and varies in dimensions and population with the season of the year. From Oct. to March, the trading season, the population amounts to 10,000 or 15,000 souls. The tribes from the interior begin assembling in Oct., and are continually arriving with caravans up to March, bringing their produce; ghee, ivory, myrrh, gums, coffee, cotton, &c. These things they exchange for cotton cloths, piece goods, shawls, copper-wire, zinc, &c. Trade is entirely in the hands of banyan merchants, who enter into agreements with the tribes for the following year's produce, for which their baghalah's or kotiehs will be ready in harbour as soon as it arrives. At the end of March the town and harbour are being deserted, the natives leave for the mountains, trading vessels have all departed by the first week of April, and nothing remains but the frame-works of houses piled on the sandy shore ready for next year, and bones of camels and sheep, which soon attract various beasts of prey. Lions are often seen at the town wells during hot weather.

The great drawback to Berbereh as a port, is the lack of good drinking water; the wealthy merchants obtain their supply from Seyareh. Nor is Berbereh readily made out from a distance: between April and Sept. there are no vessels there to mark the place; but, in the fair season, the numerous masts are visible over the low sandy point that forms the harbour.

Tides. H. W. on F. and C., at 7 h. 15 m.; rise and fall about 9 ft.

The Coast from Berbereh extends to the W. for about 13 leagues, or till near Jebel Elmas, which is 2,000 ft. high, within 7 m. of the shore; it then takes a N.W. direction for 25 leagues to Zeyla. From Berbereh to Karangarit, it has not been thoroughly examined.