

Shab Karangarit, the first (known) dangerous reef to N.W. by W. of Berbereh (from which it is distant 27 leagues), lies 2 m. off shore, in lat. $10^{\circ} 57' N.$, lon. $43^{\circ} 43' E.$; it bears E.S.E. nearly 2 leagues from the small boat harbour of Khor Karangarit. Above this place the coast is fronted by shoals at the distance of 2 to 10 m. from shore, the soundings outside of which appear to increase regularly from 7 or 8 fathoms to 20 and upwards, as far as sounded. Variation $4\frac{1}{2}^{\circ} W.$

ZEYLA, in lat. $11^{\circ} 22' N.$, lon. $43^{\circ} 30' E.$, a town of some importance, having a trade with Mocha and neighbouring parts, is situated on a low sandy point, between which and Saduldeen Island ($3\frac{1}{2}$ m. to N. of it) is the anchorage in 3 and 4 fathoms. To the N. of Saduldeen, $2\frac{1}{2}$ m., is another island, called Ivát or Erbaat; but these appear so surrounded with banks and shoals as to render navigation into Zeyla Bay very difficult. Anchorage for large ships at Zeyla is about 3 m. N.N.E. of the town and to the S.E. of Saduldeen Island, in $4\frac{1}{2}$ or 5 fathoms water. The rocky shoals of Sháb Filfil lie nearly 3 leagues to N.E. and E.N.E. of Zeyla Mosque. By night an entrance should not be attempted. On a clear day the reefs are visible from aloft. Approaching from the S., a vessel should not shoal under 20 fathoms, until the mosque bears S.W. $\frac{1}{4}$ S. The soundings here extend from the coast 4 to 5 leagues.

The Coast from Zeyla trends N.W. 25 m. to **Ras Jibooty**. This point and Ras-al-Ber form the entrance to a wide and deep inlet, which runs in a W. direction to the meridian of $42^{\circ} 33' E.$, gradually narrowing till it terminates in a very narrow opening to an extensive basin, called Gubet Kharab, having a depth of 105 fathoms in its centre: this basin appears to be surrounded by steep rocky cliffs. The entrance to the basin is 27 m. W. of Ras Jibooty, and the interval of coast between them formed of steep cliffs, except near Jibooty, where the shore is low and swampy. From Jibooty N.E. by N. 7 m. in the direction of Ras-al-Ber, is a small group called the Mushah Islands; they stand on the N. edge of Zeyla Bank, and divide the entrance of the Gulf of Tajoura into two channels, the one to N. of the islands being free from danger, and the water deep.

Mushah Islands, ceded to England by the Sultan of Tejooreh in 1840, stand about 7 m. to N.E. by N. of Ras Jibooty. They are surrounded by coral reefs, and dangerous to approach.

Tajoura, or Tejooreh Town stands on the N. shore of the inlet, in lat. $11^{\circ} 46' N.$, lon. $42^{\circ} 52' E.$; from whence the coast runs E.N.E. 32 m. to Ras-al-Ber. Tejooreh Harbour, merely a gap in the shore-reef, with 10 fathoms, but with swinging room for one vessel only, is (like Obokh) exposed to S.W. winds. It is under the Chief of the Danarkli tribe, who is called Sultan. (See page 125.)

Obokh, the French settlement, in lat. $11^{\circ} 58' N.$, lon. $43^{\circ} 14' E.$, is 2 or 3 leagues to the W. of Ras-al-Ber, and between reefs, which extend nearly half a league from shore. Anchorage is in a gap with a depth of 15 fathoms, at $\frac{1}{2}$ m. from the main land; protected from all winds except S.W., which come sometimes in gusts from the Gulf of Tejooreh, between May and Sept. Tejooreh, Ambáboo and Obokh are the only villages along the coast between Goubet Kharab and the Red Sea entrance. Scattered parties of the Danarkli tribe may sometimes be found, but they have no permanent villages; when pasture is scarce in the interior, they drive their flocks to the coast.

Ras-al-Ber is a low sandy point in lat. $11^{\circ} 57\frac{1}{2}' N.$, lon. $43^{\circ} 22\frac{1}{2}' E.$, from which the coast runs N. for 6 leagues to Jebel Jarn table-land; whence it runs N. by W. about $13\frac{1}{2}$ m. to Ras Sejarn, the S.W. entrance-point to the Red Sea. Off this cape, about E. by S., lies the group called Jeziret Sabah, or the Brothers; the outermost island being 7 m. from the cape. The shore between Jebel Jarn and Ras Sejarn is low but backed by hills, the soundings off it are regular.

THE COASTS OF AFRICA AND ARABIA TO ADEN. Ras-al-Ber is 40 m. due S. from Perim Light; the cape is low and sandy, difficult to distinguish at night; said to be deep-to, but not yet thoroughly sounded. High land stands back about 7 m. from the sea, mangrove bushes and brushwood on sand-hills occupy the intervening plain. Above Ras-al-Ber, the same low sandy coast stretches to the N. for 5 leagues; then high table-land cliffs for nearly 2 leagues off Jebel Jarn; above that about 4 leagues of low shingly and sandy shore to Ras Sejarn. The N.E., the highest island of the Brothers group, stands $7\frac{1}{2}$ m. due E. of Sejarn Cape, and $9\frac{1}{2}$ m. to the S. of Perim Island. Amongst the Brothers, the tides are rapid and irregular, affected by the prevailing winds and currents. (See *The Brothers*, at page 127, in Chapter 8.)

Ras Ahrar Shoals, about $3\frac{1}{2}$ m. off the S. point of Arabia, are 35 m. to the E. of the Brothers. A dangerous sand-bank lies 22 m. E. by N. from Ahrar shoals, and 4 m. off the shore near Ras Kau; this sand bank is 35 m. W. by S. of Aden.

SOUNDINGS IN GULF OF ADEN. Wherever the land is high close to the sea, the soundings are deepest; while the contrary is the case where the land is low and continues low for some distance inland. As a rule, then, the sea is shallow where the coast is low; and deep off high land. But the soundings off Ras-al-Ber show exception to this rule; off that cape, 30 fathoms is not found when a vessel approaches within $\frac{1}{2}$ m., but this coast needs further examination. Both

shores of the Gulf of Tejooroh are very deep-to, affording no anchorage. The **Zeyla Bank** of soundings, which begins from the Mushah islands on the N., and goes to as great a distance to the S. of Zeyla, extends more than 12 m. off the main; the depths increase gradually from the shore to 20 and 25 fathoms, muddy bottom; then comes a narrow ridge with 15 to 18 fathoms, close outside which no ground is obtainable at 40 and 50 fathoms.

Gubet Kharab, the deep basin at the W. extreme of the Gulf of Tejooreh, is 12 m. long and half as broad, with a rocky islet at the entrance about 40 ft. high, called Bab, or the Gate. The S. channel, not 2 cables broad, has shoal water $3\frac{1}{2}$ fathoms. The N. channel, only 50 yards wide, has not less than 17 fathoms. Tides rush rapidly through these channels, causing whirls and rippings which alarm a stranger. The centre of this bay, or Gubet, has 100 fathoms, and all around it the depths are too great for anchorage. At the W. extreme of the Gubet, there is a natural deep basin about 300 yards across, and with 16 fathoms water in it. The entrance is shallow, closed even for boats at L. W. by a rocky ridge. The water is always running from it, and the natives imagine that it comes underground from the salt lake, **Bahr Assal**, which is nearly $2\frac{1}{2}$ leagues to the N.W.; this lake is said to supply all Abyssinia with salt. The heat in Gubet Kharab is very great, the cliffs being so steep to the N. and the S., whilst the W. side is strewn with lava and volcanic remains; the thermometer in shade, during six days of Sept., ranged from 92° to 110° .

Further information about **Bab-el-Mandeb Straits and Aden** will be found in Section First, page 30, and again in Chapter 9.

WINDS AND WEATHER BETWEEN ZANZIBAR AND ADEN.

ZANZIBAR. The disastrous hurricane of April, 1872, at this port—hitherto, so far as known, exempt from such fearful visitations—claims precedence in our notice of the winds and weather between Zanzibar and the Red Sea. That harbour has many outlying shoals and islets which serve to shelter the anchorage; but the great breadth of the channel between the island and the main land of Africa—nowhere less than 16 m., and generally exceeding 25 m. in width—explains how a heavy swell could arise in a violent storm, such as even Bombay has been subject to, at the change of monsoons. So terrible a disaster may induce His Highness, the Sultan of Zanzibar, to introduce European ideas as to harbour conservancy, berthing of ships, storm signals, and such like precautionary measures. Mariners should also be reminded that similar hurricanes have occurred at Mozambique; one on April 1st and 2nd, 1858, did great damage, and wrecked 7 out of 10 vessels then in port.

Prevailing Winds at Zanzibar, for nearly 9 months of the year, range between the S. and the E.; during the other 3 months, from mid-Dec. to mid-March, the wind blows from the N.E., with considerable force in Jan. and Feb. At the change of monsoon, about end of March or early in April, heavy squalls blow from the S.W. and W., accompanied with heavy rain. The hurricane of April 15th, 1872, warns all ship-masters to expect at this season, and to be prepared for a similar storm. There are two rainy seasons at Zanzibar; the heaviest in March, April and May, and the lesser in Sept. and Oct. The hottest months are Jan., Feb. and March (the N.E. monsoon); the coolest are July, Aug. and Sept., when the cool waters of the S. Indian Ocean are propelled by the S.E. trade-wind between the Seychelles and Madagascar.

Sailing-Vessels making Zanzibar during the entire S.W. monsoon should make for Latham Island, as the N. current is so strong. **When leaving**, they should go out by the N. channel. In the N.E. monsoon, the S. channel should be adopted for leaving.

SOCOTRA ISLAND is situated only a short distance from the continents of Africa and Arabia; yet, from both monsoons blowing over a vast expanse of ocean, it enjoys, at least as compared with them, a remarkably temperate and cool climate. The mean daily temperature on the plain, from mid-Jan. to mid-March in 1834, was $70\frac{1}{2}^{\circ}$ Fah. In the S.W. monsoon, from June 1st to July 13th the thermometer ranged from 80° to 95° . On the mountains it is of course much cooler. It appears that frequent and heavy rains are experienced on the Island even as early as March, and during the S.W. monsoon the fall is very great, rendering the climate moist, but not unhealthy.

Anchorage. Socotra has no ports in which a vessel can ride in safety, protected from all winds. The island is so placed that only on opposite sides are vessels perfectly safe during the prevailing monsoon. There are, however, several bays and anchorages, which, with E. and E.N.E. winds, afford good shelter. Amongst these are Gubet Koormeh, Gollonseer, Gubet Sharb, Bunder Ney, Bunder R'dresseh and Bunder Fikeh; also Tamareed, when the wind is E., and if anchored close in shore. During N.E. winds, Gubet Koormeh, Gubet Gollonseer, Bunder Sharb, Bunder Ney and Bunder R'dresseh afford tolerable shelter; which may also be found close in shore on the

S. side of the Island. In N.N.E. winds, Gubet Sharb is the only bay where shelter may be found on the N. side of the Island, all others being a dead lee shore. At Bunder Ney, and close in on the S. side, the anchorage is good.

The natives report that the only good anchorage in the S.W. monsoon is at Bunder Deleeshi; by this is meant where a vessel would feel neither wind nor sea, the water being perfectly smooth, almost without a ripple, and where several vessels have ridden out the monsoon. A vessel might be sheltered from the sea in all bays between Ras Kadarmeh and the W. extreme of the Island; these are Koormeh, Kadhoop, Tamareed, Deleeshi, Gurrieh and Fikeh; but would experience violent gusts of wind from the mountains and valleys. Good ground tackle would be necessary, the anchorage being on a narrow bank, and the soundings quickly deepening to the N.

Winds. From Nov. to Jan. the prevailing wind is N.N.E., the most dangerous on the N. side of the Island, blowing in violent gusts for several days at a time, rendering it almost impossible for anchors to hold, the bottom being very indifferent as anchoring ground. During these months great quantities of rain fall; but this is not the case every year, as a drought has been frequently experienced on the Island. From Feb. to May is the fine-weather season, when the anchorages on the N. coast are considered safe. In April the trading-boats from India frequently put into Bunder Fikeh for water.

In June, July and Aug., the natives say it blows incessantly in hard and violent gusts on the N. coast; but on the low land of Naukad the wind is more steady and less violent, with, however, a tremendous sea and surf. In these months rain falls in showers, but not equal in quantity to that which falls during the squalls of Nov., Dec. and Jan. In Sept., Oct., and part of Nov., light land and sea-breezes are experienced, towards the latter part becoming more steady from the N.

GULF OF ADEN.—The S.W. Monsoon commences in the Arabian Sea, about the middle or end of April, and continues to the end of Sept., liable to a variation of from 10 to 15 days, being sometimes earlier, sometimes later, but is not felt in full force until May or even June; it continues in force during the months of June, July and Aug., blowing stronger and steadier, and accompanied by a swell which is very heavy in the open sea about 100 m. to the E. and S.E. of Hafoon, and at the same distance to the S. and the S.E. of Socotra.

On the E. coast of Africa the wind blows very strong from the S.S.W., and continues with full force from that quarter through the channel between the island of Socotra and Cape Guardafui, and thence more from S. and from S.S.E. across the Gulf of Aden to Ras Rehmat (which signifies in Arabic, the Cape of Wind's Death, where the sand is blown far up the face of the hills when gusts of wind occur there), a cape to S.W. of Makalleh. On this line a vessel generally enters the monsoon when proceeding from the Red Sea to the E.

Within the Gulf of Aden—that is, between the meridians of Guardafui and Bab-el-Mandeb—the winds, during the season, are very variable; as a general rule, they are freshest by day and lightest by night. In April and May they vary from E.N.E. to S.E. and S. with clear weather, but hazy weather is sometimes experienced; close in-shore land-winds are occasionally felt from 4 h. to 8 h. a.m. June is a very unsettled month, the wind uncertain; weather at times clear, but generally hazy; in the morning it is either calm, or there are very light airs, which sometimes increase towards noon to a fresh breeze from the S., occasioning a long swell on the Arabian coast. Towards the middle of the month, and in July and Aug., between Burnt Island and Bab-el-Mandeb, strong W. and S.W. winds may be expected, blowing as N.W. winds through the Straits with violence, and sometimes enabling a vessel bound to India to reach the monsoon; but as a general rule a vessel will lose the wind before reaching Ras Rehmat, and will not fall in with it again until it bursts from the S. through the channel between Socotra and the main land of Africa.

Vessels on the Arabian coast, between Aden and the Straits, in the months of June, July and Aug., will often experience thick hazy weather; if the wind is from N.W., fresh gusts of winds may be looked for, especially in-shore; and sometimes the wind will change quite suddenly, and blow fresh from the S. During these months it is very necessary to have good sails bent, and care should be taken to be on the bank of soundings at the turn of tide, to enable a vessel to anchor in shallow water, should it fall calm, or the current be too strong for her. On the African coast it is equally necessary to have good sails bent, as the gusts from the shore are, at times, very violent. Moderate S. winds may also be expected on the Arabian coast during these months, blowing only during the day, declining into a light air at night. In the evening, after the S. wind dies away, severe land squalls are not unfrequent along the Aden coast, which, rising in a thick cloud of dust, give ample warning to the seaman. There is always a long S. swell on the Hadramaut coast at this season.

Near the coast of Africa, from Ras Feelook to the W., at this season, heavy land squalls are experienced from about S.S.W., and generally come off between midnight and daybreak, lasting

about an hour, frequently followed by a calm, and as frequently by a W. or W.S.W. breeze. These land-winds are always parching hot, and very disagreeable. In Sept. the W. winds cease, and land and sea-breezes prevail, as also in the month of Oct. The nights are calm and sultry.

The atmosphere in the S.W. monsoon is generally very hazy, and the land consequently not visible till very close, rendering it necessary to pay great attention to the lead. On making the coast at the N.E. point of Africa during the S.W. monsoon, the best signs of being near the land are the gradual change in the colour of the water from blue to dark green, and the alteration in the direction of the swell, caused by the prominent Cape Ras Hafoon.

The N.E. Monsoon commences in the Arabian Sea, about mid-Oct., and prevails during Nov., Dec., Jan. and Feb., after which the winds become light and variable, until the setting in of the other monsoon. It blows a steady moderate breeze from the N.E., in the open sea, with fine settled clear weather, and a smooth sea; but within the limits of the Gulf of Aden, the wind is very variable. There the N.E. monsoon commences early in Nov., the prevailing winds being E. and E.N.E., blowing fresh at F. and C. of the moon. At the end of Dec., or early in Jan., it frequently blows a moderate gale with heavy rain. In Jan., Feb. and March, E. and E.N.E. winds are common, increasing in strength towards the Straits of Bab-el-Mandeb, beyond which they blow up the Red Sea as S.E. and S. winds. The weather is generally clear and pleasant; thermometer ranging from 68° to 80° Fah. Rain may sometimes fall, but not in any great quantity at sea: although, against the face of the African mountains, a considerable precipitation often occurs, and is carried off by numerous water-courses into the sea. These three months are the principal for trade.

The Temperature of the atmosphere in the Gulf of Aden varies with prevailing winds; the following is the average range of the thermometer throughout the year.

Jan. Feb. and March.—Weather generally clear. Ther. ranges 68° to 80° Fah.

April.—The weather becomes warmer. Ther. 80° to 86°.

May.—Owing to light winds and calms, it is frequently very hot. Ther. 84° to 95°.

June.—During a W. wind, temperature is much lower, and the change on leaving the Red Sea surprising. In July and Aug.—Ther. ranges 80° to 87°. The coolness of these months is much owing to the low temperature of the sea-water propelled by the S.E. trade from the S. ocean.

Sept.—Again warm, owing to cessation of W. winds. Ther. ranges 84° to 96°.

Oct.—Towards the end of this month the nights become cooler, and at sunrise the thermometer will sometimes stand as low as 78°.

Nov. and Dec.—From commencement of Nov. the weather gradually becomes cooler as the N.E. monsoon increases. Ther. ranging between 76° and 84°.

During the S.W. monsoon, on the African coast the heat is insufferable, especially when a land-wind is blowing, at which time the thermometer will sometimes rise to 110° Fah. The natives always leave the coast at this season for the mountains to escape the heat, and there is consequently a total cessation of all trade.

Gales. No gales of any strength are likely to be experienced in the Gulf of Aden, beyond those mentioned in the remarks on the monsoons.

The Sea on these coasts is remarkable for its occasional peculiar brilliancy at night; without any warning it will become suddenly illuminated, as if on fire, causing alarm to any one unacquainted with the phenomenon, by giving the idea that his vessel is amongst breakers; but, on casting the lead, the deception becomes apparent. It occurs in the open sea as well as near land and whether calm or with a breeze blowing.

POPULATION AND TRADE—SOCOTRA AND SOMAULI COAST.

SOCOTRA ISLAND is under the government of the Sultan of Kesheen, on the Arabian coast, but his rule is merely nominal. A relative of his makes an annual visit for the purpose of collecting revenue, which in 1833 barely exceeded in value 200 dollars. There does not appear to be any constituted authority, either civil, military, or of any description whatever; nor is there distinction of rank: all are respectable in proportion to their wealth in flocks and herds. Notwithstanding the singular anomaly of so great a number of people residing together without chiefs or laws, offences against the good order of society are uncommon; theft, murder, and other crimes are almost unknown. The people possess no maritime enterprise, consequently have no trading boats, but they do not appear averse to commercial pursuits. In commercial transactions amongst themselves, money is rarely or ever used, and certain quantities of ghee are substituted. Dollars or rupees are demanded of strangers visiting the ports. All silver obtained in exchange for articles supplied by them is

made into ornaments for their women. They have no mechanics on the Island, nor is there any timber fit for ship-building purposes, so that a vessel in distress requiring repairs could receive no assistance from them.

The inhabitants of the Island may be divided into two classes—the Bedouins, or those who inhabit the mountains, and the high land near the W. extremity of the Island, and who, there is every reason to believe, are the aborigines; and those who reside in Tamareed, Kadhoop, Gollonseer, and the E. end of the Island, a mongrel race, descendants of Arabs, African slaves, Portuguese, and several other nations. The whole population of the Island amounted in 1833 to about 4,000. There is a language peculiar to the Island, which is in general use by those who have permanently settled there; but Arabic is spoken by the merchants when transacting business with traders who visit the Island in their baghalahs. The Bedouins from the Arabian coast are sometimes able to make themselves well understood by the Bedouins of Socotra, but the Arabs from Muskat are quite unable to do so. The dialect of the Island is not now a written language, although it appears to have been so once.

Early History of Socotra. The talented Colonel Henry Yule, of the Bengal Engineers, has given most interesting information in "The Travels of Marco Polo," about **Scotra**, as the famous Venetian wrote it. In the Colonel's Notes, we have the benefit of his researches amongst the writings of old authors. Of this island, he says:—

"So much painful interest attaches to the history of a people once Christian, but now degenerated almost to savagery, that some detail may be permitted on this subject. The 'Periplus' calls the island very large, but desolate; . . . the inhabitants were few, and dwelt on the N. side. They were of foreign origin, being a mixture of Arabs, Indians, and Greeks, who had come thither in search of gain. . . . The island was under the King of the Incense Country. . . . Traders came from *Muza*, and sometimes from *Limyrica* and *Barygara* (Canara and Guzerat), bringing rice, wheat, and Indian muslins, with female slaves, which had a ready sale. Cosmas (6th century) says there was in the island a bishop, appointed from Persia. The inhabitants spoke Greek, having been originally settled there by the Ptolemies. . . . The Arab voyagers of the 9th century say that the island was colonised with Greeks by Alexander the Great, in order to promote the culture of the Socotrine aloes. . . . The colonising by Alexander is doubtless a fable, but invented to account for facts."

Marco Polo says of *Scotra*, "The people are all baptized Christians; and they have an archbishop. . . . There is a great deal of trade there, for many ships come from all quarters with goods to sell to the natives. The merchants also purchase gold there, by which they make a great profit; and all the vessels bound for Aden touch at this island." . . . "Abulfeda says, the people of Socotra were Nestorian Christians and pirates. Nicolo Conti, in the first half of the 15th century, spent two months on the island (*Sechutera*). He says it was for the most part inhabited by Nestorian Christians. When Francis Xavier visited the island, there were still distinct traces of the Church. The people revered the cross, placing it on their altars, and hanging it round their necks. . . . No man could read. The Kashees (Presbyters) repeated prayers in a forgotten tongue. . . . The last vestiges of Christianity in Socotra, so far as we know, are those traced by P. Vincenzo, the Carmelite, who visited the island in the middle of the 17th century. The people still retained a profession of Christianity, but without any knowledge, and with a strange jumble of rites; sacrificing to the moon; circumcising; abominating wine and pork. They had churches which they called *Moquame* (Arabic, *Makám*), dark, low, and dirty, daily anointed with butter. On the altar was a cross and a candle. The cross was regarded with ignorant reverence, and carried in processions."

"Now, not a trace of former Christianity can be discovered. . . . The remains of one building, traditionally a place of worship, were shown to Wellstead; he could find nothing to connect it with Christianity."

The Productions of most importance are the *aloe spicata*, called in the language of the Island *tayef*, and by Arabs *soobah*; and the dragon's-blood-tree. The Island has been famous for the first-named plant from the earliest period; it grows spontaneously on the sides and summits of limestone mountains, at an elevation of 500 to 3,000 ft. above the level of the plains. In 1833 the best kind sold for one rupee the Bengal seer (about 2 pounds English), or one dollar for four seers of the more indifferent. The Socotrine aloe should be the purest in the world; but, owing to the careless manner in which it is gathered and packed, it contracts many impurities, and its value becomes proportionately deteriorated. The quantity exported varies very much; in 1833 it amounted to 83 skins, or about 2 tons. Much more might be procured, the hills on the W. side of the Island being thickly covered with plants for an extent of miles; but, owing to the indolence of the inhabitants, it is only collected when the arrival of a ship or baghalah creates a demand.

Next in importance to the aloe comes the dragon's-blood tree (*pterocarpus draco*), the gum from which (*sanguis draconis*) is collected at all seasons. Like the aloe it is usually met with on the hills, rarely at a less elevation than 800 ft., and frequently as much as 2,000 ft. above the level of the sea. The gum exudes spontaneously from the tree, and it does not appear usual, on any occasion, to make incisions in order to procure it. The price of the best is, at Muskat from 6 to 8 rupees the Bengal seer; not above one-tenth of the quantity which might be procured is collected; as with the aloe, this appears consequent on there being no regular demand. Dragon's blood is called by the Arabs *dum kholid*, and *edah* by Socotrians. A light-coloured gum is also procured from a tree called, in the language of the Island, *amara*, which is slightly odoriferous, but inferior to the *luban* of the Arabian coast.

The wood of a tree named *metayne*, or *malarah*, which abounds in every part of the Island, is so hard as to answer the same purposes as *lignum vitæ*, for sheaves of blocks, splicing fids, &c.

The only grain cultivated on the Island is a species of millet called *dakhan*; this is preferred to any other, because requiring little attendance, and producing a crop at any season. No *dakhan* is grown on the W. side of the Island; but on the E., the enclosures amidst the valleys are numerous. It is to date groves, next to flocks, that the inhabitants look for their principal means of support; though, with the exception of a small one at Gollonseer and another on the W. side of the granite peaks, these are confined to the E. portion of the Island. Here the borders of numerous streams are lined with them; but notwithstanding the large quantities collected from the whole of these groves, the supply is not sufficient for the consumption of the inhabitants, and a large import takes place annually from Muskat. In the vicinity of Tamareed are some enclosures of beans, and a little tobacco is grown, sufficient for the inhabitants.

Vast flocks of sheep and goats are found on every part of the Island; the latter are, indeed, so numerous that the owners keep no account of them. Oxen are very numerous near Tamareed, and on the mountains in its vicinity. Cows are kept mostly for their milk, from which the ghee, so much esteemed in Africa and Arabia is made; the natives are not, therefore, solicitous to part with them, and the prices they demand are proportionately high. There are a great number of asses in the Island, permitted to stray where they please; camels having superseded them as beasts of burden.

The only wild animals known among the hills are civet cats, which are very numerous. Antelopes, hyenas, jackals, dogs, monkeys, and other animals which are common to the shores of either continent, are unknown here. On the lowlands, scorpions, centipedes, and a large and venomous description of spider, called *nargub* by Arabs, are common. Ants are very numerous, and the bite of one kind is scarcely less painful than the sting of a wasp. On the hills rats and other vermin are common. The chameleon is a native of the Island.

SOMALI COAST PEOPLE. From Ras-al-Khyle on the E. coast to Zeyla, the country is known by the name of Bar-e-Somal, and it is divided between two great nations; who, both tracing their origin from the Arab province of Hadramaut, are yet at bitter and endless feud with each other. The principal of these two great families is that to the E. of Burnt Island. The other extends from Burnt Island, or Bunder Jedeed, to the Essah tribe, who reside in the neighbourhood of Zeyla, and is divided into three great tribes, namely, the Haber Gerhajis, the Haber Awal and the Haber-al-Jahleh (Haber meaning *the sons of*), who were the children of one Isaakh, who crossed from Hadramaut some time after his countrymen had founded the nation to the E., and who settled at the town of Meyt, near Burnt Island, where his tomb exists to this day. The eldest branch, the Haber Gerhajis, was put in possession of the frontier mountains to the S.; and the other two brothers were placed on either side of them; the Haber Awal establishing themselves on the lowlands from Berbereh to Zeyla, and the Haber-al-Jahleh locating themselves at Karram. Enterad, Ankor and Hais, four small ports to the E. of Berbereh. To the E. of Meyt, as far as Bunder Ziadeh, are the warlike tribe of the Wursoongli (which name means *has brought good news*); and thence to the E., round Ras Jered Hafoon, and down to Ras-al-Khyle, the country belongs to numerous clans of the Mijjertheyn. These are the tribes on the coast. Although at constant war amongst themselves, they are friendly and obliging to strangers.

From Ras-al-Khyle to Berbereh, the Wadi Nogal extends in almost a straight line between two ranges of mountains. The *happy valley* is spoken of in most glowing terms by the natives, and apparently forms their great road for trade; the people of Ogahden, Murreyhan, &c., bring all their gums, ivory and ghee along this valley, as being the safest and least fatiguing route; and the people are described as a peaceful race, who subsist chiefly by the chase, and by their sale of ostrich feathers, myrrh and ghee.

Productions. In a commercial point of view, the Mijjertheyn and Wursoongli territories are most valuable, and a vessel of 300 or 400 tons might with ease procure a cargo of gum arabic,

luban and myrrh, at any of the ports belonging to these tribes. Arrangements should be made with the merchants on the coast before the commencement of foal weather—say the month of April—to have a cargo ready by the end of August; the coast is then approachable, and the gums could be shipped off at Bunder Marayeh, Bunder Khor, Bunder Ziadeh or Bunder Ghasim, with but little delay. The name of an Englishman is much respected by the natives, who make a marked difference between them and any other nation. Promises of all kinds were made to Captain Cruttenden, of the Indian Navy—who was much amongst them, and from whose memoirs these remarks are taken—that they would give every facility to the English merchant who should bring his wares to them, and could thus afford to sell them cheaper; and one or two offered to guarantee a certain supply annually, if arrangements were made in time. It would be useless, however, to send out a vessel without some person who understood the character of the people, and who could converse in Arabic with them, without the aid of an interpreter.

To the W. of the Mijjertheyn the Wursoongli range, 4,000 ft. high, affords an inexhaustible supply of frankincense, though but little gum arabic, and no myrrh. The climate in these mountains is described as most invigorating, and the country abounds in large game, the lion being very common in those parts.

Westward of the Wursoongli, gum trees become scarce; and though there are some parts having considerable trade throughout the year, all their gums are brought from the Dalbahanti and Ogahden tribes. Sheep form the chief exports from Karraam and to the W.; the countless flocks that are driven down almost daily, and shipped off for the Arabian coast, almost exceed belief. Berbereh is of course the greatest mart at one season of the year, as all the tribes collect there; but an English vessel would do little when placed in competition with the Banyans, whose cargoes are, generally speaking, engaged the season before. It is not therefore advisable for a vessel to go to Berbereh to trade, but endeavour to be off the E. ports as soon as the season opens; the gums are then all packed in readiness for shipment, and very trifling delay would occur. To the W., there are no trading ports between Berbereh and Zeyla, at which latter place a vessel would doubtless obtain a valuable cargo of coffee and mules, but probably much time would be lost. But a small quantity of gum is brought into Zeyla; coffee, dye and ghee, with ivory in small quantities, and ostrich feathers, form the articles of export. The average quantity of gums, exported annually from the Somaui coast, may be estimated at 1,500 tons; though occasionally, after a good season, the Mijjertheyn tribe alone probably export nearly that quantity. The trading season on the coast is from the early part of Oct. to the end of March.

Harrar City, in the province of that name, though hardly in the Somaui country, is closely connected with it by commerce, especially by its slave trade. It is eight days' journey for a kafilah of camels from Zeyla and nine days from Berbereh, placing it in about lat. $9^{\circ} 22' N.$, lon. $42^{\circ} 35' E.$ The city is described as larger than Mocha, and situated in a fertile country, but fast decaying. The coffee districts are described as lying amongst a low range of mountains near Harrar, and to the S. The quantity exported is very large, and the quality fully equal to that commonly sold at Mocha. Besides coffee, Harrar exports white cotton cloths, the cotton of which they are made is grown at Harrar; a few silk loongis are also manufactured: cardamoms, gum mastic, myrrh, a small quantity of manna, saffron and safflower, with the articles above mentioned, comprise the extent of Harrar trade, so far as regards produce; but the most valuable branch of commerce is the export of slaves. The duties levied at Harrar are 10 per cent. on import and export, and a further tax of 6 pounds of brass or $2\frac{1}{2}$ dollars is laid on slaves of both sexes.

In the country of the Haber Gerhajis, the principal articles of trade or produce are ghee, myrrh in small quantities and of inferior quality, luban of the first quality, ivory, ostrich feathers, and gum arabic, with a small quantity of *sheima*, or orchilla weed, and a still smaller supply of *warus*, a kind of saffron, used by natives in Yemen to rub over their bodies.

Ras Hafoon, or the Surrounded, is a peninsula or prominent headland, nearly square, of from 400 to 600 ft. in height, rising in steep cliffs from the sea, and formed of sandstone and limestone. The outer edge of the peninsula is perfectly flat and tabular; the interior consists of undulating hills, deeply intersected by ravines and the courses of mountain torrents. It is connected with the main land by a long narrow neck of white sand, shells and mud, with a few stunted bushes thinly scattered along it, and from its being almost an island (probably it was one many centuries ago) it takes its name of Hafoon. On either side of the narrow neck of sand, is formed a deep bay with good anchorage, according to the season. The S. bay is of course best adapted for ships during the N.E. monsoon, but a change of two or three points in the direction of the wind causes a swell to roll in, and a surf to break on the beach. The bay is much frequented by shark fishers from the Arabian coast, many of whom reside here throughout the year, merely moving their fishing boats to the other side of the isthmus as the monsoon changes. The peninsula is in the Mijjertheyn

territory, and tenanted by the Aial Fatha branch of the Othman family; there are only a few miserable huts, and a population of probably 50 persons; they are friendly to strangers, and may be trusted. The water in the wells is bad. Cattle and firewood are procurable.

On the N. side of the isthmus of Hafoon is an extensive harbour, called Khor Hardeah, $2\frac{1}{2}$ m. wide at its entrance, and extending 12 m. into the coast. As an anchorage it is only available for boats, the depth of water inside being only 1 to $1\frac{1}{2}$ fathoms. This is probably the most unhealthy spot on the Somaui coast; its shores and the bottom of the bay are covered with decomposed vegetable matter, which on being disturbed gives forth a noxious gas that is perfectly sickening: yet there are many fishermen living on the sea-shore, who from long habit have become accustomed to the exhalations. There is no fresh water in the bay, but it is said by the natives that at the bottom of the bay, at a place called Khor Hashera, there is a stream of fresh water running into the sea. It is possible that the river mentioned in old writers as existing in the neighbourhood of Hafoon, may be this stream, and Khor Hashera the ancient Opone.

During the S.W. monsoon, a kind of fair similar to that at Berbereh, though smaller, is annually observed at Khor Hardeah. The merchants from Makalleh, Shehr, and from the Mijjertheyn bunders to the N. and the W., attend this meeting at the end of May, when their baghalahs are hauled up on the beach; and a brisk trade is carried on throughout the S.W. monsoon in gums, ostrich feathers, hides, ivory and ghee; large quantities of ambergris are also brought for sale, and the price demanded is very great. Elephant hunting is followed by those who have guns. A good trade might be carried on between Mauritius and Hafoon, and asses; these might be procured at Hafoon in great numbers for five or six dollars each, and the voyage being so short in the N.E. monsoon, would probably afford a good speculation.

Bunder Marayeh is the principal town on the coast, about 50 m. to the W. of Cape Guardafui; it is situated close to the beach, 7 m. to the S. of Bunder Feelook, and is defended by five forts. Here is a large trade in gums, which at present lies entirely in the hands of Banyan traders, but it is open to the English, there being every desire on the part of natives to have commercial dealings with them. It is only necessary to make arrangements with the merchants at the commencement of the foul weather, to have a cargo ready as soon as the coast is approachable, towards the latter end of August.

The anchorage off the town is good, in from 5 to 10 fathoms water, the soundings increasing gradually to 20 fathoms at $1\frac{1}{2}$ m. distance from the shore, after which they become irregular with over-falls; the edge of the bank lies 5 m. from shore. To the N. of the town is a mangrove swamp, and the bed of a water-course, which extends in the direction of the mountains. Good water may be obtained from a well 2 m. inland; bullocks, sheep and firewood in abundance.

Bunder Khor, about 35 m. to W. of Marayeh, has a considerable trade in gums, &c.; which, as at the latter place, might be made available for English vessels, but is at present enjoyed by Banyan traders. Here, as at all the towns on the coast, sheep, firewood and water are to be procured.

Bunder Ghasim, a town and anchorage $7\frac{1}{2}$ m. to the W. of Ras-al-Hamr, consists of about 100 huts and five forts. It is the principal town of the Mijjertheyn Somaui, and has a large trade in gums, &c. Off the town is a coral bank, dry at L. W., extending $\frac{1}{2}$ m. from the shore, outside of which is moderately good anchorage in from 6 to 8 fathoms water, over a sandy bottom, but not protected, being an open roadstead. One mile and a half to the W. of the town is the bed of a broad stream, which after heavy rains discharges a large quantity of water into the sea. There are wells in all the forts, from which good water may be obtained; sheep and firewood are procurable.

Bunder Ziadeh, a small town and fort, 12 m. W. of Bunder Ghasim, is the termination of the Mijjertheyn territory. The Wursoongli tribe, who inhabit the coast from Bunder Ziadeh to Bunder Jedeed, are divided into several clans; a powerful and warlike people. Brothers by the same mother of the Mijjertheyn, they generally coalesce should war break out; but petty feuds and plunder are of frequent occurrence. It is worthy of remark, that in this tribe theft is looked upon with abhorrence, though doubtless in the event of a wreck they would consider it fair to plunder. Their country may be described as a plateau of limestone mountains, precipitous to the N., and gradually sloping to the S. Between the mountains and the sea, undulating ranges occur, intersected by ravines and thickly wooded; whilst the belt of level ground near the sea is thinly sprinkled with bushes, exhibiting a plain of white sand.

Frankincense, myrrh, *sumuk* or gum arabic, *sheneh* (orchil), and ghee form the export of this tribe; and a peculiar kind of gum, called *felleh felleh*, which is imported into Aden in large quantities from the coast.

Ras Goree is a low sandy point, $7\frac{1}{2}$ m. W.S.W. of Bunder Gahm, on which are several small

sand hills, and a khor or lagoon of brackish water, which is little more than a swamp. On the W. side of the point is situated the principal town of the Wursoongli tribe, called Bunder Goree, consisting of three forts and two large villages. Here is a large trade in gums. Anchorage off the town is bad, the bottom being rocky, and soundings very irregular; the best berth would probably be found N.E. of the town, in 7 to 10 fathoms, $\frac{3}{4}$ m. from the shore. Cattle, water and firewood are procurable at the town.

Bunder Jedeed, a small village $6\frac{1}{2}$ m. to W. of Ras Suereh, close to the beach, is the boundary of the Wursoongli territory. The inhabitants are not always inclined to be civil to strangers.

Meyt or Burnt Island is a barren rock, elevated 430 ft. above the sea, perfectly white, being covered with guano, which is collected and carried in native boats to the Shehr and Makalleh markets. It is situated $5\frac{1}{2}$ m. from Ras Hambais, the nearest point on the main land. Jebel Meyt, a hill 1,200 ft. high, stands on the coast about 5 leagues to S.W. of the Island.

Mention was formerly made in Horsburgh's "Directory" of a *spring of water* existing on the S. side of the Island, near the centre; this however appears to be an error, as no water is found except after rain, which, lodging in pools on the summit of the rock percolates through, and finds exit close to the water's edge. The face of the rock on the S. side of the Island is frequently moist, and bears the appearance of rain having filtered through its crevices. On that S. side there is a remarkable cove or natural dock, capable of admitting a ship of 300 tons, by clenching the ends of a cable through holes in the rock: the remains of two clenches of cables were found affixed to the rock in 1801. In Oct. 1844, the remains of a hempen cable were found, which had been apparently rove through a hole in the rock.

Sailing Directions. Vessels bound to Aden or the Red Sea during the S.W. monsoon, should keep along the Somaali coast until off Meyt Island, when they should stretch off from it for the Arabian coast.—(See **Meyt**, at page 114.)

MEYT. Two m. to the E. of Jebel Meyt is the town and tomb of Meyt or Meyet, the burial-place of the founder of the Edoor nation, and their present E. limit. It is situated on a small plain, bounded in the S. and S.W. by the W. extreme of the lofty mountains Al Wursoongli, which here approach within two hours' journey of the sea. From Meyt a large quantity of white ebony is exported, also a long and thin rafter used both at Aden and on the coast in the construction of native houses. The hills immediately over the town afford a large supply of very fine gums, and the place carries on a considerable trade with Aden and Makalleh. The stranger is at once struck with the magnitude of the burial-ground at Meyt, which extends for fully a mile each way. Attachment to the memory of their forefather, Isaakh, yet induces many aged men of the W. tribes to pass the close of their lives at Meyt, in order that their tombs may be found near that of their chief; and this will account for the unusual size of this cemetery. Many of the graves have head-stones of madreporal coral, on which is cut in relief the name of the tenant below; of these many are to be found 250 years old.

BERBEREH HARBOUR, the only sheltered one on the coast, lies in a direction E.N.E. and W.S.W., and is formed by a curve in the coast line. The town of Berberah is situated at the head of the harbour, and varies in dimensions and population according to the season of the year. From Oct. to March, or the trading season, the population amounts to 10,000 or 15,000 souls. The tribes from the interior commence to assemble in Oct., and are constantly arriving as late as March, bringing with them the produce of the country, which consists of ghee, ivory, myrrh, gums, coffee, cotton, &c.; these are exchanged for cotton cloths, piece goods, shawls, copper wire, zinc, &c. The trade is entirely in the hands of Banyan merchants, who enter into agreements with the tribes for the produce of the following year, and have their baghalahs ready in the harbour to receive it as soon as it arrives. At the end of March the town and harbour are entirely deserted, the natives leave for the mountains, carrying with them their hides and mats of which their houses were formed, and nothing remains but the skeleton frames, giving the place a most dreary appearance.

The annual fair, which commences in Oct. and lasts till the end of March, is one of the most interesting sights on the coast. As soon as the season changes the inland tribes commence moving down towards the coast, and prepare their huts for the expected visitors. Small craft from the ports of Yemen (anxious to have an opportunity of purchasing before vessels from the Persian Gulf arrive) hasten across, followed about a fortnight to three weeks later by large vessels from Muskat, Soor and Ras-al Khaimah, and the valuably freighted baghalahs from Bahrein, Bussorah, and Koweit; lastly, the fat and wealthy Banyan traders from Por-bunder, Mandavee and Bombay, come across in their clumsy kotiehs, and elbow themselves into a prominent position in the front tier of vessels in the harbour, and by their superior capital, cunning and influence, soon distance all competitors.

During the height of the fair, Berbereh is a perfect Babel in confusion, as in languages; no chief is acknowledged, and the customs of bygone years are the laws of the place. Disputes between inland tribes daily arise, and are settled by the spear and dagger, the combatants retiring to the beach at a short distance from the town, in order that they may not disturb the trade. Long strings of camels are arriving and departing day and night, escorted generally by women alone until at a distance from the town; or an occasional group of dusky and travel-worn children marks the arrival of the slave kafilah from Harrar and Efaht.

By the end of March the fair is nearly at a close, and craft of all kinds, deeply laden, and sailing generally in parties of three or four, commence their homeward journey. The boats of Soor are generally the last to leave; and, by the first week in April, Berbereh is again deserted; nothing being left to mark the site of a town, lately containing perhaps 20,000 inhabitants, beyond the bones of slaughtered camels and sheep, and the frame-work of a few huts carefully piled on the beach in readiness for the ensuing year. Beasts of prey now take the opportunity to approach the sea: lions are commonly seen at the town wells during the hot weather; and in April, 1847, but a week after the fair had ended, three ostriches were observed quietly walking on the beach.

The great drawback to Berbereh, as a port, is the scarcity of good water, that in the two wells belonging to the town being brackish; the wealthier portion of the merchants therefore send to Seyareh for a supply. Remains of an ancient aqueduct and reservoir are still to be seen; the latter is about $\frac{1}{2}$ m. from the beach, and the former 9 m. in length, in the direction of the nearest range of hills, named Dthubar.

There is an extensive burial-ground with the remains of a mosque in the vicinity of Berbereh; the ground is strewn with human skulls and bones. The natives report that at one time a large town existed here. That Berbereh has existed as a port of great trade for several centuries, is almost sufficiently proved by the fact of its being an annual rendezvous for so many nations, and from the time of this great meeting having been chosen so as to suit the set of the Red Sea and Indian monsoons. But beyond the aqueduct mentioned above, it exhibits no proof of antiquity.

The Haber Awal branch of the Edoor tribe occupy the lowlands between Berbereh and Karangarit, near Zeyla, a fertile tract of country, with several low ranges of hills, averaging perhaps 40 m in depth, by 90 m. in length. The number of sheep and camels found on these plains is perfectly incredible; asses are very numerous, and most admirably adapted to the country. The camels are small and weak, and never used for riding, except in cases of sickness, or a wound. The Haber Awal have no chief; the customs of their forefathers are the laws of the country, and appear to be based upon the simple principle that might gives right. Theft is punishable with the loss of the right hand, but, fortunately for them, this is not insisted on, for they are most inveterate thieves.

ZEYLA is a place of some importance, being the only port on the Essah coast, and having a trade with Mocha and the neighbouring parts. It is built on a low sandy point, nearly level with the sea, projecting to the N.E., called Ras Hamar, and consists of a mosque, 12 to 15 stone houses, and probably 200 huts, the whole enclosed within a mud-wall, which is in a most ruinous condition. The population in 1848 amounted to about 750 souls. Zeyla, no doubt, was originally intended to serve as a sea-port for Harrar, for of itself it appears to be worth little. A vessel of 250 tons cannot approach within a mile of the town, and the anchorage is shallow, and difficult of entrance after sunset, on account of the numerous reefs.

The town is now under the Sheriff of Mocha, who has the power of displacing the governor, should he think fit, but who yet receives no part of the revenue. The governor pays an annual tribute of 750 German crowns to the Sheriff, and reserves all that he can collect above that sum for himself. A tax of one dollar is levied upon each slave exported from Tejooreh, or imported from Harrar, and afterwards sold at Berbereh. The principal articles of export are coffee, dye, ghee, ivory in small quantities, and ostrich feathers. A vessel would doubtless obtain a valuable cargo of coffee and mules. But a small quantity of gums is brought into Zeyla. There are a few Arab and Somauli soldiers kept for the defence of the place. Water is supplied from a water-course about 4 m. S.W. of the town, where there is a small tower and a guard of five or six soldiers to protect the watering parties. Water is thus difficult to obtain, owing to the distance it has to be brought. Sheep are procurable.

There are so many reefs and dangers in the vicinity of Zeyla, that it is almost impossible to give a clear description of them.

Anchorage. The best anchorage for small vessels is on the N. side of the harbour, in 4 fathoms water, towards the S.W. point of Sadaldeen Island. Large vessels should anchor to the S.E. of Sadaldeen Island, in $4\frac{1}{2}$ or 5 fathoms water, about 3 m. N.N.E. of the town. It would be impossible to give any clear directions for sailing into Zeyla Harbour, there being no distinct

land-marks as guides: probably the eye is the best guide, the reefs being generally, on a clear day, distinguishable from the mast-head of a vessel: it certainly would not be safe to attempt the passage amongst the reefs at night, all having deep water close to their edges, whereby the lead affords no guide. (See page 115.)

The Mushah Islands are a group standing at the N. end of the Zeyla Bank, consisting of three islands and five small rocky islets, situated mid-way between the Essah and Danarkli coasts. The Islands were ceded to the British by the Sultan of Tejooreh, and taken possession of on 31st Aug., 1840.

Population. **The Coast** from Karangarit to Khor Kharab is inhabited by wandering parties of the Essah Somaulis; they are a powerful tribe, and said to be very numerous, and are much feared by the Danarkli tribe, inhabiting the opposite side of the gulf, who describe the Essah as a race of treacherous thieves and murderers; they have, however, always been found to be an inoffensive people in their dealings with Europeans, except in a few instances, when probably some cause of offence was first offered by the stranger. It would be, nevertheless, prudent to be very cautious in all dealings with them, to avoid giving offence, especially in regard to their religious scruples. They are followers of Mahomet. Their arms are the spear and shield, bow and arrow, in the use of which they are said to be very expert, especially the latter, with which they shoot the elephant, ostrich, zebra, and indeed all kinds of animals; the barb of their arrow is poisoned, with some vegetable composition, which, when fresh, causes death a few hours after wounding. They are rich in cattle; bullocks, sheep and goats, are very cheap; their camels are large, the price of a full-grown one is equivalent to 7 German crowns; a horse is equal to three camels. The sea-coast is very barren, but the interior is said to be very fertile. The produce of the country is taken to Zeyla, where it is exchanged for coarse white and blue cloth, tobacco, &c., the Arab merchants of the town profiting greatly by the exchange. They do not know the value of money, but are very fond of ornaments, false pearls, beads, looking-glasses, &c. They are, generally speaking, a very tall race, the men averaging 6 ft. in height, and the women 5 ft. 8 in. to 5 ft. 10 in. Most of them are partial to red hair, and dye it that colour; those who are not blessed with a good head of hair wear wigs made of sheep skin. They never wear turban or head-dress of any kind. A man who kills another in fair fight, is allowed the privilege of wearing an ostrich feather in his hair.

Tejooreh, the seaport of the Danarkli, is a village consisting of about 100 huts, and two stone buildings (one of which is a mosque), and containing about 500 inhabitants. It is governed by the chief of the Danarkli tribe, who assumes the title of Sultan. The natives from the interior assemble here annually, about the months of Jan. and Feb., for the purpose of trade, bringing with them slaves, gums, skins, ivory, myrrh, ostrich feathers, coffee, and a large supply of cattle. About 200 female slaves are exported annually. The above-mentioned produce is exchanged for coarse blue cloth, red cloth, salt, frankincense, brass, lead, zinc, &c., with which they return to Abyssinia. Kafilahs are passing to and fro throughout the year. There are about fifteen small trading boats belonging to Tejooreh, the largest of which does not exceed 70 tons burthen; they trade with the ports of Aden, Mocha, Zeyla and Berbereh, and sometimes, though very seldom, go as far as Jiddah.

The harbour of Tejooreh is formed by a gap in the shore-reef which here extends about 200 yards off shore, immediately outside of which there is no bottom found at a depth of 40 fathoms. There are 10 fathoms water in the harbour, but the anchorage is exceedingly unsafe, with barely sufficient room for a vessel to swing. It is only during E. winds that the native boats can lie there; during the S.W. monsoon it is extremely dangerous.

Tejooreh, Ambaboo and Obokh, are the only three villages on the whole extent of coast between Gubet Kharab and the entrance to the Red Sea. Occasionally scattered parties of the Danarkli tribe may be found, but they have no permanent villages; it is when pasture is scarce in the interior that they drive their flocks down to the coast.

The Coast from Gubet Kharab to the entrance of the Red Sea is inhabited by the Danarkli tribe, whose territory extends inland to the borders of the kingdom of Shuah. They probably exceed 5000 in number, and are sub-divided into several smaller tribes, viz.: the Abd-Ali, the principal, to which the Sultan belongs; the Abli; the Debenk; and the Rookbeh. Their religion is Mahomedan, but they are not strict observers of their creed. They are all armed with spears, shields and kreeses, some few have swords, and near the coast a few have fire-arms. Opinion seems to be divided as to the character of these people; by their neighbours they are held in great disrepute, being considered cruel, treacherous and inhospitable, in the same manner as they themselves hold the Essah Somaulis to be murderous thieves. Europeans who have visited the coast have always been received with great civility, possibly owing to their being armed; but the

probability is, that if treated kindly, and their prejudices respected, they in return will act civilly.

Just outside Gubet Kharab, and on the Danarkli coast, are some ruins; and below the H. W. mark is a hot spring issuing from beneath the rocks; at H. W. there is no sign of it, but at L. W. it is so hot as to instantly destroy crabs and other fish thrown into it.

Obokh, the village which the French purchased a dozen years ago, lies about 2 leagues to the W. of Ras-al-Beer. Good water is here procurable at all seasons of the year.

ARABIAN COAST.—**Ras Bab-el-Mandeb**, or the Cape of the Gate of Affliction, the S.W. extremity of Arabia, is a prominent Cape; its highest peak, **Jebel Manhali**, is 865 ft. above sea, thence it slopes to the S., and terminates in a low point on the sea. Off the extremity of the Cape numerous rocky points project about $\frac{1}{2}$ m. from the shore, which form shallow bays, affording shelter to boats and small vessels; and here the traders from the opposite coast of Africa land their sheep, and drive them to Mocha, to avoid a tedious voyage back against S. winds.

Ras Arrah, the S. point of Arabia, is a low sandy cape with dangerous rocky patches at 3 m. off shore. Several vessels have been wrecked here and plundered. The natives on this part of the coast should be avoided, being of a hostile and ferocious character. There is excellent shelter from E. winds under **Ras Amran**, which cape forms the E. boundary of the territory of the **Subeihi** tribe. These people, though numbering about 12,000 persons, are little known; their general character is, that they are suspicious of strangers, revengeful and treacherous.

Jebel Hasan is a peninsular granite mountain, not very unlike to that of Aden, and bordering **Aden Back Bay** on the W. The land to the N. of it is low, and a deep inlet, called **Khor Biyar Ahmed**, or **Seilan**, extends for 3 m. to the W., almost insulating the promontory. **Biyar Ahmed**, a small fort and village, is situated about 3 m. from the beach, and contained (in 1836) about 250 inhabitants; it is the residence of the chief, or sultan, as he is called, of the **Akrabi** tribe. About 2 m. to the N.E. of **Biyar Ahmed** is the village of **Seilan**. The territory of the **Akrabi** tribe does not exceed 20 square miles, with a population of about 600 males; they are a treacherous race, and are not to be trusted: their territory is bounded on the N.E. by the **Abdali** and **Haushabi**, and to the W. by the **Subeihi** tribes.

The chief produce of the country is *jowari* (millet), of which much is exported.

ADEN, or AHDEN, has become of increased importance since the Suez Canal was opened. Owing to several wrecks having occurred on this coast, the British Political Authorities here have entered into Treaties with the Arab Chiefs to respect wrecked vessels, their crews and cargoes. **Aden** is situated in the territory of the **Abdali** tribe, which is said to number about 10,000 souls, who are not friendly towards Europeans; it is not safe, therefore, to land on the W. shore of the W. or **Back Bay**. The religion of the **Abdali** tribe is Mohammedan, and they are, apparently, very strict observers of their creed.

Trade. **Aden** was declared a free port in 1850, since which it has engrossed nearly the whole of the coffee trade formerly enjoyed by **Mocha**. The following statistics, from official sources, will serve to prove the increasing importance **Aden** is assuming:—

Total value of trade from 1843 to 1850, including exports and imports	£1,309,558
Ditto from 1850 to 1857	4,219,734
In the one year ending 1858, the total value of trade was	1,145,550
In the year 1872, the trade was greatly increasing.	

The principal articles of export are coffee and honey; imports chiefly coal, cotton goods, sheep, malt liquors, wines, spirits and sundries. (See **ADEN**, page 31, and in Chapter X.)

CHAPTER VIII.

RED SEA—AFRICAN SIDE—GULF OF SUEZ.

RAS SEJARN—ASSAB BAY—RAS RUKMA—ABELLAT—RAS SHUKS—HOWAKEL—ANSLEY BAY—MASSOWAH—
—DHALAC BANK AND ISLANDS—SUAKIN—MUSAHMROO—RAS ROWAY—ELBA CAPE—ST. JOHN'S—
RAS BENASS—DÆDALUS SHOAL—COSEER—THE BROTHERS—JAF FATAIN—SHADWAN—JUBAL—
ZEITEE—TOOR—GHARIB—ZAFARANA—SUEZ—WINDS—CURRENTS—TIDES—ARAB WORDS.

(VARIATION AT RAS SEJARN, $4\frac{1}{2}^{\circ}$ W.; AT MASSOWAH, 5° W.; AT JUBAL AND SUEZ, $5\frac{1}{2}^{\circ}$ W.)

Ras-al-Beer. As the Gulf of Tejooreh makes such a break in the African coast, it is convenient that a description of the African side of the Red Sea should commence at Ras-al-Beer, the N. cape of that Gulf, and 40 m. due S. from Perim Light. The cape is low and sandy, difficult to distinguish at night, and said to be deep-to. High land stands back about 7 m.; mangrove bushes and brushwood cover the intervening plain. This portion has never been surveyed, but is reported free from all danger. The French have lately purchased **Obokh**, a village about 2 leagues W. from Ras-al-Beer, where anchorage is found in a gap between reefs, about $\frac{1}{2}$ m. from shore, only open to S.W. winds. The entrance is nearly 2 cables wide, but the harbour-area though deep (15 fathoms) is of small extent.—(See further remarks at page 115.)

Above Ras-al-Beer the same low sandy coast stretches N., slightly convex, for 15 m.; then high table-cliffs come close to the sea for 4 or 5 m. to Jebel Jarn, with a low shingly and sandy shore 12 m. onward to Ras Sejarn. Above the table-land of Jebel Jarn, the soundings are a good guide; 20 fathoms at about 3 m. from land, 10 fathoms at less than 1 m. off; and the depth is less than 10 fathoms between the W. Brother and Ras Sejarn. Sailing vessels on this coast, not wishing to lose ground, might conveniently make use of the W. Brother as a breakwater, by anchoring under its lee in 7 or 8 fathoms, in either S. or N. winds; but the tides are rapid and irregular.

The Brothers, or Jezirat Sabah, are six rocky islets, scattered from $2\frac{1}{2}$ to 7 m. E. of Ras Sejarn. The W. one is about 200 ft. high. The N.E. Brother is largest and highest, 350 ft., visible in clear weather more than 20 m.; in lat $12^{\circ} 28' N.$, lon. $43^{\circ} 23' E.$, and it stands 11 m. S. from Perim Light.

Ras Sejarn is an elevated rocky cape on a projection of the Abyssinian low coast, and the S. point of Red Sea entrance, in lat. $12^{\circ} 28' N.$, lon. $43^{\circ} 16' E.$, bearing S.W. by S., and 12 m. from Perim Light. Its peak, Jebel Sejarn, is volcanic, about 380 ft. high, and like a haycock. The peak is isolated, there being no hills within 5 m. to the S. and to the W. The coast is low and sandy for more than 30 m. to Ras Sintuar. The little bay to W. of Jebel Sejarn is a swamp with mangrove bushes; off it, and bearing N.N.W. from the peak at the distance of $1\frac{1}{2}$ m., are two rocks, about 7 ft. above water, with depths of 20 fathoms $\frac{1}{2}$ m. outside them, and a passage with irregular soundings between them and the main. Between these rocks and Doomairah the soundings are deficient, though apparently regular.

Jebel Doomairah is the high peak of an islet which lies $\frac{1}{2}$ m. off the sandy coast, 18 m. from Sejarn. A shoal (with little more than 12 ft.) lies 1 m. to N. of the islet; and 8 m. further at a prominent part of coast a sunken fringing reef commences, extending for nearly 10 m. in a convex course to **Ras Macawa**, a low woody island, which is 5 m. N. of Ras Sintuar, the low and swampy E. cape of Assab Bay.

Panther Shoal, in lat. $12^{\circ} 56' N.$ lies 5 or 6 m. to E. of Ras Macawa, having less than 9 fathoms. Another patch of 5 fathoms, lies 5 m. to N.W. of this; and a more minute search might find others. This part of the African coast had better be avoided.

ASSAB BAY is the space with islands and reefs extending to Ras Loomar, which is 15 m. W.N.W. from Ras Macawa. Its outer detached reef is about 8 m. long, having an islet near each end; **Jezirat Dilcose** at the E., and **Jezirat Fartmar** at the W. There is a passage into the Bay between Dilcose and Ras Macawa, but the principal channel is by Ras Loomar, avoiding the 2 fathom shoal which lies about 2 m. W. of Fartmar, and another shoal (not on the charts) said to

lie a little to N. of that island. The soundings inside Assab Bay are 6 and 7 fathoms mud. Wood may be procured on the islands. Jebel Marsoob, a small saddle hill, stands at the back of Ras Loomar, and 9 m. to W. of Fartmar.

Anchorage may be taken under the lee of Fartmar, which is a wooded island, in 8 or 9 fathoms, if overtaken by S. winds; with it bearing E.S.E., and less than 1 m. off. Then if the wind veer to N., the ship can run to S.E. along the reef, pass close to Dilcose, and haul out to E. and N.E. between the latter and Ras Macawa.

Tides. H. W. at F. and C. about noon, rise and fall 4 ft.

Sunnahboar Islet, in lat. $13^{\circ} 4' N.$, lon. $42^{\circ} 40' E.$, is a high pyramidal rock with a reef round it, $1\frac{1}{2}$ m. off the coast, and 8 m. W.N.W. of Fartmar. There is a narrow channel between it and the shore, with 5 and 6 fathoms. The soundings are regular towards Ras Billool, but a ship should not shoal under 10 fathoms by night.

RAS BILLOOL is a prominent cape with a bay on its W. It is an oblong hill, steep and deep-to on the N., bearing N.W. $\frac{1}{2}$ W. and 21 m. from Fartmar Island. The bay affords protection from S. winds, but would be unsafe if the wind veered to N. There is a shoal bank of 2 fathoms at 4 or 5 m. W. from the cape. The iron-stone on Ras Billool affects the compass.

RAS BILLOOL TOWARDS HARNISH ISLANDS. This space of sea, 25 m. broad, is studded with nearly a dozen islets, barren rocks, almost all volcanic. (See also Chapter IX.)

Sayel Islet, white and rather high, stands 6 m. to N. by E. of Ras Billool; Harbee, a similar white rock, is 5 m. E.N.E. of Sayel. Between these islands and the main, soundings are obtainable with the deep-sea lead. The **Mah-heb-bakah Islets** are a group of three, standing from 13 m. to 15 m. to the N.N.E. of Sayel.

The Haycock is the central one of these three, in lat. $13^{\circ} 32' N.$, lon. $42^{\circ} 35' E.$, and between them and Sayel there are two other rocky islets. The channels amongst them are said to have no hidden dangers; but the charts exhibit few soundings, and the ships of the Abyssinian expedition (1868) considered it perilous navigation. Steamers should always pass between Harnish Islands and the Arabian shore. The outer rocky S.E. islet of the Harnish group lies E. by N. 5 or 6 m. from Sule Harnish, which is the S. high island. There is also a rock nearly midway between Sule Harnish and Mah-heb-bakah. A cluster of **Rocks**, some **above water**, others **awash**, lie out 6 m. to the W. from the S.W. end of Great Harnish, and about 7 m. to the N.N.W. of the Haycock; these have no soundings around them, but a depth of 45 fathoms at 5 m. to the W. of them; and thence to the shoals off Ras Ruckma there is a clear space of 20 m., with soundings gradually decreasing towards the African coast, where you get 10 fathoms at 3 m. from shore off Ras Ruckma, or Rukma.

RUCKMA ISLAND, about 150 ft. high, just off a cape of the same name, is situated 28 m. to the W. of Great Harnish. It is on the coast reef, a little bight in which (to S. of the Island) affords sheltered anchorage against N.W. winds, in 4 and 5 fathoms. To the N. of Ras Ruckma there is also good anchorage in moderate depths, with shelter from S. winds. In Ruckma Bay there are three or four islands; the S. one is largest, and about 200 ft. high. In the bight to S. of it, there are two wells where a moderate supply of brackish water may be obtained. There is no village hereabouts.

White Quoin Hill is the S. one of three white islets, about 80 ft. high, and rather more than 5 m. to N.W. of Ruckma Island. There is a rock awash at 1 m. to S.W. of White Quoin, and a passage with 7 fathoms between that and the main. Ras Sherayer, a barn-shaped brown volcanic hill, about 200 ft. high, stands on the shore, 7 m. to the W. of these islands.

JEBEL ABBELAT ISLAND, the N.E. point, in lat. $13^{\circ} 55' N.$, lon. $41^{\circ} 56' E.$, is volcanic, about 150 ft. high, the centre of the Abbelat group of three islands; the E. one called Sail Abbelat, or the Button Rock, is 40 ft. high and 10 m. to N.W. of the White Quoin group; the W. one is the Saddle, 200 ft. high. Jebel Abbelat is 42 m. W. of Jebel Zoogur, and the intermediate sea is clear of danger, with no soundings obtainable by passing ships.

Barn Rock, about 10 ft. out of water, situated 8 m. N.W. from Jebel Abbelat, is the N.E. danger of the Coordali Islets. It is 5 m. from the main land, and 3 m. off Jezirat Coordali, which is 150 ft. high; but the channel between them, though deep, is less than 2 m. wide. Ships must not attempt to pass between Coordali and the main.

Edd Village is in a bay 10 m. W. from Jezirat Coordali, and the same distance to S. of Coordomeat Island. It has a few small boats, and does considerable trade with Mocha in mats, rafters, ghee and goat skins. Good cattle may be had; but only brackish water, brought from a distance. Good anchorage is found at 2 m. off the village in 5 to 6 fathoms, with the square cape less than 1 m. to S.S.E., sheltered from S. winds. The soundings are regular into the bay. A sugar-loaf hill, 300 ft. high, stands 7 m. to S.W. of Edd.

COORDOMEAT ISLAND, in lat. $14^{\circ} 8' N.$, lon. $41^{\circ} 36' E.$, and $2\frac{1}{2}$ m. off the Abyssinian coast, is rugged and volcanic, 180 ft. high. S.S.W. of it, and 2 m. off, there are three small rocks, about 100 ft. high, situated upon one shoal bank, between which and the coast there is a narrow channel with 5 and 6 fathoms. In the rainy season, good water is found in a valley and water-course on the coast opposite Coordomeat.

The coast above Coordomeat has a general N.W. trend for 50 m. to Ras Shuks, with three prominences, called Ras Seerboot, Cussar and Ourata. The soundings regularly decrease towards shore from 30 fathoms at 10 m. off. Ships should not shoal under 10 fathoms.

Ras Shuks is a low cape, off which a reef extends 2 m. Soundings of 10 fathoms are found at 1 m. off the N. part of the reef, but on its E. side it is gradually shelving, and that depth is found 4 m. off.

Dangers. To the N. of Shuks, from 16 to 12 m., some shoals were discovered during the Abyssinian campaign of 1868; and to N. of these shoals, or 40 m. N. and N.N.E. of Shuks, there are other dangers mentioned under **Jebel Teer**, in Chapter IX. Therefore, a safe rule is to draw the danger line from Ras Shuks to Jebel Teer; unless bound for Massowah, Ansley Bay, or along the Abyssinian coast, inside all the Dhalac Islands, in which case a ship must take a pilot.

Amphilla, in a bay 16 m. to W. of Ras Shuks, is a small village on the verge of a sandy plain. There are several islands and shoals in Amphilla Bay; Barm-al-Haji, the outer island, is 8 m. to N.N.E. of the town, and 15 m. N.W. by W. from Ras Shuks. The anchorage is in 5 to 6 fathoms, about 2 m. to the W. of Durrampus Island, which is 5 m. E. by N. of the village; this position is more than 1 m. from the main land, with another island to the W.

EASTERN OR INNER PASSAGE TO MASSOWA AND ANSLEY BAY.

Abyssinian Coast. On account of the many shoals to the S.E. of Dhalac Islands, a ship should keep the Abyssinian Coast on board and not shoal her water under 10 fathoms; all along shore danger being inside that depth till you reach Howakel. Off Shuks and Morah, when working to windward, either to N.W. or to S.E., she should keep between 3 m. and 12 m. off shore to avoid the Outer Banks.

Beach Hill is a round double-topped hill, bearing N.W. $\frac{1}{2}$ W., and 34 m. from Ras Shuks. A line drawn between them cuts through Barm-al-Haji outer islet and the N. point of Ras Morah, which may be taken as the general trend of the coast. **Omer Sarrij**, a low coral island, with bushes, lies $5\frac{1}{2}$ m. N.W. from Beach Hill. A shoal with 4 fathoms lies 13 m. to N.E. of Beach Hill.

Howakel Bay, 10 leagues to the S. of Dhalac Island, is a large bight more than 30 m. wide and 15 m. deep, containing numerous low coral islets and shoals, and two islands of some elevation, Howakel and Jebel Boker; the latter is 10 m. to W.S.W. of Omer Sarrij.

HOWAKEL ISLAND has a conspicuous peak on its centre, in lat. $15^{\circ} 9' N.$, lon. $40^{\circ} 14' E.$; its village is small, affording no supplies. Jebel Boker, 7 or 8 m. to the S. by W., forms a high oblong hill. About 2 m. to the E. of Howakel, there is a narrow low island, about 4 m. long N.E. and S.W. Between the latter and the E. end of Jebel Boker, there is another low island of less than half the above extent. **The Channel into Howakel Bay** is between these, on a S.W. course; then edge away to S.S.W. and to S., along the W. side of Jebel Boker, where you will get 4 fathoms, afterwards deepening to 5 and 7 fathoms, when you may anchor, with the extremes of Boker between N.E. by N. and S.E. by E.

Adjoos is a roundish and low coral island, about 1 league across, with a few trees and huts, to the N. of Howakel. To enter Howakel Bay from the N., steer in on a S.W. course between Adjoos and a small island W.N.W. of it; and then pass to the N. of all the islets, which lie to the W. of Howakel, towards the shore reef; this fringing reef must be coasted along till you are to the S. of the islets, then you may anchor in 7 or 8 fathoms, mud, about 1 m. to the S.W. of the W. islet. The N.E. extreme of Adjoos Island is in lat. $15^{\circ} 15' N.$, lon. $40^{\circ} 15' E.$; the nearest shoals of the Dhalac Bank are 5 leagues from this.

Larmoo's Islet (5 leagues to N.W. of Adjoos), is low and surrounded by a reef, and lies 2 m. off the main land to the E. of Hurtow Peak. A rocky patch lies 2 m. to the W.N.W. of it. The channel between Larmoo's and the Dhalac Islands is 3 leagues broad, and has soundings throughout. **Moosmaree Island**, on the Dhalac Bank, is equidistant 17 m., from both Adjoos and Larmoo's.

Shummar Island, about 1 league to S.W. of Dhalac Island, is 10 m. to the N. of Larmoo's, and 5 m. to E. by N. of the Asarkas; this forms the narrowest part of the Inner Channel. The little island **Enturah**, surrounded by a reef, is $7\frac{1}{2}$ m. to N.W. of Shummar.

ASARKA ISLANDS. Hurtow Island is off Hurtow Point, 12 m. to N.W. of Larmoo; and two small rocky islets stand to the N.E. of it, called the Asarka Islets, on the E. one of which a temporary light was placed in 1868, in lat. $15^{\circ} 32' N.$, lon. $39^{\circ} 55' E.$, to mark the entrance to Ansley Bay. From these islets the town of Dhalac Island bears N.E. by E. 6 m. off; and Enturah Islet is the same distance to N. The N. point of Hurtow lies about 2 m. to S.W. by W. of the W. Asarka, and a khor or inlet runs in thence a league to the S., with 7 fathoms shoaling to 3 fathoms; a fringing reef forms the W. side of this khor, with an island on its N.W. extreme, which is midway between Hurtow and Dissee Islands.

To enter Ansley Bay. A vessel may pass the Asarkas on either side, and find good anchorage between them. The fair channel between the Asarkas and Shummar Island (on the Dhalac side) is 4 m. wide, with soundings of 25 to 35 fathoms. After passing to the N. and W. of the Asarkas, a vessel should keep on a W. course, not shoaling under 10 fathoms, till all Dissee Island is seen; then steer for Dissee Peak, about a S.W. course, and anchor in 10 fathoms, off Village Bay, about $\frac{1}{2}$ m. to N.E. of the Peak, with a shoal about $\frac{1}{4}$ m. to the S. by W., and Quoin Hill open of the S.E. point of the island.

ANSLEY BAY, or GOOB DUCNOO, is a deep indentation of the Abyssinian coast, extending 10 leagues to the S. of Hurtow Point. Hurtow Peak, the culminating and central point of the Hurtow Headland, at 3 leagues to S. of that point, is equidistant from it, from Larmoo, and from Dissee Islands, and is a good land-mark; it is also called Mount Dulhi.

This Bay was used during the Abyssinian campaign of 1868 as the base of military operations. Shoals were then marked by temporary beacons now removed. The E. passage into the Bay is on either side of Centre-Bay Island, between Dissee and Hurtow Headland; then borrowing towards the latter because of the **Indore Rock**, (with only 6 ft.) about 3 or 4 cables off the S.E. point of Dissee Island; after passing that rock, a S. by W. course, for about a dozen miles, will take a vessel to Malkatto Point, near Zula, on the W., or Keedan shore, whence the British troops commenced their march.

Entering Goob Ducnoo from the N. Ansley Bay is quite exposed to N. winds. The entrance from the N. is past Massowah, where the water is all deep, 20 to 40 fathoms. Give a berth of at least 2 m. to the round Cape of Keedan, 3 leagues to S.E. of Massowah, where a 5-fathoms shoal has been found at $1\frac{1}{2}$ m. from the Cape (and there may be others); thence to Dissee Island, and up the Bay, all is deep water. The mountains on the W., or the Keedan side, are very lofty; **Jebel Keedan, or Geedan**, 13 m. to S. by E. of Massowah, is 2,700 ft. above sea, and only 6 m. from the shore of the Bay. To the W. and the S.W. of that peak, and at only 20 m. from the sea-shore, the mountains attain to three times that elevation.

Dissee, or Valentia Island, nearly 3 m. long N. by W. and S. by E., and $\frac{3}{4}$ m. in breadth, consists of a central plain covered with grass, and a number of hills around, with a few straggling trees. Dissee Peak (to the N. of which lies Village Bay, the watering-place) looks down upon the middle of the E. shore, and opposite Centre Bay Island, which stands about $1\frac{1}{2}$ m. to the E., half-way to the Hurtow shore. **Village Bay** has but a dozen houses. Water is procurable in small quantities from springs at $\frac{1}{2}$ m. from the beach. Plenty of bullocks, sheep and goats are at hand, but the inhabitants are not anxious to sell them.

A Sand-bank lies $6\frac{1}{2}$ m. to the N. of Dissee Island, connected to it by a narrow reef. This makes the E. entrance into Ansley Bay (past the Asarkas) the most handy for vessels coming from Mocha or Aden. The entrance from the N. is handiest for vessels coming from Egypt or Jiddah.

An extensive rocky ledge, with only 2 fathoms, lies from $3\frac{1}{2}$ m. to $2\frac{1}{2}$ m. to the W.N.W. of the above sand-bank, and vessels had better not try to pass between. From these rocks the bearing of Jebel Keedan is about S.W., and Dissee Peak about S. by E. The rocks bear from Massowah, E. $\frac{1}{2}$ S. 13 or 14 m.; therefore, in going from Massowah towards Mocha, a vessel should be careful to steer to the N. of an E. course (say E. by N.) for at least 15 or 16 m.; then S.E. by E. to pass between Shummar Island and the Asarkas.

MASSOWAH ISLAND, in lat. $15^{\circ} 38' N.$, lon. $39^{\circ} 28' E.$ (the N.E. Martello tower), is situated at the N. extreme of Arjeego Bay, and about 4 m. to the N. of Dohono, or Arjeego Town. The high land of Keedan forms the S. and the S.E. sides of this Bay. The Island is less than 3 cables wide, and rather over $\frac{1}{2}$ m. long, W.S.W. and E.N.E. Shoal water connects it with other low islands to the W. There are many water-tanks and graves on the Island; the W. half is occupied by the town, which is thickly inhabited to the very water's edge. Some mosques and the residences and warehouses of Banyan merchants, are conspicuous buildings. The bazaar has beef, mutton, fowls, and sometimes fish, ghee, jowari, dates and tobacco; a few vegetables sometimes. The trade is not great, and entirely carried on by small baghalahs, principally to Mocha or Hodeidah,

Jiddah and Aden. Since 1866 an Egyptian garrison has taken the place of the Turks, who formerly held Massowah. Consuls of both Great Britain and France reside here.

The harbour is along the N. side of the Island, having good anchorage in 7 to 8 fathoms. The entrance is only $1\frac{1}{2}$ cables wide, as shoal water extends nearly 2 cables to the N. from the Martello tower. The mid-channel course inwards is about W. by S., or steering for the S. end of Hor-al-Jarai, an island 3 cables to N.W. of Massowah town; when the E. end of Massowah Island bears to the E. of S. by E., you can begin to haul more to the S.W. for the anchorage.

THE GREAT DHALAC BANK AND ISLANDS.

The Dhalac Bank is that vast extent of shoal water, with Dhalac and numerous other islands and dangerous reefs, extending from 30 m. W. of Jebel Teer for a distance of 150 m. to N.W., or about half-way to Suakin. This Bank has not been thoroughly examined; and, as it has so many shoal spots with 3 fathoms and less, ships had better haul off, after getting a cast with the deep-sea lead.

Moghady, the S.E. island of the Dhalac Bank, in lat. $15^{\circ} 32' N.$, and lon. $40^{\circ} 50' E.$, is a high rocky islet, with others to the W. of it. Mashilgar, bearing S.W. by W. and 8 m. from it, is the S. high rocky islet, but Bolhessoo (*See* page 132), which is low and sandy, is the most S. island of all the Dhalac group, bearing S.W. by W. 13 m. from Moghady. Howakel Island is on the same bearing, and 23 m. from Bolhessoo, but the navigable channel along the African coast is only 15 m. broad, as there is a sunken rock at one-third of the way from the last-named islet.

REEFS AND SHOALS. Several patches, with 2 and 3 fathoms, have been found to E. of the above islets. The outer patch is 33 m. on a S E. by E. bearing from Moghady, and it is also 33 m. to S.W. by W. of Jebel Teer. The **Shab Ali Reef**, partly dry, has its E. extreme at 13 m. off Moghady on a N.E. by E. bearing; and the Segarla Islands, sandy, low and bushy, stand to W. of this extensive reef, which lies between lat. $15^{\circ} 38'$ to $15^{\circ} 48' N.$ Segarla N. island, low and bushy, lies to the W. by S. of the N.W. end of Shab Ali reefs.

Caution. Vessels coming from the E., should be careful to avoid the Shab Ali reefs.

Bilhaha—another low sandy island, standing 20 m. to N.N.W. of Moghady, and 5 m. to N.W. of the N. Segarla—has a dangerous shoal projecting 5 m. N.E. from it; and there is a detached sunken reef at 9 m. to N.N.E. This last and other neighbouring shoals warn the mariner off this dangerous Dhalac Bank.

Hooateb, another low sandy islet with bushes, stands 9 m. to N.W. of Bilhaha, and thence the islands lie back more to the W. till you reach **Mahoon Island**, in lat. $16^{\circ} 4' N.$, and lon. $40^{\circ} 10' E.$ From Mahoon they lie in a N. direction, with plenty of off-lying banks and shoals. Untoentore, or **Entah-entoor Island**, lies about 17 m. to the N. by E. from Mahoon. Captain Moresby says, "there is **no channel for ships across the Dhalac Bank** to the S. of Untoentore."

HARMEEL ISLAND (the N.E. point), in lat. $16^{\circ} 34' N.$, lon. $40^{\circ} 10' E.$, the N.E. island on the Dhalac Bank, has its N.E. end at 30 m. due N. of Mahoon. It is a large island, about 5 m. in length N. and S., of sand and coral, low and woody. A bank of soundings extends around it, off the N.E. point for 3 or 4 m.; off the S.E. side for 8 m., where there is only 3 fathoms. A detached shoal lies 5 m. to the N.W. of Harmeel, and plenty more to the W. between it and Difnain Island, which bears W. by N. 50 m. from Harmeel. **Romea Island**, at 5 m. to W. of Harmeel, is small, sandy, and covered with wood. A good channel between it and Harmeel.

Difnain, a low coral island, in lat. $16^{\circ} 38' N.$, lon. $39^{\circ} 17' E.$ is the N.W. island of the Dhalac Bank. It stands 8 m. off the Abyssinian coast. Vessels going to Massowah from the N. part of the Red Sea, may conveniently take this N. Inner Passage, keeping between 3 and 6 m. off the main land. Vessels should make the coast at the 17th parallel of lat., as there are so many shoals on the N. part of the Dhalac Bank. The most N. shoal (as yet known) with 3 fathoms, lies 36 m. to N.E. of Difnain, another lies 35 m. to the E.N.E.

Suratoo or Israhtoo Island, with some small peaked hills on it, stands about 17 m. to the S.W. of Harmeel. **Nora Island**, low and sandy (the next largest to Dhalac) **Nahelej** and others, lie between Harmeel and Dhalac. Vessels should not go into this labyrinth of islets and shoals, without large-scale charts and Captain Moresby's *full* directions; and with an Arab pilot.

COAST CHANNEL FROM THE N. TOWARDS MASSOWAH.

The Islands and Shoals marking the E. side of the Coast Channel are **Difnain**, the N. island, then **Andesilee**, 6 or 7 m. further to the S.; some shoals then occur, and a space of 9 m. without soundings, which had better be avoided; then **more shoals** occur till you come to **Sail Badeera**

Islet, which is 27 m. to the S. of Difnain, and about 9 m. from the main land. Do not approach this islet nearer than 3 m. off its N.W. side, nor pass between it and Haraht.

Haraht is an island 8 m. long N. and S., standing 2 m. to S.S.E. of Sail Badeera; its S. point is 25 m. due N. from Massowah. All the shoal water for 9 m. to the N. by W. of this island is called **Haraht Reefs**; when abreast of which, vessels had better keep within 5 or 6 m. of the African shore. A small sandy island, called **Laboo**, lies 1 m. off the S.W. end of Haraht, this is less than 8 m. from the main. To the S.E. of it, at 7 m. and 11 m. off, there are two low sandy islets, with a few bushes, **Dulbahoot** and **Dahrel**; then, at 2 m. to the E. of the latter, stands **Dohool Island**, which is about one league in diameter, having some dome trees and a village with a mosque on its N.W. side.

Durgaum and **Darghelee** are two low sandy islets, with a few small trees or bushes, standing midway between Dohool and **Enturah**. (See page 129.) This last stands 1 league off the W. side of Great Dhalac Island. Vessels should not attempt to pass between them.

DHALAC KEBEER, or GREAT DHALAC ISLAND, which lies only 7 m. to the N.E. of Hurtow Point (page 130), has a sort of star-fish shape, thus formed by three or four inlets converging towards its centre. There are seven towns or villages on the Island; Doobelloo, Derboshat, Salat, Dhalac Kebeer, Goobanee, Cumbeeber and Memlah. **Dhalac Kebeer**, the principal town, is at the S.W. side of the great island, which is a little short of 6 m. to the N.E. of the Asarka Islets; this town has four mosques and two burial grounds; about 2 m. to the N.W. of it, there are near the beach a number of wells, surrounded by an embankment. During the rains, fresh water is found in pools; some parts of the Island afford a supply of good grass. The only beasts seen were asses, goats, sheep and numerous antelopes. To the N. of Dhalac Kebeer Town, there lies an extensive lake, called **Gubet Segeer**, with depths of 40 fathoms in it; the narrow mouth, which is 5 m. or 6 m. to the N.N.W. of Dhalac Town, has 6 and 7 fathoms in it. Boats obliged to procure water at Dhalac, can approach that place within 1 m., if the ship be taken into Gubet Segeer and anchored off the S.W. shore, about 3 m. due N. of the town. **Tides** run with rapidity in the entrance to Gubet Segeer, and may assist a ship in getting in or out; otherwise she needs a fair wind, there is no room to tack. The rise and fall was stated by Captain Court (Lord Valentia's voyage, in the *Panther*) to be 9 ft., but this is most improbable.

Doobelloo Town, about 12 m. to the N.E. of Dhalac, and on the N.E. side of the Island (an inlet runs up past it to Derboshat), has the principal trade and a better appearance than any of the other villages. The principal sheik of the island resides at **Derboshat** 4 m. to the S. of Doobelloo, those of the different villages being subordinate to him. The trade of Doobelloo is principally with Loheia and Gheesan, whence they import jowari and dates, giving in return the produce of the pearl banks, such as fish, shark-fins, the horny part of shell fish, turtle-shell and pearls. They preserve their water in tanks, which are filled during the rainy season.

Enturah Islet (page 129), stands off $3\frac{1}{2}$ m. to the S.W. of Gubet Segeer; and between this Islet and Dhalac Kebeer, the Dhalac reef projects $2\frac{1}{2}$ m. from shore, narrowing the passage between it and the Asarkas Islets to a breadth of 4 m.

Shummar Island stands nearly 1 league to the S. of Dhalac Kebeer shore; the passage between seems safe and very deep, but had better be avoided as not well known. **Moosmaree**, a high rocky island, lies 16 m. to the E. of Shummar. No vessel should go to the E. of these islands without an Arab pilot. **Sail Amber Islet**, low and sandy, lies 4 or 5 m. to the E. by S. of Moosmaree, and 13 m. to the N.W. by W. from Bolhessoo.

BOLHESSOO, the most S. of all the Dhalac group, stands 18 m. to S.E. by E. of the E. end of Dhalac Island, and in lat. $15^{\circ} 25' N.$, lon. $40^{\circ} 38' E.$

Numerous shoals have been discovered in the space of sea, extending 30 m. to the S.E. and the E. of Moosmaree. Therefore (as stated at page 129), a ship should keep the Abyssinian coast on board if going to Massowah.

To describe what is known of the numerous islets, reefs and shoals, at the S.E. end of the Dhalac Bank, would be of little use to navigators. We can only warn all vessels to avoid them. If compelled to go there, they should have the large scale Admiralty charts and a pilot.

ABYSSINIAN, NUBIAN AND EGYPTIAN COASTS.

(VARIATION OF COMPASS HALF A POINT, W.)

Massowah has been described (at page 130). The mountains at 15 m. or 20 m. to the W., and at 40 m. to the N.W., are lofty, but they stand many miles from the sea-coast.

Khor Dahaleah, only $1\frac{1}{2}$ m. to the N. of Massowah, is a very similar anchorage, and larger.

The coast-line above this place trends to N. by W. for 10 m. to Ras Haroob, and thence about N.N.W. 28 m. to **Coobak**; it is low and sandy in some places, with mangrove bushes and salt swamps, where the natives procure salt; low barren sand-hills lie at the back of the swamps. Soundings seem pretty regular along this shore, and they are not too deep towards the islands. Do not shoal under 10 fathoms towards the main land.

Mersa Ebrahim, a small boat anchorage, lies 16 m. to the N. by W. of Coobak; and, at 8 m. further stands **Gundaleet Islet** in lat. $16^{\circ} 38' N.$, lon. $39^{\circ} 8' E.$; this is abreast of **Difnain**, the most N. of the low coral islands of the Dhalac group, from which it is distant $8\frac{1}{2}$ m. Another small boat anchorage, called **Mersa Moobarak**, lies midway between Ebrahim and Gundaleet. The coast reef hereabouts extends about 2 m. from shore.

Garna Duff, properly **Karn Ahduf**, is a slight projection of the coast, about 18 m. to the N. by W. of Gundaleet; this coast is all low and sandy. **Jebel Karn Ahduf** is a sand-hill 4 m. from the beach, with a bluff to the N.

From Garna Duff the coast runs N. by W. 29 m., under some high peaks; then N. by W. $\frac{1}{2}$ W. 16 m. to Serabar, all low barren sand, backed by high mountains in the distance. At 4 m. to the S. of Serabar is that part of the coast called **Rarret** and **Gubroo Sheikh**. **Mundaloo** is 7 m. N.W. by N. of Serabar: there is at this place a very small bay between the points of the coast-reef, where boats anchor. The land hereabout is low and swampy, and a little within the beach is a salt plain, where the Bedouins come down with their camels to procure salt.

Ras Casar, bearing N.N.W. 18 m. from Mundaloo, is a projecting point of land, at $1\frac{1}{2}$ m. to the S. of which is a bight or bay, called **Brassy**. The shore-reef about here projects nearly 2 m. off the coast, with breakers; and within the outermost part between the patches are 3 or 4 fathoms, where buggalows anchor. The coast is low and sandy, backed by high land. **Abou Yahbis**, a low bushy cape with small white sand-hills, is $5\frac{1}{2}$ m. to N.W. of Ras Casar; from thence the coast trends away to the S. and N.W., forming small bays of shoal water, with islands in front of them, upon the coast-reef.

SAIL BAR, a small rocky island, lies $1\frac{1}{2}$ m. to N.W. of Abou Yahbis: to the N.W. of it there is a rather large, but low bushy island, for which we have no name. The next is a small sandy island, with the highest part to the E., called **Ras Abeed**: it is separated from the main by a narrow channel of shoal water, affording protection for small craft, there being 2 and 3 fathoms in it. To the N.W. of this island is **Eree Island**, about $4\frac{1}{2}$ m. in length, N. and S., of very irregular shape, measuring nearly 14 m. This Island is low and sandy on the E. part, but on the W. part are the ruins in coral rock of the ancient Ptolemais Theron: the highest part is a mound of ruins which is visible from Ras Abeed, from whence it bears W. 3 m. Many tanks were seen there. There is a bay formed on the W. side of the Island, with 3 and 4 fathoms, mud, the former depth being pretty close to the Island. The entrance into this bay is along by the N. side of Eree, passing between the W. extreme of that Island and Ras Farajin to the N.W. of it; but there are only 2 and $2\frac{1}{2}$ fathoms in the entrance, on a bar formed on a continuation of the coast-reef from Ras Abeed, whence it runs along the E. and N. sides of Eree, and then off from its W. point to the islands of Khor Nowarat.

Quoin Hill is a near range of sand-hills 4 m. from the beach; Round Hill is to the W. of it, and about 6 m. from the beach; Sugar-loaf is a rugged steep hill in the first range of high land.

A Group of low coral Islands lies fully 40 m. off the coast from Ras Abeed to Suakin. These have been alluded to (Section I., page 29) as the Mussarmroo (Musahmroo) group, and more fully described at page 136.

KHOR NOWARAT is, without exception, the finest bay in the Red Sea; its breadth from Ras Istye to Ras Farajin is $4\frac{1}{2}$ m., and it is nearly the same in depth from Farajin Island; but the island of Badour is in the centre of it, so that a channel is formed round that island. In the outer part the soundings are from 4 to 6 fathoms, mud; in the inner part, where vessels anchor, there are 4 fathoms towards the island, gradually decreasing to 3 and 2 fathoms near the main. The outer part of the bay is bordered by a chain of low sand and coral islands, which effectually keep out the swell of the sea; they are formed upon coral reefs, and there are a few bushes or small trees on some of them. The most N. of these islands is Jezirat Gooban, a low coral island; the most elevated of the whole to the S.E. of it are **Hadjar Islands**, three in number, and situated upon one reef. A little within them is Jezirat Shetevo, and to the S.E. of it an island nearly 3 m. long, called **Farajin**; these two are also situated upon one reef, which is connected to the coast-reef off Ras Farajin, upon which are two or three other small islands. There are also some small islets between Badour and Farajin Islands, and a shoal easily discernible just to the W. of Shetevo Island; and two small islands in a swampy bay to the W. of Ras Istye, or Es-saj.

Badour Island, or **Ahgeeg Kebeer**, is $2\frac{1}{2}$ m. long, and $\frac{3}{4}$ m. broad, formed of coral rock, with

a low sandy plain on the W.; on the E. part it is rather woody. The village of Badour is a small place, consisting of about sixty huts, and a square stone mosque, and a little W. of the town, on the margin of the Island, opposite the ship's anchorage, is a small tomb. About $\frac{1}{4}$ m. from the village are some stone tanks, cut out of the solid rock; but most of the water found in them was very brackish, nor could better be found either on the Island or the main.

Directions. Sailing in to Khor Nowárat, the only proper entrance for ships is between Gooban Island and the Hadjar chain to the S.E. of it; then round Ras Istye and steer S.W. by S. to clear the shoal off Shetevo Island; then in passing round the W. point of Badour Island, give a small spit off it a berth, and anchor in 4 fathoms to S.W. of the village.

There is a channel between Farájin and Hadjar islands, through which the *Benares* sailed; but it is very narrow, and cannot be recommended for ships, there being only 16 ft. in some parts. Small vessels proceeding from Khor Nowárat to the S. find this a convenient channel during N. winds; also, when coming into the Khor from the S. with S. winds, as it shortens the distance in and out, as well as time in working through the N. channel. Fishing-boats find a channel in from the S.E., by crossing the reef between Farájin Island and Ras Farájin.

There are no supplies to be obtained here; so that the only advantage to be derived from this excellent harbour is the protection it affords in stormy weather. The coast surrounding the bay is low and sandy, and the high land approaches within 5 m. of the coast; perhaps some spot might be found where wells could be dug, and a sufficient supply of good and wholesome water be obtained.

Ras Shakul is 3 m. to the N.W. of the Hadjar Islands, and **Ras Ahsees** is 12 m. further to N.W.; the coast between forming a deep bay, with soundings of 12 to 6 or 5 fathoms. From 2 to 3 m. W. of Ras Shakul are the two **Amarat Islands**; they are low and sandy, with a few bushes, situated upon a coral reef; a small islet lies on it also to the S. of the E. island, and a little beyond it a rocky patch. Between these and the cape-land is a passage to **Ahgeeg Segeer**, a small island in the bottom of the bay, bearing S.W. by W. $6\frac{1}{2}$ m. from Ras Shakul. This island, with a small tongue of land to the W. of it, forms an anchorage in 5 or 4 fathoms, and at $\frac{1}{4}$ m. from the beach are some wells dug in the sand, containing brackish water in the dry season. About 1 m. from the beach, in the direction of Quoin Hill, are some remarkable ruins in a straight, narrow line, $1\frac{1}{2}$ m. in length, and from 20 to 60 ft. wide; they are situated upon raised ground, sloping from the centre to either side. About $5\frac{1}{2}$ m. to the N.W. of the tongue of land at Ahgeeg Segeer is a similar one running to the N., with a reef, on which are some islets, and another to the E. of it; this place is called Barrat Dodom, it is $7\frac{1}{2}$ m. to the S. of Ras Ahsees.

The Coast from Ras Ahsees runs 14 m. to N.W. by W. to a projecting point of the coast, and from thence concave $11\frac{1}{2}$ m. to Ras Muedum. The land all along the coast from beyond Ras Ahsees is a very low sandy shore, with a layer of soft mud beneath it, and continues of the same description several miles inland; but after passing the above-mentioned projecting point of the coast, there are a few sand-hills. A mile or so to the S. of Ras Muedum is Trikatatah, off which place there is anchorage in 6 fathoms inside a reef, which bears from it N.E. $\frac{1}{2}$ N. about 500 yards. This part of the coast is low barren sand, full of salt water swamps, and some parts covered with bushes, but no fresh water known to be procurable. Within a narrow woody neck of land is a deep bay of shoal water, the entrance to which forms a small bay for boats; but ships must anchor to the E. of this narrow neck of land, between it and a breaking reef, called **Gad-al-Kanasha**, where they will have 6 fathoms. About 4 m. S.E. from Ras Muedum is a rocky spot, called **Gad-at-Tromba**.

Ras Mugda is 3 m. to N.N.W. of Ras Muedum. The nearest of the several islands, that lie some 40 m. off the coast, to the N.E., and the N. of Khor Nowárat, called **Tellah-tellah Segeer**, bears E. by N., 15 m. from Ras Mugda. From Ras Mugda to Suakin the direct course is about N.W. 32 m.; but the coast between forms a bight, encumbered with reefs and shoals. Close to the E. of Ras Mugda is a shoal patch, and close to the N. of it are some islets. A projecting point, consisting of sand-hills, lies 5 m. W. by N. from the Ras, the coast between forming a bight. From this projecting point to Mersa Sheikh Saad is N.W. by W., 13 m., the coast also forming a bight, in which is Burkat Island, and another to the W. of it; the former is situated on the shore-reef, which extends from Ras Mugda towards the projecting sandy point, whence it suddenly turns off to N.E. 2 m., forming a point, and thence to W., with some islets on it, 7 m., whence it suddenly turns in S.S.E., and forms a bight close to the shore. From thence it runs up along the coast to Suakin, extending from $\frac{1}{2}$ m. to $1\frac{1}{2}$ m. from shore all the way, having, however, some breaks in it. The first of these breaks is 7 m. N.N.W. from Mersa Sheikh Saad, and is called **Mersa Hadoo**; and 2 m. further is another, called **Mersa Likak-Hindi**; to the N. of the latter and $3\frac{1}{2}$ m. off, is **Mersa Entabeel**, which is 7 m. S.S.E. of Suakin.

Al Shubuc is an extensive reef with some islets on its fringe. It extends from near Ras Mugda to the distance of 17 m. to W.N.W.; a deep-water harbour is formed inside it, the entrance being by Mersa Sheikh Saad, and it has 10 fathoms in the narrowest part of the channel. Entrance may also be taken off Ras Mugda. **Sumar Islet** is on the N.E. side of Al Shubuc Reef, and some **sunken reefs** lie about 6 m. to N.E. by N. from Sumar; but **Two Islets standing on a Reef**, only 2 m. from these sunken dangers, form good marks to avoid them. These islets are 9 m. to the N. of Ras Mugda.

Gad Hogeet is a reef, about $1\frac{1}{2}$ m. off the fringe of Al Shubuc, and 6 m. to the N.N.W. of Ras Mugda.

Gad Etwid Reefs are a cluster of shoals and islets, lying off the coast, between Al Shubuc and Suakin, commencing about $1\frac{1}{2}$ m. off Mersa Hadoo, and extending 5 m. to the N.E. by N., where a dry sand-bank (Gad Etwid) marks their N.E. extremity. The channel between these reefs and Mersa Hadoo is 1 m. broad, with 10 to 25 fathoms water. From the sand-bank, the cluster embracing the dangers extends for 5 m. to the S. by E., leaving a clear channel, 3 m. broad, between it and Al Shubuc Reef.

Etwid Island (a small islet with a larger one at $\frac{1}{2}$ m. further S.) stands on a reef about a league to the E. of Gad Etwid Sand-bank. There are plenty of reefs in the vicinity, and to the N.W., half-way towards Suakin. The S.W. reef (called **Shab Tweel**) of the group of islands and reefs which lie many miles off shore abreast of Suakin, bears N.N.E., and is distant $5\frac{1}{2}$ m. from Etwid Island.

SUAKIN. The Khor of Suakin is bordered by a reef of rocks, between which, in the narrowest part, it is about 150 yards broad; its depth is 2 m. The lat. of the island, by Captain Pullen, R.N., $19^{\circ} 7' N.$, lon. $37^{\circ} 20' E.$ In the entrance of the Khor there is a depth of 21 fathoms, mud; and it is open with the S. mosque bearing S.W., when Warantah Hill will bear about W. The soundings throughout the channel are mud, and the depth decreases gradually on approaching the town: the widest anchorage is to the N. of Sheikh Abdallah tomb (on an island 2 cables to N. of Suakin), in 6 to 8 fathoms, mud; but that off the town, between the landing-place and S.E. part of the above island, is the most convenient. There is a ruined tower on the N. side of the entrance. The town of Suakin is built of madrepore, and is situate upon a small island of the same name; the houses are very small, seldom containing more than one room, though some few have also an upper room with a verandah; for supplies, it has to depend upon Ulgaff, situated on the main at the bottom of the Khor. The water between them is shallow, and there is constant communication between the places throughout the day by ferry boats. Ulgaff, or El-Kaff, is much larger than the town of Suakin (Swákin,) and consists of grass huts surrounded by compounds (enclosed courts); it has a bazaar, in which a few cattle may be had occasionally; but fire-wood, milk, ghee, coarse mats, jowari, grass and butter, were the principal articles; fish is very scarce; good water can be obtained at a moderate price; it is brought from about a mile beyond the town on donkeys.

The Khor lies in a S.W. and N.E. direction, and the general winds are either land and sea-breezes, or blow in a line with the coast, inclining off the land at night, and from seaward early in the forenoon. By weighing at sunrise, the *Palinurus* was always able to lie close-hauled out of the Khor, keeping the weather-side on board; and by so acting, she has sailed in and out four times; in Jan., March, and June. The reef bordering the Khor is easily seen, and there is a rock or two above water at the entrance.

Warantah is the high land just to the N.W. of Suakin: it is the largest conical hill in the first range, and forms with two small knobs when seen off the place. Farther to the N., off Mersa Kuwai and Sháb Damaht, its summit forms the lower section of a truncated cone; and from Jezirat Abdullah the whole of it appears in the shape of a neat's tongue.

Approaching Suakin from the S., after passing between Tellah-tellah Segeer Island and Ras Mugda, steer for the **Two Islets** (nameless at present) in lat. $18^{\circ} 54' N.$, lon. $37^{\circ} 46' E.$; when between them and Sumar Islet, steer W.N.W. for 6 m., then to W. for nearly 12 m., which will put you off Mersa Hadoo, having passed between Al Shubuc and Gad Etwid Reefs. From Hadoo, you may coast along to the N., along the shore-reef, keeping a good look-out from mast-head, whence the reefs and patches may generally be seen in the day-time.

The numerous shoals off shore along this coast, and the probability of the existence of many more in unsurveyed parts, renders the **Inner Channel** along the fringing reefs of the coast to be the preferable navigation. The S. entrance by Ras Mugda may be taken on a clear day, if the large-scale Admiralty Charts are on board.

The principal part of the Outer reefs and patches may generally be seen in the day, if a good look-out be attended to; but the chart will show that the Inner Channel is preferable.

ISLANDS OFF KHOR NOWARAT AND SUAKIN.

Having given a description of the reefs and dangers near the coast, and forming the Inner Channel to Suakin, we now return to the S., and describe the islands, shabs, &c., lying off the coast, between the parallels of $18^{\circ} 20' N.$ and $19^{\circ} 25' N.$

Dahrat Abeed is the most S. of these islands, in lat $18^{\circ} 21\frac{1}{2}' N.$, lon. $38^{\circ} 46' E.$, and bearing N.E., distant 20 m. from Sail Bar Islet. **Suffenot Shoal**, a patch with 1 fathom only, lies 4 m. to N.N.E. $\frac{1}{2}$ E. of Dahrat Abeed. It is very likely that others, equally dangerous, lie amongst these islands, which (in Section I., page 29, and again at page 133) we have spoken of as the Mussarmroo (Musahmroo) group.

Gurb Mioon Reef, the N.E. extreme, bears about N.E. by N., 12 m. from Dahrat Abeed: it is upwards of 1 league long, W. by S. and E. by N.; the islet of Gurb Mioon stands at its W. end; and further to W., nearly 2 m., is **Mioon Islet**, at 4 m. to W.S.W. of which stands **Derahkah**, surrounded by a reef, and no bottom at 80 fathoms close to the N. of it. **Eddom Sheikh**, also surrounded by a reef, with 90 fathoms close to it, lies nearly N. $6\frac{1}{2}$ m. from Gurb Mioon, and 3 m. to the W. of it is **Gurb Abi Isah**. Three miles N. of Mioon is **Dahrat Duggelet**, surrounded by a reef, with no bottom at 90 fathoms near it. **Dah-l-Gab**, surrounded by a reef, lies 13 m. N.N.W. from Dahrat Abeed, and 5 m. N.W. from Derahkah. **Isah Abi**, which bears E N.E., $4\frac{1}{2}$ m. from Dah-l-Gab, is another island surrounded by a reef. This group of nine islands are all low coral and sandy spots, from $\frac{1}{2}$ m. to 200 and 300 yards across, with a few bushes upon them. Between Gurb Abi Isah, Eddom-Sheikh and Dahrat Duggelet, is a reef a-wash, lying in a N. and S. direction $1\frac{1}{2}$ m., with no ground at 60 fathoms on its E. side.

The Ahgrab Islands are situated upon a dangerous coral reef, which is $6\frac{1}{2}$ m. in length N. and S., and $5\frac{1}{2}$ m. E. and W., including patches in its neighbourhood. There are six small islands, or more properly, sand and coral banks, on this reef, upon which when there is a swell the sea breaks heavily. The three N. ones are called the **Ahgrab Islands**; the two next S. are the Gurl Islands, and the E. ones, the Aboo Murina. The water is very shoal on this reef, caused by pinnacle coral rocks, and there is no bottom at 40 fathoms between them, and close to the W. of Gurl Island. The N. Ahgrab Island is 13 m. to N.E. of Ras Shakul; the S. Gurl Island and Aboo Murina bear N.E. by E. from Shakul; and Aboo Murina bears about W. by S. 12 m. from Derakah Island.

About 4 m. to the S. of the Gurl Islands, and from 9 to 12 m. to the E. of Ras Shakul, is a rocky bank of 7 to 16 fathoms, with 40 and 50 fathoms between it and the shore; and 3 or 4 m. further to the E.N.E. there are 8 and 10 fathoms, with no bottom at 30 and 40 fathoms very near.

Darah Terass is a low, sandy, coral island, lying N.N.E. 12 m. from Ras Ahsees, and 17 m. to the N.W. of the Ahgrab Islands; it has 26 fathoms close to it, and 20 fathoms midway between it and the main land. A dangerous rocky reef lies 6 m. to the E. by S. from Darah Terass.

Tellah-tellah Segeer Island, lying about 15 m. to the N.W. of Darah Terass, and 15 m. E. by N. from the coast at Ras Mugda, is surrounded by a reef, with 17 fathoms near its S.E. side, and 5 near the N.W. side; and at the distance of 6 m. to the N.N.W., is a bank of 5 or 6 fathoms, with 10 fathoms on the S.E., and 30 fathoms on the N.W. side. Bearing E. by N. from Tellah-tellah Segeer, at the distance of 9 m., are the **Tellah-tellah Kebeer Islands**. These are three low sand and coral islands, having at a distance the appearance of being only one; they are covered with bushes, and the extent of the reef on which they are situated is 3 m. N. and S., and about 2 m. broad. From Tellah-tellah Segeer to these islands, the soundings are regular, increasing from 7 to 28 fathoms, and then gradually decreasing to 20 fathoms, after which they are irregular towards the islands on rocks and sand.

Tymashiya Island, a low sand and coral Island, where anchorage may be obtained in great necessity, bears N.E. by E. 10 m. from Tellah-tellah Segeer. It is surrounded by a reef, and there are 6 to 12 fathoms near its S. side; but the island is too small to afford any protection from swell. About E. $\frac{1}{2}$ S., 17 m. from Tymashiya Island, is **Undi Sellee**, a low, circular, coral island, about $\frac{1}{2}$ m. in diameter. W.N.W. of this island, nearly 2 m., is a patch of rocks. About S.E., 5 m. from Undi Sellee, is **Locha**, also a low, circular island, about $\frac{1}{2}$ m. in diameter, with 67 fathoms at a short distance from its S. side. **Shab Locha** is a breaking reef, above a mile in extent, lying $8\frac{1}{2}$ m. S.W. from Locha Island, and N.W. by W. 18 m. from Eddom Sheikh Island.

THE MUSSARMROO, or MUSAHMROO GROUP. At 7 m. E. by S. from Locha, is the

Island Musahmroo, in lat. $18^{\circ} 50' N.$, and lon. $38^{\circ} 47' E.$; and to S.E. by S. 2 m. from this, stands the outer island, **Karam, or Gurm Musahmroo**. They are both low sandy and coral islands, with bushes on them. There is no ground at 90 fathoms close to the former. At $1\frac{1}{2}$ m. S. of the latter there are 40 fathoms. These islands are 42 m. off the Abyssinian coast. The navigable breadth of the Red Sea, abreast of them, is 75 m. only. (See also page 29.)

BARMOSA or BAR-MOOSA SEGEER, is in lat. $19^{\circ} 3' N.$, lon. $38^{\circ} 13' E.$, and bears N.W. by N. 9 m. from Tymashiya; indeed, it is a sort of connecting link between the islets off Khor Nowarat and those off Suakin. Bar-Moosa Seeger is about $\frac{1}{2}$ m. long, composed of coral and sand. To the N., and 10 m. from this island, is **Bar-Moosa Kebeer Island**, in lat. $19^{\circ} 14' N.$, lon. $38^{\circ} 11' E.$; standing 47 m. to the E. of Suakin; it is about $\frac{3}{4}$ m. in length, to E. and to W.; and is also composed of sand and coral, with a few bushes. There is a reef at about a mile to the N.W. of this island, and no bottom at 100 fathoms close to its S. side. To the W., and about 9 m. from Bar-Moosa Kebeer, is Barcoot, a low sand and coral island without anchorage, there being no bottom at 135 fathoms close to its S. side. There are four large breaking reefs, extending nearly 5 m. to the N. of this island; the second is called **Shab Barcoot**, and the most N. reef is **Shab Cootab**. The latter bears W.N.W. 10 m. from Bar-Moosa Kebeer, and S.E. by E. 8 m. from Hind Gedam. At 15 m. to the W. from Barcoot is **Sail Ad-dar Kebeer**, a small sand and coral island, lying 22 m. E. by N. from the entrance to Suakin; there is no bottom at 120 fathoms a short distance to the S.E. of it. To the N.E. by E., 7 m. from Sail Ad-dar Kebeer, is **Sail Ad-dar Island**, of similar description; and about 2 m. E.N.E. of it is a rocky patch.

HIND KADAM or GEDAM ISLAND, in lat. $19^{\circ} 21' N.$, lon. $37^{\circ} 52' E.$, is the most N. of those off Suakin, and about 4 m. N. by E. of Sail Ad-dar. This is a low sand and coral island, and so steep, that there is no bottom at 22 fathoms close to its S. side. It bears from the entrance of Suakin about E.N.E. 31 m. About $2\frac{1}{2}$ m. E. by S. from it is a rocky patch, and a similar patch at about the same distance W. by S. from it, with no bottom at 57 fathoms close to the W. of it.

Shab Mobiyet and Shab Amber are two narrow reefs, having deep water close to; nearly joining, and forming a danger 5 m. long. N. and S.: its N. end, Shab Amber N. extreme, lies 12 m. to the W. by S. from Hind Kadám; and it bears about N.E. by E. 19 m. from the entrance to Suakin. **Shab Gusser**, $1\frac{1}{2}$ m. long E. and W., lies nearly 5 m. S.W. from Shab Mobiyet, and at about a mile to the S. of it is **Shab Tweel Reef**, upwards of 1 m. long, in a N.W. and S.E. direction, bearing nearly E. from the entrance to Suakin, distant 14 m. About 11 m. to the E. of Shab Tweel is a breaking patch, called Shab Muncar. (See **Etwid Island**, page 135.)

COAST OF NUBIA, FROM SUAKIN TO^{*} KHOR DULLOW.

Mersa Quoih or Kuwai, bears N. by W. $4\frac{1}{2}$ m. from Suakin; the entrance to it is narrow, and the anchorage small, but the water is smooth, and the depth 8 or 9 fathoms, mud. Should a small vessel find it necessary to anchor here, she should drop her anchor as near to one side as possible, as no great range of cable can be veered out. At this anchorage Warantah hill bears S.W. by W. $\frac{1}{2}$ W.

One mile further N. the *Benares* anchored in $14\frac{1}{2}$ fathoms to the S. of **Shab Damart**, so called from a Mersa for boats in its vicinity. It is a projecting part of the coast-reef, with indifferent anchorage on the N. and S. sides. To the S. of the dry part of the reef are some rocky patches, on one of which 4 fathoms were found, and some of them are nearly dry. Warantah hill bears from the anchorage W.S.W. Nearly 9 m. N. by W. of Suakin, is **Mersa Ahtah**, a small Khor in the coast-reef, with a narrow entrance, forming an anchorage for a buggalow: to the N. of it 3 or 4 m. are some small islands, inside the coast-reef and close to the shore, where fire-wood may be obtained. Nine miles further N. by W. is **Jezirat Abdullah**, in which there is good anchorage in 7 fathoms, soft mud, Little Hadarawi Hill bearing W. by S. This place has little protection for ships, and within the above anchorage are some straggling patches of rock: there is also one in the entrance, on which 5 fathoms were found; and there may be less. Bullocks, sheep and goats can be obtained here; fire-wood may be had for cutting, and there is a well of brackish water about $\frac{3}{4}$ m. from the beach, and just to the left of Little Hadarawi Hill from this anchorage.

The Outlying Reefs off this coast are described further on.

Hadarawi Hill is just to the S. of Jezirat Abdullah; it is at that anchorage hidden by a peak on the near high land, but towards the S. it shows as a round hill. To the N. of the peak on the near high land is a small hill, like Hadarawi, when seen from the S., and therefore has been

named Little Hadarawi. N. by W., $9\frac{1}{2}$ m. from Jezirat Abdullah, is the entrance of the following Khor or harbour.

MERSA SHEIKH BAROUD, in which the *Benares* anchored, is called after a chief of that name, the ruins of whose tomb are on the N. point of the entrance. The Khor is formed by a gap in the coast-reef, by which it is also bordered, and extends inland 3 m. The soundings in mid-channel are mud, decreasing gradually from the entrance: when abreast of the place, the notch in Az-zoodat Rileh bears W. $\frac{1}{4}$ S. The *Benares* anchored just within the ruined tomb. Sheep and goats can be procured here; there are also some springs of good water on the S. side of the Khor, about a mile from the beach; but as the road is very bad for casks, it is advisable to be provided with skins for holding water, to be conveyed to the boat on camels or asses, which may be obtained for that purpose for a trifling sum.

Az-zoodat Rileh, to the W. of Sheikh Baroud, is the highest land immediately N. of Hadarawi, and has a remarkable notch in its top, by which it may be known. Shar Kereeb, the next high land to the above, has its top in the shape of a saddle; Hadal Ourl is a peak under it, when seen from Keehai, but to the N. of it, when viewed from Sheikh Baroud, and S. of it at Mersa Duroor.

Mersa-Keehai, or Geehai, about 3 m. N. of Mersa Sheikh Baroud, and formed by the coast-reef and 2 or 3 low swampy islands, is very narrow, with deep water close to its edges; the anchorage is contracted, and the depth 9 or 10 fathoms. To sail in, keep close along the weather side, and anchor near the weather shore, in order to have room to veer cable. From the entrance, Az-zoodat Rileh bears about W. by S. **Mersa Duroor** is nearly 12 m. N. of Mersa-Geehai, or 42 m. from Suakin, and in lat. $19^{\circ} 49'$ N. The anchorage is formed in the coast-reef, with a rocky shoal off it, and some low swampy islands. There is a channel on either side of the shoal off its entrance, but the N. one appears to be best: the soundings in mid-channel are mud, and decrease gradually. The best anchorage is just within the outermost island, in $3\frac{1}{2}$ or 3 fathoms; from whence Saddle Hill, or Shar Kereeb, bears W. by N. $\frac{1}{4}$ N. A little to the N.E. of the entrance of the Mersa are some rocky patches, on which the least water found was 5 fathoms. Wood and water may be procured, although the latter is not considered quite so good as that at Suakin; but it is more convenient, being about $\frac{1}{2}$ m. from the beach, and is brought down in goat skins upon asses. Bullocks, sheep and goats are also to be had.

Mersa Fejer lies N. by W. 12 m. from Mersa Duroor. This khor is formed by a break in the coast reef, in the bight of which there is good anchorage in 13 fathoms, mud. Within this anchorage is a sandy spit, forming a small bay, in which there are 6 and 7 fathoms water; but the channel into it is narrow. There is a shoal which forms the S. side of entrance of this khor, and extends along the coast-reef in patches to Mersa Ahroos, which is 1 m. to the S., and is an anchorage for boats only; on this shoal is a 1-fathom rock, with 5 or 6 fathoms between. To enter Mersa Fejer, keep close along round the point of the reef forming the N. side of the entrance. Goomud Rabaht bears W. by N. Wood may be cut here, and bullocks may be obtained.

Goomud Rabaht, the most conspicuous land on this coast, is a high conical mountain, with a crooked peak on its top; it is just to the N. of Mersa Fejer, does not alter its appearance, and may be seen from the S. of Jezirat Abdullah to the island of Macowa. About N. $8\frac{1}{2}$ m. from Mersa Fejer, is **Awī Tereē Mersa**, a gap in the coast-reef, 600 yards wide at the entrance, and about the same depth, with 26 fathoms mud in mid-channel, which decreases to 8 fathoms close to the reefs. Country boats anchor here close-in; but there is no protection for ships. Off this anchorage Goomud Rabaht bears W. $\frac{1}{4}$ S.

Mersa Ar-rakea is 12 m. to the N. of Mersa Fejer, or 65 m. from Suakin, in lat. $20^{\circ} 13'$ N., lon. $37^{\circ} 11'$ E. The coast from Awī Tereē has some rocky patches near its reef, and the entrance to this place is surrounded by them, with deep water close to it. This anchorage is narrow, and encompassed by a reef, which, with N. winds, makes it necessary to keep the weather side of the khor close on board. In mid-channel, the soundings are 12 fathoms, mud, and there is smooth water with all winds. The ships' anchorage is on the E. side of a small coral island, which is in the entrance, to a small bay of 6 and 7 fathoms. The channel into this khor is winding, and to the N. of the largest shoal off its entrance, with the mouth of the khor open, leaving two small patches on the right hand, Goomud Rabaht being then on with the S. end of the island in the bay, bearing W. by S. It is reported that excellent fresh water may be obtained here.

False Chimney Hill is to the N. of Mersa Ar-rakea; it is just seen off Sheikh Baroud as a high mountain with a rugged top, assimilating to chimneys, from whence it is so named. Its range appears to be E. and W. Off Awī Tereē and Mersa Ar-rakea, it appears as a sharp peaked mountain, like a sugar-loaf, and at Salaka its top is seen just above the S. brow of a round elongated mountain, which is known by a remarkable piece of land a little S. of it, called Table Hill; this is the lowest piece of land near the coast, a little below Salaka.

SALAKA is $14\frac{1}{2}$ m. to the N. of Ar-rakea, or 79 m. from Snakin. There is a shoal about 4 m. off this place, lying about $1\frac{1}{2}$ m. to the N. of the outer reefs of Saláka, and with Table Mound bearing W. $\frac{1}{2}$ S. There are some rocky patches near the coast-reefs about 6 m. S. of this place, and the narrow part of the channel, between the coast and outer reefs, is only $\frac{1}{2}$ m. S. of this place. There is a projecting sandy spit bordered by the coast-reef, and a small bay formed to the W. of it, between the sandy spit and some sunken rocks to the S. of it (whose discoloured water may be seen in clear weather), in which is an anchorage in 9 or 10 fathoms mud, surrounded by sunken patches of rocks. This is what Captain Court called Mousetrap Bay. The channels leading to it are narrow; that to the E. is close round the sandy spit reef, avoiding some small patches off its edge a little outside the spit, and passing between them and the larger patch to the S. of it. The S. channel is inside the sunken rocks to the S.E. of the sandy spit; it is a little wider than the E. channel, but the eye through both can be the only guide. The least water the *Benares* had in these channels was 3 fathoms, rocks, but between the sandy spit reef and shoal, to the S.E. of it, there are 9 to 4 fathoms.

Those who do not wish to go into this intricate place, may obtain anchorage outside the sandy spit, upon the S. of its reefs; but the water deepens quickly off it. The *Benares* anchored in $3\frac{1}{2}$ fathoms, rocks and sand, and when brought up, was in 10 fathoms, rocks and sands. This anchorage is very indifferent, with bad holding-ground, and will not answer in S. winds; it is also doubtful if the inner anchorage is protected from them by the surrounding patches of sunken rocks. There are no supplies of any description to be had here. **Little Salaka** is 1 m. to the S. of Saláka, and is only a narrow break in the reef, which leads into a small bay, full of shoals, a fit anchorage for nothing larger than boats.

Mallago, or Chimney Hill, is to the W. of Saláka; it is a high, rugged-topped mountain, approaching the appearance of chimneys more than that named False Chimney Hill. It has the same appearance throughout, and is seen from Mersa Fejer to Macowa Island.

DUBERDABB is 12 m. to the N. of Saláka. The Tyflah Islands are to the S. of it, and between them and the main is the channel in, which is only $\frac{1}{2}$ m. wide; and the anchorage bears from the N. part of the island, W. by N. 2 m. This anchorage is small, but the soundings are mud, and good protection from N. winds may be found by anchoring close up inside the point of the reef. There is a remarkable dark hill in the range nearest the coast, and the Funnel Hill appears open to the N. of it at this anchorage.

Funnel Hill, so called from its similarity, is to the W. of Duberdabb, in the S. extreme of Jebel Treber, and is shut in behind the Sugar-loaf at Macowa. **Jebel Trebur** is a high, distant mountain above Duberdabb, beyond the second slope. On its N. top, are two small rugged elevations, the N. one is seen from Awi Terec to Khor Dullo, where it shows as the highest part of land to the S. **Small Peak**, on the near hills, has a flat top, and is a little to the N. of Jebel Trebur. Sugar-loaf is a peaked mountain in the range between Jebel Trebur and the coast, and is a little to the N. of the Funnel Hill above mentioned.

THE TYFLAH ISLANDS are about $\frac{1}{2}$ m. from the coast, near Duberdabb, and consist of three or four sandy patches, with a few bushes on them; they are surrounded by shoal water and sunken patches of rock; but anchorage may be had under the W. sandy patch against the N. winds, in from 10 to 4 fathoms, very irregular soundings; and protection against S. winds may be found in irregular soundings of 5 to 14 fathoms, $1\frac{1}{2}$ m. to N. of these Islands. There are detached reefs spread over 8 m. to the S.E. of the Tyflah Islands. **Gatat-el-Banah**, a solitary reef, lies at the distance of 9 m. to E. by N. from these Islands; it is $7\frac{1}{2}$ m. to S. by E. from Myetta Island.

Khor Makaffi is about 9 m. to the N. of Duberdabb; it is formed by a narrow break in the coast-reef, and has good anchorage for buggalows; but neither wood nor water can be obtained. Nearly 2 m. to the S. of it is **Little Makaffi**, with a breaking patch $1\frac{1}{2}$ m. to the E. of it in the channel towards Macowa, which here is nearly 4 m. wide, and forms the best entrance to Dokhána.

MACOWA ISLAND is $6\frac{1}{2}$ m. long nearly, N. and S., and about $1\frac{1}{2}$ broad, at the distance of 4 m. from the coast, and nearly parallel thereto. Its S. point is in lat. $20^{\circ} 44' N.$, lon. $37^{\circ} 15' E.$ It is rather high table-land, composed of rocky sand stone, in steep cliffs, apparently worn away by the heavy rains. It has a very sterile appearance, there being nothing to relieve the eye but rocks, barren sands and innumerable shoals, excepting on the S. point of the Island, where there are a few mangrove trees. The remains of two rough but dry wells were found on the N. end, but no vestige of a tank, or any other ruin. The Island is surrounded by a coral reef, which extends 3 m. off the N. end, and thus forms the S. side of the E. entrance to Dokhána Bay. A rocky spit extends 1 m. off from the S. end, with anchorage in 12 fathoms on its S.E. side. Anchorage is also to be had on the W. side of it, in any depth required.

Myetta is a small, high, barren island, 3 m. to the E. of Macowa, situated upon the S.E. part

of a coral reef, $4\frac{1}{2}$ m. long, and nearly 2 m. broad; it has another small island upon it, 1 m. N.W. of Myetta. This reef extends nearly 1 m. S. of Myetta; and at 2 m. S.S.W. of this island is a sunken patch of rocks, and about 4 m. from it, upon the same bearing, is a $1\frac{1}{2}$ -fathom patch of rocks. These two patches, which are $1\frac{1}{2}$ m. apart, form the entrance to Macowa from the sea; the S. high part of Macowa, about W. $\frac{1}{2}$ N., should lead through between them. When the E. extreme of Macowa Island bears N., you should haul to the S.W. towards Chimney Hill, to pass round the S. tip of Macowa Reef. **The Channel** is $1\frac{1}{2}$ m. broad between this reef and the numerous reefs to the N.E. of Duberdabb. There is a channel between Myetta and Macowa Islands, with many sunken patches in it.

DOKHANA, or DOHONA BAY is formed by Ras Roway and the reef which extends S. from it, from the S. extremity of which it runs inland to the N.N.W. nearly 20 m.; the S. part, or mouth of this Bay, is encumbered with small islands, reefs and shoals. The part more particularly called Dokhána Bay is situated on the W. side of this extensive bay, at the distance of 18 m. N. by W., and N.N.W. from Khor Makáffl. It has good anchorage, and the water is better than that generally met with on the coast. The well is about 1 m. from the beach, to which the water-casks may be rolled and filled, or the water may be purchased of the natives: but neither fresh provisions nor fire-wood are to be procured. The E. entrance to this bay is about $\frac{1}{2}$ m. wide, the S. part being bounded by the reef off the N. part of Macowa, and on the N. by the extreme of Ras Roway Reef; the depth between being 18 fathoms. Having passed this, the breadth increases to more than 1 m., but again becomes narrower in what may be called the W., or inner entrance, formed by a sand-bank on the N.W. part of Macowa Reef and a small island off it; this is also about $\frac{1}{2}$ m. wide. After passing through the inner entrance, the soundings will be from 12 to 4 fathoms, until abreast of the third island, where they deepen; but there are many patches for which the eye can be the only guide. Having passed the third island and its extensive reef, a course about N.W. will carry the ship to the anchorage at Dokhána, which is a little to the N. of a cluster of sandy islands, off which are some rocky patches of 2 fathoms.

The channel inside Macowa, leading to Dokhána Bay from the S., is safe, as the patch in the S. part of it, off Little Makáffl, can be seen, and the soundings decrease towards the N.W. part of that island, affording an opportunity of anchoring conveniently.

The *Benares* sailed out through the E. channel from Dokhána; and, as the channel is intricate and dangerous, it has been thought proper to give an account of the proceedings:—Weighed in early morning from Dokhána, and after clearing the islands and patches of 2 fathoms, which are 2 m. from the anchorage, we steered just to the E. of the third island (which is connected to the second by the shoal water), and anchored in 7 fathoms, amongst a number of patches off the E. entrance, and about 1 m. N. of the extensive reef off the N. part of Macowa Island; the extreme S. point of Ras Roway Reef bearing E.S.E., and the entrance distant $\frac{1}{2}$ m.; the extremes of Macowa, from S. by W. $\frac{1}{2}$ W., to S. by E. $\frac{1}{2}$ E. Weighed with a light N. wind, and proceeded through the E. entrance; in standing out we had 10, 6, and 5 fathoms, rocks and sand. From thence we worked through a maze of reefs, with deep water between, and in the afternoon anchored under the lee of a reef, on its edge, in 9 fathoms, rocks and sand, about 1 m. to the E. of Ras Roway, which forms a bluff on the highest land hereabout.

RAS ROWAY lies $10\frac{1}{2}$ m. about N. by E. from the N. end of Macowa Island. Between Myetta Island and Ras Roway there is a continued mass of rocky patches, and deep, narrow channels; outside of them again are two other reefs, with two small sandy islands; which render this a dangerous part of the coast to make from the S.E. at night-time; when it is the first land-fall after leaving Jebel Teer, on the N. passage, up the Red Sea. From Ras Roway, the reefs off Jiddah on the Arabian coast bear about E. by N., and are 100 m. distant.

Oomul Groosh, or Ohm-el-Kuroosh, the outer island, is a sand-bank on a small reef, about $\frac{1}{2}$ m. in diameter, in lat. $20^{\circ} 51' N.$, lon. $37^{\circ} 26' E.$; and it is 7 m. N.E. by E. from Myetta Island. The other, called **Shab Baraya**, is 3 m. to the W. of it, and is situated upon the S. end of an extensive reef, which runs 4 m. to the N., and on which the H.E.I.C. sloop-of-war *Nautilus* was wrecked in 1833.

Dangers. From 1 to 3 m. E. of Ras Roway are three small shoals or sand-banks; and at 2 m. E. by N. of a sandy cape, which is 2 m. to the N. of Ras Roway Bluff, there are two dangerous sunken rocks.

The Coast, from the E. tip of Ras Roway, trends rather straight to the N.W. At 12 m. to the N.W. from the E. sandy cape is the S.E. end of a reef, called Shab Kumeeri, which extends nearly 5 m. N.W., and is only 1 m. off the coast, which to the S.E. of it is steep-to. There are a few patches between this shab and the coast, which can be seen by a good look-out. At 8 m. to N.W. from Shab Kumeeri is **Khor Mishmish**; there are two breaking patches about 2 m. off the

coast between, and another, considerably larger, about $2\frac{1}{2}$ m. N.E. of the entrance. There is also a dangerous sunken rock, lying at a distance of 6 m. in nearly the same direction, from Khor Shenab, on which the sea breaks sometimes: between these two latter there are no soundings. This is the outer danger hereabout, and is nearly 6 m. from the land; it lies in lat. $21^{\circ} 25' N$.

ABOO MISHMISH, or, more properly, Khor Shenab, is 35 m. to the N. of Khor Makáffl. **Ras Roway**, situated between them, is a very prominent part of the Nubian coast. **Khor Shenab** is formed through a gap in the coast-reef, and extends between 3 and 4 m. inland: it is upwards of 200 yards wide at the entrance, with a depth of 30 to 15 fathoms, decreasing as you advance inwards. A vessel may run in with a fair wind, but there is no working room in it. The best mark for this khor is Quoin Hill, on with two small paps on the highest part of the land within: or it may be found by the breaking patches to the N.E. of it, which will be on with Aboo Hamahma when bearing N.W. $\frac{1}{2}$ W.; and from the S. part of these outer patches the entrance is to the S.W. 2 m. There is neither wood, water, nor fresh provisions to be had here.

Khor Dullow is nearly 5 m. to the N.W. of Shenab, and although it runs nearly as far inland, it is only about 200 yards wide, and is also a gap in the coast reef, having in the entrance from 18 to 15 fathoms. A vessel with a fair wind may run in here and anchor, but there is no room for working. About 2 or 3 m. to the N.E. of this place is a breaking reef, called **Shab Dullow**, from the S. part of which Aboo Hamahma bears W. by N. A dangerous rock lies $3\frac{1}{2}$ m. to the S.E. of Shab Dullow; it is upwards of 5 m. from the coast-line.

Aboo Hamahma (not on the charts), is a table-topped hill to the N. of Dullow, in a range near the coast, which continues to the S., and terminates in small straggling hummocks, a little to the S. of Khor Mishmish. Haycock Peak is the most S. but one in the above range. **Quoin Hill** is to the N. of the last; it has a piece of land curiously projecting from its S. brow, which is the highest, and is situated at the upper part of Khor Mishmish. The Paps are a notch in the centre part of the highest hill, to the W. of Mishmish.

OUTER REEFS AND INNER CHANNEL FROM SUAKIN TO KHOR DULLOW.

The land throughout this tract is high and mountainous in the interior, of barren aspect, and decreases in several ranges towards the coast, and at 6 to 10 m. from it terminates in a broken ridge of hills on a sandy plain, partially covered with short furze and tufts of bad grass, which extend to the sea, without any appearance of cultivation.

The Outer Reefs forming the Inner channel along this coast are generally 2 and 3 m. from it, excepting in the neighbourhood of Jezirat Abdullah, Saláka, Duberdabb, and Ras Roway, in the latter of which places they approach within half a mile. The outermost parts of these reefs are 12 m. off the coast, and are in patches with deep water between. The first cluster extends from Suakin to 4 m. to the S. of Sheikh Baroud, or to the parallel of $19^{\circ} 31' N$. Between this and the parallel of $19^{\circ} 36'$, or about 1 m. to the N. of Sheikh Baroud, where the reef again commences, is the **First Outlet** into the open sea.

The second cluster of reefs continues so far as the parallel of $19^{\circ} 44' N$., or about 6 m. to the N. of Mersa Geehai, and extends about 10 m. off the coast. To the N. of this cluster is the **Second Outlet**, which terminates off Mersa Duroor, or in lat. $19^{\circ} 48\frac{1}{2}'$. These the natives speak of as the principal outlets in this neighbourhood. Close under some of the above reefs anchorage may be found; but the ports on the coast being only 12 to 14 m. apart, will, perhaps, in most cases, preclude the necessity of resorting to them. One of these anchorages is between Shab Damart and Mersa Kuwai, in 25 fathoms, mud; a second is to the S.E. of Jezirat Abdullah, in 20 fathoms, mud; a third is to the N.E. of Geehai, in from 9 to 16 fathoms, sand.

From the second outlet terminating off Mersa Muroor, the outer reefs extend in patches to the distance of 10 m. off the land, and cease a little to the S. of Mersa Fejer, or nearly to lat. $20^{\circ} 0' N$., the inner part being distant from that port about 2 m.; and from thence is the **Third Outlet**, which extends up to the E. by S. of Awi Teree, or to the parallel of $20^{\circ} 7' N$.; but there is a rocky patch about 2 or 3 m. from the coast in the centre of it.

The outer reefs continue from the E. by S. of Awi Teree to the N., and commence in the S. part with a shoal called **Shab Suady**, about 4 m. off the coast, which is upwards of 6 m. in extent, its N. extreme being to the E. of Mersa Ar-rakea. On the inside of this shoal are many patches of sunken rocks, and the reefs continue in this way to the N. with small channels to the open sea, none of which are frequented or considered safe, until to the N.E. of Ar-rakea, where there is an opening—the **Fourth Outlet**—about half a mile in extent, with some patches of sunken rocks in its neighbourhood; and therefore it is not to be recommended, although frequently made use of by native boats proceeding to Jiddah.

With moderate N. winds, these boats can reach that port from it, and therefore an interval of one or two days' fine weather induces them to take advantage of this opening, in order to avoid the narrow and intricate parts of the Inner Channel off Saláka, and to the N. of that place. When the winds are fresh, it is usual to work from port to port daily on this coast, until up with Macowa, from whence they proceed across to Jiddah. Anchorages on rocks and sand may be obtained under many of the outer patches between Duroor and Fejer, and on those from Awi Teree to the N., particularly to the N.E. of Ar-rakea, under the S. part of the reefs, in 10 fathoms, rocks and sand.

From the outlet terminating to the N.E. of Ar-rakea, and which is not reckoned usually amongst the principal channels, the outer reefs extend in patches to the parallel of Saláka, or to $20^{\circ} 26'$ N. lat.; and 3 m. to the S. of that anchorage they are more numerous, and approach nearer to the shore, the channel being reduced to the S. of that place to half a mile or less in breadth, with some sunken rocks on the E. side of it, which are near the largest reef on that side; and when Table Mound is shutting in with the top of the False Chimney Hill, a good look-out should be kept for them. The first sunken rock is about a mile to the S. of Saláka, and to the S. of this sunken rock two patches will be seen, which may be passed on either side, but the in-shore channel is the widest. To the N.E. of these, off the end of the largest reef, is another sunken rock.

Anchorage.—If the weather is cloudy, it will at times be difficult to discern the sunken rocks and patches: it will then be advisable to remain at anchor at Saláka, or some other place about the reefs, until it clears up. If coming from the S., anchorage may be found in 7 or 8 fathoms, rocks and sand, under the two small patches already mentioned, to the W. of the largest reefs bordering the narrowest part of the channel, about 2 m. to the S. of the sandy spit at Saláka.

The Fifth Outlet from Suakin is between the parallels of $20^{\circ} 26'$ and $20^{\circ} 31\frac{1}{2}'$ N., being 5 m. broad to the open sea. From the latter parallel, at 9 m. to the S.E. of Duberdabb, where the reefs again commence, they continue in patches to the N. to lat. $20^{\circ} 43'$. This cluster approaches within half a mile of the coast, a little to the S. of Duberdabb, and the outermost patch, called **Guttat el Banah**, is 10 m. E. $\frac{1}{2}$ N. from Duberdabb, and 9 m. S.E. by E. from the sandy point of Macowa Island.

The Sixth Outlet is about 2 m. wide between the two rocky patches lying at 2 and 4 m. S.S.W. from Myetta Island. From the N. one of these, the reefs continue to the N. to lat. $21^{\circ} 3' N.$, including all those about Macowa and Ras Roway, already described.

From the two dangerous rocky patches lying E. by N. 2 m. from the sandy cape to the N. of Ras Roway, up to Khor Dullow, there are only three small clusters. One is 12 m. N.W. from the sandy cape, and is called **Shab Kumeeri**: it is narrow, and forms a channel between it and the coast, 1 m. broad, with several small sunken patches in it near to the reef. The second is N.E. of Khor Mishmish, and from $2\frac{1}{2}$ to 3 m. off shore. The third is **Shab Dullow**, lying N.E. of Khor Dullow, from $2\frac{1}{2}$ to 5 m. off shore. Between **Shab Kumeeri** and the reefs off **Shenáb** are also two small patches. There is also a single sunken rock, lying 6 m. N.E. of Khor **Shenáb**.

COAST FROM KHOR SHENAB TO SHADWAN ISLAND.

Khor Shenab, or Mishmish, is an extensive inlet on the coast of Nubia, in lat. $21^{\circ} 21' N.$, lon. $37^{\circ} 4' E.$, and has already been described in page 141. Here the surveying vessels *Benares* and *Palinurus* commenced their surveys, one to the N., and the other to the S. This inlet is the S. one of nine which lie on the coast. Khor and **Shab Dullow** have also been described.

From the outermost dangerous rock in lat. $21^{\circ} 25' N.$, to the N.E. of Khor **Shenáb**, on a N. bearing, and 15 m. distant, there is a small dangerous reef, the outer one of several: this small reef lies 12 m. from the shore, in lat. $21^{\circ} 39' N.$, lon. $37^{\circ} 7' E.$, and has no soundings near it. From this again the next outer danger is a large reef, of $2\frac{1}{2}$ m. in length, its S. end in lat. $22^{\circ} 0' N.$, and lon. $37^{\circ} 1' E.$ Between these two last-mentioned reefs there are no dangers, except those which lie 3 or 4 m. to the W., among which anchorage may be found, as well as at the latter large reef, which is nearly connected with an extensive range of reefs, extending from this for 8 or 9 m. to the shore, which here forms **Ras Elba Cape**, with a range of small hills on it.

RAS ELBA, in lat. $22^{\circ} 3\frac{1}{2}' N.$, and lon. $36^{\circ} 51' E.$, is so named from a range of conspicuous high mountains in the interior, called by the natives **Elba**, distant from the Cape 24 and 25 m. The S. and highest hill on this range, of 6,900 feet elevation, is called **South Peak**; it is in lat. $21^{\circ} 53' N.$, and lon. $36^{\circ} 28' E.$ These lofty **Elba** mountains form a magnificent land-mark. Vessels, passing up the Red Sea, should remember the prominence of **Cape Elba**. The H.E.I.C. Steamer *Feroze*, in 1848, not having seen land after passing **Jebel Teer**, suddenly at 4h., in the morning, found herself among the reefs off **Ras Elba**. The mountains had been visible for 2 hours but the pilot could not believe they were so near as they proved to be.

Between Elba Cape and Khor Shenáb, any of the inlets on the coast afford good anchorage for ships, taking care to avoid the numerous detached reefs off the coast 3 or 4 m.; even under many of these reefs anchorage is to be got, the eyesight being your guide.

The coast, from Elba Cape to the N., is low near the sea; gradually rising inland, it takes a N.W. direction for 19 m. to a coral cliff cape, of moderate elevation, called Ras Juzreel; there is an excellent harbour close to the S. of this cape, called **Merza Helaib**. A vessel, wishing to anchor there, must haul close round a sandy island, nearly attached to the cape, and then haul up to the N.W. between a reef and the island; the passage is narrow, but when clear of the reef, you may stand to the S.W. and the S. into a beautiful harbour, where a vessel may anchor in 5 or 6 fathoms, $\frac{1}{2}$ m. from the shore. Good water is to be procured here at some wells about 500 yards from the beach; fire-wood is plentiful; sheep are numerous, and to be obtained from the civil and obliging natives. The coast from Ras Juzreel takes a direction N.W. for 33 m. to Ras Aboo Darah, in lat. $22^{\circ} 40' N.$, which is due S. from the Siah Islands: to seaward it is studded with innumerable reefs and rocks. High Peak, of the Elba range, 5,000 ft. high, stands 17 m. to W. by S. of Ras Juzreel.

Elba Island, a small low coral island, in lat. $22^{\circ} 24' N.$ and lon. $36^{\circ} 29' E.$, is situated on the body of an extensive reef or reefs, by which it is surrounded; anchorage may be found on some spots, or breaks, in this reef, but sunken rocks are numerous about it.

The Siah, or Seeall Islands are three in number, low and sandy, and partly covered with bushes: they are 8 or 9 m. from Aboo Darah, the nearest part of the coast, and surrounded by numerous rocks and reefs, with intricate passages among them. The E. Seeall Island is the largest, being about 2 m. long, from E. to W. These Islands are the residence of numerous fishermen of the Hootainy tribe; the large island is in lat. $22^{\circ} 47' N.$, and lon. $36^{\circ} 12' E.$, and can be seen at times from the large reef Aboofenderah, which is $7\frac{1}{2}$ m. to the N.E. of Seeall Island.

Shab Aboofenderah Reef, in lat. $22^{\circ} 54' N.$, and lon. $36^{\circ} 17' E.$, bearing N.W. by N. from the outer large reef off Elba Cape, just described, is very large, 3 m. from E. to W., and it is the S. and outer reef of what was called in the old charts Foul Bay. It has anchorage on its S. side, but studded with numerous small patches of rocks: there is also a small rock about 20 ft. high on its E. extreme, probably the remains of an island, the outer part being washed away.

Having drawn a line between Aboofenderah Reef and the outer reef off Cape Elba, it just touches the outer reefs between these two points, extending and detached from the shore. Their positions remain to be described, as follows: One small reef, lat. $22^{\circ} 10' N.$, 2 m. to the W. of the line, and the same distance from shore. Two small reefs in lat. $22^{\circ} 15\frac{1}{2}' N.$, 1 m. to the W. of the line, and $5\frac{1}{2}$ m. from the shore. The outer reef of a group, in lat. $22^{\circ} 35\frac{1}{2}' N.$, just on the line, on a bank of soundings, extending 20 m. to the N.W., as far as the Siah Islands. These reefs are very dangerous, having numbers of detached rocks about them; however, if a small vessel is in want of anchorage, she may find shelter under most of them.

Meereer, a low sandy islet, surrounded by numerous reefs, lies about 35 m. to the N.W. of the large Siah. **Mersa Sharb**, lying on the coast between, has good anchorage for a small vessel in its entrance; and there seem to be fewer reefs off this place than either to the N. or the S.E.

ST. JOHN'S ISLAND, or SEBERJET, in lat. $23^{\circ} 36' N.$, and lon. $36^{\circ} 10' E.$, is a small high island, of 1000 ft. elevation, and of a circular form; the hill in the centre of the island forming a remarkable sharp peak of volcanic origin. This island was formerly famous for its emeralds, but now is the lonely abode of one or two fishermen, who are constantly on the look-out for turtle, which are very numerous hereabouts, and valuable for their shell. The island neither affords water nor vegetable production, being dreadfully barren; it is steep on all sides, having no soundings near the band of coral reef which surrounds it, or, more properly speaking, which constitutes its base. During the survey of the Red Sea, the surveying vessel *Palinurus* held on this island during a N.-Wester, by hooking the kedge anchor to a hole in the reef, and making fast. At 3 m. to the S.E. of Seberjet, there is a small steep rocky island, with no soundings near.

Foul Bay, the S. point of which lies to the W. of Seberjet Island, and to N.W. of Aboofenderah Reef, is full of reefs and sunken rocks; a line drawn from Aboofenderah Reef, on a N.W. bearing, to lat. $22^{\circ} 54' N.$, and lon. $36^{\circ} 18' E.$, touches the outer boundary of reefs to the N.W., till this line is crossed by another drawn to the S.W. from Seberjet. This last line, or Seberjet bearing N.E. by N., will lead vessels clear to the E. of St. John's reef and others.

St. John's Reef lies in lat. $23^{\circ} 26' N.$, and lon. $35^{\circ} 59' E.$, or 14 m. to the S.W. of the island. Other reefs lie to the S.W. and W. of this outer reef; indeed this part of the sea seems a nest of reefs. Therefore no vessel should pass to the W. of a line drawn from it to Macour Island, unless in charge of a pilot. There are numerous reefs in the northern part of Foul Bay, which is bounded on the N. side by Macour Island and Ras Benass promontory.

Macour, or Emerald Island, bears from St. John's N.W. $\frac{1}{2}$ W., distant $23\frac{1}{2}$ m., and is in lat. $23^{\circ} 50' N.$ and lon. $36^{\circ} 48' E.$, and distant between 3 and 4 m. from the low sandy cape at Ras Benass; the island is small, not being above a mile in length, and about 100 ft. high in the centre, composed of one mass of coral, and affords no anchorage, bottom not being found. It is surrounded by a coral reef, which, off the N.W. end, extends half a mile from the island.

RAS BENASS.—The body of this cape, on which are some moderately-elevated hills, lies in lat. $23^{\circ} 55' N.$; the outer extreme of the cape, in lon. $35^{\circ} 47' E.$, is a low sandy point running out to the S.E. On the E. side of the cape there is no bottom at 30 fathoms close to the shore; on the W. side there is an extensive reef running off to the S. as far as the parallel of Emerald Island; off the extreme S. point of the reef are numerous small reefs and rocks, with irregular soundings between them, from 8 to 30 fathoms. The channel between this reef and Emerald Island is $1\frac{1}{2}$ m. broad, with overfalls from 7 to 12 fathoms, rocks. A vessel coming in through this channel must be cautious not to come too close to the sunken rocks and reefs off the cape, till in deep water; she may then work up to the anchorage N.N.E. to the head of the bay, and anchor in 10 or 12 fathoms, about 1 m. from the shore, well sheltered from all winds, the low sandy cape off Ras Benass bearing S.E., distant $3\frac{3}{4}$ m. In working up, care should be taken not to come too near to the low sandy cape, on account of the numerous rocks near it. On the main land, are some ancient Egyptian ruins, nearly covered with sand, and supposed to be the remains of the city of Berenice. Off this place, vessels can anchor in from 8 to 12 fathoms.

Near the beach, in Foul Bay, is a range of high, remarkable peaks, called Berenice Mountains, which are seen some distance from sea; the N. and highest one of this range is 4,440 ft. high, and lies in lat. $23^{\circ} 34' N.$, and lon. $35^{\circ} 20' E.$

The Coast, from Ras Benass, runs W.N.W. 7 or 8 m. to a point, off which there are two small reefs, distant from the point about 2 m.; the land there forms a deep bay, having no soundings near the shore. In lat. $24^{\circ} 10' N.$, and lon. $35^{\circ} 40' E.$, there is a large reef, called the **Fury Shoal**, and several small ones to the N.W.; the outer one distant from the main 9 or 10 m. There is anchorage in 6 or 7 fathoms, rocks, on the S. part of Fury Shoal; but it is very bad holding-ground, and difficult to approach, being studded with small rocks. From the Fury Shoal, the dangers extend only a few miles off the coast of Egypt to Cosire, and will be mentioned as follows:—To the W.N.W. of the Fury Shoal, and on the main land, there is good anchorage, called **Mersa Wadi Lehuma**, in lat. $24^{\circ} 12' N.$, in 7 or 8 fathoms, under the lee of a low point, off which a narrow reef projects to the S., between which and the main a vessel may anchor. To the E. and to the N.E. of this anchorage, there is a cluster of small reefs in lat. $24^{\circ} 13'$ and $24^{\circ} 14' N.$, and lon. $35^{\circ} 34' E.$, with no soundings close to them; and 9 or 10 m. to the N.W. is another cluster, with numerous detached rocks in the channel between them.

Jebel Wadi Lehuma, in lat. $24^{\circ} 12' N.$, lon. $35^{\circ} E.$, is the highest peak of the Emerald Mountains, which stand about 40 m. to the W.N.W. of Ras Benass. This magnificent peak has been seen in clear weather upwards of 100 m.; it stands about 21 leagues to the S.W. of the light-house on Dædalus Reef.

Mehabees, or South Island, is the most S. of four low sandy islands, situated near the main land, and lying nearly N. and S. from each other. South Island lies in lat. $24^{\circ} 19' N.$, and lon. $35^{\circ} 22' E.$, and 2 m. off the main, to which it is joined by an extensive reef, $1\frac{1}{2}$ m. long. These islands, the N. one of which, called Seeoul, is in lat. $24^{\circ} 23\frac{1}{2}' N.$, are surrounded by extensive reefs, with narrow passages between them, which are studded with rocks. Along the outer or E. edge of the reef there is no bottom at 30 fathoms close to the rocks. To the S. a vessel may anchor in 8 or 10 fathoms water between South Island and the main: there are two small reefs to the S.E. of South Island, about 1 m. distant, and two small patches, $3\frac{1}{2}$ m. to E. by S. Other dangerous reefs lie at 6 m. and 7 m. to the E. by S., and the E.S.E.; and others again between these and the **Fury Shoal**.

A small reef lies in lat. $24^{\circ} 29' N.$, and lon. $35^{\circ} 20' E.$, with several sunken rocks near it, $4\frac{1}{2}$ m. from the shore, and 3 m. from the N. extreme of the reef joining the four islands to the S.E., with overfalls from 14 to 30 fathoms between the patches of rocks. **Ras Ohm-ul-Ahbas**, in lat. $24^{\circ} 33' N.$, is a low point, to the S. of which there is indifferent anchorage under its lee, close to the shore, in 10 fathoms, and good shelter from the N.W.: it lies nearly S. from the Island Wadi Jumaal, distant 6 m., and can be easily known by a remarkable sugar loaf hill close to the beach, which is 300 or 400 ft. high.

Sherm Sheik, in lat. $24^{\circ} 36\frac{1}{2}' N.$, and 4 m. S.W. of the S. point of Wadi Jumaal Island, is a cove in the main land, the entrance to which is about 200 yards broad, the anchorage capacious at the further end, in 10 fathoms, sand and mud. Wood can be procured here close to the anchorage.

Wadi Jumaul is a low rocky island, in lat. (the centre) $24^{\circ} 39\frac{1}{2}'$ N., and lon. $35^{\circ} 11'$ E., $2\frac{1}{2}$ m. in length N.W. and S.E.: there is an extensive coral reef off the N. end. The channel between the island and the main is dangerous, being full of small reefs and patches of rocks. Off the S. point there is a spit of shoal water, on which a vessel may anchor in 8 or 10 fathoms, sand and rocks, with the centre of the island bearing N. **A dangerous sunken rock** lies E. by N. 5 m. from the island, and another to the N. of the island 5 m. A small shoal, in lat. $24^{\circ} 46\frac{1}{2}'$ N., lies 7 m. to the N. of the island, and another half-way between them. The coast about this part ought to be approached with caution when within 15 m. of the land, as far as lat. 25° N.

DÆDALUS REEF, or Abdul Kheesan, the only reef in centre of Red Sea, lat. $24^{\circ} 56'$ N., lon. $35^{\circ} 51'$ E., and 41 m. to the E.N.E. of Wadi Jumaul, used to be dangerous before the iron light-house was erected there (by Mr. W. Parkes, C.E., the eminent harbour-engineer). During the S.-Easter season of the Red Sea, Nov. to March, the sand-bank used to be covered.

The Light on Dædalus is *fixed*, 61 ft. above sea, visible 14 m.; the light-house is 70 ft. high, from base to vane; of open iron-work, painted Red, and hoists the Turkish flag. The Brothers Islands bear from the Dædalus Light N.N.W. $\frac{1}{2}$ W. (by compass), or N.W. by N. (*true*), and are distant 98 m. (See page 29.)

The Coast of Egypt. Ras Doorah, in lat. $24^{\circ} 53'$ N., and lon. $34^{\circ} 58'$ E., is a low point of the main, with a long reef running parallel and close to it. To the North of the cape 4 m., there is a dangerous rock, and several other detached rocks to E.S.E. 8 m.; this part is dangerous for ships. **Mirza Toondebah**, in lat. $24^{\circ} 57'$ N., and lon. $34^{\circ} 56'$ E., is an anchorage close in shore, where a vessel may anchor in 10 fathoms, under shelter of a low point, and a small reef projecting from it. To the E.N.E. $3\frac{1}{2}$ m. from this anchorage, there is a small reef, with anchorage on its S.E. side. In lat. $25^{\circ} 4'$ N., and lon. $34^{\circ} 55'$ E., there is a reef $2\frac{1}{2}$ m. from the shore, on the S. extremity of which a ship may anchor in from 10 to 18 fathoms, well sheltered from N.W. winds. In lat. $25^{\circ} 12'$ N., and lon. $34^{\circ} 48'$ E., anchorage will be found in a small, narrow cove, called Mirza Zebara, the entrance not more than 100 yards broad, but perfectly sheltered; to the N. of this lies the **Elphinstone Reef**, discovered in the *Palinurus*, in 1827, in lat. $25^{\circ} 18\frac{1}{2}'$ N., and lon. $34^{\circ} 49'$ E. To the W.N.W. of this reef $5\frac{1}{2}$ m., is indifferent anchorage, on the main land in Mirza Debah, between which and Elphinstone Reef are several shoals and rocks, 3 m. from the shore. **Mirza Mombaruck**, a good anchorage, in lat. $25^{\circ} 30'$ N., and lon. $34^{\circ} 39'$ E., is a small bay with soundings of 6 and 7 fathoms inside. Care must be taken in anchoring, as there is a sunken rock in the middle of the bay, visible from the fore-yard. **Ras Humroo** is 4 m. N.W. of this, and is a bluff, red cape. **Mirza Trombee**, in lat. $25^{\circ} 42'$ N., and lon. $34^{\circ} 33'$ E., is an anchorage in 7 or 8 fathoms, a little sheltered from N.-Westers by a low point of the main. To the N. of the point are two small shoals close in-shore. Soundings of 17 and 20 fathoms are near them, as well as 3 m. to the E. and N.E.

Ras Aboo Haja, in lat. $25^{\circ} 58'$ N., and lon. $34^{\circ} 22\frac{1}{2}'$ E., is 11 m. below Cosire, bearing S.E. by S. from the town. Off this cape there are two sunken rocks, distant from the shore 1 m. There is a black hill, shaped like a cone, standing among a number of low sand-hills, about 3 m. in-shore, which bears from the rocks W.S.W. $\frac{1}{4}$ S.

COSIRE, COSEER, or KOSAIR, the town is in lat. $26^{\circ} 7'$ N., and lon. $34^{\circ} 16'$ E., and contains about 2,000 inhabitants. The houses are low, and built on a sandy point, projecting a little from the line of coast: a small Turkish fort occupies the more elevated ground at the back, or land-side of the town, and can be seen by a ship at sea 10 or 12 m. distant. The coast, 8 or 9 m. N. and S. of Cosire, is very low: and a long line of moderately-elevated hills, 5 or 6 m. inland, presents no prominent marks to guide a ship into the port, more particularly at night-time. **Jebel Aboo Tiour**, a distant mountain, of about 4,500 feet elevation, is the most remarkable; the N.W. brow of it is the highest part, and bears from the anchorage S.S.W. distant $19\frac{1}{2}$ m. This hill can seldom be seen at night. The Egyptian coast from Ras Benass to Cosire, is thinly peopled by the Ababdeh tribe, and wandering parties are found as high as Suez. They are in general poor, and said to be treacherous and cruel.

Should a ship, making this port, not be certain of her latitude, it would be better to make the Brothers (hereafter described), and then, if N.W. winds are blowing, stand in for the coast, 7 or 8 m. to the N. of the port, then bear up close along it. **Caution.** A ship cannot be too careful not to get to the S. of the port. This has frequently been the case, and a few miles to the S. has taken three or four days to beat back; for when N.W. winds are blowing, a continued drain of current and heavy swells sets along, and some distance from the coast. If a ship by accident should get to the S., she had better stand over to the coast of Arabia, and make her nothing there, than short tacks on the Egyptian coast. If a vessel makes the port at night, and does not intend to anchor, she ought not to heave-to, but keep off and on under topsails, or she

will drift to leeward. If the wind be light, she may anchor on a small patch of soundings from 15 to 17 fathoms, sand, which lies $1\frac{1}{2}$ m. to the E. from the fort; between this bank and the anchorage in the roads there are soundings of 45 fathoms.

In anchoring at Cosire, the best place is close to the point of the reef forming the roads. Should the wind blow hard from the N.W., a vessel may, by placing a grapnel on the reef, haul close up to it by a hawser, as the native boats manage, in a line of S.S.W. from the point of the reefs. The sand in the roads is shoal, having only $1\frac{1}{2}$ fathoms water on it. Having anchored near the reef, another bower anchor ought to be let go to the S.S.E., in case the wind should change to the S., from which quarter it seldom blows hard, and there is little danger with a long scope of cable, and as the ground holds well, being sand at the top and clay underneath. This place, in a few years more, will not afford shelter for boats, which are daily arriving to carry away the immense quantity of grain for Arabia, bringing as ballast a quantity of sand, which they are allowed to throw overboard into the roads, and is fast filling them up. Variation of the compass is $5\frac{1}{2}^{\circ}$ W. On the F. and C. of moon, H. W. occurs at 6 h.; rise and fall 3 ft. Easterly winds are not to be dreaded here; being the sea-breeze, they are only light and pleasant, and bring with them little or no swell.

THE BROTHERS are two small coral islands, situated in lat. $26^{\circ} 19' N.$, and lon. $34^{\circ} 50' E.$, and bearing from Cosire E.N.E. 33 m. distant; they are 40 or 50 ft. out of water, steep all round, and have no soundings between them; they may be seen 10 or 12 m. off.

It is proposed to place a light on the Brothers.

The coast to the N. of Cosire forms a straight line N.N.W. and S.S.E., as far as lat. $26^{\circ} 38' N.$; it is safe to approach, and clear of dangers, except off one small anchorage called Gouay. A line from the outer roads of Cosire drawn N. by W. clears all the dangers on the coast of Egypt to the N., as far as the Jafatain Islands; to the N. of which has been included in the Straits of Jubal. From Cosire to Suez, the country inland is occupied by the Mahahzi, a small tribe bearing a bad character; but they are seldom seen near the coast.

Gouay is a small Bedouin village, in lat. $26^{\circ} 21' N.$, and lon. $34^{\circ} 8' E.$ Here is good anchorage for small craft close to the shore, among a cluster of small reefs and rocks, in 4 or 5 fathoms. Off this place are several dangerous reefs, with soundings between them and the shore; they bear from the anchorage about N.N.E. 2 and $3\frac{1}{2}$ m., and lie in lat. $26^{\circ} 23\frac{1}{2}' N.$, and $26^{\circ} 25' N.$, and from 2 to 3 m. off shore, with soundings about them to the N. and N.E. 2 m. The coast is then clear as far as Safadjer Island, between which and a low woody point of the main, called Safadjer Ulbur, are three small reefs, in lat. $26^{\circ} 40' N.$, and the outer one in lon. $34^{\circ} 3' E.$

Safahja or Safadjer Island, 5 m. long, S. by E. and N. by W., and 2 m. broad at the N. part, lies between lat. $26^{\circ} 43' N.$ and $26^{\circ} 48' N.$ The S. end is a long, low, sandy point, and on the N. end there is a remarkable table-hill about 150 ft. high, and in lon. $33^{\circ} 57\frac{1}{2}' E.$ Bearing E. by S. from this hill, distant $4\frac{1}{2}$ m., lies a **dangerous coral reef** about $\frac{1}{2}$ m. in extent, with no soundings near it, in lat. $26^{\circ} 46\frac{1}{4}' N.$ Two other reefs lie to S.S.E. of this last-mentioned reef, one distant 2 m., the other $4\frac{1}{2}$ m., and are 6 m. off shore. This last reef is the outer danger near Safadjer Island, and is called **Shab Shear**, in lat. $26^{\circ} 42' N.$, and lon. $34^{\circ} 4' E.$ Safadjer Island is situated in the centre of a deep bay, in which there is good anchorage, both to the N. and S. of the island; the soundings are very irregular, from 5 to 25 fathoms, sand and rocks. The best anchorage in this part of the bay is near the S. point of the island: from the main an extensive reef projects out, and extends to the S. as far as the low woody point called Safadjer Ulbur. The channel between the Island and the main gradually decreases, until it becomes not more than 200 yards broad, and the depth of water 3 fathoms: it then increases until you pass the Island, and enter the northern bay. The E. side of this Island is lined by a narrow reef, with no soundings at 30 fathoms close to it; off the N. end a narrow reef projects in prongs to some distance. Between this reef off the N. end of the Island, and the islets joining Ras Abou-Soomi, is the channel into the N. bay: but there is a shoal in the middle of the channel, which bears from the table-hill on Safadjer due N., distant $2\frac{3}{4}$ m. In the upper part of this bay there are three small islets, two of which are connected together by a reef. Haul round the outer of these two islets, and a vessel will find good anchorage between them and the main. The soundings are irregular, from 7 to 25 fathoms, sand and clay. The bay shelters from all winds. The channel between the above islets and reef is $1\frac{1}{2}$ m. broad. **Ras Abou-Soomi** is in lat. $26^{\circ} 52' N.$, and due N. from Table Hill on Safadjer Island. This cape forms the N. extreme of Safadjer Bay; it is rather high, and safe to approach, having no bottom at 30 fathoms close to the shore.

Sail Hasheesh, or Abou Mokhadij, are two small islets, the largest in lat. $27^{\circ} 3' N.$, and lon. $33^{\circ} 55' E.$, lying in the centre of a small bay, formed by Ras Khor Abobah. There is anchorage in 10 fathoms close to the N. point of the bay, affording good shelter from the N.W. and N.

THE J'FAHTIN, or JAFATAIN ISLANDS, are five in number, the S. part of the largest being in lat. $27^{\circ} 12' N.$, and lon. $33^{\circ} 57\frac{1}{2}' E.$ The **Great Jafatain** is a long, narrow island, moderately high at the N. part, its length about $5\frac{1}{2}$ m.; between it and the main is a low, woody island, called **Aboo Mingrah**, to which it is joined by an extensive reef, which extends off the N. point of Great Jafatain in several prongs. The passage between it and Ras Salam (the point of the main) is not more than $\frac{1}{2}$ m. broad, and the soundings in it are extremely irregular. In passing through it, the surveying brig *Palinurus*, frequently had 25 and 30 fathoms, then 6 and 7 fathoms the next cast. The reef projects off the W. side of the Great Jafatain, and gradually shoals towards it; on any part of which there is good anchorage in 5 or 6 fathoms, sand.

Little Jafatain is a small, but rather high island, lying close to the E. side of the Great Jafatain. There is indifferent anchorage close to the S. end of the channel between the islands, in 10 or 12 fathoms, rocks. A small island, called **Aboo Tamahla**, bears S.E. from the S. end of Great Jafatain, distant $1\frac{1}{2}$ m.; it is steep all round. There is a dangerous patch of rocks close to the S. point of the Great Jafatain, and another patch to the S.W., distant $1\frac{1}{2}$ m., or due W. from Aboo Tamahla 2 m., with soundings about them. There is also a small coral reef S. by W., distant $2\frac{3}{4}$ m. from the S. point of the Great Jafatain, having soundings about it. Between this shoal and the main, nearly in the centre of the bay, is a small low reef, Mugomish, having an island on its S.W. point, and a spit of sunken rocks bounding its S.W. side. Between this island and the main is an extensive reef in mid-channel, in the bay formed by the islands and Cape Khor Abóbah. There is no bottom in mid-channel, and irregular over-falls as you approach the shore and islands. From Jafatain Islands to the N. the coast forms a deep bay as far as the Sea of Zeitee.

THE STRAIT OF JUBAL AND GULF OF SUEZ.

The Strait of Jubal extends from Ras Mahomed to Toor Harbour, on the Arabian side; and from the island of Shadwan to the peninsula of Zeitee, on the other. On the Egyptian side, the island of Shadwan, the Saul or Olive Islands, and reefs to the E. of them; Jubal Island, Gaysoom, Ashrafi Islands, and reefs to the E. and N.W., and the peninsula and high land of Zeitee. In the Strait of Jubal there are regular tides; also in the Sea of Suez, strong enough, when contrary, to prevent a ship from working to windward. Vessels passing either up or down the Strait should keep the Egyptian shore on board; the light-house and soundings round the Ashrafi Reef will enable a vessel to approach within a mile of the light.

Coming from the N., immediately after passing Rás Zeitee, the light-house is visible; keeping it under the high part of Shadwan Island by day, or not bringing it to the E. of S.E. by S. by night, clears all dangers N. of the Ashrafi Island and Reefs. After passing to the E. and S. of the Light-house, keep it shut in under the high land of Zeitee. By night, do not bring the light to the N. of N.W., taking care when the light has dipped not to bring the E. extreme of Shadwan Island, as you approach it, to the E. of S.S.E.; on account of the **Aboo Nahas Reef**, on which the P. and O. steamer *Carnatic* was lost. (See also page 28.)

SHADWAN is a large high island 700 ft. high, with precipitous sides, and is 7 m. in extent, N.W. and S.E.; the S. high part lies in lat. $27^{\circ} 28' N.$, and lon. $34^{\circ} 2\frac{1}{2}' E.$ There are no soundings on its E., S., and S.W. sides with 40 fathoms. On its W. side, fronting the Egyptian shore, and near the N.W., there is a low sandy and rocky point, extending a considerable distance to the W.; soundings from 8 to 10 fathoms extend from this point to the S., and towards the island. This is excellent anchorage in N.W. winds; but care must be taken to avoid a very small sunken rock, nearly in the middle of the bay; this rock can be seen if a good look-out is kept, having only 2 or 3 ft. water on it. This anchorage will answer very well for a vessel making the Straits in blowing weather, as you may work up under the lee of Shadwan in quite smooth water; the winds are sometimes very baffling under its lee, more especially when it blows from the N.W., in the Straits. The distance between the W. side of Shadwan to the reefs off the Egyptian shore is 5 or 6 m., having several shoals mid way.

A large shoal, nearly 2 m. in extent, having no soundings on its E. side, lies about 8 m. off the coast, and with the S. part of Shadwan bearing E.N.E., distant 8 m. To the N.W. of this shoal at 3 m. there are others, off which, and in the space between them, there are 10 and 25 fathoms. A small island of coral cliffs, called Gumrah, lies 3 m. to the S.E. of the large shoal; it has no soundings near it, and bears from Shadwan, high part, S.W., distant 9 m. Two small shoals, with no soundings to the E. of them, lie S.S.E., distant $1\frac{1}{2}$ and 3 m. from Gumrah. These are all the dangers in the channel to the W. of Shadwan; excepting the coast reefs.

After anchoring at Shadwan, a ship may proceed through the N. channel, where there is smooth water, into the Strait of Jubal. This channel lies between the N. end of Shadwan and

the Saul Islands. A reef extends off the N.W. end of Shadwan $\frac{3}{4}$ m., between which and the Saul Islands there is a small reef in mid-channel. Bearing N. by E. from Shadwan N.W. point, distant between 2 and 3 m., is a small but dangerous reef, **Abou Nahas**, there are no soundings on the E. and N. sides of this reef; but there are 10 and 12 fathoms a little off the S.E. side, where a vessel might anchor upon an occasion: the high part of Jubal bears from this reef N.W. by W. distant 7 m.; the E. or high part of Shadwan S.E. $\frac{1}{4}$ S., and its W. extreme about S.S.W.

The **Saul Islands** are small, low coral islands; the E. one, the largest, surrounded by a reef, having no soundings near it; the other two islands lie $1\frac{1}{2}$ m. to the W. of the former: they are three small broken coral cliffs, and are situated on the N. part of an extensive reef, off the S. side of which there is anchorage on a sandy bottom. Care must be taken not to approach this reef too close, as there are numerous coral rocks detached from it, which can be easily seen. In this channel a N.W. wind will carry a ship into the Strait of Jubal, passing close to the reefs off the Saul Islands, between them and the reef as mentioned, off the N. end of Shadwan. In hauling up to the N., you pass close to a large horse-shoe-shaped reef, which lies about $1\frac{1}{2}$ m. to the N. of the E. Saul Island. These are the only dangers between Shadwan and Jubal, and in working in the large strait near these two islands, a bearing of Shadwan is the best guide to the S., and of Ashrafi Light-house to the N. Shadwan, S.E. part, bearing S.E. by S., touches all dangers on the W. side of the Strait, including Jubal and Ashrafi Reefs, and up to the high land of Zeitee.

Jubal Island, the centre or high part of which is in lat. $27^{\circ} 38' N.$, and lon. $33^{\circ} 47' E.$, is 420 ft. high, elevated in the centre, and of a circular form, being about $2\frac{1}{2}$ m. in diameter; the E. side is steep, having soundings near it at depths of 30 and 40 fathoms; but deeper than that at 1 m. off. On its S.S.W. side, two low coral islands nearly join, being connected with it by a reef. **Tawileh**, the S. one, is larger in area than Jubal, and there is a clear sea between its W. shore and the Egyptian coast, which may be coasted along from the S. into the Bay of Ras Gimsah, which runs up 15 m. to N.W. by W. of the S. end of Tawileh. On hauling round the S. end of Jubal, good anchorage is to be found between it and the reef off the low coral islands in 7 or 8 fathoms, sandy bottom, distant about $\frac{1}{4}$ m. from Jubal, with the high part bearing N.; this is excellent anchorage in S.W. winds, and from which a vessel can easily proceed again into the Strait, and make the anchorage under Shab Ali. From 1 to 4 m. to the N.N.W. of Jubal are three low coral islands connected with it by a reef, in which they are situated; the largest one, being near Jubal, forms a small bay with the N. end of Jubal, in which there are soundings of 25 and 35 fathoms: it would not answer as an anchorage. The N. end of **Gaysoom Island** has a small brown hillock 80 ft. high on its extreme point, which bears from Jubal about N.W., distant 4 m. There is a deep channel, between Jubal and Gaysoom, in which there are soundings from 25 to 38 fathoms, with good anchorage, close under the S. end of Gaysoom. The disadvantage of this anchorage is, that a ship runs so far to leeward before she obtains shelter from the N.W. swell, and loses time in beating back again through the channel.

Gaysoom, or Keisoom, from its N. point (which bears W. 2 m. from the N. end of the shoal off Jubal), extends to the S.W. $3\frac{1}{2}$ m., where it is nearly joined by W. Gaysoom, a low coral island, extending to the N.W. $2\frac{1}{2}$ m.; the N. point of this W. Gaysoom, which is 55 ft. high, lies W. by N. $\frac{1}{4}$ N. from the brown hillock on Gaysoom, distant $3\frac{1}{4}$ m., between which it forms a bay, with soundings of 20 and 30 fathoms. Although the entrance to this bay is 1 m. broad, the N.W. swell comes in from Zeitee, and renders it unsafe anchorage; the N. side of the channel is bounded by Dhakrah Islet on the S. point of the reef, extending to the S. of the Ashrafi Islands.

Ohm-el-Kroosh Harbour is a singular oval basin, formed to the S. of the Ashrafi Islands by a bank of coral and sand, forming a loop towards Gaysoom, and having the low sandy islet, Dhakrah, at its S. extreme. It has from 6 to 8 fathoms inside, and the entrance on the E. side (with 16 ft.), is only a break in the circling reef, and barely 2 cables wide. Small vessels, drawing 13 ft., may enter by keeping the islet off the N. point of the W. Keisoom, on with a sharp distant peak of the main land bearing W. by S. $\frac{1}{4}$ S., until the water deepens to 6 fathoms; then (to avoid a shoal in front of the entrance) haul sharp to the N.W. and N., for the white beacon on Ohm-el-Kroosh Islet, which stands half-way between the hillock on W. Keisoom and the Ashrafi Light-house. Larger vessels may enter, but the channel should be previously buoyed.

Good anchorage under Dhakrah Islet may be had in from 7 to 10 fathoms, sand and coral; steer for the latter in one with the islet off the N. tip of W. Keisoom, bearing W. by N., and anchor 2 cables to the E. by S. of Dhakrah, where the N. point of the E. Keisoom will bear about S.E.; thus you will have protection from both S.E. and N.W. winds.

THE USHRUFFEE, or ASHRAFI ISLANDS, are a group of low coral islands, scattered on an extensive reef, which bounds the W. side of the channel, in the Strait of Jubal; the N. end of these islands and reefs extends N.W. by N., distant 12 m. from the centre of Jubal. To the E.

of the Ushrufee Islands, distant 1 m., are two small and dangerous reefs, connected with each other, leaving a channel between them and the islands. There is also indifferent anchorage under the lee of them, and soundings of 10 or 12 fathoms extend a little to the E. of them; the light-house is now the guide for a ship nearing them at night. There are soundings of 17, 20, and 35 fathoms to the N.E. and N. of the Ashrafi Islands and Reefs, distant 1 or 2 m. from the light-house.

The Ashrafi Light, revolving every minute, is exhibited on the N.E. part of the reef; 125 ft. above H. W.; visible 18 m., in lat. $27^{\circ} 47\frac{1}{2}'$ N., lon. $33^{\circ} 42'$ E. The structure is of open iron-work, designed and erected by Mr. W. Parkes, C.E.

Tides. It is H. W. on F. and C., at $6\frac{1}{4}$ h.; rise of tide about 2 ft.; the ebb-tide is said to set to the N.W., and flood to the S.E., from 1 to 2 m. per hour. But there is a sad dearth of information as to the set of tides and currents in Jubal Strait.

A Reef, between the light-house and Zeitee Islet, is the N. danger on the W. side of the Strait; it has two coral islets (7 ft. high); here the N.W. swell breaks with violence.

Between this reef and the high land of **Zeitee** there is a fine bay, with soundings on mud in 17 and 20 fathoms, but the N.W. swell rolls into it; yet anchorage in smooth water may be found in its N. part, close under Zeitee Islet, a low sandy island and reef extending a little way from a projecting point of Zeitee, called **Petroleum Point**, from having some petroleum wells about 1 m. to the N.W. of the point, and close to the beach. This point bears from the reef to the N.W. of the Ashrafi Islands, W.N.W., about 3 m.

The S. point of Zeitee is quite low, and nearly 6 m. to the W. of Ashrafi Light-house; and nearly joined by a low coral island, to the S. of which 2 m., extends a reef, having a channel between it and the reef off Gaysoom Island, which leads into the Zeitee Inlet, a deep bight, running up to the N.W. for 5 m. In this bay, or at its entrance, a ship may anchor, if she is very desirous of obtaining wood, with which the Egyptian coast abounds in the Bay of Zeitee; and, strange to say, Suez is partly supplied from this place by boats: the wood is all dry.

The Coast to the N. of Petroleum Point is safe to approach, close to the high land of Zeitee, having 30 or 40 fathoms close to the beach or rocky shore.

The high land of Zeitee, from 1,000 to 1,500 ft. high, is a narrow spinal range, about 2 m. from and running parallel with the sea shore for 15 m., about N.W. and S.E.; its S. end stands about 8 m. to the W. by N. of Ashrafi Light. **Ras Zeitee**, the most prominent cape of it, is in lat. $28^{\circ} 0'$ N., lon. $33^{\circ} 28'$ E., and the dangerous part of **Toor Middle Shoal** lies about 10 m. due N. of this cape.

Ras Shukhair, on the Egyptian side, is a small point, in lat. $28^{\circ} 5\frac{1}{2}'$ N., and lon. $33^{\circ} 19'$ E., extending a little to the E. of the line of coast, between which and the N. end of the high land of Zeitee is formed a small bay, in which a vessel may anchor in 7 or 5 fathoms sandy bottom, a little sheltered from N.W. winds; Mount Agrib bears from the anchorage W. by N., distant 23 m. The soundings gradually decrease as you approach the shore. Take care not to go too close to the Spit of Reef, which extends about $1\frac{1}{2}$ m. to the E. of the point.

The Egyptian coast, from Ras Shukhair, lies in a direction about N.W. by N., to lat. $29^{\circ} 0'$ N., preserving nearly a straight line, with a few small bays to the W. Along this coast the soundings decrease as you approach the shore; but on no account stand within 20 fathoms at night: even at that depth, if a vessel is going fast through the water, she may be on shore before another cast of the lead is taken; a navigator ought, therefore, to be on his guard, and measure his distance from shore to shore. **Ras Gharib**, 20 m. above Shukhair, is nearly opposite Great Jehan Peak (on the Arabian coast). The native pilots are excellent in judging distance from shore, and when to tack of a dark night. Captain Moresby was of opinion that they may be implicitly trusted in the navigation of the Gulf of Suez; and that a commander of a ship has little else to do than to see his ship properly worked. The Arab pilots have so long and often been accustomed to work up and down the sea, that they may be expected to have a thorough knowledge of its localities.

Ras Gharib Light, in lat. $28^{\circ} 21'$ N., lon. $33^{\circ} 7'$ E., is a fixed White Light, at 165 ft. above sea, visible in clear weather 20 m. The Light-house, an iron column supported by three stays and painted Red, stands on a cape close to the sea, but about 4 m. to the S.E. by S. of the cape marked Ras Gharib on the charts.

The outer dangers of Shab Khoswan Reef, on the Arab coast, bear N. $\frac{1}{4}$ E., distant 14 m. from this Light.

Mount Agrib, or Ahkrab, is the most conspicuous mountain on entering the Gulf of Suez; it has a high conical shape, and stands pre-eminent among a lofty range on the Egyptian coast. It can be seen 100 m. distant, is about 8,000 ft. high, though generally said to be 10,000 ft. high, and lies in lat. $28^{\circ} 7'$ N., and lon. $32^{\circ} 52\frac{1}{4}'$ E.

ZAFARANA POINT LIGHT, in lat. $29^{\circ} 6'$ N., lon. $32^{\circ} 40'$ E., and 50 m. to the S. of Suez,

is a valuable help to the navigation of this Gulf, as that cape is so prominent and was (before the erection of Zafarana Light-house) a dangerous land-fall to vessels proceeding up the Sea of Suez. The Light is *fixed*, of the first order, 85 ft. above the sea, and visible 14 m. Patches of rock lie to the E. and to the N. of the Light; therefore it should not be approached within 2 or 3 m. The coast, at the back of the Light-house, has some lofty peaks; to the S. of that new land-mark it recedes and forms a deep bight. Soundings off the Cape are about 15 fathoms at 3 m., and 30 fathoms beyond 5 m.; and then 30 to 35 fathoms across the sea towards **Hummum Bluff** and **Gad Mahlab**. (See page 28)

Ras Abooderaj, is a prominent cape, 15 m. to the N. of Zafarana. Coral reefs extend off it about $1\frac{1}{2}$ m.; thus, with the reefs off Metameh on the opposite coast, narrowing the channel of the Sea of Suez to little more than 7 m.; the depths across are between 30 and 40 fathoms. The high land of Abooderaj is an useful mark to vessels proceeding down the Sea. To the N. of the cape, the shore line recedes to the N.W. for some 20 m., forming a deep bay; from the bottom of which the coast turns abruptly to the N.E. for some distance to **Ras Ataka**, or the Cape of Deliverance, which is about 4 m. to the S. of Suez.

Dangers in approaching Suez. Until this approach is better lighted and buoyed, large vessels must be cautious in running up to the mouth of the canal. Recent surveys have discovered shoals lying to the S.W. of Ras Mesalle, thus leaving a clear channel of little more than 3 m. between them and Ras Ataka.

The Newport Rock, discovered by the officers of H.M.S. *Newport*, though still ignored by many Arab pilots, is a patch of 13 ft., lying $1\frac{1}{2}$ m. to the S. of the light-vessel. It is marked by a buoy. Ships of great draught should adopt the central channel, called **the Narrows**, close to the W. of the buoy. (See pages 26 and 27.) Small vessels may run in N.N.E., for the light-vessel, over Ataka Flat, which has depths of 23 and 24 ft. at L. W.

Gad ul Markab, or Kad-el-Markeb, is the S. point of the harbour of Suez; a spit of sand extends out to the W. of it $\frac{1}{2}$ m. To the S. of Gad ul Markab, and 1 m. from the shore, there is a patch of sunken rocks, dry at L. W. In the centre of the bay is a small reef, bearing from Gad ul Markab about W. The best place for a vessel to anchor is off the Canal's mouth, in 4 or 5 fathoms; she will then be off the town of Suez, to the N. of the Light-vessel.

SUEZ town is in lat. $29^{\circ} 58' N.$, and lon. $32^{\circ} 33\frac{1}{2}' E.$ Provisions are plentiful and good; in the seasons, various fruits, such as oranges, pears, apples, and plums; also plenty of fine cabbages, lettuces, &c., may be had. The natives are civil and friendly to Europeans.

GULF OF SUEZ.—THE ARABIAN SIDE.

(VARIATION OF COMPASS AT SUEZ AND JUBAL STRAIT, $5\frac{1}{2}^{\circ} W.$)

Jubal Strait. The principal parts on the Arabian side are Ras Mohamed; Shab Mahmoud, and Shab Ali reefs.

RAS MAHOMED, the extreme point of the Sinai promontory, in lat. $27^{\circ} 43' N.$, and lon. $34^{\circ} 15' E.$, is an abrupt broken cliff, with a flat top; it is about 90 ft. high, and decreases in height to a low sandy plain, a little to the N. of the cape. In the centre of this plain stands a remarkable black hillock about 150 ft. high, having a large pile of stones on its top, erected by the crew of the surveying vessel *Palinurus*; it lies $2\frac{1}{2}$ m. to the N.W. of the cape, and is in lat. $27^{\circ} 45\frac{1}{2}' N.$, and lon. $34^{\circ} 14' E.$; it is the best guide at night to clear a ship of the S. point of Shab Mahmoud, as well as to point out the large anchorage between Shab Mahmoud and the reefs extending to the W. of Ras Mahomed. Close to the S.W. point of Ras Mahomed there is a low coral island, connected with the cape by a reef. To the W. of the cape $4\frac{1}{2}$ m., a reef extends off shore with no soundings close to it, or to Ras Mahomed; in one part of the reef extending to the W. there is a break, having a sandy bottom at 6 and 7 fathoms, but so full of sunken rocks that few vessels would attempt anchoring there. Do not approach Ras Mahomed too near in the night, as the white cliffs and land are not easily seen, though the black hillock is perfectly distinct. H. W. on F. and C. at 6 h., rise and fall 5 ft. Variation $5\frac{1}{2}^{\circ} W.$

Shab Mahmoud Reef, S. point, is W. $\frac{1}{2}$ S. from the extreme point of Ras Mahomed, distant $7\frac{1}{2}$ m., and E. $\frac{1}{2}$ N., distant 17 m. from the high part or centre of Jubal. The black hillock on Ras Mahomed bears from Shab Mahmoud about N.E. by E.; and about N.N.E. distant 14 m. from the S. and high part of Shadwan. On this extreme of the shoal there is a **beacon rock** 3 or 4 ft. above water. There are no soundings near the S. or W. sides of this shoal, but good anchorage on sandy bottom in 18 and 10 fathoms, to the N.E. and E.N.E. of the beacon rock. Soundings extend

to the N.N.E. from this rock and shoal to the reef off Ras Mahomed, having an opening of 2 m. This is excellent anchorage in N.W. winds, and can be easily made at night, by attending to the bearings given for the point of the shoal, or beacon rock, keeping the black hillock, when you anchor, bearing a little to the N. of N.E. by E., and Ras Mahomed nearly E., or a little to the S. of E. Should the night appear unfavourable for passing through the Straits, a ship may anchor here, and should on no account attempt to work through, if the light and island of Jubal cannot be seen. In light variable winds, a vessel gets through the Straits with less difficulty than in strong N.W. winds. **Shab Mahmoud**, from the beacon rock, extends to N.W. by N. 6 m. in length, making a slight curve to the W. of this bearing. There is a channel between Shab Mahmoud and the reefs off the main; but the N. entrance is too intricate, except with a fair wind, for ships to pass through. The reefs off the main land to the N. of Shab Mahmoud lie about 3 m. from the shore, and a N.W. course from the beacon rock, distance 12 m., will bring you to the entrance of the channel between Shab Ali and the main, in which there is good anchorage. If to the N. of the beacon rock, and standing towards the N. end of Shab Mahmoud, the S. high part of Shadwan ought not to be brought to the W. of S., whilst Ashrafi Light bears to the N. of W. by N.: you will then be $1\frac{1}{2}$ m. from the shoal; do not bring black hillock to the S. of E., until Shadwan E. end bears to the E. of S.

Shab Ali, an extensive shoal, 10 m. in length by 2 in breadth, whose W. reefs lie in the middle of the Straits, and contract the channel to $6\frac{1}{2}$ m. The S. point, which is broken into several small reefs, lies W. by N. $\frac{1}{4}$ N., distant 13 m. from the beacon rock; from Jubal Peak N.N.E., $8\frac{1}{2}$ m.; and from Ashrafi Light about E. by S. 8 m. To clear the W. side of all Shab Ali reefs, do not bring Jubal Peak to the W. of S. Under the S. point, good anchorage in 15 or 20 fathoms is obtained; also between it and the reef off the main land, which here forms the entrance of the **Narrows**, a good channel 3 m. broad. When in a fair way to enter this channel from the S., Jubal ought to bear about S.W.; and the E. end of Shadwan S. $\frac{1}{4}$ E. This channel may be safely used in the daytime, as it affords good anchorage-ground throughout, and the water is smooth; the N. entrance is also capacious, but a good look-out must be kept when approaching the reef. To the N. of Shab Ali the Straits widen 10 m.; still off the Arabian shore there are some dangerous reefs and patches, called **Shab Jarah**, extending 3 m. from the coast, which is here a low sandy desert. On approaching this shore reef, keep the lead going. Should a ship decrease her water to 25, 15, and 10 fathoms, she ought to tack immediately.

Sheikh Riyah is a bay on the Toor side, so named from the tomb of a Sheikh. This anchorage is $5\frac{1}{2}$ m. to the S.S.E. of Toor, and affords excellent shelter for ships; there is a patch of rocks on entering the bay, which can be easily avoided; your anchor in 7 or 8 fathoms sandy bottom. These are all the dangers on the E. side of the Straits.

Two shoals, with 5 and 4 fathoms water, are marked on charts, to the S.W. of Shab Riyah, and to the N.W. of Shab Jarah. Therefore, we advise steamers to keep over towards the Egyptian coast, where all the lights are situated.

NAVIGATION OF THE GULF OF SUEZ. Great care is requisite in working between Shadwan and Toor, particularly in the night or in hazy weather, the channel, called the **Strait of Jubal**, being narrow and bordered by shoals on the E. side. Islands and shoals also bound its W. side, to the distance of 7 leagues from Shadwan; but, having now the excellent *Revolving* light on Ashrafi Reef, this is the safe side to work in during the night, as Jubal may be closely approached on its E. side. A ship bound up the Sea of Suez may pass Shadwan at any convenient distance; but when past this island, she ought not, in working, to stand into the open space between it and Jubal, nor so far over as to approach the dangers on the E. side of the channel. Having got abreast of Jubal, it will be prudent to make short tacks, keeping nearest to Jubal and its contiguous isles, to avoid the Shab Ali Shoals (or W. Shab, as it was formerly called) on the Sinai side, which lie about half-way between Ashrafi Islands and the E. shore. The breadth of the fair channel in this part is not above 5 m., which renders it dangerous to work here in the night. In passing along, a ship should not stand so far to the W. as to bring the E. end of Shadwan to bear to the E. of S.S.E. $\frac{1}{4}$ E., till Jubal Peak bears W.N.W.; on which bearing of the peak she may approach Jubal quite close, and until it bears S. by W. All dangers on the W. side of the channel will be avoided by keeping Ashrafi Light to the W. of N.W., whilst to the S. of it, and to the S. of S.E. by S. when to the N. of it.

Ras Mahomed Low Cape cannot be seen farther than 3 or 4 m., but there is no danger near it, the water being very deep close to the shore. In crossing over towards the Strait of Jubal, the first danger is the shoal with the Beacon Rock on the S. end of Shab Mahmoud, which bears W. from Ras Mahomed $2\frac{1}{2}$ leagues. If the weather has an unsettled appearance, a ship ought to keep plying betwixt the Beacon Rock Shoal and Ras Mahomed, unless she can weather Shab Mahmoud Reefs and get into the Narrows. There is no safe passage between Shab Mahmoud Reef and the main

land. In the day it generally blows strong, but moderate during the night. If at day-light Mount Sinai, or Jebel-et-Tor, is enveloped with clouds, the wind will assuredly blow strong that day: if the mountains be free from clouds, moderate weather will prevail. When the weather is moderate, a ship should stretch well up towards Jubal, and make several tacks across the channel at the entrance of the Strait before dark.

The Narrows, formed between the Shab Ali reefs and the shore-reefs, may be adopted, with great circumspection, when strong N. winds and a heavy sea prevent a ship from gaining ground in the main channel to the W. of the Shab Ali reefs, although the latter track (*the Strait of Jubal*) should always be followed when the weather will admit. In the Narrows the people have the advantage of rest in the night: if it blow too hard to be under weigh in the day, by remaining at anchor, sails may be repaired if necessary, or any other work may be done. When anchoring in the Narrows, it will be prudent to give the reefs a small berth, to avoid detached pieces of rock, which might injure the cables.

Toor, or EL-TOR, on the Sinai shore, is in lat. $28^{\circ} 14' N.$, and lon. $33^{\circ} 37' E.$ The water here is excellent and in plenty. This is the nearest point from which a traveller can proceed to Mount Sinai: the journey is performed on camels, and generally takes two days: the road is bad, winding a great part of the way through broken and precipitous ravines of rocky mountains, called Jebel-et-Tor. About $1\frac{1}{2}$ m. from Toor, at the foot of some low hills, is a square building or tower, at the foot of a large date-grove, which belongs to the convent of Mount Sinai: this grove of dates is watered by a large and clear spring of bitter and brackish water, which lies close at the back of the garden walls near the hills, and makes an excellent warm bath, its temperature about 95° , with a small building enclosing it. Abreast of Toor the sea is 17 m. broad.

Anchorage in Toor Bay may be had in 4 to 5 fathoms, sheltered by the reef off Ras Toor from N.W. winds; with Ras Toor Point N.W. by W., and the ruined fort on nearest point to the E., bearing N.E. by E. The reef off Ras Toor projects $\frac{1}{2}$ m. to the S., having a great surf on it at times. A ship coming from the N. should run close along the reef, until she open the town and haul round its S. extreme; she may then anchor in any depth at discretion, from 8 to 5 fathoms, avoiding a coral patch of 3 fathoms, which is nearer to the E. shore, but only 4 cables to the S.E. of the S. tip of the reef of Toor Point.

Toor Sunken Reef lies $\frac{3}{4}$ m. off shore to the S. of Toor Point, and the same distance from the E. shore. The passage to the N. of it into Toor Bay is $\frac{1}{2}$ m. broad. The passage between it and the E. shore is $\frac{1}{2}$ m. wide. This reef is 1 m. long, N. by W., and S. by E., and has only from 6 to 10 ft. water on it in some places; a ship leaving the harbour may sail to the S. between it and the main, in regular soundings, by steering S. by W. along the E. shore; avoiding the 3-fathom patch which lies S. by E. from the anchorage. This is the channel generally used when *bound out*, as the winds are N. during three-fourths of the year. The N. channel is frequented by vessels *bound into* the harbour. When the sun shines, a green shade is reflected from the rocks, by which they may be discerned, and thus avoided. The depths in both channels are in general from 7 or 8 to 10 and 11 fathoms, regular soundings.

During the violent N.W. winds, ships bound to Suez are often obliged to take shelter in this port, where the drinking water is better than any place in the Red Sea; it is procured from three wells abreast the anchorage, which are about 200 yards from the beach; this water is slightly brackish, although much better than that of Suez. Good water may be found in a direction N.E. from Toor, distant about $2\frac{1}{2}$ m., situated in a very extensive grove of palm trees, where there are several wells, the water of which is pure and sweet. Several very fine hot mineral springs were found due north from the harbour, about 3 m. distant. Provisions, or other articles of refreshment, are not to be obtained. The town, which is situated at the N.E. part of the harbour, is inhabited principally by Greeks and Bedouin Arabs. Near the town lie the remains of a well-constructed fort. Variation, $5\frac{1}{2}^{\circ} W.$ **Tides.** The tide flows to $10\frac{1}{2}$ h. on F. and C. of moon, and rises 3 ft.

Mount Sinai. In a valley, at the foot of Mount Sinai, there is a large Greek monastery, where travellers are entertained with the utmost hospitality and goodwill; it is inhabited by twenty-five or thirty Greek and Russian monks of the Greek Church: they live in a state of celibacy, and never eat animal food. Mount Sinai, or Jebel Moosa, is 3,000 ft. above the monastery: the top of the mountain, is in lat. $28^{\circ} 30' N.$, and lon. $33^{\circ} 57' E.$ The Sea of Suez, except a very small portion about Hummum Bluff, cannot be seen from Mount Sinai; Toor, and all the coast of Egypt, being hid by Mount St. Catherine, which is a few hundred feet higher than Sinai, and lies 4 m. to the S.W. of it. The islands Tirahn, Senaffer, Shooshooah, and the entrance of the Sea of Akabah also, some distance up, can be seen distinctly, as well as the high mountains about Moilah, by which we fix the station of the Mount. From Toor to Cairo the Bedouins will convey letters or passengers in from three to five days. Boats from Jeddah, however, wishing to communicate speedily with

Cairo, generally used to land passengers or letters at a place called **Sherm Sheikh-Ahdeel**, on the N.E. side of Ras Mahomed; by doing this, they avoided strong N.W. winds in the Sea of Suez.

TOOR MIDDLE SHOAL is an extensive spot of shoal water in midway, on which in one spot, about W.S.W., 9 m. from Toor, there is less than 6 fathoms (and, indeed, a cast of $3\frac{1}{2}$ fathoms was once reported about 1 m. further to N.W.), and on each side of it 26 or 30 fathoms, sometimes 35 and 40 fathoms, which is the general depth in the centre of the Sea of Suez.

The Arabian Coast, from Toor Harbour, takes a direction N.W., for 30 m., to the dangerous reef, Shab Khoswan, in lat. $28^{\circ} 34\frac{1}{2}'$ N., a few miles to the N.W. of Great Jehan Peak. To the E. of this line the coast has a few small bays, affording indifferent anchorages, one under Great Jehan Peak, the other about 6 m. above Toor, near a few withered and blighted date trees; but they are both bad spots for anchoring, the water being deep, little sheltered, and close to the shore. At the latter place are those famous written mountains, **Jebel Mokhtab**, one of which produces musical sounds, a source of superstition to the natives. From Toor to Jehan an extensive range of hills comes close down to the sea, and the shore is bold to approach, till you get to the N. of Jehan Peaks, which are two pointed hills. A shoal, nearly 2 m. across, with 6 to 8 fathoms, lies from 3 m. to 5 m. off this Arabian shore, about 10 m. to the S. of Jehan Peaks. **The Great Jehan Peak**, which is the highest and N. one, is in lat. $28^{\circ} 32\frac{1}{2}'$ N., and lon. $33^{\circ} 15'$ E.; it bears from Mount Agrib about N.E. There is a lagoon of some extent between Jehan and Shab Khoswan.

SHAB KHOSWAN REEF, dangerous at times, lies 3 m. off Ras Sherateeb, a low sandy point, with which it is connected by shallow water, having a passage only for boats. A narrow rocky ridge, with only $3\frac{1}{2}$ fathoms, water over it, has been found to extend as much as $6\frac{1}{2}$ m. from Ras Sherateeb. From its outer extreme Ras Gharib Light bears S. $\frac{1}{2}$ W., distant 14 m.; and Great Jehan Peak bears about E.S.E., 9 m. There is a good anchorage under its S.E. end, in 6 and 7 fathoms. Care should be taken not to stand too close in, as the water shoals suddenly. This danger ought to be avoided at night, by keeping well over on the Egyptian coast; there are 25 fathoms at $\frac{1}{2}$ m. to the W. of the shoal. W.S.W. from Shab Khoswan, the Egyptian coast is 9 m. distant. From the lagoon opening, near the S. end of Shab Khoswan, the coast extends N. by W. for 7 m. to **Ras Sherateeb**; thence due N. 12 m. to Ras Burdess, under which point there is anchorage.

Ras Burdess is a low, sandy and bushy point, in lat. $28^{\circ} 52'$ N, lon. $33^{\circ} 9'$ E.; the coast forms a slight bay to the E., between Burdess and Sherateeb to the S., with soundings of 10 and 15 fathoms near the shore. The next place of anchorage is Ras Selima, or Zelima, 14 m. to the N.N.W. of Burdess. Ras Zelima is a low, sandy point, close to the hills, which here again extend to the beach; this anchorage is well sheltered from N.W. winds. W.S.W. from Ras Zelima the Egyptian coast is 21 m. distant.

RAS HUMAHM, or Gad Mahlab, is the next cape; it is a low, sandy point, in lat. $29^{\circ} 14'$ N, off which, about 3 m. to the W., is shoal water. There is a good anchorage on the S. side of this cape; Hummum Bluff, lies close to the shore, to the E.S.E. of the anchorage. **Jebel Hamahm, or Hummum Bluff**, in lat. $29^{\circ} 10'$ N., and lon. $32^{\circ} 58\frac{1}{2}'$ E., is 1,500 ft. high, and shows a precipitous cliff nearly overhanging the beach; at the foot of this hill there is a hot salt-spring, and two hot caverns, called Humahm ul Faroun (the baths of Pharaoh). The surveying vessel, *Palimurus*, was at anchor off Hummum Bluff, sheltered from the N.W.; the wind suddenly shifted to the S. and blew a hard gale, which she rode out with three anchors ahead, topsail-yards and top-masts down, and not a cable's length from the shore; her tender was driven on shore, and was a total wreck in a few hours. This will show how necessary it is, when anchoring from N.W. winds, not to hug the shore too close, in case of a shift of wind, which is very sudden, at times unexpected. To the W.S.W. of Gad Mahlab, 14 m., and on the Egyptian shore, is **Zafarana Point** Light-house, in lat. $29^{\circ} 6'$ N., lon. $32^{\circ} 40'$ E.

Ships ought to be cautious at night in working between the reef off Ras Humahm Cape and Zafarana, the distance across being only 10 m. When Hummum Bluff bears E.S.E., it is on with shoalest and most extensive part of the reef off Ras Humahm Cape. A mile or two to the S. of Zafarana Cape there is a deep bay, in the N. part of which a ship may anchor in 6 or 7 fathoms, with Hummum Bluff bearing E. by N. $\frac{1}{2}$ N., well sheltered from N.W. winds by the shoal water of Zafarana. A range of high hills lie a few miles to the W. of Zafarana, which terminate abruptly a few miles to the N., between which and the high land of Abooderaj, further to the N., there is a long, flat desert or valley between the mountains. It was at this spot, say the Arabs, that the Israelites passed over the Sea, which is here 12 m. broad.

Ras Metamer is a low, sandy point and spit on the E. shore, in lat. $29^{\circ} 26'$ N.; there is a good anchorage to the S. of this cape, in 11 or 12 fathoms sand. Ras Metamer bears from Hummum Bluff N.W. $\frac{1}{2}$ N.; and **Jebel Sedour**, or **Barn Hill** (a capacious hill on an elevated range, in lat

29° 40' N., and lon. 32° 55' E.), bears from Ras Metamer about N.E. The sea, abreast of Metamer, becomes contracted to 9 m., between the S. end of the high land, or cape of Abooderaj, and Metamer. From Metamer to Suez the shore is bounded by a coral reef, which extends in some places from $\frac{1}{2}$ m. to 1 m. from the land. Caution is requisite in approaching the shore at night, as the coast is low, and deceitful as to the distance; from 23 fathoms in some places is close to the shore. The S. point of Abooderaj Bay is bounded by the high hills of Abooderaj, which come close to the sea, and are bold and safe to approach, having 30 fathoms close to the beach. In the N. part of this Bay the water is more shoal, and affords good anchorage from N.W. winds. Adaga or Atáka Point is the N. entrance of the Bay, and runs out a considerable distance, forming a low point not seen till very close to it. **Ras Sedour**, a low, sandy cape, on the E. side, is in lat. 29° 36' N.; a small, sandy spit, runs off the cape; there is good anchorage on its S. side, in 12 and 15 fathoms, sand. On the N. side of this cape there are two small reefs, about $1\frac{1}{2}$ m. from the shore, and 3 m. from the cape.

Ras Messale is the next cape on the E. shore; it lies in lat. 29° 49' N. Two miles to the S. of this cape a narrow spit of sand extends off shore to the S.W. At $2\frac{1}{2}$ m. to the W.S.W. of Ras Mesalle some sunken rocks have lately been discovered. Therefore, vessels had better not anchor, except in the Bay, 3 or 4 m. to the S.E. of the cape. Between Ras Mesalle and the opposite shore, near Point Ataka, is only 6 m, having 15 and 20 fathoms in mid-channel. Care should be taken on approaching Ataka Point, as a spit of sand extends off it between 2 and 3 m. to the N.E.

Suez is further described in Section First, pages 26 and 27.

THE CENTRE CHANNEL, OR STEAMER HIGHWAY.

In Section I., pages 27 to 30, we have given directions for navigating the steamer-highway from Suez to Aden, or the Outward-bound voyage. Those which follow are from the remarks of Captains Moresby, Elwon, and Rogers, of the Indian Navy; with the more recent observations of Navigating Officers on board H.M. Indian Troop-Ships.

After clearing out of the Gulf of Suez, the navigation of which is now rendered so easy by numerous lights, the highway of the Red Sea is marked by the Brothers Islets, Dædalus Light-house, Jebel Teer, and other islands.

The Brothers have been recommended as the site for a light-house.

Dædalus Shoal is a small reef nearly in the centre of the sea; it lies in lat. 24° 55 $\frac{1}{2}$ ' N., and in lon. 35° 52' E. In 1863 a fixed light was exhibited 200 yards within the S.E. extreme of the reef, 61 ft. above H.W., and visible 14 m. There are no soundings alongside the shoal, and, to obtain observations, the surveying vessel *Palinurus* hooked on to it during the warm weather in the Red Sea, when its waters are much lower than in the months from October to May. A sand-bank of several feet high is formed on this reef (but is yearly washed away when the sea rises, and the wind blows strong). This is the only reef in the centre of the Red Sea, and is called by the natives **Abdul Kheesan**. It is 6 cables in length N.W. and S.E., and $2\frac{1}{2}$ cables wide.

The Centre Channel, between the outer extremities of reefs extending off the Arabian and Abyssinian shores, is very deep throughout. The surveyors sounded from 70 fathoms to upwards of $\frac{1}{2}$ m., or 260 fathoms, without getting bottom. More recently, soundings of 500 to 1,000 fathoms were taken by H.M.S. *Cyclops*; the greater depth was found midway between Jiddah Harbour and St. John's Island.

This channel, in the parallel of Jiddah, is 110 m. broad: from 20° of lat. on the Arabian side to 19° of lat. on the Abyssinian side, its breadth is about 70 m. From the outer extremity of the mud soundings on the W. part of Doharab (the S. end of Shab Farsan) until soundings are again obtained on the E. part of the Dhalac banks, the extent of deep water is not much more than 40 m.; and to the S. of Camaran, the deepest part of the channel, where ships could not obtain soundings, is reduced to a narrow strip by the sand and mud-soundings obtainable off both sides of the sea; and from thence the narrow strip of deep water in an irregular form may be traced to the Straits of Bab-el-mandeb.

Proceeding to the S. through Inner Channel on Arabian side. This inner channel, from Jiddah to Leet, is formed by numerous sunken rocks, breaking patches and reefs, the S.W. of which is called Gad Amaze (Kadd Omais) and the coast is bound by coral reef. It is generally narrow until past Kishran, from whence is an open channel to sea, bound on the N. by Gad Amaze, and on the S. by the N. part of an extensive bank of reefs and islands, running from thence to the S. as far as Camaran, abreast of Zebayer Islands. Within the above space the inner channel is only 2 and 3 m. wide, has very deep water, with some patches, and very indifferent anchorages, being mostly stopping-places for boats, formed by breaks in the coast-reef or rocky patches off it, affording

little protection from the sea, even for baghalahs. There are no towns on this part of the coast, nor any supplies procurable.

From Leet to Camaran the coast is generally bordered by coral reef, and the inner edge of the outer reef is formed by extensive sunken rocks, dangerous patches, and small islands, with deep water close to them, between Leet and Serain Island; but, after passing the latter, it is generally clear, with good anchorages, though there are many sunken patches in it. A little N. of El Burk and Nahood, the channel is contracted to 1 and 2 m. by a bank, called Ohm Kergan, the N. part of which is very shoal; but there are 2 and 3 fathoms on other parts. After passing this bank, which is extensive, the channel becomes comparatively open.

The best entrance from seaward is to the W. of Leet; there is one, between Loban and Entookfash Islands, over the tails of the banks; a third between Okbahn and Camaran Islands (page 170). The S. entrance to the inner channel is between Camaran Island and Ras el Bayath, being no more than 700 yards wide between the latter and a reef which extends towards it from the island. The boats sail night and day through these channels.

The principal places within this space are Leet, Coomfidah, Gheesan, Loheia, and Camaran.

Inner Channel along the African side. This channel is similarly bound as that on the opposite side, and ends at Dhalac Islands and Bank to the S. The **Island Bolhessoo**, which bears N.E., distant 25 m. from Howakel, may be considered the S. entrance. The N. entrance of this channel may properly commence at **Macowa**, though this description extends it to **Khor Dullow**, from whence to Suákin the channel is generally from $1\frac{1}{2}$ to 3 m. wide, except in the neighbourhood of Saláka, Duberdabb, and Ras Roway, where the limits are $\frac{1}{2}$ m. From Macowa to Saláka, which is the most intricate part of the channel, there are generally soundings, but in all other parts deep water.

From a little below Suákin the channel becomes wider, passing outside the extensive shoals in a bight of the coast S. of Ras Mugda, which is about 30 m. below Suákin, and soundings will generally be obtained; but, excepting the harbours on the coast, there are few places where ships would prefer to anchor, the bottom being generally rocky, with great overfalls. In most of the anchorages N. of Suákin, it is advisable to moor the ship; and in many places it may be considered prudent to lay out, in blowing weather, the stream-anchor on or near the weather beach.

There are several entrances to this channel from seaward, the best of which, N. of Suákin, is off Sheikh Baroud. There is also a wide one N. of the Dhalac Banks, but several patches are in it, most of which will be seen by a good look-out. There are also channels out to seaward over the Dhalac Bank, to the N. of Untoentore Island, but none below it, excepting the S. entrance, bounded by Howakel and Dhalac Island Reefs, already described. The principal places on the Abyssinian coast in the above space are Suákin, Khor Nowárat, and Massowah.

Passes from centre of sea to the Inner Channels. In the channels amongst the islands and shoals there is very deep water to the N. of 17° N. lat.; but from thence to the S., from the N. extremities of the Dhalac Banks on the Abyssinian side, and Sháb Farsán and Islands on the Arabian side, soundings may be obtained; those parts being composed of very extensive banks, with shoal water and moderate depths, intersected by narrow channels of mud with deep water.

In prosecuting the survey, the H.E.I.Co.'s sloop of war *Benares*, was, from the nature of the duty, amongst all these islands, reefs, and banks, where the depth of water permitted, excepting that part on the Arabian side to the S. of Aboo Laad Island, and also immediately above and below Sabyar and Gootna Islands, which part was found too dangerous. Captain Moresby said, "I think few navigators will frequent the channels amongst the islands and reefs on the broadest parts of the banks to the N. of 17° of lat., on account of the deep water and great distance of either coast; which render it probable that they would not be able to procure anchorage before nightfall, and therefore would be obliged to heave-to amongst the reefs and islands for the night. But we used to make fast to the islands by hooking a grapnel on to the reef off them, and haul the vessel close up, and send the stream-anchor on shore. Twice, the wind falling light, the eddy laid the ship's broadside close to the reef. On one occasion we veered clear, and on another set the sails to keep her off, but at last were obliged to get the anchors on board, and heave-to for the night. The country boats make fast to the islands and reefs, either by means of a boat, or by a man swimming with the end of a hawser and a hook, from the vessel to the reef, and hooking on to the rocks."

"Should it ever become necessary to make use of these channels on either side, it will be requisite to make certain of the vessel's situation, so as to be at a moderate distance from the reefs at daylight, in order to have as much of the day as possible to run across with; and a sharp look out must be kept for the sunken patches, some of which can only be seen in clear weather, and when the sun is in the opposite direction to a ship's course (see end of Jiddah, Chapter IX.), and even then they will not get clear through before dark, without a six knot breeze. The country boats, small

and great, frequent these channels. In fine weather, with moderate fair winds, they steer from Jiddah direct for Harmeel or Roméa Islands, on the N. part of the Dhalac Banks, on the Abyssinian side of the sea. But, if the wind is Southerly, they keep their wind on the port tack, and pass in through the channels on the African side as the wind permits, and for the nearest of which they run direct, on the appearance of bad weather."

"On fresh, fair, or foul winds, they use the Inner Channels. If going from Jiddah to Suákin, or even to Massowah, they either cross to pass into the inner channel to the S. of Macowa Island, or through one of the channels between the reefs S. of it, and return in a similar manner. The boats bound to Massowah also frequently sail down the Arabian coast to near Kotumbul Island; then quitting the inner channel, at daylight they proceed across the reefs, passing the Simmer Islands, and when clear of the reefs they run across to make Roméa Island with N. winds, but with S. winds they keep their luff, and cross in amongst the numerous islands on the Dhalac Banks to Massowah; from whence they return in the same way to Jiddah. When we were running between the reefs to seaward, from Dahret Simmer Island, we saw in the forenoon a merchant boat coming in to the coast from the centre channel; and she must have made the outer reefs early in the morning. The ship and boat crossed each other with a half-fathom patch of rocks between them. We had the sun at our back, which was favourable to us, but not to the boat, and there was much glare."

WINDS AND WEATHER IN THE CENTRE CHANNEL.

The N.E. monsoon, entering the Red Sea, becomes a S.E. wind; and, being repelled by the high land of Africa into a narrow strait, blows with considerable force, and rather inclining towards the Arabian coast; for it is probably stronger there than on the Abyssinian side, even in the lowest part of the Sea. These S.E. winds generally begin to decrease in force after passing the Harnish and Zoogur Islands; and as they approach the wider part of the Sea, are gradually lost in light winds along the outer reefs on the Arabian side, or turn towards the banks and islands on the African side, becoming E. and N.E. winds, and gradually blending with the prevailing N. winds in that part.

These S. winds commence in October, and subside in the latter part of May. They blow with most force from October to the end of January, and in some months extend so far as Suez, but most commonly do not reach Jiddah. They are frequently succeeded by light variable or N. winds in the 18th degree of latitude. From Feb. to the end of May they do not blow so strong as in the preceding months, and are frequently succeeded by N. winds for several days, particularly in Feb., at which time the native boatmen avail themselves of the opportunity to quit, and reach the S. ports of the Red Sea.

The weather, from Oct. to Jan., in the lower part of the Sea, is generally thick; a haze obscuring objects, especially the sandy coast-line, until pretty near. Along the outer reefs, squalls and rain are frequently experienced in Nov. and Dec. From Feb. to May the weather is unsettled, in April and May particularly. Below the Zebayer Islands, fresh squalls from the E. are sometimes experienced, with heavy clouds of sand, and sometimes rain. These are doubtless identical with the sand-squalls from N.E. and E., felt at Aden after sultry weather.

In the beginning of June the Southerly monsoon is succeeded by N.W. winds, which, in the lower part of the sea, seldom blow with great force. They continue pretty regular during June and July; but, in Aug and Sept., are frequently light and variable. In the latter month there are sometimes light S. winds or calms. During this time the weather is frequently very thick and hazy, particularly on the Arabian side; and the Abyssinian shore is consequently much the most pleasant, and is considered the most healthy.

On the evening of 20th October, the pilot drew our attention to the *Pleiades*, which the Arabs call *Tryer*, *Thurayá*, or *Tsuraiá*, and which was then seen low down in the E.; he informed us that, on its first being seen in that quarter in the evening, it indicated the commencement of the Southerly winds. The latter part of April, in the evening, the *Pleiades* set, when he said that light variable winds would prevail for forty days, after which those stars will be again seen in the E. in the morning, when the N.W. winds commence, and continue until *Pleiades* again sets in the morning in the beginning of Sept., when there will be light variable winds for forty days, after which the Southerly winds commence again, when it is seen in Oct. early in the evening.

Winds and Currents in the S. part of Red Sea. At Mocha, and throughout the S. part of the Red Sea, the Southerly monsoon predominates about two-thirds of the year, commencing in Oct. or Nov., and ending in May or June; then the N. winds set in, and continue nearly four months. During strong S. winds, the current frequently sets through the straits with rapidity into the Red Sea. With these winds, the atmosphere is usually red and fraught with vapour; a great haze prevents objects from being seen, unless very near. About the F. and C. of moon, the S. winds are

sometimes checked, and replaced by breezes from the N., which continue two or three days, and greatly cool the air. The currents at such times are liable to change, and run in opposition to the wind; but in general they set with it in the Red Sea; and also in the Straits, or in the gulf outside, they mostly run with the wind.

In the gulf outside the Red Sea, between the coast of Arabia and Africa, Easterly winds usually prevail from the early part of Oct. to May; then the Westerly winds commence, and continue about six months. Near the Arabian coast the monsoon from the W. sometimes begins more early, about the middle of April; the Easterly winds setting in on the same coast early in Oct., with a current running to the W. As a general rule it may be observed, that from Oct. to May or June, the wind is from the Eastward in the gulf *outside the Straits*, and about S.E. *inside*, in the *S. part* of the Red Sea. During the other six months, it is from W. *outside*, and N.W. *in the Red Sea*, from June to Oct. This rule is not applicable to the *N. part* of the Sea, for the Northerly winds prevail there during nine months of the year, particularly in the Gulf of Suez, and frequently blow strong: at all times in this gulf S. breezes are of short continuance. The strong N.-Westerly winds that prevail in the Gulf of Suez seldom blow to the S. of the Brothers. And the strong S. winds, which prevail at Mocha, seldom reach above lat. 15° or 16° N.; for about Jiddah, and half-way up the Red Sea, the winds are often light and variable. It is almost impossible to beat up against the Northerly winds to Suez in June, July, and Aug. Ships bound to that port should endeavour to reach it before the 1st of May, or more early if possible; and although, when bound outward, they may get down the Gulf of Suez at any season, it is prudent if bound to a distant port that they depart from Suez by the 25th or 30th of Aug., to enable them to clear the Straits of Bab-el-Mandeb in Sept., before the E. winds commence in the gulf outside. Ships leaving the Straits, after the 10th of Aug., should keep near the Arabian coast, to avoid the strong current, which then sets to the W.S.W. and the W., at the rate of 2 or 3 m. an hour, along the African shore, from Ras Feelook to Zeyla.

Winds and Weather in the Inner Channels. In the inner channel, towards Massowah, on the Abyssinian side, Northerly winds, inclining to land and sea-breezes, seem most prevalent all the year round; but most probably are, as in all other parts to the S., light and variable in Aug. and Sept., when there are also frequent calms; and Southerly winds are by no means common. From the month of Aug. to Oct. is generally fine weather, but from Nov. to the end of March appears to be the rainy monsoon upon that coast. In April the weather was cloudy, and fine in May, June, and July; but between 19° and 20° of lat., in these months, several hot winds and fresh land-squalls are experienced; the *Panther* was driven from her anchorage at Massowah, June 20th, 1805, by a partial simoon or land-squall, from the N.W.

There are similar winds and weather on the Arabian side; and, though land and sea-winds are more frequent in March and April, the land-squalls from the E., in the lower part of the Sea, occur, as at Aden, in April and May. From May to July, when the surveying ships experienced land-squalls from the W., on the Nubian coast, there was at that time thick, hazy weather; and at night there were heavy dews on the Arabian side opposite, about Jiddah.

THE TIDES AND CURRENTS.

Along the shores of the Red Sea, in some places a rise and fall of the water was observed; and at a few parts of the shore, and in some of the narrowest channels, a tide was seen to flow; but at all other parts it was imperceptible.

Within the Straits of Bab-el-Mandeb, on both sides of the Sea, when the ship at anchor had her head to the N.W., the tide was rising on the shore, when it *appeared* as if the flood ran to the S.; but it is to be observed, that the ship was wind-rode, the tide-stream not being of sufficient force to counteract the effect of the wind upon her hull and rigging; and it should also be noticed, that the abrupt turn of the coast at the entrance of the Sea causes an eddy in the neighbourhood of the Straits, though not immediately within the small one. The tide flows into the Red Sea through the narrow channel of the small Strait, at the same time that it is rising by the shore.

On F. and C. of the moon, it is H. W. at Bab-el-Mandeb at 12 h. 0 m. At Ras Macowa, on the Abyssinian coast, nearly opposite to Mocha, the tide, though hardly perceptible, appeared to flow in from the open sea, and it was H. W. about 12 h. 30 m., and the rise about 2 ft. At Amphilla the motion of the tide was not perceptible, but the rise was about 3 ft., and the time of H. W. about 12 h. 40 m. At Ras Mejarula, on the Arabian coast opposite, the rise was about 4 ft., and the time about 1 h. 10 m. At Camaran Island, the rise at the Equinox was 2 ft. 10 in., and the time of H. W. 10 h. At Dissee Island, on the Abyssinian coast opposite, a branch of tide flows perceptibly S. into Goob Ducnoo; and it runs with considerable rapidity on the E. side of Dhalac, through the contracted channel, over a rocky bottom, into Doobelloo harbour, and also into Gubet Sogera (Soghra),

on the W. side of the island, Dhalac, through the narrow gut that forms the entrance, where it is H. W. at 1 h. 0 m. At Dissee Island the rise is $3\frac{1}{2}$ ft., and H. W. at 1 h. 0 m. At Massowah the stream of tide was hardly perceptible, but the rise was 3 ft., and H. W. at 1 h. 0 m. At Loheia, on the Arabian side, nearly opposite Massowah, there was no perceptible motion of tide in the offing, but the rise was 3 ft., and H. W. at 1 h. 30 m. in the inner harbour. At Badour, on the Abyssinian coast, the rise of tide was 1 ft. 6 in., and H. W. at 1 h. 15 m. In Jiddah harbour we observed no motion of tide; there was a rise and fall of water, but so very irregular, that we were unable to obtain correct data. In Jan. and Feb. the greatest rise or fall on the springs was about 2 ft.; but in the hot months there is less at L. W. by 3 ft. than in the cold season; showing how the N. winds cause a considerable depression.

The Currents in the Red Sea seem to be entirely governed by the winds; during the prevalence of S. breezes they run to the N., and with N. winds to the S.; they increase according to the strength of either, as there was little set or none at all during the prevalence of light variable airs previous to the setting in of the S. winds.

In Nov., in a strong S. wind, the current sets to the N.W., about 1 m. per hour, off Jiddah harbour. In Dec., on the Arabian side, below that place, it sets to the N., $1\frac{1}{2}$ m. per hour. In Nov., off the Outer Reefs on the Arabian side, it sets along them N.N.W., 1 m. per hour. In Feb. there appeared to be no current in the neighbourhood of Jebel Teer, during light winds. In Aug. the current in the S. part of the Sea sets to the S., 1 m. per hour.

In the beginning of Oct., 1832, there seemed to be no current; and afterwards, on the N. part of the Shāb Farsan banks, it was setting to the N., about $\frac{1}{2}$ of a knot per hour, amongst the banks and islands on the Outer Reefs. The flow of tide and current through the several deep-water channels was so irregular, and intermixed so much with eddies from the numerous islands and shallows, that it was quite impossible to ascertain it with any correctness.

WINDS, CURRENTS, AND PASSAGES, BETWEEN SUEZ AND JIDDAH.

The Winds from Suez to Jiddah, during the whole year, are mostly Northerly, blowing with great violence at times, but generally moderate with changes of the moon. During winter months, from Dec. to April, Southerly winds at times prevail for a few days, occasionally blowing fresh; more especially in the Sea of Suez, where they freshen at times to a moderate gale, blowing home to Suez, but lasting only a short time. In these months, in the Sea of Suez, Westerly gales are not unfrequent; they are called by the natives the Egyptian winds, and from their violence are much dreaded. On the Arabian coast, near Jiddah, both to the S. and N. of it, the winds from N., from N.E., and E., at times blow with great violence during the winter months, bringing off clouds of dust from the land.

The Currents in the Red Sea, from Jiddah to Ras Mahomed, are various all the year; no particular direction can be assigned to them; it may be generally remarked, they set with the prevailing winds, which, when strong, cause a current of sometimes 20 and 40 m. a day. If the wind continues long in the same quarter, they sometimes set against it, which can be proved by the short, deep swell, in a N.W. wind, against which the best-sailing vessels make nothing for the first and second days, when all at once they unexpectedly get to windward. Southerly winds, which sometimes prevail from Oct. to May, generally bring a current from 20 to 30 m. a day with them.

After a N.-Wester has been blowing, and light winds prevail, a current generally sets to the N., more especially on the Arabian coast. Therefore, the Arabian side, with the N. winds, is the best to work on, and not the Egyptian coast, which the old navigators preferred, on account of its being more clear of shoals. On the Arabian coast a vessel will be able to take advantage of the wind, if she is near the reefs and coast; as the wind almost always bears several points more from off the land as the night advances, and in the early part of the morning; and it comes well from seaward during the day; but this is not the case on the Egyptian coast, when N., N.E., and E. winds prevail. At times, from Nov. to March, these last cause a strong current to the W., and as the wind becomes light it sets back again to the E.

Passages. The average time a ship takes to reach Cosire from Jeddah depends so much on circumstances, that no definite period can be stated: it is seldom performed in less than 10, or longer than 20 days; in the native boats 25 and 30, sometimes more. A ship ought to have good sails bent on quitting Jiddah for the N.; and, if she is proceeding to Cosire, should work up on the Arabian side as far N. as **Namahn Island**, in lat. $27^{\circ} 6' N.$, before she attempts to cross the sea to Cosire; for should she make to leeward of the port, it may take her days to work up a small distance. On quitting Cosire for Suez, with a strong Northerly wind, a vessel ought to stand over to the Arabian coast; she will nearly fetch Moilah, in lat. $27^{\circ} 40' N.$, and lon. $35^{\circ} 27' E.$ Having

worked up 30 m. to the N. of Moilah, she may then stand over to Ras Mahomed, leaving the Arabian coast at night: as she proceeds along, the N. winds will veer to the N.N.E. out of the Sea of Akabah, which enables a vessel to reach Ras Mohamed, keeping a close luff to the islands bounding the head of the Sea.

From what has been said respecting the currents, it will be essential to ascertain the vessel's situation correctly, taking latitude by the stars which pass the meridian, as also correcting the longitude at sunset by sights for the chronometers, of some of the numerous stars at twilight, which, from the clearness of the atmosphere in this Sea, are always to be seen. After taking observations at sunset or later, a vessel ought only to stand back to the shore or reefs, half the distance she stands out, and never come nearer than 10 m. off the reefs at night, in case of a current. A vessel cannot do wrong by keeping the Arabian side on board, but should not go too close with a light wind or heavy swell, or if there is much probability of the wind failing: in case it blows hard, she can take advantage of the anchorages, having a native pilot on board. These men know nothing of the Egyptian coast, so they could take a ship only to one or two principal ports on that side, which is essentially necessary, should a vessel be in distress, or requiring some refit.

The Arab Pilots being acquainted with the reefs and anchorages of the Arabian coast, from eyesight, are always able to take a vessel among them with safety; whereas a stranger, not acquainted with the localities, would feel alarmed in navigating among the reefs; but they are all safe to approach, taking the precaution to be on the fore-top-sail-yard with the native pilot, and keeping a good look-out for sunken rocks, the eye, and not the lead, being the only guide. The different shades of green on the coral rocks will show the depth of water and the spot to anchor on; when at anchor care should be taken of a shift of wind, on the vessel forging a-head, to haul in the slack of the cable, to prevent its taking turns round the rocks; in which case it is with difficulty cleared again.

The hire of a native pilot from Jiddah to Suez is about 25 or 30 German crowns, besides his food. If possible, do not take a very old man. These pilots have little inclination to go aloft, and are generally indolent; it is necessary to keep them on the alert, and never place too great a dependence on them: they know nothing when in the midst of the sea and out of sight of land.

WINDS AND CURRENTS IN RED SEA, BY COMMANDER T. E. ROGERS, OF THE INDIAN NAVY.

Winter Months. From the beginning of Oct. to the end of April, which period may be called the winter months, from the Straits of Bab-el-Mandeb to Jebel Teer, the wind may be said to blow constantly from the S., with the exception of an occasional day or two of Northerly winds on the F. and C. of the moon; but two months frequently pass without any change of wind. The current generally takes the direction of the wind 15 or 20 m. per day, particularly that from the N.; the Southerly winds having, as it were, heaped the waters in the upper part of the Sea; from this cause, also, I imagine it is, that a set is at times found against the Southerly winds, on the decreasing of a strong breeze from that quarter.

The effect of the S. wind in raising the water, and the N. wind in decreasing it, very plainly appears in Jiddah Roads; with the former a small boat can go straight from the anchorage to the shore, whereas with the latter, in the same direction, a succession of dry banks appear, having only a circuitous and narrow channel.

From Jebel Teer to lat. 19° or 20° , the winds at the same season are variable, blowing nearly as much from the N. as the S., that particular wind predominating as you approach the N. or S. of the above limits. The currents here, in general, set with the wind, but at times are found to run across the sea as much as 20 m. in 24 hours; occasionally, but not often, a set to windward is experienced of 12 or 15 m. in the same time. The winds here do not, in general, blow so strong as the prevailing ones above and below these limits.

From lat. 21° to 27° , at the same season, the Northerly is the prevailing wind, but half a moon seldom passes without having the wind one or two days from the S., more particularly from the end of Nov. to mid-March. The currents here are much the same as between Jebel Teer and Jiddah; the Southerly wind is less frequent as you approach the N. extreme of these limits. Strong Northerly winds, of two or three days' continuance, are often experienced here in these months.

From lat. 27° to Suez, the wind is almost constantly from the N., and, unless during the months of Dec., Jan., and Feb., seldom interrupted by that from the S. The currents run with the wind, but are not so strong as those experienced more to the S. The N.-Wester seldom blows with violence here for more than 12 or 15 hours at a time, and, from what I have experienced, I should say it does not blow so strong in the summer as in the winter.

Summer Months. In June, July, Aug., and Sept., the Northerly winds prevail, with more or less strength, throughout the Sea from Suez to Bab-el-Mandeb, with little interruption; occasional slants from the land are met with, particularly in Aug. and Sept.; and a vessel that sails fairly will average 35 m. a day, in working from Mocha to Suez in these months.

Leaving Mocha in the end of July, the *Euphrates* worked to Suez in 36 days; leaving Mocha in the end of Aug., she completed the same voyage in 32 days. On both these occasions, from leaving Mocha until she passed the Strait of Jubal, she never had a second reef in the topsails. The water was in general smooth; the current generally against, sometimes with her, the difference giving an average of $3\frac{1}{2}$ and 4 m. daily against her during the voyage.

In opposition to Horsburgh, who says the wind in the Sea of Suez generally blows strongest during the day,* I have found in working up on three occasions, once in June, another in July, and again in Aug., the contrary to be the case, never, on any occasion, having found a second reef in the topsails necessary during the day, whereas at night I have generally been obliged to double reef the topsails, and at times take in the mainsail.

Throughout the Sea of Suez a hazy horizon is generally a sign of a breeze; but it is not always its precursor. The same remark applies to a light fleecy cloud hanging above the tops of the Toor or Sinai mountains, as seen from the southern entrance of the Strait of Jubal.

During the winter months, throughout the Sea, the Northerly wind is generally accompanied by a dry atmosphere, and the Southerly wind by one that is damp. A change of wind is thus often indicated some hours before it takes place, or before any other sign is visible.

During the summer months the atmosphere is generally damp throughout the Sea; but the sky overhead is so clear that a planet can often be seen at noon-day.

In working up the Sea to the Strait of Jubal, I think the Arabian coast is the best to keep on; and in this opinion I am strengthened by the practice of Turkish ships, which, in their way from Jiddah to Cosire, sight the island of Tirahn before they venture to cross over, so much do they dread making the Egyptian coast below Cosire. This is 60 m. farther to the N. than I think a fair sailing ship need go, and the practice is sometimes attended with provoking consequences, as I have known one Turk reach Cosire before another who left Jiddah 13 days earlier, in consequence of the former getting a S. wind below Cosire, which to the other was a foul wind, from his being so far to the N.

The wind in the Red Sea seldom blows in squalls, but its gradual rise is often very rapid in the N. part.

In the months of Dec., Jan., and Feb., a ship sometimes will carry a fair wind from Mocha to Cosire, and make the passages in 6 or 7 days. I never heard of this being done from Cosire to Mocha, unless in the summer months.

ADDITIONAL DIRECTIONS FOR THE NAVIGATION.

The track usually taken by H M. Indian troop-ships and other large steamers is, after leaving Suez, to keep the W. shore on board, as being the clearest, passing Zafarana Light-house from 3 to 5 m. distant, and carefully checking the distance by bearings, as judging distances by eye in the Red Sea is more than usually deceptive. From Zafarana Light they steer so as to pass Ras Gharib Light about 4 or 5 m. distant, still keeping the W. shore on board; passing W. of the $3\frac{1}{2}$ -fathom patch, Toor Middle Shoal, between Ras Shukhair and Toor, the high land of Zeiti is made on the bow, and a course shaped for Ashrafi Light-house. The position of Mount Akrah in this vicinity used to be depended upon for bearings, and the mountain can generally be seen at night; but Ras Gharib Light now supersedes it.

There is no difficulty for steamers in the Strait of Jubal by night or day, if in passing the Ashrafi Light-house its distance is carefully determined by the change of bearing. This precaution in taking each fresh departure is absolutely necessary; as, between determining the distance by bearing, and judging the same by eye, an error of 3 m. in 10 has been found by different observers.

Entering the Strait of Jubal from the S. it is better to pass Shadwan Island close (1 or $1\frac{1}{2}$ m.),

* This account, occurring in the old Directions for Entering the Sea of Suez, by Captain Kydd, does not mention the time of year, but merely states, "*In the day it generally blows strong, but moderate during the night.*" Captain Rogers speaks of the summer months only. My own experience of S.E. winds during winter months, at the lower part of the Red Sea, is, that they blow strongest in the day (notably in the afternoon), as sea-breezes do. I might also mention, that in the passage from Aden to Bombay, in the N.E. monsoon, the wind is fresher in the forenoon (generally between midnight and noon), just as the land-winds on the coast of India are. Notes of such occurrences as these—capable of being frequently taken by the many intelligent master-mariners and engineers who now ply between Europe and Asia—will be of service to the physical geographer when investigating the phenomena of periodical winds.—EDITOR.

and then steer a course to pass the out-lying reef of Abou Nahas and the Horse-Shoe, about 3 m. distant, until Ashrafi Light is sighted. Shadwan Island has been seen on several occasions when 35 m. distant.

The Brothers may be safely approached within a short distance; on the centre of the N. and larger one is a high pole with cage-top, in lat. $26^{\circ} 18' 53''$ N., and lon. $34^{\circ} 50' 44''$ E.

The Dædalus Reef, which has a good light on it, may be passed on either side, and a course is then * shaped to pass 4 m. W. of Jebel Teer. St. John's Island makes in the distance like a hay-cock. The S.W. Zebayer Island is passed on the same side, and at the same distance as Jebel Teer; the track then lies inside Jebel Zooger, passing between it and Abou Eyle, keeping on the side of Jebel Zooger, as a reef runs off the N.W. side of the W. Abou Eyle. A course is next shaped to pass Mocha, about 6 or 7 m. distant, and thence to Perim.

The doubtful danger marked in the Small Strait of Bab-el-Mandeb is not believed to exist, the *Malabar* having passed close over the spot five times without discovering anything of the kind. It is of importance to know this, as the island side in this channel is the safest, the Oyster Rock with its outlying reef not being very easily seen at night.

In this route it is considered many additional lights are wanting. A better one is required at Suez. Ras Gharib now shows a good light. A light would be useful on Shadwan, and also on the Brothers, which latter are low, and not seen under ordinary circumstances more than 2 m. at night. On Jebel Teer one might be favourably placed on low land on the W. side; also on Abou Eyle, where it might be built on the reef running off the N.W. side of the W. rock. And lastly, a light-vessel moored outside the shoal patches which extend 4 m. off Mocha would be of great assistance in rounding the shoals at night.

Currents. As a general rule the currents are not strong. With a strong S.S.E. wind, lasting about three days in Dec., when between Jebel Teer and Jebel Zooger it ran with the wind at the rate of $1\frac{1}{2}$ m. per hour, but in ordinary weather, such as is generally experienced, the velocity does not usually exceed $\frac{1}{2}$ m. an hour. On two occasions in the vicinity of the Brothers (near Shadwan), a W. set of $\frac{1}{2}$ m. per hour was observed, lasting about twelve hours. The greatest set noticed in the Gulf of Suez was $\frac{1}{2}$ m. per hour to the E.

STRAIT OF JUBAL. The following observations, on the tides and currents in Jubal Strait, were made by Captain Henry D. Grant, R.N., while conducting the operations for the recovery of the treasure from the wreck of the P. and O. Company's steamship *Carnatic* in Dec., 1869, on the Abou Nahas Reef.

The rise and fall of the tides on all the banks between Jubal and Shadwan Islands are much affected by the direction and force of the wind; they range from 4 to 6 ft. at F. and C. The direction of the tides (the ebb running to the N.W. and the flood to the S.E.), as shown on the chart of the Strait of Jubal, is correct, but within the distance of 2 m. from the reefs and Shadwan Island they are uncertain, setting in towards the reefs and circling round them.

For the space of nearly a month a steady N.W. current was experienced passing between Shadwan and Abou Nahas, and setting past the Saul Islands. Captain Alli Suggery, of H.H. the Khedive's steamship *Tor*, states that it sets out again N. of Jubal Island. The strength of this current depends on the age of the moon; and at change it runs about 2 m. an hour. On three occasions, when at anchor for a week or ten days, in Dec., off Abou Nahas, the vessel was riding with her head to the E.S.E., and a strong N.W. wind blowing the whole time. **Strong under currents** were found on the N. side of the Reef.

As the Ashrafi is a first-class light, and can be seen clearly when to the S. of all the reefs, with attention to its bearing, and Shadwan Island always in sight, no vessel ought to be endangered. Vessels should pass the Ashrafi Light-house at a distance of from 1 to 2 m., and then a course should be shaped to give the Horse-Shoe and Abou Nahas Reefs a berth of from 3 to 4 m.

WINDS AND WEATHER. The following has been collected from various sources:—

Hurricanes or heavy storms are almost unknown in the Red Sea, but fresh gales and close-reefed topsail breezes are of constant occurrence.

Between Suez and Jiddah, Northerly winds prevail all the year round. From Dec. to March inclusive these winds blow fiercely, moderating at F. and C., with an occasional Southerly breeze foretold by damp weather. During these months, Westerly gales occur in the Gulf of Suez, and as far S. as the Dædalus Reef, accompanied at times by dense fogs of dust; violent N.E. winds on the Arabian coast, near Jiddah, are also felt.

Between the Strait of Bab-el-Mandeb and the parallel of 17° N., Southerly winds are experienced in the middle of the sea from Oct. to May, prevailing from Nov. to March, blowing

* See the Editor's own experience and remarks, at bottom of page 29.

strong from the S.E. in Jan.; about Dec. these winds bring hazy weather, with squalls and rain; after Feb. they blow with less strength, and are frequently followed by Northerly winds for several days. Rain falls between Oct. and March.

In March, April, and May the weather is unsettled, with Easterly squalls, and sometimes rain.

The N.W. winds commence in June, seldom blowing strong, and becoming light and variable in Aug. and Sept., with occasional Southerly winds, long calms, and hazy weather in the latter month. Squalls come off the land with hazy weather between April and June; while in July, August, and Sept., the winds are usually light and variable, with frequent long calms; land-breezes are occasionally met with then on the Arabian coast.

On the coasts of this region land and sea-breezes are experienced, but Northerly winds prevail all the year round.

WORDS USED IN DIRECTIONS FOR RED SEA AND GULF OF ADEN.

Balad	A Town or Village.
Bander or Bunder	A Harbour or Anchorage.
Bar or Bahr	The Land.
Bayat	A Shoal, dry at L. W.
Gadd or Gad (<i>Kadd</i>)	A Shoal.
Goobet or Gubet (<i>Ghubbet</i>)	A Gulf.
Gurn or Garn (<i>Karn</i>)	A Horn, or Point.
Guttah (<i>Kit'ah</i>)	A Patch of Rocks.
Hassar	A Rock.
Jibbel (<i>Jebel</i>)	A Hill, or Mountain.
Juzeerat, or Jezirat (<i>Jazirat</i> or <i>Jazirah</i>)	An Island.
Kebter (<i>Kebireh</i>)	Great.
Khor or Core (<i>Khaur</i>)	An Inlet.
Kinásat	A Shoal or Sand-bank.
Mirza, or Merza (<i>Mersá</i>)	An Anchorage.
Nakhil	A Date-grove.
Rak, Rakat, or Rejjat	A shallow, flat Bank, extending off shore; or a Ripple.
Ras (<i>Rás</i>)	A Cape, or Headland.
Sail, or Sale (<i>Seil</i>)	A Torrent.
Segeer (<i>Saghireh</i>)	Small.
Shab, or Shaab (<i>Shā'b</i>)	A Reef, or Shoal.
Shurm, Sherm, or Shrum (<i>Sharm</i>)	A Creek, or small Cove.
Waddy (<i>Wádi</i>)	A Valley, or River.

CHAPTER IX.

THE RED SEA—ARABIAN SIDE.

PERIM—BAB-EL-MANDEB—MOCHA—HARNISH AND ZOOGUR—HODEIDAH—ZEBAYER AND JEBEL TEER—CAMARAN—LOHEIA—COMFIDAH—LEET—OUTER REEFS—SHAB FARSAN—WUSALIAT—ABOO LAAD—JIDDAH—YEMBO—CAPE BAREDI—HASANI AND MASABIH ISLANDS—MOILAH—TIRAHN ISLAND—GULF OF AKABAH—RAS MOHAMED—TOOR—SUEZ—NAVIGATION.

(VARIATION AT BAB-EL-MANDEB, $4\frac{1}{2}^{\circ}$ W.; AT JIDDAH, 5° W.; AT SUEZ, $5\frac{1}{2}^{\circ}$ W.)

The Directions for the S. half of the Red Sea, from the Straits of Bab-el-Mandeb to Jiddah, were extracted from a Memoir written by the late Commander Thomas Elwon, of the Indian Navy, to accompany his portion of the survey. For the part N. of Jiddah, the directions were written by Commander Robert Moresby, by whom that part of the survey was executed. The longitudes were determined by chronometric measurements, and have lately received important corrections

FROM BAB-EL-MANDEB TO MOCHA AND JEBEL TEER.

The Straits of Bab-el-Mandeb are 14 m. wide. The mountain ranges of Africa and Arabia converge towards them, both inside and outside the Red Sea, thus acting as a funnel to increase the strength of the N. and S. winds and the currents also in their seasons. **Perim or Meyoon** is a bare rocky island, about 4 m. long by $2\frac{1}{2}$ broad, rising 200 ft. above the sea. On its S.W. side is a good harbour, nearly $\frac{1}{2}$ m. broad, with 6 and 7 fathoms water, and a muddy bottom. The harbour forms in two branches, and that to the N.W. appears the best. There is difficulty in getting out of this place in S. winds, and warping out might be found necessary. A bank extends off the N. of Perim $\frac{1}{2}$ m., with 4 and 5 fathoms on its outer edge; the steamer *Evora* got aground in $2\frac{1}{2}$ fathoms, said to be nearly $\frac{1}{2}$ m. to the N. of the N.W. cliffs of Perim.

Perim Light, in lat. $12^{\circ} 40'$ N., lon. $43^{\circ} 23'$ E., is a white light of the first order, *Revolving* every minute; it is placed 1,100 yards within the N.E. bluff; and being elevated 240 ft. above H.W., is visible 22 m. in clear weather.

THE SMALL STRAIT is nearly $1\frac{1}{2}$ m. wide, with 10 or 12 fathoms in mid-channel in its N. part; 14 to 16 in its centre; and 11 to 13 fathoms between Fisherman or Pilot Rock and the S.E. extreme of Perim. Shoal water in rocky patches extends N. of Pilot Rock to the lower Cape of Bab-el-Mandeb. But N. of that Cape ships may, during S. winds, anchor in 6 or 7 fathoms, with Pilot Rock seen over the low Cape, and the N. end of Perim Island W.S.W., or the light about S.W. by S. There is sheltered anchorage during N. winds in 6 and 7 fathoms, in a small bight to E. by S. of the Pilot Rock, and about 2 or 3 cables from it.

Navigation. Ships entering the **Red Sea**, usually take the Small Strait, which has moderate depths for anchorage. In running for the entrance, the depth decreases quickly from 30 and 28 to 13 and 10 fathoms. With a fair wind keep in mid-channel, or nearer Perim; there is no danger, although the depths are irregular from 17 to 7 fathoms coarse sand. At the N. part of the Strait, nearer the main than to the island, lies a small bank, having on it 7 or 6 fathoms, whereon a few casts may be got, but there is no danger. Off the N. part of Perim Island about $\frac{1}{2}$ m. is a shoal spit of 24 and 17 ft. **Anchorage.** Having passed through the Strait, and uncertain of reaching Mocha with daylight, with the wind inclining to blow strong from S., you may shut in the entrance of the Strait, and anchor to the N. of Cape Bab-el-Mandeb, near the French settlement of Sheikh Syed, where the water is smooth, with Perim Light about S.W. by S., and Pilot Rock just behind the low point of Bab-el-Mandeb. It may be difficult to bring up, with the Strait open, or farther N. towards Mocha. The navigator must be on his guard not to overshoot Mocha in the night, for currents sometimes set strong to the N. with S. winds.

THE LARGE STRAIT is 9 m. broad. Perim is its N. boundary; the Brothers Islands and Ras Sejam mark its S. limits. Throughout this strait, no soundings are obtainable, except with the deep-sea lead near Perim and towards the Abyssinian shore. There is no anchorage in the Large

Strait, except near Perim Island, or between the Brothers and the main land. With a steady fair wind, the Large Strait may be adopted, for a ship may run through in the night, when it is imprudent for a stranger to proceed through the Small Strait. In passing through the Large Strait, a ship should borrow towards the Island Perim, where she may anchor if the wind fail, and prevent being carried over to the Brothers when the current is running to the S. If passing through the Large Strait in the middle or early part of the night, it will be prudent to haul in to the E., and heave-to until daylight, keeping near the Arabian shore, in from 12 to 24 fathoms; this is preferable to anchoring when blowing strong, as a ship is liable to lose her anchor.

Having entered the Red Sea by either Strait, steer along the Arabian coast, coming no nearer than 10 or 11 fathoms, on account of a small bank 8 or 9 leagues to the N. of Cape Bab-el-Mandeb, having 9 fathoms close-to.

Zee Hill, 18 m. N. of Perim Light, is a small but remarkable rocky peak, like a gunner's quoin, close to the beach. This is the only hill by the sea between Bab-el-Mandeb and Mocha. Shoal water runs off it; and, to the S., there are two reefs lying off shore, extending 6 m. to the S. from Zee Hill. Soundings along this coast are pretty regular, and the lead is a good guide in approaching it. Between Zee Hill and Mocha, but nearest to the former place, there is a small bank (reported by former navigators, but not on the Red Sea charts,) having 9 fathoms close outside of it. There is also said to be a shoal between Bab-el-Mandeb and Zee Hill; therefore never go under 12 fathoms along this shore, except you have an Arab pilot.

In passing Mocha, the lead should always be used to determine the distance off shore; if the hand-lead gets bottom, you are too near and should haul out a little.

MOCHA, in lat. $13^{\circ} 20' N.$, and lon. $43^{\circ} 12' E.$, is enclosed by a wall with several forts and towers, occupying a space about $\frac{1}{2}$ m. square; many of the buildings within it are in ruins. The houses generally are large, and built with stone: there are also several mosques with lofty minarets, and being white, they have an imposing effect from sea. It has several batteries towards the sea; the centre battery is by the jetty; and a little to N., opposite the old factory, is a five-gun battery; beyond that is the N. fort, on a sandy spit to the N.W. of the town. The south fort is in a ruinous state, upon a sandy beach to the S.W. of the town. This place has an extensive bazaar, and is well supplied with beef, Abyssinian sheep, fruits, and vegetables; very good bread may also be had, but there is no biscuit. The water is brackish and dear. The population is now less than 2,000, but formerly was 20 times as great, before Aden rose to such importance. Hodeidah, 100 m. further N., has supplanted Mocha as the principal commercial depôt of Yemen.

Mocha Roads, to the W. of the town, have a depth of only 3 to 6 fathoms, and the bottom is sand, not good holding-ground. There are three rocky shoals to be avoided in sailing in or out, and in anchoring. Firstly, the numerous shoal patches, lying $3\frac{1}{2}$ m. to S.W. of the town, which prevent ships approaching nearer than 4 m., whilst the grand mosque bears to the N. of E. Within these, and 2 m. W. of the town, lies a small shoal with 13 and 14 ft.; and between this and the town is Mocha Roads.

A light-vessel is proposed to be placed off Mocha.

When approaching Mocha from the South, steer along the Arabian coast about N.N.W., keeping without the depth of 12 fathoms, to clear the sand and rocky banks which project from Mocha Roads. Vessels entering must bring the Grand Mosque to bear E. by S., or the North fort bearing E., before they approach within $2\frac{1}{2}$ m. of the shore; and then steer in on that course, and anchor in 4 or 5 fathoms. No vessel should attempt to enter from the S. without a pilot; as a long narrow shoal lies 1 m. W. of the South fort. Passing inside the banks can only be attempted by a small vessel, and not without a pilot. After passing Zee Hill, keep along the coast in 7 or 6 fathoms, and when the N. fort bears N.E. by N. steer for it, until the South ruined fort and mosque are in one. With these marks on, about a N.E. course, you can steer in until within 1 m. of the S. fort, but do not attempt getting near the landing-place without a pilot.

PASSAGE FROM MOCHA TO JEBEL TEER. A N.N.W. course, for 40 m., from the Small Strait having placed the vessel from 5 to 7 m. off Mocha; steer thence N. by W. 52 m. to Abou Eyle islets, passing about 1 m. to E. of them. If the Large Strait be used with a fair wind, a N. by W. $\frac{1}{2}$ W. course for 44 m. places the ship off Mocha; then steer as above to pass well to the E. of Mooshedjerah and to round Abou Eyle. The rocks and islets between Harnish islands and the Abyssinian coast, make the Arabian shore a preferable navigation. The land is low and sandy, but the soundings are regular, and the lead will be a good guide between Mocha and Ras Zebeed, which is abreast of Zoogur island; but no shelter from strong winds is found till you reach Khor Goolafugger, 80 m. to the N. of Mocha.

HARNISH ISLANDS are nearly 40 m. to N.W. of Mocha. Great Harnish is 10 m. long, N.E. and S.W., and about 3 m. in breadth. Its central peak is highest, and all are volcanic and barren;

grass grows in the valleys, in which plenty of antelopes are found. The W. side is very steep-to, but along the E. side the soundings are pretty regular, affording anchorage against N. winds, with a bottom of sand and rock, just to the S. of Haycock island, which lies off the N.E. end of Great Harnish. **Little Harnish**, 3 m. to N. of Haycock, is also very high and rugged. Off its N. and E. sides there are several rocky islets and sunken rocks.

The S.E. Rocky Islet of the Harnish group lies 5 or 6 m. E. by N. from Sule Harnish, which is the S. high island. This S.E. rocky islet stands about 10 m. to the S. of Mooshedjerah.

Mooshedjerah is a small, low island, 3 m. to E. of the N. point of Great Harnish. It is safe to approach quite close, except on S.E. side, where the P. and O. steamer *Alma* was lost in 1859; but navigators should avoid the islets and rocks about 9 m. to the S. of Mooshedjerah.

JEBEL ZOOGUR, the highest island in the Red Sea, nearly 10 m. in length from N. to S., has its centre in lat. 14° N. Several lofty, barren hills, with sharp peaks, formerly volcanoes, form its high land. The W. peak is highest, more than 1,000 ft. There is anchorage to S. of this peak during N. winds, in 7 to 9 fathoms, sandy bottom, inside of Sandy Peak islet, the passage between which and Zoogur has 7 fathoms. Anchorage in strong S. winds, in 7 to 10 fathoms, with smooth water, may be found to N.W. of the highest peak, on the N. side of the prominent, rocky, W. cape of Zoogur, in lat. $14^{\circ} 2'$ N. Here the S. winds blow in gusts from the island, but the water is smooth. There is no protection from S. winds on the Arabian coast opposite, except on the N. side of Ras Mejarmila, more than 30 m. from Zoogur.

Aboo Eyle are three islets, standing together out of the sea, about 1 league off the N.E. points of Jebel Zoogur. They are 13 m. from the Arabian shore, and the fair channel is fully 3 leagues wide. It was usual for pilots to take steamers to the E. of the Aboo Eyle, but practised navigators now pass between them and Jebel Zoogur. From these islets, a course N.W. by N. will take a vessel to the W. of Zebayer islands and of Jebel Teer. (See end of Chapter VIII.)

The Islands and Rocks between Ras Billool and Jebel Zoogur. The islands comprising this group are mostly volcanic hills, of a dark and barren aspect, with rocky eminences in fanciful or romantic shapes, covered with a loose, granular black, brown, or sandy-coloured earth and ashes, or strewn with pieces of sharp rock. The principal, as before stated, are the Zoogur and Harnish Islands, which are surrounded by many small ones of various heights, to which appropriate names have been given, according to their different shapes. In some of the largest, the remains of craters are very evident, having all the appearance of being originally high-peaked islands, reduced to the present saucer-shape by internal explosions; and the neighbouring smaller islands and rocks to the E.S.E., the S., and S.W. of Harnish, being of similar formation, leads to a belief that they have been formed by the same means. No sunken patches were discovered between any of this group from Ras Billool to Zoogur, all the dangers being above water, so that vessels running either up or down this sea can pass through any of these channels during the day with safety; but it is better not to attempt to pass through the smallest ones beneath the N.E. of the Mah-heb-bakah Islands; or through the 9-fathom channel between the N. part of Great Harnish and Haycock Island off it, for fear of baffling winds.

ZEBAYER ISLANDS are 40 m. W.N.W. from Hodeidah; their S.W. island, called Centre Peak, bears N.N.W. $\frac{1}{2}$ W., 65 m. from Aboo Eyle islets. Jebel Zebayer, the E. island, and largest of the group, is about 600 ft. high, and has three remarkable hills; the S. one is conical, the N. one is like a barn. Some low rocks awash lie nearly 3 m. to the N. of the N.E. tip of this island, and no soundings would be got at 1 m. off them. Therefore it is best for steamers to pass to the W. of Zebayer group, although the fair channel to N.E. of them has a width of 15 m. The nearest land (20 m. from the Zebayers) is **Rasher**, in lat. $15^{\circ} 10'$ N., lon. $42^{\circ} 33'$ E., a low, sandy islet, surrounded by a reef; this is 3 m. to the S. of Ras-al-Bayath, a sandy cape, which is 33 m. N.W. by N. of Hodeidah.

Quoin Rock, the N. islet of the group, in lat. $15^{\circ} 12'$ N., lon. $42^{\circ} 4'$ E., stands 12 m. to N.W. of Jebel Zebayer. **Haycock Islet** stands about 4 m. to S.E. by E. of the Quoin, and 8 m. to N.W. by N. of Jebel Zebayer. **A Sunken Rock** lies 6 m. to the S.E. of Haycock, with the E. extreme of Jebel Zebayer bearing S.; therefore, ships must take care not to pass too near the E. sides of the Zebayer group; the fair channel between them and the shoals off Camaran is 7 leagues wide.

Centre Peak is the S.W. island of the Zebayer group; its S.W. point is in lat. $15^{\circ} 1\frac{1}{2}'$ N., and lon. $42^{\circ} 10'$ E.; it is pretty high and steep-to. There is a passage between it and the large island; but all vessels should pass outside.

Soundings. Close to the W. of the Zebayer group the sea is very deep, and the deep-sea lead could not get bottom. But, although the soundings are a complete blank on the charts, both to S. and to W. of this group, there is reason to believe that, at 15 or 20 m. from the Zebayers, a continuation of the soundings on the Great Dhalac Bank would be found, with so little as 30, and perhaps 20 fathoms

JEBEL TEER, in lat. $15^{\circ} 32\frac{1}{2}'$ N., and lon. $41^{\circ} 50\frac{1}{2}'$ E., lies W. by N., distant 28 m. from Okbahn, and N.W. by N., 34 m. from Jebel Zebayer. This island is nearly of a circular shape, being about $1\frac{3}{4}$ m. from N. to S., and $1\frac{1}{2}$ m. broad, with 50 and 60 fathoms close to it. Its height is 900 ft. above the sea-level, and visible at 40 m. in clear weather. From the base it has a gradual ascent for $\frac{1}{2}$ m., where a range of hills, about 100 yards high, commence and terminate in a steep, rocky bluff, on the S. end of the island. From the top of this range is another gradual ascent to the peaks, which are about 100 yards in height. The largest peak is of a brown colour, and the other forms a beautiful cone, when seen from the S. and W. They appear to be of volcanic origin. There is a small, sandy patch, on the W. side, where landing may be effected; but there is no anchorage. Captains have reported it as sometimes sending up smoke by day, with flame by night. No soundings are obtainable near it with ordinary deep-sea line. The nearest land is Kotama Island, which bears E. by N. $\frac{1}{2}$ N., 26 m. from the Jebel. (See remarks at page 80.)

There are three names for this island: the Indians call it Jebel Teer, or hill of birds; the El Shoorees of Sohar, near Muscat, Jebel Dokhan, or hill of smoke; and the Arabs and Abyssinians Jebel Sebain, or hill without anchorage. About $2\frac{1}{2}$ leagues to the W. by S. a depth was found of 297 fathoms, water; and at 1 league further to S.W., you will get 50 fathoms, and less, on the tail of the Great Dhalac Bank.

Caution. Sailing vessels must be warned that dangerous shoals, with patches of 2 and 3 fathoms, lie about 35 m. to W.S.W. of Jebel Teer. Other shoals encumber the sea between them and the E. islands of the **Great Dhalac Bank**, which Bank has not been thoroughly examined, and ships had better avoid it.

COAST OF YEMEN, FROM MOCHA TO LOHEIA.

Mersa Fejeerah, about 16 m. to N. from Mocha, is fit only for boats in less than 4 fathoms, to the S. of which the coast projects a little, and in some degree breaks off the swell in S. winds. Between Mocha and this place the soundings are regular. Seven miles further N. is the village of **Mousa**, where good water may be obtained; it may be known by a small white mosque, on its point. To the N. of Mousa, $4\frac{1}{2}$ m., is the village of Cocha, or Khauka. Sh'haree is also a small village, where good water may be procured: it is about 9 m. N.N.W. from Mousa, and may be known by a small, white mosque, on a cape, forming a small bay, about $1\frac{1}{2}$ m. to the N.W. of it, called **Gubet-el-Hamar**. The soundings being regular along the coast from Mersa Fejeerah, a vessel in want of water may anchor in any convenient depth off the said places to obtain it.

Ras Miltonah is about $11\frac{1}{2}$ m. N.W. from Sh'haree, and 41 m. N. by W. from Mocha. From Miltonah, the Little Harnish and Aboo Eyle are distant about 5 leagues; and to the N. of it, to the distance of 2 m., there are three small rocky patches on which the sea breaks. This cape is in lat. $14^{\circ} 0' N.$; the E. side of Jebel Zoogur being 16 m. W. of it, the soundings deepening gradually from the coast, and the deepest water between is 39 fathoms. Three small pyramidal hills, called the **Three Sisters**, or **Jebel Mousa**, are near the coast, between Mersa Fejeerah and Mousa. Seven m. N. of Ras Miltonah is **Ras Zebeed**, off which is a small shoal, on which the sea breaks, and about 1 m. to the N.E. of it is an excellent spring of fresh water, emptying itself into the sea. The rushes about its mouth are easily distinguishable from the anchorage off it in $4\frac{1}{2}$ fathoms, and there are also some trees and bushes in its neighbourhood, by which it may be known. Jebel Zoogur Peak bears from this anchorage W. by S.; and it is to be observed, that this being an open coast, if there is any surf on the beach, it will be difficult, and even dangerous, to attempt getting water here at such times. **Khor Goolafugger** is an inlet of the sea, running in for some 10 m. to the S.S.E., round Ras Mejarmla, which is 40 m. to the N. of Ras Miltonah. Some shoals lie along this coast. Vessels should not go in under 7 fathoms. **One Shoal** of 5 fathoms was found, amongst soundings of 20 and 28 fathoms, about $7\frac{1}{2}$ m. to S.W. $\frac{1}{2}$ S. from Ras Mejarmla.

Ras Mejarmla, a low, sandy cape, forming the W. side of the inlet of Goolafugger, and situated 12 m. to the S. of Hodeidah, affords shelter against S. winds in 5 or 6 fathoms, with the extremes of the cape bearing S.W. and S.E. **A Shoal**, 3 m. long, lies in a N. and S. direction, and between 2 and 3 m. to the W. of Ras Mejarmla. Ships must pass outside and to the N. of this shoal, and haul in for Mejarmla N. point, when it bears to the S. of S.E. by E.

HODEIDAH, in lat. $14^{\circ} 47' N.$, lon. $42^{\circ} 54' E.$, now the chief port of Yemen, is a large fortified town, with lofty buildings, but not so extensive as Mocha, though it has supplanted that place as a trading port, and the chief mart for coffee. Fresh provisions can be procured in the bazaar, and there is plenty of good water, which the natives will bring off in their boats. The trade is principally in the hands of Banyans. Small vessels will find shelter at Hodeidah from N. winds, about $1\frac{1}{2}$ m. to W.S.W. of the Grand Minaret, in $3\frac{1}{2}$ fathoms at L.W.: this position will be nearly

1 m. to the S.E. of the sunken rocky patches which lie 2 m. to W. by N. of the Grand Mosque. Large ships must anchor outside these sunken rocks, in $4\frac{1}{2}$ fathoms, with Minaret bearing E. by N., and Fishing Point (sandy) N.E.; but there is scant shelter for large vessels during S. winds, except what is afforded by Ras Mejarmila, which is 4 leagues off.

Ras Jedeer is a low, sandy cape, 5 m. to N.W. of Hodeidah. About 2 m. to W. of it there is a patch of 2 fathoms, with 3 fathoms near to it, to the N.W., and midway between it and the cape is a rock. Four miles further N. is **Ras Keteeb**, the extremity of a point or tongue of land, forming a bay or inlet to the S.E., which has depths of 4 and 5 fathoms, but the entrance is not well sounded.

Ras-el-Bayath and **Ras Essah**, about 30 m. to N.W. by N. of Hodeidah, are the N.W. and S.E. capes of the promontory which forms the S.E. side of Camaran Bay. To the E. of Ras Essah there is a bay of the same name, where a ship may anchor in 8 to 5 fathoms, sheltered from N. winds; but she must quit it on the appearance of the wind coming from the S. or W. From Ras-el-Bayath round Ras Essah, the shore is bordered by a reef steep-to; and nearly 4 m. S. by W. from the former is a low island, or sand-bank, called **Rasher**, surrounded with a reef, and with 14 fathoms between it and the main.

CAMARAN ISLAND, situated to N. of Ras-el-Bayath, is 12 m. in length, N. and S. It is generally low; on the N. there is swamp and jungle, but on the S. there are some small hills. Date trees are seen here and there by groups of fishermen's huts; turtle abound; pearls are found on the banks. Camaran village and bay are halfway up the E. side of the island, where shelter from all winds is found. The entrance to this **excellent harbour**, between Ras-el-Bayath and the S. end of Camaran, is narrowed to less than 4 cables, but is easily entered with a fair wind. The depths are 4 to 6 fathoms by the island reef, and from 8 to 11 fathoms, mud, in the channel; the greatest depths being towards the sandy cape. Wood and water are procurable. The S. end of the island bears N.E. by E., 21 m. from Jebel Zebayer.

Loheia is a large, walled town, about 30 m. to N. of Camaran Bay entrance, but a ship must not attempt to get there without an Arab pilot. It has an excellent bazaar, where cattle and poultry, flour and vegetables, are procurable. Large ships anchor $3\frac{1}{2}$ m. to S.W. of the town, in 5 or 6 fathoms, on the N.E. side of Humreek Island. (See also **Humreek**, at page 170.)

Okbahn Island, low and sandy in its centre, with a hill at its N.W. end, and a bluff at the S., is 11 m. to the N.W. of the W. extreme of Camaran. Between these islands there is a 2-fathoms shoal; and, still further to seaward, there is a 4-fathoms shoal, which bears S., and is 7 m. from Okbahn, and is 17 m. to N.E. by N. from Jebel Zebayer; and 15 m. to the N.W. of Rasher Islet.

KOTAMA ISLAND, in lat $15^{\circ} 41' N.$, lon. $42^{\circ} 16' E.$, standing 22 m. to the W. of Loheia, and 26 m. to the E. by N. of Jebel Teer, is rather high, but without water or inhabitants. It is the outermost of a number of islands off this part of Arabia, amongst which there are navigable channels, but their intricacy renders a pilot necessary. There is a **shoal**, with 3 fathoms, about 2 m. to the W. of Kotama; and another about 20 m. off, bearing S. by E. This last is the shoal mentioned as lying 7 m. to S. of Okbahn.

OUTER REEFS BETWEEN CAMARAN AND LEET.

The edge of the plateau of soundings takes a nearly straight direction of N.W. by N. from Kotama for 93 m., to Sail Macowa, the most N. of the islands, standing out towards the centre of the sea, on the Bank which is called **Shab Farsan**, (from an island of that name, the largest of the group). There are dangerous patches some 6 or 7 m. to the N.W. of Sail Macowa. Then occurs a space which has not been sounded at all. Onwards to the Wussaliat Islands, in lat. $17^{\circ} 40' N.$, and lon. $40^{\circ} 55' E.$, numerous shoals, more or less dangerous, stud the plateau wherever it has been sounded.

The mariner must cautiously approach these Outer Reefs, to describe which to any advantage is almost impossible. Captain Moresby's Charts are the best guide. We shall briefly notice the most prominent reefs and islands.

Okbahn and Kotama, with the shoals off them, have been already described.

Loban is an islet on a reef 10 m. to N. of the latter. Above this islet, the islands stand back to a distance of 15 or 16 m. from the edge of the plateau. The Chart shows no danger between Kotama and Dohrab; sailing vessels might, therefore, in working up against N.W. winds, borrow on this bank towards Sana and Beree Islands, to the E. and E.S.E. of Dohrab, where the water must be smoother than in the open sea.

SHAB FARSAN REEFS.—**Dohrab**, a low sandy island, in lat. $16^{\circ} 18\frac{1}{2}' N.$, lon. $41^{\circ} 53' E.$,

is the most S. of the Farsan Group. This part of the Outer Reef, from Dohráb to Sail Macowa, 60 m. long, is called **Shab Farsan**, and on it innumerable shoals are found. Fortunately there are sandbanks placed all along, and within 5 or 6 m. of the outer edge of the plateau of soundings. In the day-time, these are useful land-marks. **Murrah** lies 6 m. to N.W. by N. of Dohrab, and at 2 m. further in same direction is **Dowaslah**. There appears to be no safe channel across the Sháb Farsan between Dowaslah and Sail Macowa. A chain of nameless islets, running N.W. and S.E., lies to the N. of Dowaslah towards **Zelfeef**, but leaving a deep channel between them and the latter island, the W. end of which bears N.N.W. 18 m. from the former. Zelfeef is between the Farsan Islands and Sháb Farsan.

The W. nameless islet, in lat. $16^{\circ} 40' N.$ and lon. $41^{\circ} 34' E.$, bearing W.S.W., and 7 m. from Zelfeef, is 4 or 5 m. within the line of dangers, and a good land-mark to warn vessels off. A 2-fathoms shoal lies 2 m. to S.W. of it. At 10 m. to the N. of it, lie the **Sarso Islands**, two narrow parallel strips, lying N.N.W. and S.S.E., with an anchorage between them, which shelters from S. winds, indeed from all winds; but, with N. winds, a vessel could not get out, as the S. opening of the channel is blocked up by islets and shoal water. The **W. Sarso** is elevated 160 ft. above the sea. These islands lie on the N.E. verge of Sháb Farsan, with a deep channel 4 m. wide between them and Jezirat Deesan, a large roundish island, having elevated ground in its centre, with a high hummock on its S. part, called **Jebel Deesan**.

Dithahaya and Harneesh, two low sandy islets, lie 6 m. to the W. of the N. end of Sarso. **Sail Macowa**, in lat. $16^{\circ} 58' N.$, lon. $41^{\circ} 21' E.$, lies 5 m. to N.W. by N. of Dithaháya, and is the most N. island on the Sháb Farsan. None of these islands should be approached on their W. side nearer than 5 m.; Sail Macowa should not be sighted from the deck of a vessel off the N.W. and N. sides of that island, owing to the numerous dangerous shoals.

THE WUSSALIAT ISLANDS are two by themselves, about 6 m. within the margin of the plateau of soundings, now being described as extending from Camaran to Leet. They stand N. and S. of each other. The S. Wussaliát is in lat. $17^{\circ} 40' N.$, lon. $40^{\circ} 55' E.$ Two Detached Reefs lie off them at 6 m. to the W., and to the S.W.; the latter one is called **Shab-el-Jurmah**, and is the danger that projects most towards the central highway in this part of the Red Sea.

Caution. Between them and the Sháb Farsan, wherever soundings have been taken, shoals have been found. To the N.N.W. of the Wussaliát, there are plenty more to the W. of Shab Marass. The surveyors describe this part of the Outer Reef as full of patches.

Zuggak and Dahrat-Abou-Musali are two low sandy islets, surrounded by dangerous reefs; the former is in lat. $18^{\circ} 4' N.$, lon. $40^{\circ} 48' E.$ Ships should not sight them from the deck on a N.E. bearing, as numerous isolated reefs encumber the sea for 12 m. to the S.W. of these islets. **El-Hala**, which is a sand-bank or islet, on the verge of the plateau, at 10 m. to N.N.W. of Zuggak, is the S.W. islet of four within the area of about $2\frac{1}{2}$ square miles; the others are called **Mugrabeeah**, **Eloom**, and **Sabeeah**. To the N.E. of these islets, a low sand-bank and two reefs were seen from the mast-head, and beyond them nothing but shoals.

Doreesh, in lat. $18^{\circ} 30' N.$, lon. $40^{\circ} 40' E.$, is a low sandy islet with bushes, 18 m. to the N. by W. of El-Hála. It stands upon a small coral reef, with no bottom at 40 fathoms around it. **Abou Gulloor Reef** is a narrow breaking reef about 3 m. long, N.W. and S.E.; its N. end is 12 m. to the N.N.W. of Doreesh, and from it Sharbain Islet bears N.E. about 3 m. Sharbain is a small, low, coral island; the sea to the N.E. of it has not been sounded. **Mooska**, a low islet, lies 8 m. to the N., and others beyond. **Shahker**, a small, low, sandy island, with some bushes, lies 26 m. to the N.N.W. $\frac{1}{2}$ W. of Doreesh, with a **breaking reef**, called **Shab Marass**, extending 3 m. to the S.W. of it.

Shab Umbarak, or Moobarak, in lat. $19^{\circ} 0' N.$, lon. $40^{\circ} 8' E.$, is a dangerous breaking reef, standing out towards the centre of the sea, further than any others about this part of Outer Reefs. It bears N.W. by W., and is distant 17 m. from Shahker. At 10 m. to the E., other reefs commence; and the bank to the N., and the E. of them, though not sounded, is said to be full of dangerous patches with deep water between them, but no navigable channel. At 11 m. to the N. of Sháb Moobarak, there is a small **1-fathom shoal**, with a long breaking reef, lying N.W. and S.E., about 1 league to the N.E. This part of the Outer Reefs is most dangerous, because there are no islands that might be seen from mast-head.

Shab As-sageer, in lat. $19^{\circ} 22' N.$, lon. $40^{\circ} 5' E.$, is a low, rocky, coral islet on a reef, 11 m. to the N. of the 1-fathom shoal. Soundings of 17 and 18 fathoms were found at 9 m. to the W.S.W. from it; but quite close to it, 105 fathoms obtained no bottom. The Chart shows a perfect blank to the E. and S.E. **Jebarah**, a low sandy islet, stands 4 m. to the N. by W. of the last. At 2 m. to the N.W. of Jebárah, lies a dangerous reef, Sháb Muthar; and at 3 m. further to the N., stands **Dahnac**, a low and sandy island, surrounded by a reef with no bottom close to it.

at 130 fathoms. There are reefs to the S.E. and the N.E. of this island. To the N. of Dahnac, there are **Shab Amar**, a half-moon reef, and **Shab-as-Sabah**; the latter reef is 16 m. to the N. by W. of Sháb-as-Sageer. Several reefs lie to the E. of these; and, further to the E. of this group, the sea appeared from the mast-head to be full of shoals towards Surrein or Serain Island.

Matahtoo, a low sandy island, on which were found a number of graves and a fisherman's hut, is in lat. $19^{\circ} 46' N.$, lon. $39^{\circ} 55' E.$; and stands 10 m. to N.W. by N. of Sháb-as-Sabah. Three islets stand to the N. and the N.E. **Dohrah**, the outer one, is 3 m. to the N. by E. from Matahtoo. From 4 m. to 7 m. to the N. of Dohrah, there is a cluster of reefs, and to the E. of them there are plenty more, with two long breaking reefs, called Sháb Soolaim and Sháb Shabac, the N. extreme of which lies 4 m. to the W. of Abou Laad Island.

ABOO LAAD, or Jebel Ahbulat, (its N. point) in lat. $19^{\circ} 59' N.$, and lon. $40^{\circ} 7' E.$, is the N. island on the Outer Reefs which we have been describing. It stands 14 m. to the N.E. of Dohrah, and is 12 m. to the S.W. by S. from **Leet** anchorage. Abou Laad Island is $2\frac{1}{2}$ m. long, in a N.W. and S.E. direction, $\frac{3}{4}$ m. broad; 250 to 300 ft. high, and surrounded by a sandy plain. It is quite barren, and destitute of water: branches of coral are observable sticking out of its highest parts. There is a small port for fishing-boats on the W. side; and beyond it, breaking reefs in that direction, and to the S.E., as far as can be seen from the top of the island. There are also several rocky patches near the edge of the Outer Reef to the N. of the island, about 3 m.; others to N. by W. **One rocky patch**, at 6 m. to N.W., is on the N. margin of the plateau, and only separated from **Shab-el-Jefeén** (on the coast to the W. of Leet) by a channel, 5 or 6 m. broad. This channel, too, has reefs in its centre, and it is better to keep nearer to the coast-reefs. (See **Leet** at page 175.)

PASSAGE ALONG ARABIAN COAST FROM CAMARAN TO LOHEIA.

The Coast. From Ras-el-Bayath round Ras Essah, the shore is bordered by a reef, steep-to; and nearly 4 m. S. by W. from the former is a low island or sand-bank, called **Rasher**, surrounded with a reef, and with 14 fathoms between it and the main. From Ras-el-Bayath the coast bends to the E., and round to the N., forming a bay called Camaran, the N. point of which, **Jebel Maharseen**, is a piece of high land, having below it a mosque; thence to N.N.E. to a sharp point of land named **Ras Arafar**, or **Ahrifah**. At 20 m. to N. of Ras Arafar stands the town of Loheia. The coast forms a bay to the S.E. of the former, and from thence an irregular shore up to the latter, fronted all the way with a reef; which, at 5 m. to S. of Loheia, extends $2\frac{1}{2}$ m. from shore.

Camaran Island. The S.E. point of this Island, in lat. $15^{\circ} 16' N.$, lon. $42^{\circ} 33' E.$, lies nearly $1\frac{1}{2}$ m. to N.W. of Ras-el-Bayath; its E. side extends from thence in a N. by E. direction above 11 m., and the Island is from 2 to 4 m. broad; composed of hard rock intermixed with sand, and in some parts earth capable of cultivation; there are some spots on which date trees flourish. The Island is generally low, but towards the S. there are some elevated parts forming small hills; on the N. it is swamp and jungle. Including Camaran, there are seven small villages upon this Island, mostly consisting of a few miserable huts belonging to fishermen employed in its neighbourhood on the pearl banks, turtle islands, &c. Excepting a small portion of its E. side, the Island is bordered by a reef, which, off its S.E. point, extends little more than 1 m. towards Ras-el-Bayath, whereby the entrance to Camaran Bay is reduced to a breadth of 700 yards.

Channel and Anchorage. There are 4 to 6 fathoms on the edge of the island reef, and in the channel 8 to 11 fathoms, mud, the greatest depth being towards the Ras. In approaching this entrance from the S., pass inside the little Island **Rasher**, keeping in about 15 fathoms along by the coast reef; keep a look-out for the sandy point of Bayath, and haul round it as requisite for the entrance. There is good anchorage in the small bay or harbour of Camaran, half-way along the E. face of the Island, in 7 fathoms mud, with the fort bearing S.W., distant about 2 cables; and the town W. by S. Large vessels had better anchor outside in the extensive and remarkable fine bay formed by the island and adjacent coast before-mentioned, where are regular soundings and moderate depths: here wood and water may be procured on the island.

The W. side of Camaran. There is anchorage off the W. side of the Island in 4 fathoms, opposite Muckram village, known by a few date trees and a small white mosque to the S. of it. The Muckram Reef extends 1 m. off this part, with a small sandy island on it, 1 m. to N.W. of the village. At 3 m. to N.W. of Muckram, is a small sandy island with a reef $\frac{1}{2}$ m. off its W. side, but a little way only off the E. end; and it has a channel on each side. At 4 m. to the W. of Muckram, is a dangerous shoal lying in a N.N.W. and S.S.E. direction, in length 4 m., with 2 and $2\frac{1}{2}$ fathoms near its centre, and 4, 5, and 6 on each end, rocks and sand. There are 30 and 35 fathoms close to the S. end of this shoal, 32 at its N. end, and 35 fathoms just within it. Without the above-