

The information contained in this notice is to be carefully considered, to be noted in the Sailing Directions, and compared with the chart when the ship is navigating the parts to which it refers.

## HYDROGRAPHIC NOTICE.

(No. 10.)

CHINA SEA DIRECTORY, VOL. IV.

NOTICE No. 5.

The following information relating to portions of the Korean archipelago and to the Goto islands, furnished by Navigating Lieutenant W. Pearee, is resulting from the surveys, in progress, of H. M. S. *Sylvia*, 1877.

[All Bearings are Magnetic. Variation 4° Westerly in 1878.]

## KOREAN ARCHIPELAGO.\*

**Mackau Group**, about 8 miles east of Modeste island (lat. 34° 42' N., long. 125° 12' E.) consists of several islands and rocks extending 8½ miles in a N.N.E. and S.S.W. direction.

**Mackau Island**, the principal and highest island of the group, 1,328 feet high, is 5 miles long N.E. and S.W. and 2 miles broad. A chain of hills rising abruptly on the west side, extends through the length of this island, terminating at the north end in Amphitheatre range, which overlooks the chief town (Bacsanto) and St. John harbour.

**Anchorage**.—On the west side of Mackau island, sheltered from easterly winds, good anchorage will be found for large vessels in 7 fathoms, mud, with the south end of Modeste island in line with the south point of West island bearing West, and Venancourt rock 128 feet high, in line with the west point of Mackau island S. by W. ¾ W. Small vessels could lie nearer the shore in 5 fathoms water.

**St. John harbour**, which is open only to north-east winds, is circular, nearly a mile in diameter, and 4 cables wide at its entrance; there are depths of 2¼ to 4 fathoms, mud, in this harbour. On the north-west side of the entrance lie two islets (Eagle islets), the eastern 204 feet and the western 222 feet high, their western sides rising perpendicularly from the water; the western islet is nearly connected to Mackau island by numerous rocks. About 1½ cables north of the eastern islet lies a cluster of rocks, the highest of which is 75 feet high. At 1¼ cables from the south shore of the harbour lie two rocks near each other which dry 4 and 6 feet respectively.

**Observation islet**, 45 feet high, and about 360 feet in extent, lies one cable from the west shore of St. John harbour. The observation spot on the summit of this islet is in lat. 34° 41' 40" N., long. 125° 25' 48" E.

**Anchorage**.—A good berth is in 3¼ fathoms, mud, with the summit of Observation island in line with the north-west peak of Amphitheatre range bearing W. by N. ¼ N., and the eastern extreme of Eagle islets N. by E. ¾ E.

**East island**, 770 feet high and wooded, lies about one mile east of Mackau island; the west side of East island is indented with two small bights, and the east side is composed of cliffs. Near the north-east point of East island lies an islet 60 feet high, and at 1¼ cables N. ¾ E. from this islet lies a rock that dries 4 feet at low water. The channel between East and Mackau islands was not examined; no dangers however were seen from the boats of the *Sylvia*.

**West island**, 896 feet high, lies three-quarters of a mile from the west side of Mackau island. When viewed either from the north-east or south-west, the perpendicular fall of the summit stands out prominently; the middle part of the island (a sharp peak 520 feet high) is connected to the southern part by rocks which are covered at high water, and to the northern part by a spit also covered at high water. A village is situated on the north-east side of the southern portion of West island, and a few of trees and a few houses on the northern portion of the island; there are also off the north-west point a few small rocks above water, and off the north point are two round islets 110 and 100 feet high. The channel between West and Mackau islands is small vessels, and at easterly winds, Biuff island summit in line with the north point of Mackau island, bearing N. by E. ¾ E., leads through the deepest water.

**Biuff island**, 336 feet high, is a wedge shaped, is a good mark to steer for when approaching Mackau group from the north; it is steep on all sides, and may be passed at one cable distance.

**Wooded island**, 540 feet high, on the north side of Mackau island, is half a mile long N.N.W. ¼ W. and S.S.E. ¼ E., and 300 yards broad. Its wooded peak is conspicuous when seen from either the eastward or westward. At two-thirds of a cable west of the north point of Wooded island lies a rock which uncovers 6 feet at low water. Wooded island has on either side a navigable channel; the southern is 3 cables wide and clear of danger, the northern is 4 cables wide with a rock (Danger rock) lying in the fairway.

This island from its situation protects St. John harbour from winds to the eastward of N.E.

**Danger rock** covers at half tide and lies 3¼ cables E. by N. ¾ N. from the north point of Wooded island, and 3¼ cables S.E. ½ S. from the outer rock off the south point of North-east island.

The north-west peak of Amphitheatre range in line with north end of the 75 feet rock at the entrance to St. John harbour, bearing W. by S. ¼ E., leads 1¼ cables north of Danger rock, and midway through the channel between North-east and Wooded islands; the same peak in line with the north point of Wooded island W. ¾ S. leads three-quarters of a cable to the southward; the west point of East island in line with the north-east point of Wooded island S. by W. ½ W. leads 1½ cables to the eastward; and the islet near the north-east extreme of East island in line with the south-east point of Wooded island S. ¾ E. leads three-quarters of a cable to the westward.

**North-east island**, 540 feet high, immediately to the northward of Wooded island, is 1¼ miles long and nearly a quarter of a mile broad; near the north and south extremities of the eastern point are two remarkable conical rocks, 100 and 90 feet high respectively. The northern shore of this island is bold and the summit is over the east point; off the south point there are two small rocks, the northern being 28 feet, and the southern 23 feet high.

**North island**, the north-westernmost of the Mackau group, is recognised by a sharp peak 430 feet high immediately over its west point. Between North and North-east islands lies Passage island, 336 feet high, the channels on either side of which are obstructed by numerous islets.

**Double islands**, the most northern of the group, are two islands about 300 feet high, similar in shape and appearance, lying in an east and west direction from each other, with a boat channel between. Off the north-east point of the easternmost island are a few rocks, the outer of which, named Pillar, is perpendicular and 143 feet high. In the narrow channel between Double islands and North island there is a small islet 157 feet high, and several rocks which completely block the channel.

Two small clusters of rocks, having deep water around them, lie respectively 4¼ cables and one mile to the eastward of Double islands, the highest of the westernmost cluster is 56 feet, and that of the easternmost 95 feet high. A depth of 21 fathoms was obtained 2 cables eastward of Pillar rock, and 16 fathoms 2 cables westward of the easternmost cluster of rocks.

**Sylvia rock**, on which the *Sylvia* struck during the survey in 1877, lies 3¼ miles N.E. by E. ½ E. from Pillar rock, and has less than 6 feet water, with 10 to 21 fathoms close around.

**Directions**.—Vessels bound to St. John Harbour from the westward should steer towards Biuff island, passing it on either side, then steer for the north point of Wooded island until past the 75 feet rock, when the harbour will be open.

\* See Admiralty charts:—Pacific, sheet 1, No. 2459; Hong Kong to Liau-tung gulf, No. 1262; Nipon island and part of Korea, No. 2347; Korean archipelago, No. 104; Also, China Sea Directory, Vol. IV., 1873, pages 46, 48.

From the eastward, north of Wooded island, keep the west end of East island in line with the south-east point of Wooded island bearing S. by W.  $\frac{1}{2}$  W., until the north-west peak of Amphitheatre range is in line with the north end of the 75 feet rock W. by S.  $\frac{1}{4}$  S., when steer to the westward with this mark on until past Wooded island, thence a course may be shaped for the harbour.

The best channel is that to the southward of Wooded island, being free from danger; in the narrow part however, a rock which uncovers 4 feet at low water springs, lies one-third of a cable north of the West entrance point of this channel.

*Tides.*—It is high water full and change at Mackau islands at 1 h. 30m. Springs rise  $10\frac{1}{4}$  feet, neaps 4 feet. The flood stream generally runs to the northward, and ebb to the southward, about 5 knots at springs, during which time the channels on either side of Wooded island must be approached with caution. Overfalls are visible occasionally for some considerable distance westward of West island.

*Craig Harriet Group.*—*Salamis reef.*—H. M. S. *Salamis*, 1869, when passing between Quelpart island and the southern part of the Korean archipelago, observed the sea breaking heavily, with discoloured water having the appearance of a reef, midway between Craig Harriet islands and West Pinnacle rock.\*

The *Sylvia*, 1877, determined the position of Salamis reef, on which a depth of 4 feet was found, with 16 to 25 fathoms at a short distance around.

From the centre of this reef the northernmost Craig Harriet island bears N.E.  $\frac{3}{4}$  N., and West Pinnacle rock (157 feet high) N.W. by W.

#### GOTO ISLANDS.†

*Uku Sima*, 842 feet high, the most northern of the Goto islands, is  $3\frac{1}{4}$  miles long north and south, and  $4\frac{1}{2}$  miles broad; in the centre are two peaks nearly of the same height, the northern being the higher. The shores of this island are indented with several small bights, which afford shelter for boats; a small islet 60 feet high, Kamo ze, lies 2 cables off the west point of Uku sima, having in the passage between, numerous rocks.

*Kura-no-hana*, the northern point of Uku sima, is low, with detached dangers extending to the northward one third of a mile, having 16 to 19 fathoms close to.

Kamo ze in line with the summit of Hira sima bearing S.W.  $\frac{1}{2}$  W., or the summit of the highest Koshi-no-ze islands E. by S.  $\frac{1}{2}$  S., leads one third of a mile to the northward of these dangers.

*Caution.*—In passing Uku sima by night it is advisable to give the northern shore a wide berth, as the extremity of the land is low, and the tide runs very strong in this locality.

*Koshi-no-ze* are three small islets, situated 2 miles east of Kura no hana; the centre islet is 200 feet high; from which the eastern islet 98 feet high, is distant  $3\frac{1}{4}$  cables; and the western 54 feet high, about three-quarters of a cable. A small rock probably covered at times, with 5 to 11 fathoms close around, lies one cable to the south-westward of the eastern islet.

About half a mile westward of Koshi-no-ze is a dangerous patch of rocks on which the sea breaks occasionally, having  $6\frac{3}{4}$  to 14 fathoms close round. In the channel between these rocks and Uku sima there is a depth of 11 fathoms.

From the centre of the rocks the highest Koshi-no-ze islet bears E. by N.  $\frac{1}{2}$  N.  $4\frac{3}{4}$  cables; and the high water mark of Naga saki hana, the eastern point of Uku sima, is in line with Tanji (a conical islet 91 feet high, to the southward of Nosaki sima), bearing S. by W.

The summit of Kuromo-ze bearing S. by E.  $\frac{3}{4}$  E., will lead a quarter of a mile west of these dangerous rocks.

*Naga saki hana*, the eastern point of Uku sima, is low and bordered with detached rocks which in some parts to a distance of 2 cables, with shallower water extending to the eastward 2 cables from their base, and 1 mile from the point there is a depth of 10 fathoms.

When passing Naga saki hana, the summit of Kuromo-ze must not be bro.

*Kuromo-ze*, situated  $2\frac{3}{4}$  miles to the south-eastward of Uku sima, is a cluster of small rocks 15 cables extent, and 50 feet high, with deep water surrounding them.

*Maye-go-sima*, 125 feet high, lies 3 cables off the south-east part of Uku sima; this islet, 300 yards long, is steep to all round, but vessels should invariably pass to the southward of it. At three-quarters of a mile N.W. by N. from this islet is a sandy beach, on which is situated Tai-ra-mura village; junks are sheltered here by a small pier extending from the east end of the beach.

*Tera sima*, about 120 feet high, is an irregularly shaped island off the south-west part of Uku sima, with a narrow navigable channel between. The ridges of Tera sima appear flat, and in the eastern portion of the island, on the top of a ridge, is a remarkable tree.

The shores of this island are principally composed of lava, the northern point, 90 feet high, being narrow and projecting.

*Ikadzuchi* are 2 small rocks, dry at low water, lying  $\frac{1}{4}$  cables N. by W. from the north point of Tera sima.

The high water marks of the east extreme of Ojika and the west extreme of Uku sima in line, bearing S.S.E., leads one cable eastward of Ikadzuchi.

*Nezumi sima* is a small islet connected at low water to the south-east point of Tera sima, having on its summit a tall tree.

*Kono ura*, situated between Uku sima and Tera sima, has depths from  $4\frac{1}{4}$  to 13 fathoms, and is open only to winds from the southward; in the centre of the harbour there is a bank with  $4\frac{1}{4}$  to 5 fathoms water.

*Anchorage.*—The best berth is in 10 fathoms, north of the bank in the centre of the harbour, with Nezumi sima (tree) bearing S.S.W., and the west end of Uku sima W.  $\frac{1}{2}$  N.; anchorage may be obtained in 13 fathoms south of the bank, with the north end of Madara sima in line with the south end of Nezumi sima, bearing S.W. by W.  $\frac{1}{2}$  W., and the north point of Tera sima seen just open to the westward of Uku sima west point, N.W.  $\frac{1}{4}$  W.

*Directions.*—Entering Kono ura from the southward, steer towards the north point of Tera sima seen just open to the westward of Uku sima bearing N.W.  $\frac{1}{4}$  W.; and when the east end of No sima is in line with the east end of Nezumi sima, steer N.E. by E. for the anchorage. Caution however is necessary when approaching the narrow channel between Uku sima and Tera sima during flood tide, which runs strong to the northwestward. This channel is only suitable for small vessels.

*Supplies.*—There are 3 villages on the Uku sima shore of Kono ura, where fish, rice, vegetables, and poultry may be obtained in small quantities. Pheasants abound in the northern part of Uku sima.

\* Navigating Lieutenant J. Cole, H. M. S. *Salamis*, 1869.

† See Admiralty charts:—Kiusiu and Nipon, western part, No. 358; Kiusiu, harbours on the west coast, No. 359; and Atsusi-no-ō-Sima to Mato Sima, No. 140: Also, China Sea Directory, Vol. IV., 1873, pages 266-268, and 288.

*Ojika Seto* is the strait south of Uku sima and Tera sima. In the centre of this strait is a small rock named Ai-no se, 16 feet above high water, having deep water round it. The width of the western entrance of this strait between Tera sima and No sima is 9 cables, but isolated dangers exist nearly one cable to the northward of No sima.

*Mu sima*, 254 feet high, half a mile wide and circular in shape, lies a little over one mile from the south end of Uku sima. The north, south, and west sides of Mu sima are steep-to, but shoal water extends one quarter of a mile to the southward of its eastern point.

There is a small islet, 28 feet high, having a single tree on its summit, situated just off the west part of Mu sima.

*Directions.*—In entering *Ojika seto* from the eastward, pass *Kuromo ze* on either side, and steer to the westward between Uku sima and Mu sima; the summit of Hoage in line with the south end of Ai-no-se, bearing W. by S., leads 3 cables from the south shore of Uku sima, and when the north point of Tera sima is seen just open to the westward of Uku sima west point, N.W.  $\frac{1}{4}$  W., steer towards it, which will lead into *Kono ura*, when proceed to an anchorage as before directed. But if proceeding through the *Ojika seto* from the eastward, after passing Ai-no-se, steer to the westward with *Kuromo ze* summit seen well open to the northward of Ai no se, bearing E.  $\frac{1}{4}$  S.; this mark on astern leads through the centre of the channel between Tera sima and No sima; Tera sima can be passed at  $1\frac{3}{4}$  cables distance, but No sima must be given a wide berth, and when passing the northern point of No sima the summit of *Kuromo ze* should not be seen south of Ai-no-se.

In entering the *Ojika seto* by the channel south of Mu sima, keep the eastern point of Nosaki sima in line with the point west of Eno sima bearing S.S.E.  $\frac{1}{4}$  E. and steer N.N.W.  $\frac{1}{4}$  W., which will lead clear of *Kebuta* (see below); and when the north extremes of *Kuromo-ze* and Mu sima are in line, E. by N.  $\frac{1}{2}$  N., steer N.W.  $\frac{1}{2}$  W., which will lead one-third of a mile north of Ai-no-se, and when Ai-no-se bears S.S.E. steer N.N.W. for the anchorage in *Kono ura*.

In entering *Ojika seto* by the channel between Nosaki sima and *Ojika*, remember that Nosaki sima is steep-to, but in passing the south-east point of *Ojika* care must be taken not to bring the north end of Nosaki sima to the eastward of N.N.E.; the north-east point of *Ojika* should be given a berth of at least a quarter of a mile, and after passing it, steer towards Ai-no-se, leaving that rock on either side, and if intending to anchor in *Kono ura*, proceed as before for the anchorage.

*Nosaki sima*, 1142 feet high, one mile south of Mu sima, is  $3\frac{1}{2}$  miles long north and south, with hills extending through the centre, the summit being over the northern portion; in the middle of the island is a saddle about 200 feet high.

The western part of the northern point of Nosaki sima is densely wooded, and on the west side of the island, immediately under the summit, is a remarkable reddish coloured landslip.

The channel between the south-east point of Nosaki sima and *Nakadon* is  $2\frac{3}{4}$  cables wide and clear of danger.

Deer and pheasants abound in Nosaki sima.

*Eno sima*, 89 feet high, is a small islet, steep-to all round, lying a quarter of a mile from the north-east shore of Nosaki sima.

*Kebuta* are two dangerous rocks, having less than six feet water, lying near each other,  $1\frac{1}{2}$  cables north of the north extreme of Nosaki sima, with Eno sima summit bearing S.E. and the south end of Mu sima E. by N.  $\frac{1}{8}$  N.

The eastern extreme of Nosaki sima in line with the point abreast Eno sima, bearing S.S.E.  $\frac{1}{4}$  E., leads  $1\frac{1}{2}$  cables to the eastward of *Kebuta*; a bare hill, 193 feet high, over the north point of *Ojika* seen open a quarter of a point to the northward of the north-east extreme of *Ojika*, W.  $\frac{1}{4}$  S., leads  $1\frac{1}{2}$  cables to the northward, and the south-east extreme of *Ojika*, S.W.  $\frac{1}{4}$  S., leads  $1\frac{1}{2}$  cables to the westward.

*Ojika island*, which forms the south side of *Ojika seto*, is  $3\frac{1}{2}$  miles long East and West, and  $2\frac{1}{4}$  miles broad, it is separated from Nosaki sima by a navigable channel three-quarters of a mile wide. Off the southern and western portions of *Ojika* are several islands, the westernmost being  $10\frac{1}{2}$  miles distant. The narrow channel formed by the islands adjacent to *Ojika* are only  $\frac{1}{2}$  mile wide for small vessels. On the east side of *Ojika* there are two conical hills, having clumps of trees on them; the northern hill is 266 feet high, and the southern 200 feet. About half a mile west end of the northern hill is a hill 200 feet high; and half a mile west of the southern hill is a hill 265 feet high, the south side of which rises perpendicularly from the sea. Towards the western end of the island the hills are 348 to 263 feet high, with a bare hill over the northern point, 193 feet high, rising precipitously from the sea on its west side.

*East bay*, on the eastern shore of *Ojika*, is three-quarters of a mile deep, and nearly 7 cables wide at its entrance. The shore of this bay is fronted with shelving rocks that cover at high water; from *Tonozaki*, the south entrance point, rocks extend 2 cables in a northerly direction, and shallow water half a mile in a south-easterly direction. *Kuszukuri*, the north entrance point, is marked by a rock above water at the extremity of the shelving rocks.

The depths in East bay are from 4 to 14 fathoms, the best anchorage being in about 8 fathoms, with the north point of Nosaki sima in line with the rock off *Kuszukuri* point, bearing E. by N.  $\frac{1}{2}$  N.; and the south end of Nosaki sima in line with *Tan-ji* islet, S.S.E.  $\frac{3}{4}$  E.

*Directions.*—Entering East bay from the southward, keep the west extreme of *Shimomu sima* in line with the north point of *Nakadori sima*, bearing S. by E.  $\frac{1}{2}$  E.; this mark leads clear of the shoal water off *Tonozaki*, and when the north point of Nosaki sima bears N.E. a N.W. by N. course will lead to the anchorage.

From the south-westward when approaching *Tonozaki* point, the north extreme of Nosaki sima should not be brought to the eastward of N.N.E. until the west point of *Shimomu sima* is in line with the north point of *Nakadori sima*, bearing S. by E.  $\frac{1}{2}$  E., when proceed as before.

From the northward, keep the east point of Nosaki sima in line with the point abreast of Eno sima, bearing S.S.E.  $\frac{1}{4}$  E., until the south-east point of *Ojika* bears S.W.  $\frac{1}{4}$  S., then steer to the southward, keeping midway between *Ojika* and Nosaki sima, and when the centre of a small reddish coloured landslip on Nosaki sima bears E.  $\frac{1}{4}$  N. steer W.  $\frac{1}{4}$  S., until the hill over the north side of the bay bears N.N.W.  $\frac{1}{4}$  W., when a N.W. by N. course will lead to the anchorage.

The north-east point of *Ojika* should not be approached nearer than a quarter of a mile.

*Ko-guro sima*, 57 feet high, situated  $6\frac{1}{4}$  cables westward of the south-east point of *Ojika*, and 2 cables from the shore; is 400 yards long East and West, and 300 yards broad. This island is steep-to, except off the north-east point.

*Anchorage* can be obtained nearly midway between *Ko-guro sima* and the south-east point of *Ojika*, in  $7\frac{3}{4}$  fathoms, sand, with the south extremes of *Ko-guro sima* and *Kuro sima* in line, bearing W. by S.  $\frac{1}{2}$  S., and the hill over the south-east point of *Ojika* N.N.E.  $\frac{1}{4}$  E. This anchorage is sheltered from northerly winds, and the depths are even.

*Kuro sima*, 140 feet high, half a mile westward of *Ko-guro sima*, has a wooded peak over its east and west ends, both of which rise precipitously from the sea, the dark cliffs being remarkable from the southward and westward. This island is nearly half a mile long east and west, and a quarter of a mile broad, having on its south-west extreme a pinnacle rock, 31 feet high; the southern side is steep-to, but the channel on the north side, which is one cable wide, has only 4 to 10 feet water.

*U-u-sima*, 172 feet high, 7 cables to the westward of *Kuro sima*, is nearly 800 yards long, and bare.

*O sima*, 349 feet high, a quarter of a mile westward of *U-u-sima*, rises perpendicularly on its north-west side; on its summit is a large clump that shows out conspicuously from the southward and westward. The south side of *O sima* is steep-to, but its rocky ledge extends some distance from the south-west side, with shallow water between it and *Mutz-se*, a cluster of small rocks, three-quarters of a cable in extent, and 5 feet above water, half a mile south-west of *O sima*.

*Kuro se*, a small black rock, 25 feet high, lies S.W. by W. one mile from the south extreme of O sima, and S. by W. 4 cables from Mutsz-se. The north-east side of Kuro se is foul, there being a patch of  $2\frac{1}{2}$  fathoms three-quarters of a cable from it; the west and south sides can be passed at a cable distance, in 16 fathoms.

*Hoge sima*,  $1\frac{1}{4}$  miles W.  $\frac{3}{4}$  S. from O sima, is 200 yards long north and south, having over the south end a conspicuous peak, 200 feet high, which rises precipitously from the sea; over the northern point is a small peak connected to the southern portion of the rock by a perforated arch, which shows out prominently from the westward.

*Yaburogi sima*, 204 feet high, half a mile to the northward of O sima, is half a mile long east and west, and nearly half a mile broad, having at one cable from its west side a small cluster of rocks (Kai-ze), 70 feet high, and semi-circular in shape.

*Koro* is a small island, a quarter of a mile north-eastward of Yaburogi sima, having on its west side cliffs 175 feet high. Between the north point of Koro and Ojika, a distance of 3 cables, are numerous dangers, which show at low water. Four cables to the eastward of Koro lies a small bare island 52 feet high.

*Aka sima*, 335 feet high,  $2\frac{3}{4}$  miles west of Ojika, is three-quarters of a mile long east and west and 700 yards broad; the summit of this island rises perpendicularly from the sea on its south side, and over the south-west point are several small hummocks which show out prominently from the southward and westward. Off the north-west part of Aka sima are a few small rocks above water; vessels should not pass the north and east sides nearer than three cables, but the south and west sides can be passed in smooth water at one cable distance.

*Madara sima*, 407 feet high, and nearly a mile in extent, is separated from the west point of Ojika by a channel one cable wide, with 9 feet water. Near the west side of Madara sima is a small rock 20 feet high. The north and west sides of this island can be passed at 2 cables distance.

*Hoage (Arch Rock)*, situated west  $4\frac{1}{2}$  miles from Madara sima, consists of two remarkable pinnacle islets, 150 yards in extent, bearing from each other east and west; the western islet is 167 feet high, and the eastern 120 feet high, having a hole through it, visible only from the northward or southward.

*Danger*.—A rock, dry 5 feet at low water springs, with 5 to 11 fathoms round it, and on which the sea generally breaks, lies to the northward of Hoage, with the summit of Biriyo sima in line with the west extreme of Hoage, bearing S.W.  $\frac{3}{4}$  S., distant from the latter  $6\frac{1}{2}$  cables, and Aka sima west point S.E. by E. easterly. There is a depth of from 20 to 34 fathoms between this rock and Hoage.

The high water mark of the west extreme of O sima in line with the west point of Aka sima, bearing S.E.  $\frac{3}{4}$  E., leads north-east of the danger; and the east extreme of Hira sima in line with the west end of Hoage, S.S.W., leads to the westward.

*Kura sima*, 380 feet high, nearly 3 cables to the southward of Hoage, is almost square, and a quarter of a mile in extent.

In the channel between Kura sima and Hoage there are no dangers, depths of 17 to 20 fathoms being found in the centre.

*Biriyo sima*, S.W.  $\frac{1}{2}$  W.,  $1\frac{1}{2}$  miles from Kura sima, may be known by being the highest island to the south-westward of Ojika; it has two peaks, the northern 470 feet and the southern 445 feet high. Biriyo sima is nearly half a mile long north and south, about a quarter of a mile broad on its north side, and half a mile on its south.

*Hira sima*, 167 feet high, situated 6 cables south of Biriyo sima, is nearly half a mile long east and west, and is the southernmost island in this locality. Off its south point there is a small rock 29 feet high, and  $4\frac{3}{4}$  cables to the westward of the south end lies a rock 24 feet high; there are other rocks near the west point, and rocky ledges extend to the northward from its north side, a distance of 2 cables, with shoal water extending some distance to the northward of them. Close to the east point of Hira sima there is a depth of 5 fathoms; one cable to the southward of the rock off its south point, 23 fathoms; in the centre of the channel between Hira sima and the 24 feet rock to the westward, 12 fathoms. This rock is steep-to on its south side, but the soundings off its north and west ends are uneven, and a patch of  $2\frac{1}{2}$  cables from it.

*Shiro-se*, 105 feet high,  $13\frac{1}{2}$  miles W. by S. from Ojika seto, is the Goto islands. Shiro-se is divided into two pinnacles, nearly the same height, and lies in a north-east end south-west direction.

Off the south side of this islet is a small rock, and off the north side are several rocks above water extending nearly one cable to the northward, with deep water beyond; the east and west sides of Shiro-se are steep-to, and can be passed at one cable.

*Hodge rock (Shaku shi)*, a rock awash at low water, with deep water around it, lies N.  $\frac{1}{4}$  W., distant  $4\frac{1}{4}$  cables from Shiro-se, the north peak of Nosaki sima in line with Hoage, bearing East, will lead 2 cables to the northward of Hodge rock.

*Korai-no-ze* rock with 18 feet water, lies near the south-east edge of a rocky bank; this bank extending N.W. by N., three quarters of a mile, with a breadth of 4 cables, has from 5 to 10 fathoms. At 3 cables southward of the rock the depth is 20 fathoms; and at half a mile from the depth of  $5\frac{1}{2}$  fathoms on the northern edge of the bank, there is 38 fathoms.

*Clearing marks*.—North point of Biriyo-sima in line with the north peak of Nosaki-sima bearing E.  $\frac{2}{3}$  N., leads northward of Korai-no-ze. South point of Hira-sima in line with the north peak of Nosaki-sima bearing E. by N.  $\frac{1}{4}$  N., leads southward of Korai-no-ze.

*Nakadori sima* is  $21\frac{3}{4}$  miles long between Sawo saki the south and Tsua saki the north extreme. The coast line of Nakadori sima, the greater part of which has not yet been surveyed, is deeply indented with bays.

The northern part of this island for a distance of 6 miles to the southward of Tsua saki is very narrow, having high hills and mountains which rise abruptly on both sides. O-mitsu yama, a flat peak 1,446 feet high, is the summit of Nakadori sima; Yabokura yama, 1,197 feet high, lies  $2\frac{3}{4}$  miles to the northward of O-mitsu yama, thence to the northward the hills are much lower, the ridge over Tsua saki being about 250 feet high.

*Shimomu sima*, 275 feet high, lying S.S.E.  $1\frac{3}{4}$  miles from the north end of Nakadori sima, and one mile from the eastern shore, is nearly half a mile long north and south, and 400 yards broad.

*Tan-ji*, 91 feet high, a remarkable conical shaped islet, lying half a mile N.E. by N. from Shimomu sima, is steep-to except on the west side, from which rocks extend nearly one cable.

The north-east peak of Ojika, open one-third the breadth of the channel between Nosaki sima and Nakadori, bearing N.N.W.  $\frac{1}{2}$  W., will lead through the deepest water between Tan-ji and Shimomu sima.

*Kamigashi* is a rock 53 feet high and steep-to, lying  $8\frac{1}{2}$  cables off the east side of Nakadori sima, and a little over 3 miles to the southward of Shimomu sima, having off its north end a small rock 2 feet high.

*Ikatchi* is a rock 15 feet high, situated 2 cables from the western shore of Nakadori, about one mile north of O-mitsu yama. Vessels must not pass eastward of Ikatchi.

*Tsubo gashi*, 10 feet high, with 12 to 20 fathoms round it at half a cable distance, lies W. by S.  $\frac{1}{4}$  S. about one mile from Ikatchi, and  $1\frac{1}{2}$  miles to the northward of the entrance to Nama ura.

*Nama ura*.—This bay, situated immediately to the southward of O-mitsu yama, may be recognised by a conical rock 313 feet high, which forms the south entrance point of the bay. Nama ura is 2 miles deep and half a mile wide, with an even depth of about 16 fathoms; from the north-east side of the entrance shelving rocks, which dry at low water, extend  $1\frac{1}{2}$  cables in a south-westerly direction, with shoal water nearly 2 cables to the south-westward; Cone rock, the south-west entrance point, is steep-to, and has a depth of 16 fathoms about three-quarters of a cable to the north-eastward.

*Anchorage.*—The best anchorage for large vessels is near the head of Nama ura, in 10 fathoms water,  $2\frac{3}{4}$  cables from the shore, with the peak of O sima just open eastward of the Cone rock, bearing N. by W.  $\frac{1}{4}$  W., a patch of red cliff on the west shore of the bay, just north of Nama village, W. by S.  $\frac{1}{4}$  S., and Joss point N.E. Small vessels could anchor to the eastward of this position with Tsubo gashi (the 10 feet rock north of the entrance) in line with a black point on the east side of the bay N. by W.  $\frac{1}{4}$  W., and the point on the south shore eastward of Nama village S.W. by W.

*Hira sima*, nearly 2 miles from the east extreme of Nakadori sima, and 4 miles westward of Yenoï sima, is  $2\frac{1}{4}$  miles long and  $1\frac{1}{4}$  miles wide, having near the centre a peak 663 feet high, sloping gradually to the coast on its north and west sides; to the southward of this peak there are remarkable ridges of cliffs, and over its north-east point is a prominent peak 325 feet high, rising perpendicularly from the sea on its eastern side.

The western side of Hira sima is steep-to, and trends in a north-westerly direction 2 miles from Ai-saki the west-point, to Kuro saki the north point of the island; the eastern side of Hira sima from Komo-no-saki the south-west, to Tatsu saki the north-east extreme of the island, a distance of  $2\frac{1}{4}$  miles, is irregular, with a few off-lying dangers and islets.

*Haidomari bay*, on the north-east side of Hira sima, between Kuro saki and Tatsu saki, is 6 cables deep; it is however, only suitable for junks.

Komoda bay, situated on the south-west side of the island, between Ai-saki and Komo-no-saki, affords protection to small vessels from north and easterly winds; near the centre of this bay lies a small wooded islet, named Kojima; vessels should anchor to the south-eastward of this islet, the best berth being in 10 fathoms, with Ai-saki bearing N.W. by W.  $\frac{1}{2}$  W., and the summit of Nanori rock S.S.W.  $\frac{1}{2}$  W. Eastward of Kojima on the northern shore of the bay is an inlet in which junks lie securely; and load inferior coal obtained from the mines.

From Komo-no-saki rocky ledges extend in a south-westerly direction for  $1\frac{1}{4}$  cables; the shore to the eastward of this point for a distance of half a mile is foul, and should not be approached nearer than 3 cables.

*Nanori* is a remarkable rock 92 feet high, 6 cables to the south-westward of Komo-no-saki, having rocky ledges surrounding it, those off its southern extreme extending nearly 2 cables. The north extreme of Nanori is foul, a depth of  $3\frac{1}{2}$  fathoms being found at  $1\frac{1}{2}$  cables to the northward; immediately outside the shelving rocks on either side however, there is deep water.

In the centre of the channel between Nanori and Komo-no-saki the depths are from 12 to 20 fathoms; the centre of Shimomu sima in line with Ai-saki bearing N.N.W.  $\frac{1}{4}$  W. will lead through in the deepest water.

*Sakize* is a cluster of conspicuous islets extending nearly a mile from the eastern shore of Hira sima; these islets should be passed at not less than 2 cables distant. About midway between Sakize and Tatsu saki, and nearly half a mile from the shore, lies a rock that dries 3 feet at low water. Tatsu saki bearing N.N.W. leads to the eastward of this rock.

The channels on either side of Hira sima are navigable; the channel between Hira sima and Nakadori sima is clear of danger, but in the channel between Hira sima and Yenoï sima are the Saracen reefs situated to the southward of Yenoï sima and the foul ground to the south-westward of Kuro sima (a small islet 120 feet high). The eastern shore of Hira sima is the clearer side of this channel.

*Directions.*—If approaching Hira sima from the south-eastward keep Tatsu saki in line with the south end of Nosaki sima, bearing N.W.  $\frac{3}{4}$  N., which will lead nearly one mile westward of the Saracen reefs and half a mile from the foul ground south-westward of Kuro sima; and when the summits of Yenoï sima and Kuro sima are in line bearing N.E. by E.  $\frac{1}{2}$  E., a vessel should take a course to the northward to pass between Hira sima and Iwoze, a rock 30 feet high, the westernmost of a group lying to the north-west of Yenoï sima.

If bound to the bay from the eastward keep about half a mile from the Hira sima coast, and enter the channel between Nanori and Komo-no-saki, with Ai-saki in line with the centre of Shimomu-sima bearing N.N.W.  $\frac{1}{4}$  W., and when Kojima is in line with the summit of Komo-no-saki, stand to the northward.

*Naru Sima*—A shoal of 2 to 5 fathoms extends from the north-west entrance point, and terminating in a knoll of 12 feet water near the middle of the entrance; between this knoll and Observatory island (south-east side of entrance) there is a depth of 15 fathoms in mid-channel.

At one cable south of Observatory island a shoal with 9 feet water extends  $1\frac{1}{4}$  cables from the shore, having near the outer edge a depth of 13 fathoms.

A rock with 3 feet water lies three-quarters of a mile S.S.W. from the southernmost point of Naru sima. The north-east extreme of Hisakajima (Kuga sima) in line with Szuyechi, an islet 72 feet high, close to the south end of Mia sima, bearing N.W. by N. leads to the westward; and an islet off the north point of Kochi-domori-ura in line with the east extreme of Shinto ga sima, an islet 146 feet high, near the south-east shore of Naru sima N.N.E.  $\frac{1}{4}$  E. leads to the eastward of this rock.

*Oldham rock*, covered at high water springs, lies nearly  $1\frac{1}{2}$  miles E. by N. from Sawo saki, the south extreme of Nakadori. An islet 78 feet high, half a mile to the westward of Sawo saki in line with it, bearing West, leads to the southward; and Tazaki the north point of Kabo sima in line with Sawo saki W. by S.  $\frac{1}{2}$  S. leads to the northward of Oldham rock.

*Tides.*—It is high water full and change in the East bay (Ojika) at 8h. 40m.; springs rise  $10\frac{1}{4}$  feet, neaps 2 to 4 feet. The duration of the tidal streams in the north part of Goto islands is nearly equal; the main direction of the flood is to the northward and ebb to the southward.

A portion of the flood stream on the east side of the islands passes through the channels south and north of Nosaki sima. On the west side the flood stream runs in a north-easterly direction, and on nearing the islands in the vicinity of Ojika, it diverges into two parts; the eastern part flowing towards the centre of the channel between Ojika and Nosaki sima, is met by the stream from the south-eastward through the channel south of Nosaki sima, thence these streams run together to the northward, and when in Ojika seto are joined by the stream flowing to the north-westward through the channel on the north side of Nosaki sima; the whole body of the stream then runs for the narrow channel between Tera sima and Uku sima, where its velocity at times is very great; a small portion, however, flows to the westward between No-sima and Tera sima.

A portion of the stream on the west side of the islands sets towards the western entrance to Ojika seto, where it is met by the small portion of the eastern stream, causing heavy tide rips and overfalls.

The ebb splits on the west side of Uku sima, one part running to the south-westward past the islands off the west side of Ojika, the other to the south-eastward through the narrow channel between Uku sima and Tera sima, thence towards the north end of Nosaki sima, where it divides and runs in the directions of the channels on either side of that island; on the west side of Nosaki sima it again splits, one part running to the south-eastward through the channel on the south side of Nosaki sima, the other to the south-westward along the west side of Nakadori sima, uniting with the stream that is going in the same direction on the west side of Ojika.

In the vicinity of Hira sima the streams run through the channels at the rate of 3 to 5 knots during springs, causing heavy overfalls.

Hydrographic Office, Admiralty, London, 4th April 1878.

The information contained in this notice is to be carefully considered, to be noted in the Sailing Directions, and compared with the chart when the ship is navigating the parts to which it refers.

## HYDROGRAPHIC NOTICE.

(No. 11.)

CHINA SEA DIRECTORY, VOL. 2.

NOTICE No. 17.

The following information relating to the gulfs of Siam and Tong-King, with directions for approaching Hainan strait, has been derived chiefly from the account of the voyage of the German corvette *Nautilus*, published by the German Admiralty, 1877.\*

[All Bearings are Magnetic. Variation 2° Easterly in 1878.]

### GULF OF SIAM.

*Menam Chau-Phya or Bangkok River.†*

**Directions.**—Entering Bangkok river, West point should be brought to bear N.  $\frac{1}{2}$  E., and steered for on that bearing until the lighthouse bears N.N.E.  $\frac{1}{2}$  E., when a N. by E.  $\frac{1}{2}$  E. course will lead between the sets of fishing stakes (3 sets on each side, pointing to the south-west) and about a third of a mile westward of the lighthouse; thence steer N.E.  $\frac{1}{2}$  N. until the lighthouse bears S.S.W., when a N.N.E. course should be steered for about half a mile, or until West point bears N.W.; a vessel may then steer N. by W.  $\frac{1}{2}$  W. for the centre of the mouth of the river, keeping a little towards the eastern shore to avoid the flats which extend from West point. A mid-channel course may then be steered to Bangkok city, being careful to avoid the shoals extending from East point.

The Pak-lat canal on the west bank of the river, at about 10 miles from the entrance, is frequently closed; it was so during the visit of the *Juno* in the month of March.

### GULF OF TONG-KING.‡

*On Pon* is a port of some commercial importance, situated on a small river which, rising in Kwangsi, flows through Ko Tchou, and empties itself into the north-east part of Tong-King gulf.

**Pak-Hoi.**—*A-long*, the large sand bank on the north side of Pak-hoi anchorage, is nearly awash at low water. Northward of *A-long* bank, between Pak-hoi and the opposite shore, about 8 miles distant, there are several sand banks (some of which dry at low water), extending in a general east and west direction.

**Directions.**—Approaching Pak-hoi from the southward the soundings decrease gradually towards cape Quan-tow, within half a mile of which there are depths of 23 feet. Vessels bound to Pak-hoi anchorage should, after passing cape Quan-tow at a distance of half a mile, steer North until Nautilus hill, 340 feet high,—about three-quarters of a mile to the northward of cape Quan-tow—bears East, when a N.E.  $\frac{1}{2}$  N. course should be steered until the sandy point on which stands Tykok village bears East, thence close around the outer extreme of the fishing stakes extending from Tykok for the anchorage abreast the custom house, in 4 fathoms, with Tykok point bearing S.W. by W.

**Tides.**—The following particulars concerning the tides at Pak-hoi anchorage are taken from observations extending over a period of forty days by the *Nautilus*, during the months of February and March 1877.

The flood stream sets to the north-east and the ebb to the south-west. From one day before full to one day after full and change, the average rate of the flood stream is  $\frac{1}{2}$  mile an hour, and the average rate of the ebb stream is  $\frac{1}{2}$  mile an hour.

High and low water occur twice in the 24 hours during the period of the g. or one day before to five days after full and change when the rise is about 12 feet; with the lesser tides there is only one high water in the 24 hours, the flood continuing 14 and the ebb 10 hours.

**Climate, Winds.**—The rainy season at Pak-hoi is from January to June, but it does not rain uninterruptedly or heavily; from January to April heavy northerly gales blow frequently and rise suddenly, lasting sometimes three days. Warning, however, of these gales will be given by the barometer rising, and the opposite coast becoming visible, which, under other circumstances, cannot be distinctly seen from Pak-hoi.

**Typhoons** occur occasionally from June to October; their centres however, are said always to pass south of Quan-tow peninsula.

**Water** can be obtained from a well 400 yards from the shore; it is however, unwholesome, and can only be used for cleansing purposes.

**Guie Chow Island (Wy-chow)**, 280 feet high, situated about 24 miles south from cape Quan-tow, is  $4\frac{1}{2}$  miles long north-east and south-west, and 3 miles broad. The south and west sides of Guie Chow are composed of hills rising abruptly from the water and sloping gradually to the north-east shore. Mount Hümpel, the summit, is near the south-east extreme of the island.

The north-east point of Guie Chow should not be approached nearer than 2 miles.

**Nam-Wan (south harbour)**, situated on the south side of Guie Chow, is about a mile in extent, with depths of 6 to 4 fathoms, good holding ground, and sheltered from all winds except those between S.S.E. and E.S.E. The entrance of Nam-Wan is  $1\frac{1}{4}$  miles wide; it is, however, contracted to 6 cables by a shoal of 13 feet, which extends nearly half a mile in a south-easterly direction from Petit Cochon, a small rocky islet 95 feet high, on the east side of the entrance. From the east entrance point a shoal of 13 feet extends 2 cables in a southerly direction; and from the west entrance point a shoal of 13 feet extends nearly half a mile in a south-easterly direction.

On the beach at the head of Nam-Wan harbour there is a small village, a short distance westward of which, and about half way up the cliff, stands a Chinese temple, conspicuous from its yellow colour against the dark back-ground.

**Population.**—The population of Guie Chow island in 1877 amounted to about 4,500, their principal occupation being the cultivation of sugar-cane and bananas.

**Winds and weather.**—In Nam-Wan harbour southerly winds seldom blow home, and are never very strong. Typhoons may be expected in the month of June; they are considered, however, to occur most frequently in September, but seldom with sufficient strength to endanger vessels at anchor in the harbour.

During a typhoon, the water in the harbour is said to rise about 6 feet.

**Water.**—Good fresh water can be obtained in Nam-Wan harbour.

\* Annalen der Hydrographie, Heft X., 1877

† See Admiralty Charts:—Koh-ta-kut to cape Liant, No. 2,720; Menam Chau-Phya or Bangkok river, No. 999; Also, China Sea Directory, vol. II., 1868, page 318; and Hydrographic Notices, Nos. 7 of 1869, and 14 of 1872. Navigating Lieutenant A. Fane, H.M.S. *Juno*, 1877.

‡ See Admiralty Charts:—China Sea, northern portion, No. 2,661 a; Tong-King gulf, No. 2,062; Also, China Sea Directory, vol. II., 1868, p. 369; and Hydrographic Notices, No. 20 of 1868, No. 1 of 1869, Nos. 30 and 38 of 1876, and No. 21 of 1877.

## HAINAN STRAIT.\*

*Taya islands.*—The northernmost Taya island, about 12 miles east of the north-east point of Hainan island, is 360 feet high, and steep-to; at  $2\frac{1}{2}$  cables from the south side of the island there is 27 fathoms, mud, and temporary anchorage might be taken up, but a swell rolls round the island.

The Taya islands appeared uninhabited.

*Entering Hainan strait from the Eastward.*—Captain Valois of the *Nautilus*, 1877, having made two voyages from Hong Kong, through Hainan strait, advocates the use of the channel round Hainan head (South channel) which is used by Chinese pilots, and mentioned in Hydrographic Notice, No. 38 of 1876, page 6 (last two paragraphs); also in Hydrographic Notice, No. 21 of 1877, page 6. He recommends making mount Mafou from seaward on a W.  $\frac{1}{4}$  S. bearing, and passing about 3 to 5 miles northward of North Taya island, thence for Sa-chow, along the coast and around Hainan head. The least water obtained by the *Nautilus* in the narrow part of South channel, near Hainan head, was  $4\frac{1}{4}$  fathoms at low water.

*Hydrographic Office, Admiralty, London, 16th April 1878.*

\* See Admiralty chart:—Hainan island to Macao, No. 1,246: Also, China Sea Directory, vol. II., 1868, page 379; and Hydrographic Notices, Nos. 30 and 38 of 1876, and No. 21 of 1877.

No. 138.

## GOVERNMENT NOTIFICATION.

The following Notices to Mariners are published for general information.

By Command,

Colonial Secretary's Office, Hongkong, 6th July, 1878.

J. M. PRICE,  
*Acting Colonial Secretary.*

The substance of this Notice, as soon as it is received on board, is to be inserted in red ink on the Charts affected by it; and introduced into the margin, or otherwise in the page, of the Sailing Directions to which it relates. See Instructions, Navigation and Pilotage, p. 172.

## NOTICE TO MARINERS.

[No. 45.]

CHINA—EAST COAST.  
YANGTSE-KIANG RIVER.

*Light-Vessel substituted for Kiu Toan Light.*

The Chinese Government has given Notice, that on or about 1st March 1878, a light would be exhibited from a light-vessel moored in mid-channel, north-eastward of Kiu Toan lighthouse, Yangtse-Kiang river:—

The light is a *fixed* white light, elevated 35 feet above the sea, and should be visible in clear weather from a distance of 11 miles.

The illuminating apparatus is catoptric, or by reflectors.

A white riding light is also exhibited from the forestay, 6 feet above the rail.

The light-vessel painted red, with the words Kiu Toan in white letters on her sides, has one mast, with an 8-foot black globe at mast-head.

NOTE.—The light-vessel will be shown in the bow and stern. By day, the globe will be struck as soon as possible, and at night a fixed red light will be shown above it.

On the expiration of this notice, the fixed and flashing light previously shown from Kiu Toan lighthouse was discontinued.

*Fog Signal.*

Also, that during thick and foggy weather, a 10-cwt. bell on board the light-vessel will be struck *three double* blows every minute; the interval between the blows in each pair will be *five seconds*, and between two successive pairs of blows *fifteen seconds*.

By Command of their Lordships,

FREDK. J. EVANS,  
*Hydrographer.*

*Hydrographic Office, Admiralty, London, 30th March 1878.*

This Notice affects the following Admiralty Charts:—Hieshan islands to Yangtse-Kiang, No. 1199; Yangtse-Kiang to Nanking, No. 1480; and Yangtse-Kiang entrance, No. 1602: Also, Admiralty List of Lights in South Africa, China, &c., 1878, No. 174; and China Sea Directory, Vol. III., 1874, page 348.

## Government of India.

DEPARTMENT OF REVENUE, AGRICULTURE, AND COMMERCE.

## NOTICE TO MARINERS.

[No. 16.]

CEYLON—EAST COAST.

*Light at Batticaloa.*

The Master Attendant, Colombo, has given notice that a bright light is now exhibited every night, from sunset to sunrise, at an elevation of 50 feet above the sea, on the flagstaff near the mouth of Batticaloa Lake, East Coast of Ceylon, and that it will be exhibited hereafter, until further notice, from the 15th February to the 31st October, the time during which the port is open.

Position: Latitude  $7^{\circ} 43' 50''$  N., longitude  $81^{\circ} 41' 20''$  E. (Approx).

By Direction of the Government of India,

A. DUNDAS TAYLOR, *Comdr. (late I. N.),*  
*Superintendent, Marine Survey of India.*

MARINE SURVEY DEPARTMENT, CALCUTTA, 7th June, 1878.

This Notice affects the following Admiralty Charts:—Ceylon, East Coast, Singane River to Pedro Point, with plan of Batticaloa Road, No. 2031; Cape Comorin to Cocouada, No. 828; Bay of Bengal, Western Sheet, No. 70a; Indian Ocean, Sheet 2, northern portion, No. 748b; and Indian Marine Survey Chart, No. 15b; also, Admiralty List of Lights in South Africa, India, &c., page 13; Indian Marine Survey Light List, page 26; and Taylor's Sailing Directory, Vol. I, page 442.

If this Notice is received on boardship, the substance of it should be inserted on the charts affected, and introduced into the Sailing Directions to which it relates.