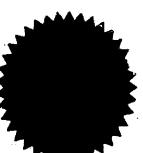




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U.S.C.& G.S.Str.Patterson.

S.E. Alaska. Season of 1897.

Descriptive Report and Sailing Directions.

.K.Zoore.

Lieut.Comdr., U.S.N.,

Chief of Party.

by Willen bucher



U.S.C.& G.S.Str.Patterson.

S.E.Alaska. Season of 1897.

Descriptive Report and Sailing Directions.

West Coast of Kruzof and Chichagof Islands. St.Lazaria Id.to Khaz Bay.

E. K. Moore.

Lieut.Comdr., U.S.N.,

Chief of Party.

By−

Lt.G.R. Slocum. Lt.W.W. Gilmer. Mr.H.L. Ford.

Assistants.

U.S.C.& G.S.Str.Patterson. Descriptive Report and Sailing Directions.

West Coast of Kruzof and Chichagof Islands.

St.Lazaria Id. to Khaz Bay.

Topographic Sheet 1:60000. Hydrographic Sheet 1:60000.

Bearings and distances are approximate.

SITKA SOUND to SALISBURY SOUND.

The coast line is formed by the W.side of Kruzof Id.which trends N.N.W.'/2 W.and is indented by two bays.

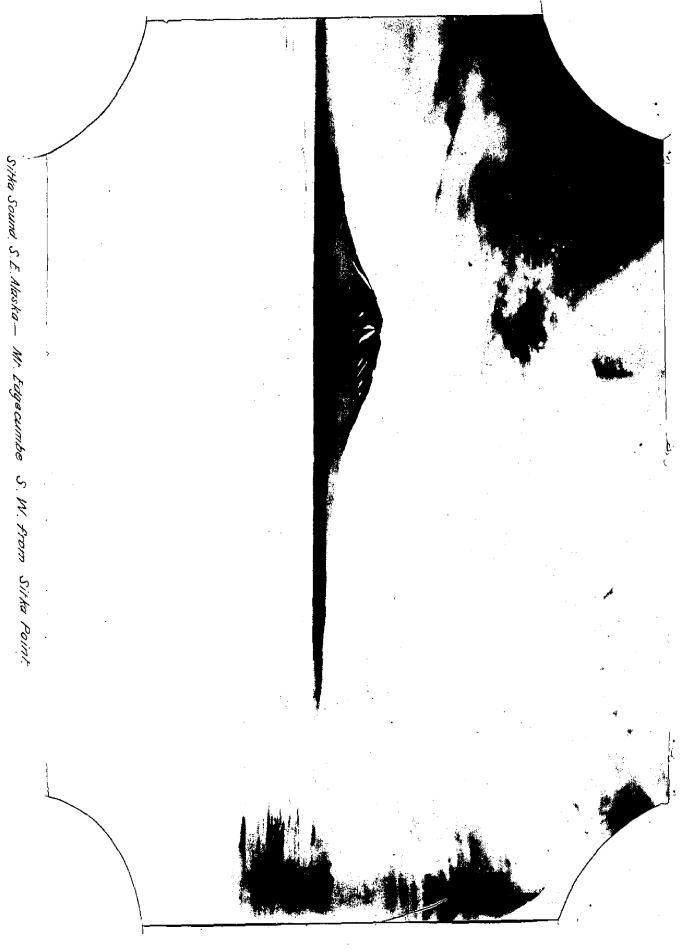
The shore is clear for coasting, there being no hidden outlying dangers so far as known, until Cape Georgiana is reached. Sunken rocks do exist, however, in the bays and bights and will be described further on.

Abreast Cape Edgecumbe the 100 fm.curve is found 8 miles from shore. It gradually draws off shore and is found distant 12 miles abreast Cape Georgiana.

The soundings show a very regular increase in depth running out from shore.

Fish abound inside of 30 fms, especially between Cape Edgecumbe and Pt. Amelia, in the vicinity of kelp. The kind depends on the locality, but cod, red snappers, and sea bass are most plentiful.

KRUZOF ISLAND extends in a N.N.W.and S.S.E.direction for a distance of 21 miles. From Sitka Pt and Cape Edgecumbe, as far as the north side of Shelikof Bay, the coast is the edge of the lava plain of Mt. Edgecumbe, which rises abruptly 100 to 200 ft from the waters edge and



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Sitka Sound, S. E. Alaska — Mt. Edgecumbe and Lazaria Island S. W. From Sitka Point.

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then slopes gradually to the cone of Mt. Edge cumbe.

On the north shore of Shelikof Bay the coast line changes from a lava formation to white granite and is very bold. The rock is much split and is in horizontal strata, although in places it is inclined or vertical. This general character extends to Salisbury Sound; being especially steep and rugged on both sides of the peninsula which terminates in Pt. Amelia.

Kruzof Id is rugged and densely wooded. The highest peak is Mt. Edgecumbe at its southern end.

Mt.EDGECUMBE. This prominent land mark, an extinct volcano, occupies the southern third of Kruzof Id. See photographs.

From the shores on each side the land rises gradually to a height of from 1600 to 1800 ft, being well covered with timber and interspersed with grassy flats, which become more numerous as the base of the cone is approached. Above this height the mountain forms a very regular cone which is devoid of vegetation and is of a reddish brick color.

The base of the cone is a little over 1 mile in diameter, tapering to about 1/3 mile at the top, which is 3467 ft above sea level. The crater is from 300 to 400 ft deep.

Extending down the sides of the cone are numerous deep gullies or ravines, in which the snow lies until late in the summer, giving to the cone a peculiar streaked appearance.

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In clear weather Mt.Edgecumbe may be seen very clearly from well to the Nd of Salisbury Sound, and from any point to seaward it is easily distinguished by its isolated position, its flat top, its peculiar streak -ed appearance, and its reddish color which is in strong contrast with the hills in the back ground. A group of small knolls about 1200 ft

high lies half way between the cone and Cape Edgecumbe. To the north of the cone and about the same distance is the old crater, about 2800 ft above sea level, but in no wise confusable with Mt Edgecumbe.

St.LAZARIA ISLAND lies 1'/4 miles off the south shore of Kruzof Id. It is '/2 mile. long in an E'ly and W'ly direction, but very narrow in the middle. The entire island is covered with underbrush. The west -crn end is high and tolerably thickly wooded. The eastern end is lower and not so thickly wooded. The hills on the western end are very steep and show numerous caves, and the entire island shows a lava formation. It is a resting place for thousands of birds.

The Cosmos, in moderate S'ly weather, found a lee on the north side of the island abreast the narrow neck, rocky bottom.

Ships pass on either side of the island.

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One mile to the Nd. of St.Lazaria Id. and ... '/4 mile off shore is a small wooded island.

SITKA POINT. This is the southernmost point of Kruzof Id and is 7 miles W.S.W. from the west end of St.Lazaria Id.

Off the point and between it and Cape Edgecumbe outlying rocks extend to the Sd and Wd for $^{5}I/4$ mile, but they are marked by constant breakers in ordinary weather.

With the flood tide a very stong current sets directly on these breakers.

CAPE EDGECUMBE. This is the S.W.point of Kruzof Id. and is 1'/8 miles W.by S.from Sitka Pt. The cape is bluff near the water, moderately high, densely wooded, and has the appearance of a table land.

A mile and a quarter above Cape Edgecumbe is a small bight which which may afford shelt; r as a landing for canoes at its east corner.

Just to the Nd of this bight is a sheer bluff about 200 ft high, extending for 1 mile and having numerous large caves washed in it.

NEVA BAY North of the high bluff just mentioned and 2'/2 miles from Cape Edgecumbe is a small bight, probably Neva Bay, in which are several Indian shacks. The Indians find a landing place for canoes behind the reef at the north entrance point.

BEAVER POINT is 5 3/4 miles N.N.W.'/2 W. from Cape Edgecumbe. From Neva Bay to Beaver Pt the shore is lower and is fringed with reefs extending from 300 to 400 yds off shore. Comparatively shoal water,5 to 10 fms, and kelp may be found 1 mile off shore. Just north of Beaver Pt. is a small open bight,3/4 mile wide and 1/2 mile deep, full of rocks and kelp. From the northern entrance point of the bight a reef extends 400 yards.

At Beaver Pt. the shore line trends to the N.E; and Beaver Pt. is practically the south entrance point of Shelikof Bay.

SHELIKOF BAY is 4'/2 miles wide at its entrance and 3 miles deep. The bay in general outline is rectangular.

very thick in from 6 to 10 fms. In the S.E.corner is a sand beach 1'/2 miles long trending N.by W. A little to the Nd.of this sand beach the shore line makes a further indentation to the N.E.for nearly 1 mile.

In this vicinity a long ledge of roefs, mostly bare at low water, makes out 5/8 mile in a S.W!ly direction, and terminates in a wooded island 150 ft. high.

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This ledge forms with the south and east shores a partially protected cove which is probably the Port Mary of the Sailing Directions of 1891. An anchorage may be had in 5 fms, hard bottom. Off the southern point of this cove is a ledge of small extent, and 800 yds. E. by N. from the high wooded island is another ledge which bares at half tide.

A 1/4 mile to the Nd of the ledge forming the north shore of Port Mary is another ledge making out from two small wooded islands for 1/2 mile.

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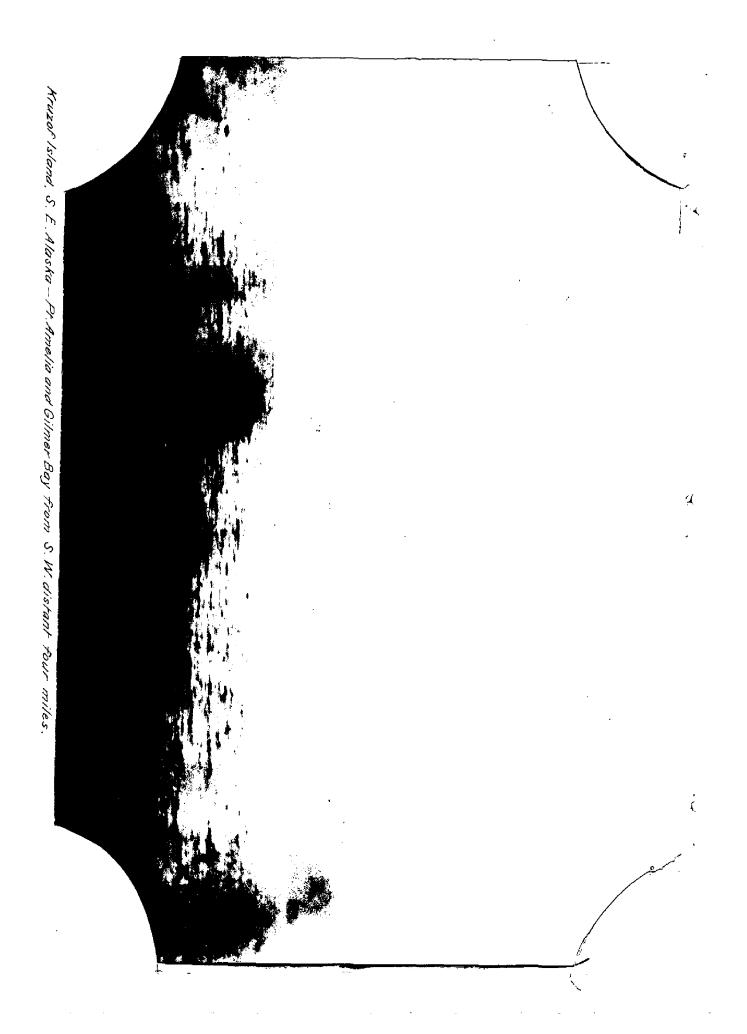
In the N.E.corner of Shelikof Bay is another long sand beach and two streams make in. The beach is formed of powdered lava and pumice stone which packs very hard. Back of this, following the streams, may be found extensive meadows where grass and wild flowers grow profusely, with numerous small, shallow, ponds filled with water lilies (June).

From Port Mary to Slaughter Id, a distance of 3 miles, the north shore of Shelikof Bay is very foul; numerous rocky islets and ledges extending for a distance of 1/4 to 1 mile off shore.

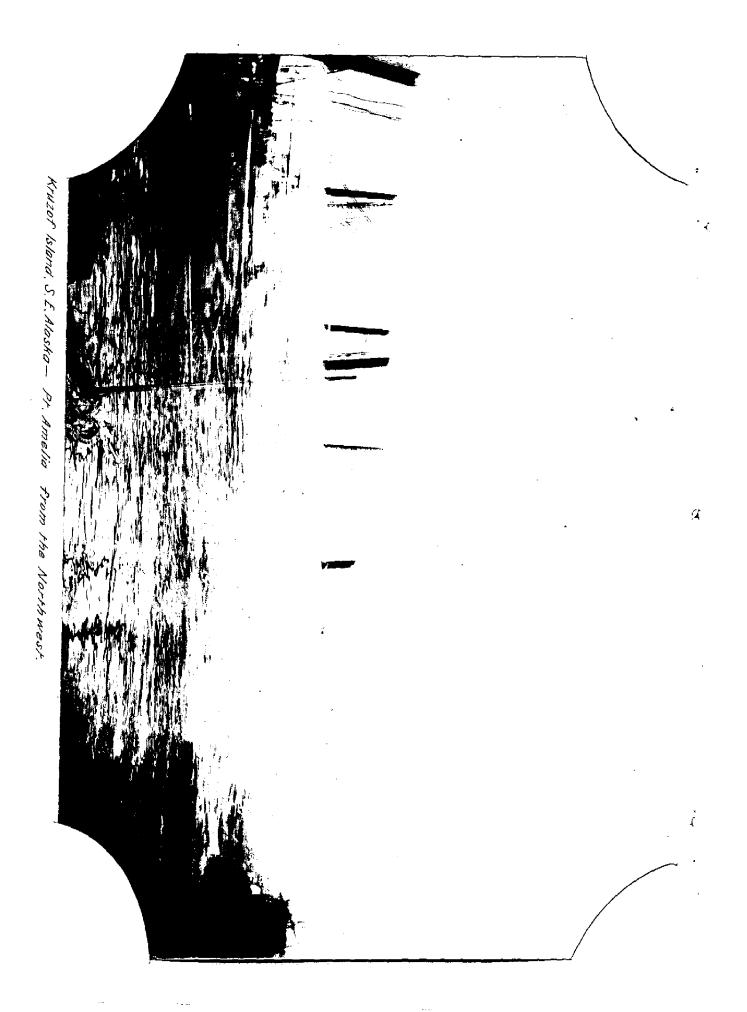
Shelikof Bay being open to the Wd. and foul along the northern shore is not recommended. Port Mary is suitable for small craft only, and with Gilmer Bay so close at hand thore appears to be little occasion to enter Shelikof for protection.

SLAUGHTER ISLAND bears 1.3/4 S.,2'/2 miles, from the north entrance point of Port Mary and N.N.W.,4 5/8 miles, from Beaver Pt. It is a small island covered with grass but without trees and is connected at low water with the main land. West 3/8 mile from Slaughter Id, and South 1/2 mile from Point Mary, is a sunken rock with 9 ft of water at low tide.

POINT MARY, the north entrance point of Shelikof Bay and the south entrance point of Gilmer Bay, is 5 3/8 miles from Beaver Pt, N. N. W. 1/4 W. This point rises very abruptly from the waters edge to a small ridge 1800 ft high.



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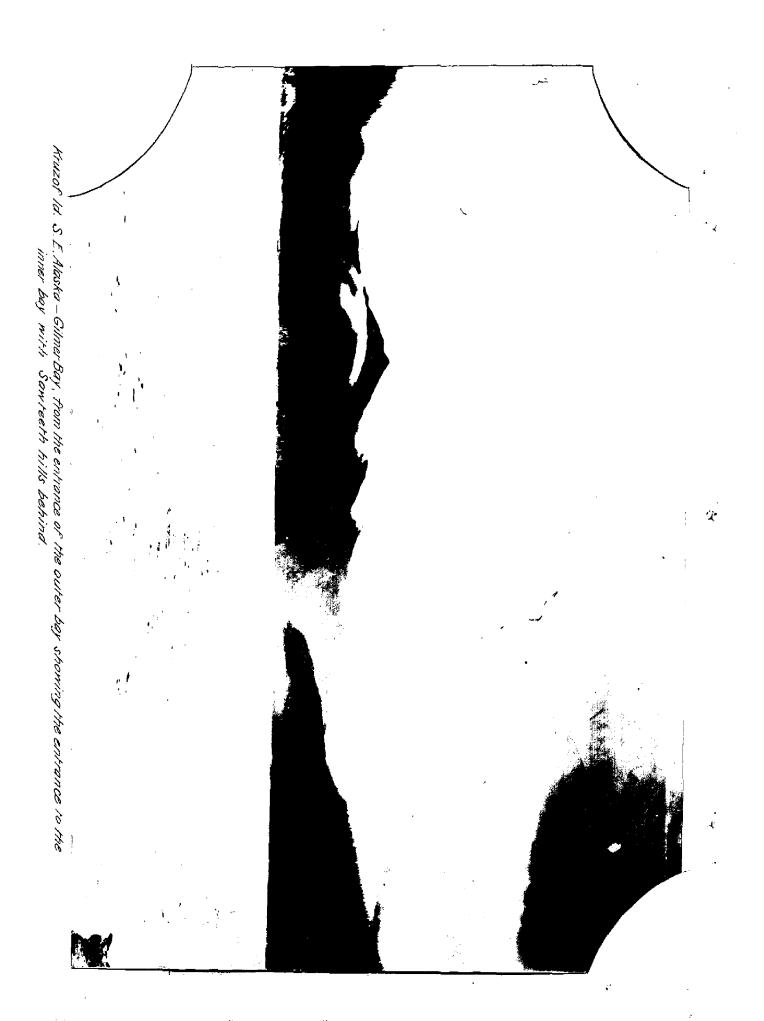
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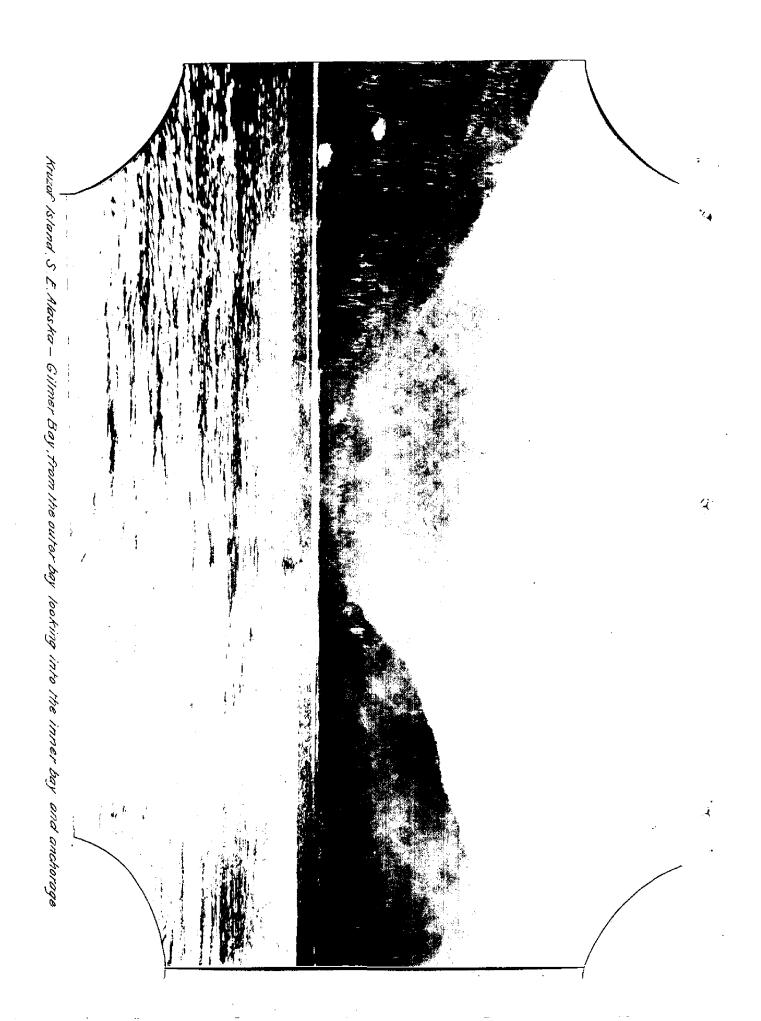
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POINT AMELIA bears N.W. by W., 3'/8 miles, from Pt. Mary. This is the most prominent point on Kruzof Id between Cape Edgecumbe and Cape Georg -iama, and is seen equally well from Nd. and Sd. See photographs.

Pt Amelia is the terminus of a peninsula about 1800 ft. high. There are two small knolls at the seaward end of this peninsula; the inner one being wooded and about 400 ft high; the outer one consisting of a cone shaped rock about 100 ft in elevation.

Two rocks, bare at half tide, lie E.S.E. from the white rock, 750, and 150 yds respectively, and about 200 yds off shore.

GILMER BAY. Between Pt Mary and Pt Amelia is the funnel shaped entrance to Gilmer Bay. See photographs.

N.W.3/4 W.,1'/4 miles, from Pt Mary is a small white rocky islet about 50 ft high, lying off a small cove.

About 1/2 mile W.5/8 N. from this islet and nearly on range between this islet and Pt. Amelia, also nearly on range between Pt. Mary and the western entrance to Gilmer Bay, is a sunken rock carrying 15 ft. at low water and showing a breaker at low water with moderate swell.

A mile and a half from the islet the entrance to Gilmer Bay contracts to a width of 2/3 mile. A mile beyond, the bay expands to about 1 mile in width and terminates 1 mile further on in a narrow arm about 3/4 mile long by 300 yds in width.

The anchorage is in mid channel, one half way up the arm, in about 15 fms of water, sticky bottom.

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In the arm the shore line changes from the white granite to a black rock formation, the strata being almost vertical and very jagged, especially so near the entrance.

An anchorage for small craft can be found in the N.E. corner of the wide part of the bay in from 4 to 7 fms of water. The water in

the middle and western part of the wide entrance is deep.

On the western side, just south of the low neck of land which separates the sea from Gilmer Bay, is a landslide, the lower part of which is a very peculiar yellow bluff.

The only danger in this bay is the sunken rock previously mentioned. The anchorage in the arm referred to was used by the Patterson in the season of 1897 while prosecuting the work in this vicinity.

The swell did not come much beyond the entrance points of the arm, but there is no record of the value of the anchorage in winter gales.

TWIN POINT is 2 3/4 miles N.by W.'/2 W. from Pt. Amelia, the shore line forming a bight 1 mile deep between the points. Twin Pt. is the Pt. Amelia of the Coast Survey Chart # 8050, and has probably been so called from its resemblance to Pt. Amelia of the survey of 1897.

In the bight between the points is a conspicuous sand beach 3/4 mile in length.

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The hight is unsuitable for an anchorage on account of its exposed position.

SEA LION ROCKS. This group lies 3'/2 miles N.W. by N. from Pt. Amelia and about 1'/4 miles W.N.W. from Twin Pt. It extends 1 mile in a N.E. and S.W. direction and consists of five detached rocks, the most eastern one lying about 3/4 mile from shore. The two largest rocks are from 150 to 200 ft high and lie close together, both being covered with grass, the eastern one having a number of dead trees. The extreme eastern one of the rocks, which is 75 ft high, is partially covered with grass; the remaining two are bare.

EAGLE ROCK is 1 5/8 miles from the western low, rocky, bare, Sea Lion Islet. It is 58 ft. high, dome shaped, and devoid of vegetation.

This rock is S.'/4 E. and 1'/3 miles from Cape Georgiana.

From Twin Point the shore line trends to the Nd,1'/2 miles, then N.W. about the same distance to Cape Georgiana, forming a bight referred to in the sailing directions of 1891 as Sea Lion Bay. It is not proper -ly a bay but may have appeared so from the outlying Sea Lion Rocks.

SEA LION COVE is a small cove about the middle of the bight just described. There is a sand beach at the head nearly 1 mile in length, and a small peninsula 3/8 mile long forms its southern point.

CAPE GEORGIANA is 6 3/8 miles N.N.W. 1/4 W. from Pt Amelia, and is the southern entrance point to Salisbury Sound.

See Descriptive Report, Season of 1897. Sergius Narrows to Sitka Sd.

SEA ROCK bears W.N.W.3/4 W. from Cape Georgiana, distant 2/3 mile.

It is bare except at extreme high tides when it shows a breaker. On the same bearing, 1'/4 miles from Cape Georgiana, is a sunken rock which shows a breaker with a moderate swell.

Sailing directions for Shelikof and Gilmer Bay .-

SHELIKOF BAY. This bay although not recommended may be entered safely from the Sd. by rounding Beaver Pt. and following the south shore in keeping a mile from it. The sand beach will indicate at its western end the approach to the western entrance point of Port Mary.

With Beaver Pt. abeam, bearing N.W. '/4 W. and distant 1 mile, the course N.E. '/4 E. leads directly in to Port Mary.

If coming from the Nd, avoid Shelikef Bay, round well over to the south shore and enter on the above course as the sand beach is the best indication of the entrance and that part of the bay is clear.

GIIMER BAY. If from the Sd, pass Shelikof Bay heading for Pt.

Amelia, and stand for the western shore of Gilmer Bay. The sunken rock

on the eastern shore is the only danger. The rocks off Pt Amelia are close inshore, so that the western shore may be approached within 1/4 mile with safety.

Following the western shore in is considered a safer direction than a compass course. However, the following courses may be used.-

If coming from the Sd,pass Beaver Pt. at a distance of 1 mile on the course N.N.W. and when Pt. Amelia bears N.W. '/4 W., the position being midway between Pt Amelia and Slaughter Id, haul to post N. 1/8 W. for the entrance to the arm. This course will leave the rock 3/8 mile on the starboard hand.

For the description of the entrance to Salisbury Sound and Fortuna Strait see Descriptive Report, and Sailing Directions, S.E. Alaska, Season of 1897.

SALISBURY SOUND to KHAZ BAY.

From the western entrance point of Fortuna Strait the coast trends in a general W.N.W.direction, and is considerably broken with foul ground, consisting of sunken rocks and ledges, generally showing breakers, extending off shore to distances varying from 1/2 to 2 miles.

The shore line for the first 6 miles is the west shore of the peninsula between the main arm of Khaz Bay and the Ocean.

This peninsula is rugged, with peaks from 2500 to 3000 ft in height, and terminates in Khaz Head, a bold bluff headland about 1400 ft. in elevation, which is particularly noticeable from the Sd. and Ed.

The 100 fm. curve is found about 16 miles off shore on this part and the of the coast, soundings showing a much more irregular bottom than in the section-Sitka Sound to Salisbury Sound.

The location of points on the coast from the west end of Klokachef Id. to the Nd. of the course W.N.W.'/4 W.have been determined for a distance of 12'/2 miles, and the soundings completed to the 100 fm. curve, so that passing Klokachef Id.1'/2 miles distant on the above course clears all dangers over the limits described.

If going through Fortuna Strait a mid channel course West will clear everything.

The shore line from the west entrance of Fortuna Strait to Khaz PT.is very foul, and should not be approached, except in small craft, nearer than 1 mile.

There are no anchorages between Leo Anchorage and Khaz Bay.

Rounding Klokachef Id, and hauling to the Nd, the most distant point picked up in clear weather is Black Id, beyond the limits of this season's work..

BLACK ISLAND is a small island covered with trees giving it the appearance of a black rock.

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From the morthern entrance point of Fortuna Strait to the high water rock off Pt. Slocus all dangers to navigation lie inside the line drawn between the points.

POINT SLOCUM bears W.'/2 N.,2'/2 miles, from the eastern entrance point of Fortuna Strait and N.by W.'/4 W.,4'/4 miles, from the west end of Klokachef Id.

This is the first prominent point to the Nd and Wd of Klokachef Id. A bare flat topped rock about 30 ft high bears south distant about 200 yds. Between the rock and the point kelp grows very thickly, breaking the swell and in ordinary weather making a safe landing for boats.

KHAZ POINT bears W.N.W. from Pt. Slocum and is distant from it 2 5/8 miles.

The shore line between these points forms a shallow bight with numerous breakers.

The outlying one bears west from Pt. Slocum, distant 5/8 mile.

From Khaz Pt. to the limits of the present survey are numerous breakers showing in moderate weather. As this portion of the season's work was examined in all kinds of weather it is thought that all dangers have been located.

about 30 ft high, and with a lower smaller bare rock to the Wd. about 200 ft, terminates the series of ledges and rocks forming the N.W. shore of the entrance to Khaz Bay.

It is seen soon after rounding Klokachef Id.

OUTLYING DANGERS between KHAZ Pt.and OUTER ROCK:-

Breaker # 1,S.W.'/2 W. from Khaz Pt.3/4 mile.

Breaker # 2, west from Khaz Pt.2'/4 miles.

Breaker # 3, W. by S. from Khaz Pt.2'/2 miles.

Breaker # 4,S.by W. from Outer Rock, distant 3/8 mile.

Breakers 2 & 3 are over reefs that bare, and there is a clear passage between them; but it is recommended to pass outside and bring them in range if bound for Khaz Bay, passing the outer one at a distance of 1/2 mile, then heading N. by W. for the entrance to the bay.

In the entrance are three breakers. Two of them lie near the west shore and bare at low water. Their bearings and distances from Outer. Rock are respectively; N.N.E. '/4 E., 1 mile, and N. by E. '/4 E., 2 miles.

The third one lies in the narrowest part of the entrance and shows with a heavy swell. The least water found on it was 4'/2 fms. It bear from Outer Rock N.N.E.'/2 E and is distant 2'/2 miles.

No further sailing directions are considered necessary for this section.

A reconnaissance of Khaz Bay was hastily made and a general description follows.

KHAZ BAY. Beyond Khaz Head, extending for 4 miles in the same general direction as the peninsula, is a group of almost innumerable rocks and reefs, some bare and some wooded generally low with numerous sunken rocks in the intermediate winding channels.

The western island of this group, with several small ledges and two bare rocky islets off its western point, forms the eastern point to the main entrance to Khaz Bay. A small narrow winding channel connecting with the bay lies under Khaz Head but it is full of rocks and is suitable for small craft only.

The western entrance point, Outer Rock, is the extreme southern bare rock of a mass of rocks, ledges and islands that extend for many miles to the Nd and Vd and form series of inland channels into which open numerous bights and bays from Chichagof Id.

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From Klokachef Pt. this rock is distant 12'/4 miles bearing W.N.W. 1/4 W. From the eastern entrance point it bears S.W. by W., distant 2'/2 miles, and from Khaz Head it bears W., distant 5 miles.

N.by E.'/4 E.,2'/2 miles, from the western entrance point is a high wooded island of rather small extent which contracts the entrance to a width of 1 mile. From this point the main part of the bay, Slocum Arm, extends in an E.by S.direction for 11'/2 miles with an average width of 1 mile. A mid channel course gives good clear water and with the exception of a single rock, distant 3/4 mile N.E.by E. from the eastern entrance point and from 350 to 400 yds off the northern shore, the

shores

are clear to the head where there is a flat of considerable extent with the usual grassy meadows.

The waters of the bay are completely sheltered from the outside swell and sea the first three or four miles by the group of islands previously referred to, and the remainder by the high land of the peninsula which terminates in Khaz Head.

With the exception of the islands near the entrance the southern shore of Slocum Arm is straight away but the northern one is cosiderably indented.

Opposite the entrance to the bay is a small hight, about 1 mile in length, with an island lying in its mouth, and several smaller islands and ledges further in. From the head of this bight a trail and portage, about 200 yds in length carries over a low divide to a large lagoon, several miles in length and of varying width that connects with the inland channel about 2 miles to the Wd. This opening is hidden by a group of several small low wooded islands.

About 3 miles inside Khaz Bay and abreast of the eastern end of the group of islands is the entrance to an inlet which extends about 3'/2 miles in a N.N.E. direction, with an arm at its head extending T. 1/2 S. for 2'/2 miles. The inlet, called Ford Arm, has an average width of '/2 mile, but is contracted to less than that in several places by small islands and outlying rocks.

The western entrance point to this inlet is rounding, with sand and gravel beaches of considerable extent. Near the middle of the point is an Indian Shack in a fair state of repair. The eastern point consists of a group of small low wooded islands. About 30 fms were carried up on a mid channel course to where the western arm opens well out.

A stream empties at the head of the bight which is fished for salmon

by the Indians, and a good sized shack stands on the eastern side of the stream.

Near the head of the inlet a fair sized hight extends to the Ed. connecting by a high water passage with the waters of Slocum Arm.

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The western branch of Ford Arm is about 2 miles in length and a little less than '/2 mile in width, terminating at the head in a small flat, where a small stream makes in on the northern shore. The head of the arm as will be seen from the sketch terminates a very short distance of the large lagoon of which previous mention has been made. A sunken rock with about 8 ft. of water over it at low tide lies some 400 yds. E.N.E. from the southern entrance point which should be given a good berth. Otherwise this arm is clear to the head where a good anchorage for small craft may be had in from 10 to 15 fms. of water.

Beyond the high water passage connecting Slocum with Ford Arma are two small bights of no particular importance. A waterfall empties into the western one.

At the narrow part of the entrance to Khaz Bay is the beginning of a series of inland channels of considerable length, extending to the Nd. and Wd, formed by the numerous islands previously spoken of and whose outermost rock constitutes the western entrance point to Khaz Bay. A very hasty reconnaissance of a portion of this passage was made in the "Cosmos", the compass courses being noted, and the distances and strength of the current estimated as closely as possible. The total distance run was about 11 miles following what appeared to be the largest and principal passage.

For the first 2 miles the channel, although straight, is very narrow, lying between several small wooded is and rocks. It then expans

to a width of between 1 and 1'/2 miles for a distance of 3 miles.

Numerous small channels exist between the islands on the seaward side,

giving occasional glimpses of the sea and of the mass of rocks and

ledges previously referred to.

A small bight, sheltered by three small wooded islands, lies on the northern shore with several shacks and graves at its head. It was not ascertained whether this was a permanent or merely a summer habitation, although the presence of the graves and the rather substantial appearance of the houses, would indicate the former.

A mile beyond this bight the channel bends to the Nd narrowing in width to less than '/2 mile for about 1 mile, then it turns sharply to the N.E. expanding \$\phi\$ to a width of 1 mile, with several small islands in the broad portion which is about 1'/2 miles long. Here it turns again to the Nd. for another 1'/2 miles with a small bight on each side, and leads into another bight extending of the Ed, about 1 mile in length by 1/2 mile wide, containing several wooded islands. At the entrance to the bight the channel narrows and turns sharply to the Wd. for 2 miles where it divides. The reconnaissance stopped at this point for lack of time.

At this point a small bay with two islands in its mouth, and nearly closing the entrance extends in a N.E'ly direction for 1'/2 miles with a width of '/2 mile. A rock covered at half tide lies off the eastern entrance point of this bay, almost in the middle of the channel and care must be taken to avoid it.

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The presence of numerous wickiups and drying frames throughout these channels indicate a considerable use of the locality by the Indians for fishing purposes, and it is probable that game is also plentiful although time was not available for investigation.

This channel has also been made use of by Capt. Smith, Secretary of the Baranoff Packing Co. and Captain of their fishing Steamer "Wigwam".

On this stretch of coast from Cape Edgecumbe to Outer Rock the current is to the Nd. and Wd., from zero to one and a half knots, which is the counter current experienced all along this coast..

Very respectfully,

Lieut Comdr.U.S.N.,

Chief of Party.