2295

2274.2276 2277-2278 2279 2280.2283 -2284.2285

22.74-2276-2253-2254

Form 504
U. S. COAST AND GEODETIC SURVEY
DEPARTMENT OF COMMERCE
DESCRIPTIVE REPORT
Type of Survey Topographic
Field No. Office No. 2295
LOCALITY State Claska
State Claska General locality St Paul Island
Locality Dibelof Group
Beins Sea.
. / 194-
CHIEF OF PARTY
Will Ward Duffield
LIBRARY & ARCHIVES
DATE

22922295



U. S. COAST AND GEODETIC S

W. W. Duffield,

JRVEY.

State: Alaska

DESCRIPTIVE REPORT.

Topographic Sheet No. 2295, 2277, 2278, 2274, 2279, 2276, 2280, 2283, 2285, and 2284.

LOCALITY:

St. Paul Island,

Pribilof-Group,

Bering Sea, Alaska.

lughieute.

 $_{18}97$

CHIEF OF PARTY:

Will Ward Duffield, Assistant

Descriptive Report to accompany Topographic Sheet No. 2295, St. Paul Island, Bering Sea, Alaska, scale 1-20,000, surveyed in 1897:

also,

of nine (9) Topographic Sheets of Seal Rockeries on St. Paul Island, as follows:

Sheet No. 2277, Zapadni Rookery,

- " No. 2278, Little Zapadni and Zapadni Reef Rookeries,
- " No. 2274, Tolstoi Rookery,
- " No. 2279, Lagoon Rookery,
- " No. 2276, Gorbatch, Ardiguen, and Reef Rookeries,
- " No. 2280, Kitovi and Lukanin Rockeries,
- " No. 2283, Polovina, Polovina Cliffs, and Little Polovina Rookeries,
- " No. 2285, Morjovi Rookery, N. E. Point, East Sheet,
- " No. 2284, Vostochni Rookery, N. E. Point, West Sheet.

The Island of St. Paul, one of the Pribilof Group, lies in Bering Sea some 225 miles Northwest of Unalaska Island, of the Alentian chain, which is the mearest land to the Southward, and 195 miles Southwest of Nunivak Island, which is the nearest land in that direction. The extreme length of the island, from Southwest Point to Northeast Point, is 13-1/2 miles, while its extreme width, from Reef Point to Severnoye Point, is 7-3/4 miles.

SHORE-LINE.

In general, it may be said that the shore-line of the Western half of the island is bluff and rocky, while that of the Eastern half is low and sandy.

Beginning at the western extremity of the sand beach forming the shore of Lukanin Bay, and extending westward around Reef Point and thence northward to English Bay, the shore-line is mostly rocky, with boulder beaches for a good part of the distance, and broken by three prominent bluffs - Black Bluffs, the village bluffs, and the bluffs of Tolstoi Point. The first two rise to a height of about 100 feet, and the latter reaches a maximum elevation of about 150 feet. The shore of English Bay is formed by the sands of Middle Hill, the boulder beach of Zapadni Reef Rookery, the rocky shore of Little Zapadni Rookery, the sandy beach of Southwest Bay, and the rocky

shore of Zapadni Rookery. These begin the Zapadni Bluffs, which extend around Zapadni Point and end opposite the south shore of Antone Lake. At the highest point these bluffs are a little over 100 feet high.

Separating Antone Lake from the sea is a boulder beach with a crest line about 21 feet above high water, which has been cited as an evidence of a rise of the island since its It may be questioned whether the height of first upheaval. this beach is not due to the action of the surf and ice during heavy southwest winter gales. It is well known that the sea breaks clean over the beach, separating the Salt Lagoon from Village Cove, which is similar in character and but seven or eight feet lower, during heavy gales. So also the seas sweep over Walrus Island, and along its northern part wave-worn boulders, piled to a height of thirty feet or more, testify to the power of the waves. They have undoubtedly sufficient force to form the beach in question without assuming an upheaval to account for its existence.

From Antone Lake westward to Southwest Point, the coast line is rocky with a bluff of moderate height. The highest part of this bluff is south of Ridge Wall, where it reaches a height of about 80 feet.

Off Southwest Point a sunken reef extends in a southwest-

erly direction nearly 700 metres, as shown by the breakers at the time this part of the shore line was surveyed. Older maps indicate a still greater seaward extent of this danger, and it is quite likely that had the sea been rougher at the time, our observations would have shown that shoal water exists at a greater distance from the Point.

From Southwest Point to the western end of Lincoln Bight is one continuous bluff. Opposite Rush Hills the bluffs reach an altitude of 379 feet. Great numbers of sea fowl nest along these precipitous cliffs. The shore of Lincoln Bight is principally cobble beach. To the eastward a succession of cobble beaches, low bluffs, and strips of sandy beach extend to a point about three-quarters of a mile beyond Severnoye Point. Along this stretch of coast there are a few outlying sunken rocks, none, however, that showed in the smooth sea at the time of the survey at a greater distance than an Two rocky reefs extend about eighth of a mile off shore. 150 metres off shore, one 550 metres, and the other 1400 metres west of Severnoye Point.

Three quarters of a mile East of Severnoye Point begins a sand beach which sweeps in a gentle curve for a distance of 6-1/3 miles to a point opposite Webster Lake, where the Vostochni Rookery begins. This beach has a succession of high

grass - covered sand dunes back of it - except at the narrow neck connecting Vostochni with the main part of the island, where the sands are low, and where the winter storms send the surf clear across at times, thus uncovering buried walrus skeletons and revealing the hidden ivory tusks to the natives, who eagerly search for them. In earlier times this neck was undoubtedly a walrus rookery.

Around Vostochni the shore line is made up of cobble and boulder beaches, with a few rocky ledges and rocky bluffs of slight elevation, and one strip of sand beach near Sea Lion Neck.

Almost due North from Hutchinson's Hill, and over a mile off shore, extensive kelp patches indicate shallow water and rocky bottom. So also southeast of Sea Lion Neck, and from 400 to 600 metres off shore, kelp patches exist. the indefinite outlines of the patches and the distance of these on the North shore, it was impracticable to locate them exactly on the sheet, and the position as indicated must be considered approximate. But they are sufficient to warn navigators to give the point a wide berth. No breakers were seen off this point during the progress of the survey. Tide rips. however, were formed by the strong tidal currents. Captain

Hooper, of the Reverme Cutter Service, states that he has seen it break more than a mile off Northeast Point in heavy weather.

From a point south of Webster Lake, a smooth sand beach extends southeastward for about 3-1/2 miles. Like the beach on the north shore, this is backed by grass-covered sand dunes. A cobble or boulder beach three quarters of a mile long extends southward to the Little Polovina Rookery. From here to Polovina Point the shore line is rocky with a rocky bluff rising to a height of about 30 feet. Immediately at the Point is a flat rocky ledge of considerable extent that is awash at high tide.

Extending from Polovina Point to Stony Point is another stretch of sand beach, backed by dunes. At Stony Point, a boulder beach extends around the Point, and hreakers off shore indicate shoal water. The shore of Lukanin Bay is a smooth sand beach with dunes inshore.

FORMATION OF THE ISLAND.

The Island is of volcanic origin. Scattered all over its surface are hills that still show more or less distinctly the forms of the craters that once beloned forth the molten material of which the island is formed, and the outlines of the great central flow are still plainly to be traced. Of the

hills mentioned, Crater Hill is perhaps the best example.

Quite an extensive lake now occupies the bed of the old crater.

On Lake Hill and Polovina also old crater beds are now lakes.

Lake Hill has no less than four of them. Rush Hill, Dot

Hill, Cone Hill, North Hill, Low Hill, Slope Hill, Bogaslof,

and Little Polovina all show remains of old craters.

DRAINAGE.

A remarkable feature of St. Paul is the utter absence of running streams. One would naturally expect to find water courses on an island of such size, but none exist. The cause lies in the fact that the water that falls on the island sinks among the rocks, volcanic cinders, and sands that make up its The island is, however, tolerably well watered, surface. for numerous lakes and ponds are distributed over it. of these, except Antone Lake and the lake near Polovina, are fresh, and the waters can be used for drinking purposes. The two exceptions noted are rendered brackish by the ingress of sea water during high tides. The chain of lakes and ponds extending from Polovina to Telegraph Hill is peculiar. was made use of in former years as a highway for the seals when they were driven from the eastern end of the island to the village to be slaughtered.

TRAVEL OVER THE ISLAND.

Except at low water and along the sand beaches of the shore, travel is difficult in any direction over the island. Around the shores a rank growth of grass, and farther back a coating of moss in which one sinks ankle deep, makes progress very laborious; while in the interior the slopes covered with loose angular rocks make walking exceedingly tiresome.

SEAL ROOKERIES.

St. Paul derives its importance from the fact that it is the largest of the Pribilof Group, and the home of the greater portion of the American fur seal herd. The fur seal rookeries are therefore the most important features of the island.

Beginning with the most western rookery and following the shoreline around from the South to the East, the rookeries are as follows:

ZAPADNI, Sheet No. 2277.

This rookery extends along the southeast shore of Zapadni Bluff, beginning about 300 metres to the Eastward of Zapadni Point and continuing around to the mouth of the little creek forming the outlet to Antone Lake, a distance of about 1100 metres. Back from the shore line the ground rises with a moderate slope to the height of about 100 feet at the crest of

the bluff. The rookery ground, however, does not extend all the way up the slope, but comprises a strip averaging in width some 200 metres, and having an elevation of some 40 to 60 feet at its inshore margin. The surface of the rrokery is diversified with rocky ledges, loose boulders, and sand patches.

LITTLE ZAPADNI, Sheet No. 2278.

This is separated from Zapadni by a strip of sand beach about 200 metres long. Beginning at the eastern end of this sheet the rwokery extends along the shore for a distance of some 500 metres. Back from the shore the ground rises rapidly to a height of about 60 feet in a distance of about 100 metres to a bench or table of about the same width, and back of this is a second and still steeper rise of another 60 feet to the top of another table or mesa. The rockery occupies the lower slope up to the edge of the first table. The ground is rocky, consisting of ledges and loose boulders, and is free from sand patches.

ZAPADNI REEF, Sheet No. 2278.

To the eastward of Little Zapadni, a boulder beach extends for a distance of about 1300 metres to the beginning of the sands of Middle Hill. The beach rises to a crest nearly 10 feet in height at an average distance of about 15 metres from the high water line, and slopes down again a few feet to a

LAGOON, Sheet No. 2279.

close to the village on the outside shore of the narrow strip of land separating the Salt Lagoon from Village Cove is located the Lagoon Rookery. It extends from the southeast extremity of Tolstoi Bluff to the end of the strip, a distance of about half a mile. In character this rockery beach resembles Zapadni Reef, having a similar boulder TREE rising to abcrest from 11 to 13 feet above high water and sloping back to a level strip behind.



level rocky plain behind. The seaward slope of this beach is occupied in places by harems of breeding seals.

TOLSTOI, Sheet No. 2274.

The northern limit of this rookery is somewhat indefinite, but it may be said to begin on the south slope of Middle Hill, where a large hauling ground exists. From here the sands of Middle Hill extend southward a little more than half a mile, when the shoreline changes in character to racky, and makes an abrupt change in direction to the westward, and extends for a distance of another half mile to Tolstoi Point, which marks the western end of the rookery. Near Tolstoi Point the bluff rises so steep that it cannot be occupied by the seals, but some 300 or 400 metres to the eastward of the point it becomes less steep, and from here to the turn of the shoreline above mentioned the rookery extends well up the slope.

GORBATCH. Sheet No. 2276.

This rookery begins at the southern extremity of the Zoltoi Sands and extends southwesterly along the northwest depositions shore of the Reef peninsular for addistance of about 1200 metres. For the first 450 metres of this distance the breeding ground of the rookery occupies a rocky beach at the base of a cliff ranging from about 20 to 40 feet in height, known as Zoltoi

Bluffs. Beyond the Bluffs the shore rises in a moderate slope and near the waters edge consists of rocky ledges and loose boulders. At the southwest end of the rookery, back from the ledges and rocks, is a moderate cinder slope leading up to what is known as the "Parade Ground".

ARDIGUEN, Sheet No. 2276.

This rookery lies to the westward of Gorbatch and to the north and east of the Reef peninsular. Some 160 metres from Reef Point there is a break in the bluff which extends along this part of the shore by means of which the seals can gain access to the bank above. This break has been named The Slide". The territory of Ardiguen embraces the rocky beach beneath the bluff, "the slide", and also some ground at the head of "the slide". Its precise outline and limits cannot be given by the writer from lack of definite information. The rookery had, in former years, no separate existence, but was considered as part of the Reef rookery. It was isolated and named by the present Seal Commission.

SEA LION ROCK.

This little islet, south of Reef Point at a distance of about a quarter of a mile, is occupied by the seals during the season.

REEF. Sheet No. 2276.

From the extremity of the peninsular this rookery extends along the southern shore, and then northeastward to the beginning of the bluff that corresponds on the south shore to the Zoltoi Bluffs of the north shore, a distance of about 1200 metres. The rookery ground slopes very gently up from the waters edge, and is mostly covered with loose boulders. Rocky ledges occur at a few points. The ponds formerly existing about midway of the rookery have been drained.

KITOVI, Sheet No. 2280.

Beginning at a point about 200 metres northwest of Kitovi Point, and extending around this point to Lukanin Point, is Kitovi Rookery. Its shoreline has an extent of about 850 In the vicinity of Kitovi Point, back from the rocky metres. ledges forming it, the rookery ground resembles that of the greater number of rookeries on the island, being covered with loose boulders; but the greater part of the remainder of the rookery is made up of rocky ledges "faulted" in many places. thus producing little cliffs and shelves ranging in height from 2 to 20 feet. In this respect this rookery is unlike any other on the island. Except in the neighborhood of Kitovi Point, the rookery occupies merely a narrow strip along the shore.

LUKANIN, Sheet No. 2280.

Adjoins Kitovi on the North and entends a distance of about 500 metres to the commencement of the sandy beach forming the shores of Lukanin Bay. At the southern end the rookery extends well up to the steep slope of Lukanin Hill, among large loose boulders. Beginning a couple of hundred metres North from Lukanin Point and extending for about a hundred metres parallel with the shoreline and back about 20 metres from it, is a series of four eroded bluffs from 10 to 20 feet in height. Beyond these the rookery ground againswidens out and covers nearly all the East slope of the hill, the ground being covered with loose boulders.

POLOVINA, Sheet No. 2283.

This rookery begins about 300 metres West of Polovina

Point and extends around the Point northeastward for a distance
of nearly 1600 metres. The main part of the rookery is,
however, in the immediate vicinity of Polovina Point and extends only about 200 metres beyond it. The remainder has
been designated as Polovina Cliffs, and will be described below. At the southwest end of Polovina, and back from the
sandy beach, is a mixed sandy and rocky hauling ground about
75 metres in extent. Then comes the breeding ground. The
slope of the rookery is gentle, except in the immediate vicinity

of the point where a rocky cliff rises abruptly to a height of between 10 and 20 feet. Along the edge of this cliff the ledge outcrops, but the remaining surface of the rockery ground is mostly covered with small boulders.

POLOVINA CLIFFS. Sheet No. 2283.

ery. It consists, as its name implies, of a line of cliffs. Along most of their extent the cliffs consist of an eroded bank above sloping down to an outcropping ledge of rock, which in places is comparatively flat and smooth, and in others extremely rough and irregular. The outer edge of this ledge is, in general, a bluff descent to high water mark. In some places, however, a rocky beach lies below the bluff. At intervals along the bluff are low places and breaks, which furnish runways by which the seals gain access to the ledges and top of the bank. The number of seals frequenting the cliffs is comparatively insignificant.

LITTLE POLOVINA, Sheet No. 2283.

This rookery lies to the northeast, of Polovina Cliffs and has a shoreline of about 275 metres. The southern portion of the rookery has a rocky bluff shoreline ranging from 10 to 30 feet in height. The elevation of the bluff diminishes as one goes North. Near the middle of the rookery a little cove

exists, and a break in the bluff furnishes a runway for the seals. The rocky point forming the north shore of the cove is terraced in steps so that the seals can also gain the bank at this place. Back from the ledges forming the immediate shoreline, the rockery ground is smooth earth partly covered with small to medium sized boulders.

Beginning at the first rocky point South and West of Sea
Lion Neck, this rockery extends along the shoreline to Northeast Point, a distance of about 2000 metres. Not all of this
extent of shoreline is, however, occupied by the seals. At
the extremity of Sea Lion Neck is a sea lion rockery from which
the point derives its name; the sandy beach north of this
neck is not suitable for breeding ground; and farther along
towards the end of the rockery two rocky points are favorite
resorts of the sea lions. The great body of seals occupying
the rockery is massed on the slope of the slight ridge to the
north of the sandy beach above mentioned.

VOSTOCHNI, Sheet No. 2284, (N.E.Point, West Sheet
Beginning at Northeast Point this rookery extends west—
ward and southwest around Hutchinsons Hill to the sands form—
ing the north shore of the island, a distance along the shore
line of about 3000 metres. Practically the whole extent is

rookery ground, though thebreeding ground is interrupted here and there by hauling grounds, and sea lions occupy a small portion of the shore. Close to Northeast Point, at the beginning of the rookery, is a short strip of beach where the sea lions breed, and the rocky ledge and reef on the northwest tip of Vostochin is another resort to which their title is undisputed by the seals. The great mass of the seals of this rookery occupy the shoreline and north and west slopes of Hutchinsons Hill. On the north slope especially the rookery ground reaches nearly to the summit of the Hill, and is densely crowded.

(Signed) Fremont Morse,
Assistant, U. S. C. & G. Survey.



U. S. COAST AND GEODETIC SURVEYS

W W Duffield

State: Alaska,

DESCRIPTIVE REPORT.

Topographic Sheeto Nov. 2295 2277, 2278, 2274, 2279, 2276 2286, 2283, 2284 & 2285

LOCALITÝ:

St Paul deland Parbelof Group Bering Dea Clarka

Original

1897

CHIEF OF PARTY

Wie Ward Duffield

Descriptive Report to accompany the Topographical Sheet of St. Paul Island, Bernig Lea, Deale 2000, 189). (N° 2295) also of nine Dopographic Starts of Seul Revheries on St Paul Island The island of St. Paul, one of the Privilet Sump, hie in Bering Lea som 225 miles hotherest of Turalaska island of the aleutian chain, which is the nearest land to the Southward, and 195 miles Douthnest of numerak island, which is The nearest land in that direction. The extreme length of the island, from Southnest Point to northeast Point, is 13 to miles, while its extreme midth, from Reef Point to Lerenoye Ponit, is 73/4 miles.

Shore-line: In general it may be said that the shore-line of the braction half of the island is theif and rocky while that of the Eastern half is low and jointy.

۳

Beginning at the Mestern extremity of the rand heach forming the show of Lukanin Bay and extending Prestrand around Reef Point and Thence northward to English Bay the short-line is mostly rocky, mith builder heaches for a good part of the dictauce and broken by thee prominent bluffe - Black Bluffo, the village bluffe, and the bluffe of Tolstoi Point. The first two rice to a height of about 100 ft, and the latter reaches a maximum elevation of about woft. The shore of English Bay is Jonned of the sands of middle Will, the brilder beach of Zapadni Reef wokey, the weky show if Little Zapadin roskery, the sandy Leach of Sunthmest Bay, and the rocky show of Zapadni rookery. Then Legin the Zaprdni Bluffe which extend around

Japadui Ponit and end opposite The South shore of autone Lake at the highest point these Huffe are a little over 100 ft. high.

Separating antone Lake from the sea is a brilder head with a creit line about i ft. above high water, which has been cited as evidence of a rise of the island price its frist upheard. It may be questioned whether the height of this head is not due to the action of the surf and ice during heavy South west muter gales. It is well known that the sea heaks clean over the heach separating the Salt Lagore from Village Core, which is similar ni chaiacter and but seven a eight feet lone , during heavy gales. As also the sear sweep ner Walnus Saland, and along

4

its hothern park nove-mon boulders filed to a height of 30 ft, a more teetify to the power of the waves. They have undoubtedly sufficient force to form the head in question, mithout assuring an upheard to account for its existence. From autom Lake Westward to Louthmext Point the coast live is rocky, with a bluff of moderate height. The highest part of this bluff is south of Ridge Wall, where it reaches a height of about so

off Southwest Point a senten reef extends mi a Southwesterly direction monly you meters, as shown by the heakers at the time this part of the shore-line was surveyed. Older make indicate a stell peater seaward extent of this danger, and it is quite likely that had the

J-

sea heen sougher at the time, our observations small have shown that should make shown that should make a greater distance from the Point.

From Southnest Point to the Crestern end of Lincoln Bight is me continuous Whiff. Opposite Bush Heille the Huffe reach an altitude of 379 ft. Erest numbers of sea ford next along these precipitions cliffe. The shore of Linodn Bight is principally colle heach. To the Eastraid a succession of cobble Leacher, low bluffe and etrips of Randy heach extend to a point about three quarters of a mile legand Devernoye Point. along this stretch of coast there are a few citting sunken rocks, none, honever, that showed in the smooth sea at the trice of the surry at a

greater dictance than an eighth of a mile off shore. In rocky reefs E extend about No meter off show, me 550 meters and the other 1400 meters Orest of Severnoye Poris. Three quarters of a mule East of Leverneye Point Legis a sand heach which sweeps ni a guitte ourse for a dictance of 61/3 mules. to a fair opposite Orekter Lake, when The Vistochrie rookery Legins. This beach has a succession of high passenered pand demes back git, except at the narrow neck connecting Vostichin with the main part of the reland. where the sands are low, and where the muter storms send the surf clear across at truces thus meaning heried

nature excletone and revealing the

hidden way tweke to the natives who eagerly reach for them. In earlier times this neck was midarbtedly a malruo rookery.

around Nortechui the shore him is made up of cobble and boulder heaches, with a for rocky ledges and rocky bluffe of slight slevation and me strip of sand head near. Lea Lin Meck.

Reilf and over a mile of shore extensive kelp patches indicate shallow water and rocky tottoin. So also Southeast of Lea Lim Neck and from 400 M. to 600 M. off shore kelp patches syist. Orning to the indefinite author of these patches and the dictance of those in the I wish shore it was impeacheable

to locate them exactly on the sheet, and the firstime as indicated must be considered approximate. But they are sufficient to man nangatures to give the paint a mide heith. Or heakers nere seen off this paint during the progress of the surrey. Tide rips. however, overe formed by the eting tidal currente. Captain Hooper, of the Resence Cutter Service, states that he has seen it hear more than a mile of Northeast Ponit in Leavy meather. From a point South of Wester Lake a smooth sand Lead extends South. eastrand for about 3's miles. Like the Leach on the north shore this is Lacked. by grass-exceed point denner. a cottle a brilder heach three quarters of a mile ling extends frithmand to the Little

Poris the shore live is rocky mill a ricky bluff vieing to a height of about so ft. Immediately at the Point is a flat ricky ledge of considerable extent that is awash at high tide.

Extending from Polornia Ponis & Along Ponis is another stretch of Rand Leach, backed by domes. At stony Ponis a boulder beach extends around the Ponist, and breakers off shore indiate shoul water. The shore of Lukamin Bay is a smooth pand leach with domes pishore,

Firmation of the belows: The island is of molecumic origin. Scattened all over its surface are hille that still show more a less distinctly the forms of the craters that once beloked fish

the nirther material of which the reland is formed, and the atthices of the great central flow are still plainly to be traced. Of the hills mentioned Crater Hill is perhaps the Vest example. Lute an extensive lake now occupies the Ted of the old crater. On Lake Hill and Polovina also old crater bedr are our laker. Lake Keill has no less than for of them. Rush Weill, Dot Weill, Come Vaill, north Voill, Low Weill, Slope Well, Bogaslof and Little Polonia all show remains of old craters.

Drawinge: A remarkable feature of St. Paul is the setter absence of summing streams. One mould naturally is beet to find mater courses in an island of such size, but none exist. The cause hie in fact that the mater that

falls in the island sinks aming the rocks, volcanie uniders and sands that make up its surface. The island is , however, tolerably well material, for numerous lakes and ponds are distributed wer it. all these except autore Lake and the lake near Polovina are fresh and the craters can be need for drinking purhase. The two exceptions noted are rendered trackish by the signer of sea water during high tides. The chain of lakes and konde extending from Polovnia & Gelepaph Will is peculiar. It was made use of ni former years as a highway for the seale when they neve driven from the Eastern end of the island to the village to he plaughtered.

Travel over the faland: Except at low water and along the sand beacher of the

shore tharel is difficult in any direction over the island. Around the shores a rank growth of grase and farther back a coating of mine ou which me emiles ankle deep make progress very laborious, while in the siterior the elopes covered with love angular rocks make malking succeedingly triesome.

Deal Rookeries.

St. Paul devines its importance from the fact of its being the largest of the Printed Publish and the home of the greater portion of the american but seal herd. The fine real proteins are therefore the most important features of the island. Beginning with the most mesting with the most mesting with the most mesting to the shore him arms by the South to the East the rootenies are so follows:

1- Zapadni: , This rooken extends along the Anotheast shore of Zapadni Bluff, Leguning about 300 meters to the Eastward of Zapadrii Point and continuing around to the month of the little creek forming the notlet to antine Lake, a dictance of about 1100 meters. Back from the shore line the ground uses with a moderate slope to a height of about 100 pt. at the crest of the bluff. The rooken ground, horever, does not extend all the way up the slope but comprises a strip arraquing on math some 200 meters, and Larring an eleration of from 40 ft. to 60 ft. at its inshore margin. The surface of the rookey is diversified with rocky ledges, loose bulders, and sand patcher.
2. Little Zapadin: 1 This is reparated from Zapadni by a strip of sand head about 200 meters long. Beginning at the Eastern

end of this beach the pookery extends along the shore for a dictance of some soo meter Back from the shore the ground rises rapidly to a height of about 60 ft. in a dictance of about 100 meters to a beach a table of about the same math, and back of this is a seemed and still steeper rice of another 60ft to the top of another table or mesa. The rookey occupies the lower slope up to the edge of the first table. The ground is ricky. consisting of ledges and love boulder, and is free from sand patcher. 3- Zakadin Reef. 1 To the Eastward of Little Zapadin a boulder beach extends for a dictance of about 1300 meters to the beginning of the sands of middle Heill. The beach uses to a crest nearly 10 ft. in height at an average distance of about 15 meters from

the high water line, and elopes down again a for feet to a level rocky plain behind. The seaward slope of this leach is recupied in places by Laremo of heeding scale. 4 - Tolstor: " The northern brief of this rookery is somewhat sudefinite, but it away he said to Legin on the South slope of Middle Heil. where a large handing ground exists from here the sands of Middle Hell extend Southward a little ourse than half a wile, when the shore live changes in character to rocky and makes an abrupt change in direction to the Mestraid, and extends for a dictance of author half mile to Tolstor Porist which marks the Western end of the rookery. hear Poleti Point the bluff rises so steep that it cannot he occupied by the real, but some soom. a 400 M. to the Eastward of the point it becomes less steek, and from here to the time of

the shore line above mentioned the rooken extends mell up the slope.

No 2279

5- Lagon: , Close to the nellage on the ortside shore of the narrow strip of land reparating the fall Lagon from Village Cove is located the Lagon rookey. It extends from the Southeast extremity of Toleton Bluff to the end of the strip, a distance of about half a mile. In character this rookery resembles Zapadin Reef, Larring a emilar boulder beach rising to a creek from 11 to 13 ft. above high water and sloping tack to a level strip hehind. 6- Gorbatch: , This rookery Leguis at the Southern extremity of the Zolotoi Sanda and extends Doroth nesterly along the northwest show of the Resp ferrisala, for a distance of about 1200 heeters. For the frist 450 meters of the dictance the heeding growing

the rooken occupies a rocky heach at the base of a cliff ranging from about 20 / to 40 ft. in height, known as Jolotoi Bluffe. Begand the Bluffe the shore pises in a moderate slope and near the rate's edge consists of rocky ledges and loose Louldere. at the South nest and of the rookey, back from the ledges and rocks, is a surderate civider slope leading up to what is known as the Parade Eroud! 7- Ardiguen; , This rookey lies to the Westrand of Gerbatch and to the north and East of the extreme point of the Reef fermeula. Louve 160 meters from Reef Point there is a hear in the bluff which extends along this part of the shore by means of which the seals can gain sees to the bank above. This heak -has have named The blide. The time-

Tory of ardiquen embracer the rocky heach hereath the bluff, "the slide", and also some ground at the head of "the slide". Its precise authore and limits cannot be given by the miter from lack of definite information. The rookery had in former years no separate existence, but was considered as part of the Reef rockery. It was isolated and named of the present feat Commission. 8- Lea Lim Rick: This little islet South of Ruf Point at a distance of about a quarter of a mile is occupied by seals during The season. 9- Reef: From the extremity of the Fernisula this rookery extends along the Southern shore and then Northeastway to the Legiuming of the Huff that corresponds on the furth show to the

Zolotoi Bluffs of the north shore, a distance of about 1500 meters. The rooken ground plopes very gently up from the water's edge, and is mostly covered noth losse Lindders. Ricky ledges occur at a few points. The fonds formerly existing about midray of the rookery have Feen drained.

10. - Kitori: No 2280

Beginning at a point about 200 meters northwest of Ditori Point and extending around this paris to Lukamin Parist is Kitori rookey. Its shore live has an extent of about 850 meters. In the namity of dition Point, Lack from the rocky ledges forming it, the rookey ground . resembles that of the peater number of rookeries on the island, Long conced mitt love brildere; but the preater part of the remainder of the rookery is made

places, thus producing fittle cliffe and shelves panguing pin height from 2 fr. to 2 fr. the any other on the island. Except in the neighborhood of Ritori Point the workey courses merely a narrow strip along the shore.

11. Lukamie: , adjoins Kitori on the Porth and extends a dictance of about 500 meters to the commencement of the Randy Leach forming the shows of Lukamin Bay. at the Southern end the rooking extends well up the steep slope of Lukamin Heill, among large losse brilders. Beginning . a comple of hundred meters broth from Lukauin Point and extending for about a hundred meter parallel with the shore live and lack about so meter from it is a series

I four enoded bluffe from 10 ft. to roft. in height. Beyond these the rookery ground again orders out and covers nearly all the East slope of the hill, the ground heing covered with loose boulders. 12. Polovina: his rookery Legins about 300 meters meet of Polovina Point and extende around the Point northeastrand for a dictance of nearly 1600 meters. The main part of the rookery is homever, in the immediate occurity of Polomia Parist and extends only about ros meters beyond it. The remainder has been designated as Polonia Cliffe, and will be described below. at the S.W. and of Polonia and back from The sandy beach is a mixed sandy and rocky hauling ground about youeters in extent, Then comes the breeding ground, The elope if the working is justle, except in the immediate

vicinity of the fait where a rocky diff rises ahuptly to height of between 10 ft and 20 fs. Along the edge of this diff the ledge outcope, but the remaining surface of the rossery ground ie mostly covered with awall brilder. Polovina Cliffe: This is the northern contrunation of the Polomia rookery. It consito, as its name suplies, of a live of cliffe. along must of their extent the cliffs consid of an evoded hank alove sloping down to an enteropping ledge of rock, which in places is comparatively flat and smooth and in others extremely rough and inegular. The order edge of this ledge is ni general a bluff descent to high pratic mark, In some places, honever, : a ricky beach lies helow the bluff. at intervals along the bluff are low places and heaks, which privaid runnays of means of which the seals gain access to the ledges and top of the bank. The number of reals frequenting the cliffe is comparatively misignificant.

e significant.

14- Little Polovina: This rookery lies to the Untheast of Polomia Cliffe and has a shore line of about 270 meters. The Southern fortion of the rookey has a rocky Eluff show line ranging from 10ft 30ft in height, The elevation of the bluff dominishes as me goes north. near the middle of the rookey a little croc exists, and a heat mi the bluff fursushes a sunway for the seale, The rocky point forming the north shore of the core is terraced in steps so that the seale can also gain the bank at this place. Back from the ledges forming the minudiate show line the rookey ground is smooth earth partly covered with small to medicin sign brilders.

15- Majovi: - Beginning at the frist noch point South + brest of Lea Lin heek this rookery extende along the stone line to Northeast Point, a distance of about 2000 metics. For all of this extent of show hime is honever, occupied by the seals. at the extremity of lea Lin nich is a sea lin rookery from which the paint denses its name; the sandy heach both of this neck is not suitable for heeding gound; and faither along troads the end of the rookey the rocky points are favorite reserts of the sea line. The great body of seale occupying the rookery is massed on the slope of the slight ridge to the north of the sandy Teach above

mentioned.

11.- Variothini: Nº 2284

11.- Variothini: Beginning at Northeast Point

this rookeny extends Orestrand and Linthout

around Houtchinson's Heill to the sand forming the north share of the island. a distance along the shire live of about 3000 meters. Practically the whole extent is nothery ground, Though the heeding ground is interrupted here and there by Landing grande, and sea him soup a small fortin of the shore. Close & Northeast Point at the beginning of the rookey is a short strip, of heach when the sea him heed, and the rocky ledge and need in the northwest tip of Victoria is another resent to which their title is undisputed by the seale. The great mass of the eals of this roskey vecupy the shore line and North and West plopes of Woutchiuson's Weill. On the buth slope especially the rookery ground reaches nearly to the summit of the Hill and is densely conded. Fremont more, assistant

11/4/52- Ch 8994- Wittman -

•

٠

•