

A

CHINESE
COMMERCIAL GUIDE,

Consisting of

A COLLECTION OF DETAILS AND REGULATIONS

RESPECTING FOREIGN TRADE WITH CHINA.

BY THE LATE HON. J. R. MORRISON.
^{John Robert}

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**Second Edition.**

REVISED THROUGHOUT, AND MADE APPLICABLE TO THE TRADE AS AT PRESENT CONDUCTED.

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PREFACE.

THE present volume is called a second edition of the "Chinese Commercial Guide," partly because it is, like that work, designed to supply the merchant with details respecting the mode of conducting trade under the new regulations, and to furnish him with the necessary forms used in business, as well as give some collateral information respecting currency, weights, measures, &c.; and partly out of regard to its late author, to whom the merit of planning its compilation is due, and by whose name it has become generally known. This edition, however, contains but few pages of the first work, so entirely has the foreign trade been remodeled, and the contents of the book altered.

The sources from whence part of the work have been derived are mentioned in short introductory notes at the beginning of many of the sections. Nearly the whole of Chapter I., containing Sailing Directions for the Coast, is extracted from the Chinese Repository; and it is hoped will in this form prove convenient to those sailing up and down the coast. As the surveys under captain Collinson are still in progress, it is probable that many additions and corrections, besides those contained in Sect. 12 (pages 81-84), will ere long be furnished. It was intended to have given charts of the four new ports, but accurate plans of them all could not readily be procured, nor was it easy to get them reduced and lithographed: the cheapness and facility with which the Chinese printsellers copy charts will in a measure supply the deficiency.

Chapter II. is almost entirely new. In compiling it, constant reference has been made to parties at Canton and Macao most likely to be acquainted with the subjects treated of, and information on all points of inquiry has been furnished with the utmost readiness. Every endeavor has been taken to make these details correct throughout, and in the main they are probably accurate; but the distance of the place of publication prevented that constant and immediate reference to Canton which was desirable whenever any question required to be solved, or obscurity cleared up.—Since the section

upon Macao was written, the emperor's ratification of the articles of agreement mentioned on page 184 has been received, and those sections which relate to commerce are here given to complete that account.

"2d. The tonnage dues on the twenty-five registered ships shall be paid according to the new tariff, the same as on European vessels at Whampoa, with a deduction of one and a half mace per ton, which makes three and a half mace of silver for every ton. All ships that visit Macao, and are not registered, shall continue to pay the tonnage dues of the new tariff, viz., five mace per ton. All ships numbered, or not numbered, that shall visit the five ports (now open to the foreign trade, viz., Canton, Amoy, Fuchau, Ningpo, and Shanghai), shall also pay tonnage dues according to the new tariff at five mace per ton.

"3d. The duties on goods imported, or exported (in Portuguese bottoms) by Chinese merchants, shall be paid to the hoppo (Chinese custom-house) of Macao, according to the new tariff. And goods not mentioned in the said tariff shall be charged ten or twenty per cent. *ad valorem* according to their quality, without any additional charge. The Portuguese lorchas, furnished with passports, are permitted to go up to Canton, on paying the tonnage dues according to the new regulations established for cargo boats. N. B. The burden of these lorchas having been agreed upon at 75 tons for the smallest, and 150 for the largest, and those not exceeding the latter figure shall be charged one mace per ton every time they enter the port; and those measuring more than 150 tons shall be charged, as vessels navigating the high seas, five mace per ton; and lorchas measuring under 75 tons shall be charged the same as those of that burden.

"5th. Portuguese ships shall be allowed to go and trade at Canton, Amoy, Fuchau, Ningpo and Shanghai, provided they are subject to the regulations of the new tariff, with respect to the payment of duties on goods, and the tonnage dues. With regard to Fuchau, however, that port not being yet open to European commerce, the Portuguese vessels must keep from it, for purposes of trade until it shall be open to all other [European] foreign nations.

"6th. The number and quality of goods which the Chinese merchants are in the habit of importing into Macao are unlimited. Such goods as must pass through the Canton custom-house, shall then pay the duties according to the new tariff, and when sent down for exportation must be accompanied with a certificate of clearance from the said custom-house. All such goods as have not passed through that custom-house shall pay duties to the hoppo of Macao."

The Chinese government have also, since the tariff was settled, taken off the tonnage duties on ships laden entirely with rice if they leave the port empty; but if they take export cargo, one half or $2\frac{1}{2}$ mace per ton must be paid.

Some of the Tables in Chapter IV. have not before been published in China, having been kindly furnished for this work. The three first were taken from the Bengal and Agra Directory.

The lists in the Appendix, of Commercial Houses and their establishments, and those of Consular officers and the Colonial Government of Hongkong, are corrected down to the month of June.

Full statements of the foreign trade during the year ending June 30th, were to have been inserted, but on inquiry it was ascertained that the two largest portions—the British and American—could not be procured.

The COMPILER.

Macao, July 1, 1844.

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COMMERCIAL GUIDE.

CHAPTER I.

SAILING DIRECTIONS FOR THE COAST OF CHINA.

1.—From Amoy to Cape Montague.

[The following Sailing Directions, showing the outer islands and external dangers, in the 28th, 27th, 26th, 25th, and 24th degrees of north latitude, have been compiled from the surveys of captains Kellet and Collinson of H. M. S. Starling and Plover, in the months of January, February, March, and April, 1843. The latitudes and longitudes are given in degrees, minutes, and decimal parts. The paper is extracted from the Chinese Repository, Vol. XII., pages 401-422.]

On approaching Amoy, (Hiámun ching, 夏門城,) from the southward, Chapel island, called by the Chinese Tungting 東碇, and situated in lat. $24^{\circ} 10.3$ N., and long. $118^{\circ} 13.5$ E., or 9.44 E. of the S.W. point of Kúláng seu 鼓浪嶼, may be seen from four to five leagues: it has an even surface, is about 200 feet high, and its circumference three cables.* It is perforated at its southeast extreme, which shows when it bears E.N.E. or W.S.W. When in its neighborhood, a pagoda (called Nántái Wúshán 南大武山) will be seen, which is elevated 1720 feet above the sea, and is a good mark for the entrance.

Between Chapel island and the main are two shoals. The extremes of the southern one bear from Chapel island S. 60° W. to S. 77° W. The south extreme, having only one fathom on it, is distant $7\frac{1}{2}$ miles. The northern extreme, having $3\frac{1}{4}$ fathoms, is distant $5\frac{1}{2}$ miles; the direction and extent of the shoal is N.N.E., $3\frac{1}{4}$ miles. When on the shoalest part, Chapel island bears N. 60° E., and the island of Nánting 南碇 or Lamtia, N. 63° W. The Northern shoal

* A cable is one tenth of a mile.

<i>Entrance to Amoy Harbor.</i>	<i>Chauchat.</i>	<i>Wú-seu.</i>	<i>Wú-án.</i>
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bears from Chapel island N. 80° W., distant from it 8½ miles; it is formed by a number of pinnacle rocks which show at low water spring tides, having deep water between them. Four miles due north of this shoal, with Chapel island bearing S. 60° E., is a small bay called Tingtae, which affords shelter for small vessels in the northern monsoon; it may be easily known by the flat table head (with three chimneys on it), forming the eastern point of the bay, and the ruin of a wall encompassing a hill above it. The pagoda of Nántái Wúshán is immediately over this bay, bearing N. 15° W.

In entering Amoy harbor, should a vessel pass inside Chapel island, she must not approach within a mile of the coast after passing Tingtae point. The Chauchat, or Taetseao 大礁, composed of three flat rocks, said never to be entirely covered, but over which the sea breaks, lies N. 22° W., 10.6 miles from Chapel island. When on it, the three chimneys on Wúseu shan island are in line with the Nántái Wúshán pagoda, bearing S. 82° W. By keeping Taepán 大磐 or Weitsz' sú, Point open to the eastward of Tsing seu 青嶼 island, (which it will be when bearing N. 55° W.,) it will be avoided. The channel between the rocks and Wú-seu shán island is five cables wide, with deep water, but dangerous for ships in consequence of the chowchow water. The passage to the northward and westward of Wú-seu shán is dangerous, being strewed with rocks.

Wú seu 浯嶼 island is 1.2 cables long, and in the centre a cable's length broad. The northeast and southeast faces of this island are steep cliffs; on the east side is a sandy bay, and on the west three, with two batteries. On its summit (which is about 300 feet high) are three chimneys intended for night signals. There is a large village on the west side of it.

Wú-án. To the westward of Wú-seu shán, half a mile, is the island of Wú-án, which is five cables long,—it is barren and without inhabitants. Between the two are three small islets, with reefs lying off them. Shelter from easterly winds, with a depth of from four to six fathoms, might be found here; but vessels had better not pass to the westward of Wú-seu shán, until more soundings have been obtained; the number of detached reefs in this neighborhood, making it probable that many sunken rocks will be found.

South from Wú-seu shán Island 1.1 mile, is another half-tide reef, which lies seven cables from the main.

North 32° E. from Wú-án island, lie two patches which are covered at high water, and between it and the main are several islets and half-tide rocks.

North 40° W. from Wú-sü shán island is Tsing seu; midway between the two is a cliff islet, (Jihü,) northwest of which two cables, and S.S.W. one cable, are reefs which are dry at low water.

The entrance to the harbor lies between Tsing seu and a small island north of it, 60 feet high, called by the Chinese Chih seu (or

Tao-sao & Hwángkwa. Seaotán & Taetán. Chih seu. Mouth of Amoy H.

Yi sii) 日嶼. The shores of both islands facing the passage are steep to, but one or two rocks lie one cable southerly from Chih seu. Off Chungpat siaou, which is the rocky islet immediately to the northeast of it, lie two half tide rocks, three to four cables' distant, to avoid which, when standing to the eastward, and within half a mile of Chih seu, keep the west tangent of that island open of the eastern extreme of Wú-seu shán.

N. E. by E. from Chih seu are four islands; the two nearest Tao-sao 大小 and Hwángkwa 黃瓜 are rather larger than it, and between which there are no passages. Seaotán 小担 island is 6 cables long, and about 200 feet high, and has a sandy bay on its northern side; between it and Hwángkwa there is a safe channel, which may sometimes be taken with advantage by ships; thereby enabling them to weather the Chauchat without tacking. Between Seaotán 小担 and Taetán 大担 there is also a safe channel. Vessels cannot enter to the northward of Taetán, for between this island and Amoy there is only $1\frac{1}{2}$ fathoms. On both of these islands there are three chimneys. Taetán is eight cables long, with a sandy isthmus in the centre, and a village on its western shore; the eastern end is about 300 feet high.

From Chihseu (or Yi sü) to the outer harbor off Kúláng seu, the course is N. 38° W., $4\frac{1}{2}$ miles, with a depth varying from 7 to 12 fathoms. Between Tsing seu and Taepan Pt. is a deep bay with many rocks and shoals in it, to avoid which vessels should keep Pagoda island or Kí seu 鷄嶼 open of Taepan Point. Vessels entering Amoy from the northward, to clear the shoal which extends three miles due south, from the western pagoda on Quemoy 金門, and dries at low water spring tides, must keep the southern extreme of Taetan open to the northward of Pagoda island. With these marks on, when the pagoda on Quemoy bears N.N.E., you are clear of the danger: or a better mark is, (as Pagoda island may not be seen,) after passing Leo-Loo 料羅 point, to steer to the southward until (Nántái Wúshán or) the high pagoda bears west, when you may steer west without fear until you make Wú-seu shán and the Chauchat. The south end of Amoy is a sandy point, with several rocks extending two cables from the shore. Between this point and the next west of it there is a half tide rock, three cables from the shore. To avoid this, when standing into the coast, a cliff point with a battery, and three chimneys on it, (1.3 mile from the rock,) will be seen, and also a sandy point with a large stone at its southern extreme, 0.8 of a mile further to the northwest. Tack before these two points come in line with one another. From the south point to the remarkable stone on the beach, the three fathom line extends two cables from the shore. The channel between the island of Kúláng seu and Amoy is so nar-

<i>Harbor of Amoy.</i>	<i>Hau seu.</i>	<i>Kúláng seu.</i>	<i>Facilities of this Harbor.</i>
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row that a stranger would not be justified in passing through it until he had anchored, and made himself acquainted with the marks. A rock at the entrance of this narrow strait, called Coker's rock, with only four feet water on it at low water spring tides, may be avoided by bringing the centre of Hau seu 猴嶼 island on with a remarkable peak, the highest but one on the land behind it. When the rock off the south tangent of Kúláng seu is in line with Pagoda island and a pinnacle rock off the eastern extreme of Kúláng seu is in with a remarkable Tree point on that island, you are on it. From this position a vessel should keep as close to the Amoy shore as the junks anchored off it will allow them. The small island off the City point has deep water close to it; between this island and Hau seu (i. e. Monkey island), is the best anchorage for a ship, having a reef that extends from City point in a N.N.W. direction lying to the northward of her. Vessels cannot anchor in the straits without a great risk of losing their anchors, as the bottom is very rocky and uneven. North of the island of Kúláng seu, there is a pinnacle rock which is nearly covered at spring tides, and distant from the shore three cables. The mud dries between this rock and the island. All the points of Kúláng seu have rocks off them; off the southwest extreme there is a half tide rock, $1\frac{1}{2}$ cable from the shore.

The island of Kúláng seu is 1.1 mile long and 0.7 wide, and 2.85 in circumference; there were five batteries on it. The channel between it and Amoy is 675 yards wide in the narrow part: at the entrance, it is 840 yards. The ridge of hills is about 280 feet high, being less elevated than those opposite on the Amoy shore; these hills are granitic, and the geological features of the country primitive. Fresh water is plentiful, and the island before its occupation by the English, was well cultivated. The population may be estimated at between 3000 and 4000.

To the westward of Kúláng seu there is a good and safe anchorage in 7 or 8 fathoms. Close to either shore the water is deep, but in the centre there is a bank with from 7 to 9 fathoms on it. Vessels wishing to anchor off the town, should use this passage, and by keeping the rocks off the west extreme of Kúláng seu in line with a remarkable sharp peak on the south shore of the harbor, until the peaked rock off the north end of Kúláng seu bears to the southward of east, she will avoid the mud bank and rocks running off that island, and may choose her berth off the city. The channel round the island of Amoy is so narrow and winding that directions would be useless; the chart is the best guide. Besides the excellent shelter that this harbor affords, and it is one of the best on this coast, the Chinese have docks for building and repairing their largest junks. The access and egress are easy; in the outer harbor there is good holding ground, and unless vessels are badly found in ground tackle, they will ride out almost any gale. In the inner harbor, capable of containing from 60 to 100 vessels, there is little or no

Quemoy I.	Leeo-Loo B.	Dodd's I.	Oyster I.
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swell, and the houses are built close to the beach. Fresh water and supplies of every description may also be had of the best quality and cheap. The rise and fall of the tide from one day's observation on the full moon in September, was fourteen feet and a half; at this period, however, the night tides exceed the day by two feet. The change in the depth, in all probability, three days after full and change would exceed sixteen feet. This would be of great importance to vessels requiring repair, particularly as sites for docks, and ample materials for making them, are to be found upon the island of Kúláng seu, as well as in other parts of the harbor.

Shelter may be obtained under Quemoy, but the entrance is not well known or sounded yet. N. 74° E. from the Chauchat, and distant sixteen miles, is a small indentation in the coast called Leeo-Loo 料羅 bay, where small vessels shelter themselves from the violence of the northeast monsoon, by bringing the south extreme rocky point of Quemoy in line with Nántái Wúshán pagoda, and as close as possible to the point forming the eastern head of the bay, in four fathoms, sandy bottom, with fair holding ground. There is a village amongst some trees at the head of the bay, with a fort on a bluff to the westward of it. The land over it is high and easily distinguished.

E.N.E. five miles from Leeo-Loo point is Dodd's island, called by the Chinese Pakting 北錠; it is distant from the nearest part of Quemoy 2½ miles. There appeared to be no channel between it and the shore. A reef extends some distance to the north of it. N. 35° E., five miles from Dodd's island is the point of Hooe-Tow 圍頭 bay, in lat. 24° 31' N., and long. 118° 31.5 E. This bay affords good shelter from northeast winds; it may be easily known by two very remarkable peaks situated in the bottom of the bay. The eastern peak bears from the point N. 45° W. There is a shoal in the centre of the bay which extends two or three miles in a W. N. W. direction. This shoal may be avoided by keeping a remarkable hill inland, resembling a dome, open to the southward of the eastern high peak in the depth of the bay. In entering, give the point of the bay a berth of at least three quarters of a mile, for there is a reef running off it, but on which the water generally breaks. The best anchorage is off Oyster island, but as vessels do not visit this bay, except for shelter, it would be advisable to anchor just inside the point with it bearing E. by S. or E.S.E. South of Oyster island there is a ledge of sunken rocks, which at low water have only a few feet on them. To avoid these rocks, keep Oyster island to the eastward of north. Vessels from the southward, intending to anchor should not stand too far into the bay until it is better known; there are overfalls from 10 to 4 fathoms, and there may be less water. The junks go to Amoy by this passage, and the Chinese say there is water for small vessels, but it must be very intricate.

The coast between this and Chimmo bay is clear of dangers, and

<i>Chimmo B.</i>	<i>Kúsáu táh pagoda.</i>	<i>Ockseu I.</i>	<i>Sootzee.</i>	<i>Lamyit Is.</i>
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the general soundings are from 12 to 15 fathoms. There is no shelter for vessels, but junks anchor under some of the points. The small Pagoda island off the southeastern point of Chimmo bay is in lat. $24^{\circ} 42' N.$, and long. $118^{\circ} 42' E.$ This bay may be known by a pagoda called by the Chinese Kúsáu táh 姑嫂塔, on the highest hill in the northern end of the bay. Although vessels lie here throughout the year, it cannot be called a good anchorage, as it is exposed from E. by N. to S. S. E. Vessels entering this bay from the northward must not approach the land nearer than one mile, as there is a rock which shows at low water, half a mile off shore, on which a brig called the Fairy struck, and from which it has taken its name.

W. by S., $1\frac{1}{2}$ cable from the rocky islet off the northern point of the bay, is a ledge of rocks, which uncovers at low water, and on which the sea generally breaks. Half a mile to the W. N. W. of the northernmost rocky island off the southeast point are two sunken rocks, to clear which keep a remarkable clump of trees in the depth of the bay on with the right shoulder of the high land in the northwest part of the bay. There are rocks a short way from the beach all round the bay. The best anchorage for vessels is as close up to the northern shore as the water will allow; the holding ground is good. There are several very large towns in this bay, and numberless fishing boats; supplies may be had and at cheap rates. From Chimmo bay the land stretches away to the eastward as far as $119^{\circ} 10' E.$, very much indented, and but little known except to vessels trading to Chinchew (or Tsiuenchau fú) with opium.

Ockseu 烏坵 (or Wúkiú, probably a contraction of Wúkiú sū 烏坵嶼) consists of three islands, the centre one a barren rock, nearly joining the eastern island. The steamer *Nemesis* anchored under this island. There is a considerable fishing village on it, which is difficult to be seen unless very close. The western island is the largest, and is in lat. $24^{\circ} 59.3' N.$, and long. $119^{\circ} 25.5' E.$

W. N. W., twelve miles, is a group of islands, consisting of one large and four small, with a reef to the northward of them, called Sootzee. These islands were seen from Ockseu, but not examined. N. N. E., $12\frac{1}{2}$ miles from Ockseu, is the largest of the Lamyit 南日 islands, called by the Chinese Chungtung shán. It is 7 miles long in an E. S. E. and W. N. W. direction. The eastern peak is the highest, being 565 feet above the sea; it is in lat. $25^{\circ} 12.3' N.$, and long. $119^{\circ} 36' E.$ There is a remarkable table land to the southwestward of it called Powshan. This island is very low and narrow in several places, and has a remarkable conical hill towards its west end. The channel to the westward of it has not been examined. Notwithstanding its barren appearance it is very populous.

To the northward of the large Lamyit is a group of small islands, called by the Chinese the 18 Yit; between this group and the large

Haetan St. Reef Is. Sand I. Three Chimney I. Turnabout I. Haetan Peak.

island, there are numerous rocks and shoals, rendering the bay perfectly useless for shipping. N. 81° E., 6 miles from the highest peak of the Lamyt, is an islet called Cap, which is the southeastern of the 18 Yit. Vessels entering the Haetan strait should pass to the eastward of this, and the Double island three miles to the north of it, keeping to the westward of a group called the Reef islands, which bear from the Cap N. 49° E., five miles. N.N.E. four miles from Double island is a remarkable White island with sandy beaches and detached hills; the channel between this and Reef island group is foul, having many rocks in it, but it has not been sufficiently examined. After passing to the westward of Sand island, which has several rocky islets on its northwest face, a pagoda situated on the point of a shoal bay, with the ruins of a town will be seen to the westward. Here vessels will have smooth water, protected from the easterly swell by Three Chimney island, which is the large island immediately to the northward of Sand island. In the centre of the channel between this island and the pagoda, the water is deep. The best anchorage is close under the shore of Haetan, near to Observatory island, avoiding a reef to the westward of it, which is nearly covered at high water spring tides. Observatory island is in lat. $25^{\circ} 25' N.$, and long. $119^{\circ} 45' E.$

The passage to the westward of Haetan has not been examined through, but as far as the examination has gone, the channel has proved narrow, with a great many dangers, of the approach to which the lead gives no warning. A vessel leaving this anchorage bound to the northward must give the south point of Haetan a good berth, as there are several rocks off it.

N. 80° E., $5\frac{1}{2}$ miles from the Three Chimneys, and S. 65° W., 7 miles from Turnabout island, is a very dangerous shoal. Vessels coming from the northward intending to enter the harbor, after passing Turnabout, should steer for Triple island, passing within a mile of it, being very careful not to approach the south point of Haetan too close.

Turnabout island in lat. $26^{\circ} 26' N.$, and long. $119^{\circ} 58.7 E.$; it is distant from the nearest or southeast point of Haetan four miles; it has two small islets in its neighborhood. The channel between it and Haetan is safe. Under the eastern point there were several large junks seen at anchor, and a considerable village. Unless this anchorage gives good shelter, there is no bay on the eastern coast of Haetan that vessels ought to enter, as they are strewn with rocks and shoals. Under the high peak of Haetan, and to the eastward, is a bay that was entered by the surveying vessels Starling and Plover, in a strong northeasterly wind, out of which they were glad to get, and lucky in having escaped getting ashore; but the entrance into it and the anchorage are full of rocks, with a heavy swell when blowing hard.

The high peak of Haetan 海壇 is in lat $25^{\circ} 53.7 N.$, and long.

<i>White Dog group.</i>	<i>Breakwater.</i>	<i>Entrance to Min R.</i>	<i>Rees' rock.</i>
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119° 51'.3 E., and its elevation above the sea 1420 feet. The north coast and the northern entrance of the straits, as seen from the peak, presented to view many rocks and islands, which would always render the entrance from the northward, and the navigation of the straits extremely dangerous. The White Dog islands bear N. 14° E., 23 miles from the peak of Haetan.

The White Dog group, called by the Chinese Pihkiuen 白犬 has two large and one smaller island; 1½ mile northeast from the eastern island is a rock on which the sea generally breaks. Anchorage for ships of any draught may be had under the western island in the northeast monsoon. A reef of rocks running off from the western extreme of this island, forming a natural breakwater, affords good shelter close under them for vessels under 18 feet draught:—here whole fleets of Chinese junks anchor during foul weather. As the water decreases gradually towards the island, large ships may approach as convenient (keeping in mind that there is 18 feet rise and fall). H. M. ship Cornwallis, 74, vice-admiral sir William Parker, anchored here for five days with strong northeasterly winds, and rode easy. The bearings from her anchorage were as follows; west point of northwest island, N. ½ W.; village, N.N.E.; smallest island, E. ½ S.; eight fathoms at low water.

A large ship ought to approach the island, until the passage between them is shut in by their tangents. One cable off the western point of Village bay on the south side of the western island is a half tide rock. The channel between the islands is safe, as the dangers show. The Breakwater is in lat. 25° 58'.1 N., and long. 119° 57' E. The highest peak of the island is 598 feet above the sea. Fresh water may be obtained here in small quantities. These islands are inhabited by a few fishermen.

Vessels bound for the river Min 閩河 from the anchorage under the White Dog islands, should start with the ebb tide. The entrance bears N. 55° W., 8½ miles from the Breakwater. When this distance has been run, a good lookout must be kept from the masthead for Rees' rock (a small black rock about 20 feet high) on the southern side of the channel, which will be seen bearing N. 71° W., 4½ miles. This will place the vessel about 8 miles from the land. The channel between the breakers is 2 miles across at the entrance, and gradually decreases to half a mile. There is a remarkable sharp peak on the north bank of the river, and a square peak on the south bank nearer than Square peak; and to the southward of it, Round island will be seen, and to the southward of that is a sharp sandy peak bearing about S. 68° W. This latter may be mistaken for the sharp peak of the north bank of the river, unless the bearings of the White Dog group be referred to.

Eastward of the north horn of the channel is a dangerous reef which shows only at low water. The bearings on it are, Matsooshan peak, N. 54° E.; Sea Dog, N. 88° E.; W. White Dog peak, S. 45½°

Reef. Hokeanga I. Sharp Peak Pt. Temple Pt. Woga Fort. Kinpai mun.

E.; Sand peak, S. 59° W.; Sharp peak, N. 71° W.; and Rees' rock in line with the south peak of Square Peak island. The best mark to keep to the southward of it, and for entering the channel, is to bring Rees' rock in line with Square peak bearing N. 81° W. There is a small knoll, with 2½ fathoms on it at low water, in the centre of the passage; it bears S. 86° E., 3½ miles from Rees' rock, and the above leading mark will keep you clear of it.

Having entered, steer so as to pass one mile north of Rees' rock; the breakers will show on each side of the channel if it be near low water at the time, and there is any swell. Should the breakers show, by skirting the northern shoal, a vessel will insure the deepest water. The course from Rees' rock is N. 68° W., on which bearing a remarkable pinnacle rock on the northeast side of Hokeanga is in line with a white battery on the northern shore of the Kinpai mun. In going up, keep the two islets called the Brothers on the face of the island of Hokeanga 壘 江 in one. This will carry you in mid-channel until you are abreast of Sharp Peak point, when you can haul up N. 55° W. for Temple point, which is on the north bank of the river, and will be known by the trees on it.

In the channel without Rees' rock, the depth of water is generally three fathoms. Between Rees' rock and Sharp Peak point, close to the northern breakers, there is a hole with five and six fathoms, where vessels may stop a tide and find tolerable shelter. Sharp Peak point may be passed within a cable's length. The bay west of it is shoal, and under the peak the two fathom line extends nearly one mile from the shore. The mud also extends southeasterly from Hokeanga nearly 1½ mile;—vessels beating in this passage must therefore keep the lead agoing.

Woga fort is a dilapidated circular building on the top of the first hill, on the island west of Sharp peak. The junks laden with timber lie immediately under it, until the whole convoy is collected, sometimes amounting to eighty sail. S. 17° W., 3¼ cables from the Temple, (called Hoktow or Fuh-tau 福 斗), is a knoll with only 2½ fathoms on it. Sharp Peak seen over the lower part of Woga point will put you on it. From the West Brother, the mud extends westerly one mile; on its northern edge is a patch of rocks, which are covered at a quarter flood. The West Brother bears from it S. 74° E., and the Temple N. 12° E.

From the Temple to Kinpai mun is not quite two miles, W. by S. There are two islets at the entrance of the passage. Pass between them, and keep over towards the south shore to avoid a reef, which lies W. by S. ½ S. from the northern islet. The channel is not quite two cables' length wide, and should only be attempted at slack tide, for the chowchow water renders a vessel unmanageable.

Two cables to the westward of Kinpai point is the tail of a sand bank, to avoid which, keep the southern shore close on board; the

Ferry House. Wedge I. Mingan town. Ló-sing Pagoda. Fuchau fú.

distance between it and the edge of the bank being under two cables. When abreast of the Ferry House, which is $1\frac{1}{2}$ mile above Kinpai, and on the right or southern bank, edge over to the other shore, passing Wedge islet at a cable's length. Tree point will then be seen on the southern bank. A half tide rock bears N. 9° W., $4\frac{1}{2}$ cables' length from it. When on it, the Ferry House is in line with Kinpai point. On the northern shore, after passing Wedge islet, are two rocky points extending nearly a cable's length from the embankment.

This reach runs S. W. by S., and N. E. by N. At the distance of six miles from Kinpai mun, the river narrows again to $3\frac{1}{4}$ cables, the land rising on each side to 1500 and 2000 feet. The town of Min-gan 閩安 is on the left or northern bank of the river, one mile within the strait. The river continues narrow for three miles, the depth of water being above 12 fathoms, and in some places no bottom at 29 fathoms. Vessels will have some difficulty in getting through this strait with spring tides, unless with a leading wind, in consequence of the chowchow water. Rather more than half a mile above Mingan, and on the same side of the river, is an islet crowned with a fort.

The banks of the river on each side are steep cliffs with many batteries. At the upper or south end of the gorge, are two islets on the right bank of the river. In going up, leave these islands on your larboard hand, passing close to the northern one of the two, to avoid a shoal patch of $1\frac{1}{2}$ fathoms, which lies two cables W. N. W. from the island. Having passed this island, keep along the right bank, gradually hauling up for the pagoda Ló-sing táh 羅星塔. When you have passed the low point of the island on which it is situated, anchor east of it. S. 12° E. from the pagoda, rather more than two cables, is a sunken rock, which shows only at low water spring tides. It is recommended to pass close to the pagoda, if vessels intend proceeding up higher, but as the river is only navigable for vessels three quarters of a mile beyond the pagoda, and the channel is not only narrow but the tides are stronger, it would be advisable not to go above it.

Above the pagoda, the river turns abruptly to the northwest. The city of Fuchau fú 福州府 is situated on the left bank of the river, nine miles above the pagoda; the distance to the city (by the river) from the rocks at the entrance is not quite 34 miles. Four miles below the city, the river is staked half way across, and the remainder rendered difficult even for junks to pass, by large piles of stone which are covered at high water.

Due north of the Western White Dog is a large island called Matsoo shan 馬祖山, and between the two, N. 14° E. from the White Dog, is a precipitous black rock, about 60 feet high, with reefs

Matsoo shan. Sea Dog I. Changche shan. Trio Rocks. Larne Rock. and I.

about it, called the Sea Dog. Between the Sea Dog and Matsoo shan, there are two other reefs, which are never covered. There is also an island off the eastern end of Matsoo shan, with a reef running off its eastern point. Shelter may be had under this island from the northeast monsoon. There is a deep bay on its northwestern face, where good shelter may be had from the southwest monsoon. From the peak of this island, the reef at the entrance of the Min river bears S. 54° W., $7\frac{1}{2}$ miles. In the northern, and also in the western sandy bays, fresh water may be obtained.

Northeast, three miles from Matsoo shan, is another large island called Changche shan 長岐山, with two very remarkable sharp peaks on it; the highest is elevated above the sea 1030 feet, and in lat. $26^{\circ} 14'$ N. and long. $120^{\circ} 1.7$ E. The bay on the south side of this island affords good shelter in the northeast monsoon. Vessels entering from the northward may round the southeastern horn of it close, and anchor within the point in six fathoms.

Vessels bound to the river Min should anchor here, as from this anchorage in the northeast monsoon, they may always get to the bar at the precise moment they require it, but from the White Dogs a vessel will barely fetch. After a little intercourse, pilots might also be obtained, as there is a large fishing population on it. The coast inside these islands and north of the Min, (Tinghae 定海 bay) has not been examined; but from Matsoo shan peak several rocks and numerous islands were seen.

On the northern face of Changche shan are several small islands, the largest of which bears north $2\frac{1}{2}$ miles. There is no safe passage between these islands. N. 61° E. from the southeast point of the same island, are three peaked rocks, called the Trio rocks, about 50 feet above the sea, between which and the point is a safe channel. Care must be taken in approaching these islands from seaward to avoid Alligator island (called Tungsha 東沙); it is due east of Matsoo shan peak $24\frac{1}{2}$ miles. From the south extreme of the White Dog island, it bears N. 62° E., $25\frac{1}{2}$ miles; it is in lat. $26^{\circ} 9'$ N., and long. $120^{\circ} 25.7$ E., about 40 feet above the level of the sea, and is a flat barren rock.

N. 56° W., $12\frac{1}{2}$ miles from Alligator island, is a small rock, called Larne rock, with one awash two cables to the northward of it. It bears from the high peak of Changche shan N. 80° E., and is distant from it 11 miles.

N. 11° E. from Larne rock, distant $5\frac{1}{2}$ miles, is Larne islet; it bears from the high peak of Changche shan N. 58° E., 14 miles. It is about 200 feet high, with large boulders sticking up here and there. Near the summit are three houses, and off its northern and southern ends are ledges of rocks. N. 72° W., $7\frac{1}{2}$ miles from Larne island, and bearing from Changche shan peak N. 25° E., 11 miles, is another patch of rocks, about 40 feet above the sea.

Tungyung I. Spider I. Double Peak I. Pihseang shan. Fulyaou shan.

The peak of 'Tung-yung 東永 bears from Larne islet N. 84° E., distant 14 miles, and is the easternmost island on this part of the coast; the highest part of it is in lat. 26° 23.2' N., and long. 120° 31' E., and elevated above the sea 853 feet. Its appearance is level and flat, topped with steep cliff shores; off its south extreme is a ledge of rocks. There is another island half a mile to the westward of it. They appear however as one, except on a N. E. by N. or S. W. by S. bearing. Under this island there is good anchorage during the northeast monsoon. North, half a mile from the eastern point of the western island, is a sunken rock. Tung-yung has a large village and fishing establishment on its western side.

N. 68° W., 20 miles from Tung-yung, is a remarkable Conical island; it has a reef off its northeast point; with this exception the channel between it and the two islands north of it is safe, and two miles wide. West of it, 4½ miles, is a large island (Spider island), with good shelter from the northeastern winds on its western side. The highest part of the island is 620 feet above the sea; the other peaks of it are nearly the same height. There is a large village in a bay on the south of it, and off the southwest point is a reef. On the northeast face of it are four islets, and one on the northwest, between which and Spider island there is a half tide rock. To the westward are many islets and rocks.

Four miles northeast of Spider island is a large island, with two remarkable cones on its northern end called Double Peak island; it is 3½ miles long, and its highest peak 1190 feet high. There is very good anchorage, the best being under its southern point, the two small islands north of Cone island sheltering you from the eastern swell. Between it and the main, there is a good channel, three miles wide, whose depth varies from 6 to 18 fathoms. The mainland to the westward of this island is high, with very remarkable conical peaks, and much indented. Water and a few vegetables may be had here.

N.E. by E., 10 miles from Double peak, is a group of islands called Pihseang shan 北礮山 or Tsihsing 七星. The northern one is the largest. There is at its southwest angle, a small bay, which would afford shelter to two or three small vessels. This is a Chinese vice-admiral's station; when the surveying vessels visited it, there were three war junks at anchor in the bay. Between the northern and the southern islands of this group, there is a safe passage, but the bay is thickly studded with fishing stakes. The northern island is in lat. 26° 42.5' N. and long. 120° 22.7' E. The southern, which is a detached rocky island, is about 60 feet above the sea, in lat. 26° 32' N. Between this group and the main, the average depth of water is 9 fathoms.

Due north, 12 miles from the Pihseang shan group, is a high island called Fulyaou shan 福瑤山, 1700 feet above the sea, with a

*Taeshan Is.**Mushroom Rock.**Pihquan I. & Harbor.*

good harbor between it and the main; it in lat. $26^{\circ} 56.1$ N., and long. $120^{\circ} 22.6$ E. The entrance to the northward is broad and open, the southeastern channel is only one cable wide. Good water is plentiful and easily obtained here. N. 60° E., 5 miles from Fuhyaou shan, is a group of small islands affording no protection, but having no danger near them. And N. 13° E., $5\frac{1}{2}$ miles, is a solitary islet having a reef off its eastern end. The southwestern entrance to Fuhyaou shan harbor will probably be found better than the eastern; it has not however yet been examined.

S. 74° E., 10 miles from Fuhyaou shan, and N. 45° E., 15 miles from Pihscang shan, is a very dangerous rock, over which the sea breaks; it is in lat. $26^{\circ} 53'$ N., and long. $120^{\circ} 34.3$ E. N. 80° E., 16 miles from the eastern point of Fuhyaou shan, there is a small group of islands called Tae shan 臺山 (i. e. Table hill); the easternmost large island (remarkable for its table top) is situated in lat. $26^{\circ} 59.5$ N., and long. $120^{\circ} 44'$ E., and is 618 feet above the sea. S. 25° W. from Table island are two rocky islets, about 100 feet high, and which are almost joined. There is bad shelter to be had between the two largest islands, as close (half a cable or less) to the Table island as a vessel can with safety go. There is a passage between the two islands, and to the northeast of the western large islands, there is a most remarkable Mushroom rock, about 260 feet high, and joined to the islands by reefs at low water. There is an indentation on the eastern face of the middle large island, that affords shelter to a number of small fishing junks.

N. 60° E., $7\frac{1}{2}$ miles from Table island, are three small rocky islets, with several rocks awash near them. Three miles to the N.N.W. of these is another rock, about 50 feet above water, and is remarkable from its being cleft in two. To the westward, between this group and the harbor of Pihquan, there are also several rocks which only show at low water. From the number of rocks and shoals about these islands, all of which may not yet be discovered, it will be necessary for vessels to approach this part of the coast with great caution, or indeed to avoid it in this latitude altogether.

N. 45° W., 14 miles from this group, is the island and harbor of Pihquan 北關; it is in lat. $27^{\circ} 9.7$ N., and long. $120^{\circ} 32.6$ E., and will afford good shelter in the northeasterly monsoon for vessels drawing 15 feet.

Three quarters of a mile west of the south point of Pihquan is a rock nearly level with the water's edge, with a reef that is covered, half a cable's length to the northwest of it.

This roadstead is $1\frac{1}{2}$ mile broad, and has three fathoms in it. Fresh water may be got in the sandy bay at the foot of the three chimneys on Pihquan.

To the westward of the roadstead is the island of Namquan 南關, within which is a deep bight, and a walled city. To the northward

Namke shan group. Pepa shan. Pihke shan. Tungpwan shan. Tseigh Is.

of it on the main is a most remarkable peak, called by the fishermen Pihquan peak. The boundary line of the provinces of Chekiáng and Fukien, passes through Pihquan harbor.

N. 35° E., distant 30 miles from the Taeshan group, is a group of islands, the largest of which is called by the Chinese Namke shan 南圯山. It consists of one large and fourteen smaller islands; the large island is 737 feet above the sea, and has a good harbor on its southeastern side in the northeast monsoon, where there is a good watering place. The eastern horn of the harbor is in lat. 27° 26.3 N., and long 121° 6.6 E. Vessels should not pass between the islets which form the southwest part of the group, as there are many reefs which cover at high water. The westernmost island makes like a cone, and has reefs to the northward. The southern islet is a castellated rock, and is 5 miles distant from the rest of the group.

W. by S., 24 miles from Namke shan, on the main, is an apparently good harbor, and most probably is that called Pepa shan 琵琶山 on the Admiralty chart.

N.N.E., 10 miles, is a group of islands, the largest of which called Pihke shan 北岐山, in lat. 27° 37' N., and long. 121° 12' E. There are four small islets close to it, which protect the anchorage off the southwest end of the island from the easterly swell. Vessels should not anchor under these islands unless from necessity, as they have so much better anchorage either to the northward or southward of them. Fresh water may be obtained. There is an extensive fishing establishment on the island.

West, 11 miles from Pihke shan, is another group, of one large and four smaller islands. The largest is called Tungpwan shan 銅盤山 (i. e. Brass-basin I). Between this group and Pihke shan are five detached islets. The main is distant 15 miles to the westward of Tungpwan shan, the hills rising to 1000 or 1200 feet, with extensive plains between them, which are protected from encroachment of the sea by embankments. Between it and the main there are two groups of islands, under which a fleet of junks, probably from Wanchow foo, took shelter during a northeasterly gale.

Eight miles, W. N. W. from Pihke shan, are the Tseigh islands, of which there are three, the North Tseigh 北策, the South Tseigh 南策, and the East Tseigh 東策, in the space between which there are clusters of rocks interspersed with reefs which cover at half tide. Vessels cannot go between these groups without great risk, as there may be many rocks not yet laid down.

The Tseigh islands form the south extreme of a very large and numerous group of islands; to the northward and westward of these islands, between them and Takew 大瞿, is an excellent ancho-

Bullock's B. Coin I. Tongtau shan. Miaou S. Hoolow S. Peshan I.

rage, sheltered from all winds, called Bullock's bay. The best entrance into this bay is to the northward of the Tseigh islands, between them and Pwanpien shan 半邊山. Here water may be procured, and bullocks of the best description were obtained from the natives, and in any quantity. The harbor may be known by a remarkable conical island, called Coin island, (with three rocks N. $\frac{1}{2}$ W. of it,) which is the northeasternmost of this group, and is in lat. $27^{\circ} 50'$ N., and long. $121^{\circ} 15'$ E. W. N. W. of Coin island is a flat island with rocks off its southern extreme, and two rocky islets to the westward, between which and Tongtau shan 洞頭山 there is a safe passage in 8 fathoms.

Tongtau shan, the largest of the group, and forming the northern boundary of Bullock's bay, is 6 miles long and $2\frac{1}{2}$ miles at its extreme breadth; the feature of its eastern face is high and precipitous: between it and Pwanpien shan, is a junk passage, but it is not available for vessels.

North of Tongtau shan, there are two large islands, Miaou shan 尾峽山 and Chwangpien shan. The channel between these is shoal, having only 3 fathoms; Miaou shan and Chwangpien shan 狀元山 are separated by a channel, too narrow for a ship. The extent of the two islands together is 9 miles.

N. 55° W., 8 miles from Miaou shan, is the entrance of the Wanchow foo 溫州府 river, with an island in the mouth of it. The inhabitants of Tongtau shan report that the approach to the entrance is very shallow. S. 65° W., 5 miles from Miaou shan, is a dangerous rocky shoal. We found on approaching the main from Miaou shan that the depth of water decreased at 4 fathoms. To the northward of Miaou shan, are two large islands called Hootow shan 虎頭山 and Laouka shan 九麕山, with two small islands between them. The channels between these islands, and between them and the main, have not been examined. Two and a half miles to the southward of Laouka, there are four cliff islets, and half a mile from the south point of it is another islet. The Plover passed between these, and anchored to the westward of a small islet on the southwest side of Laouka; in this bay the water shoals suddenly from 19 to 6 fathoms.

N. 75° E., 17 miles from Laouka, is the easternmost island of the next group called Pe shan 披山, in lat. $28^{\circ} 5.5'$ N., and long. $121^{\circ} 31.8'$ E. It is three miles long from east to west, has three rocks on its northern face, and two islets on its southern. Northwest from it is a sugar loaf island, with a small one close to it, and W. by N., $1\frac{1}{2}$ mile, is another low level island.

Taluk shan 大鹿山 is west from Pe shan, $5\frac{1}{2}$ miles; this

Taluk S. Nanpai S. Shetung mun I. Teaoupung mun. Chikhok I.

island is 771 feet high, and affords good shelter on its western side in 3 to 4 fathoms; its eastern face is a high and precipitous head.

Seaoluk shan 小鹿山 are three islands, $1\frac{1}{2}$ mile south of it; between the two the depth of water is 8 fathoms. To the west of Taluk shan, 3 miles, is Chinke shan 鷄冠山 which has a large and populous town on it. To the north of Taluk shan, 2 miles, is another island, which is also populous. Chinke shan faces a deep bay on the main.

Northwest, 24 miles from Taluk shan, is a high conspicuous mountain on the main; the sea washes the foot of it, but the entrance to the sound was not explored. To the westward of Seaoluk shan, distant 6 miles, is Nanpai shan 南排山 an islet. On the point to the westward of Nanpai shan, there is a large and populous village. Heachuh shan 下竹山, the southernmost island of the Taichow group, bears N. 50° E., 27 miles from Pe shan. N. 45° E., distant 16 miles from Pe shan, is a small island, with a reef running off its southern end, and which is the eastern island of a group; it is in lat. $28^{\circ} 15.8$ N., and long. $121^{\circ} 44.5$ E.

Southwest, 2 miles from this island, are four small peaked rocks, with rocks awash between them. West, $2\frac{1}{2}$ miles, is the island of Shetung mun 石塘門, having many small rocky islets nearly joined to its southern extreme, and a reef to the westward of them. A vessel may get very good shelter under this island, unless the wind is far to the eastward.

Between this island and Teaoupung mun 吊邦門, are two islands; the eastern passage of the two is a mile wide, and has $3\frac{1}{2}$ fathoms. Northeast of the centre island are 3 small islets, with a reef extending from the east end of the northernmost. To the southward of the roadstead are four islets, the largest of them is called Sanshe shan 三蒜山. The channel between them and the main is a mile wide, and has $4\frac{1}{2}$ fathoms through it. The point opposite to these islets is called Chinseu shan, and forms the southeast horn of a shallow bay, and is connected with the main by an isthmus occasionally overflowed.

Through the Teaoupung mun all the coasting trade passes, and from the number of towns erected on this barren headland, it would appear that it is a stopping-place for the numerous junks that pass. When the Starling anchored in this roadstead, there were nearly 100 sail of junks at anchor. They all weighed together, and passed through the Mun to the northward.

North, 6 miles from the easternmost island off the Teaoupung mun, is the island of Chikhok 積穀山, in lat. $28^{\circ} 22.4$ N., and long. $121^{\circ} 42.2$ E. It is 760 feet above the sea, and bears S. 58°

Taichow group: Heachuh S.; Shang tachin S.; Hea tachin S.; and channels.

W., from the anchorage at the Taichows. It rises abruptly, and has a most remarkable broad yellow stripe on its southeastern side, forming one of the best leading marks for the coast. There is an islet, $1\frac{1}{2}$ mile W.N.W. from it, off the north end of which there is a half tide rock. Westerly from Chikhok is a crooked island, under which there may be shelter, but between the two there is foul ground.

East of Chikhok, distant $9\frac{1}{2}$ miles, is Heachuh shan, the southernmost island of the Taichow group, in lat. $28^{\circ} 13.3$ N., and long. $121^{\circ} 55.2$ E. This group extends 9 miles in a northerly direction from Heachuh shan; it consists of two large and ten smaller islands. Between the two large islands is an excellent harbor, the approaches to which, both from the eastward and westward, are free from danger. The best anchorage will be found southeast of the island, lying off the southwestern extreme of Shang tachin shan 上大陳山, which is the northern large island. The bay to the northward of this is too shoal for anchorage.

Between Shang tachin shan and the small island, $1\frac{1}{2}$ mile to the N. N. E. of it, there is a safe passage. Several watering places will be found on Shang tachin shan, but the supply from any one of them is not very abundant. The southern large island, called Hea tachin shan 下大陳山 is the highest, its elevation above the sea being 750 feet. It is well inhabited; a couple of bullocks and other stock were obtained here.

There are four islands and two reefs to the southward of it. The southernmost island, or Heachuh shan, has a remarkable finger rock off its southern side. The western rock lies S. 22° W., $3\frac{1}{2}$ miles from the highest part of Hea tachin shan, and is seen at all times of tide. N. 41° E., $4\frac{1}{2}$ cables from the above rock, is a reef that covers at high water; it bears from the peak of Hea tachin shan, S. 20° W., $2\frac{3}{4}$ miles.

There is a good channel west of the Taichow group, and to the north of Chikhok are numerous islands, many of which are joined by the mud at low water.

N. 55° W., distant 7 miles from the northern island of the Taichow group, are two islands close together, that will be mistaken for one except on an E. N. E., or W. S. W. bearing. Junks take shelter under the western point in strong northeast winds; off the northeast and northwest points are rocks; a reef also extends off its southeast end. Two and a half miles to the eastward of these is another cliff islet, which is the easternmost of the group. The channel between these islands and the Taichows is free from danger. The mainland is distant 9 miles from the above islands, and the depth of water between the two is from 6 to 3 fathoms, shoaling gradually towards the coast, which is very low, and at low tides dries a long way off from the shore.

Tungchuh seu. *Chuh seu.* *Passage to Taichow foo.* *Hishan group*

North, 10 miles from the northern Taichow, is the easternmost of a large group in lat. $28^{\circ} 42.2$ N., and long $121^{\circ} 55.1$ E., called Tungchuh seu 東機嶼. Shelter may be had under it on its south side, but there is always a heavy swell which renders riding there very unpleasant. There are several rocks and islands within two miles of its southern, and three islets on its northern face. There are several large islands lying to the northwest, some of which would no doubt afford good shelter, but they have not yet been examined.

Seven miles, west a little southerly from Tungchuh seu, lies the island of Chuh seu 竹嶼 with a sharp cone 670 feet above the sea, over its southern point. Midway between the two is a cluster of rocks, four in number; and S.S.W. from Tungchuh seu are two islets, with detached reefs bearing from it E., two cables distant and N. by W. four cables. On the same bearing from it, 3 miles are two islets, with a reef off the eastern end of the southernmost. From Chuh seu there is a solitary cone island, S. 60° E., $2\frac{3}{4}$ miles.

Good anchorage, with a convenient and abundant watering place will be found under and to the southwestward of the peak of Chuh seu in 6 fathoms, between an island with a reef off its northeast point and Chuh seu. On the peak at the northwest end of Chuh seu is a lookout, and three chimneys, from whence they communicate by signals with Taichow foo 台州府. The entrance to the river bears S. 88° W., 8 miles from Chuh seu. The inhabitants reported that vessels of 12 feet could not get over the bar except at high water, and that one tide would carry you to the city; the tide rises in the neighborhood from 18 to 20 feet.

The channel between Chuh seu and the main appears to be shoal with several rocks covered at high water. Vessels therefore ought to pass to the eastward of the whole group until the inner channel has been examined.

South of Chuh seu, there are several small islets, with safe passages between them. There are several rocks and islands to the northward towards Sanmoon bay, which cannot now be described, not having been sufficiently examined.

N. 62° E. from Tungchuh seu, and distant 17 miles, is the Hishan 黑山 group, consisting of 3 inhabited islands and 8 barren rocks, extending 4 miles in a north and south direction, and 2 miles east and west. The southernmost is the largest, and makes like a saddle. It is 320 feet high, and is in lat. $28^{\circ} 50.8$ N., and long. $122^{\circ} 14.4$ E. The rocks are steep, with remarkable cliffs. The sea has undermined the northernmost one so much that it bears some resemblance to a large mushroom. The inhabitants, who are Fukien men, call the island Ung shan. The depth of water in the vicinity is 20 fathoms; they are too small and too detached to afford much

Patahecock I. Cape Montague. Leaming. Albert's peak. Sanche shan.

shelter. The inhabitants are all fishermen, from whom excellent fish may be obtained. There is also a fine stream of water on the island, but it would be difficult to get at it.

North from the highest of the Hishan islands, distant 32 miles, is Patahecock 八字角 the southernmost of the Kew shan 韭山 or Quesan group.

N. 25° W., distant 22 miles, is Tantow shan 潭頭山 or Cape Montague, in lat. 29° 10' N., and long. 122° 2' 5 E. It is an island separated from the main by a channel varying from one mile to 1½ wide. It is 738 feet high, and nearly divided into two parts, the connection being a low shingly isthmus.

Four miles to the southward of cape Montague, and nearly attached to the main, is a small islet with a reef off its eastern point. Twelve miles S.S.W. of cape Montague, is Leaming, forming the northern and eastern points of Sanmoon 三門 bay, having a rock off its southwestern end.

South of cape Montague, and 3 miles from the coast, are four islets; the southern is 9 miles from the Cape, the others are severally 3, 5, and 7 miles distant from it, with good passages between them to enter Sanmoon bay.

Sanmoon bay will be readily recognized by a most remarkable thumb peak, called by the opium vessels that frequent this bay, Albert's peak, and by the Chinese Tafuh tow 大佛頭 (i. e. Budha's Great head or point); it is about 800 feet high, and is in lat. 29° 5' N., and long. 121° 58' 5 E.

S. 38° W., 2½ miles from Leaming, is Sanche shan 三岐山 or Triple island, the depth between the two being 10 or 11 fathoms. Vessels entering, either to stop a tide, or driven in by weather, will find good shelter from the northeast monsoon, to the westward of Leaming. Care, however, must be taken in standing into this bay as it shoals suddenly. If the north peak of Leaming is not brought to the southward of east, there is no danger; it is all soft mud in the bay.

Due west of Leaming, 6 miles, is a conical island, with a reef off its south end.

Tafuh tow, or Albert's peak, is situated on an island to the northward of this half a mile, but the channel between has many rocks. In the northern extreme of the bay, between Leaming and Albert's peak island, is a small entrance into Sheipoo.

Having rounded the conical island, St. George's I. or Ching shan, will be seen, bearing N. W. 4 miles. The bay shoals gradually as you approach it, and the anchorage, half a mile south of it in 3 fathoms, is secure in northeast winds. There is a well of good water on the island, but it is not easily got at nor plentiful, and vessels in want of water will find it more convenient to anchor to the southward and eastward of Albert's peak, where water can be easily obtained. The

St. George's I. Nimrod sound. Sheipoo roads. Wangche S. Cliff I. Tungmun

bay to the northward of St. George's island is shoal, and full of rocks; it extends a considerable distance. The isthmus between it and Nimrod sound, or Tseangshan keang 象山港, is only 7 miles. There is an entrance into Sheipoo, 4 miles to the north of St. George's island, which is frequently used by junks.

Westward of St. George's island, 4 miles, is a group of islands with many sunken rocks off them. The mainland is distant 3 miles to the westward of this group, and rises immediately from the sea to the height of 900 to 1000 feet, forming a continuous range along the coast. Patahecock bears from Cape Montague, N. 36° E., 15½ miles.

Vessels bound for Sheipoo roads may pass close to the northward of cape Montague, and run in due west for the two forts which will be seen on the summit of the island forming the entrance to Sheipoo.

North of the roadstead are 3 islands. South, 3 cables from the eastern end of the centre island, Wangche shan 黃芝山 are the Bangoa rocks, which always show; there is deep water close to them. To the westward of Bangoa, the water shoals off the centre island to 2½ fathoms, 9 cables from the land, to avoid which do not bring the higher fort to the southward of west.

Cliff island, or Seo-seao, lies nearly in the centre of the roadstead; anchorage will be found off the northwest end of it in 4 fathoms mud; there is always a considerable swell rolling in with a strong wind. Vessels passing between cape Montague and the main should keep to the eastward of Cliff island, and pass between it and a rock, 7 cables further to the eastward. The deep bay on the western side of cape Montague is shoal, but the southwest point is steep to.

A reef of rocks extends from the westward of Cliff island, and the channel between it and the main has only 3 fathoms in it. South of Cliff island is another islet; the ground between is foul.

From the roadstead into Sheipoo 石浦 harbor are three entrances, all of which are very narrow with rapid tides and chowchow water, rendering the navigation dangerous for ships. Two of them are formed by Tungmun 東門, the island on which the forts are situated. The third entrance is 1½ mile to the southward of Tungmun, and is the best of the three.

At the entrance to it is a small flat island, with a reef of rocks extending easterly; pass to the northeastward of this island, as there is a reef to the westward between it and the main. The town is situated on the main, forming the north boundary of the harbor; it is walled, but the walls are in a most dilapidated state. The houses and shops are not good. It derives its importance from its being a convenient port for the coasting trade. At high water the harbor has the appearance of a spleneid basin; but at low water the mud

*Chusan Archipelago.**Kew shan group.**Patahecock I.*

dries off shore a long distance, giving it the appearance of a river.

At the western extreme of the harbor, is a narrow passage into Sanmoon bay, and midway between this passage and the town is a large island. South of this island is another narrow passage into Sanmoon bay.

N. 36° E. from the highest part of cape Montague, $7\frac{1}{2}$ miles, is a very dangerous wash rock; it is as near as possible half-way between Patahecock and the Cape.

2.—Through the Chusan Archipelago.

[The following survey of the Chusan Archipelago was first published in the Chinese Repository, Vol. X, pages 251–272, under the supervision of captain Collinson, from which it is extracted without any alteration. It was made in the years 1840–41 by the officers in H. B. M. ships connected with the Expedition to China. It goes over part of the same ground as the preceding survey, but is more minute.]

THE 隹 山 Kew shan (or Quesan islands) are eleven in number, besides several rocks. The largest is three miles long, and its greatest breadth $1\frac{1}{2}$ mile; in some places, however, it is not more than a cable, or a cable and a half wide: the others are much smaller, varying from $\frac{3}{4}$ to $\frac{1}{4}$ of a mile in extent. They are thickly populated, probably to the amount of 1500 inhabitants, who principally subsist on fish. They have goats, pigs, and fowls. The sweet potato is cultivated upon most of the islands, and forms during the winter their principal article of food.

The geographical extent of the group is from lat. $29^{\circ} 21\frac{1}{2}'$ N., to $29^{\circ} 28'$ N., and from long. $122^{\circ} 10'$ to $122^{\circ} 16\frac{1}{2}'$ E.

Patahecock (or Páhtszekeõ). The south-easternmost island is called Patahecock. (八字角 Páh tsze keõ, or the 'letter Páh Point,' so named from its resemblance to the form of the character 八?) Its flat and table appearance will cause it to be easily recognized, when compared with the adjacent islands to the south, 黑 山 Hi-shan or Hesan, which are rugged and uneven. Four small islets lie off its northeastern shore, and one off the southern. The summit is more than 450 feet above the level of the sea, and in lat. $29^{\circ} 22'$ N., and $122^{\circ} 13.40'$ E. The northeastern islet of the group is a narrow cliff, an uninhabited islet. To the westward are four small islands, inhabited and cultivated; and north of them, three cables, is a flat precipitous rock; its colored appearance renders it remarkable, being composed of red porphyritic hornstone. This face of the island may be approached without danger.

Holderness rock. Sunken rock. Cape Montague. Half-tide rock. The Bear.

The westernmost island is the second in size, and attains an elevation of 400 feet. The body of the large island lies due south from it. Between the two is a mud bank, gradually shoaling to the shore of the large island. By keeping the western extreme of the west island to the eastward of N.N. E., not less than 3 fathoms will be found, and good holding ground without much swell. The highest part of the large island forms a sharp peak, near the western extreme, and is 490 feet high. The coast line of the island consists of high steep cliffs, with the exception of six small sandy bays.

South, and separated by a channel a cable and a half wide, there is another island, which is also high, with steep cliffs. Off the western point is a half-tide rock, and a reef runs off from its south extreme.

Holderness Rock. The Holderness rock lies N. 88° W., one mile from the highest part of this island. It has one fathom over it, and breaks occasionally. From it, the highest part of the western island bears N. 24° E.; a small peaked islet to the southeast, S. 52° E., and Patahecock table, S. 66° E., the reef of rocks, lying off the south extreme of the nearest island, being in line with it.

Sunken rock. Another sunken rock, with only three quarters of a fathom on it, lies S. 20° W., three quarters of a mile from the summit of the island, south of the large Kew shan, and N. 70° W. from Patahecock, the east extreme of the large island being in line with the east extreme of the nearest island, bearing N. 50° E. The inhabitants were civil, and readily sold their pigs, potatoes, and goats. Fresh water probably could not be procured in any quantity.

During the expedition against Chusan in 1840, H. M. ship Pylades encountered three piratical junks here, one of which was taken and burnt. The inhabitants did not appear to participate at all in the crimes of these marauders, and expressed themselves well pleased at their being driven away.

Cape Montague. Several small islets lie off cape Montague (or 四招山 Szechaou shan), the depth of water close into them being 4½ and 5 fathoms. The cape is in latitude 29° 10' N., and longitude 122° 5' E. A passage exists between it and the main, which is used by the junks. Between it and Buffaloc's Nose many deep inlets occur, which render the extremity of the continent doubtful.

Half-Tide Rock. The half-tide rock lays S. 32° W. from Patahecock, 7.8 miles, being in a straight line for cape Montague, and from the Bear (an island called 大目山 Tamuh shan by the Chinese, with a sharp peak at its eastern extreme), S. 42° E., 11 miles. It is uncovered two thirds of the tide. High tide and smooth water sometimes prevent its being seen.

High Water. The time of high water in the neighborhood of the Kew shan islands is 2h. 30m. before the moon's transit, and the rise and fall 14 feet. The change in the direction of the stream does not take

<i>The Whelps.</i>	<i>Corkers.</i>	<i>Buffaloe's Nose.</i>	<i>The Ploughman.</i>
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place until 2 hours subsequent to the change in depth. The flood tide comes from the southward, and seldom exceeds 2 knots per hour. The variation of the compass (1840) is $1^{\circ} 57'$ westerly.

Between the Kew shan group and the Bear, the depth of water varies from $3\frac{1}{2}$ to 6 fathoms, gradually shoaling towards the latter. Two small groups of islands lie between the Half-tide rock and the Bear, lying 5 miles from the main. From the N. E. extreme of the Kew shan islands, Buffaloe's Nose bears N. 53° W., 16 miles, and a small rock called the Mouse (nearly level with the water's edge at high water) N. 24° W., 6 miles.

The Whelps. The Whelps are a group of four small islands, N. 70° W., 10 miles from the Kew shan.

Starboard Jack. Starboard Jack is a low flat reef with two rocks off its eastern end, N. 47° W., 10 miles from the Kew shan.

Corkers. Between Starboard Jack and the outer rock of the Corkers, (a number of isolated reefs lying between the Whelps and Buffaloe's Nose,) the distance is $3\frac{1}{2}$ miles, with a depth of from 5 to 6 fathoms. The outer rock of the Corkers is occasionally covered, and bears S. 31° E. from the extreme of Buffaloe's Nose. Two islets, a cable's length farther to the westward, are always above water, and will give warning should the sea not break on the outer rocks.

Tinker. N. 20° E., $1\frac{3}{4}$ mile from the Starboard Jack, is the Tinker (a steep cliff rock, 80 feet above the water). This passage has $6\frac{1}{2}$ fathoms water, and will be found the more eligible of the two, during the N. E. monsoon, as vessels will be farther to windward, and have better anchorage under Luhwang than they would at Buffaloe's Nose. A sunken rock lies S. 56° E., (nearly in line with the Mouse) from the Tinker, distant 2 cables.

Buffaloe's Nose. Buffaloe's Nose (牛鼻山 Newpe shan) is $1\frac{1}{4}$ mile from north to south, and three quarters from east to west. Its eastern shore is rocky, and off the western extreme lies a small islet. The western shore has several deep indentations, one of which nearly separates the island into two parts. The harbor is formed between this island and the Ploughman, and is secure; during the northeasterly monsoon, however, the wind blows directly through, and occasional violent squalls are experienced.

Fresh provisions and water may be obtained here, but the supply of the latter is not always certain. On the main (two miles distant) are several villages, the inhabitants of which showed themselves hostile, and endeavored to intimidate us from landing. There are three peaks on the island, the central of which is the highest, being about 500 feet above the sea. Near the northern extreme, the island is perforated, whence its native name is supposed to be derived.

Ploughman. The largest island of the Ploughman, which is situated in latitude $29^{\circ} 37'$ N., longitude $122^{\circ} 0.15$ E., lies W. N. W., nearly 1 mile from Buffaloe's Nose, the depth of water varying from 5 to 18 fathoms. It is an even flat-topped island, with a reef extend-

Mesan & Lanjett. Harbor. Lowang. Tree-a-top I. Duffield's passage & reef.

ing from its northeastern extreme; another reef lies N. 34° W., 4 cables from its N. E. extreme. The other two islands are narrow and small, and lie to the N.W. of the large one. The junks usually pass inside the Ploughman and Buffaloe's Nose, and to the westward of the Corkers. The passage is not recommended for square rigged vessels, as there are many reefs and the tides are strong.

Mesan and Lanjett. The islands of Mesan and Lanjett lie three quarters of a mile to the N. E. of the Tinker. There are four large, and several smaller islets or rocks. The largest is not a mile in extent, and about 400 feet high. Its barren summit forms one of the most remarkable features in the Buffaloe's Nose passage. In the channel, between it and the Tinker, there is 7 and 8 fathoms; sunk on rocks extend a short distance from both shores.

Harbor. Between this group and Front island, which lies 3 miles to the N.E., is the entrance to a convenient harbor (in the north-east monsoon). A small castellated rock lies near the centre, and the depth of the water varies from 5 to 9 fathoms.

Lowang. The southern face of Lowang or Luhwang has two deep indentations, with sandy bays, and a reef extends from the point opposite to Mesan and Lanjett, 3 cables. The reefs also extend from the northern extreme of the Mesan and Lanjett group 5 cables, narrowing the passage to less than a mile. From the small castellated rock abovementioned, a N. 64° W. course will carry you to Tree-a-top, (a small island without a tree on it, at the entrance of Gough's and Duffield's passage,) and keep a mid channel course between the reefs. The coast line of Lowang immediately after the reef point trends to the northward, forming a deep bay which extends to the entrance of Duffield's passage.

South, 1 mile from the first island in the bay, is a mud bank with 3½ fathoms: to avoid which, you can keep the island on board, avoiding a rock half a cable from its extreme.

From this island to Duffield's reef, (which lies off the western entrance to Duffield's passage, and consists of three rocks, with a sunken rock between them and Lowang,) there is 5 to 9 fathoms, good holding ground.

Buffaloe's Nose through Duffield's Passage. From the anchorage at Buffaloe's Nose, Tree-a-top island bears N. 4° W., 5½ miles: it is about 4 cables in circumference, and 180 feet high. There is a pile of stones on the summit, but no tree.

Duffield's, or the passage between the islands of Lowang and Futoo shan, is the nearest towards Ketow point.

When between Duffield's reef and Tree-a-top, the water suddenly deepens from 5½ to 40 fathoms. The course through is N. N. E., 3.7 miles. It is 1.2 mile broad at the entrance, and 5 cables at the narrowest part, which is near the centre. On the Futoo shan shore are several small islets, and off the fourth point on the Lowang side is a reef one cable from the shore. The Lowang shore otherwise is very steep, having 35 fathoms to within a cable of the mud. On the Fu-

Notches. Gough's & Robert's passages. Ketow Pt. Junk passage. Kwökeu so.

too, shan side, among the islets, the water shoals to $4\frac{1}{2}$ and 5 fathoms, where a ship may stop a tide if necessary.

Between the Notches (2 small islands in the centre of the passage) and Futoo shan, is a half-tide rock; unless it shows, vessels should not tack within the Notches so as to fetch to the westward of them.

The Bird rock lies off the north end of the passage, and has a stone pillar on it. It is one cable from the shore. The distance from hence to Round-about island (off Ketow point) is 9 miles, N. 25° E.

Gough's passage. This passage (by far the best of any leading to Chusan) is formed by Futoo shan on the east, and the Central islands (four in number) on the west. In the passage, both shores are steep to; but south of the southern islet of the central group is a shoal, of which the lead will give warning. The passage is 1.4 mile through, and 5 cables wide.

Robert's passage. 'Robert's best passage' is formed by the Central islands on the east, and the mud extending from Mei shan on the west, which dries one mile from the solid ground. The boundary of the passage westerly, therefore, is not known, except at low water, the lead giving no warning. The depth of water varies from 6 to 40 fathoms. The channel is 1.8 mile through, and 5 cables wide.

Ketow or Kitto 岐頭 (also on some Chinese maps written 旗頭). The course, after you are through these two passages, for Ketow point, will be N. 41° E., $9\frac{1}{2}$ miles. Anchorage will be found anywhere along the Ketow shore, until one mile to the northward of Singlosan, a small islet near the Ketow shore, where the water deepens suddenly; and as there is no anchorage beyond this, until you get to Elephant island, ships are advised not to proceed, unless they have sufficient wind or tide to carry them in.

Tides. In these passages, the first of the flood comes from the northward, and runs sometimes for three hours before it takes the same direction as the ocean tide.

Ten-foot Junk passage. Between Mei shan and the Ketow shore there is a narrow passage $2\frac{1}{2}$ cables wide. It has deep water 5, 6, and 7 fathoms through, until you arrive at its southern extremity, where it shoals considerably. There may be more than 18 feet, as only one line of soundings was run across the bar. There is however no likelihood of its ever being used. Near the centre of the passage, on the Ketow side, there is a custom-house, and two canals which communicate with large villages in the neighborhood.

Kwökeu so 霏渠所. Two miles from the northern entrance is the walled town of Kwökeu, a military station; interruption to our sounding operations in 1840 was experienced from this quarter.

The several islands which form these passages may be here briefly described.

Lowang or Luhwang 六橫 is $9\frac{1}{2}$ miles long, and 6 miles across at the broadest part, which is the western extreme. Near the centre

Lowang I. *Futoo shan.* *Central Is.* *Mei shan.* *Teaouchow mun.*

it is little more than two miles across, and very little elevated above the level of the sea. The southeast body of the island rises to the height of 865 feet, being a conical bare hill. On the isthmus is an isolated peak. On the northwestern side of the island are five high peaks, the highest being 920 feet above mean tide level. The southwestern coast has been already described; that to the west, in the Duffield's passage, has several small bays, with stone embankments stretching from point to point, by which means a considerable quantity of land has been gained from the sea. The points of these bays form nearly a straight line. Beyond the Bird rock, the coast-line takes a sudden turn to the northeast. Cape Lowang, the northern extreme of the island, is high and bold. The island is 26 miles in circumference, very populous, and well cultivated.

Futoo shan 佛肚山. *Futoo shan* is not quite three miles long and one broad: the southern extreme forms a narrow point, connected, at low water, with St. Andrew's. The channel between the point and 'Tree-a-top is $3\frac{1}{2}$ cables wide, and has deep water. A spit runs off the northern extreme of *Futoo shan*, to the northward of which are three small islands.

Central islands. The south-westernmost of the Central islands is a small islet, connected by a reef and spit with the next, which is the largest of the group. This island is one quarter of a mile long, and is the resort of several fishermen, whose stakes and nets in 7 fathoms' water will be seen in the neighborhood.

Mei shan 梅山 (or Plum island) appears formerly to have been eight islands, now however united by substantial stone walls, one of which is $1\frac{1}{2}$ mile in extent. The mud dries $1\frac{1}{2}$ mile from its southern extreme, and $2\frac{1}{2}$ cables from the northern. Off the northwest side are two small islands, from the northernmost of which a shoal extends northerly, there being 3 fathoms at the distance of 4 cables from the shore. By keeping the Central islands open of the two islands mentioned above, until you have passed them half a mile, the shoal will be avoided, and the Ketow shore may be approached with safety.

Teaouchow Mun 條筭門. The passage next to Buffalo's Nose is called *Teaouchow mun* by the Chinese. The entrance to it is N. 8° E., 18 miles from the northeast extreme of the Kew shan islands.

The island called Beak Head (or 銅鑼山 *Tunglo shan*) forms its southwest extreme, off the east end of which lie three small islets; and two hummocks near the end of the island render it sufficiently remarkable. Between the Beak Head and Front islands are three islets and a rock, which, with *Lowang*, form Harbor Rouse.

There is a narrow passage, having $3\frac{1}{2}$ fathoms, between *Lowang* and the Beak Head, but there would be no object in using it, while there are other passages so superior.

Beak Head I. Southeast passage. Vernon I., or Heäke shan. Taou-hwa shan.

Beak Head is 5 miles long, and very narrow $1\frac{1}{4}$ mile from the east extreme. Two reefs lie close in shore upon the northeastern side. The distance across to Vernon island, or Heäke, is 2.8 miles, with 18 and 20 fathoms. Near the west extreme of Beak Head the channel narrows to 5 cables, and there is no bottom with 34 fathoms. A reef of rocks, the northernmost of which is always above water, bounds the channel on the south side; and an island, with a conical hill and two small islets on its south side, bounds it on the north; this island is situated midway between Vernon and Beak Head; between it and the former are two small islets and a reef, which render the channel, on that side, more intricate.

Having steered N. 59° W., $8\frac{1}{2}$ miles from the entrance you will pass another island, to the northwest of which good anchorage will be found, in 9 to 10 fathoms. The same course, and 4 miles farther, will carry you clear of the passage. On the north side of the channel are four small islets, and between them and Taouhwa shan is an archipelago of reefs and islands. There is a passage through into the Heäke mun, but it is awkward for sailing vessels. On the Lowang side is a reef, and an islet with a small pinnacle on it. The reef bears S. 34° E. from cape Lowang, and is generally uncovered. The mud dries 7 cables off Lowang in the bight. Vessels beating through, therefore, should not stand into this shore, so as to bring cape Lowang to the northward of the bearing given above to avoid the reef. On this side of Lowang, it will be found difficult to land, except at high water.

The southeast passage, or Heäke mun, 蝦岐門, lies five miles further to the northward. It is formed by Vernon island on the south, and Taouhwa shan on the north. The east extreme of the former island is rugged, with large boulders of granite. There is a cove at this end of the island, which runs in three quarters of a mile, and would afford good shelter for boats.

Vernon island (Heäke shan 蝦岐山 or Crab-cape island) is five miles long. On the northwest side of the island, there is a long bay, where vessels may anchor in 4 to 5 fathoms, and procure water from the island of Taouhwa shan opposite. There are several cascades, and the water might be obtained without removing the casks from the boats. The passage here is $1\frac{1}{2}$ mile wide. Six miles from the entrance it narrows to $3\frac{1}{2}$ cables. Two small islands and some rocks on the Taouhwa shan side, and an island with a sharp peak (half a cable off the northern extreme of which is a rock,) form the boundaries.

Taou-hwa shan 桃花山 shore is bold and precipitous. The peak rises to the height of 1680 feet. Near the western end the island becomes very low, rising however again towards the extreme, where it is surmounted by a peculiar crag, which will be recognized nearly throughout all the southeastern part of the Archipelago.

The depth of water in the channel is 60 fathoms in some parts,

Sarah Galley passage. Oswamong I. Two rocky patches. Channel northward.

and the tide is very strong. It will, however, be found a convenient passage out to sea from Chusan during the northeast monsoon: the distance from Elephant island to the open sea, by this passage, being only 17 miles. It should not however be attempted in light winds, as vessels are liable to be becalmed, and to experience flaws under the high land of Taouhwa shan. The passage is 8 miles through, and from its northeast entrance to Round-about island the distance is 5 miles, N. 41° W.

Sarah Galley Passage. This passage is by no means so eligible as those already mentioned. The entrance is situated N. 12° E., 21 miles from the Kewshan group, near which will be seen the Jansen rock, a steep cliff islet with a reef $1\frac{1}{2}$ cable from the east extreme. Another rock, uncovered at half tide, bears from the Jansen S. 25° W., 1.3 mile. From it the highest part of Oswamong island bears N. 75° W., 1.8 mile, and the highest part of Taouhwa shan S. 5° E. The coast line of Oswamong is high cliffs, and off the southeastern extreme is a ledge of rocks.

Oswamong is called by the Chinese 烏沙 Woosha, or Usha, that is, 'Black sand.'

Two patches of rock. South of the island of Oswamong, 5 cables, are two patches of rock, lying N. W. $\frac{1}{2}$ W., and S. E. $\frac{1}{2}$ E. from each other, and not quite 2 cables apart. From the southeastern patch, the Jansen bears N. 52° E., and a flat peaked island between them and Taouhwa shan S. 16° E. Very high tides may cover them, but they are generally above water. The distance between them and some rocks extending from the north extreme of the flat peaked island is 7 cables. There is no bottom with 31 fathoms in the vicinity of the rocks, after passing which the course is west $2\frac{1}{4}$ miles, leaving two small islets with a reef between them to the southward. The channel is here 7 cables broad, between Tangfow on the south, and an island (with a hut on its summit, and a reef of rocks off the southeast extreme,) to the northward. From hence the course is S. 50° W., 1.7 mile. The channel is now $1\frac{1}{4}$ mile broad, between a small island with two hummocks (nearly divided at the centre,) and an island to the westward with a building on its summit something similar to a Druidical temple; between this island and Chookeä tseën, the mud dries nearly all the way, leaving only a small passage for boats. In standing over to the Chookeä tseën shore, vessels should not bring a small flat islet (with two rocks off its southeast extreme,) to bear to the southward of S. 15° W., as the depth of water decreases very suddenly. Off the eastern end of the island, with the Druidical temple on it, the small flat island (abovementioned), which is at the west extreme of the Sarah Galley passage, bears S. 21° W., 2.6 miles. Before reaching the flat island, the southeast extreme of Chusan will be seen. There is a building constructed of slabs of stone (similar to the one already mentioned on the island,) on the hills over the point, and a small tower or a fort near the water's edge.

*Chookeä tseën.**Tower-hill passage.**Anchorage near Bell I.*

From the flat island to Round-about island, the distance is 7.7 miles, W. 7° S.

Between Chookeä tseën and Oswamong, there is another navigable passage, two cables wide, which may be used with a fair wind, by which means the reefs in the entrance of the Sarah Galley passage will be avoided. Off the north end of Oswamong is a small island. The passage between Tangfow and Taouhwa shan is very narrow in one part.

Chookeä tseën (朱家尖 or Choo's Peak,) is 6 miles from east to west. The west coast has many deep indentations, some of which are inclosed from the sea by stone walls. On the eastern extreme are 4 remarkably high peaks; and near the centre of the island is a smooth cone-topped one, which is 1164 feet above the level of the sea, and forms one of the most remarkable features in this part of the Archipelago. On the west face of the island are several sandy bays, and the hills in this neighborhood are covered with large isolated masses of granite. Off its northeast extreme is a group, consisting of five islands; and to the eastward are three small islets, the outermost of which is $8\frac{3}{4}$ miles distant. A half-tide rock bears N. 14° E., 7 miles from the cone-topped hill. From the summit of Pooto it bears S. 78° E., and from the south-easternmost island of the northeast group, S. 49° W.

Tinghae 定海. The harbor of Tinghae is difficult of ingress and egress, owing to the strong tides and narrow passages. The best entrance is that round Tower hill, and between Bell and Tea islands, in which no hidden danger has been found.

Tower-hill passage. The course for vessels intending to enter by this passage, will be west by north, 8 miles from Ketow point. The depth of water in this part of the passage varies from 35 to 110 fathoms, and no anchoring ground is to be found unless close to the shore. Vessels, therefore, not having sufficient tide to carry them round Tower hill, or wind enough to stem the current, should remain at anchor to the eastward of Round-about island, or in the neighborhood of Singlo shan. If possible the time of starting should be so arranged as to obtain the first of the ebb after rounding Tower hill. After having rounded Tower hill, Tea island may be steered for. The depth of water between Tower hill and Bell island varies from 30 to 40 fathoms. On the northwest side of Tower hill, a bank extends a cable's length from the shore, with 3 to 4 fathoms on it. Spring tides set at the rate of 3 to $3\frac{1}{2}$ knots; and vessels, in light winds, should be careful that they are not set into the archipelago between Tea and Elephant islands, where the channels are narrow, and the water deep with foul ground.

Anchorage between Bell and Tea islands. Between Bell and Tea islands good anchorage will be found in 10 to 12 fathoms. Ships intending to remain here should not open the channel between Bell island and Chusan, as the tides are stronger and the ground loose.

Anchorage near Chusan. Middle Ground. South passage. Elephant I. North Ro.

Proceeding from thence to the inner harbor of Tinghae, another anchorage will be found on the Chusan shore. A sunken rock, $2\frac{1}{2}$ fathoms upon it at low water, lies due south of a small hillock in the valley, and $2\frac{1}{4}$ cables from the shore.

Anchorage on Chusan shore. Opposite to a canal entrance is a mud bank, with 3 fathoms in the shoalest part, and deep water between it and the shore. The tides are irregular at this anchorage, but it is convenient for watering. In light winds, vessels should avoid the strength of the ebb, when passing through the channel between Tea and Guard-house island, which otherwise is liable to set them through the Straight or Southern passage. A ledge of rocks extends off the northeast extreme of Tea island, 1 cable. It is steep to, and between the islands 40 fathoms will be found.

Middle Ground. After passing Guard-house island, it is necessary to steer for Macclesfield island, in order to avoid the Middle Ground, which has two feet in its shoalest part. The 3 fathoms line extends within $2\frac{3}{4}$ cables of the latter island, and Tower hill on with the slope upon the south rise of Tea island will keep you in 4 fathoms, or not to open the fort on Trumball island, with the north end of Macclesfield.

The Middle Ground is situated at the western extreme of the harbor. On all but the western edge, the water shoals suddenly. The passage between it and Chusan is $1\frac{1}{2}$ cable wide, with 12 to 14 fathoms. The channel is 1 cable broad between Guard-house island and it.

South passage. The South, or Straight, passage lies between Deer and Elephant islands. Two sunken rocks lie near the centre of the channel, which narrow it to $1\frac{3}{4}$ cable. It should never be attempted without a commanding breeze. The tides in the vicinity of the sunken rocks flow from three channels, forming eddies which render a ship, in light winds, totally unmanageable. Intending to enter this passage, the course from Round-about island is northwest by north, $4\frac{1}{2}$ miles.

Elephant island is remarkable for a curious crag near the summit, and cannot be mistaken. The tides or wind not suiting to go into the harbor, anchorage will be found abreast of it in 16 to 18 fathoms water; the bottom is gravel, and not good holding-ground. Beyond Round island, which is a small islet lying to the northeast of Elephant island, the water deepens from 28 to 34 fathoms, until you arrive at the Southern rock, which has $1\frac{3}{4}$ fathom on it at low water. The marks for it are the Cap rock on with the saddle of Kintang, N. 75° W., and the joss-house on the hill near the suburbs showing between Trumball and Sarah Galley islands; it lies S. 63° E., 2 cables from the Black rock, and N. 75° E., $1\frac{3}{4}$ cable from the ledge extending off the island to the southward of Tea island.

The North Rock lies $1\frac{3}{4}$ cable due north of it. The marks for which are a bushy tree on the eastern slope of Sarah Galley island, in line with the square beacon on the east hill, and the Black rock's

Inner Har. Deer I. passage. Anchorage between Sarah Galley & Trumball I.

north extreme on with the south part of the Cap; it bears from the former N. 63° E., $2\frac{1}{2}$ cables; it has 9 feet at low water. This patch is about 30 feet by 20; the water deepens suddenly on all sides of it.

To avoid these dangers, the best direction is to keep the western shore on board, taking care to avoid the ledge of rocks which extends three quarters of a cable from the island south of the Cap and Black rock; the latter is steep to. At this part of the channel the bottom is rocky, and the depth very irregular. Having passed Sarah Galley island, steer for Macclesfield, which may be rounded close, to avoid the Middle Ground, the marks for which have been already given, in the direction of Tower-hill passage.

Inner harbor. The Inner harbor of Tinghae is formed by the coast of Chusan on the north, Trumball and Macclesfield islands on the south, Grave island and the Beacon rock on the east, Guard-house and Tea islands to the west. It is $3\frac{1}{2}$ cables wide and 6 cables long, the depth of water varies from 4 to 8 fathoms; at the eastern extreme is a patch of rocks with two fathoms, lying S. 85° W. one cable from the Beacon rock, which may be avoided by keeping the Chusan shore on board until Sarah Galley is open of Trumball.

Deer island passage. The Inner harbor also may be entered from the eastward by passing between Deer and Sarah Galley islands, which are $1\frac{1}{2}$ cable apart. The Beacon rock, to the northeast of Sarah Galley, may be passed close on either side. The Chusan shore may then be steered for, keeping 1 cable to the eastward of Grave island, and when the harbor Beacon rock opens with Grave island it may be steered for: pass between it and Chusan, and keep the Chusan shore on board until Sarah Galley island is shut in with Trumball. This passage is superior to the South or Straight passage, as although in some parts it is only $1\frac{1}{2}$ to $1\frac{1}{4}$ cable wide, the limits are always marked, except off the northeast end of Deer island, from whence a spit extends 1 cable northerly. It is also the only passage into the harbor, in which the flood tide is in your favor all the way.

Anchorage between Trumball and Sarah Galley. There is good anchoring ground between Sarah Galley and Trumball islands, in 8 to 10 fathoms. A spit extends from the southeast extreme of the latter, the 3 fathoms line being 3 cables from the shore. By keeping the south end of Macclesfield open of the summit of Tea island, it will be avoided.

Suburbs. The suburbs, called Taoutow, 衛頭 contain many houses, forming a long street, running parallel to the beach. To the east, and close to the water's edge, is a small hill, with a temple or joss-house on it (the mark for the South rock), 122 feet high.

The level ground intersected by canals extends $1\frac{1}{4}$ mile to the eastward, where it is terminated by a ridge of hills 642 feet high, extending down to the beach, upon which are 3 beacons, two round and one square; the latter is 595 feet high, and also one of the marks for the North rock. Westerly from the suburbs, the level ground extends

<i>Tides.</i>	<i>Variation of compass.</i>	<i>Suburbs and city of Tinghae.</i>	<i>Chusan I.</i>
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1.1 mile, a ridge of hills 450 feet high runs down to the coast, forming two points. There are also three beacons on this ridge, the central one is 323.7 feet above mean tide level.

The latitude of the eastern of these points (the one opposite Guard-house island) was ascertained to be $30^{\circ} 0'.20$ N., and its longitude $122^{\circ} 5'.18$ E.

The variation of the compass in 1840, was $2^{\circ} 33'$ E., and high water, on fall and change days, 1 hour before the moon's transit.

Rise and fall of the tide, 12 feet and 6 inches. Scarcely any change takes place in the depth of the water three quarters of an hour previous and subsequent to high water. At low water, the change in the depth occurred more rapidly. Ordinary tides rise and fall from 5 to 7 feet.

In all the channels, generally speaking, the change in the direction of the stream does not alter until 1h. 40m. after the change has taken place in the depth. In the Inner harbor, and along the coast of Chusan, the flood comes from the eastward; at the outer anchorage, off the Elephant, from the southeast; between Bell and Tea islands, ships flood-ride tend to the northward. The strength of the tide varies from 2 to $3\frac{3}{4}$ knots. Strong breezes from the northward materially affect the rise and fall, the range in two consecutive days being sometimes $2\frac{1}{2}$ feet.

Chusan. The island Chusan (or Chowshan 舟山 so called from its supposed resemblance to a *boat*) is 51.5 miles in circumference, its extreme length being 20.8 miles, which is in a northwest and southeast direction. The greatest breadth in any part is 10.5 miles. From the beach at Tinghae to the northern shore, the distance is 7 miles. Towards the eastern end of the island it becomes narrower, never however being under 6.1 miles.

The city of Tinghae is a walled town, 1.8 miles in circumference, situated 5 cables from the beach. There are four entrances, situated at each of the cardinal points, which are through double arched gateways at right angles to one another. The span of the outer one is 7 feet and 6 inches, and 9 feet high. The city wall is 14 feet and 9 inches high, surmounted by a parapet 4 feet and 6 inches. The width of the wall is 13 feet, and the parapet 2 feet. The southern face runs east and west. The western face north and south. The eastern face north 350 yards, and then northwest. The northern face is irregular. On the northwest side the city is overlooked by a hill, part of which is inclosed by the wall. A moat, 33 feet wide and 3 feet deep, nearly encircles the city, and enters it near the south gate. A canal and paved footpath communicate with the suburbs, but the principal means of communication with the sea is by a canal further to the east.

There are three other commercial ports in the island, viz., Shir-keä mun (Singkamong), Chinkeäng (Singkong), and Shaou.

Shinkeä mun, 沈家門 or *Singkamong*. This is situated at the

Sinkamong Harbor. Lookeä I. Channel to Tinghae. Aou shan channel.

southeast extreme of the island. The town is situated at the water's edge, and is a miserable assemblage of huts. The principal occupation of the inhabitants is fishing. About 35 junks, of 100 tons burden, and carrying from 30 to 35 men, with 250 smaller boats, each containing 5 men, are employed for this purpose. The harbor is formed by the island of Lookeä (which is divided into six islands at high water), and is $1\frac{1}{2}$ cable wide, with 4 to 5 fathoms abreast the town. The southwest entrance lies between Lookeä and Takan, and has not more than $2\frac{1}{2}$ fathoms at low water. A reef and mud spit extend easterly from Takan one cable, and the mud extends westerly from Lookeä $4\frac{1}{2}$ cables.

H. M. ship *Pylades* lay between Takan (大竿) and Chusan in 5 fathoms, the width here being $2\frac{1}{4}$ cables. The high land (600 feet) on the Chusan shore, occasioned the squalls to be sometimes very violent. H. M. ship *Conway* lay to the westward of Lookeä, with the small flat island (with two rocks off it), at the entrance to the Sarah Galley passage, bearing west 0.7 mile in 5 fathoms. The distance from Shinkeä mun to Tinghae is $11\frac{1}{2}$ miles. The channel along the Chusan shore has deep water. It is not, however, advisable for ships, owing to a number of small islands 3 miles to the east of the suburbs, which render the passage narrow and crooked.

Sheih-luh mun 十六門, or Sixteen passages, is the name given to this narrow and crooked passage by the Chinese.

Several islands with extensive mud banks confine the channel beyond this to half a cable; occasionally it is one cable wide. Vessels, therefore, bound from Tinghae to Shinkeä mun must use one of the passages already described, or must pass to the northward of Deer island and the island east of it: this passage is not above $1\frac{1}{2}$ cable wide. It has deep water, except at the southeast entrance, where there are only 3 fathoms.

Between Takan and Aou shan there is shoal water, to avoid which vessels should not stand so far to the northward as to bring the reef off the southern end of Aou shan in line with the crag on Elephant island. The channel between the east end of Chusan and Pooto has only $1\frac{1}{2}$ fathom at low water, and off the southeast end of Chusan it is only 2 cables wide, owing to a reef with a stone pillar on it, near the centre of the passage.

After rounding the flat island with two rocks, this Beacon will be seen bearing N. 35° E. A course should be steered to pass between it and Chusan. Shoal water extends $3\frac{1}{2}$ cables from Lookeä, and 6 cables from the island with the Druid's temple on the summit. To avoid which, do not stand further to the eastward, when a cliff islet off the east extreme of Chusan is in line with a building on the summit of the flat peninsula at the northeast extreme of Chusan. The Beacon rock in line with the cliff islet is a good mid-channel mark. After passing between the Beacon rock and Chusan, keep the cliff islet on with the building upon the peninsula, which will keep you in

Pooto I. Passage to Green I. Chinkeäng harbor. Passage to Tinghae.

the deepest water. The flat is extensive, the $2\frac{1}{2}$ fathoms line extending 1.7 mile. On it were several hard casts of the lead. Vessels therefore, should cross the flat under easy sail.

Pooto 普陀. The island of Pooto is 3.4 miles from the south-east point of Chusan, and 1.6 mile from the east point. The channel is termed by the Chinese 蓮花洋 *Leênhwa yang*, or sea of Water-lilies. After passing the flat noticed above, the water deepens suddenly to 6, and then to 12 fathoms. There is also a good passage between Pooto and Tsing shan 青山 or Green island, which is 7 cables wide. The flat extends within 5 cables of Pooto, which must therefore be kept on board. The island is $3\frac{1}{2}$ miles long. In one part it is only six tenths of a mile broad. A narrow projecting point extends from the west side, forming a deep sandy bay, with three fathoms in it. A stream runs into the bay, which might be used during the northeasterly monsoon, by vessels in want of water. There are two reefs in the bay, but they are always above water. This island and the Chookeä tseën group belong to the priests of Budha. The temples on Pooto are very numerous, the largest of which is situated on the western side of the island, and a broad flagged road leads to it from the south side.

Singkong or 嶼港 Chinkeäng. Chinkeäng harbor is situated at the western extreme of Chusan, and is distant $7\frac{1}{2}$ miles from Tinghae. From the Inner harbor to the southwestern point of the island, the distance is 4 miles. The passage between Bell island and Chusan is not recommended, owing to the strong tides which exist in it. Near the centre is a half-tide rock, with a beacon on it; and to the southwest of it, two cables, a rocky patch with only $1\frac{3}{4}$ fathom on it. Vessels bound to Chinkeäng had therefore better use the passage between Bell island and Tower hill. Should, however, the other be used, that part of the channel between the Beacon and the Chusan shore will be found the best.

Between Kiddisol and Chusan there is no danger, the distance being rather less than a cable and a half.

From the southwest point of Chusan, the coast-line is mud (with the exception of a small islet) to the point of Chinkeäng harbor. Anchorage will be found along this shore in from 10 to 12 fathoms. A small islet (the Steward) lies midway between Chusan and Kintang. There is 45 fathoms' water in its vicinity: 2 cables to the eastward there is a rocky patch, on which 9 fathoms were found.

Chinkeäng harbor is formed by three islands, (Wacteaou 外, 鈞 Chungteaou 中, 鈞, and Leteaou 裡, 鈞, i. e. Outer-hook, Middle-hook, and Inner-hook,) and Chusan; a reef of rocks lies off the southwest point of the first island, and the mud extends from the island nearly to the reef. Between Wacteaou and Chusan the dic-

<i>Katsu I.</i>	<i>Blackwall I.</i>	<i>Kintang I.</i>	<i>The Steward.</i>	<i>And channels.</i>
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tance is 6 cables, with 7 to 8 fathoms. The mud extends half a cable from the island; on the Chusan shore is a circular fort, which can only be approached along the embankments.

Opposite the island of Chungteaou, the channel is less than a cable wide, with 7 fathoms. The passage increases but little in width, until you have passed the island of Leteaou, opposite to which is the landing-place, and the entrance of a stream, which is navigable at high water up to the town, distant 6 cables. Near the beach are a few houses.

Upon the islands forming the harbor, and also on the point near the entrance, are extensive quarries of stone. The passage through is 1.7 mile long, and being both narrow and crooked can only be available for steamers and small vessels.

Katsu 蘇茨 or *Koo-tsze*. To the northward of Leteaou, is a flat island, Kootsze. A reef of rocks extends from it towards the island of Chusan, narrowing the passage to one cable, in which there is no bottom with 30 fathoms.

Channel between Blackwall and Chusan. Between Kootsze and Blackwall or Tsatsu (册子 Tsih tsze) the distance is three cables. The eastern side of Blackwall has several deep bays and indentations; a sunken rock lies off the northeast point, distant $1\frac{1}{2}$ cable, and between it and Chusan, the water varies from 12 to 19 fathoms.

Kintang 金塘. From the Steward, or Pwanyang tseaou (half-way rock), to Kintang, the distance is two miles; near the southeast extreme of the latter is a remarkable saddle-hill, which with the Cap rock forms one of the marks for the southern sunken rock, in the South or Straight passage. There is a peninsula (connected by mud, which is overflowed at high water) at the southeast point, from which a ledge of rocks extends, the southwestern part of which is always above water. Nearly opposite to Chinkeäng, there is another sharp peak on Kintang, which is 1519 feet above the level of the sea.

Channel between Kintang and Blackwall. Vessels bound from Chinkeäng to Seaou Sha-aou, or to sea by the northwest passage, must bear in mind that there is no anchorage after leaving Chinkeäng, until to the northward of Blackwall, the distance being 6 miles. The channel between Kintang and Blackwall is half a mile wide. A small islet lies off the southwest extreme of the latter. Between the two there is deep water, and from the summit of the islet, Chin-hae (at the entrance of the river leading to Ningpo) may be seen over Kintang, which, abreast of this part of the channel, is very low. After passing the islet, there is a long bay on Blackwall island, from the northern point of which a reef extends $1\frac{1}{2}$ cable. Off the north extreme of Kintang there is a group of 5 islands.

Broken island, or Mamuh shan 馬目山. The northern rock off Broken island bears from the northwest extreme of Blackwall

Broken I. & H. Fisher's I. Passages between Sheppey, Chusan, & Blackheath.

N. 15° E., $6\frac{1}{2}$ miles. Between it and Broken island there is a good channel. The latter is connected with Chusan at low water; it is about 700 feet high. The ridge of hills at the northwest extreme of Chusan rises to the height of 761 feet, and on it are three beacons. The entrance to the harbor of Seaou Sha-aou is between Broken and Fisher's island (Changpih shan 長白山), and is 6 cables wide. Broken island is steep to, except on the southeast side, where it joins Chusan. A shoal extends 5 cables off the west side of Fisher's island.

The harbor is formed by Fisher's island and Chusan; it is 2 miles long and 1.7 mile broad, with a depth of water from 5 to 9 fathoms. This harbor is well sheltered from all winds, and easy of ingress and egress. The coast of Chusan is lined with a mud bank, which renders landing (only at one spot, which is at the eastern extreme of the harbor) difficult except at high water. Near the landing-place is a small village; the principal town is situated some distance up the valley from the landing-place. The south shore of Fisher's island is also an extensive mud bank, a considerable portion of which has been inclosed from the sea. Off the southeast extreme of the island, the three fathoms line extends five cables. The depth decreases gradually, so that the lead will give warning. The eastern entrance to Seaou Sha-aou harbor is 8 cables wide. A small islet and a rock lie off the north extreme. They may be rounded close, passing between the islets mentioned above and the islets to the eastward.

Passage between Sheppey and Chusan. Vessels intending to go to the eastward from Seaou Sha-aou may pass either between Sheppey (Lan and Lew shan) and Chusan, or to the northward of Sheppey. The latter is the more eligible. The former is 2 cables wide in the narrowest part. The Houbland islands lie between Sheppey and Fisher's island. Vessels should pass between them and two small islets, which lie off the southwest side, between which and Chusan is the narrowest part of the passage. Having passed this islet, vessels may either stand along Sheppey, or steer a course for the open sea.

Passage between Sheppey and Blackheath. To pass to the northward of Sheppey, a N. 56° E. course must be steered for a long barren island, with a round peak upon it, the distance between which and Sheppey is 1.6 mile. The mud runs off the latter half a mile. The barren island is steep to, on the southeast shore. In the channel, between Kwan shan and Sheppey, are several islets; and in standing over to the Sheppey side of the channel, the mud may be avoided by keeping the north end of the largest of these islands open of the northern extreme of Sheppey.

Having passed the barren island, a course must be steered to pass close to Kwan shan, which lies west from the barren island $1\frac{1}{4}$ mile, in order to avoid a reef which is covered at high water. It is distant from Kwan shan $2\frac{1}{4}$ cables. From it the barren hill bears N. 85° W., and the highest part of Sheppey S. 26° W.

Nine Is.	Sheppey I.	And its anchorages.	Tae shan.
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Having passed the reef, the large island, mentioned as the mark for avoiding the mud bank extending westerly from Sheppey, bounds the passage to the southward. A reef extends a short distance from its northern extreme.

Nine islands. Besides Kwan shan, there are Nine islands lying off the southeast end of Tae shan. A reef of rocks lies off the southern point of the one east of Kwan shan. The channel then runs between these Nine islands to the north, and the large passage island on the south. A due west course will carry you along Changtoo and the northwest group to the open sea.

Vessels wishing to anchor under Sheppey, which will be found a secure anchorage in the northeasterly monsoon, may haul to the southward, after passing the first island to the eastward of the large Passage island, and run between them and a cluster of rocks to the eastward. The east extreme of Sheppey is a low cliff, which may be passed within a cable; good anchorage will then be found in five fathoms, the water shoaling gradually towards the shore.

Sheppey. The island of Sheppey is 7.5 miles long, and 5.6 broad. On the east side are several deep sandy bays. A considerable portion of the east extreme is separated from the island by a narrow channel at high water. The island appears formerly to have been two (蘭山 *Lan shan* and 秀山 *Sew shan*) the land being very low, and the coast-line protected from the sea by walls near the northern extreme.

H. M. S. Pylades anchored here in the month of February, in $5\frac{1}{2}$ fathoms, six tenths of a mile from the west point of Sheppey, bearing N. 8° W.; the island south of Sheppey bearing S. 54° W.; and the highest peak of Chusan, S. 7° E. To the eastward of Sheppey are two cliff islets, the nearest is 1.8 mile distant, and the further $4\frac{1}{2}$ miles. South from the western, 2 cables, is a ledge of rocks, which is occasionally covered; and 0.6 of mile W.N.W. from the eastern, is another small islet. The mud bank from Sheppey gradually deepens to the eastward, the depth of water, when the island of Pooto bears due south, being $8\frac{1}{2}$ fathoms.

Tae shan 岱山. To the northeast of Fisher's island, $5\frac{1}{2}$ miles, is the island of Tae shan, which is very populous. The centre of the island is an extensive flat, with many villages; near to its eastern extreme, the hills also separate, leaving a level plain across the island. Midway between Fisher's island and it are two small islets; and between Barren island and it are three others, off the south end of the westernmost of which is a sunken rock. Rocks also extend off the southwest and north points of the central one of the three. A mud bank extends from the northwest point of Barren island nearly to the first islet of the three, which lie to the N. W. of it. Between them and Tae shan the bottom is sandy with irregular soundings.

Kwan shan 官山. The passage between Kwan shan and Tae

<i>Kwan shan.</i>	<i>Changtoo I.</i>	<i>Eastern group.</i>	<i>Islands east of Chusan.</i>
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shan is 3 cables wide; on the Tae shan shore are several small islets; the channel is deep. H. M. ship *Pylades* anchored in a small cove to the north of Kwan shan on the island of Tae shan, and rode out a heavy gale of wind. The cove, however, is too small to be recommended, and the deep water in its vicinity is also disadvantageous.

To the westward of Tae shan, the islands extend about 15 miles, and from the summit, the termination of the group northerly could not be defined.

Changtoo 長塗. To the eastward of Tae shan, and separated by a channel 1.5 mile, is another large island, called Changtoo by the Chinese, and is probably the Blackheath of Thornton's chart. The southern face of this island has many deep indentations, and may be composed of several islands, for the time allotted for the service did not admit of a close investigation.

The breadth of the channel, between Changtoo and the two islands to the eastward of Sheppey, is 2.3 miles. The group of islands continues to the eastward of Changtoo, and a little to the southward of the same parallel, for 25 miles.

Eastern Group. The easternmost island of this group is in latitude $30^{\circ} 7.45$ N., and longitude $122^{\circ} 46.30$ E. From the anchorage under Sheppey, it bears E. 5° S., 27 miles; from the summit of Pooto, E. 20° N., 21 miles; from the outer islet east of Chookeä tseën, N. 29° E., $18\frac{1}{4}$ miles. It is five miles in circumference, and about 500 feet high. There is a small village on its north-western side. The shores are precipitous cliffs. The intervening islands between this and Changtoo were not examined, their outline therefore has only been inserted in the chart. Two small islets lie N. 74° E. two miles from the eastern island.

Coast-line of Chusan. The coast-line of Chusan, after passing between it and Sheppey, trends to the northeast. At the distance of three miles, there is a small island with a narrow passage between it and the shore, and a deep bay to the westward, in which the mud dries out a considerable distance, rendering it difficult to land, except at the extreme points.

Three miles and a half further to the southeast, there is a larger island with a remarkable *fall* in the hills near its centre; a small islet lies half a mile west from its extreme.

To the eastward are three islands at the distance of, a half, one and a half, and three and a quarter, miles. The nearest is the largest of the three, and has a patch of rocks 2 cables from it to the northeast. Northeast also from the centre of the three is another reef, 4 cables from the island. The outer island is a narrow cliff with a rock off its northeast end.

To the northward and northeast of Pooto, are three islets and three rocks, which are steep to, except to the westward of the southern and largest of the three, where there is a reef. To the northeast of these islands, and $3\frac{1}{2}$ miles from the summit of Pooto, is a small conical islet E. 8° S.; 2 miles from it is a group of 4 sharp pinnacled

Best course for north side of Chusan;— To Sheppey or Sha-aou Harbor.

rocks, with several reefs among them. The reef already described (when treating of the island of Chookeä tseën) lies S. 43° E., $6\frac{1}{2}$ miles from these rocks, and is the last danger in the passage. The northeast extreme of Chusan is high, rising probably 1400 feet, the hills approaching near the coast-line. A flat peninsula, with a building composed of slabs of stone, forms the extremity of the island.

Ships bound to the north side of Chusan ought to make the land in about latitude 30° , when the easternmost island of the northern group will be seen to the northward, and the high land of Chookeä tseën to the westward. On closing the land, three small islets to the eastward of Chookeä tseën will be made out, and also the island of Pooto, which may be known by a small lookout-house on its summit. Intending to communicate with Chinkeä mun (Sinkamong), the most eligible anchorage will be found to the southward of Pooto, for which purpose a course may be steered to pass between that island and Lookeä, taking care to avoid a half-tide rock which lies E. 12° S., 9 miles from the highest part of Pooto. The best anchorage will be found opposite two sandy bays, near the west extreme. It is recommended not to open the passage between Chusan and Pooto, as by standing too far to the westward, vessels may get on the flat between Pooto and Chinkeä mun. Good water may be obtained from a well in the sandy bay near the temple.

If bound to Sheppey or Seaou Sha-aou, a group of sharp pinnacle rocks must be kept to the southward, when a remarkable island near Chusan, with a sudden fall in the land near the centre, will be seen to the westward. There are three islands with rocks off them to the eastward of it; when abreast the easternmost of these—one course may be steered so as to pass between Sheppey and Kwan shan, in which case a vessel should get to the northward of a small cliff island, one quarter of the way between Changtoo and Chusan, and keep mid-channel between it and Changtoo; $3\frac{1}{2}$ miles to the westward of the first cliff island, there is a second, which must also be kept to the southward, and you will then be abreast several small crooked islets, which lie off the southeast extreme of Tae shan; Kwan shan lies $2\frac{1}{2}$ miles to the W. N. W. of the second cliff island, is high with a flat summit; keep it close on board to avoid the sunken rock near its south extreme, bearing from the highest part of Sheppey, N. 26° E.; you may then steer a west course to pass close to Barren island, from whence a S. 56° W. course, 5 miles, will carry you to Seaou Sha-aou harbor:—or, instead of passing between the islands of Changtoo and Kwan shan, you may pass between Sheppey and Chusan, in which case keep the Chusan shore on board, passing between it and a small islet (which lies S. 23° E. from the south end of Sheppey). The course then lies between an islet on the Chusan shore and the south islet off Sheppey, from thence steer so as to pass to the northward of three small islets, and a reef which lies two miles to the westward, from whence a west course will carry you past a rocky point, and into Seaou Sha-aou, i. e. Small Sand-harbor.

Barren Is. Leuconna I. Monte Video. Fisherman's chain. Tchinsanna I.

3.—*For the N. E. Part of the Chusan Archipelago.*

[This survey was made by lieuts. Milbank and Nolloth, of H. M. S. Childers, G. G. Wellesley commander, in 1843. It is taken from the Chinese Repository, vol. XII. pages 422-424.]

VESSELS bound for Shanghai, and not intending to call at Chusan or Ningpo, should pass to the eastward of the Chusan Archipelago, and make the Barren islands, which are in lat. $30^{\circ} 43' N.$, and long. $123^{\circ} 7' E.$ From hence the Amherst rocks, at the entrance of the Yangtze' kiang, bear $N. 58^{\circ} W.$, $47\frac{1}{2}$ miles.

The Barren rocks are three in number, about 50 feet high, lying nearly east and west, and are three quarters of a mile in extent. To the southeastward of the eastern rock, is a rock awash, distant from it 2 cables.

$S. 31^{\circ} W.$, $20\frac{1}{2}$ miles from the Barren rocks, is Leuconna, which appears from the southward as three abrupt and round-topped hummocks.

$S. 24^{\circ} W.$, 19.8 miles from Leuconna, is Monte Video, or Wong-shing shan, in lat. $30^{\circ} 7.8' N.$, and long. $122^{\circ} 46.2' E.$; it has a bold and precipitous appearance, and is nearly square. It has a remarkable white cliff, which shows very distinctly when the island bears $N.W.$ by $N.$

$N. 74^{\circ} E.$, 5 miles from its summit, are seven rocks called the Four Sisters; and $N. 78^{\circ} E.$, 9 miles, are two rocks called the Brothers. There is a safe passage between these rocks and Monte Video, and also between the rocks themselves, the depth varying from 30 to 40 fathoms in the vicinity of these islands.

Westerly from Monte Video, is a chain of islands extending to Tae shan, called Fisherman's chain. Vessels passing to the eastward of these islands, and bound to Chusan or Ningpo, should make Monte Video, then pass to the northward of Fisherman's chain, and between it and the large island of Tchinsanna.

The Beehive rock in this channel bears from Monte Video, $N. 17^{\circ} W.$, $14\frac{1}{2}$ miles, and from Leuconna, $S. 69^{\circ} W.$, $12\frac{1}{2}$ miles; it is about 35 feet high, with a rock awash 3 cables to the eastward of it; otherwise the depth of water around it is from 14 to 17 fathoms.

$W.$ by $N.$ from the Beehive is the large island of Tchinsanna, having several smaller islands on its eastern and northern faces. The channel between it and Taeshan is 5 miles wide, and safe. Tchinsanna is $8\frac{1}{2}$ miles long from east to west, having good anchorages in both monsoons. [Having passed Tchinsanna, vessels will proceed according to the directions given for the Chusan Archipelago, (No. 2.) or by those for the passage between Square island and Shanghai (No. 6.)].

Northward of Tchinsanna is Peenchowa. It has several islands around it, and between it and Tchinsanna; it is next to Tchinsanna.

Peenhowa I. Childers Rock. Chintsien shan. Leeleu sa I. Saddle Is.

sanna in size, being 6 miles from east to west, and will also afford shelter in either monsoon. Off its northeast point, 5 cables distant, is a rock awash.

The islands of Chintsien shan and Leeleu sa lie to the eastward of Peenhowa, bearing from the Barren islands S. 77° W., 17 miles, and from Leuconna N. 21° W., 18 miles. Between Leuconna and Chintsien shan, is the Childers rock, which does not always show. When on it, the peak of Chintsien shan bears N. 9° W., the Barren islands N. 70° E., and Leuconna S. 15° E.; the lead gives no warning of it, the depth being 24 fathoms close to.

The two islands of Chintsien shan and Leeleu sa afford very good shelter in both monsoons. The former from the southward appears of an equal height, the latter more rugged, the highest part being at its northeast end. There is fresh water at the eastern end of Chintsien shan. In the bay on the east side of Leeleu sa, is a rock which only shows at low water spring tides. It lies nearly in the centre of the bay. When on it, the highest part of the rock close to the eastern point of the bay is in line with a conical hill over the western point of Chintsien shan. Should vessels be caught at anchor under these islands with a southeasterly wind, they might run through between them, taking care to keep as *close as possible* to the shore of Leeleu sa, as there is a patch of three fathoms in the centre of the channel, and three wash rocks further to the northward.

The bay on the south side of Leeleu sa is smaller than the other, with deep water at the entrance of it; the best anchorage in it is a little to the eastward of a rocky point which juts out in the centre of the bay.

Eight miles to the northwest of Chintsien shan is Saddle island, and midway between them is False Saddle, forming the northern boundary of the Chusan Archipelago. The two largest of the northern group are saddle shaped, about 800 feet high, and of similar appearance when seen from the eastward. The northernmost island is in lat. 30° 50' N., and long. 122° 41' E.

To the southwest of North Saddle are the long and narrow islands of Tunghuh hwa and Seaoluh hwa, which are scarcely detached. These islands afford anchorage, but not so good shelter as under Tchinsanna, where vessels ought to stop, should night or thick weather render doubtful the making of the Amherst rocks, which are distant from the northernmost Saddle island, N. 42° W., 24 miles. Having made and anchored close to the Amherst rocks, follow the directions given for entering the Yángtsh' kiáng (No. 4.). The tides throughout this group are regular, the flood sets northwest, and the ebb southeast.

Rock near the Deadman. Anchorages. Passage north from Ningpo.

4.—*For the Entrance to the Yangtsz' kiang.*

[This survey was made under the direction of captain C. R. Drinkwater Bethune of H. M. S. Conway, when stationed off the mouth of the river in 1810. This survey, together with No. 6, contain directions for sailing up to Shanghai. It was first published in the Chinese Repository, vol. X., pages 383-387, from whence it is extracted.]

ARRIVING in the bay of Ningpo from the eastward, care must be taken to avoid a tide rock, which lies a short half mile to the northward of the Deadman. The bearings from the rock, by compass, are as follows: left extreme of Square island, N. 68° W., or W. N. W.; left extreme of the islet north of Kintang, N. 5° E., or N. $\frac{1}{2}$ E.; right extreme of Dumb island, S. 52° W. or S. W. $\frac{3}{4}$ W. Passage islet shut in by the south extreme of the Triangles, or the Beacon hill on with the fort (Chaou paou), clears the rock.

The Blonde rock, which shows itself at low water, is three quarters of a mile to the northward of the Deadman.

There is a patch, with $2\frac{3}{4}$ fathoms, southeast by south from Square island, distant one half mile; the Beacon hill on with the fort also clears the patch. The Conway lay in a good berth, having Passage islet south, and Square island east-northeast. This anchorage during the summer season is safe; but during the autumnal and winter months, strong northerly breezes prevail, and then shelter must be sought over on the Kintang shore, or off Just-in-the-way, (called by the Chinese Hwangnew tseaou 黃牛礁,) bringing it to bear northwest about one mile. The steam vessel Madagascar anchored under Passage islet during a blow, but was glad to get out to Just-in-the-way.

A rock awash at low water spring tides, has been seen about S.S.E., 2 cables from Just-in-the-way. Consequently vessels passing to the southward of that island should be cautious not to approach too close.

The reef off the south end of Silver island, and a $2\frac{3}{4}$ fathoms' patch to the S. S. W. of Square island, have already been noticed.

Running to the northward, pass on either side of Square island, and then keep over towards Kintang, so as to bring Square island to bear south as soon as possible; do not bring it to the eastward of this bearing, as the western part of the bay is supposed to be shallow, a patch of 3 fathoms having been passed over, lying N. by W., 3 miles from Square island.

Proceeding to the northward, you pass the North islands to port, the largest and easternmost being about 220 feet high, with an islet north of it. To starboard is a small island, named East island, with 3 or 4 islets or rocks north of it; and to the northward of this lies