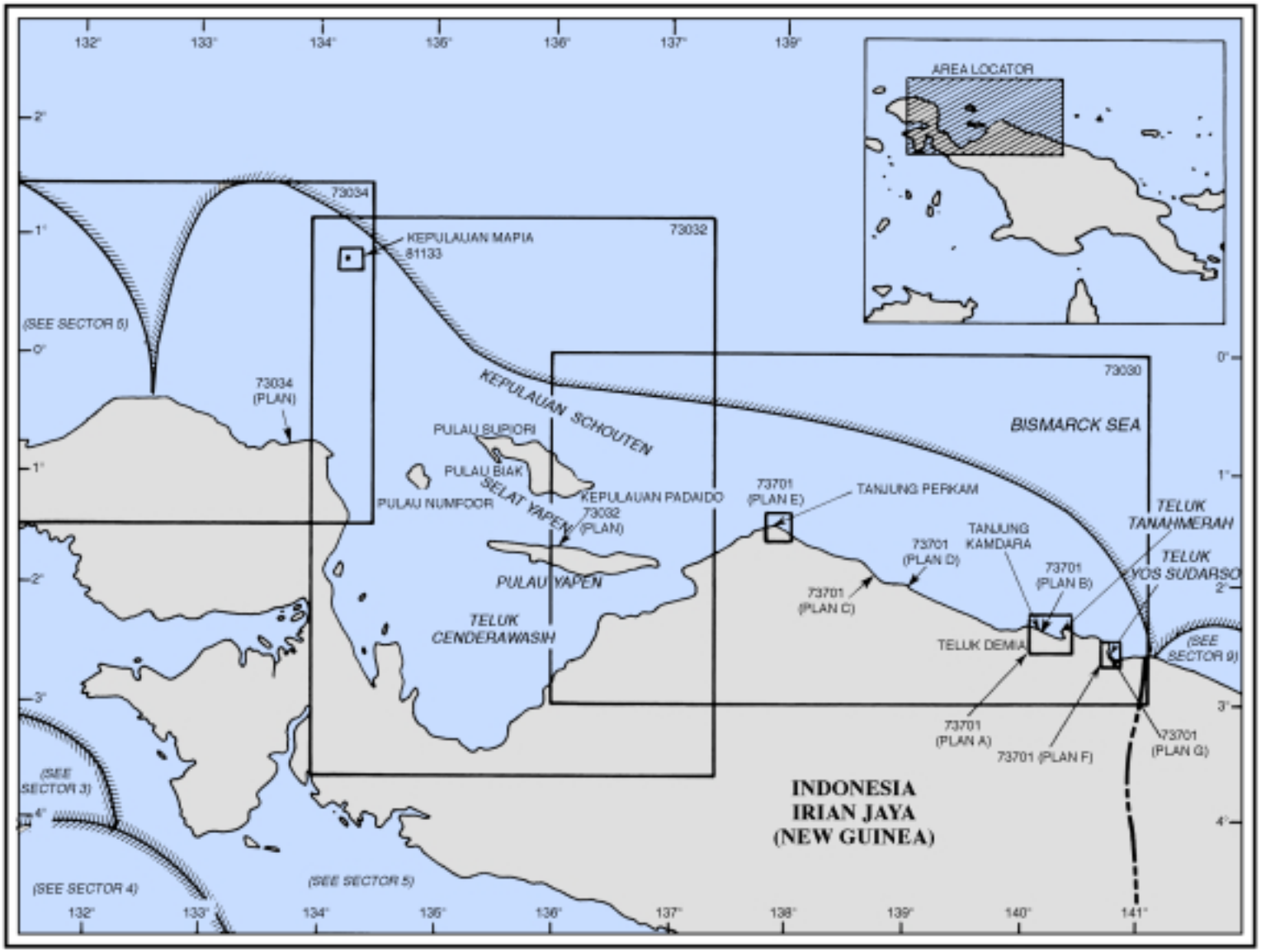

Additional chart coverage may be found in CATP2, Catalog of Nautical Charts.

SECTOR **10** — CHART INFORMATION

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SECTOR 10

NORTH COAST OF NEW GUINEA—EAST BOUNDARY OF IRIAN JAYA TO TANJUNG YAMURSBA

Plan.—This sector describes the N coast of New Guinea from the E boundary of Irian Jaya, at the 141st E meridian, to **Tanjung Yamursba** (0˚20'S., 132˚25'E.). The sector includes **Teluk Cenderawasih** (2˚20'S., 135˚30'E.). The arrangement of the sector is from E to W.

Eastern Boundary of Irian Jaya to Teluk Cenderawasih

General Remarks

10.1 The coast of Irian Jaya between its E boundary and Teluk Cenderawasih, except for the E end, is low and monotonous, with a continuous line of trees behind the beach. The line of trees is broken in places by small clumps of casuarina trees or coconut plantations and by the mouths of rivers; behind this is generally a wide plain, rising into hilly land, formed by the spurs of mountains.

The entire area is sparsely populated.

Winds—Weather.—Between the E boundary and Teluk Cenderawasih, as well as in Teluk Cenderawasih, the monsoons do not show the great difference between wet and dry weather, which is such a strong feature for the middle and W parts of the archipelago. The heavy showers of rain fall mostly in July, August.

During July, August, and September NW winds predominated in one year, and NW winds in another. These winds, however, were then not nearly as strong as in other seasons of the year, and were nearly always varied in the evening by land breezes, which continued until 2200; after that it is calm, sometimes with much rain, until the early morning. During December, January, and February the NW winds are very strong day and night; they bring little rain, but cause a troublesome sea. April, May, October, and November are transition months.

Tides—Currents.—Tidal currents are only noticeable off the mouths of rivers. Elsewhere the monsoon current sets E during the NW monsoon and W during the SE monsoon. This current is weak close to the coast between Teluk Yos Sudarso and Teluk Tenahmerah; however, there is sometimes a W or E current of from 2 to 3 knots after strong E or W winds, respectively.

The greatest rate in the open sea was only 1.5 knots, except one occasion when a set of 2.5 knots was observed.

Eastern Boundary of Irian Jaya to Teluk Yos Sudarso

10.2 The coast between the E boundary of Irian Jaya, at the 141st meridian, to **Germania Hook** (Hoek Germania) (2˚37'S., 140˚56'E.), about 4.5 miles W, is high and covered with vegetation. Germania Hook is the steep termination of a spur of mountain, 310m high, about 1.75 miles SE. A knob, 785m high, a spur of Bougainville Mountains, is conspicuous about 5 miles ESE of Germania Hook.

Tami River, navigable only by boats, discharges close W of Germania Hook. From seaward the mouth of the river is easily recognized by the quantity of timber washed up on the coast, particularly W of the mouth. Anchorage off the mouth of the river can be recommended only in fine weather, and is dangerous during the NW monsoon.

The coast between the mouth of the Tami River and Tanjong Jar, about 8 miles W, is inaccessible due to the surf. Sko Sai, about 2 miles W of the entrance to Tami River, is one of several villages along this coast, and is conspicuous due to a temple with a high conical roof.

Teluk Yos Sudarso

10.3 Teluk Yos Sudarso (Teluk Jos Sudarso) (Humboldt Baai) is entered between **Tanjung Jar** (Tanjung Djar) (2˚36'S., 140˚47'E.) and Tanjung Suaja (Tanjung Soeaja), about 4.5 miles NNW. Teluk Jayapura (Hollandia Baai) and Teluk Imbi (Imbi Baai) occupy the NW part of Teluk Yos Sudarso. Most of the commercial activity is at the head of Teluk Jayapura, where the city of Jayapura (Hollandia Haven) is located. Teluk Yautefa (Jautefa Bay), at the head of the bay, has a least depth of 3m in the entrance, between drying sandbanks.

Winds—Weather.—The monsoons are little felt in and off Teluk Yos Sudarso. By day there is a sea breeze; in the evenings there is a land breeze which dies down about 2200. During the SE monsoon the sea breeze starts fairly suddenly at 1000 and abates just as quickly at 1600. After a calm period the land breeze sets in after sunset. In the months of June and July, squalls with a force of 5 to 6, coming suddenly from E, must be reckoned with. Strong gusts of wind occur occasionally in the bay, probably due to the proximity of Pegunungan Cycloop (Cycloop Mountains).

In Teluk Jayapura variable winds predominate throughout the year; from May to August inclusive, the winds are mainly E by day, during the other months they are mostly NW to NE by E, and mostly W in the evenings. The humidity at 92 percent is very high.

Tides—Currents.—The tidal rise at Teluk Jayapura is 1.2m at mean higher HW and mean lower HW.

The tidal currents in Teluk Jayapura are weak, but there is nearly always a slight S current between Entsjau and the coast which must be allowed for when berthing at the wharves.

Aspect.—Tanjung Jar (Tanjung Djar) (2˚36'S., 140˚47'E.), the SE entrance point of the bay, is the N termination of a mountain which rises to an elevation of 318m about 1 mile SSE.

A peak, 504m high, backs Teluk Yautefa, about 7 miles WSW of Tanjung Jar. Leimok, a hill, 222m high, about 4 miles N of the peak, is the N termination of a yellowish ridge; there is a prominent radio mast on its summit.

Tanjung Suaja (Tanjung Soeadja) (2˚32'S., 140˚45'E.), the NW entrance point of the bay, is the SE termination of a peninsula which attains an elevation of 204m about 0.5 mile WNW. A light, from which a racon transmits, is shown on Tanjung Suaja. Several radio towers are located about 1.25 miles NNW of Tanjung Suaja.

Tanjung Kassu (Tanjung Kassoe), steep and rocky, lies about 1 mile SW of Tanjung Jar. Sibir, a rocky islet, is conspicuous about 0.25 mile farther SW. Pulau Pun (Poen Island), about 0.75 mile SW of Tanjung Kassu, is covered with vegetation.

The S and W shores of Teluk Yo Sudarso, to Hamadi, an islet about 4.5 miles WNW of Tanjung Jar, are sandy and covered with coconut palms.

Caution.—Cemperia (Tjemperia), a shoal, in a depth of 6.7m, lies about 1.5 miles NW of Tanjung Jar.

A shoal, with a depth of 5.5m, lies in the N approach to Teluk Yos Sudarso, about 2.5 miles NNE of Tanjung Suaja, and about 1.5 miles offshore.

Nembawewe, a shoal, with a least depth of 3.2m, lies about 1.5 miles SSW of Tanjung Suaja; a light marks the E side of the shoal. The N side of this shoal is marked by a black buoy. Seroibi, with a swept depth of 5.5m, lies 0.67 mile W of Nembawewe. Depths of 9.1m lie between the two shoals.

A 2.7m shoal, and a 3.2m shoal lie about 0.8 mile NE and 1.25 miles E, respectively, of Hamadi; other shoals lie farther W. A shoal, with a least depth of 2.3m and marked by piles, lies about 0.75 mile ESE of Tanjung Yogur, which lies about 1.25 miles N of Hamadi.

Several shoals, with depths of less than 5.5m, extend up to 1 mile off the entrance to Teluk Yautefa.

Teluk Jayapura and Teluk Imbi

10.4 Teluk Jayapura (Hollandia Baai) (2˚32'S., 140˚43'E.) and Teluk Imbi (Imbi Baai), in the NW part of Teluk Yos Sudarso, are separated by Tanjung Kayu Batu (Tanjung Kajoe Batoe), a high point. **Tanjung Yogur** (Tanjung Jogoer) (2˚33'S., 140˚43'E.), on the S side of Teluk Jayapura, lies about 2 miles WSW of Tanjung Suaja, and is the termination of a spur from Jarremoh, a prominent mountain about 0.5 mile WSW.

Madurau (Madoerau) (2˚33'S., 140˚44'E.) and Entsyau (Entsjau), two rather high islands, lie 0.35 mile ENE and 0.2 mile NE, respectively, of Tanjung Yogur. A reef, on which the sea breaks in heavy weather, extends 0.17 mile NW of Entsyau. There is a lighted buoy, reported missing, moored on the NW edge of this reef. A detached drying reef lies about 0.25 mile W of Entsyau.

Teluk Jayapura and its approaches, and the S part of Teluk Imbi, have been wire-dragged to a depth of 14m. A patch in the middle of Teluk Imbi, nearly 0.5 mile NE of Tanjung Kayu Batu, has been wire-dragged to a depth of 12m. Lights, in range 255˚, lead to the anchorage at the head of Teluk Jayapura. A lighted buoy, moored 0.3 mile ENE of the front leading light, marks the edge of a reef off the N shore in the bay. The reef was reported to be extending S.

10.5 Jayapura (Hollandia Haven) (2˚32'S., 140˚43'E.) (World Port Index No. 53285) extends along the shores of Jayapura Bay and 7 miles inland. Jayapura is the administrative capital of Irian Jaya.

Tides—Currents.—Tidal currents in Teluk Jayapura are weak, but there is nearly always a slight S current between Entsyau and the coast which must be allowed for when berthing.

Aspect.—Oil Pier, in the NW corner of Jayapura Bay, is a concrete jetty, in poor condition 32m long with a depth of 4.9m at the accessible berthing section. This berth is suitable for mooring vessels up to 2,500 grt only.

No. 1 Wharf is 132m long with a depth of 8.8m alongside; a vessel of 20,000 grt can berth there.

No. 2 Wharf is 116m long with as depth 5.8m alongside.

Berthing for tankers is provided by two mooring buoys, in a depth 13.7m. Cargo is discharged over the stern by floating pipeline to storage tanks ashore.

There are two mobile cranes, one of 25 tons and one of 2.5 tons capacity and five forklift trucks of between 2 and 3 ton capacity.

The village of Imbi, built on piles, stands on the E side of Teluk Imba. There are a number of fishing traps in Teluk Imba.

Beacons, with white triangular topmarks, in range 000˚, lead to the tanker berth on the W side of Teluk Imbi. A can buoy marks a 9.1m patch, about 0.1 mile S of the front range beacon. A cross range, consisting of two similar beacons, in range 276˚, is located about 0.3 mile N of Tanjung Kayu Batu. Another beacon, close SE of the E beacon of this range, is on the edge of a 4.6m shoal extending from the shore reef.

The offshore pipeline berth, on the W side of Teluk Imbi, is in depths of 13.7m and consists of two stern mooring buoys. A group of oil tanks stand on the shore about 0.1 mile W of the berth.

Pilotage.—Pilotage is compulsory. The pilot boards just seaward of the two navigational buoys in Teluk Jayapura. The harbor is closed to traffic at night. The harbormaster's office is located at the head of the harbor.

The harbor limits of Teluk Jayapura are lines joining Jarremoh and Tanjung Suaja to the NW extremity of Madurau.

Anchorage.—Anchorage may be taken in depths of 40 to 46m, mud and sand, near the head of Teluk Jayapura.

Safe anchorage can be taken in Teluk Imbi, but the water is rather deep. Vessels should keep clear of the 12m patch in the middle of the harbor.

Caution.—Vessels approaching from N should give the 5.5m patch, about 2.5 miles NNE of Tanjung Suaja, a wide berth.

Vessels approaching from N should give Tanjung Suaja a good berth, as a bank, with a depth of 3.7m, and an above-water rock on its outer edge, extends about 135m SE from the point. After rounding the point the vessel should bring the range lights in line, bearing 255˚, which leads to the anchorage.

Nembawewe should be given a berth of at least 0.2 mile.

Teluk Yos Sudarso to Tanjung Kamdara

10.6 The coast between **Tanjung Suaja** (2˚32'S., 140˚45'E.) and Tanjung Tanahmerah, about 26 miles WNW, is high, with numerous ridges extending N from the mountains, and terminating insteep points and rocky cliffs at the coast.

There are small sandy beaches between the points, and there are several villages on the coast.

Tanjung Suaja Light is exhibited at an elevation of 215m. A racon transmits from the light structure.

Merah Riboh, 680m high, lies about 3.5 miles WNW of Tanjung Suaja. Remor, about 10.5 miles farther W, is the highest of three conspicuous peaks of Pegunungan Cycloop (Cycloop Mountains), and attains an elevation of 2,056m. The Dafonsero Mountains, with four peaks, lie at the W end of this section of coast; the highest peak attains an elevation of 1,623m, and is conspicuous about 6 miles SE of Tanjung Tanahmerah.

Teluk Tanahmerah.—Teluk Tanahmerah (Tanahmerah Baai) is entered W of **Tanjung Tanahmerah** (2˚24'S., 140˚21'E.), the E extremity of a peninsula rising to an elevation of about 100m. The bay is deep, with a generally rocky shore, with occasional beaches, the hills rising steeply from the sea. A peak, 647m high, and steep on its SE side, is distinctive about 4.5 miles SSW of Tanjung Tanahmerah.

A tongue of land, 155m high at its N end, projects N from the S side of the bay. Kwakeboh, 56m high, is the outermost of several islets, lying on a partly drying reef which extends 0.67 mile N of the tongue of land. Teluk Demengong lies on the W side of the tongue, and Teluk Depapre lies on the E side.

Siakammoko, a sharp conical peak, and Deparemoko, a prominent double peak, lie about 1.75 miles and 1 mile, respectively, S of the N extremity of the tongue.

Foul ground, with a small wooded islet within its outer edge, extends 0.35 mile from the head of Teluk Demengong.

Anchorage.—It is reported that safe anchorage can be taken in 40m, in Teluk Demengong, close W of the small wooded islet. There is also anchorage in 40m, in Teluk Depapre, close offshore. Strong continuous NW winds cause a heavy swell in the bay, but at other times there is a calm sea. The coastal reef is mostly marked by discoloration.

10.7 Teluk Iris (Iris Baai) (2˚24'S., 140˚13'E.) is entered about 5.75 miles W of Tanjung Tanahmerah. The shores of the bay show bright white rocky patches in places. Kiakebo, an above-water rock, lies in the NE approach to the bay, nearly 0.5 mile NW of the E entrance point. Daidokopo, a rock above water, lies in the N approach, nearly 1.5 miles NW of the E entrance point; a patch, with a depth of 4.6m lies 0.35 mile N of Daidokopo, with a 5.5m patch between. A reef, on which there are three rocks above-water, lies about 0.3 mile N of **Tanjung Hadimoko** (2˚24'S., 140˚14'E.), located about 1 mile WSW of the E entrance point. The passage between Daidokopo and the three rocks is deep and clear of dangers. Anchorage, exposed N, can be taken at the head of the bay, in depths of 12.8 to 16.5m 0.35 mile offshore, with good holding ground. During the NW monsoon, anchorage may be obtained close off the mouth of the Marubu River (Maroeboe River), in the SE corner of the bay by vessels with local knowledge.

Teluk Muris (Moeris Baai) (2˚22'S., 140˚10'E.) is entered about 4.5 miles WNW of Daidokopo. Anchorage, with no shelter from N, may be obtained by small vessels in Teluk Muris, with good holding ground.

Salean Segara is a reef, with a least depth of 2.7m, marked by discoloration, lying about 2.25 miles ENE of the E entrance point of Teluk Muris; it extends about 1 mile in a NW-SE direction, is steep-to, and is usually marked by heavy breakers.

A patch, with a depth of 12m, lies about 1.75 miles E of the E entrance point of Teluk Muris. A 4.9m patch, which is seldom marked by discoloration, lies about 1 mile NE of the same entrance point. Daidokopo bearing 110˚; and in range with the summit of Dafonsero Mountains, leads between the coast and the above two patches.

10.8 Teluk Demta (2˚21'S., 140˚09'E.) is separated from Teluk Muris by a peninsula with Tanjung Ande at its N extremity. The bay is entered between Tanjung Ande and Tanjung Murugue (Tanjung Moeroegoee), about 0.2 mile NW. A reef, with depths of less than 5.5m, and on which there are several islets, extends about 0.5 mile N of Tanjung Ande. An above-water rock lies on the shore reef, close E of Tanjung Murugue. Several beacons, which cannot be relied on, mark the edge of the reef on either side of the bay.

Anchorage.—Teluk Demta affords secure anchorage, sheltered from the heavy N swell by Pulau Besar (Poelau Besar) on its W side.

Mayee (Majee) (2˚22'S., 140˚08'E.), a sharp 676m peak, nearly 2 miles WSW of Tanjung Ande, is a good landmark in the approach to Teluk Demta. The flat summit of Jembee, about 1 mile SE of Mayee, in range 211˚ with the beach at the head of the bay, leads to the anchorage. As the alignment leads rather close along the E side of Pulau Besar, it is advisable to haul E before passing Tanjung Murugue, as the reef extends about 135m from the point; then a midchannel course leads to the anchorage.

Teluk Matterer (Matterer Baai) (2˚19'S., 140˚08'E.) is entered between Tanjung Korongwaab, at the NW end of Pulau Besar, and Tanjung Kamdara, about 1.5 miles W. Reefs and depths of less than 5.5m extend up to 0.3 mile N of Pulau Besar.

Tanjung Kamdara (2˚19'S., 140˚07'E.) is fringed by reefs, which extend nearly 0.75 mile ENE of the point; reefs and depths of less than 5.5m extend up to 0.4 mile N of Tanjung Kamdara.

Approaching from W, a good landmark is a hill, 90m high, about 1.75 miles WSW of Tanjung Kamdara; this hill is a spur of another hill, 119m high, close S. About 1.5 miles SE of the 90m hill, a short ridge, 443m high, is plainly visible.

Teluk Matterer, open N, does not afford good anchorage, as winds from between NW and NE prevail by day throughout the year, and the head of the bay is encumbered by reefs.

Anchorage.—Temporary anchorage can be taken in 12 to 12.8m, good holding ground of mud and sand. There is a detached reef, with a depth of 1.8m, in the center of the harbor. A vessel should approach with Mayee bearing 186˚; the white patch on the slope of the hill on the SW side of the bay is a good mark when the vessel is closer in.

A good refuge harbor during the NW monsoon, for vessels with local knowledge, is in Tarfia Roads, SE of Tanjung Kamdara; the anchorage is in a depth of 4m, with the S extremity of the peninsula on which lies the village of Tarfia, bearing 277˚, and the N extremity bearing 313˚.

Tanjung Kamdara to Kepulauan Wakde

10.9 The coast between **Tanjung Kamdara** (2˚19'S., 140˚07'E.) and the point abreast Kepulauan Wakde, about 70 miles WNW, is low, and bordered by an almost continuous sandy beach, backed by trees; inland, marshy plains extend to the hills, which approach the coast abreast Kepulauan Podena.

Teluk Walckenaer is the bight formed between Tanjung Kamdara and **Tanjung Wiruwai** (2˚17'S., 139˚39'E.) about 28 miles W. Tanjung Wiruwai can be identified by the mouth of Wiruwai River (Wiroewai River) close E of it; the coast is thickly populated in the vicinity of the river. Anchorage can be taken in any part of Teluk Walckenaer, but there is always a ground swell near the coast.

Pulau Kaicebo (Kaitjebo) (2˚14'S., 139˚34'E.), a sandy cay, covered with vegetation and high trees, and **Pulau Mengge** (Mengge) (2˚12'S., 139˚32'E.), a low, rocky islet, with high trees, lie about 1.5 miles offshore, about 5.75 and 8.75 miles, respectively, NW of Tanjung Wiruwai. Mopkai and Warko, each with a depth of 5.8m, lie about 0.5 mile and 1.25 miles, respectively, NNW of Pulau Kaicebo; the reefs are not marked by discoloration.

Kepulauan Podena (2˚07'S., 139˚29'E.), lying about 12 miles NW of Tanjung Wiruwai and within 5 miles of the coast, consists of Pulau Anus (Anoes), 40m high; Pulau Yarsun (Jarsoen); and Pulau Podena (Podena), 28m high. The islands are covered with fairly high trees, and there are small villages on each island. A reef, with depths of less than 5m, extends about 1.25 miles NNW from Pulau Anus, and a patch, with a depth of 8.8m, lies about 0.25 mile E of the E extremity of Pulau Yarsun.

Anchorage may be obtained in 28m, about 135m from the S extremity of Pulau Yarsun, but it is not recommended due to the swell.

10.10 The coast SW of Kepulauan Podena is backed by the Siduarsi Mountains (Sidoearsi Mountains), attaining an elevation of 851m about 9 miles inland. This range is especially conspicuous from E, and appears from N as a chain of peaks extending E-W. The Gauttier Mountains, farther SW, attain an elevation of 2,272m, about 38 miles from the coast. The Gauttier Mountains are connected E to the Foja Mountains, 2,194m high, by a high ridge. The latter two ranges can be identified in clear weather.

Of the many rivers along this coast, the Biri River, entered about 6 miles WSW of Pulau Podena, is the only one accessible by small craft; it is about 37m wide near its mouth.

Pulau Yamma (Jamna) (2˚01'S., 139˚15'E.) and Pulau Mademo (Mademo), two low islands, principally occupied by coconut plantations, lie about 14 miles WNW of Kepulauan Podena. A light is shown from the W extremity of Pulau Yamma.

A shoal, with a depth of 1.8m, slightly marked by discoloration, and a shoal with a least depth of 12m at its N end, lie about 0.5 mile N and 1.25 miles NNE, respectively, of Pulau Yamma. A shoal, with a depth of 6.4m, and a shoal with 4m, lie about 1 mile ENE and 0.67 mile E, respectively, of the SW end of the same island. A 2.4m patch, with a 7m patch close S, lies about 0.25 mile SW of the W extremity of Pulau Yamma. The shoals off Pulau Yamma are frequently marked by rips; with the wind against the current, the sea appears to break over the 12m shoal NNE of the island. The velocity of the tidal current is variable but does not exceed 1.5 knots.

A shoal area, with depths of 2.7m at the outer end, extends 0.67 mile NNE of Pulau Mademo. A 4.9m patch lies about 0.3 mile SE of the SE end of Pulau Mademo, and a 5.8m patch lies about 0.25 mile WNW of the N end of the same island.

A 5.8m patch, with a 4.9m patch about 0.25 mile WSW of it, lies about 1.25 miles SW of Pulau Mademo, about midway between the island and the mainland.

Anchorage can be taken in the bight on the SW coast of Pulau Yamma, or farther offshore, in a depth of about 14.6m.

10.11 Pulau Masi-Masi (Masi Masi) (2˚00'S., 139˚08'E.), an island, 51.8m high to the tops of the trees, lies about 6 miles W of Pulau Yamma, and about 1.5 miles offshore. A shoal, with a depth of 4.6m, lies midway between the island and the mainland. Sefieri, a rock awash, lies about 2 miles ESE of Pulau Masi-Masi. A rock, with a depth of 0.3m, lies about 3.75 miles W of the N end of Pulau Masi-Masi, and a 0.9m patch lies about 1.25 miles farther NW; they are not marked by breakers, and show only slight discoloration.

Kepulauan Wakde (1˚56'S., 139˚01'E.) consists of Insumoar (Insoemoar) and Insumanai (Insoemanai), close S of it, lying about 7.5 miles WNW of Pulau Masi-Masi, and about 1.5 miles offshore. Both islands are low and covered with coconut trees, which attain an elevation of 41m on Insumoar. A patch, with a depth of 5.5m, lies about 0.5 mile SSE of the S extremity of Insumoar.

Anchorage may be obtained in 12 to 12.8m, between the islands, where there is no swell. Tidal currents are irregular, but never exceed velocities of 1.5 knots. A jetty, reported in poor condition, is located on the S side of Insumoar.

Rocks, with depths of 1.5 and 1.8m, lie about 1.5 miles W, and 2.75 miles WSW, respectively, of the W end of Insumoar.

Kepulauan Wakde to Tanjung Perkham

10.12 The coast between the village of **Arare** (1˚58'S., 139˚00'E.), on the coast abreast Kepulauan Wakde, and Tanjung Perkham, about 71 miles WNW, is entirely flat, and bordered by a wide, dark-colored sand beach. Behind the beach there are high trees of uniform height, and the coast presents no noticeable features, except at Tanjung Verkami.

A peak, 610m high, SW of Kepulauan Wakde, and about 20 miles E, is conspicuous from NE. The Irier Mountains, running in a N-S direction, lie between the peak and the coast; Basbassi, 688m high, is the highest peak of the range. Near the N end of this range, and 5 miles inland, a peak, 610m high, is conspicuous from E.

Tor River (1˚57'S., 139˚54'E.) flows into the sea about 6 miles W of Kepulauan Wakde, and can be entered by small craft at HW. A dangerous spit extends about 1 mile N of the entrance. The E entrance point of the river can be identified by a group of high casuarina trees. There is a strong current in the river, and muddy water extends from 4 to 5 miles offshore; the dividing line between fresh and sea water is often marked by heavy ripples, which frequently have the appearance of reefs.

Teluk Maffin (1˚58'S., 138˚52'E.) indents the coast about 1.5 miles WSW of the mouth of Tor River. Anchorage may be obtained in 13.7m close off the village of Maffin, with good holding ground of mud and sand, and out of the tidal current. Anchorage can be taken in 66m farther offshore, but care must be taken to avoid a deep gully, with depths of 92 to 110m, which extends into the middle of the bay close W of Maffin.

The village of Sawar, about 8 miles WNW of the mouth of the Tor River, is backed by coral stone, rising vertically to elevations of about 30.5 to 40m.

Sarmi Anchorage (1˚51'S., 138˚45'E.) is formed by a peninsula extending from the coast, about 3.5 miles NW of Sawar. The peninsula is fringed by reef which extends about 0.2 mile from its N end. There are conspicuous, high, round-topped trees on the peninsula. The village of Sarmi, on the peninsula is the headquarters of a government official.

A light is shown from the N part of the peninsula.

Pulau Sarmi (Poeloe Sarmi) and Pulau Sawar (Poeloe Sawar) are low, reef-fringed islets, lying nearly 1 mile NNW, and 1.5 miles SSE, respectively, of the N end of the peninsula.

A reef, with a depth of 1.8m, lies 0.35 mile E of the N end of the peninsula. A rock awash lies 0.67 mile SSE of Pulau Sawar. A sunken wreck, dangerous to navigation, lies 1.1 miles SSE of the N end of the peninsula. This wreck is marked by an obstruction buoy N and S of the position.

Anchorage.—Good anchorage may be obtained in depths of 7.6 to 12m, mud and sand, on either side of the peninsula. During the NW monsoon some swell sets into the SE anchorage. A stone pier for boats extends over the reef on the S side of the peninsula.

10.13 Kepulauan Kumamba consists of **Pulau Armo** (Armo) (1˚41'S., 138˚48'E.), 143m high and marked by a light, and Pulau Liki (Liki), 328m high, about 4 miles NW, with the small island, Pulau Lamsutu (Lamsoetoe), 104m high, midway between. The islands are located on a plateau which is separated from the mainland by a deep passage. The S extremity of Pulau Armo lies about 9 miles NNE of Sarmi.

There are patches, with depths of 2.8 to 11m, between Pulau Liki and Pulau Armo. Isyuma Light is shown from the N extremity of Pulau Liki. A reef extends about 0.5 mile N of Pulau Liki, and a rock lies 1 mile SSW of the S extremity of Pulau Armo. These dangers are seldom marked by discoloration. Vessels of deep draft should not pass between Pulau Armo and Pulau Lamsutu. Kepulauan Kumamba has been reported to lie 3.3 miles 320˚ from its charted position.

Currents were reported to set W, with a velocity of 3 to 4 knots off the S end of Pulau Armo. A maximum velocity of 1.5 knots was observed between the islands.

Anchorage may be obtained off the lee sides of the islands, but the depths are considerable.

The coast between the peninsula of Sarmi and Tanjung Perkam, about 55 miles WNW, has regular depths, shoaling gradually shoreward. Anchorage may be taken fairly close offshore along this coast. The coast in the vicinity of Tanjung Perkam should not be approached within 3 miles as a bank fronts the entrance of Matabori River and the mouth of Mamberamo River. The coast in the vicinity of the mouths of rivers is constantly changing; during the SE trade it silts up, while during the NW monsoon the surf causes erosion.

A moderate ESE current is usually experienced along this coast, and large trunks of trees are frequently encountered.

Tanjung Verkami (1˚48'S., 138˚41'E.), about 5 miles NW of Sarmi, is conspicuous due to a group of high trees protruding above the surrounding foliage.

Matabori River (1˚31'S., 137˚59'E.), entered about 5.5 miles SE of Tanjung Perkam, is accessible to small vessels with local knowledge at HW. The ebb tidal current may attain a velocity of 4 knots. There are high trees on the W entrance point of the river, and some low casuarina trees on the E entrance point.

Tanjung Perkam (Kaap d'Urville) (1˚28'S., 137˚55'E.) can be identified by a very high clump of trees on its extremity, and also by the wide mouth of the Mamberamo River, close W, when viewed from NNE.

Mamberamo River

10.14 Mamberamo River (1˚28'S., 137˚54'E.), one of the largest rivers in New Guinea, is entered W of Tanjung Perkam. A deep channel leads to the river entrance from depths of over 183m. Close outside the river entrance there are two patches, in depths of 5.5m and 6.4m, respectively, in the middle of the channel, with a deep channel on either side of them. Close inside the patches there is a bar, with depths of 7 to 9.1m.

The banks of the river are sparsely populated. The village of Teba lies on the E bank of the river, about 1 mile within the entrance. There is a light on the W shore of the entrance.

The river has been safely navigated by a surveying vessel as far as the Kerkhoven and Morris Islands, abut 50 miles from its entrance. A vessel of 2.4m draft can reach Marine Falls, nearly 50 miles farther upriver, but there are rapids and whirlpools on this stretch of river.

Tides—Currents.—The level of the river shows little variation at the different seasons, the greater difference so far recorded being 4m below Marine Falls.

The velocity of the outgoing fresh water current is 4 knots at LW and 2.5 knots at HW. This layer of fresh water flows over the salt water, which lies in the deep channel in the approach and is not subject to this current.

Anchorage.—Good anchorage can be obtained in 12m, off the village of Teba, where the river is about 0.2 mile wide. Vessels anchor E of the main stream where they are clear of the ocean swell.

Directions.—The mouth of Mamberamo River is not easy to identify, but the clump of high trees on Tanjung Perkam is a good guide. Approaching from W, several isolated trees on the W entrance point are a good guide.

When about 4 miles N of Tanjung Perkam, keep the W entrance point in range with the inner point on the E side, bearing 202˚, until the outer point on the E side of the entrance to Matabori River is in range with Tanjung Perkam, bearing 131˚. Then steer to make good a course of 180˚, allowing for the NNE stream of fresh water, in order to pass W of the 5.5m patch close outside the entrance. When the outer point W is shut in by the W entrance point of the river, steer for the inner point on the E side, bearing 207˚, until the first point on the W side is abeam, and then keep near the W bank. A good lookout should be kept for large tree trunks which are frequently carried downstream.

Tanjung Perkam to Selat Kurudu

10.15 The coast between **Tanjung Perkam** (1˚28'S., 137˚55'E.) and Tanjung Dombo, about 56 miles WSW, is low, almost uninhabited, with several unimportant rivers entering the sea. **Mabri Hill** (1˚51'S., 137˚15'E.), a hill, 169m high, about 9.5 miles ENE of Tanjung Dombo, is the only elevated land along this coast; it has high trees on its summit, and is a good landmark due to its isolated position.

Depths on this coast are regular, shoaling gradually shoreward. The coastline at the mouths of rivers are subject to constant change; it silts up in the NE trade, and in the NW monsoon the surf causes portions to fall away.

Pulau Kurudu (Koeroedoe) (1˚51'S., 137˚00'E.), a hilly island, 169m high at its E end, lies about 3 miles WNW of Tanjung Dombo, from which it is separated by Selat Dombo (Dombo Strait). A bank, with a least known depth of 0.9m, extends about 1.25 miles N from the NE extremity of Pulau Kurudu; depths of less than 7.8m extend about 2.5 miles farther N.

Anchorage.—Safe anchorage, during the southeast trade, may be obtained off the village of Kaipuri, located in the middle of the S coast of the island, and also off the village of Kurudu, on the NE coast, W of the projecting bank. During the NW monsoon there is a swell at both anchorages and landing cannot be effected.

Selat Kurudu (Koeroedoe Strait) (1˚49'S., 136˚56'E.), deep and clear, separates the W extremity of Pulau Kurudu from **Tanjung Rainbawi** (1˚47'S., 136˚54'E.), the E extremity of Pulau Yapen, nearly 4 miles NW. A reef, with a depth of 3m at its outer extremity, extends about 0.75 mile offshore from the W extremity of Pulau Kurudu, and a reef, with a depth of 0.9m, lies about 0.5 mile S from Tanjung Rainbawi.

A light is shown from Tanjung Rainbawi.

The strait is navigable at night with good visibility, care being taken to avoid mistaking Selat Dombo for Selat Kurudu; soundings, however, are a good guide.

Tides—Currents.—There are strong tidal currents in the strait. During springs the tidal currents set constantly SW, with a maximum velocity of 3.5 knots.

A shoal, with a depth of 8.8m, lies about 10 miles S of Tanjung Rainbawi.

Island in the Approach to Teluk Cenderawasih

10.16 Kepulauan Schouten (Schouten Islands) (1˚00'S., 136˚00'E.), in the approaches to Teluk Cenderawasih (Teluk Sarera), consist of the following islands: Biak and Supiori, separated from each other by a narrow channel; Kepulauan Padaido, SE of Biak; and Bepondi and Ayawi, NE of Supiori. Biak and Supiori are mountainous, the others are low and hilly, but most of them are densely covered with high trees.

Farther S, the islands of Pulau Yapen, Mios Num, and Numfoor extend across the entrance of Teluk Cenderawasih, and are separated from Kepulauan Schouten by Selat Yapen.

During the NW monsoon the heavy seas in the E entrance to Selat Yapen can be avoided by passing N of Kepulauan Padaido, taking care to avoid Wundumimas, then proceeding midway between the islands of Biak and Owi.

Winds—Weather.—In the vicinity of Kepulauan Schouten, November and April are the transition months. The change from the NW to the SE monsoon and the beginning of this last season is characterized by a period of long calm called "Wampasis" (Quiet wind) by the natives. In both monsoons the sky is overcast and especially near the equator, much rain was experienced. During the SE monsoon there was often a thick mist over the sea for months on end.

Land and sea breezes usually occur over Pulau Supiori and Pulau Biak three hours after sunset and sunrise. They are only of any importance during the periods that the monsoon wind is less strong.

Tides—Currents.—During the NW monsoon the east-going current divides into two branches W of the NW extremity of Pulau Supiori. One branch sets N of Kepulauan Schouten. The other branch sets SE between Pulau Supiori and Pulau Numfoor, then E through Selat Yapen, and then NE out though its E end. From the latter branch another branch sets between NNE and NE, along the S coast of Pulau Biak, and unites off the W end of Pulau Biak with the N branch. During the SE monsoon the reverse occurs.

Kepulauan Padaido

10.17 Kepulauan Padaido (Padaido Islands) (1˚15'S., 136˚35'E.) consist of a large number of wooded islands and islets. Some are hilly, with elevations up to 137m, and others are low and sandy.

Pulau Workbondi (Mios Workbondi) (1˚13'S., 136˚42'E.), 56m high, the E island, lies about 37 miles NNW of Tanjung Rainbawi. Urbinasi, a bright white sandy patch, lies on the W extremity of a drying reef, S of Pulau Runi (Roeni), an islet about 4 miles S of Pulau Workbondi. Urbinai (Oerbinai), an extensive shoal, with a least depth of 4.6m, lies about 2 miles E of Pulau Workbondi. Kassinampia is an extensive bank, with a least depth of 5.8m at its NW extremity, about 2.75 miles NNW of Pulau Workbondi.

Pulau Bromsi (1˚13'S., 136˚36'E.), about 5 miles W of Pulau Workbondi, attains an elevation of 137m and is the highest of the group. Pulau Pakriki (Pakriki), about 3 miles farther WSW, has a table-topped summit, 136m high, which is very prominent. Pulau Manggwandi (Mios Manggwandi), about 2.5 miles S of Pulau Bromsi, is 77m high at its N end. Pulau Rasi (Rasi), the S islet of the group, and a reef, with a depth of 0.9m and plainly marked by discoloration, lie about 1.5 miles SE and SW, respectively, of the S end of Pulau Manggwandi.

A light is shown from Pulau Rasi.

A coral patch, with a depth of 4.6m, and with a 7.6m patch, about 0.5 mile E of it, lies about 6.5 miles WSW of the S extremity of Pulau Manggwandi. A 0.9m patch lies about 1 mile SW of the S end of Pulau Manggwandi.

A 7.9m patch, about 2 miles WNW of Pulau Pakriki, is marked by eddies and tide rips, but does not discolor.

The passage between Pulau Manggwandi and Pulau Pasi (Pasi), about 1 mile N, is clear of dangers. The narrow passage between Pulau Pasi and Pulau Bromsi has a least depth of 18.3m in midchannel; a current was reported setting W in the passage, with a velocity of 1 to 3 knots. There is a least depth

of 6.9m in the fairway between Pulau Bromsiand and Pulau Padaidori (Padaidori), the N island of the group; a strong current runs through this passage.

Pulau Pai (Pai) (1˚13'S., 136˚26'E.) lies at the NE extremity of an atoll, about 3 miles W of Pulau Pakriki. Pulai Nusi (Noesi), Pulau Wundi (Mios Woendi) and Pulau Auki (Auki) also lie on the atoll; the above islands are inhabited. Jumni, an islet, 42.4m high, lies about 1 mile E of Pulau Auki. A shoal, which partly dries, lies about 1 mile SW of Pulau Komori, an islet on the SW side of the atoll; it shows as a bright white sandbank, and is plainly marked by discoloration when covered. **Pulau Wurki** (Mios Woerki) (1˚17'S., 136˚19'E.), about 3.5 miles WSW of Pulau Wundi, has coconut plantations on it, and is uninhabited.

Anchorage.—Anchorage may be obtained in 18.3 to 26m, good holding ground of mud, sand and coral, by vessels with local knowledge, in the lagoon off Pulau Wundi.

The entrance to the lagoon, at its S end, is marked on its W side by a red conical buoy. The entrance to the lagoon, with a least depth of 9m, lies between a patch, with a depth of 4.9m, on the W side, and the S extremity of the reef extending about 1 mile S from Pulau Nusi, on the E side; there is often a strong current setting across the entrance.

Vessels should enter the lagoon with the W side of Pulau Wundi, bearing 332.5˚, in range with Jumni, 0.75 mile from its W end. When well within the entrance change course to 027˚, which leads to the anchorage.

Pulau Owi (Owi) (1˚14'S., 136˚13'E.), 94m high and inhabited, lies about 3.75 miles W of Pulau Auki, and is the W island of the group.

Pulau Rurbasbeba (Roerbasbeba), with Pulau Rurbaswedari, about 0.4 mile E, are the SW islets of the group, and lie about 3 miles S of Pulau Owi. The islets have practically no coastal reefs, and the pass between them is deep and clear of dangers.

Karana Wundumimas (Woendoemimas), with a swept depth of 5.9m, lies about 4 miles N of Pulau Pai, in the passage between Kepulauan Padaido and Pulau Biak. A rectangular area, extending about 0.6 mile N and W, and about 1.25 miles S and E, respectively, of Karana Wundumimas, has a clear swept depth of 17m.

Tides—Currents.—During a survey, the tidal currents set strongly S with the falling tide and weakly N with the rising tide, in the channels between Pulau Pakriki and the islands on either side. In the vicinity of Pulau Pakriki, S of line joining Pulau Padaidori and Pulau Pai, there were constant heavy tide-rips; at the same time there was a constant layer of water setting S from the W side of Pulau Pakriki and a whirlpool E of the line.

While anchored off the E side of Pulau Pasi, it was observed on several occasions that there was a constant S set with a maximum velocity of 2 knots.

During October and November, between Kepulauan Padaido and the SE end of Pulau Biak, there was a constant SSW set, with a maximum velocity of 2 knots, with a SW wind, which raised a heavy sea, especially between Tanjung Warari, the E extremity of Pulau Biak, and Pulau Padaidori.

During the SE trade the current sets NW, dividing at Tanjung Warari and setting along both sides of Kepulauan Padaido.

Pulau Biak

10.18 Manseren Baken (0˚44'S., 135˚51'E.), 740m high, and Sombunen, 695m high, the highest peaks in Pulau Biak (Biak), lie about 3 miles SE, and 2.75 miles S, respectively, of Tanjung Praisbari, the N extremity of the island. The land then slopes gradually to the SE end of the island. There are some fairly conspicuous hills on the coast between Tanjung Praisbari and the NW entrance point of Teluk Korim (Korim Bay) about 18 miles SE. A ridge, 412m high, lies about 2.25 miles S of Tanjung Snerisbari, the S entrance point of Teluk Korim.

The NE coast of Pulau Biak is reported to be a good radar target at a distance of 27 miles.

South and West Coasts of Pulau Biak

10.19 The S coast of Pulau Biak is mostly low, and bordered by sandy beaches. Some high, white rocks are on the shore of the bight E of **Tanjung Samersbari** (1˚11'S., 135˚54'E.). There are numerous villages visible from seaward. Except at **Mokmer** (1˚12'S., 136˚09'E.), where there is a steep cliff, conspicuous from E, there are no outstanding features on this coast; a light is shown at an elevation of 105m at Mokmer.

Tanjung Warari, the E extremity of Pulau Biak and marked by a light, is low, and a reef, on which there is an islet, extends about 0.2 mile E of the point. There are whirlpools off the point.

The village of Bosnik, the headquarters of a government official, lies about 11.5 miles WSW of Tanjung Warari; a boat pier extends to the edge of the coastal reef. Anchorage in 20 to 40m, can be taken by vessels with local knowledge, about 0.1 mile off the head of the boat pier. Vessels should leave the anchorage when strong SW winds spring up. Working cargo is difficult during the NW monsoon.

Suanggarai Roads (Soeanggarai Roads) lie off the coast between **Tanjung Faknik** (1˚11'S., 136˚10'E.), about 3.75 miles WSW of Bosnik, and the village of Mokmer, about 2 miles farther WSW. Maidurip, an islet, lies on the coastal reef, about 0.6 mile SW of Tanjung Faknik, and is conspicuous due to its light green color against the dark green rocky coast behind it. A detached drying reef lies with its N extremity about 0.25 mile SE of Tanjung Faknik.

A patch, with a depth of 4.6m, and about 0.25 mile offshore, lies 0.33 mile E of Tanjung Sapori, which is located about 1 mile SW of Tanjung Faknik. A detached drying reef lies between the patch and Tanjung Sapori; the edges of the reef are steep-to and plainly marked by discoloration.

Anchorage.—The anchorage may be approached with the W extremity of Pulau Owi (Kepulauan Padaido), bearing 161˚ astern, in range with the E extremity of Pulau Rurbasbeba; Tanjung Faknik will then be slightly on the starboard bow. When Maidurip bears 292˚, steer for it on that bearing and anchor in 40 to 50m, about 0.4 mile from the islet, where a vessel will be almost outside the tidal current. Small vessels can anchor farther in, in about 42m, with Maidurip bearing 323˚, distant 0.12 mile.

Small vessels with local knowledge can obtain fairly good anchorage in 29 to 40m in a bight in the coastal reef NE of Maidurip. Anchorage may also be obtained between the islet

and Tanjung Faknik. Both anchorages are protected NE by the detached drying reef SE of Tanjung Faknik.

Sorido Lagoon (1˚12'S., 136˚05'E.)

10.20 From Tanjung Sapori to the entrance of Sorido Lagoon, about 3 miles W of Mokmer, the fringing reef and shoals extend only about 0.25 mile offshore, beyond which is deep water.

Sorido Lagoon, a natural harbor, lies between Pulau Biak and a barrier reef which lies parallel to the coast until it joins the coastal reef at **Sorido** (1˚10'S., 136˚03'E.), a village at the head of the lagoon, 3.5 miles within the entrance. The lagoon is 0.25 mile wide at its entrance, widening gradually to 0.5 mile opposite Waupenor, a town situated on the coast about 1.25 miles within the entrance, where there is a government wharf. The barrier reef is plainly visible. From the entrance to a position opposite the wharf it is submerged with occasional drying patches; then to the head of the lagoon the reef dries except for a secondary entrance through the reef, less than 0.1 mile wide, about 1.5 miles W of Waupenor.

Sorido Lagoon is the most important trading center of Kepulauan Schouten. Biak is the official name of the chain of settlements situated along the N side of the lagoon. The headquarters of the government officials of the Teluk Cenderawasih area and the islands are located here.

Tides—Currents.—The tidal rise at Sorido Lagoon is 1.6m at MHHW and MLHW.

The tidal currents are weak and do not exceed 0.5 knot. Inside the lagoon the flood current sets W and the ebb sets E.

Winds—Weather.—Because of sudden heavy squalls vessels may have to get underway on short notice.

Aspect.—The channel to the wharf and for about 0.25 mile W of the wharf has been swept to 11m. The berth is 142m long and has depths of 11m alongside. Vessels up to 30,000 dwt can use the harbor. The area NW of the swept area is encumbered with reefs.

A lighted buoy, painted in red and white vertical stripes, with a red cylindrical topmark, is moored on the W side of the entrance to the lagoon, and marks the E extremity of the barrier reef.

Pilotage.—Pilotage is compulsory, but is not undertaken at night. The pilot boards in the anchorage in position 1˚12.2'S, 136˚ 05.0'E.

Anchorage.—There are several anchorage berths in the E part of the lagoon. To seaward there is an anchorage area with good holding ground which should be approached with caution due to strong currents.

Caution.—Several shoals lie outside the barrier reef S of Sorido Lagoon. A 7.6m shoal, and an 8.2m shoal, lie 0.67 mile S, and 1 mile SW, respectively, of Waupenor, and about 0.25 mile off the barrier reef. A 3.4m shoal lies 0.35 mile off the SW part of the barrier reef.

White rocks lie about 0.25 mile offshore about 6 miles WNW of Waupenor. A 3.4m patch lies about 0.75 mile W of these rocks. **Tanjung Sambersbari** (1˚11'S., 135˚54'E.) lies about 4 miles farther WSW. A high, gray rock lies on the coast about 5 miles NW of Tanjung Sambersbari.

Between Tanjung Snerisbari, a low point, about 8 miles NW of Tanjung Sambersbari, and the S entrance to Sorendidori, about 18 miles farther NNW, there are no off-lying dangers, except **Japonda** (1˚03'S., 135˚49'E.), a drying reef, about 0.5 mile offshore and 2.5 miles NNE of Tanjung Snerisbari.

Sorendidori, the narrow channel separating the NW end of Pulau Biak from Pulau Supiori, has considerable depths at its S end, but the N end is only navigable by small vessels with local knowledge. A detached reef, plainly marked by discoloration, lies in the S entrance; the channel lies between it and the E shore, which is steep-to, with no coastal reef. A rock lies about 1.5 miles E of this detached reef at the entrance. Anchorage may be obtained by vessels with local knowledge in the S entrance, close to the detached reef. There is no tidal current in the channel.

Northeast Coast of Pulau Biak

10.21 The coast between **Tanjung Warari** (1˚05'S., 136˚23'E.) and Tanjung Snerisbari, about 23 miles NW, affords no anchorage.

Korim Bay (0˚53'S., 136˚03'E.) is entered between Tanjung Snerisbari and Tanjung Nubee (Tanjung Noebee), nearly 2 miles NNW. The bay is clear of dangers, and has steep sides. Anchorage can be taken at the head of the bay in depths shoaling gradually from 20 to 5.5m; vessels lie safely during the SE monsoon, but in depths of less than 14.6m there may be a ground swell. The town of Korim, where there is a landing pier for boats, lies at the S entrance point of a shallow lagoon in the SW corner of the bay.

Wari Bay, entered W of Tanjung Nubee, affords good anchorage in about 20m for small vessels during the SE monsoon. Reefs fringe the entrance points.

Tanjung Kwaree (0˚48'S., 135˚58'E.) is about 5.5 miles NW of Wari Bay. A conspicuous waterfall, which shows as a white rocky wall in the dry season, lies about 1 mile S of Tanjung Kwaree. The headquarters of a government official is at Warsa, about 2 miles NW of Tanjung Kwaree. The coast between Wari Bay and Tanjung Praisbari, about 17 miles NW, is densely populated; Tanjung Praisboro can be recognized by a rock lying close off it.

Pulau Supiori

10.22 Pulau Supiori (Soepiori) (0˚45'S., 135˚33'E.) is traversed by two mountain ranges, lying in a NW-SE direction and parallel with one another. The island attains an elevation of 1,034m about 5 miles NNW of its SE extremity, and Bumbeffor (Boembeffor), 850m high, with a white rocky patch, at an elevation of 681m, about 0.5 mile ESE of it, lies near the NW extremity of the NE range. A peak, 454m high, in the SW range, is fairly conspicuous about 4 miles SSE of Tanjung Mandundi (Tanjung Mandoendi), the NW extremity of the island; the point is low, rising to a 303m hill, close inland.

Southwest Coast of Pulau Supiori

10.23 Korido Bay, entered between **Tanjung Pimonsbari** (0˚53'S., 135˚39'E.), the SE extremity of Pulau Supiori, and Tanjung Mankekesdi, about 6.5 miles W, is divided into two parts. The inner part is encumbered with reefs. The outer part

is clear of dangers except for two small rocks close offshore close WNW of Tanjung Pimonsbari, the reef fringing Tanjung Mangkekesdi and the W shore, and a detached reef about 1.5 miles ESE of the latter point.

Anchorage.—The best anchorage is in 70m, coral, in Korido Roads, off a break in the coastal reef off the village of Korida, about 4.5 miles NW of Tanjung Pimonsbari. Bransfari, an islet, lies on the coastal reef, close E of the break; a beacon, surmounted by a triangle, lies about 0.1 mile SW of the islet, on the SW corner of the coastal reef, and marks the E entrance point of the break in the coastal reef. There is a pier, with a depth of 0.9m alongside, at Korido, and a conspicuous round-topped tree at the village of Ababiadi, about 1 mile NW.

Vessels should approach the anchorage with the conspicuous round-topped tree at Ababiadi, in range with a sharp peak, bearing 318˚, and anchor when the pier at Korido bears 020˚. Small vessels can anchor closer in.

The SW coast of Pulau Supiori for about 10 miles NW of Tanjung Mangkekesdi is fringed by a reef extending up to 1.5 miles offshore, and on which there are several above-water rocks.

Sowek Roads (0˚50'S., 135˚29'E.) is a basin inside the coastal reef, about 4.5 miles NW of Tanjung Mangkekesdi, and W of the village of Sowek, which is built on piles. Several islets lie on the coastal reef around the basin. The approach to Sowek Roads, marked by a beacon, is about 35m wide, and is always available to vessels not exceeding a draft of 1.8m.

Nearly 2 miles SW of Sowek, and nearly 1 mile outside the entrance to the basin, there is a shoal, with a depth of 0.5m, and a 1.8m patch about 0.25 mile farther E. The detached reefs and coastal reef are usually marked by discoloration.

Anchorage.—Vessels with local knowledge may obtain anchorage in about 61m, sand and coral, between the detached shoals and the entrance to Sowek Roads.

An extensive drying reef lies with its SE extremity about 9.5 miles SW of Tanjung Pimonsbari; it extends NW, parallel with the SW coast of Pulau Supiori at a distance of about 3.5 miles. **Rani** (0˚57'S., 135˚30'E.), a sandy island covered with coconut palms, lies at the SE extremity of the reef, with Insobabi, another islet, about 4 miles NW; both islands are uninhabited, but the plantations on Rani are visited periodically. A light is shown from the S extremity of Rani.

A ridge, with depths of 1 to 9.1m, extends about 16.5 miles NW of the drying reef. Numerous shoals, with depths of less than 9.1m and steep-to, lie between this ridge and the SW coast of Pulau Supiori; vessels are recommended to avoid this area.

North Coast of Pulau Supiori

10.24 Anchorage may be obtained in 62m, about 0.2 mile offshore, off the N entrance to **Sorendidori** (0˚44'S., 135˚45'E.).

Wafordori Bay (0˚43'S., 135˚42'E.) lies about 4 miles WNW of N entrance to Sorendidori. A reef extends nearly 0.5 mile W of the E entrance point of the bay. Anchorage can be taken by vessels with local knowledge in about 20m, mud and sand, in the bay.

Wabudori Bay (Waboedori Bay) is entered about 4.5 miles WNW of Wafordori Bay. The E entrance point is hilly, and the W entrance point is low; reefs fringe both entrance points, leaving a deep channel, 0.23 mile between them. A steep-to drying patch lies near the middle of the bay.

Anchorage.—The bay affords a safe anchorage at all times to vessels with local knowledge. Anchorage may be obtained in about 26m, with the village of Wabudori (Waboedori), on the W shore of the bay, bearing 245˚, distant 0.33 mile; this berth is 0.17 mile S of the drying patch.

The coast between Wabudori Bay and **Tanjung Imbieri** (0˚37'S., 135˚23'E.), a steep, red, rocky point, about 13 miles WNW, is much indented and fronted by drying reefs, on which lie the islands of Pulau Puri (Mios Poeri), Pulau Wundi, and Pulau Pandi (Mios Pandi); the islands are low but covered with high trees. The coastal reef extends up to 0.5 mile offshore for about 6.5 miles W of Wabudori Bay, and there is foul ground between the coastal reef and the islands.

A spit, extending about 3.5 miles WNW of Pulau Pandi, has a least depth of 6.8m at its outer end, which is about 1.5 miles offshore. A deep channel lies between the spit and the coast, with Fando and Fanda, two conspicuous rocks, lying close together, about 2 miles W of Pulau Pandi. A 5m patch lies about 1 mile E of the rocks.

Anchorage by vessels with local knowledge can be taken in 12.8m, sand, with the NW extremity of Pulau Pandi bearing 030˚ and the S extremity of Pulau Puri bearing 102˚. The anchorage should be approached on the latter bearing, which leads S of Fando and Fanda.

Islands and Dangers Northwest of Pulau Supiori

10.25 Isabel Reef (0˚30'S., 135˚14'E.), with a least depth of 4.6m, lies about 12 miles NW of **Tanjung Imbieri** (0˚38'S., 135˚23'E.). The reef is marked by discoloration and sometimes by the sea breaking on it.

Pulau Bepondi (Bepondi) (0˚24'S., 135˚16'E.), about 14.5 miles NW of Tanjung Imbieri, has two summits, 137m high, and is densely wooded. It lies on Bepondi Bank, which has very irregular depths, and extends about 7.5 miles ENE of the island; there is a least depth of 9.1m on the bank, about 2.5 miles NW of the N end of the island. Anchorage may be obtained fairly close to the island on all sides, in depths of 10 to 20m, coral. A village on the SW side of the island is only inhabited during the SE trade winds. A light is shown from the SW extremity of the island.

Pulau Ayawi (Ajawi) (0˚11'S., 134˚59'E.), an island, 46m high, and covered with trees, lies about 21 miles NW of Pulau Bepondi; it is uninhabited. The island lies on the SE extremity of bank, extending about 13 miles NW, with depths of 5.8 to 39m. Due to the clear water the bottom can be seen at a depth of about 26m.

Caution.—The island was reported to lie 2 miles SE of its charted position.

Pulau Yapen

10.26 Pulau Yapen (Japen) (1˚45'S., 136˚10'E.) is separated from Pulau Kurudu at its E end by Selat Kurudu, which was previously described in paragraph 10.15. A central chain of mountains traverses the entire length of the island, attaining an

elevation of 1,496m about 29 miles from its E extremity, and sloping gradually at its E and W ends. **Bumpekki** (Boempekki) (1˚45'S., 136˚19'E.), a sharp peak, 1,275m high, about 6.5 miles WNW of its summit, is very conspicuous from N or S.

Winds—Weather.—It is calm in both monsoons on the S coast of Pulau Yapen. During the SE monsoon a "Wambrau" from a SW direction is occasionally experienced.

Tides—Currents.—The tidal currents close off the N coast of Pulau Yapen, and off the S coast, except near the E and W ends, set E and W and does not exceed a velocity of 1 knot. Farther N they come under the influence of the currents.

In the month of December, a current setting NNE at a velocity of 1.25 knots was observed from Tanjung Perkam and W through Selat Yepen until clear of the islands.

North Coast of Pulau Yapen

10.27 The coast between **Tanjung Rainbawi** (1˚47'S., 136˚54'E.) and Tanjung Ormoana, about 43 miles W, is low with high trees. At Tanjung Marapa, about 7.5 miles farther W, the coast rises and remains steep as far as Serewen Bay, about 21 miles farther W. The coast is then flat to the village of Saribi, about 9 miles farther W, and then it is high and rocky to Tanjung Woka, the W extremity of the island. A light is shown from Tanjung Woka. The N coast of Pulau Yapen is more sparsely populated than the S coast.

Anchorage may be obtained by vessels with local knowledge in the bights off numerous small villages. Anchorage can be taken off the village of Awek, about 5 miles W of Tanjung Marapa, in depths of about 37m, 0.25 mile offshore.

Pulau Indi (Mios Indi) (1˚31'S., 135˚50'E.), about 17 miles WNW of Tanjung Marapa, lies on a drying reef, about 7 miles offshore. Aibai, a reef-fringed islet, lies about 2.5 miles W of Pulau Indi; both are densely wooded. Anchorage, in favorable conditions, can be taken in 37m SSW of the village of Samberi, on the S side of Pulau Indi.

A shoal, with a depth of 9.1m, lies about 5.5 miles SE of Pulau Indi, and about 2 miles off the coast of Pulau Yapen. A 7.8m shoal lies about 5.5 miles farther W, and about 1.5 miles offshore. Except for these dangers there is a deep channel between Pulau Mios and Pulau Yapen.

Teluk Pom, a small inlet, lies about 17 miles E of Tanjung Woka. The village of **Pom** (1˚38'S., 135˚42'E.) (World Port Index No. 52960) lies on the drying shore reef in the bight on the S side of the E entrance point. The landing place is on the W side of the bay. Anchorage can be taken by vessels with local knowledge, in 46m, about 0.1 mile from the fringing shore reef. Vessels entering must take care to avoid the drying reef extending about 0.1 mile W from the E entrance point.

South Coast of Pulau Yapen

10.28 The coast between **Tanjung Rainbawa** (1˚47'S., 136˚54'E.) and Mampuri, a hill, 184m high, on the coast about 5 miles WSW, is low and covered with casuarina trees. Tanjung Rainbawa was previously described with Selat Kurudu, described in paragraph 10.15.

Ambaijawappi (1˚51'S., 136˚54'E.), consisting of two detached shoals, with depths of 1.8 and 2.4m, lie about 9.5 miles WSW of Tanjung Rainbawi, and about 1 mile offshore. A depth of 0.6m lies about 0.75 mile ESE of Ambaijawappi.

Samberbaba Bay is entered E of Tanjung Tekopi, located about 12.5 miles WSW of Tanjung Rainbawi. A detached reef lies about 0.2 mile offshore, about 0.75 mile NE of Tanjung Tekopi. The village of Samberbaba, the headquarters of a government official, and where there is a boat pier, lies about 1.25 miles N of the same point. Anchorage can be taken by vessels with local knowledge in 18.3m, with the point about 4 miles W of Mampuri bearing 086˚.

Randowaja Bay is entered N of Tanjung Arrareni, which is located about 9.5 miles WSW of Tanjung Tekopi. A 3.4m shoal lies 0.35 mile S of Tanjung Arrareni. Anchorage can be taken by vessels with local knowledge, in convenient depths in the bay.

Obaurippi (1˚53'S., 136˚27'E.), a 203m high hill, is conspicuous on the coast about 6 miles W of Tanjung Arrareni. Two mountains, 440 and 476m high, lie about 2 miles N and 3 miles NW, respectively, of Obaurippi.

10.29 Kepulauan Ambai (Ambai Islands) (1˚55'S., 136˚20'E.) consists of a group of islands and islets lying off the coast between Obaurippi and Tanjung Awokarupi, about 13 miles W, and extending about 5.5 miles from the coast. Pulau Ambai (Ambai), the largest and most conspicuous of the group, has three hills lying in a N-S direction, with Pakini, the middle and highest, with an elevation of 326m. Pulau Monoparaiapi (Monoparaiapi) is the E island of the group. A patch, with a depth of 0.3m, lies midway between the SW end of Pulau Monoparaiapi and the E side of Pulau Ambai.

Urampi lies about 0.75 mile SE of Pulau Monoparaiapi. Urang Kaitui (Oerang Kaitoei), a saddle-shaped islet, lies about 1 mile farther SE. A detached 1.5m patch lies close off the E side of Urampi.

Pulau Saweru (Saweroe), the W island, lies about 1.75 miles W of Pulau Ambai, and is lower and slightly undulating. Three islets, forming a chain, extend about 2.25 miles SE from the SE end of Pulau Saweru.

Anchorage.—Sheltered anchorage may be obtained off the N side of Pulau Monoparaiapi by vessels with local knowledge. Well sheltered anchorage can be taken off the village of Saweru, lying near the middle of the E side of Pulau Saweru; farther N there are heavy squalls during the NW monsoon, and there is a 4.5m patch about 0.25 mile E of the village.

Teluk Serui (Seroei Bay) (1˚54'S., 136˚15'E.) is entered between Tanjung Awokarupi (Abori) and a point about 1.75 miles E. Tanjung Awokarupi, a steep point, is the SE extremity of a high peninsula. The E side of the bay is formed by the spur which slopes gradually from the very prominent Tafel van Serui, a flat-topped mountain, 318m high, about 1.5 miles N of the E entrance point. Mawampi, a rocky, wooded islet, lies 0.35 mile S of the E entrance point, and another islet lies on the shore reef on the W side of the bay, about 0.5 mile N of Tanjung Awokarupi.

The village of **Serui** (Seroei) (1˚53'S., 136˚15'E.) (World Port Index No. 52940), the headquarters of a government official, lies at the head of the bay. A pier, at the head of the bay, is marked at its head by a light.

Anchorage can be taken in 33m, S of the pier. During the southeast trades, there is a heavy sea in the bay at times. Approaching Teluk Serui from S or SSW, Pulau Ambai will be distinguished before Tafel van Serui, as the latter is not so prominent from these directions.

The coast is flat and sandy from a position about 4 miles NW of Teluk Serui to Pulau Janusi, the E entrance point of Teluk Kanawa. Tanjung Worui (Tanjung Woroei), about 7.5 miles WNW of Teluk Serui, and Tanjung Panduami (Tanjung Pandoeami), nearly 3 miles farther W, are covered with high trees. The village of Mariarotu (Mariarotoe), with a waterfall about 0.5 mile NNW, lies about 3.5 miles WNW of Tanjung Panduami. Anchorage by vessels with local knowledge may be obtained off the latter village and other villages on this section of coast, mostly with mud bottom but good holding ground.

A coral patch, with a depth of 3.4m, lies about 1 mile SSE of Tanjung Worui. A patch, with a depth of 3.4m, lies about 1.25 miles offshore, about 2.5 miles SE of Pulau Janusi.

Teluk Kanawa (Kanawa Bay) is entered between **Pulau Janusi** (1˚48'S., 135˚56'E.), a high island connected by a reef to Tanjung Sumboi (Tanjung Soemboi), close NNE, and a point about 2 miles WNW. The village of Kanawa is built on piles in the water on the W side of the bay. Anchorage by vessels with local knowledge can be obtained E or W of Uwandeipi, an islet lying on a reef in the middle of the bay close inside its entrance.

Teluk Papuma (Papoema Bay) (1˚36'S., 135˚53'E.) lies W of Teluk Kanawa, and is separated from it by a peninsula, from which a reef, marked by discoloration, extends about 0.5 mile from its S and W sides. Kwajuni, with a reef extending about 0.5 mile S, lies close SE of the W entrance point, to which it is connected by a reef. Two patches, close together, with a least depth of 0.3m, lie about 1.75 miles W of the E entrance point.

10.30 Teluk Parumi (Paroemi Bay) (1˚46'S., 135˚51'E.), W of Teluk Papuma, is separated from it by a peninsula; a reef extends about 0.75 miles SSW from the S extremity of the peninsula. A reef, on which there are two islets, extends about 1.25 miles SSE from the W entrance point, and another reef extends about 0.5 mile E of the same point. A 0.3m patch lies about 1.25 miles S of the W entrance point.

Kepulauan Kuran (Koeran Islands) (1˚53'S., 135˚49'E.), three in number, lie with Pulau Bawei (Bawei), 151m high, the S and largest of the group, located about 9.5 miles SW of Pulau Janusi. Pulau Karuati lies about 0.5 mile NE of Pulau Bawei, to which it is joined by a reef; the islet is saddle-shaped, with a settlement and coconut plantation on it. Anchorage maybe taken in 55m, E of Pulau Karuati. Pulau Nuori (Noeori) lies about 1 mile NW of Pulau Bawei, with a deep channel between. A reef extends 0.5 mile NE from the island, and a reef, with a depth of 2.7m, lies about 0.5 mile N of the island.

A shoal, with a depth of 5m, lies about 4.25 miles ENE of Pulau Karuati, and another shoal, with a similar depth, lies about 2.25 miles NNW of Pulau Nuori.

Pulau Manupampi (Manoepampi) (1˚48'S., 135˚48'E.), a wooded and rocky island, lies about 6.25 miles W of Pulau Janusi. It has two peaks conspicuous from E or W; the S peak is 313m high.

Two 3.2m shoals lie about 3 and 5.5 miles, respectively, W of the W extremity of Pulau Manupampi.

Ansus Bay lies on the NW side of **Pulau Ansus** (Ansoes) (1˚46'S., 135˚46'E.) and Pulau Keiari, close NE; these islands are connected by a reef, on which there are several islets. Pulau Ansus lies about 1 mile NW of Pulau Manupampi. Tanjung Maraiworeh, about 1 mile NW of Pulau Ansus, is the SW extremity of Marai, the high peninsula forming the NW shore of the bay. A reef, with a depth of 1.8m over its outer end, extends 0.67 mile S of Tanjung Maraiworeh, and a reef, with a least known depth of 0.9m, lies about 0.5 mile farther W.

Ansus (Ansoes), built on piles, and the largest village of Irian Jaya, lies at the head of the bay; a prominent church is on the hilly land in the vicinity.

The channel leading to Ansus is tortuous, with reefs on either side, so that only vessels with local knowledge should use it. A reef, with a depth of 1.2m, extends about 0.2 mile W from the N end of Pulau Keiari.

The E approach to Ansus lies between Pulau Ansus and Pulau Manupampa, passing W of a reef, with Nuwowa, an islet at its S end, about 1 mile N of Pulau Manupampa; the reef is about 1 mile long in a N-S direction. This channel is easier to navigate, as the reefs are usually marked by discoloration, and the channel is less tortuous, but there is a 3m patch lying about 0.4 mile WSW of Nuwowa. A reef, with two islets on it, extends about 0.65 mile S from the SW end of Pulau Ansus.

Vessels approaching from W, should keep the S extremity of Pulau Ansus in range with the N extremity of Pulau Manupampi, bearing 100˚, until a short distance from Batu Pendita, a group of rocks on the outer edge of the reef extending from the W extremity of Pulau Ansus. Then altercourse ENE into the bay, being careful to avoid the 1.8m patch, about 0.5 mile S of Tanjung Maraiworeh.

Pulau Janusi (Janoesi) (1˚43'S., 135˚41'E.), a high island, lies about 6 miles NW of Pulau Ansus. **Tanjung Orearo** (1˚42'S., 135˚37'E.), also high, lies about 4.5 miles farther WNW. A rock, with a depth of 1.8m, lies about 1.5 miles WSW of Pulau Janusi; a drying reef lies about midway between the rock and the island. Another drying reef lies about 2.5 miles W of the island.

Teluk Jaimaria (Jaimaria Bay) (1˚41'S., 135˚36'E.), entered between Tanjung Orearo and Tanjung Wopore, about 2 miles WNW, is fronted by four islets. The best entrance to the bay is between Pulau Kariori, the large island in the W part of the bay, and the first of two islets lying E of it. A drying reef extends about 0.4 mile SW of Pulau Kariori, and shoal water, with a depth of 2.4m extends about 0.2 mile NW from the islet on the opposite side of the entrance.

Teluk Wooi (Wooi Bay) (1˚41'S., 135˚31'E.), entered about 3.75 miles W of Tanjung Wopore, is backed by high land. The shores at the entrance are cliffy, but inside they are low and covered with mangroves. Aroja, a rock covered with vegetation, lies about 0.75 mile W of the W entrance point, and is difficult to identify; it lies on the coastal reef which extends about 0.4 mile offshore. The reefs fronting the entrance points are usually marked by discoloration. The village of Wooi, lies on the W shore, about 0.4 mile NW of the W entrance point.

Anchorage may be obtained in about 46m, NE of Wooi. A vessel should approach the bay with the double peak of Marai 536m high, located about 3.5 miles NNE of the E entrance point, bearing 037.5˚; only one peak will be seen on this bearing. There is sometimes a very strong current setting across the entrance of the bay, so it is necessary to enter at a moderate speed.

Islands and Dangers Northwest of Pulau Yapen

10.31 Pulau Num (Mios Noem) (1˚30'S., 135˚11'E.) lies with its E extremity about 8 miles NNW of the W extremity of Pulau Yapen. It is densely wooded and traversed by a range of mountains, attaining an elevation of 448m about 6 miles from its W end. The island is uninhabited.

Kepulauan Pono Kabai (Pono Kabai Islands) consists of three islets, fringed by drying reefs, lying within 2 miles of the E end of Pulalu Num. A 6.9m shoal lies between the E islet and Pulau Num. A 12.8m depth lies about 5 miles E of the E extremity of Pulau Num. A 7.8m shoal lies 1.25 miles W of the NE point of Pulau Num. Navigation between the islets is dangerous due to the moderately strong tidal currents.

The S coast of Pulau Num is steep-to and affords no anchorage.

Selat Pulau Num (Mios Noem Strait) (1˚33'S., 135˚23'E.), separating Pulau Num and Pulau Yapen, is clear of dangers, and can be navigated at night without difficulty. Tanjong Woka, the W extremity of Pulau Yapen, is steep-to, and rocky.

Anchorage.—On the N coast of Pulau Num there are two bays close together. Both bays can be safely entered by keeping in mid-channel. The W bay affords the better anchorage to vessels with local knowledge, in 70m, sand.

A 7.8m patch lies about 1 mile E of the NW extremity of Pulau Num.

Slamiapien (1˚28'S., 135˚06'E.), two rocky islets covered with vegetation, lie about 1 mile W of the NW extremity of Pulau Num.

Sewandeh (1˚29'S., 135˚01'E.), an island, 104m high and densely wooded, lies about 4.5 miles W of Pulau Num. It lies on the SE edge of a drying reef, which extends about 1 mile NW of the islet; numerous rocks, covered with vegetation, lie on the reef.

Selat Sewandeh (Sewandeh Strait) (1˚29'S., 135˚03'E.), separating Sewandeh from Pulau Num, is deep and clear of dangers.

An area of irregular depths, with a greatest width of about 9 miles, extends about 31 miles WNW of Sewandeh. It has a least known depth of 10m, about 9 miles W of the island.

Tides—Currents.—In Selat Sewandeh and over the shoals W of Sewandeh the tidal currents attain a maximum velocity of 2 knots.

Pulau Numfoor

10.32 Pulau Numfoor (Noemfoor) (1˚00'S., 134˚53'E.), 204m high, and densely wooded, lies about 23 miles NW of Pulau Num. It has no prominent peaks and has a flat appearance. The island is fringed by coral reef, except on its SW side; on its S side the reef extends about 2.25 miles offshore. Several openings in the reef give access for boats to the numerous coastal villages.

Manim, a low islet, covered with high trees, lies about 2.5 miles offshore, about 5 miles NW of Tanjung Aikar, the SW extremity of Pulau Numfoor. A spit extends about 0.25 mile S of Manim, and another spit, with a least known depth of 5.8m extends 0.65 mile NNW of Manim.

A light is shown at the village of Jenmanu, on the NW side of Pulau Numfoor.

Winds—Weather.—During the survey from June to October, the "Wambrau," a strong, hot, and dry mountain wind, was only experienced from SW at the beginning of August and the beginning of September; at both times it came through with storm force for 3 to 4 days, after which the wind became normal again from S to SE. On one occasion a heavy SE squall was experienced which came up rapidly, raising a troublesome sea, with heavy rain. After a couple of hours the squall was over and not long afterwards the sea was calm. At the end of September there were some weak N winds and there was a long N swell on the N coast of Pulau Numfoor, and much rain fell; sometimes the rain squalls, often accompanied by thick weather, lasted a couple of hours and were so dense that visibility was nil.

Anchorage.—A vessel with local knowledge may obtain anchorage in 35m, sand, off Jenmanu. A boat can land on the beach by passing through a nearby opening in the reef which is easily found.

Anchorage can be obtained by vessels with local knowledge, in 35m sand, off the village of Jensamberi, about 5 miles SE of Tanjung Keretsbari, the N extremity of the island. There is an opening in the reef NE of the village, for which three pairs of range beacons are established; the junction of the first two pairs of range beacons is marked by a buoy, painted in black and yellow stripes. Then a channel, marked by beacons, leads to the village of Bawe, about 3 miles S, which is available for power boats at HW. There is a pier at the village of Menggarai, about 2.5 miles N of Bawe, with a depth of 1.8m at its head. The tidal current may attain a velocity of 2 knots at springs off the pier.

Anchorage may be obtained by vessels with local knowledge in 26 to 35m, coral and sand, in Teluk Rumboi (Teluk Roemboi), an open bay on the SW side of the island, entered between **Tanjung Indabandarai** (1˚06'S., 134˚50'E.) and Tanjung Insowendi, about 1.25 miles NNW. There is a landing pier for boats in the N part of the bay. A reef lies parallel to, and up to 0.25 mile off the reef-fringed N and NE shores of the bay.

A bank, with a depth of 66m at its E end, and 73m at its W end, was reported about 10.5 miles N of Pulau Numfoor.

Teluk Cenderawasih

10.33 Teluk Cenderawasih (Sarera), lying between Tanjung Dombo and Tanjung Saweba, about 205 miles WNW, is fronted by two groups of islands which afford it considerable protection against heavy seas. During both monsoons, however, rough seas are encountered between the E end of Selat Yapen (Japen Strait) (Sorenarwa Strait) and Tanjung Perkam (Cape d'Urville).

The E coast of the bay is, in general, low and flat, and a number of large rivers discharge along it. The W coast, on the other hand, is steep and high. The rivers that discharge into this bay discolor the water for a distance of 5 to 6 miles offshore

and carry out large trees and other debris which constitute a distinct menace to navigation. Furthermore, the E and S coasts of the bay are subject to such constant change that the lead must be the main reliance of vessels in these waters; it is deemed inadvisable to take a vessel into depths of less than 20m, particularly in the E and SE parts of the bay.

The densely wooded shores of the bay are but sparsely settled. The natives live in a very primitive manner. The villages along the coast and on the various rivers consist of houses built on poles. Vessels call at various places along the shores of the bay where jungle products are gathered for shipment.

Winds—Weather.—In Teluk Cenderawasih a warm, dry, SW wind sometimes blows off the W shore, and is known as the "Wambrau". As it sets in, the coast temperatures rise considerably, the air becomes very dry and rather hazy at sea level. It has been known to last a week, decreasing slightly in strength at night. It usually blows force 4, but may reach gale force for short periods. It sometimes raises a rough sea in the bay.

During May and June, between Pulau Kurudu (Koeroedoe) and Tanjung Worisanua, the direction of the wind was very variable, the rainfall was considerable and generally occurred at night.

Between Pulau Kurudu and **Tanjung Bumi** (Boemi) (3˚22'S., 135˚25'E.) during the SE monsoon rain squalls were repeatedly experienced, especially over the land. Although during this monsoon the wind is generally E to SE, force 1 to 2, W winds occurred many times. The state of the sea was calm in both monsoons, especially in the N part. There is much rainfall in both monsoons.

Tides—Currents.—Along the W shore of the bay there is both a diurnal and semidiurnal tide, but the latter predominates. The spring lows of the two tides may coincide. As a consequence of this coincidence the LW level occurs in December or January and June or July. The maximum rise and fall that can be expected are, respectively, about 0.79m above and 1.09m below the mean sea level.

Fronting Teluk Cenderawasih, in Selat Yapen and N Kepulauan Schouten (Schouten Islands), there are no tidal currents, but there is a weak drift to the E during the NW monsoon and to the W during the SE monsoon. The islands, however, cause some deflection from these general directions. The maximum recorded velocity of this drift is 2 knots, although in the vicinity of the SE coast of Biaka velocity of 3 knots has been reported.

Inside the bay there are weak tidal currents but no monsoon drift. The general set of the currents is into the bay at flood tide and out at ebb. In the S part of the bay the currents change about 2 hours after H and LW. The maximum recorded velocity of the currents is 1 knot.

The tidal currents between Tanjung Dombo and Tanjung Worisanua are weak and irregular. S of Selat Dombo the most perceptible current sets N, with a velocity of 1 knot.

The 10m curve extends S from the S shore of Pulau Kurudu about 6.5 miles W of Tanjung Dombo and fronts the bight thus formed by the coastline, and then irregularly follows the coastline from 1 to 5 miles offshore.

Selat Dombo (Dombo Strait) (1˚52'S., 137˚04'E.), separating Pulau Kurudu from the coast of W New Guinea N of Tanjung Dombo has depths of 11 to 53m and is 2 miles wide. The strait is approached from N in depths of 11 to 12.8m and from the S over a bank with a least depth of 5.9m.

Caution.—Apparently the outermost dangers area 1.8m spot lying about 3 miles offshore at a position 21.5 miles SW of Tanjung Dombo, and a 4.6m patch lying 2 miles NE of **Tanjung Waba** (Geelvinks Oosthoek) (2˚11'S., 136˚31'E.).

Southeast Shore of Teluk Cenderawasih

10.34 The coast, trending SE from **Tanjung Dombo** (1˚54'S., 137˚06'E.) to the mouth of the Kariferi River, a distance of 12 miles, and then WSW to Tanjung Worisanua (Valsche Hoek), a distance of about 53 miles, is low, swampy, and overgrown with mangroves which are submerged at HW. Inasmuch as the land is subject to seaward extensions, by reason of the rapid deposit of silt, alternating with periods of destructive erosion, particularly during the NW monsoon, the various points, such as Tanjung Waba, along this coast are of no value as landmarks.

The principal landmark within this stretch of coast is Kamusopedai (Kamoesopedai) (Great Kerkberg), rising to 1,023m about 37 miles ESE of Tanjung Worisanua. Other fairly prominent peaks are: Tolaterri, a dome-shaped peak 660m high, about 8 miles W of Kamusopedai; Vandori, 281m high, located 20 miles ESE of Tanjung Worisanua; and Mambai, 178m high, with a large round-topped tree on it, situated 16.5 miles ESE of Tanjung Worisanua. Within 3.25 miles SW of this point are three hills, the NE of which is 185m.

Few villages are to be seen close along the shore. The principal coastal villages are Napuai (Napoeai), near the mouth of the Kai River, close SE of Tanjung Waba; Wonti (Wainoei), near the mouth of the Wonti (Wainoei) River, 9.5 miles ESE of Tanjung Waba; Dombo, on the W side of Pulau Dombo; and Pamai, on the E side of the island.

Anchorage.—Vessels can anchor in mud or muddy sand anywhere along this coast. The preferable anchorages seem to be in depths of 40 to 49m off Tanjung Waba and off the mouths of the Kai, Sajati, and Wonti rivers, all of which empty into the sea between 2.5 and 9 miles SE of Tanjung Waba. During the NW monsoon landing is generally impossible along the coast between Tanjung Worisanua and Tanjung Waba.

10.35 The coast between Tanjung Worisanua and **Ujung Auri** (Jacobus Opdekams Hoek) (2˚47'S., 135˚57'E.), 45 miles to the SW consists of a wide coastal belt of low, marshy land fronted by a narrow strip of tree-covered sand that is broken in many places by wide river mouths. Inasmuch as the mud banks fronting this coast extend off not more than 2 miles, vessels can proceed along it closely enough to take bearings on the various headlands and the mouths of the rivers.

The coast is bordered by a narrow strip of sand, overgrown with casuarina trees, and interspersed by the wide mouths of several rivers. The water from these rivers causes the sea to be discolored for 5 or 6 miles offshore, and large trunks of trees, stuck in the mud, are often encountered at this distance, and may render navigation dangerous within depths of 10.1m.

Among the elevations along this coast that are useful landmarks are three hills, 117, 145, and 185m high, respectively, rising SW of Tanjung Worisanua. Sanoringga

Hill, 125m high, rises 13.25 miles SSW of Tanjung Worisanua. A group of nine hills, of which the highest, named Olifant (Riwoi), has an elevation of 302m and rises 8.5 miles E of **Tanjung Karang Senu** (Olifants Hoek) (2˚42'S., 136˚01'E.). Groote Doodkist, a hill 197m high, rises 6.5 miles SE of Tanjung Karang Senu. Farther inshore, at a distance of about 30 miles ENE of Tanjung Karang Senu is Little (Kleine) Kerkberg, a group of mountains consisting of three peaks with elevations of 610, 617, and 681m, respectively.

Tanjung Karang Senu is marked by a light

This coast is very sparsely settled; the only village along it is a very small one named Waren, situated at the mouth of the Waren River, 6 miles SW of Tanjung Worisanua.

Wai Poga (Waponggа), the largest river along this stretch of coast, empties into the sea at a position about 2 miles NE of Tanjung Karang Senu. It rises far in the interior and, for the last 50 miles of its course, flows through low marshy plains that are generally flooded during the rainy season. In the lower reaches the width of the river varies between 0.16 and 0.22 mile. On the bar there is a depth of 1.8m but the depths inside increase to 18.3 or 20m. At 40 miles above its mouth the river branches into two arms, one rapidly diminishing in depth and width and the other continuing for a considerable distance into the hilly hinterland.

Pulau Naufi (Naoefi) (Nawi) (2˚14'S., 136˚15'E.), lying about 9.5 miles W of Tanjung Worisanua and marked by a light, is an excellent landmark for the vicinity. It is a heavily wooded island with several peaks,the highest of which has an elevation of 99m. The island is surrounded by a drying reef, but outside of that fringing reef there are no dangers.

Anchorage.—Vessels can anchor everywhere along this coast in depths of 29 to 40m, but during the NW monsoon these berths can be uncomfortable.

10.36 The coast between Ujung Auri and Teluk Rarewarai, 18 miles SW, is low and cut by the numerous mouths of the Warenai and Siriwo Rivers. A steep-to bank over which the greatest depth is about 2.7m extends 1 to 1.5 miles off the coast. The bottom in this vicinity is generally of mud, but off Ujung Auri it consists of hard sand and stones.

Kepulauan Moor (Moor Islands) (2˚56'S., 135˚44'E.), two large islands, Pulau Nuto Rutomorja (Noeto Roetomordja) and Pulau Ratewo, and a small islet named Utaina (Oetaina), lie on a bank of soundings that extends out from a line joining Ujung Auri and Ujung Rarewa (Hodge Westhoek). These islands are heavily wooded and the two larger ones are hilly but have no conspicuous peaks. Nuto Rutomorja has a maximum elevation of 125m, and Ratewo, the largest has a maximum height of 150m. Drying reefs extend out in places from all of the islands. A detached patch of 1.4m lies nearly 1.5 miles NW of the NE extremity of Nuto Rutomorja. Utaina is low, covered with high trees, and uninhabited.

The bottom over the bank of soundings on which these islands lie consists of hard mud. The water around them is very dirty and normally contains much debris that has been brought down by the rivers; occasionally small islets consisting of vegetable matter are seen floating around. During the NW monsoon there is frequently a heavy sea over this bank.

Pulau Nuto Rutomorja is the only inhabited island of the group; on its SE side is Moor village, around which there are extensive coconut plantations.

10.37 Teluk Rarewarai (Rarewarai Bay) (3˚02'S., 135˚48'E.) is an inlet formed between Pulau Nusariwe (Noesariwe Island) and the mainland. Tanjung Warisano, the NE extremity of Pulau Nusariwe and the N entrance point of the bay, is a good landmark, as is also a large tree on the island. The branches of the Siriwo River that empty into the bay make the water very dirty. A drying reef extends out a short distance from Tanjung Warisano. On the E side of the bay is a wide drying shore bank; off the outer edge of this bank, opposite Tanjung Warisano and 0.65 mile off the E shore of the bay, is a patch over which there is a depth of less than 0.3m.

About midway between Tanjung Warisano and Tanjung Ufai, and inner entrance point about 0.55 mile to the S, there is a small bight in which vessels can anchor in 29m, mud. In the inner part of the bay, beyond Tanjung Ufai, there are numerous reefs which, because of the muddiness of the water, can not be sighted. A small drying channel leads from the head of the bay around the W end of Pulau Nusariwe, and then into Weinami inlet. Local knowledge is necessary.

Anchorage.—Anchorage can be taken anywhere around Kepulauan Moor except to the NW of the group, where the bottom rises too steeply. The currents between the islands are sometimes strong.

Anchorage may be obtained by vessels with local knowledge, in a depth of about 29m, mud, midway between Tanjung Warisano and Tanjung Ufai, about 0.5 mile S.

From Tanjung Warisano to Pulau Nusi, a distance of about 11.5 miles, the coast takes a general SW direction, but is considerably indented between Ujung Rarewa and Pulau Nusi. A sharp-topped hill, 340m high, rises 1.25 miles S of the entrance to Musario (Moesario) River, and is a good landmark for the vicinity.

Close SW of Pulau Nusariwe (Noesariwe) is a peninsula which terminates in Ujung Rarewa, and on which there is a hill 160m high closely backing the point. The shores of this peninsula are covered with mangroves except at three small villages, named Weinami, Napan, and Masipawe. Near these villages there are white sandy beaches. The houses at Weinami extend along the shore of the inlet between the peninsula and Pulau Nusariwe. This inlet is used by the schooners of the Chinese traders who live at Weinami; it is connected by very shallow channels with Teluk Rarewarai (Rarewarai). Two villages are situated, respectively, at the mouths of the Legare and the Musario Rivers. Between these two, on a steep sand and gravel beach, is Makimi village.

Pulau Nusi (3˚09'S., 135˚40'E.) is a small, thickly wooded island, 50m, high, situated close off the New Guinea coast. It is not easily distinguished against the high coastal hills. On the island is a settlement belonging to a European trading company.

A shoal, with a depth of 3m, lies about 0.25 mile NW of the W extremity of Pulau Nusariwe.

Anchorage.—Anchorage can be taken in 35m between Pulau Nusi and the mainland. In as much as several detached reefs, one of which has a depth of only 0.5m, lie off the E end

of the island, vessels should approach the anchorage from the W. Local knowledge is necessary.

Caution.—Vessels should exercise great caution in approaching this coast because the water is muddied by sediment carried down by the rivers. Furthermore, in the S part of this stretch of coast, between Musairo (Moesairo) river and Pulau Nusi, there are several reefs, some of which dry.

Between Pulau Nusi and Tanjung Bumi (Boemi), 19 miles to the SW, the coast is low, monotonously wooded, and very sparsely settled. The only villages are at Teluk Kimi, a small inlet 1 mile NE of Pinkster Oosthuk (Pinkster East Point), and 6.5 miles SW of Pulau Nusi, and Nabire village, situated 4 miles E of Tanjung Bumi.

A light is shown from the head of Teluk Kimi. At about 0.75 mile ENE of Nabire, a pier serves an oil depot.

10.38 Kepulauan Mamboor (Haarlem Islands) consist of two large and several small islands lying 6.25 to 12 miles W of Ujung Rarewa. **Kopataar** (3˚05'S., 135˚35'E.), Awaar, Kunur (Koenoer), Her, and Numini (Noemini) islands are so grouped as to form a basin about 1.5 miles in diameter and 37 to 46m deep; in the center of this basin, however, there is a 4.6m patch. The best entrance to this basin, which is a safe and spacious anchorage, is from the N, between the N end of Kopataar and the reef that projects W nearly 0.25 mile from the NW extremity of Awaar; the other entrance channels are somewhat restricted by the reefs and stones that extend from the islands. The maximum elevation of the trees on the principal islands of the group are as follows: Awaar, 110m; Kopataar, 100m; Her, 70m; and Numini, 65m. Pulau Roin, situated close off the SE extremity of Awaar, is a small, wooded sandbank. Jaunan (Djaoenan), 33m high, is a well-wooded islet situated 1.75 miles SWof the W extremity of Kopataar Island, near the E end of a drying reef about 1 mile long. Pulau Waider, covered with high trees, stands at the S end of a drying reef 0.75 mile W of the W end of Kopataar.

A light is shown from Juanan.

A group of houses on the SE extremity of Kopataar and on the N end of Numini comprise the village of Sihaam. On the NE extremity of Kopataaris the village of Bore.

Winds—Weather.—There is sometimes a considerable sea on the plateau on which Kepulauan Moor islands lie during the W monsoon, but this quickly dies down as soon as the wind drops.

Anchorage.—Vessels can anchor in a safe and spacious basin formed by the islands of Kopataar, Awaar, Kunur, Her and Numini.

Small vessels can find good anchorage in Teluk Kimi in 15m.

Caution.—Three reefs, with depths of less than 1.8m, lie between 0.75 mile S and about 0.42 mile WSW of the E end of Kopataar. Unofficial beacons, which are unreliable, mark the E and W reefs. A drying reef lies about 0.5 mile S of the SE end of Awaar, and a shoal with a depth of 0.9m, lies about 0.2 mile S of the SW end of the same island. A 0.3m patch lies about 0.6 mile SW of the W end of Numini. A 0.9m patch lies about 0.75 mile NW of Jaunan, and a 3.2m shoal lies about 0.5 mile W of Pulau Waider. A patch, with a depth of 4.6m, lies about midway between Awaar and Kopataar. A rock lies about 0.75 mile SW of the S end of Numini.

South and West Shores of Teluk Cenderawasih

10.39 Between Tanjung Bumi and Tanjung Hamuku (Hamoekoe), 15 miles to the W, is low and devoid of conspicuous points. A fairly wide mud bank skirts the shore here and there, but no detached dangers have been discovered along this stretch of coast. Vessels approaching the coast, however, should exercise caution because the mud bottom shelves steeply in many places, the water is, at times, muddied to a distance of 5 or 6 miles by discharge from the rivers, and large, heavy tree trunks may be encountered floating around at a considerable distance offshore. These tree trunks, which often are seen with one end sticking in the mud, are a menace to navigation inside the 10m curve.

Among the villages along this sparsely settled coast are Wanggar, near the mouth of the Wanggar River 5.5 miles WSW of Tanjung Bumi, and Hamuku (Hamoekoe), situated 2 miles W of Tanjung Hamuku which is a small but conspicuous point. The Wanggar River can be ascended by flat-bottomed proas for a considerable distance.

Winds—Weather.—Between Tanjung Bumi and Tanjung Busurua (Boesoeroea), about 72 miles NW, from February to June no predominating winds from any fixed direction were observed. Land and sea breezes were however, noticeable. The sea breeze blew from 1200 to 2000 from NE to NW, the land breeze blew for the remainder of the day from SW to SE. Heavy squalls occurred principally between 1600 and 1800, mostly from W to NW. The rain fell chiefly between 1600 and 0800, and was heaviest between 2000 and 2400.

Anchorage.—Anchorage can be taken in 6.9m on the bank at the E side of the trough-shaped depression abreast the mouth of the Wanggar River. This area is for temporary anchorage.

10.40 Between Tanjung Hamuku and Tanjung Busurua the coast sweeps around through a W, NW, and N direction for about 80 miles. It is broken only by a few inlets and by two peninsulas which terminate, respectively, in Tanjung Maniburu (Maniboeroe) and Tanjung Mangguar (Manggoear).

Most of this stretch of coast is rather closely backed by high hills and mountains. Among the more conspicuous of these are the 204m hill S of Tanjung Maniburu, the 1,100m Jauer Peak, 6.25 miles S of Tanjung Mangguar, and the high mountain ridge that lies along the longitu-dinal axis of the peninsula that forms the E side of Teluk Wandamen (Wandamen Bay); this ridge has numerous peaks the highest of which has an elevation of 2,239m. Yauer Peak, one of the most remarkable points in Teluk Cenderawih (Sarera), can be seen from all directions at a great distance; the slopes of this peak extend N to the Drie Gebruders (Gebroeders), 400, 411, and 428m, respectively, located about 1.5 miles SW of Tanjung Mangguar; these peaks are good landmarks from the N and SE. The S slopes of Yauer Peak connect with a fairly high mountain ridge near the coast about midway between Tanjung Maniburu and Tanjung Mangguar. South of this ridge and across the inlet W of Tanjung Maniburu the land again rises near the coast; the highest peak of this ridge has a flat top and rises to an elevation of 712m.

Vessels seldom if ever come into this part of Teluk Cenderawasih. Vessels do not, as a rule, come farther south than Teluk Wandamen.

Caution.—A chain of islands, reefs, and banks extends from a position abreast the coast about 8 miles W of Tanjung Hamuku to about the parallel of Tanjung Busurua, roughly paralleling the coast at an average distance of about 13 miles. Northward of the parallel of Tanjung Busurua, at which position there is a rather wide break in the chain of dangers, they continue along a NE line to the reefs and islets comprising Pulau Mios Auri (Aoeri). In the daytime the navigation of the area along the E side of this barrier reef presents no difficulties.

The S end of the chain consists of a group of dangerous reefs that extend for a distance of 2 to 4 miles off the shore between Tanjung Hamuku and Tanjung Mariburu. **Numburi** (Noeboeri) (3˚18'S., 135˚06'E.) is a small, wooded islet situated near the S end of a drying reef 9.75 miles WNW of Tanjung Hamuku and 3 miles offshore. Nu (Noe) Sariwanni is another small wooded islet that lies on the central part of a drying reef 4.5 miles N of Nuburi; a drying reef nearly 2 miles long lies about midway between these islets. A shoal, with a depth of less than 0.3m, lies 0.75 mile W of Nu Sariwanni. Karei (Enkhuizer), situated 7 miles N of Nu Sariwanni, is a large, irregular-shaped drying reef on which are two light-colored sandbanks; between Nu Sariwanni and Karei there are several smaller drying reefs. Nu (Noe) Tabari, lying 2.75 miles E of the E edge of Karei and separated from it by a clear passage, is a small, wooded islet on a drying steep-to reef. Aikei, a light-colored sandbank on a drying reef, lies 2.5 miles NW of the NW extremity of Karei.

Kumbur (Koemboer) (3˚01'S., 135˚03'E.), situated near the center of an elongated drying reef about 3 miles N of Aikei, is a low, sandy islet which, because of its high trees, is the most important landmark on this part of the barrier reef. A shoal with a depth of less than 0.3m lies 0.5 mile W of Kumbur. There is a 2.3m shoal 2.25 miles W of Kumbur and a 6.9m shoal 0.75 mile S of this island.

Pasir Nabadi, a coral reef on which there is a large, light-colored drying sandbank, is located 14.5 miles NW of Kumbur. Between these two reefs there is a deep passage in which the only danger is a 2.7m patch, situated 7.5 miles E of Tanjung Mangguar.

10.41 Pulau Angra Meos (2˚42'S., 134˚50'E.), located about 11 miles N of Tanjung Mangguar, is a large, hilly, uninhabited island; it has a maximum elevation of 205m but has no conspicuous peaks. The W, E, and NE points of the island are sandy and covered with tall trees. A detached 7.8m patch lies 3 miles NE of the E extremity of Angra Meos.

Pulau Kabuai (Kaboeai) (2˚33'S., 134˚53'E.) is a low, sandy islet covered with tall trees which make it an important landmark for the N end of the barrier reef; it is situated at the S end of a small, steep-to drying reef 9.5 miles N of the E extremity of Angra Meos. Within a distance of 3 miles N and NW of Kabuai are several reefs on two of which there are drying sandbanks that are marked by breakers at high tide. Westward of Kabuai are several shoals, all lying within a distance of 4 miles of the islet. A 1.8m patch lies 1 mile SE and a 7.8m shoal lies 3.5 miles SW of Kabuai.

Anchorage.—Anchorage can be taken near all of the above-mentioned islets except NuTabari. All of these islets are uninhabited, but on some of them there are temporary shelters that are used by the natives who occasionally come out to them on fishing expeditions.

Care should, however, be taken to avoid the 0.3m patch about 0.75 mile W of Nu Sariwanni, and a similar patch about 0.5 mile W of Kumbur; there are also other patches farther W. Reference should be made to the chart.

The coast between Tanjung Hamuku and Tanjung Maniburu, about 15 miles WNW has three unimportant indentations, the largest and W most of which is Tu (Toe) Wasoi. It is very dangerous to attempt to approach this stretch of coast, because it is fronted by numerous reefs and has not been fully examined.

Tanjung Maniburu (Maniboeroe) (3˚14'S., 134˚57'E.), a steep point that is closely backed by a 204m hill, is the extremity of the irregular-shaped Kwatisore Peninsula.

Teluk Kwatisore (Kwatsore Bay) (3˚15'S., 134˚57'E.) is an indentation, about 1.25 miles wide, in the W side of Kwatisore Peninsula immediately S of Tanjung Maniburu. There are four detached reefs in the S and SW parts of the bay. Three lie close together about 0.25 and 0.4 mile, respectively, NNW of the village. About 0.4 mile NE of the middle of the village lie the third and fourth detached reefs, which have depths of less than 0.9m. Kwatisore village is located on the S side of the bay.

Anchorage.—Anchorage can be taken in 38m, soft mud, about 0.2 mile WSW from the village. This anchorage is unsheltered and the holding ground is poor. In order to avoid E squalls which sometimes blow over the lowlands S of Tanjung Maniburu, vessels should anchor N of the detached reef in about 40m.

Directions.—Vessels bound for Teluk Kwatisore from N round Tanjung Mangguar at a distance of at least 1 mile and then steer a course of 180˚ until Pulau Numangguri (Noemanggoeri Island), situated 6.25 miles S of Tanjung Mangguar, is abeam, when the 204m hill at Tanjung Maniburu, bearing 160˚, should be steered for. At that distance the point appears as a small island. This course, on which the peaks of the Drie Gebruders, located close SW of Tanjung Mangguar, are directly astern, is continued until Pulau Nusir, situated about 5 miles NW of Tanjung Maniburu, is abeam and then course 180˚ is resumed. When Nu Sariwanni is almost in range with Tanjung Maniburu course is changed to the SE in order to proceed to the anchorage.

Vessels coming from the E pass through the barrier reef S of Nu Sariwanni on course 279˚ and then steer toward Tanjung Maniburu, rounding that point at sufficient distance to clear the 0.9m shoal that lies 0.5 mile NW of the point.

The coast between Teluk Kwatisore and Tanjung Mangguar trends S, W, and N for a total distance of 28 miles; it is fronted by several islands and has a number of indentations the largest of which lies W of Kwatisore Peninsula. Between Teluk Kwatisore and Tanjung Womosisore, about 10.5 miles NW of Tanjung Maniburu, the coast is covered with mangroves, and almost uninhabited. The only settlement along this coast is a small one on the S shore of Teluk Waobu (Waoboe), 5 miles WSW of Tanjung Maniburu.

Tanjung Womosisore (3˚06'S., 134˚50'E.), located 10.5 miles NW of Tanjung Maniburu, is a very conspicuous, bare, light green-colored point at the end of a small, low, narrow peninsula. Teluk Wororomi, an inlet just S of Tanjung Womosisore, dries over its greater part.

10.42 Pulau Nusir (Noesir), a drying reef 0.75 mile long about 5 miles NW of Tanjung Maniburu, is high and well-wooded; it is a good landmark. Pulau Manimaje and Pulau Nurage (Noerage) are two islands connected by a drying reef and located in the bight N of Tanjung Womosisore at a distance of about 2 miles offshore; Pulau Nurage is 252m high. About 1 mile E of Nurage is an elongated drying reef on which are three wooded rocky islets, Kirkir, Rori, and Runggabor (Roenggabor), and several other rocky formations. In a valley on the NW shore of the inlet, W of the N end of Nurage, is Jauer Manokwari village, off which small craft with local knowledge can anchor. Close NE of Tanjung Yauer (Jauer), situated 1.5 miles NE of the N end of Pulau Nurage, is Pulau Numangguri (Noemanggoeri) which is 82m high and is conspicuous from the N.

Tanjung Mangguar (Manggoear) (2˚53'S., 134˚51'E.) is a high, rocky point at the NE extremity of the peninsula that forms the E side of Teluk Umar. A narrow reef on which there are several rocky islets extends NE for a distance of 0.5 mile from the point.

Caution.—Detached shoals and patches, which dry, extend about 5.75 miles N of Tanjung Maniburu and in the bight between this point and Pulau Nusir.

A patch, with a depth of 1.8m, and a patch with a depth of 4.1m lie about 1.25 miles SSE and 0.75 mile, respectively, of Tanjung Womosisore.

Teluk Umar (Oemar Bay) (2˚55'S., 134˚44'E.) is a roughly rectangular indentation in the coast S of the point at the N end of the peninsula, close W of Tanjung Mangguar, and **Tanjung Woibi** (2˚54'S., 134˚41'E.), situated 9.75 miles to the WSW. The bay ranges in width from 8.25 miles at the N end to 5.25 miles at its head, and it extends south 6 miles from the line joining the entrance points.

Pulau Rorenggi is a rocky islet close off the E entrance point of the bay. The E shore, S of Rorenggi, is likewise rocky and is marked by two indentations, Teluk Nappan and Teluk Singgajebi, it is closely backed by a mountainous ridge. The S shore of the bay is a steeply rising, sandy beach that is unbroken except at Tanjung Yarior, situated at the head of the bay, where there is a rocky section on which there is a conspicuous white patch that can be made out at a considerable distance. The W side of the bay to and including Tanjung Woibi, the W entrance point, is low and covered with mangroves; immediately S of Tanjung Woibi is a small inlet named Teluk Nanggu (Nanggoe Bay).

10.43 The land around Teluk Umar is moderately well settled. On the W coast, just S of Teluk Nanggu, is the village of Nanggubi; on the S shore of the bay are Jaratur (Jaratoer), Armini, which is easily identified by a small group of trees, Bawe, and Wakobi; and on the E shore of Teluk Umar, at the head of the small Teluk Nappan, is the village of Nappan. Boats can land abreast Yaratuar (Jaratoear) village. Fresh fruit and vegetables are obtainable at the villages.

Mount Yauer (Jauer) (2˚59'S., 134˚48'E.), about 1,100m high, rises about 6.5 miles SSW of Tanjung Mangguar; it is one of the most prominent landmarks in Teluk Cenderawasih, and can be identified from all directions. At the N end of the peninsula stand the Three Brothers, the highest of which attains an elevation of 427m; these peaks are prominent from N and SE.

Anchorage.—Anchorage can be taken anywhere in the bay close to the shore in 29 to 49m. Vessels entering the bay should steer in on course 180˚, making directly for the white patch near Tanjung Jarior.

Caution.—An 8.2m shoal is situated nearly midway between the E and W shores 1.75 miles from the head of the bay; although there are several shoals and rocks close to the shores of the bay, this is the only detached off-lying shoal in the bay.

A reef, with a depth of 2.7m, marked by discoloration, lies 7.5 miles E of Tanjung Mangguar. Pasir Nabadi is a coral reef on which there is a bright patch of sand which dries, lying 6.5 miles NE of Tanjung Mangguar. About 1.5 miles NE of the reef is a shoal with a depth of 14.6m.

West Shore of Teluk Cenderawasih

10.44 The coast between Tanjung Woibi and **Tanjung Busurua** (Boesoeroea) (2˚29'S., 134˚38'E.) is steep, uninhabited, and lacking in anchorage places. It is clear of dangers N of Goni village, situated 2 miles NNW of Tanjung Woibi.

A detached 5m patch lies about 1.25 miles N of Goni village.

From Tanjung Busurua to Tanjung Oransbari, 71 miles to the NNW the coast is high and is fronted by the larger Pulau Roon, Pulau Waar, and Pulau Rumberpon (Roemberpon), and a number of smaller islands and reefs. Roon lies off the N end of a peninsula which forms the large Teluk Wandamen (Wandamen Bay). A deep and clear channel will be found off this coast, leading E of Pulau Wairundi (Wairoendi) and Pulau Waar into Teluk Wandammen, or E of those two islands and Roon and to the S part of Teluk Cenderawasih.

Teluk Yoppingar (Joppingar) (2˚29'S., 134˚36'E.) is entered between Tanjung Busurua and a point about 3.5 miles WNW.

The peninsula on the E side of Teluk Wandamen consists mainly of Pegunungan Wondiwoi a range of mountains which attains an elevation of 2,239m. At the head of this bay is a low area with only a few elevated sections. Along the W side of the bay and the coast to the N a range of hills and mountains lies a short distance inland. These mountains are of little importance as far as navigation is concerned, but the numerous points and islands are sufficient for that purpose. Southwestward of Tanjung Oransbari, however, where the land adjacent to the sea is low, are two hills, Sek Fur (Foer) and Masimi, 468 and 200m high, which will serve as landmarks.

Pulau Roon (2˚25'S., 134˚35'E.) is a very irregularly shaped island, lying NW of Tanjung Busurua and separated from the peninsula on the E side of Teluk Wandammen by Selat Numamuran (Noemanoeran Strait), which is deep and clear. The island is hilly and rises to a height of 380m.

Pulau Rariei, Pulau Mansineer, and Pulau Rariau are high rocky islands on the NW side of Pulau Roon; Numberapi (Noemberapi) and Auri (Aoeri), two rocky formations, 35 and 23m high, lying N and NE of Pulau Rariau, constitute good landmarks.

Rippon, and another islet E of it, lie close W of the SW point of Roon and form part of the N shore of Selat Numamuran. Pinai, a high islet 0.75 mile N of Rippon, lies 0.5 mile W of the S entrance of Teluk Kayob to which it is connected by a reef with a depth of 0.9m.

Labuan Yende (Jende Roads) (2˚22'S., 134˚32'E.) on the S side of the large bight on the NW side of Pulau Roon, is best approached from the W by passing S of Pulau Rariei. A conspicuous church stands about 0.25 mile W of Jende.

Yende (Jende) village, abreast of the roads, consists of the houses of the natives built on poles in the water, and the dwellings of other people on the narrow sandy beach. In back of it the steep cliffs rise to a considerable height. Drinking water can be obtained from a waterfall.

10.45 Kepulauan Auri (Mios Aoeri) (2˚02'S., 134˚44'E.), NE of Pulau Roon and E of Pulau Waar, is separated from those islands by a deep and clear passage. The group consists of several islands and a number of shoals lying on a bank of soundings with very irregular depths. The W edge of the bank is very steep-to and has practically a continuous shoal of 9.1m, and less close within it. The three S most islands are low, but the other islands, farther to the N, are steep and rocky. Pulau Maransabadi, the largest, has a height of 125m. These islands are not inhabited, but are frequently visited by people from Pulau Roon.

Miei Village (2˚44'S., 134˚30'E.) (World Port Index No. 53000) is the storage place for products of the district on the E side of Teluk Wandammen. The coastal section is rich in sago palms, and nutmeg and bark is brought down from the higher sections. Fishing is carried on by the natives near the beach. A government official is stationed at Miei, and a government vessel makes regular call at the roads. The European houses and mission school are located on the hills beyond the village.

For the most part the tidal streams in the roads are negligible. There is a sandy beach, unobstructed by reef, in front of Miei and lighters are landed here.

A 175m long stone pier is located at Wassior, a place about 0.75 mile N of Miei, and there is a partially completed jetty nearby.

Good water can be obtained from a water line at Miei.

10.46 Teluk Wandamen (Wandamen Bay) (2˚45'S., 134˚28'E.) lies W of the peninsula off the extremity of which Pulau Roon is located. Its W shore is steep but the E shore is bordered by a strip of low land which is thickly populated though little can be seen of the villages. The bay itself is comparatively clear and deep.

Pulau Yop (Jop) lies in the entrance to the bay, and rises to a height of 145m at its N end.

Labuan Miei (Miei Roads) (2˚44'S., 134˚30'E.) lie in a bight of the E shore 12 miles SE of Pulau Yop. A light green spot on the slopes of the mountains SE of the village constitutes a good landmark.

Labuan Windissi (Windissi Roads) (2˚25'S., 134˚13'E.), 11 miles NW of Pulau Yop, may be located by the high Tanjung Ronsore which lies SE of it. Off the village of Windissi are a number of low but heavily-wooded islets, all surrounded by drying reefs in which navigable channels and inlets are found.

Between Labuan Windissi and the S end of Pulau Rumberpon only a few scattered habitations are found along the steep coast and there are no anchorages except that mentioned below. Along the S part of this stretch of coast the reefs are well marked by discoloration, but farther N where the islets and reefs fronting it are more numerous discoloration cannot be depended on to locate the reefs as the water is rather muddy.

Pulau Waar (Mios Waar) (2˚05'S., 134˚22'E.), NW of Pulau Roon and about 12 miles off the N part of this stretch of coast, is hilly and attains a height of 450m, but there are no conspicuous peaks; a red patch on the SE side 3 miles NNE of Tanjung Riarwepam is a good landmark. The fairly large village of Wandoswaar lies on the NW side, the small village of Nusumboni (Noesoemboni) on the W side, and the large village of Yomber (Jomber) on the E side.

Pulau Wairundi (Wairoendi) (1˚48'S., 134˚26'E.), 11 miles N of Pulau Waar, is situated more toward the SE end of a narrow bank of soundings. It is a low, sandy, uninhabited island covered with tall trees; it constitutes an important landmark.

10.47 Pulau Rumberpon (Roemberpon) (1˚50'S., 134˚10'E.), NW of Pulau Waar and close to the New Guinea coast, is hilly at its N end and W side, but its eastern side is comparatively low and covered with mangroves. The 224m hill at the N end of the island constitutes a good landmark, even at a great distance. Yaliali (Jaliali) and Senebuai (Seneboeai) villages on the E coast can be reached by channels through the drying reefs; Yembekiri (Jembekiri) and Yamakaan (Jamakaan) villages lie on the W coast. Jenimerai, a rocky islet, lies on the coastal reef close NE of Tanjung Tjidi, the NW point of Rumberpon.

Selat Rumberpon (Roemberpon Strait) (1˚43'S., 134˚09'E.), which separates Pulau Rumberpon from the New Guinea coast, has a large number of islets and dangers which greatly encumber its narrow S end. This channel is tortuous and demands local knowledge.

Teluk Mawi (Mawi Bay) (1˚39'S., 134˚07'E.) is located between Tanjung Syeri (Sjeri) and Tanjung Runaki (Roenaki), the N and S entrance points, respectively. The 1,400m peak of the Pegu-Nungan Mawi (Mawi Mountains) rises 3 miles W of the bay. Anchorage may be obtained in Teluk Mawi about 0.25 mile S of Tanjung Syeri in a depth of 58m, sand.

Labuan Syeri (Sjeri Roads) (1˚39'S., 134˚06'E.) lies in the N part of Teluk Mawi W of Tanjung Syeri. The roads are protected from the N swells that are encountered in Teluk Cenderawasih. With E or S winds there is a shore sea in the roads. There is no current.

Tanjung Yori (Jori), 7 miles NE of Tanjung Syeri, is low and marked by high, dead tree trunks.

Rapaowi, a village on the coast, is located about 2.5 miles N of Tanjung Jori. A road connects Rapaowi and Ransiki, about 3 miles W. A government official resides at Ransiki. There is a boat passage, about 0.12 mile wide, abreast of the village of Rapaowi, which is entered through the coastal reef.

10.48 Tanjung Oransbari (1˚20'S., 134˚17'E.) is low but has a tall, conspicuous tree on it. On the S side of the point is an inlet where proas often wait for more favorable weather

before continuing their journey N. Vessels rounding the point should pass either close to it or at a considerable distance off to avoid the shoals. A light is shown from a white beacon on Tanjung Oransbari.

Winds—Weather.—Along the W coast of Teluk Cenderawasih between Teluk Wandamen and **Tanjung Saweba** (0˚43'S., 133˚57'E.), the weather conditions are subject to change both from place to place as well as from hour to hour. During a survey in May and June, when proceeding SE from Tanjung Saweba, SE winds were experienced, moderate at first, later stiff, with a sea, but little swell. In December there was a heavy N swell as far S as the parallel of Tanjung Oransbari.

During a survey from Tanjung Onsbari to Tanjung Mangguar, in January and February the wind blew with moderate force from a N and NW direction. Periods of strong NW winds, locally known as "Timorlaut" occurred regularly; there was much rain.

Tides—Currents.—Currents set across the shoals and around Tanjung Oransbari sometimes cause a difficult sea when the monsoon winds are strong.

Caution.—Off the W side of Pulau Roon are a number of islands and several dangerous shoals and rocks. **De Klerk Reef** (Karang Num) (2˚15'S., 134˚28'E.), the outer danger, lies 5.35 miles WNW of the N end of the island and has a depth of 11m.

In Teluk Yoppingar, a patch with a depth of 4.9m, marked by discoloration, lies about 0.3 mile NNW of Tanjung Busuru. Three detached reefs extend on an E and W line from the W shore of the bay. The E most reef, with a least known depth of 9.1m, lies about 2.25 miles W of Tanjung Busuru; each of the other reefs has least known depth of 3.0m.

A shoal with a least depth of 5m, lies 0.37 mile SW of the S end of Pulau Rariau. Shoals with depths of 6.8m and 5.9m, lie about 1.75 miles SW and 1 mile S, respectively, of the S extremity of Pulau Rariau. A shoal, with a depth of 5.9m lies about 1.5 miles SE of the same point.

There are several detached shoals with depths of less than 5.9m within 15 miles NE through SE of Pulau Maransabadi. A drying reef lies E of the S end of the bank.

A string of reefs, some of which dry at LW, extends about 20 miles SE from the bank of soundings mentioned above. Among these reefs are two islets, Pulau Kuwom (Koewom) and Pulau Rorebo, 7 and 16 miles SE of Pulau Matas, the S most island of Pulau Auri. Both of these islets are low but well-wooded. The N end of this string of reefs is a drying reef 2.5 miles N of Pulau Kuwom; the S end consists of three small drying patches 22 miles E of Tanjung Busurua. A deep channel separates these reefs from those near Pulau Kabuai (Kaboeai). There are patches in this area that uncover. Reference should be made to the chart.

10.49 Tydeman Reefs (Karang Gajebi) (2˚09'S., 135˚15'E.), about 20 miles E of Pulau Iweri, the SE most island of Pulau Auri, is a string of reefs, 10 miles in length, lying in an area which is normally deep and clear. They consist of a number of drying and very shoal dangers. The W most group of the string has a least depth of 1.4m and the NE danger is a drying reef, marked by a light.

Some shoals of 1.8 to 6.9m lie up to 3.35 miles off the E side of Teluk Wandamen N of Tanjung Sobiei; near the shore are several drying reefs. A wide mud bank and some islets front the shore at the head of the bay. A reef, with a least depth of 2.7m, lies on the W shore about midway in the bay. The rivers Wosimi and Ambbumi (Ambboemi) discharge here. About 2.25 miles from the head of the bay and nearly 1 mile from the W shore lies Pulau Abuwami (Aboewami), a small islet with reefs N and NW of it. Five miles farther to the N are two patches of 0.9 and 1.5m. Uresi (Oeresi) is a drying rock near the W shore 4.25 miles still farther to the N. A 2.7m shoal patch lies close offshore, about 1.25 miles SSE of Uresi.

In the entrance to the bay is Pulau Yop with a drying reef extending nearly 2 miles to the N; a 7.8m shoal lies 0.5 mile farther to the N. There is a deep and clear channel on each side of Pulau Jop.

In Labuan Miei (Miei Roads), an area from about 0.1 mile offshore, W for about 2 miles, and N and S for about 3 miles, has a clear swept depth of 14m.

About 2.5 miles SE of Tanjung Kananisoe is a reef with a least depth of 1.5m, which discolors well; about 3 miles N of the roads is a 7.3m shoal which is not marked by discoloration.

The N coast of Pulau Waar is clear, and along the E coast the dangers with depths of 9.1m or less lie within a mile off the shore. Shoals of less than 7.3m extend 3 miles off the S point. Off the W coast the dangers are more numerous and shoals of 4.6 to 11m lie up to 6.5 miles offshore.

Reefs and shoals of less than 9.1m extend up to 3.35 miles NW from Pulau Wairundi (Wairoendi).

The reefs near Pulau Rumberpon (Roemberpon) are not marked by discoloration.

There is a least depth of 0.9m in the fairway of Selat Rumberpon (Roemberpon Strait); the reefs are usually well marked by discoloration, and there is not much current. Vessels entering from the N must take care to avoid the dangers in the N part. The fairway then leads W of Nusero (Noesero) Ketjiland Nusero (Noesero) Besar. Abreast of Kasibi and Tanjung Pekiriwaisai favor the W shore, pass W and S of Apong, and then out at the S entrance between Batu (Batoe) and Masoon or between the latter and Tanjung Sassoi.

10.50 Tanjung Runaki (Roenaki) (1˚41'S., 134˚06'E.) is formed by a sloping rock, off which a coastal reef extends some distance. Surf breaks on this reef much of the time. A detached 5.9m shoal and a 1.8m detached shoal lie about 0.5 mile NNE and close SE, respectively, of the coastal reef. A 18.7m bank lies between the above-mentioned shoals.

A bank of soundings, on which current rips are often seen, extends about 5 miles SE of Tanjung Yori. On the bank are three shoals of 11.9, 9.6, and 4.6m. Vessels can pass close to the point, between it and the above shoals. A small military garrison is located at the village of Momi, 4 miles SW of the point.

Batu (Batoe) Haiwai is a drying reef 4.5 miles NNE of Tanjung Yori. There is a deep and clear channel between it and the coast.

Depths of from 6.1 to 20m extend up to 1 mile from Rapaowi.

Extending E from Tanjung Oransbari is a bank of soundings on which are some shoal patches with depths as little as 5m.

Anchorage.—The only anchorage on the E coast of Pulau Roon is in Teluk Menarbu (Menarboe Bay). On the W coast there is anchorage, in a depth of 5.5m, at the head of Teluk Kayob (Kajob Bay) and at several places in the large bight on the NW side of the island.

In Labuan Yende (Jende Roads), a vessel that is not too large can anchor in 46m between two projecting points of the shore reef. The roads are dangerous during squally weather, as the holding ground is not very good.

On the E side of Teluk Wandamen, at the N end of the peninsula forming this side, are the two narrow bays of Teluk Raimu (Raimoe) and Teluk Van Dosterzee (Ainsendammen), which are deep and clear, and afford safe anchorage. There are no permanent settlements on the high shores which form these bays.

On the W side there is a safe anchorage W of Pulau Sombroko, an island 4 miles NW of Pulau Yop. One and 5 miles S of Sombroko are the two narrow but clear inlets, Teluk Watiriraro and Teluk Kurio; their shores are uninhabited. These anchorages require local knowledge.

Other than the above, anchorage can be found most anywhere along the shores of the bay in depths of 55 to 60m.

In Labuan Miei, suitable anchorage in depths of 29.3m, mud, will be found abreast the village.

10.51 In Labuan Windissi, SE of the SE islet lying off the village there is suitable anchorage for large vessels in 46m. Smaller vessels can proceed into the inlet W of this anchorage; here there are depths of 10.1 to 11m. The edges of the reefs are not very well marked by discoloration.

Anchorage may be found off Kali Werror, close south of Mamisi village and 7.5 miles NNW of Windissi. At this place the rocky coast is broken by a sandy beach, 0.35 mile in length, which vessels can approach on a SW bearing. Anchorage can be taken at most any depth and distance offshore, as the bottom rises gradually and consists of sand and mud. Large vessels can anchor in 35 to 40m. Local knowledge is necessary.

Anchorage may be found most anywhere near the drying coastal reef off Pulau Rumberpon, even though the depths are great.

Labuan Syeri (Sjeri) offers good anchorage in depths of 49 to 80m. The most protected anchorage lies about 0.25 mile due S of Syeri (Sjeri) village in about 59m, mud and sand. Elsewhere the sea and swells will be felt sooner. The shore bank between Sjeri village and Tanjung Sjeri is steep and composed of sand, free of stones. Boats and lighters can be landed on the beach here.

Anchorage may be taken in 55m 0.17 mile offshore abreast a small boat pier located at the village of Momi about 4 miles SW of Tanjung Jori.

Anchorage can be obtained in 7.3 to 14.6m, about 135m SE of the entrance of the boat passage located abreast the village of Rapaowi.

10.52 The coast between Tanjung Oransbari and Tanjung Saweba, a distance of 43 miles, is backed by high mountains, some of which extend very close to the shore. Of these mountains the Pegunungan Arfak (Arfak Mountains), which rise to a height of 2,950m, are rather prominent. These high mountains are usually enveloped by clouds, which render them of little value to navigation. The coastal hills may be of some use as landmarks, however. In general, vessels can navigate close along this coast.

The coast for about 28 miles NNW of Tanjung Oransbari is generally low but the hills come close to the shore in some places. About 5 miles NW of Tanjung Oransbari is Wantoki, a conspicuous grove of trees near the end of a range of hills. About 10, 14, and 22 miles NW of the point are conspicuous openings in the woods at War Moi, War Nasi, and War Mupi (Moepi). The bottom along this coast is too steep for anchorage.

Tanjung Memori (0˚52'S., 134˚08'E.) is the NE projection of the entrance to Teluk Doreh (Doreh Hum). It is a low, wooded point of a hilly peninsula with two rather vague summits; the W of these two summits is 230m in height and has a conspicuous tree on it.

Pulau Mansinam (0˚54'S., 134˚06'E.) lies SW of Tanjung Memori, and forms the E side of Teluk Doreh, a hilly island that rises to 75m at its N end. This latter elevation has a conspicuous tree on it.

Labuan Menokwari (Manukwari Roads) (0˚53'S., 134˚05'E.) lies in the inlet on the N side of Teluk Doreh. The reefs are hard to make out, but the E and N side of Pulau Mansinam can be approached close to Pulau Wappi, W of the N end of Pulau Mansinam, is low and covered with coconut trees on the N side and with mangroves on the S side.

A small detached 9.1m shoal patch lies about 2 miles SSE of Tanjung Memori light structure.

Aspect.—A light is shown from a white iron skeleton structure on the NE extremity of Tanjung Memori.

Range lights are shown on request at the port of Menokwari, located about 0.6 mile NNE of Tanjung Sanggen, the W entrance point of Labuan Menokwari. These lights in range 006.5˚ lead into the inlet clear of the dangers lying in the entrance.

Karang Butsuiri is a dangerous reef which lies about 0.3 mile ESE of Tanjung Sanggen, the W entrance point to Menokwari.

Mooring buoys are located in Labuan Menokwari, 0.25 and 0.5 mile, respectively, NNW of the light at the entrance. Another mooring buoy is located close SW of the range lights.

A beacon from which a light is occasionally shown, lies about 92m SSE of the front range beacon.

Pilotage.—Pilotage is compulsory in Labuan Menokwari.

Anchorage.—Near the mouth of War Andai, in the bight S of Teluk Doreh, there is anchorage in 35 to 55m. This little river has a wide mouth and can be navigated for a short distance by small craft.

Anchorage in sheltered locations, with depths of 29 to 38m can be taken in the roads. The bottom is not good, and a vessel may drag in strong gusts. In case of a prolonged stay or a crowded berth, vessels should moor head and stern.

Directions.—Vessels pass S of Mansinam and W of Mios Wappi, which is 4 miles NW of the NW point of Mansinam; then steer 006.5˚ on the range to the anchorage.

Mansinam and Mios Wappi may also be passed on their N sides by steering for the light on Karang Butsuiri bearing 290˚; this leads through the swept channel. When Mios Wappi is

about abeam, alter course N to pass between Karang Butsiuri and Tanjung Rarisamberi, the E entrance point of Menokwari, and then to the anchorage.

Menokwari (Manokwari) (0˚52'S., 134˚05'E.)

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10.53 Menokwari, a commercial port and settlement, is located along the shores of the inlet. It is the administrative capital of West New Guinea. The housing area consists of rows of houses on each side of a road extending along the shore. Menokwari is the site of a repair base.

Aspect.—New Wharf, located on the W side of the harbor to the N of the repair yard, is a T-head offshore wharf. It will accomodate large vessels and has full facilities.

Old Government Pier, located on the E side of the harbor, has a berthing length of about 70m with a depth alongside of about 4.3m.

A T-headed pier is located at Tanjung Rarisamberi, about 0.5 mile SSE of Menokwari. A buoy is moored closeoff the pier head.

The port can accommodate vessels up to 7,000 dwt, with a maximum length of 150m and a maximum draft of 9.6m.

Fuel is available by roadtanker.

From Tanjung Memori, the coast trends 14 miles NW to Tanjung Saweba. It is high and steep-to and vessels can proceed at a short distance offshore. Only sailing proas and light-draft vessels will find anchorage back of Pulau Auri (Mios Aoeri), a small islet E of Tanjung Saweba. An islet, about 38m in diameter, lies about 0.5 mile 308˚ from the N tip of Pulau Auri. The islet stands on a drying reef which is about 95m in diameter. Some dangers are charted off the S end of and near the coast NW of Pulau Auri.

Tanjung Saweba, which can be approached within a short distance, is low but is backed by hills of about 305m elevation. The small Pulau Auri, about 3 miles SE of the point, is covered with high trees and can be easily recognized.

A bank, with a depth of 73m, lies about 34 miles NE of Tanjung Saweba.

10.54 Kepulauan Mapia (Mapia Islands) (St. David) (0˚49'N., 134˚17'E.), about 95 miles NNE of Tanjung Saweba, consists of three islands, Pulau Pegun, Pulau Bras, and Pulau Fanildo, which are situated on an oval atoll, 9 miles in length, N and S. The islands are low and have a number of high coconut trees on them which can be seen from a considerable distance.

Pulau Fanildo reaches an elevation of 30m over the coconut palms. Pulau Bras reaches a elevation of 40m and Pulau Pegun an elevation of 30.5m over the coconut palms.

When approaching the islands, especially from the NE, great caution should be exercised. This is especially true when approaching against a low sun or with smooth water, as the edges of the atoll cannot be seen except at LW springs. The use of the lead is out of the question as the atoll is steep-to.

There is usually a surf over the reef, but it does not mark the outer edges, as it is, on the whole, inside them.

The edges of the reef dry at LW springs.

The lagoon within the atoll is filled with rocks. It is possible for a boat to enter through a narrow winding channel on the W side, more than 2 miles NNW of the N end of Pulau Pegun.

There is a settlement on the S part of Pulau Pegun.

Winds—Weather.—Winds observed from the middle of June to the middle of August were principally from E and ESE. They were often of considerable force, were accompanied by much rain, and made landing difficult, or impossible, because of the high surf and the rollers.

A W wind reportedly prevailed in mid-November and the weather was in general brighter.

Tides—Currents.—During a survey, a 1.5 knot current, setting W was observed at Pulau Pegun and during another survey, a current of the same strength was observed to be setting constantly in a W by N direction.

Anchorage.—In general there are no satisfactory anchorages, but small vessels can find temporary anchorage during good weather off the N side of the atoll.

The usual landing place is near the settlement on the S part of Pulau Pegun. Landing is accomplished at high tide but during inclement weather, or with high rollers, it is very dangerous, if not impossible.

Kepulauan Mapia is reported to lie (1992) further E, a distance of 1 mile.

10.55 The coast between Tanjung Saweba and **Tanjung Boropen** (0˚43'S., 133˚33'E.), 22.5 miles to the W, the coast is very sparsely inhabited. The principal settlements along this stretch of coast are Befoor, Warikau (which is conspicuous), Maseni, and Sidai.

Teluk Siwi (Kleine Geelvink Bay) (0˚44'S., 133˚44'E.), 13 miles W of Tanjung Saweba and S of Tanjung Wibain (Wilbain), is much frequented by proas but cannot be used by larger vessels as the shore is steep.

Westward of Tanjung Sidai, between the point of the same name and Tanjung Boropen, there is a very small proa harbor with a depth of 14.6m.

Anchorage.—Suitable anchorage for large vessels can be found W of Tanjung Boropen.

From Tanjung Boropen the coast trends W for 11 miles and then NW for 12 miles to Tanjung Manganeki. The settlements along this coast are Kaironi, S of Tanjung Boropen, and Mubrani (Moebrani) in the angle of the coast line.

Byenkorf Mountain (0˚46'S., 133˚34'E.), 415m in height, standing 3.5 miles S of Tanjung Boropen is conspicuous.

About 4 miles W of Mubrani there is a conspicuous double top, 430m high, with a conspicuous tree on its W side, and about 4.5 to 5.5 miles farther NW there are three conspicuous peaks with heights of 680, 755, and 735m, respectively.

Tanjung Manganeki (0˚36'S., 133˚14'E.) may be recognized by a hill, 210m high, close in back of it.

From Tanjung Manganeki the shore trends W with several indentations, for 19 miles to **Tanjung Saukris** (Saoekris) (0˚27'S., 132˚58'E.). There are several settlements on this shore and between those of Saukorem (Saoekorem) and Warpaperi and about 6.5 miles NW of Tanjung Manganeki, there is a projecting reef through which there is a channel that enables boats to land regardless of the surf.

A light is shown from Saukorem.

A conspicuous flat-topped hill, 500m high, stands 3.5 miles W of Tanjung Manganeki and is visible for a considerable distance from E.

Tanjung Srabapan (0˚31'S., 133˚05'E.), 3 miles WNW of Warpaperi settlement, is low with high trees on it.

Boltop (0˚33'S., 133˚02'E.), a conspicuous round-topped peak, 930m high, stands 4 miles WSW of Tanjung Srabapan.

Piekye (Piekje) (0˚28'S., 132˚55'E.), a 650m elevation, standing 2.5 miles SW of Tanjung Saukris, is very conspicuous from the E.

From Tanjung Saukris the coast trends WNW for 15 miles to Tanjung Weios (Valsche Kaap). There are steep rocky sections along this coast, interrupted by low, flat places.

About 4 miles W of Tanjung Saukris there is a point on which the settlement of Wau stands.

From Tanjung Weios the shore trends W for 18 miles to Tanjung Yamursba (Jamoersba) (Cape of Good Hope).

The 295m hill, which stands about 6 miles E of Tanjung Yamursba, has a conspicuous round top and drops sharply toward the sea.

On the E side of the foot of Tanjung Weios there is a chimney-shaped rock.

Tanjung Kambrini (0˚21'S., 132˚37'E.), 6.5 miles W of Tanjung Weios, is a rocky formation, 50m high, and is at the end of a chain of hills.

Warmandi settlement, 2 miles E of Tanjung Kambrini, is W of a 130m hill which drops sharply to the sea.

Anchorage.—Under favorable weather conditions vessels can find anchorage in certain places between Tanjung Boropen and Tanjung Manganeki.

Anchorage can be found in 13.7m inside the two patches of 5.9m and 5m mentioned below.

There is good temporary anchorage almost everywhere between Tanjung Saukris and Tanjung Yamursba, and in favorable weather vessels can even anchor between the 10m and 20m curves.

Directions.—Byenkorf Mountain, seen open of the fairly sharp 271m peak, one of the three distinct elevations in the ridge in back of the coast, leads clear of the shallow patches between Mubrani (Moebrani) and Tanjung Manganeki.

To keep outside the shallow patches between Tanjung Boropen and Mubrani, keep the 150m summit of Tanjung Wibain open of Tanjung Boropen.

Caution.—Several shallow depths lie in the vicinity of the 20m curve between Tanjung Boropen and Tanjung Manganeke.

A 1.4m shoal lies 1.25 miles SE of Tanjung Srabapan. A 5.9m patch lies E of a point located 4 miles W of Tanjung Saukris, and a 5m lies SE of the same point. Another shoal, with a depth of 7.8m, lies 2 miles ESE of this same point.

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