Form 564
U.S. COAST AND GEODETIC SURVEY
DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey: Topographic

Field No.: 2270
Office No.: 2274

LOCALITY

State: 
General locality: Pribilof Islands
Locality: Bering Sea

1892 - 1914

CHIEF OF PARTY

Will Ward Huffield

LIBRARY & ARCHIVES

DATE
U. S. COAST AND GEODETIC SURVEY.

State: Alaska

DESCRIPTIVE REPORT.

Topographic Sheets Nos. 2270, 2274, 2287, 2287a.

Locality: Pribilof Islands, Bering Sea.

1897.

Chief of Party: Will Ward Duffield.
U. S. COAST AND GEODETIC SURVEY.

Henry S. Pritchett, Superintendent.

State: Alaska

DESCRIPTIVE REPORT.

Topographic Sheet No. 2270

LOCALITY:
Staraya-Artil and Little East Rockeries, St. George Island.
(See season's report of 1897)

1897.

CHIEF OF PARTY:
W. W. Duffield
Descriptive report to accompany topographical sheets of St. George Island, Bering Sea. (Sheets Res. 2287 a and Res. 2287 b) and topographical sheets of 1/6 of the real estate on the Tibilex Island. (Res. 2270 a to 2276 b).

General sheets of St. George Island (Res. 2287 a and 2287 b).

When the work on this island was commenced it was not supposed that it could be completed before it would be necessary to leave the island; in order therefore to accomplish as much as possible in the time available, the work was based on a plane table triangulation starting from a base about 1.2 miles long measured with a steel tape, and running west-south-west from near the village. At the close of the season, the time being available, a theodolite triangulation was carried out, using the same base and signals as in the plane table triangulation.

At the time the base line distance was plotted on the sheet 10,000 metre distances were laid off around its edge as shown by the picked holes surrounded by lead pencil squares, the distances between these holes being laid off to scale both horizontally and vertically. The projection was placed on this sheet at the office in Jan. 1878, and is based on the geographical positions computed from the triangulation. The nearest minutes of latitude and longitude were laid off from each triangulation point, correcting the scale in each direction according to the distances on the sheet as compared with distance given by the triangulation. At the time of drawing the projection Jan. 6, 1878, there had been a general contraction of the sheet of about the 2/17 the part, uniform in all directions, as shown by the 10,000 metre distances all measuring about 9954 metres, both horizontally and vertically. There is some additional distortion due to differences between the plane table and theodolite triangulations. In drawing the projection the lines were slightly bent where necessary to conform to the positions of the triangulation points. The celluloid sheet was used for this island.
to save time in foggy and misty weather.

The topography of the interior of the island, east of a line running from Crescent Point to South Hill, thence to the Bains, north of Sarumsha Lake, thence north to the shore, excepting a strip near the bluff line and the summits of the hills, was done by Assistant Quarese on a separate sheet, the positions of the signals having been transferred from the plane table triangulation. This is filed as an original sheet (No. 2276) but has not been inked in, as all the work on it has been transferred and inked on the general sheet. The portion of the shore line and adjacent interior covered by the sheets of the real rockeries (Nos. 2270 to 2274 on a scale of 1:2000) were left blank on the general sheet during the field work, but have been reduced and transferred to the general sheet (Dec. 1897). Two or more points in common for each rockery were located on the general and the rockery sheets, and the reduction and transfer were based on these points. On the general sheet each of the common points is indicated by a small triangle, and one point on each rockery is designated by a letter both on the general and corresponding rockery sheet, as follows: A on Joraya’s Tent Rockery, B on North Rockery, C on Little East Rockery, D at junction of Little East and East Rockeries, E on East Rockery, F on Japadwi Rockery.

All the points permanently marked and described as triangulation points in the volume “Measurement of Base Line and Descriptions of Stations,” are shown on this sheet as triangulation stations (A). Several of these stations were not used in the theodolite triangulation. Nearly all of the rock cairns, mostly built by the natives and forming prominent land marks, are represented on this sheet by small circles and are designated cairns. The houses marked “Barabora” at Japadwi, Garden Cave and East Rockery, are native dog houses. The trails running from the village to Japadwi, Garden Cave, and East Rockery are merely foot paths, on portions of which some work has been done.

The great central ridges of the island, extending from...
bull hill to near Zapadni Rocky. re, and from Ulakjia to the base of High Bluff, and the ridge running obliquely across the western end of the island, and the extensive slope south of Ulakjia, are mostly covered with broken volcanic rock, scoria and cinders, interspersed with growths of moss, short grass and wild flowers. The hill summits are usually covered with scoria and cinders and the lower slopes with larger lava rocks, often quite smooth and flat, but angular and jagged and piled in great masses at the terminals of the ancient lava flows which are quite prominent in places. The bordering portion of the island is almost everywhere covered with a heavy growth of coarse grass becoming 3 to 4 feet high in places, interspersed with wild flowers. The High Bluff (Ogamuta) is thus covered on the land side to its summit. There are some boggy areas on the island, especially in the vicinity of the village and of Zapadni; these are moss bogs, spongy and wet, but could usually be traversed at the season of this work, probably in wetter seasons there would be more difficulty in crossing them. At the time of this work (an unusually dry season) there were no running streams on the island save the outlet of the lake, northeast of Red Bluffs, and the outlet of the marsh immediately west of the village. Several other well marked stream beds, in which water was seen running after rains, are shown on the map. The stream at Cascade Point was dry nearly all the time. It is said that the cascade here is only prominent during the spring thaw. One of the most striking features of this island is the bold bluff line, from a few feet to 100 feet in elevation, extending around the island, with short breaks at Garden Grove and Zapadni, and at intervals along the north shore between Staraia Art and East Rockerry. The High Bluff (Ogamuta) extending for several miles west from Staraia Art to Rockery, presents some fine views, and is a prominent land mark from a considerable distance at sea, being plainly visible from St Paul Island on a clear day. The Castle near the western extremity of the island, is a group of ledges of rock somewhat crater like in shape, rising abruptly from
the summit of a knoll. Although the entire island is of volcanic origin there are no clearly defined craters as on St. Paul and other islands. On the shore west of High Bluff and northeast of Fox Grotto is a remarkable cave called by the natives the "Bakit", standing well out from the bluff and rising 471 feet above the water.

The limit of breakers as seen from the shore, and as indicating the presence of reefs, is shown by the dotted line off Little East and East Rockeries, and the south end of Japadue Rockery. Only a few rocks off the shore could be discerned, principally in the vicinity of Garden Gove. The greater part of the island is surrounded by kelp growing near the shore, as shown. The only sand beaches are at Garden Gove and at Japadue Salt-House, with shingle beaches at several points on the north shore. For a good share of the bluff line it is impossible or dangerous to descend from the plateau to the shore. From Hanaya Cail to Galloi Point and around to Rush Point there is only one place at which the shore can be reached, at Gogowenga just southeast of Fox Grotto; here the natives are said to go up and down to the shore. There is apparently no point at which the shore can be reached from above between Garden Gove and Japadue.

There is no harbor about the island, and vessels anchor off the village on the north shore, or off Garden Gove, or off Japadue, according to the direction of the wind. The main landing near the village is somewhat protected by a ledge of rocks running out north of it, and by kelp growing in the bay, the ledge tending to subdue the breakers. A small pocket has been blasted out in the rocks for small boats to come in at high or medium tide. At Gardling just northeast of the village is another boat landing better protected from northwesterly winds, where a similar pocket has been blasted out. A ledge of rocks awash lies but a short distance off this landing. With northwesterly winds landings may usually be made at Garden Gove on the sand beach, or at Japadue on the bluffs at the north end of the
rockery. From these points trails lead across the island to the village, the distance from Hulhulé being about 2 1/2 miles, and from Japadriu about 5 1/2 miles. Both trails pass over ridges from 400 to 500 feet in elevation and the walking is rather rough.

The following elevations above mean high water were determined with the plane table and were in general checked from two or more sources. On an average they are probably in error not more than a foot.

<table>
<thead>
<tr>
<th>Elevation in feet</th>
<th>Summit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>at ground</td>
</tr>
<tr>
<td>Bull Hill</td>
<td>509</td>
</tr>
<tr>
<td>First Bluff (base of Haraga Artif)</td>
<td>568</td>
</tr>
<tr>
<td>Ghost Rock</td>
<td>119</td>
</tr>
<tr>
<td>Northeast</td>
<td>119</td>
</tr>
<tr>
<td>South Hill</td>
<td>468</td>
</tr>
<tr>
<td>Red Bluff</td>
<td>391</td>
</tr>
<tr>
<td>Cascade</td>
<td>353 %</td>
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<tr>
<td>Garden</td>
<td>434</td>
</tr>
<tr>
<td>South Scalene Hill</td>
<td>679</td>
</tr>
<tr>
<td>North Scalene Hill</td>
<td>645</td>
</tr>
<tr>
<td>Ayrrugl (Haraga Bluff)</td>
<td>428</td>
</tr>
<tr>
<td>Fox Grotto</td>
<td>671</td>
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<tr>
<td>High Bluff (Ayrrugl)</td>
<td>1008</td>
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<td>Northwest</td>
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<td>Japadriu Bluff</td>
<td>290</td>
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<td>Bynard's Hill</td>
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<td>Southwest Bluff</td>
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<td>West Race</td>
<td>237</td>
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<tr>
<td>Ulakiya</td>
<td>944</td>
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<tr>
<td>Tolstoi</td>
<td>185</td>
</tr>
</tbody>
</table>

The field work on these sheets was executed between Aug. 11 and Sept. 25, 1877, by the party under charge of Assistant Boll W. Woodfield. The Thedolite triangulation, eastern part of interior topography and astronomical observations at the base station,
(Unalaska) were made by Assistant Tramont Jerome, and the base measurement, plane table triangulation, shore line topography, western part of interior topography, topography of the five seal rookeries, astronomical and magnetic observations (at St. George) were by the winter.

**Topographical sheets of the seal rookeries.**

This memorandum relates to the following sheets: (celluloid)

- Sheet No. 2270: Naniaa Atka Rookery and Little Gash Rookery St. George Island
- 2271: Zavadi Rookery, St. George Island (celluloid)
- 2272: North Rookery
- 2273: East Rookery
- 2274: Tolstoi Rookery, St. Paul Island (paper).

The scale of each of these was 1:2000. A base line was measured with steel tape on each rookery, and a plane table triangulation carried from this base for the control of the sheet. Elevations (above mean high water) were determined with the plane table and checked at different points. The lengths of the bases were as follows (each measured twice):

- Tolstoi Rookery: 547.00 meters
- East Rookery: 210.00
- North Rookery: 162.15
- Naniaa Atka Rookery: 120.38
- Little Gash Rookery: 125.42
- Zavadi Rookery: 137.34

No projections nor other distances save these bases, were plotted on the sheets, except the East Rookery sheet, on which 1000 metre distances were laid off along the edge and transversely. Measurements at Washington in Dec. 1877 showed a fairly uniform linear shrinkage of about 3/10 of that part, on all these sheets, both paper and celluloid. Points in common on the rookery sheets and the St. George general sheet (as already referred to) are designated by letters. The main line through these points on the rookery sheets, are derived from
azimuths measured from the general sheet. The contours are at five-foot intervals, above mean high water. Prominent rocks at intervals along each rookery were numbered with white paint, as landmarks, and are located on the sheet. The limits of the area occupied by the seals could not be shown on the sheet as these surveys could not be made during the breeding season. For the George rookeries and hauling grounds some idea of the area covered by the seals during and after the breeding season, is given by the area of trampled grass which is shown. It must be understood however that the seals wander further back from the water after the breeding season, and also that some of these areas are merely hauling grounds for the bachelor seals. In both rookery each end of the rookery proper was marked by painting a rock entirely white, and these terminal rocks are shown on the sheet. The vegetation shows evidence of the seals having in former times extended far back beyond the present area of the rookeries; the so-called seal grass, where the seals have once been, and late in the summer this vegetation has a yellowish tinge in contrast to the more green vegetation further back. The limits of this area were rather too indefinite however to attempt to show on the topographical sheet.

Feb. 3, 1918.

G. Fittman