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DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

O. H. TITTMANN

SUPERINTENDENT

GEODESY

TRIANGULATION ALONG THE WEST COAST OF FLORIDA

BY

CLARENCE H. SWICK
Computer, U. S. Coast and Geodetic Survey

SPECIAL PUBLICATION No. 16

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TRIANGULATION ALONG THE WEST COAST OF FLORIDA.

By Clarence H. Swick,

Computer, U. S. Coast and Geodetic Survey.

GENERAL STATEMENT.

The main purpose of this publication is to give to the engineering public as complete a list as possible of the results of triangulation along the west coast of Florida from Cape Sable to Alabama and from the inland town of Gainesville to the coast at Cedar Keys, in all more than 1150 triangulation stations. This, together with Appendix 6, United States Coast and Geodetic Survey Report for 1911,[1] gives all the available triangulation data for the State of Florida.

This triangulation presents no unusual geodetic features, is not of primary degree of accuracy, was done under methods now largely superseded (except that which was done since 1900), and consequently offers little or no material for discussion. If its scientific value be small, on the other hand its practical value is large, for it offers to the engineer and to the geographer the positions of a large number of points determined trigonometrically and all correlated on one geodetic datum, known as the United States Standard Datum. (See p. 7.)

The accuracy of this triangulation is comparable with that of other coast triangulation in the United States; that is, it is about the same as the accuracy of triangulation usually classed as tertiary. The probable error of a length is less than 1 part in 5000 except between side points or between intersection points near together determined from distant stations, where the error is likely to exceed this amount.

THE TRIANGULATION.

This publication is mainly taken up with the results of the triangulation, namely, the list of geographic positions, the descriptions of the stations, and the sketches. The details of the field and office work which are always included in United States Coast Survey publications of primary triangulation are not of sufficient importance in work of this character to warrant publication. The index at the end of the book used in connection with the sketches makes it possible to obtain easily and quickly the data for any station or group of stations. As complete descriptions as are available are given for the principal points and for part of the supplementary points. Nearly all of the remaining stations are sufficiently described by their names, as, for example, "Tampa Bay Hotel, north tower."

The observations involved in this triangulation extend over a period of more than 60 years. Ordinarily, triangulation which has been done many years prior to the date of the publication of its results is largely reduced in value to the engineer by the loss of stations, either through the destroying agencies of time or the building agencies of man. In many cases, due to changes in the surrounding topography or to the destruction of the surface and reference marks, the engineer might fail to recover a station which still exists. If he dug at the proper place he would discover the mark and recover the station, but without the guidance of the reference marks or of the local topography he can recover it only by locating a point in the vicinity by means of

[1] Triangulation along the East Coast of Florida and on the Florida Keys, by Hugh C. Mitchell.

triangulation carried from the nearest available triangulation stations. After determining the geographic position of the new point a distance and direction can be computed to the position of the old station and measurements made to the spot indicated by the computations as its probable location.

A considerable portion of the triangulation along the west coast of Florida has been revised in recent years. Many of the old stations, the localities of which were visited, were not recovered. Some of them, it was determined, have been lost or destroyed. Others, it seemed probable, still existed, but the expense of a complete search was too great and the chances of recovery too small to warrant the search. Many stations, however, were recovered, and they were usually re-marked in a more permanent manner. Their descriptions were revised and additions made to them where necessary.

At several places along the coast, principally in the bays and harbors, new triangulation has been executed over the areas covered by the old triangulation. The reason for this apparent duplication is that not enough of the old stations could be recovered in those particular regions to control the hydrography or the topography. In every case the new work starts from two or more of the old stations which were recovered and is tied to as many more of the old stations as it was possible to locate. In St. Andrews Bay and the upper part of Tampa Bay, where nearly all of the old stations have been lost, only those recovered and the new stations have been included in this publication. At other places along the coast, as, for example, in Boca Ceiga Bay, practically all of the old stations have been lost and new triangulation has been executed over the same areas, but it has been necessary to use the old work in carrying forward the United States Standard Datum, and so the results have been included in this book.

It will be seen from the sketches at the end of this publication that the triangulation consists to a large extent of a chain of quadrilaterals with all angles observed. Along two different sections of the coast, from Cape Romano to San Carlos Bay and from St. Andrews Bay to a point opposite the eastern end of Choctawhatchee Bay, beach measures made with long wires were substituted for the triangulation. The horizontal angles were measured and the positions were carried ahead by means of these angles and the measured lengths of the traverse. Between Gainesville and the coast at Cedar Keys a traverse of a high degree of accuracy was measured along the railroad. This section of traverse, together with the section from Gainesville to Baldwin, published in Appendix 6, United States Coast and Geodetic Survey Report for 1911, serves to connect the northern end of the triangulation on the east coast of Florida with the west coast triangulation, and completes the loop around the southern and eastern part of the State.

ADJUSTMENT OF THE TRIANGULATION.

As stated in Appendix 6, Report for 1911, the positions of certain points in Fernandina were held fixed from an adjustment extending from the Eastern Oblique Arc near Atlanta, Ga. The triangulation from Fernandina to Baldwin, part way across the Florida peninsula, and the traverse from Baldwin to the west coast at Cedar Keys, were held fixed after having been adjusted for discrepancies of triangle closures, ratios of sides, and lengths, and having been made to conform to observed azimuths. No discrepancies developed in closing a loop were distributed in this part of the triangulation as it was considered to be of a much higher degree of accuracy than other parts of the loop.

The chain of triangulation (including a small section of measured traverse) along the Gulf coast between Cedar Keys and the Eastern Oblique Arc at Mobile Bay, was then adjusted, holding fixed the triangulation at Mobile Bay, and at Cedar Keys, and all observed azimuths and measured lengths along the coast.

In a similar manner the chain of triangulation, and sections of measured traverse extending down the east coast of Florida, around Cape Sable, and up the west coast to Cedar Keys was adjusted, holding fixed the triangulation at Fernandina, and at Cedar Keys, and all observed azimuths, and measured lengths.

In each of these two pieces of triangulation all observed azimuths were held fixed and the triangulation adjusted to them, it being reasonably certain that the observed azimuths were superior to any that might be computed through the triangulation. All measured lengths were also held. The discrepancies remaining in the triangulation after all conditions noted above had been satisfied were distributed along the weaker sections of the triangulation by means of latitude and longitude equations, it being believed that the character of the triangulation warranted this, and that the corrections fell close to where they belonged. This also made considerable saving in the computation.

THE UNITED STATES STANDARD DATUM.[1]

All of the positions and azimuths have been computed upon the Clarke spheroid of 1866, as expressed in meters, which has been in use in the Coast and Geodetic Survey for many years.

After a spheroid has been adopted and all the angles and lengths in a triangulation have been fully fixed, it is still necessary, before the computation of latitudes, longitudes, and azimuths can be made, to adopt a standard latitude and longitude for a specified station and a standard azimuth of a line from that station. For convenience, the adopted standard position (latitude and longitude) of a given station, together with the adopted standard azmiuth of a line from that station, is called the geodetic datum.

The primary triangulation in the United States was commenced at various points, and existed at first as a number of detached portions in each of which the geodetic datum was necessarily dependent only upon the astronomic stations connected with that particular portion. As examples of such detached portions of triangulation there may be mentioned the early triangutation in New England and along the Atlantic coast, a detached portion of the transcontinental triangulation centering on St. Louis and another portion of the same triangulation in the Rocky Mountain region, and three separate portions of triangulation in California, in the latitude of San Francisco, in the vicinity of Santa Barbara Channel, and in the vicinity of San Diego. With the lapse of time these separate pieces have expanded until they have touched or overlapped.

The transcontinental triangulation, of which the office computation was completed in 1899, joins all of the detached portions mentioned and makes them one continuous triangulation. As soon as this took place the logical necessity existed of discarding the old geodetic data used in these various pieces and substituting one datum for the whole country, or at least for as much of the country as is covered by continuous triangulation. To do this is a very heavy piece of work, and involved much preliminary study to determine the best datum to be adopted. On March 13, 1901, the Superintendent adopted what is now known as the United States Standard Datum, and it was decided to reduce the positions to that datum as rapidly as possible. The datum adopted was that formerly in use in New England, and therefore its adoption did not affect the positions which had been used for geographic purposes in New England and along the Atlantic coast to North Carolina, nor those in the States of New York, Pennsylvania, New Jersey, and Delaware. The adopted datum does not agree, however, with that used in The Transcontinental Triangulation and in The Eastern Oblique Arc of the United States, publications which deal primarily with the purely scientific problem of the determination of the figure of the earth, and which were prepared for publication before the adoption of the new datum.

As the adoption of such a standard datum is a matter of considerable importance, it is in order here to explain the desirability of this step more fully.

The main objects to be attained by the geodetic operations of the Coast and Geodetic Survey are, first, the control of the charts published by the Survey; second, the furnishing of geographic positions (latitudes and longitudes), of accurately determined elevations, and of distances and azimuths, to officers connected with the Coast and Geodetic Survey and to other organizations; third, the determination of the figure of the earth. The first two of these objects are purely practical; the third is purely scientific. For the first and second objects

[1] After the manuscript for this publication had gone to the printer, the United States Standard Datum was adopted by Canada and Mexico. On account of its international character it will hereafter be known as the North American Datum.

it is not necessary that the reference spheroid should be accurately that which most closely fits the geoid within the area covered, nor that the adopted geodetic datum should be absolutely the best that can be derived from the astronomic observations at hand. It is simply desirable that the reference spheroid and the geodetic datum adopted shall be, if possible, such a close approximation to the truth that any correction which may hereafter be derived from the observations which are now or may become available shall not greatly exceed the probable errors of such corrections. It is, however, very desirable that one spheroid and one geodetic datum be used for the whole country. In fact, this is absolutely necessary if a geodetic survey is to perform fully the function of accurately coordinating all surveys within the area which it covers. This is the most important function of a geodetic survey. To perform this function it is also highly desirable that when a certain spheroid and geodetic datum have been adopted for a country they should be rigidly adhered to without change for all time, unless shown to be largely in error.

In striving to attain the third object, the determination of the figure of the earth, the conditions are decidedly different. This problem concerns itself primarily with astronomic observations of latitude, longitude, and azimuth, and with the geodetic positions of the points at which the astronomic observations were made, but is not concerned with the geodetic positions of other points fixed by the triangulations. The geodetic positions (latitudes and longitudes) of comparatively few points are therefore concerned in this problem. However, in marked contrast to the statements made in preceding paragraphs, it is desirable in dealing with this problem that, with each new important accession of data, a new shperoid fitting the geoid with the greatest possible accuracy, and new values of the geodetic latitudes, longitudes, and azimuths of the highest degree of accuracy, should be derived.

The United States Standard Datum was adopted with reference to positions furnished for geographic positions, but has no reference to the problem of the determination of the figure of the earth. It is adopted with reference to the engineer's problem of furnishing standard positions, and does not affect the scientist's problem of the determination of the figure of the earth.

The principles which guided in the selection of the datum to be adopted were: First, that the adopted datum should not differ widely from the ideal datum for which the sum of the station errors in latitude, longitude, and azimuth should each be zero; second, it was desirable that the adopted datum should produce minimum changes in the publications of the Survey, including its charts; and, third, it was desirable, other things being equal, to adopt that datum which allowed the maximum number of positions already in the office registers to remain unchanged, and therefore necessitated a minimum amount of new computation. These considerations led to the adoption as the United States Standard of the datum which had been in use for many years in the northeastern group of States and along the Atlantic coast as far as North Carolina.

An examination of the station errors available in 1903, on the United States Standard Datum, at 246 latitude stations, 76 longitude stations, and 152 azimuth stations, scattered widely over the United States from Maine to Louisiana and to California, indicated that this datum approaches closely the ideal with which the algebraic sum of the station errors of each class would be zero.[1]

The adopted United States Standard Datum, upon which the positions and azimuths given in this publication depend, may be defined in terms of the position of the station Meades Ranch as follows:

	°	′	″
ϕ =	39	13	26.686
λ =	98	32	30.506
α to Waldo =	75	28	14.52

[1] This is further borne out in the reduction of 765 astronomic stations in connection with the "Supplementary investigation in 1909 of the figure of the earth and isostasy," by J. F. Hayford, published by the Coast and Geodetic Survey.

Points are then said to be upon the United States Standard Datum when they are connected with the station Meades Ranch by a continuous triangulation, through which the corresponding latitudes, longitudes, and azimuths have been computed on the Clarke spheroid of 1866, as expressed in meters, starting from the above data.

The principal lists of geographic positions heretofore published upon the United States Standard Datum throughout the whole United States are contained in the following publications of the Coast and Geodetic Survey and of other organizations:

Appendix 8 of the Report for 1885, positions in Massachusetts and Rhode Island; Appendix 8 of the Report for 1888, positions in Connecticut; Appendix 8 of the Report for 1893, positions in Pennsylvania, Delaware, and Maryland; Appendix 10 of the Report for 1894, positions in Massachusetts; Appendix 6 of the Report for 1901, positions in Kansas and Nebraska; Appendix 3 of the Report for 1902, positions in Kansas, Missouri, Nebraska, and Colorado; Appendix 4 of the Report for 1903, positions in Kansas, Oklahoma, and Texas; Appendix 9 of the Report for 1904, positions in California; Appendix 5 of the Report for 1905, positions in Texas; Appendix 3 of the Report for 1907, positions in California; Appendix 5 of the Report for 1910, positions in California; Appendix 4 of the Report for 1911, positions in Nebraska, Minnesota, North Dakota, and South Dakota; Appendix 5 of the Report for 1911, positions in Texas; Appendix 6 of the Report for 1911, positions in Florida; Special Publication No. 11, positions in Texas, New Mexico, Arizona, and California; Special Publication No. 13, positions in California, Oregon, and Washington; Appendix EEE, pages 2905–3031, Annual Report of the Chief of Engineers, 1902, positions of points on and near the Great Lakes; in publications of the Massachusetts Harbor and Land Commission; and in various bulletins of the United States Geological Survey.

TABLES OF POSITIONS

In the tables of positions the latitude and longitude of each point are given on the United States Standard Datum (see p. 7), also the length and azimuth of each line observed over, whether in one or both ways. This is, in a way, a duplication, as the lengths and azimuths are implicity contained in the corresponding latitudes and longitudes, while, on the other hand, from the latitude and longitude of a single point all the remaining latitudes and longitudes may be derived by means of the given lengths and azimuths. The amount of computation involved in transforming one of these systems of coordinates into the other is so great that it is necessary to have the double system for the convenient use of the tables. Along with the latitude and longitude of each point the lengths and azimuths are given of lines from that point to other points of the triangulation. No lengths or azimuths are repeated, and for a given line the length and azimuth will generally be found opposite the position of the last mentioned of the two stations involved.

For the convenience of the draftsman a column of "seconds in meters" is given, in which is placed the length (in meters) of each small arc of a meridian or parallel corresponding to the seconds of the given latitude or longitude. To facilitate further the use of the tables, a column is given of the logarithms of the lengths. It must be remembered that it is the logarithm which is derived first in the computation, the lengths given in this table being then derived from the corresponding logarithms.

The rule followed in recent publications of this Office has been to give latitudes and longitudes to thousandths of seconds for all points the positions of which are fixed by fully adjusted triangulation. Points, the positions of which are given to hundredths of seconds only, are marked by a footnote as being without check. This note means that the object was pointed on from only two triangulation stations and that therefore an error in either pointing or in the identification of the object from either occupied station would not be detected in the computation.

In the columns giving azimuths, distances, and logarithms of distances the accuracy is indicated to a certain extent by the number of decimal places given, it being understood that in each case two doubtful figures are given. In some cases there is very little doubt of the correctness of the second figure from the right, while in a few cases some doubt may be cast on the third figure from the right.

These tables may be conveniently consulted by using as finders the sketches and index at the end of this publication. In the third column of the index will be found for each point a reference to the page on which its description will be found, and in the fourth column the number of the sketch on which it appears.

For the convenience of those who wish to convert the distances given in the table from meters into feet the following conversion table is here inserted:

Meters	Feet	Feet	Meters
1	3.280833	1	0.3048006
2	6.561667	2	0.6096012
3	9.842500	3	0.9144018
4	13.123333	4	1.2192024
5	16.404167	5	1.5240030
6	19.685000	6	1.8288037
7	22.965833	7	2.1336043
8	26.246667	8	2.4384049
9	29.527500	9	2.7432055
10	32.808333	10	3.0480061

CAPE SABLE TO SAN CARLOS BAY

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Principal points	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Cape Sable west base	25 07 19.512	600.2	249 52 59.3	69 54 30.8	Cape Sable east base	6431.59	3.808318
1855	81 04 08.686	243.3					
Cape Sable latitude station	25 06 59.582	1833.3	251 18 22.8	71 18 50.3	Cape Sable west base	1913.7	3.281876
1886	81 05 13.394	375.5					
Quick	25 04 23.696	729.1	209 44 11.2	29 44 52.7	Cape Sable astronomic station	5524.2	3.742273
1886	81 06 51.199	1434.8					
			220 04 45.2	40 05 54.1	Cape Sable west base	7071.1	3.849489
			288 40 42.0	108 43 05.8	Sandy Key 2	10046.0	4.001992
Palm Point	25 09 28.230	868.6	310 40 05.3	130 41 26.0	Cape Sable astronomic station	7016.9	3.846148
1886	81 08 23.371	654.6					
			344 35 14.9	164 35 54.0	Quick	9719.6	3.987650
Cates	25 07 21.785	670.3	227 50 46.6	47 51 51.8	Palm Point	5798.2	3.763295
1886	81 10 56.854	1592.7	274 02 27.7	94 04 53.5	Cape Sable astronomic station	9646.2	3.984358
Northwest Cape	25 14 05.088	156.6	338 12 56.1	158 13 47.8	Palm Point	9173.5	3.962537
1887	81 10 24.931	697.8	4 07 19.2	184 07 05.6	Cates	12441.6	4.094877
Nell	25 13 52.674	1620.8	266 17 12.7	86 18 42.6	Northwest Cape	5918.3	3.772200
1887	81 13 55.942	1565.7	311 07 46.6	131 10 08.2	Palm Point	12365.6	4.092216
Shark	25 16 11.942	367.5	7 12 05.3	187 11 57.8	Northwest Cape	3934.3	3.594871
1887	81 10 07.309	204.5	56 12 03.9	236 10 26.4	Nell	7700.8	3.886534
Pinafore	25 16 20.425	628.3	272 25 35.9	92 27 09.4	Shark	6131.9	3.787595
1887	81 13 46.261	1294.3	306 27 26.1	126 28 52.0	Northwest Cape	7006.0	3.845473
Rodgers	25 23 13.914	428.1	7 35 38.3	187 35 11.8	Shark	13099.0	4.117237
1887	81 09 05.443	152.2	31 42 08.6	211 40 08.4	Pinafore	14951.9	4.174695
Lucknow	25 22 03.383	104.1	251 09 51.1	71 11 28.7	Rodgers	6726.7	3.827805
1887	81 12 53.195	1487.2	336 46 05.7	156 47 16.6	Shark	11767.2	4.070674
Fig	25 30 26.523	816.1	336 25 48.7	156 27 17.9	Rodgers	14522.0	4.162026
1887	81 12 33.174	926.4	2 04 14.3	182 04 05.7	Lucknow	15492.1	4.190110
Tycoon	25 28 56.644	1743.0	248 47 12.7	68 49 02.6	Fig	7648.7	3.883585
1887	81 16 48.506	1354.9	309 09 14.2	129 12 33.1	Rodgers	16692.6	4.222524
Seminole	25 36 49.779	1531.8	331 39 35.2	151 41 13.5	Fig	13397.5	4.127025
1887	81 16 20.915	583.5	3 01 48.1	183 01 36.2	Tycoon	14579.3	4.163737
Mikado	25 ?4 42.205	1298.7	234 50 38.7	54 52 05.0	Seminole	6819.7	3.833764
1887	81 19 40.751	1137.4	303 21 47.5	123 24 51.9	Fig	14296.6	4.155232
Reef	25 41 56.512	1738.9	331 37 22.2	151 38 41.3	Seminole	10726.6	4.030403
1887	81 19 23.633	658.9	2 02 50.4	182 02 43.0	Mikado	13372.8	4.126223
Alpha	25 38 59.356	1826.5	233 31 18.9	53 33 13.5	Reef	9172.9	3.962509
1887	81 23 48.175	1343.8	287 41 42.1	107 44 55.6	Seminole	13098.9	4.117234
Pavilion Key	25 41 26.968	829.8	315 32 41.0	135 34 50.9	Seminole	11945.8	4.077215
1887	81 21 20.767	579.0	347 22 03.1	167 22 46.5	Mikado	12763.8	4.105980
			42 09 18.8	222 08 14.9	Alpha	6126.3	3.787200
Freeland	25 44 58.021	1785.4	312 01 40.5	132 03 17.0	Reef	8340.5	3.921194
1887	81 23 05.841	162.8	335 43 03.8	155 43 49.4	Pavilion Key	7124.5	3.852754
			6 06 24.5	186 06 06.1	Alpha	11099.7	4.045312
Iroquois	25 45 07.879	242.4	271 21 55.4	91 25 09.9	Freeland	12483.8	4.056345
1887	81 30 33.648	937.8	293 46 03.1	113 50 03.1	Pavilion Key	16844.8	4.226466
Coral	25 48 05.362	165.0	304 19 08.6	124 21 20.3	Freeland	10220.2	4.009461
1887	81 28 08.716	242.8	36 29 16.9	216 28 13.9	Iroquois	6792.3	3.832019
Pontiac	25 43 40.704	1252.5	155 54 55.9	335 53 59.0	Coral	8921.2	3.950425
1887	81 25 58.028	1617.6	243 37 11.5	63 38 26.3	Freeland	5356.6	3.728891
			298 00 50.1	118 02 50.4	Pavilion Key	8757.0	3.942357
Fire	25 49 54.745	1684.6	307 13 43.1	127 14 52.3	Coral	5562.4	3.745263
1887	81 30 47.702	1328.5	357 27 34.0	177 27 40.1	Iroquois	8836.2	3.946265
Gomez	25 47 00.012	0.4	221 05 58.8	41 07 12.2	Fire	7136.4	3.853482
1887	81 33 36.148	1007.2	257 32 53.7	77 35 16.2	Coral	9341.2	3.970401
Horse Key	25 51 19.345	595.3	296 14 44.4	116 16 07.0	Fire	5884.6	3.769717
1887	81 33 57.212	1593.0	301 34 15.5	121 36 47.3	Coral	11394.7	4.056704
			355 47 38.4	175 47 47.5	Gomez	8001.8	3.903190
Flossy	25 48 05.826	179.3	220 11 05.4	40 12 24.1	Horse Key	7796.2	3.891881
1887	81 36 57.874	1612.2	251 58 11.7	72 00 52.9	Fire	10841.8	4.035103
Coon Key	25 53 50.285	1547.4	303 36 56.9	123 38 46.4	Horse Key	8386.5	3.923582
1887	81 38 08.031	223.6	349 33 10.7	169 33 41.3	Flossy	10778.4	4.032554
Cape Romano	25 50 37.382	1150.3	218 34 32.4	38 35 46.6	Coon Key	7594.1	3.880477
1885	81 40 58.150	1619.3	263 41 16.7	83 44 20.2	Horse Key	11792.5	4.071605
			304 51 26.5	124 53 11.1	Flossy	8157.1	3.911534

CAPE SABLE TO SAN CARLOS BAY—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Principal points—Contd	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Johnson	25 54 46.326	1425.5	286 14 56.1	106 16 28.9	Coon Key	6158.5	3.789473
1887	81 41 40.442	1125.5	351 15 35.6	171 15 54.1	Cape Romano	7750.6	3.889335
Caximbas	25 54 35.300	1086.2	264 30 56.2	84 31 51.8	Johnson	3555.2	3.550862
1885	81 43 47.597	1324.7	327 11 40.8	147 12 54.8	Cape Romano	8709.5	3.939994
Big Marco	25 57 35.230	1084.1	340 04 04.4	160 04 35.9	Caximbas	5889.6	3.770086
1885	81 44 59.737	1661.9					
Little Marco	26 00 56.409	1735.9	345 29 38.8	165 30 04.0	Big Marco	6394.6	3.805816
1885	81 45 57.311	1593.7					
Johns Pass	26 04 14.818	456.0	335 12 08.5	155 12 53.0	Little Marco	6725.5	3.827726
1885	81 47 38.752	1077.1					
Gordons Pass	26 05 26.338	810.5	340 35 02.4	160 36 23.0	Big Marco	15370.6	4.186692
1885	81 48 03.400	94.5	342 42 35.3	162 42 46.1	Johns Pass	2305.1	3.362684
Doctors Pass	26 10 35.069	1079.2	351 43 25.0	171 43 46.9	Gordons Pass	9600.7	3.982303
1885	81 48 53.132	1475.5					
Wiggins Pass	26 17 21.790	670.6	352 23 03.0	172 23 29.6	Doctors Pass	12627.8	4.101327
1884	81 49 53.399	1481.4					
Big Hickory	26 21 17.142	527.6	341 06 08.0	161 06 47.6	Wiggins Pass	7655.2	3.883959
1884	81 51 22.770	631.3					
Big Carlos	26 24 18.163	559.0	323 25 10.8	143 26 17.0	Big Hickory	6936.6	3.841144
1884	81 53 51.861	1437.3					
Little Carlos	26 23 21.158	651.2	326 44 26.3	146 45 06.4	Big Hickory	4563.9	3.659334
1884	81 52 53.042	1470.3	137 06 09.8	317 05 43.7	Big Carlos	2394.9	3.379286
Oyster Key	26 22 18.377	565.6	41 08 18.8	221 07 52.4	Big Hickory	2502.1	3.398302
1884	81 50 23.403	648.7	114 59 01.6	294 57 55.1	Little Carlos	4576.0	3.660486
Bowditch Point 2	26 27 12.309	378.8	311 41 00.6	131 42 37.2	Big Carlos	8056.8	3.906164
1883	81 57 28.967	802.4					
Mound Key	26 25 15.693	483.0	336 19 55.6	156 20 33.9	Oyster Key	5957.8	3.775084
1884	81 51 49.673	1376.5	26 29 21.0	206 28 52.8	Little Carlos	3938.1	3.595289
			62 24 16.5	242 23 22.3	Big Carlos	3821.1	3.582192
			110 54 55.7	290 52 24.9	Bowditch Point 2	10062.6	4.002712
Point Ybel 2	26 27 14.385	442.7	270 38 55.6	90 40 24.8	Bowditch Point 2	5541.2	3.743607
1883	82 00 48.973	1356.7	295 06 41.2	115 09 46.9	Big Carlos	12766.9	4.106086
Summerlin	26 29 22.290	686.0	306 21 49.7	126 23 17.1	Bowditch Point 2	6744.8	3.828972
1884	82 00 45.021	1246.9	1 35 36.0	181 35 34.2	Point Ybel 2	3937.8	3.595256

CALOOSAHATCHEE RIVER TO CHARLOTTE HARBOR

Principal points							
Middle Point	26 28 09.145	281.4	244 27 03.7	64 28 19.6	Summerlin	5221.5	3.717793
1858	82 03 35.122	972.9	290 06 00.0	110 07 14.0	Point Ybel 2	4901.4	3.690318
Sword Point	26 31 28.730	884.2	323 37 25.2	143 38 11.4	Summerlin	4832.6	3.684180
1861	82 02 28.511	789.3	16 43 12.4	196 42 42.7	Middle Point	6413.3	3.807082
Punta Rasa	26 29 12.127	373.2	67 16 45.9	247 15 31.4	Middle Point	5016.2	3.700376
1859	82 00 48.081	1331.7	146 31 16.4	326 30 31.6	Sword Point	5040.6	3.702483
South End	26 29 48.102	1480.4	207 08 16.6	27 08 42.2	Sword Point	3480.1	3.541590
1884	82 03 25.846	715.7	280 06 09.1	100 07 20.9	Summerlin	4524.2	3.655538
			317 25 23.0	137 26 32.9	Point Ybel 2	6423.3	3.807759
Caloosa	26 29 32.518	1000.8	201 31 14.0	21 31 36.7	Sword Point	3844.6	3.584850
1860	82 03 19.451	538.6	9 36 08.7	189 36 01.7	Middle Point	2602.3	3.415352
White	26 32 09.296	286.1	293 57 51.6	113 58 36.9	Sword Point	3072.9	3.487551
1860	82 04 09.934	275.0	344 18 20.1	164 18 39.8	South End	4513.5	3.654515
Sanibel east base	26 26 51.149	1574.1	122 52 36.1	302 51 36.3	Middle Point	4422.9	3.645705
1858	82 01 21.022	582.3	191 52 29.4	11 52 44.1	Punta Rasa	4433.5	3.646751
Sanibel west base	26 25 58.014	1785.4	169 34 48.4	349 34 36.5	Middle Point	4103.25	3.613128
1858	82 03 08.331	230.8	241 10 58.3	61 11 46.1	Sanibel east base	3393.2	3.530605
Sanibel	26 25 51.855	1595.8	231 47 00.7	51 48 27.0	Middle Point	6831.6	3.834520
1858	82 06 48.894	1354.8	268 12 35.6	88 14 13.8	Sanibel west base	6114.4	3.786356
Havelock	26 30 05.720	176.0	309 53 04.5	129 54 13.6	Middle Point	5593.6	3.747695
1858	82 06 10.078	279.1	7 50 18.7	187 50 01.4	Sanibel	7886.4	3.896877
Blind Pass	26 28 51.801	1594.2	254 32 06.9	74 34 19.5	Havelock	8541.3	3.931524
1858	82 11 07.352	203.6	307 42 14.6	127 44 09.7	Sanibel	9051.7	3.956730
Captiva	26 33 29.591	910.7	301 30 07.8	121 32 52.8	Havelock	11999.5	4.079164
1858	82 12 19.539	540.8	346 50 12.8	166 50 45.0	Blind Pass	8779.6	3.943474

CALOOSAHATCHEE RIVER TO CHARLOTTE HARBOR—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Principal points—Contd	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Lucknow	26 35 31.554	971.1	342 34 33.8	162 35 24.6	Havelock	10509.5	4.021584
1858	82 08 03.721	103.0	62 05 02.2	242 03 07.7	Captiva	8013.0	3.903797
Boca Captiva	26 36 40.539	1247.6	283 15 47.6	103 18 13.1	Lucknow	9240.1	3.965675
1859	82 13 28.750	795.3	341 56 40.5	161 57 11.5	Captiva	6180.8	3.791043
Bocillas	26 42 12.381	381.0	344 21 53.2	164 22 49.2	Lucknow	12809.3	4.107527
1859	82 10 08.486	234.6	28 28 57.2	208 27 27.4	Boca Captiva	11617.7	4.065122
Boca Grande	26 43 00.210	6.5	278 53 07.1	98 55 39.8	Bocillas	9507.5	3.978065
1859	82 15 48.293	1334.8	341 42 58.1	161 44 00.7	Boca Captiva	12305.4	4.090096
Oso	26 46 57.017	1753.7	332 30 47.6	152 32 01.8	Bocillas	9873.8	3.994485
1858	82 12 53.344	1473.6	33 34 03.1	213 32 44.4	Boca Grande	8745.6	3.941790
El Gabo	26 47 01.856	57.1	12 55 43.3	192 55 10.0	Bocillas	9140.5	3.960972
1859	82 08 54.505	1505.6	56 59 03.1	236 55 56.9	Boca Grande	13639.7	4.134804
			88 43 18.1	268 41 30.5	Oso	6599.4	3.819502
Mound	26 48 19.653	604.8	307 28 36.1	127 29 27.0	El Gabo	3934.5	3.594895
1860	82 10 47.540	1313.0	53 48 26.7	233 47 30.0	Oso	4306.1	3.634088
			112 54 00.3	292 52 27.4	Flat	6169.3	3.790233
Torrey	26 46 34.660	1066.7	52 55 23.6	232 52 29.8	Bocillas	13381.5	4.126504
1859	82 03 42.276	1167.9	95 33 43.9	275 31 23.2	El Gabo	8665.8	3.937807
Punta Gorda	26 53 32.734	1007.5	346 39 36.8	166 40 26.7	Torrey	13223.4	4.121343
1859	82 05 32.716	902.9	24 51 48.0	204 50 16.9	El Gabo	13257.5	4.122463
			42 04 16.6	222 01 54.5	Mound	12976.6	4.113160
Pelican	26 50 14.528	447.1	55 06 31.7	235 04 12.9	El Gabo	10361.4	4.015418
1859	82 03 46.842	1293.4	154 24 28.5	334 23 40.6	Punta Gorda	6764.1	3.830213
Dana	26 51 18.920	582.3	237 22 33.3	57 24 18.7	Punta Gorda	7642.1	3.883211
1859	82 09 25.938	716.0	281 55 51.7	101 58 24.8	Pelican	9569.5	3.980888
			312 38 55.9	132 41 31.0	Torrey	12907.7	4.110850
Locust Point	26 55 46.553	1432.8	314 30 56.0	134 32 04.7	Punta Gorda	5873.4	3.768890
1860	82 08 04.472	123.4	325 09 08.9	145 11 05.5	Pelican	12449.2	4.095142
			15 16 19.1	195 15 42.3	Dana	8538.3	3.931369
Shoal Point	26 55 28.182	867.4	299 58 05.0	119 59 46.0	Punta Gorda	7110.2	3.851880
1860	82 09 15.909	438.9	316 43 30.0	136 45 58.9	Pelican	13254.3	4.122356
			2 04 01.3	182 03 56.8	Dana	7676.5	3.885165
Bruce	26 53 46.891	1443.2	208 37 40.4	28 38 08.3	Shoal Point	3551.8	3.550443
1860	82 10 17.588	485.3	273 09 15.9	93 11 24.7	Punta Gorda	7873.7	3.896179
			301 11 22.6	121 14 19.3	Pelican	12611.8	4.100776
Palmetto	26 56 02.076	63.9	310 39 49.9	130 40 09.8	Shoal Point	1600.8	3.204331
1860	82 09 59.920	1653.1	6 41 02.1	186 40 54.1	Bruce	4189.1	3.622116
Myakka	26 56 10.308	317.2	278 22 13.7	98 22 41.9	Palmetto	1739.6	3.240458
1860	82 11 02.307	64.6	293 49 26.1	113 50 14.2	Shoal Point	3208.9	3.506361
			344 22 45.6	164 23 05.8	Bruce	4583.2	3.661166
Eureka	26 54 52.170	1605.6	42 16 30.4	222 14 52.7	Dana	8868.2	3.947834
1860	82 05 49.846	1375.4	74 48 14.8	254 46 13.6	Bruce	7656.4	3.884027
			101 02 39.2	281 01 05.9	Shoal Point	5792.5	3.762864
			114 15 56.4	294 14 55.4	Locust Point	4074.1	3.610028
Grassy Point	26 57 10.702	329.4	356 26 50.4	176 26 54.7	Eureka	4271.8	3.630615
1860	82 05 59.440	1639.6	53 06 19.8	233 05 23.1	Locust Point	4313.2	3.634799
Cooper	26 55 34.162	1051.4	94 32 34.3	274 31 15.3	Locust Point	4826.4	3.683621
1860	82 05 10.080	278.1	155 22 56.0	335 22 33.7	Grassy Point	3268.4	3.514331
Live Oak Point	26 57 09.496	292.3	38 57 53.2	218 57 14.2	Cooper	3773.3	3.576727
1860	82 03 44.074	1215.8	70 27 08.0	250 25 10.0	Locust Point	7623.4	3.882147
			90 34 39.8	270 33 38.5	Grassy Point	3734.0	3.572169
Willow Point	26 56 15.488	476.7	70 08 30.6	250 07 32.8	Cooper	3742.9	3.573203
1860	82 03 02.484	68.5	109 12 20.2	289 11 00.1	Grassy Point	5168.6	3.713373
			145 23 21.8	325 23 03.0	Live Oak Point	2019.7	3.305285
Piney Point	26 57 58.502	1800.6	21 38 57.4	201 38 36.7	Willow Point	3411.0	3.532885
1860	82 02 16.867	465.2	57 54 54.7	237 54 15.2	Live Oak Point	2839.0	3.453172
New Point	26 56 54.888	1689.3	54 51 08.9	234 50 40.6	Willow Point	2106.2	3.323497
1860	82 02 00.056	1.6	98 54 44.6	278 53 57.5	Live Oak Point	2904.2	3.463024
			166 40 37.6	346 40 30.0	Piney Point	2012.0	3.303631
Middle	26 57 28.898	889.4	61 38 10.9	241 37 39.0	New Point	2203.1	3.343025
1860	82 00 49.777	1373 0	82 55 49.8	262 54 30.8	Live Oak Point	4844.5	3.685245
			110 46 40.2	290 46 00.7	Piney Point	2569.0	3.409764
Trout	26 57 06.565	202.0	91 08 46.5	271 07 31.7	Live Oak Point	4551.2	3.658130
1860	82 00 59.105	1630.3	126 42 04.9	306 41 29.6	Piney Point	2674.9	3.427313
			200 31 15.7	20 31 19.9	Middle	733.9	2.865659
Peace Creek	26 58 18.531	570.3	11 35 21.1	191 35 16.0	Middle	1559.3	3.192941
1860	82 00 38.419	1059.5	14 26 44.6	194 26 35.3	Trout	2287.2	3.359308
			77 12 51.8	257 12 07.2	Piney Point	2784.2	3.444699

CALOOSAHATCHEE RIVER TO CHARLOTTE HARBOR—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Principal points—Contd	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Darling	26 40 51.489	1584.6	162 33 23.1	342 32 24.8	El Gabo	11948.5	4.077315
1859	82 06 44.842	1239.9	205 31 26.5	25 32 48.7	Torrey	11704.9	4.068368
Belinda	26 42 22.245	684.6	45 59 03.6	225 58 16.6	Darling	4019.2	3.604142
1859	82 05 00.300	8.3	87 58 43.4	267 56 24.9	Bocillas	8524.5	3.930671
			143 04 09.8	323 02 24.4	El Gabo	10767.4	4.032112
Dorr	26 40 37.841	1164.6	100 35 03.0	280 34 26.5	Darling	2288.0	3.359458
1861	82 05 23.496	649.8	191 17 07.0	11 17 17.4	Belinda	3276.5	3.515414
Matlacha	26 39 25.931	798.1	164 09 29.5	344 09 19.0	Darling	2737.1	3.437296
1861	82 06 17.817	492.7	214 09 43.5	34 10 09.5	Dorr	2674.7	3.427277
Rubber	26 38 43.893	1350.8	146 30 03.2	326 29 47.7	Matlacha	1551.5	3.190752
1861	82 05 46.853	1295.8	157 47 27.8	337 47 01.8	Darling	4241.7	3.627541
			190 26 03.4	10 26 13.9	Dorr	3565.8	3.552162
Gull	26 39 11.175	343.9	60 54 03.6	240 53 39.1	Rubber	1726.3	3.237120
1861	82 04 52.313	1447.1	100 52 36.3	280 51 56.2	Matlacha	2407.8	3.381626
			134 46 55.4	314 46 04.9	Darling	4383.3	3.641805
Owl	26 37 22.993	707.6	155 59 47.1	335 59 29.1	Rubber	2725.5	3.435452
1861	82 05 06.765	187.2	186 50 42.0	6 50 48.5	Gull	3353.3	3.525475
Meridian	26 36 57.538	1770.7	103 28 23.5	283 27 30.5	Owl	3364.2	3.526876
1860	82 03 08.498	235.1	145 05 03.0	325 04 16.5	Gull	5016.1	3.700362
Lumber	26 35 54.711	1683.7	142 51 28.4	322 50 55.1	Owl	3408.6	3.532574
1860	82 03 52.366	1448.8	212 06 46.7	32 07 06.4	Meridian	2282.9	3.358486
Deer	26 35 42.364	1303.7	101 51 51.3	281 51 22.0	Lumber	1848.9	3.266921
1860	82 02 46.969	1299.7	165 33 48.7	345 33 39.1	Meridian	2389.0	3.378217
Narrows	26 34 53.667	1651.3	192 44 54.1	12 45 01.0	Lumber	1926.5	3.284768
1860	82 04 07.731	213.9	236 08 33.2	56 09 09.4	Deer	2690.9	3.429902
Grape	26 33 57.331	1764.4	164 28 23.1	344 28 15.3	Narrows	1799.1	3.255067
1860	82 03 50.327	1392.9	208 28 16.6	28 28 45.0	Deer	3677.4	3.565535
Bailey	26 33 38.838	1195.2	204 25 49.1	24 26 06.0	Narrows	2529.1	3.402967
1860	82 04 45.530	1260.1	249 33 57.1	69 34 21.8	Grape	1630.4	3.212300
Buttonwood	26 32 53.537	1647.6	327 12 55.3	147 13 22.5	Sword Point	3104.4	3.491978
1860	82 03 29.224	809.0	39 36 53.3	219 36 35.2	White	1767.4	3.247341
			123 26 00.9	303 25 26.8	Bailey	2530.7	3.403246
			163 26 01.2	343 25 51.8	Grape	2048.4	3.311407
Brown	26 39 37.281	1147.4	346 15 46.2	166 16 16.1	Lucknow	7785.0	3.891260
1860	82 09 10.533	291.2	52 43 25.2	232 41 29.4	Boca Captiva	8977.6	3.953162
			161 26 52.2	341 26 26.1	Bocillas	5035.1	3.702011
Las	26 42 02.803	86.2	101 52 34.5	281 50 17.7	Boca Grande	8598.5	3.934421
1859	82 10 43.865	1212.7	158 26 47.8	338 25 49.5	Oso	9736.1	3.988386
			198 10 14.4	18 11 03.6	El Gabo	9687.2	3.986199
			253 13 25.2	73 13 41.1	Bocillas	1021.5	3.009219
			330 02 38.6	150 03 20.6	Brown	5168.8	3.713393
Oyster	26 29 23.378	719.5	353 11 13.1	173 11 20.7	Point Ybel 2	3997.9	3.601842
1892	82 01 06.093	168.7	61 02 45.7	241 01 39.3	Middle Point	4717.7	3.673731
Bird Island	26 30 45.389	1396.9	330 30 22.0	150 30 45.0	Oyster	2899.6	3.462336
1892	82 01 57.639	1596.2	29 19 05.5	209 18 22.1	Middle Point	5514.5	3.741505
			147 20 56.4	327 20 42.7	Sword Point	1584.2	3.199819
Pine	26 30 37.116	1142.3	22 51 01.3	202 50 18.8	Point Ybel 2	6770.1	3.830595
1892	81 59 14.074	389.7	53 49 10.9	233 48 20.9	Oyster	3843.5	3.584725
			57 48 36.0	237 46 39.4	Middle Point	8544.3	3.931675
			93 13 40.3	273 12 27.3	Bird Island	4536.2	3.656689
A	26 32 01.989	61.2	14 30 18.8	194 30 07.9	Pine	2698.0	3.431040
1892	81 59 49.669	1375.1	65 38 32.3	245 37 08.4	Bird Island	5713.3	3.756884
B	26 31 45.908	1412.8	59 03 46.8	239 02 49.9	Pine	4117.2	3.614599
1892	81 57 06.538	181.0	99 50 24.5	279 49 38.5	A	2897.7	3.462057
Red Fish Point	26 32 25.103	772.6	18 36 41.9	198 36 35.3	B	1272.8	3.104765
1892	81 56 51.865	1435.8	49 50 29.2	229 49 25.7	Pine	5152.3	3.712003
			77 42 08.5	257 41 15.9	A	3337.9	3.523472
Palmetto Point	26 32 23.804	732.6	50 40 24.3	230 40 01.3	B	1840.2	3.264856
1892	81 56 15.122	418.6	92 15 14.6	272 14 58.2	Red Fish Point	1017.9	3.007714
Harney Point	26 33 32.080	987.3	1 49 53.6	181 49 52.5	Palmetto Point	2102.3	3.322698
1892	81 56 12.695	351.5	27 44 50.3	207 44 32.8	Red Fish Point	2329.0	3.367172
Harris	26 33 39.333	1210.5	35 44 51.8	215 44 24.8	Palmetto Point	2863.9	3.456958
1892	81 55 14.682	406.5	82 05 22.5	262 04 56.6	Harney Point	1621.1	3.209813
C	26 34 17.005	523.3	319 07 27.6	139 07 43.8	Harris	1533.25	3.185614
1892	81 55 50.935	1409.7	23 32 20.0	203 32 10.3	Harney Point	1508.1	3.178418
Travers	26 34 09.373	288.5	55 34 08.2	235 33 46.4	Harris	1635.0	3.213512
1892	81 54 25.959	718.4	95 42 30.7	275 41 52.7	C	2363.4	3.373545

CALOOSAHATCHEE RIVER TO CHARLOTTE HARBOR—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Principal points—Contd	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Four Mile Point	26 36 27.783	855.0	353 28 26.8	173 28 34.7	Travers	4287.4	3.632197
1892	81 54 43.565	1205.3	24 51 22.8	204 50 52.7	C	4435.5	3.646946
No Name	26 36 12.057	371.0	19 32 20.4	199 31 58.7	Travers	4006.3	3.602745
1892	81 53 37.544	1038.7	46 11 55.6	226 10 55.9	C	5114.8	3.708831
			104 50 40.6	284 50 10.9	Four Mile Point	1889.6	3.276377
Edison	26 38 12.536	385.8	14 08 38.0	194 08 22.9	No Name	3823.7	3.582488
1892	81 53 03.773	104.4	40 34 44.6	220 33 59.9	Four Mile Point	4244.3	3.627863
Hancock	26 38 54.087	1664.5	318 41 51.2	138 42 09.4	Edison	1702.2	3.231000
1892	81 53 44.391	1227.9	357 49 27.6	177 49 30.8	No Name	4990.2	3.698120
			19 58 52.7	199 58 26.2	Four Mile Point	4790.9	3.680419
Sawmill	26 39 43.052	1324.9	14 52 03.2	194 51 51.2	Edison	2882.2	3.459721
1892	81 52 37.036	1024.3	51 01 52.4	231 01 22.2	Hancock	2395.9	3.379477
Experimental	26 39 43.956	1352.8	52 38 37.9	232 37 38.1	Edison	4636.0	3.666145
1892	81 50 50.542	1397.8	89 27 56.1	269 27 08.3	Sawmill	2945.0	3.469090
Marsh Point	26 40 35.088	1079.8	333 41 42.7	153 41 55.3	Experimental	1755.4	3.244375
1892	81 51 18.672	516.3	53 32 17.1	233 31 41.9	Sawmill	2694.4	3.430468
Caloosa	26 41 32.858	1011.2	31 36 54.0	211 36 20.5	Experimental	3935.5	3.594998
1892	81 49 35.939	993.6	57 57 42.1	237 56 56.0	Marsh Point	3350.9	3.525165
Gasparilla Island rear range L. H.	26 43 01.366	42.0	184 33 22.2	4 33 36.4	Coral	10929.3	4.038593
1909	82 15 39.877	1102.2	300 14 22.5	120 17 17.4	Brown	12462.6	4.095609
Useppa Inn	26 39 59.878	1842.8	138 15 15.3	318 13 54.3	Gasparilla Island rear range L. H.	7487.5	3.874337
1909	82 12 39.509	1092.6					
			276 50 57.4	96 52 31.2	Brown	5820.5	3.764959
Jug Point	26 42 13.745	423.0	335 44 36.8	155 45 12.0	Brown	5281.4	3.722751
1909	82 10 28.994	801.4	41 13 18.7	221 12 20.1	Useppa Inn	5476.7	3.738519
			99 41 53.5	279 39 33.7	Gasparilla Island rear range L. H.	8717.4	3.940386
Cape Haze	26 47 00.796	24.5	13 44 40.6	193 44 05.4	Jug Point	9094.6	3.958786
1909	82 09 10.825	299.0	24 00 46.8	203 59 13.0	Useppa Inn	14180.3	4.151684
			55 35 43.9	235 32 48.8	Gasparilla Island rear range L. H.	13033.3	4.115055
Charlotte Harbor L. H.	26 45 34.920	1074.7	44 03 42.6	224 01 00.5	Useppa Inn	14343.9	4.156667
1909	82 06 38.769	1071.2	45 47 44.2	225 46 00.6	Jug Point	8877.9	3.948308
			72 29 43.6	252 25 40.1	Gasparilla Island rear range L. H.	15682.4	4.195413
			122 11 08.9	302 10 00.4	Cape Haze	4963.1	3.695753
Torrey 1909	26 46 33.925	1044.1	54 35 54.5	234 32 51.2	Jug Point	13813.8	4.140314
1909	82 03 41.666	1151.0	69 38 56.2	249 37 36.5	Charlotte Harbor L. H.	5219.1	3.717592
			95 13 02.2	275 10 33.9	Cape Haze	9130.5	3.960494
Mellie	26 35 05.177	159.3	177 14 55.7	357 14 48.6	Useppa Inn	9080.2	3.958093
1860	82 12 23.747	657.1	212 32 09.6	32 33 36.2	Brown	9934.5	3.997147
Demorest	26 35 31.838	979.8	137 16 11.5	317 14 08.0	Useppa Inn	11233.2	4.050504
1909	82 08 03.861	106.8	166 17 00.6	346 16 30.7	Brown	7775.6	3.890734
			83 30 25.4	263 28 29.1	Mellie	7238.0	3.859616
Captiva Pass	26 36 38.856	1195.8	329 43 35.3	149 44 02.5	Mellie	3338.1	3.523504
1909	82 13 24.562	679.4	191 23 07.2	11 23 27.4	Useppa Inn	6310.9	3.800091
			231 58 33.6	52 00 27.5	Brown	8917.5	3.950245
Punta Gorda Hotel cupola	26 56 09.679	297.9	225 35 23.9	45 36 30.4	Peace Creek	5668.0	3.753426
1909	82 03 05.234	144.4	243 16 49.3	63 17 46.5	Trout	3895.0	3.590502
Live Oak Point 1909	26 57 11.256	346.4	248 15 15.1	68 16 40.4	Peace Creek	5591.6	3.747534
1909	82 03 46.744	1289.4	271 46 40.3	91 47 56.3	Trout	4626.2	3.665227
			328 51 26.9	148 51 45.7	Punta Gorda Hotel cupola	2214.2	3.345220
Cooper 1909	26 55 33.297	1024.8	217 08 23.9	37 09 01.4	Live Oak Point 1909	3782.3	3.577757
1909	82 05 09.535	263.1	251 54 31.7	71 55 28.0	Punta Gorda Hotel cupola	3607.4	3.557198
Grassy Point 1909	26 57 13.032	401.1	270 57 47.2	90 58 40.2	Live Oak Point 1909	3228.0	3.508929
1909	82 05 43.755	1206.9	294 01 20.2	114 02 32.0	Punta Gorda Hotel cupola	4787.8	3.680136
			342 54 12.7	162 54 28.2	Cooper 1909	3211.5	3.506702
Locust Point 1909	26 55 49.773	1531.9	236 58 30.4	56 59 35.2	Grassy Point 1909	4702.9	3.672370
1909	82 08 06.711	185.1	250 42 31.8	70 44 29.6	Live Oak Point 1909	7597.2	3.880654
			265 46 04.8	85 48 21.4	Punta Gorda Hotel cupola	8339.6	3.921144
			275 54 41.2	95 56 01.5	Cooper 1909	4914.3	3.691463
Supplementary points							
Punta Rasa Hotel cupola	26 29 11.718	360.6	0 50 23.3	180 50 22.4	Point Ybel 2	3611.3	3.557666
1909	82 00 47.062	1303.4	124 14 58.7	304 14 50.2	Oyster	637.6	2.804558
			104 17 45.0	284 16 34.2	South End	4537.7	3.656837

CALOOSAHATCHEE RIVER TO CHARLOTTE HARBOR—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Supplementary points—Continued	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Middle Point 1909 1909	26 28 08.566 82 03 34.211	263.6 947.6	184 19 29.9 240 41 20.3 247 13 00.6	4 19 33.6 60 42 26.3 67 14 15.1	South End Oyster Punta Rasa Hotel cupola	3072.0 4704.4 5021.0	3.487424 3.672500 3.700792
			290 00 18.5	110 01 32.1	Point Ybel 2	4871.6	3.687670
Middle Point (U. S. E.) 1909	26 28 09.144 82 03 35.128	281.4 973.0	241 01 41.4 247 30 54.1	61 02 47.9 67 32 09.0	Oyster Punta Rasa Hotel cupola	4717.9 5037.6	3.673747 3.702222
			304 58 59.4	124 58 59.8	Middle Point 1909	31.0	1.491502
Punta Rasa astronomic station 1874	26 29 13.774 82 00 46.062	423.9 1275.7	23 38 15.7	203 38 15.3	Punta Rasa Hotel cupola	69.1	1.839257
			66 41 58.3 118 02 59.7	246 40 43.4 298 02 50.8	Middle Point 1909 Oyster	5071.2 628.6	3.705115 2.798355
Punta Rasa rear range light 1909	26 29 22.393 82 01 24.619	689.2 681.8	266 36 59.6 287 31 32.2	86 37 07.9 107 31 49.0	Oyster Punta Rasa Hotel cupola	514.0 1090.8	2.710945 3.037742
			345 55 37.9 57 40 27.2 103 16 07.6	165 55 53.8 237 39 29.5 283 15 13.6	Point Ybel 2 Middle Point 1909 South End	4061.3 4248.0 3449.2	3.608665 3.628184 3.537719
Punta Rasa front range light 1909	26 29 04.876 82 01 06.607	150.0 183.0	181 25 56.9 248 44 39.6	1 25 57.1 68 44 48.3	Oyster Punta Rasa Hotel cupola	569.6 580.8	2.755545 2.764036
			351 49 27.8 67 02 15.8 109 02 31.2	171 49 35.6 247 01 10.0 289 01 29.1	Point Ybel 2 Middle Point 1909 South End	3435.3 4440.4 4079.2	3.535963 3.647425 3.610570
Sanibel Island L. H. 1909	26 27 09.592 82 00 51.909	295.2 1438.1	111 59 33.5 138 51 16.1 174 33 00.9 182 02 44.2	291 58 21.2 318 50 07.5 354 32 54.6 2 02 46.4	Middle Point 1909 South End Oyster Punta Rasa Hotel cupola	4848.5 6478.9 4136.0 3760.8	3.685609 3.811503 3.616579 3.575286
			208 52 23.4	28 52 24.7	Point Ybel 2	168.5	2.226516
Punta Rasa, Schultz' house, flagstaff 1909	26 29 05.604 82 00 21.068	172.5 583.5	12 43 38.9 71 50 45.3 104 38 56.2	192 43 26.4 251 49 19.2 284 38 44.6	Point Ybel 2 Middle Point 1909 Punta Rasa Hotel cupola	3509.0 5630.3 744.1	3.545178 3.750530 2.871648
St. James City dock warehouse, east gable [1] 1909	26 29 30.66 82 04 33.19	943.6 919.2	275 18 14	95 19 55	Punta Rasa Hotel cupola	6289.7	3.79863
			304 00 59	124 02 39	Point Ybel 2	7493.9	3.87471
Harris' house [1] 1892	26 33 23.85 81 55 19.28	734.1 533.7	54 48 10 99 43 25	234 47 29 279 43 01	Red Fish Point Harney Point	3136.3 1499.9	3.496420 3.176061
Rylander's house [1] 1892	26 37 11.73 81 53 16.19	361.1 447.8	60 46 38 166 05 32	240 45 59 346 05 19	Four Mile Point Hancock	2770.0 3245.2	3.442475 3.511248
Edison's house [1] 1892	26 38 02.76 81 52 51.03	85.0 1411.4	136 56 46 187 08 43	316 56 22 7 08 49	Hancock Sawmill	2161.8 3110.7	3.334821 3.492857
Edison's laboratory [1] 1892	26 38 04.56 81 52 49.24	140.3 1362.0	121 24 24 186 21 02	301 24 17 6 21 07	Edison Sawmill	471.1 3049.9	2.673134 3.484290
Fort Myers, Parker's house [1] 1892	26 38 35.26 81 52 16.39	1085.2 453.3	103 23 58 164 41 41	283 23 18 344 41 32	Hancock Sawmill	2502.0 2163.3	3.398288 3.335106
Fort Myers, Methodist Church tower [1] 1892	26 38 45.25 81 51 59.46	1392.6 1644.6	95 21 32 149 42 31	275 20 45 329 42 14	Hancock Sawmill	2914.8 2060.1	3.464612 3.313899
Fort Myers, Caloosa hotel [1] 1892	26 38 49.87 81 51 53.55	1534.8 1481.0	92 25 52 143 41 44	272 25 02 323 41 24	Hancock Sawmill	3068.3 2031.0	3.486891 3.307717
Experimental station house [1] 1892	26 39 16.85 81 51 08.16	518.7 225.7	108 10 02 173 07 04	288 09 22 353 06 59	Sawmill Marsh Point	2586.6 2425.2	3.412727 3.384742
West Jetty 1892	26 41 13.40 81 50 13.53	412.4 374.0	20 23 53 56 47 50 240 02 18	200 23 36 236 47 21 60 02 36	Experimental Marsh Point Caloosa	2936.7 2152.7 1199.5	3.467859 3.332979 3.078994
East Jetty 1892	26 41 20.40 81 50 03.49	627.8 96.5	23 40 20 56 09 00 243 16 25	203 39 59 236 08 26 63 16 37	Experimental Marsh Point Caloosa	3240.7 2503.1 852.8	3.510640 3.398475 2.930825
Roche's windmill, Useppa Island 1909	26 39 38.250 82 12 45.638	1177.2 1262.1	142 23 34.3	322 22 16.0	Gasparilla Island rear range L. H.	7891.8	3.897178
			194 17 11.7 270 16 26.4 355 52 38.0	14 17 14.4 90 18 02.9 175 52 47.8	Useppa Inn Brown Mellie	686.9 5948.5 8425.8	2.836868 3.774409 3.925613
Roche's water tank, Useppa Island 1909	26 39 38.381 82 12 45.982	1181.2 1271.6	142 25 47.2	322 24 29.1	Gasparilla Island rear range L. H.	7882.9	3.896684
			195 08 21.5 270 18 43.2 355 48 52.9	15 08 24.4 90 20 19.9 175 49 02.9	Useppa Inn Brown Mellie	685.4 5958.0 8430.5	2.835945 3.775104 3.925854

[1] No check on this position.

CALOOSAHATCHEE RIVER TO CHARLOTTE HARBOR—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Supplementary points—Continued	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Roche's house, north gable, Useppa Island 1909	26 39 46.324 82 12 40.615	1425.7 1123.1	184 11 43.8 272 43 46.5 356 54 43.5	4 11 44.2 92 45 20.8 176 54 51.1	Useppa Inn Brown Mellie	418.3 5816.1 8665.1	2.621455 3.764635 3.937774
Lacosta Island, quarantine building flagstaff 1909	26 42 21.767 82 14 45.964	669.9 1270.6	129 16 46.8 177 40 53.8 192 38 18.9 271 58 28.3	309 16 22.6 357 40 49.5 12 38 48.8 92 00 23.9	Gasparilla Island rear range L. H. Pelayo Plow Jug Point	1925.1 6579.8 8361.1 7107.7	3.284457 3.818211 3.922264 3.851727
Lacosta Island, pilot's lookout 1909	26 42 30.819 82 15 03.846	948.5 106.3	133 21 06.0 182 04 23.2 196 25 41.2 273 56 21.0	313 20 49.8 2 04 26.9 16 26 19.1 93 58 24.6	Gasparilla Island rear range L. H. Pelayo Plow Jug Point	1369.6 6299.9 8215.4 7615.8	3.136587 3.799336 3.914629 3.881714
Gasparilla Island, old quarantine building flagstaff 1909	26 43 10.056 82 15 36.144	309.5 999.0	30 30 57.1 192 12 04.2 205 25 23.7 280 55 06.5	210 30 55.6 12 12 22.5 25 26 16.2 100 57 24.6	Gasparilla Island rear range L. H. Pelayo Plow Jug Point	203.3 5300.3 7490.3 8647.1	2.308052 3.724304 3.874500 3.936871
Boca Grande, long railroad pier, end.[1] 1909	26 43 11.80 82 15 22.27	363.2 615.5	203 10 07 282 24 41	23 10 53 102 26 53	Plow Jug Point	7199.5 8301.2	3.85730 3.91914
Kennedy 1859	26 44 10.559 82 04 10.169	325.0 281.0	34 55 08.0 69 51 24.2 123 52 54.4	214 53 58.5 249 48 43.1 303 50 46.4	Darling Bocillas El Gabo	7471.0 10550.4 9461.0	3.873378 4.023268 3.975938
Key Point 1859	26 47 45.609 82 03 46.793	1385.2 1292.5	125 07 40.2 164 43 22.4 179 58 59.5	305 05 07.2 344 42 34.6 359 58 59.5	Dana Punta Gorda Pelican	11447.6 11094.2 4601.7	4.058713 4.045098 3.662916
Alligator 1860	26 52 21.325 82 03 37.166	656.3 1025.9	3 54 58.1 78 44 24.0 121 37 17.0	183 54 53.7 258 41 46.4 301 34 43.7	Pelican Dana Shoal Point	3911.6 9817.3 10975.3	3.592351 3.991994 4.040416
Mangrove Point 1859	26 55 24.268 82 08 30.899	746.9 852.5	282 31 25.7 304 54 36.5 11 22 38.4	102 32 38.6 124 55 57.0 191 22 13.5	Eureka Punta Gorda Dana	4552.1 5996.5 7702.3	3.658212 3.777895 3.886622
Koonty 1860	26 57 01.619 82 06 57.353	49.8 1582.0	260 04 12.7 340 01 55.5 38 42 49.0	80 04 39.0 160 02 33.8 218 42 18.6	Grassy Point Punta Gorda Locust Point	1621.7 6839.9 2960.7	3.209969 3.835047 3.471397
Mangrove Point light 1909	26 53 58.389 82 07 14.755	1797.0 407.1	157 18 33.2 202 43 57.6 224 01 13.0 239 34 29.4	337 18 09.7 22 44 38.8 44 02 47.2 59 36 22.4	Locust Point 1909 Grassy Point 1909 Live Oak Point 1909 Punta Gorda Hotel cupola	3715.7 6495.4 8256.5 7982.8	3.570045 3.812605 3.916796 3.902157
Peace Creek light 1909	26 55 52.788 82 06 14.890	1624.7 410.8	88 17 01.5 199 10 26.3 239 24 35.5 264 18 50.2 288 23 54.9	268 16 10.8 19 10 40.4 59 25 42.6 84 20 16.1 108 24 24.5	Locust Point 1909 Grassy Point 1909 Live Oak Point 1909 Punta Gorda Hotel cupola Cooper 1909	3086.3 2614.8 4746.9 5257.9 1900.2	3.489443 3.417434 3.676413 3.720813 3.278810
Punta Gorda astronomic station 1909	26 56 09.436 82 03 09.245	290.4 254.9	71 28 42.3 114 40 33.6 151 28 16.8 266 07 44.3	251 27 47.8 294 39 23.6 331 27 59.8 86 07 46.1	Cooper 1909 Grassy Point 1909 Live Oak Point 1909 Punta Gorda Hotel cupola	3500.0 4690.1 2165.6 110.9	3.544070 3.671180 3.335588 2.044965
Punta Gorda, Weather Bureau pole 1909	26 56 08.064 82 03 11.101	248.2 306.3	71 52 27.5 115 24 36.3 153 11 03.2 252 55 36.1	251 51 33.9 295 23 27.2 333 10 47.1 72 55 38.8	Cooper 1909 Grassy Point 1909 Live Oak Point 1909 Punta Gorda Hotel cupola	3438.2 4661.6 2179.3 169.3	3.536325 3.668532 3.338311 2.228707
Punta Gorda, Presbyterian church spire 1909	26 56 00.642 82 03 14.777	19.7 407.7	75 07 14.4 118 28 24.2 157 55 03.7 223 25 37.8	255 06 22.4 298 27 16.7 337 54 49.2 43 25 42.1	Cooper 1909 Grassy Point 1909 Live Oak Point 1909 Punta Gorda Hotel cupola	3275.9 4674.6 2345.4 383.0	3.515336 3.669749 3.370212 2.583177
Punta Gorda, cattle dock, end [1] 1909	26 56 06.57 82 04 01.99	202.2 54.9	191 55 00 266 29 32	11 55 07 86 29 58	Live Oak Point 1909 Punta Gorda Hotel cupola	2034.9 1568.3	3.30854 3.19543
Punta Gorda, City dock end [1] 1909	26 56 27.10 82 03 34.42	834.0 949.5	165 58 03 303 38 58	345 57 57 123 39 11	Live Oak Point 1909 Punta Gorda Hotel cupola	1400.9 967.5	3.14639 2.98566
Punta Gorda, Phosphate Works, long building, flagstaff [1] 1909	26 55 52.26 82 03 36.72	1608.4 1013.2	173 30 42 238 18 46	353 30 37 58 19 00	Live Oak Point 1909 Punta Gorda Hotel cupola	2447.0 1020.7	3.38863 3.00891
Charlotte Harbor, cattle dock, end [1] 1909	26 57 00.86 82 03 33.08	26.5 912.5	334 00 18 130 19 13	154 00 31 310 19 07	Punta Gorda Hotel cupola Live Oak Point 1909	1752.5 494.4	3.24367 2.69406

[1] No check on this position.

CALOOSAHATCHEE RIVER TO CHARLOTTE HARBOR—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Supplementary points—Continued	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Charlotte Harbor, church spire [1] 1909	26 57 33.65 82 04 16.41	1035.6 452.6	322 46 21 63 17 58	142 46 53 243 16 14	Punta Gorda Hotel cupola Locust Point 1909	3245.6 7111.8	3.51130 3.85198
Hotel Cleveland, north gable [1] 1909	26 57 42.79 81 59 43.86	1316.9 1210.0	61 45 41 126 10 22	241 45 07 306 09 57	Trout Peace Creek	2355.9 1864.0	3.37216 3.27044

GASPARILLA SOUND TO SARASOTA BAY

Principal points							
Gasparilla 1859	26 48 19.909 82 16 36.469	612.7 1007.2	292 28 21.4 352 17 33.6	112 30 02.0 172 17 55.3	Oso Boca Grande	6670.2 9928.8	3.824137 3.996898
Flat 1860	26 49 37.613 82 14 13.348	1157.6 368.5	335 54 27.6 58 49 56.4	155 55 03.7 238 48 51.8	Oso Gasparilla	5414.0 4619.6	3.733520 3.664606
Trepador 1860	26 50 14.185 82 16 25.080	436.6 692.4	287 11 10.3 5 06 38.8	107 12 09.8 185 06 33.7	Flat Gasparilla	3807.6 3531.1	3.580648 3.547908
Boca Nueva 2 1879	26 50 37.354 82 18 03.238	1149.6 89.4	284 44 05.9 330 27 59.1	104 44 50.2 150 28 38.3	Trepador Gasparilla	2802.4 4861.6	3.447530 3.686777
Hog 1879	26 51 42.727 82 18 06.757	1315.0 186.5	314 08 38.8 357 14 08.2	134 09 24.7 177 14 09.8	Trepador Boca Nueva 2	3912.2 2014.3	3.592426 3.304129
Bocilla 1879	26 52 16.080 82 19 34.543	494.9 953.5	292 57 08.0 320 19 00.8	112 57 47.7 140 19 42.1	Hog Boca Nueva 2	2631.7 3947.9	3.420233 3.596331
Lemon 1879	26 52 34.483 82 18 49.279	1061.3 1360.2	323 36 44.6 65 36 59.1	143 37 03.8 245 36 38.6	Hog Bocilla	1978.6 1371.8	3.296362 3.137286
Buttonwood 1879	26 53 27.013 82 19 09.452	831.4 260.8	340 59 42.8 17 36 04.4	160 59 51.9 197 35 53.1	Lemon Bocilla	1709.9 2290.3	3.232975 3.359897
Speedwell 1879	26 53 35.835 82 20 27.661	1102.8 763.4	277 09 53.8 329 08 54.7	97 10 29.2 149 09 18.8	Buttonwood Bocilla	2175.4 2859.1	3.337535 3.456231
Merchant 1879	26 54 46.924 82 20 06.920	1444.2 190.9	327 10 56.3 14 39 39.4	147 11 22.3 194 39 30.0	Buttonwood Speedwell	2926.4 2261.5	3.466328 3.354401
Stump Pass 1879	26 55 24.458 82 21 40.393	752.8 1114.4	294 07 20.9 329 01 04.6	114 08 03.2 149 01 37.5	Merchant Speedwell	2825.9 3899.2	3.451160 3.590980
Lopez 1879	26 56 41.497 82 21 13.929	1277.2 384.2	332 19 45.9 17 06 58.1	152 20 16.2 197 06 46.1	Merchant Stump Pass	3981.4 2480.9	3.600040 3.394608
Jacobs 1879	26 57 09.117 82 22 42.970	280.6 1185.3	289 05 07.7 331 48 29.1	109 05 48.0 151 48 57.4	Lopez Stump Pass	2599.0 3654.5	3.414814 3.562831
Porpoise 1882	26 58 08.237 82 22 26.428	253.5 728.9	323 09 38.4 14 04 39.1	143 10 11.3 194 04 31.6	Lopez Jacobs	3335.5 1875.9	3.523161 3.273205
Rocky Point 1882	26 58 41.678 82 23 47.567	1282.7 1311.8	294 41 45.3 327 58 30.4	114 42 22.1 147 58 59.7	Porpoise Jacobs	2463.0 3360.0	3.391463 3.526339
Horse and Chaise 1882	27 03 48.934 82 26 51.194	1506.1 1410.7	331 49 45.4	151 51 08.8	Rocky Point	10726.2	4.030444
Keg 1878	27 10 30.301 82 29 48.772	932.6 1342.6	338 23 21.7	158 24 42.6	Horse and Chaise	13286.2	4.123402
Northwest 1878	27 11 25.824 82 30 10.755	794.8 296.0	340 29 57.8	160 30 07.8	Keg	1812.9	3.258371
Huckleberry Camp 1878	27 10 51.655 82 29 23.532	1589.9 647.7	46 35 31.8 128 58 41.1	226 35 20.3 308 58 19.5	Keg Northwest	956.4 1672.0	2.980640 3.223240
Webb 1878	27 12 12.495 82 29 58.576	384.6 1612.1	338 48 28.6 13 08 09.9	158 48 44.6 193 08 04.3	Huckleberry Camp Northwest	2668.5 1475.0	3.426273 3.168801
Quick 1878	27 13 05.962 82 31 05.244	183.5 144.3	311 53 12.7 334 03 03.9	131 53 43.2 154 03 28.8	Webb Northwest	2464.6 3427.5	3.391743 3.534983
Clower 1878	27 13 14.815 82 30 09.039	456.0 248.7	351 27 45.7 80 00 42.9	171 27 50.5 260 00 17.2	Webb Quick	1939.6 1570.4	3.287714 3.196023
Hull 1878	27 15 07.236 82 31 04.970	222.7 136.7	336 01 12.3 0 06 56.7	156 01 37.9 180 06 56.6	Clower Quick	3786.9 3732.7	3.578287 3.572018
Little Sarasota 1878	27 14 44.310 82 32 10.760	1363.8 296.0	248 41 47.1 329 13 16.0	68 42 17.2 149 13 46.0	Hull Quick	1942.6 3523.1	3.288385 3.546927
Young 1878	27 16 44.036 82 32 23.503	1355.4 646.4	324 03 05.3 354 33 56.3	144 03 41.3 174 34 02.1	Hull Little Sarasota	3680.1 3701.6	3.565855 3.568393

[1] No check on this position.

GASPARILLA SOUND TO SARASOTA BAY—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Principal points—Contd	° ′ ″		° ′ ″	° ″		*Meters*	
Sarasota	27 16 53.330	1641.4	275 36 54.1	95 37 42.5	Young	2920.1	3.465402
1878	82 34 09.169	252.2	320 38 03.1	140 38 57.3	Little Sarasota	5135.9	3.710617
Cedar Point	27 20 04.333	133.4	350 17 38.0	170 17 55.6	Young	6254.4	3.796186
1878	82 33 01.843	50.7	17 28 58.1	197 28 27.2	Sarasota	6163.4	3.789823
New Pass	27 20 19.707	606.6	277 55 36.8	97 56 33.5	Cedar Point	3427.9	3.535030
1878	82 35 05.352	147.1	346 19 40.8	166 20 06.6	Sarasota	6537.2	3.815392
Stephens	27 22 25.788	793.7	343 51 19.7	163 51 40.8	Cedar Point	4532.5	3.656342
1878	82 33 47.691	1310.5	28 48 59.0	208 48 23.3	New Pass	4428.9	3.646296
Mangrove	27 23 37.658	1159.1	289 10 44.2	109 12 30.6	Stephens	6728.6	3.827922
1878	82 37 38.958	1070.2	310 44 56.8	130 47 04.3	Cedar Point	10055.3	4.002397
			325 16 27.7	145 17 38.3	New Pass	7412.2	3.869948
Bowlegs	27 24 47.571	1464.2	337 18 49.5	157 19 20.0	Stephens	4729.8	3.674841
1878	82 34 54.076	1485.4	340 30 38.6	160 31 30.2	Cedar Point	9247.3	3.966014
			2 09 11.3	182 09 06.1	New Pass	8250.4	3.916477
			64 36 00.2	244 34 44.3	Mangrove	5014.8	3.700257
Shell	27 25 29.155	897.4	287 57 40.3	107 58 46.4	Bowlegs	4148.6	3.617898
1878	82 37 17.739	487.3	9 38 28.8	189 38 19.0	Mangrove	3481.0	3.541699
Tom	27 25 07.980	245.6	259 03 40.5	79 04 37.1	Shell	3437.1	3.536193
1878	82 39 20.601	565.9	274 53 12.9	94 55 15.6	Bowlegs	7348.1	3.866174
			314 52 03.3	134 52 50.1	Mangrove	3940.2	3.595523
Key	27 26 19.636	604.4	294 36 39.7	114 38 23.3	Bowlegs	6800.6	3.832549
1878	82 38 39.155	1075.3	304 47 19.6	124 47 57.1	Shell	2722.9	3.435038
			341 38 50.3	161 39 18.0	Mangrove	5252.6	3.720378
			27 18 09.7	207 17 50.6	Tom	2482.0	3.394801
Longboat	27 26 39.218	1207.1	277 13 26.8	97 14 46.5	Key	4785.8	3.679954
1878	82 41 32.031	879.6	307 52 23.8	127 53 24.4	Tom	4573.5	3.660248
Cut	27 27 57.047	1755.9	310 27 34.3	130 28 33.3	Key	4619.7	3.664613
1878	82 40 47.141	1294.3	335 26 52.7	155 27 32.6	Tom	5720.8	3.757459
			27 13 54.3	207 13 33.6	Longboat	2694.1	3.430410
Anna Maria Key southeast base	27 28 33.317	1025.5	295 49 38.6	115 50 17.3	Cut	2562.0	3.408580
1873	82 42 11.131	305.6	342 59 56.3	163 00 14.3	Longboat	3672.4	3.564945
Mound	27 28 39.348	1211.1	325 27 43.3	145 27 58.4	Cut	1580.6	3.198812
1878	82 41 19.778	543.0	5 12 00.0	185 11 54.4	Longboat	3712.8	3.569705
			82 30 07.3	262 29 43.6	Anna Maria Key southeast base	1422.0	3.152904
Coral	26 48 55.363	1703.9	65 50 01.5	245 49 21.8	Gasparilla	2664.7	3.425655
1860	82 15 08.440	233.1	122 47 56.2	302 46 38.0	Boca Nueva	5693.7	3.755394
			229 28 33.5	49 28 58.4	Flat	2001.4	3.301328
			314 17 55.5	134 18 56.5	Oso	5214.4	3.717207
Boca Nueva	26 50 35.546	1094.0	283 49 33.7	103 50 17.3	Trepador	2749.8	3.439307
1860	82 18 01.787	49.3	330 33 19.5	150 33 58.0	Gasparilla	4793.4	3.680644
Llano	26 51 00.773	23.8	306 58 07.8	126 58 38.9	Trepador	2384.0	3.377301
1860	82 17 34.064	940.4	342 11 16.1	162 11 42.1	Gasparilla	5200.0	3.716006
			44 35 35.5	224 35 23.0	Boca Nueva	1090.2	3.037522
Pelayo	26 45 55.385	1704.6	312 46 39.3	132 48 39.2	Jug Point	10040.6	4.001760
1860	82 14 55.598	1536.1	341 01 07.6	161 02 08.8	Useppa Inn	11569.7	4.063322
			12 52 20.7	192 52 00.8	Gasparilla Island rear range L. H.	5493.7	3.739863
			176 20 11.6	356 20 05.8	Coral	5550.4	3.744326
Plow	26 46 46.853	1442.0	327 53 44.3	147 55 10.1	Jug Point	9921.3	3.996570
1909	82 13 39.741	1097.8	352 25 31.8	172 25 58.8	Useppa Inn	12635.3	4.101586
			25 34 20.0	205 33 25.9	Gasparilla Island rear range L. H.	7692.8	3.886085
			52 55 17.3	232 54 43.1	Pelayo	2627.0	3.419453
			148 13 48.0	328 13 08.0	Coral	4652.4	3.667677
Gasparilla 1909	26 48 16.040	493.6	245 09 42.6	65 10 25.3	Coral	2881.7	3.459643
1909	82 16 43.134	1191.3	325 32 05.3	145 32 53.8	Pelayo	5250.1	3.720167
			349 45 57.9	169 46 26.5	Gasparilla Island rear range L. H.	9841.0	3.993040
Placida	26 49 48.641	1497.0	325 11 44.3	145 12 02.9	Coral	1996.9	3.300364
1909	82 15 49.712	1372.7	348 14 06.9	168 14 31.3	Pelayo	7332.8	3.865269
			27 22 18.3	207 21 54.2	Gasparilla 1909	3209.1	3.506389
Section Post (concrete) quarter corner between Secs. 22 and 27, T. 42 S., R. 20 E.	26 49 06.853	210.9	238 21 51.6	58 22 25.7	Placida	2452.3	3.389569
	82 17 05.325	147.0	276 15 43.2	96 15 35.9	Coral	3247.2	3.511510
			338 35 56.7	158 36 06.7	Gasparilla 1909	1679.7	3.225219
Mound 2	27 28 39.399	1212.7	135 09 13.7	315 08 31.2	Anna Maria Key northwest base	3585.1	3.5545045
1908	82 41 19.749	542.2	184 51 26.9	4 51 32.2	Perico 2	3685.3	3.5664784

GASPARILLA SOUND TO SARASOTA BAY—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Principal points—Contd.	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Anna Maria Key southeast base 2 1908	27 28 33.321 82 42 11.135	1025.6 305.7	157 43 27.0	337 43 08.2	Anna Maria Key northwest base	2948.8	3.4696470
			204 03 03.5	24 03 32.6	Perico 2	4226.2	3.6259524
			262 26 33.3	82 26 57.0	Mound 2	1423.1	3.1532395
Cortez 1908	27 27 46.226 82 41 02.091	1422.8 57.4	127 24 30.2	307 23 58.4	Anna Maria Key southeast base 2	2386.4	3.3777412
			163 30 01.4	343 29 53.3	Mound 2	1707.0	3.2322212
Longboat 2 1908	27 26 44.361 82 41 31.537	1365.4 866.0	162 02 23.1	342 02 04.9	Anna Maria Key southeast base 2	3525.6	3.5472331
			185 13 19.8	5 13 25.3	Mound 2	3555.6	3.5509130
			203 00 21.2	23 00 34.8	Cortez	2068.8	3.3157084
Bolees Creek 1908	27 24 38.899 82 34 41.558	1197.3 1141.6	96 40 44.9	276 38 36.4	Tom	7717.4	3.8874701
			115 25 43.1	295 23 53.7	Key	7225.3	3.8588542
Long Bar Point 1908	27 25 31.592 82 37 15.981	972.4 439.0	78 01 25.1	258 00 27.7	Tom	3499.4	3.5439965
			122 55 21.9	302 54 43.6	Key	2721.3	3.4347818
			290 54 52.4	110 56 03.4	Bolees Creek	4541.3	3.6571770
Whale Key 1908	27 23 35.842 82 37 38.986	1103.2 1071.1	248 16 39.7	68 18 01.4	Bolees Creek	5246.6	3.7198776
			135 27 30.8	315 26 44.0	Tom	3979.5	3.5998306
			161 51 09.1	341 50 41.4	Key	5305.6	3.7247320
			190 03 26.6	10 03 37.2	Long Bar Point	3618.3	3.5585058
Cedar Point 2 1908	27 20 02.542 82 33 01.023	78.2 28.1	130 41 40.1	310 39 32.3	Whale Key	10072.5	4.0031386
			162 00 46.9	342 00 00.7	Bolees Creek	8943.4	3.9515040
New Pass 2 1908	27 20 19.531 82 35 05.362	601.1 147.4	145 04 02.5	325 02 51.9	Whale Key	7371.1	3.8675305
			184 40 58.1	4 41 09.0	Bolees Creek	8009.9	3.9036254
			278 41 25.1	98 42 22.2	Cedar Point 2	3457.7	3.5387884
Sarasota 2 1908	27 16 52.785 82 34 09.550	1624.7 262.6	166 26 43.0	346 26 17.4	New Pass 2	6545.8	3.8159640
			197 52 33.8	17 53 05.2	Cedar Point 2	6136.9	3.7879495
			207 41 04.0	27 41 25.0	Lone Pine	2711.9	3.4332782
Young 2 1908	27 16 44.011 82 32 23.562	1354.6 648.0	95 17 59.0	275 17 10.4	Sarasota 2	2927.5	3.4664941
			148 13 52.1	328 13 24.6	Lone Pine	3142.4	3.4972559
			170 26 02.1	350 25 44.9	Cedar Point 2	6196.8	3.7921651
Supplementary points							
Boca Grande, City lookout[1] 1909	26 45 02.26 82 15 39.64	69.6 1095.4	301 06 54 331 50 23	121 09 14.0 151 51 44.0	Jug Point Useppa Inn	10030.2 10554.3	4.00131 4.02343
Gasparilla Island Concrete Works water tank 1909	26 47 40.629 82 16 20.590	1250.4 568.7	150 15 35.0	330 15 24.8	Gasparilla 1909	1255.2	3.098703
			192 12 39.2	12 12 53.1	Placida	4031.0	3.605413
			220 54 01.8	40 54 34.3	Coral	3043.2	3.483327
Charlotte Harbor & Northern Ry.:							
West drawbridge, east end 1909	26 48 56.191 82 16 15.261	1729.4 421.4	270 47 18.2	90 47 48.3	Coral	1845.5	3.266122
			31 55 19.8	211 55 07.2	Gasparilla 1909	1455.9	3.163123
			203 36 23.8	23 36 35.3	Placida	1761.7	3.245922
East drawbridge, east end 1909	26 49 32.675 82 16 03.471	1005.6 95.8	217 42 35.0	37 42 41.2	Placida	621.1	2.793168
			307 04 25.3	127 04 50.1	Coral	1904.8	3.279848
			24 54 47.2	204 54 29.3	Gasparilla 1909	2600.5	3.415058
Long trestle, east end 1909	26 49 51.867 82 15 57.010	1596.3 1574.2	296 13 49.0	116 13 52.3	Placida	224.6	2.351487
			322 21 19.6	142 21 41.5	Coral	2196.2	3.341667
			23 21 42.8	203 21 22.0	Gasparilla 1909	3212.5	3.506847
Long trestle, west end 1909	26 48 11.396 82 16 29.864	350.7 824.8	111 18 29.1	291 18 23.1	Gasparilla 1909	393.4	2.594816
			200 19 35.8	20 19 53.9	Placida	3191.7	3.504020
			238 57 31.0	58 58 07.7	Coral	2624.5	3.419044
Section Post (concrete) M. C. Sec. 27, T. 42 S., R. 20 E. 1909	26 48 26.298 82 16 36.312	809.4 1002.9	30 49 45.7	210 49 42.5	Gasparilla 1909	367.6	2.565414
			206 55 05.6	26 55 26.6	Placida	2842.3	3.453665
			249 45 39.4	69 46 19.0	Coral	2586.4	3.412697
Section Post (concrete) M. C. Secs. 22 and 27, T. 42 S., R. 20 E.[1] 1909	26 49 06.86 82 16 58.20	211.1 1607.2	89 57 33	269 57 30	Section Post (concrete) quarter corner between Secs. 22 and 27, T. 42 S., R. 20 E.	196.8	2.29411
			235 46 51	55 47 22	Placida	2286.9	3.35925
Lone Pine 1908	27 18 10.807 82 33 23.728	332.6 652.5	144 48 48.0	324 48 01.3	New Pass 2	4848.2	3.6855793
			190 17 12.0	10 17 22.4	Cedar Point 2	3495.3	3.5434832
Fishing Point pavilion, north gable 1908	27 18 15.340 82 33 26.246	472.2 721.7	191 52 03.2	11 52 14.7	Cedar Point 2	3371.6	3.527840
			328 28 38.9	148 29 07.6	Young 2	3297.5	3.518182
			25 06 48.4	205 06 28.5	Sarasota 2	2806.2	3.448113
Sarasota Baptist Church spire[1] 1908	27 20 15.76 82 32 32.60	485.1 896.2	23 06 48	203 06 04	Sarasota 2	6792.1	3.832003
			62 30 06	242 29 53	Cedar Point 2	880.7	2.944836
Bell Haven Hotel cupola 1908	27 20 04.866 82 32 38.055	149.8 1046.1	23 03 24.2	203 02 42.2	Sarasota 2	6425.0	3.807874
			83 32 14.1	263 32 03.6	Cedar Point 2	635.4	2.803036
			96 22 12.0	276 21 04.4	New Pass 2	4074.3	3.610057

[1] No check on this position.

GASPARILLA SOUND TO SARASOTA BAY—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Supplementary points—Con	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Sarasota Methodist Church spire 1908	27 20 09.801 82 32 32.940	301.7 905.5	23 39 44.4 73 51 34.4 94 05 53.2	203 39 00.1 253 51 21.5 274 04 43.2	Sarasota 2 Cedar Point 2 New Pass 2	6620.2 803.6 4200.5	3.820872 2.905065 3.623305
Warehouse on piles, west gable 1908	27 22 20.068 82 33 52.209	617.7 1434.7	341 36 44.1 28 27 32.0 162 23 55.6	161 37 07.6 208 26 58.4 342 23 32.9	Cedar Point 2 New Pass 2 Bolees Creek	4460.6 4219.8 4483.0	3.649393 3.625290 3.651572
South end of cut 1908	27 25 19.240 82 38 15.571	592.2 427.7	79 01 43.4 160 47 25.4 256 55 09.6	259 01 13.4 340 47 14.5 76 55 37.0	Tom Key Long Bar Point	1819.7 1968.7 1680.4	3.259992 3.294175 3.225400
North end of cut 1908	27 26 03.929 82 38 40.331	120.9 1107.7	32 43 12.8 183 48 55.6 293 14 37.4	212 42 54.2 3 48 56.1 113 15 16.2	Tom Key Long Bar Point	2046.7 484.6 2521.5	3.311044 2.685405 3.401656
Robert's house chimney 1908	27 26 34.432 82 41 19.257	1059.8 528.9	132 10 56.0 192 02 25.6 275 54 08.2	312 10 50.3 12 02 33.5 95 55 22.0	Longboat 2 Cortez Key	455.1 2259.5 4420.3	2.658112 3.354012 3.645456
Fulford's, Wm., house, south chimney [1] 1908	27 27 58.97 82 41 06.26	1815.1 171.9	343 45 01 16 49 12	163 45 03 196 49 01	Cortez Longboat 2	408.7 2399.2	2.611442 3.380069
Bratton's, Mrs., house, south chimney [1] 1908	27 27 58.17 82 41 12.66	1790.4 347.6	321 43 13 12 51 19	141 43 18 192 51 11	Cortez Longboat 2	468.4 2330.2	2.670572 3.367401
Brunsman's, A. G., house, chimney 1908	27 28 24.493 82 42 08.632	753.9 237.0	158 25 26.9 165 48 16.7 251 07 20.8 341 42 35.1	338 25 06.9 345 48 15.5 71 07 43.3 161 42 52.1	Anna Maria Key northwest base Anna Maria Key southeast base 2 Mound 2 Longboat 2	3226.6 280.3 1418.3 3246.0	3.508739 2.447608 3.151770 3.511346

TAMPA BAY.

Principal points							
Anna Maria Key northwest base 1873	27 30 01.973 82 42 51.859	60.7 1423.4	315 10 06.8 337 43 03.4 340 38 38.7	135 10 49.3 157 43 22.2 160 39 15.6	Mound Anna Maria Key southeast base Longboat	3585.7 2948.96 6614.4	3.554570 3.469669 3.820489
Nell 1878	27 29 42.030 82 41 17.653	1293.7 484.6	1 43 55.4 34 46 09.5 103 21 35.5	181 43 54.4 214 45 44.8 283 20 52.0	Mound Anna Maria Key southeast base Anna Maria Key northwest base	1930.2 2574.6 2657.7	3.285604 3.410702 3.424507
Perico 1873	27 30 35.254 82 41 10.213	1085.1 280.3 69 50 39.0	24 01 07.5 249 49 52.1	204 00 39.4 Anna Maria Key southeast base Anna Maria Key northwest base		4108.9 2972.0	3.613721 3.473049
Palm 1873	27 32 13.227 82 44 35.603	407.1 976.9	298 08 03.8 324 49 10.5 329 37 41.0	118 09 38.7 144 49 58.4 149 38 47.8	Perico Anna Maria Key northwest base Anna Maria Key southeast base	6392.4 4942.4 7844.7	3.805665 3.693939 3.894578
Terraceia 1873	27 33 31.971 82 37 36.579	984.0 1003.5	47 09 21.3 78 07 18.8	227 07 42.5 258 04 05.0	Perico Palm	7996.9 11749.2	3.902921 4.070009
Egmont Key L. H. 1873	27 36 01.980 82 45 39.003	60.9 1069.6	289 12 18.1 323 43 53.3 346 07 17.5 337 30 27.7	109 16 01.4 143 45 57.6 166 07 46.8 157 31 44.9	Terraceia Perico Palm Anna Maria Key northwest base	14014.6 12470.5 7252.6 11992.4	4.146581 4.095884 3.860495 4.0789052
Pinelos 1873	27 42 15.719 82 38 29.340	483.8 803.8	354 52 09.8 45 42 01.7	174 52 34.2 225 38 42.3	Terraceia Egmont Key L. H.	16185.9 16463.3	4.209136 4.216518
Roach 1873	27 39 55.982 82 32 30.962	1723.1 848.6	35 21 20.8 71 36 46.5 113 40 32.8	215 18 59.2 251 30 41.1 293 37 46.4	Terraceia Egmont Key L. H. Pinelos	14489.2 22773.4 10721.0	4.161045 4.357427 4.030236
Terraceia 2 1908	27 33 35.853 82 37 33.681	1103.5 924.0 108 42 01.8	53 00 15.4 288 38 17.1	232 57 48.3 Anna Maria Key northwest base Egmont Key L. H.		10934.8 14050.9	4.0388117 4.1477056
Palm 2 1908	27 32 12.094 82 44 26.246	372.2 720.2	164 15 11.4 257 08 33.2 327 06 02.8	344 14 37.7 77 11 44.0 147 06 46.5	Egmont Key L. H. Terraceia 2 Anna Maria Key northwest base	7352.0 11609.2 4769.8	3.8664040 4.0648014 3.6784970
Perico 2 1908	27 30 38.702 82 41 08.379	1191.2 230.0 117 54 33.0 143 17 21.6 227 11 59.9	68 18 08.6 297 53 01.6 323 15 16.4 47 13 39.2	248 17 20.8 Anna Maria Key northwest base Palm 2 Egmont Key L. H. Terraceia 2		3056.9 6143.9 12415.1 8027.4	3.4852866 3.7884463 4.0939500 3.9045727

[1] No check on this position.

TAMPA BAY—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Principal points—Contd	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Mullet Key Shoal light	27 37 43.932	1352.2	325 13 49.2	145 15 18.7	Terracela 2	9294.2	3.9682133
1908	82 40 46.887	1285.5	30 30 51.3	210 29 09.8	Palm 2	11854.3	4.0738768
			68 37 27.3	248 35 11.9	Egmont Key L. H.	8602.6	3.9346290
Pinelos 2	27 42 15.797	486.2	354 27 37.6	174 28 03.8	Terracela 2	16079.0	4.2062599
1908	82 38 30.260	829.1	24 06 57.7	204 05 54.2	Mullet Key Shoal light	9167.7	3.9622614
			45 37 59.1	225 36 40.1	Egmont Key L. H.	16447.0	4.2160870
Cockroach (U. S. E.)	27 40 31.551	971.1	34 58 05.3	214 55 34.1	Terracela 2	15610.1	4.1934053
1908	82 32 07.566	207.3	69 35 46.8	249 29 30.3	Egmont Key L. H.	23741.9	4.3755155
			70 06 38.0	250 02 36.9	Mullet Key Shoal light	15141.0	4.1801545
			107 02 19.0	286 59 21.2	Pinelos 2	10966.2	4.0400554
Ant 2	27 43 33.293	1024.8	301 17 55.0	121 20 31.0	Cockroach (U. S. E.)	10761.6	4.0318772
1908	82 37 43.110	1180.9	28 26 17.7	208 25 55.8	Pinelos 2	2712.6	3.4333911
Indian Hill 2	27 41 05.026	154.7	51 56 38.6	231 56 16.3	Cockroach (U. S. E.)	1671.4	3.2230816
1908	82 31 19.542	535.5	100 29 09.0	280 25 49.0	Pinelos 2	12001.0	4.0792174
			113 29 57.0	293 26 58.8	Ant 2	11456.9	4.0590672
Mangrove (U. S. E.)	27 44 39.712	1222.4	32 04 54.7	212 03 44.4	Indian Hill 2	7798.4	3.8920033
1908	82 28 48.389	1325.3	35 33 11.8	215 31 39.3	Cockroach (U. S. E.)	9387.4	3.9725439
			74 30 20.4	254 25 49.8	Pinelos 2	16543.0	4.2186145
			82 05 16.5	262 01 07.7	Ant 2	14787.9	4.1699064
Cedar Point (U. S. E.)	27 50 08.297	255.4	313 00 12.1	133 03 16.6	Mangrove (U. S. E.)	14822.2	4.1709112
1908	82 35 24.177	661.6	338 09 11.3	158 11 05.1	Indian Hill 2	18014.2	4.2556158
			343 06 55.8	163 08 27.3	Cockroach (U. S. E.)	18551.2	4.2683726
			17 22 51.6	197 21 46.9	Ant 2	12739.7	4.1051597
Gadsden 2	27 49 17.482	538.1	3 58 47.3	183 58 37.2	Mangrove (U. S. E.)	8570.7	3.9330160
1908	82 28 26.669	729.9	17 21 20.3	197 19 59.8	Indian Hill 2	15880.3	4.2008588
			55 13 18.7	235 08 59.4	Ant 2	18557.0	4.2685069
Gadsden Point light	27 48 57.372	1766.0	17 43 42.4	197 42 59.2	Mangrove (U. S. E.)	8326.2	3.9204452
1908	82 27 15.815	432.8	59 53 35.7	239 48 43.5	Ant 2	19862.5	4.2980344
			99 18 31.7	279 14 43.8	Cedar Point (U. S. E.)	13542 2	4.1316886
			107 42 29.4	287 41 56.3	Gadsden 2	2035.6	3.3086920
Alafia 2	27 50 03.619	111.4	41 08 57.2	221 06 28.9	Mangrove (U. S. E.)	13236.5	4.1217733
1908	82 23 30.363	830.9	71 43 33.6	251 41 48.4	Gadsden Point light	6498.2	3.8127950
			80 05 07.4	260 02 49.1	Gadsden 2	8232.3	3.9155206
Bali	27 54 19.176	590.3	343 39 54.7	163 40 34.1	Alafia 2	8197.0	3.9136571
1908	82 24 54.610	1493.5	21 18 53.0	201 17 47.0	Gadsden Point light	10632.2	4.0266232
			32 00 26.4	211 58 47.4	Gadsden 2	10949.7	4.0394029
Catfish Point (U. S. E.)	27 50 42.201	1299.0	219 10 14.8	39 11 47.8	Ball	8616.4	3.9353269
1908	82 28 13.623	372.8	278 41 33.2	98 43 45.5	Alafia 2	7841.5	3.8943966
			333 52 44.3	153 53 11.3	Gadsden Point light	3593.7	3.5555402
Ballast Point 2	27 53 20.634	635.1	254 22 16.2	74 24 06.5	Ball	6695.3	3.8257714
1908	82 28 50.386	1378.2	304 41 16.6	124 43 46.2	Alafia 2	10650.4	4.0273640
			342 17 07.1	162 17 51.4	Gadsden Point light	8506.6	3.9297563
			348 20 42.8	168 21 00.0	Catfish Point (U. S. E.)	4979.4	3.6971765
Picnic Island	27 51 02.893	89.0	330 43 27.9	150 45 20.6	Mangrove (U. S. E.)	13519.6	4.130965
1908	82 32 49.785	1362.1	30 08 36.6	210 06 19.9	Ant 2	16000.2	4.204125
			68 19 02.8	248 17 50.7	Cedar Point (U. S. E.)	4546.6	3.657682
Dave	27 53 46.439	1429.4	17 46 08.5	197 45 40.9	Picnic Island	5286.3	3.723149
1908	82 31 50.822	1390.0	41 00 45.0	220 59 05.3	Cedar Point (U. S. E.)	8896.9	3.949239
Pete	27 52 51.662	1590.2	258 45 34.4	78 47 59.7	Dave	8665.4	3.937789
1908	82 37 01.585	43.4	295 54 18.8	115 56 16.4	Picnic Island	7659.1	3.884175
			332 04 17.8	152 05 03.3	Cedar Point (U. S. E.)	5691.1	3.755198
Gun	27 54 51.146	1574.3	33 55 29.6	213 53 49.6	Cedar Point (U. S. E.)	10490.9	4.020814
1908	82 31 50.213	1373.0	66 39 40.0	246 37 14.3	Pete	9276.0	3.967362
Dog	27 54 22.308	686.7	265 17 23.8	85 20 29.3	Gun	10869.1	4.036195
1908	82 38 26.354	720.7	275 48 08.5	95 51 13.6	Dave	10873.3	4.036360
			320 16 15.3	140 16 55.0	Pete	3627.8	3.559638
Rocky Point	27 57 47.362	1457.9	323 05 03.2	143 06 13.0	Gun	6783.5	3.831455
1906	82 34 19.216	525.2	331 18 27.2	151 19 36.6	Dave	8453.2	3.927023
			7 10 12.9	187 09 42.4	Cedar Point (U. S. E.)	14242.0	4.153570
			26 00 43.2	205 59 27.2	Pete	10127.1	4.005487
			46 57 56.7	226 56 00.8	Dog	9246.2	3.965964
Supplementary points							
Johnson's house north gable, Perico Island [1]	27 29 49.53	1524.5	33 21 03	213 20 37	Anna Maria Key southeast base 2	2808	3.44837
1908	82 41 14.91	409.3	98 12 02	278 11 17	Anna Maria Key northwest base	2689	3.42952
Stake, south end of 40-foot cut	27 30 46.470	1430.3	58 25 37.7	238 25 00.2	Anna Maria Key northwest base	2615.4	3.417545
1908	82 41 30.678	842.0	291 20 19.1	111 20 29.4	Perico 2	657.1	2.817596
			355 36 48.4	175 36 53.3	Mound 2	3922.7	3.593584

[1] No check on this position.

TAMPA BAY—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Supplementary points—Continued	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Manatee 2	27 31 54.593	1680.4	93 20 20.2	273 17 43.6	Palm 2	9309.4	3.968924
1908	82 38 47.547	1304.7	124 01 52.7	303 58 42.2	Egmont Key L. H.	13615.4	4.134030
			163 04 36.2	343 03 40.9	Mullet Key Shoal light	11239.9	4.050762
Snead Point Shoal light	27 32 08.838	272.0	32 56 30.1	212 55 59.6	Perico 2	3305.7	3.519267
1908	82 40 02.882	79.1	49 54 43.1	229 53 24.8	Anna Maria Key, northwest base	6062.5	3.782649
			90 48 41.1	270 46 39.1	Palm 2	7227.2	3.858972
			127 54 54.3	307 52 18.6	Egmont Key L. H.	11683.7	4.067582
			236 47 40.8	56 48 49.6	Terraceia 2	4891.9	3.689476
			281 58 15.1	101 58 49.7	Manatee 2	2113.2	3.324932
Manatee River Cut light	27 31 46.913	1444.0	62 22 42.3	242 20 58.4	Anna Maria Key northwest base	6963.4	3.842824
1908	82 39 07.080	194.3	95 04 40.9	275 02 13.3	Palm 2	8792.2	3.944098
			126 09 48.1	306 06 46.8	Egmont Key L. H.	13312.7	4.124267
			217 22 55.2	37 23 38.3	Terraceia 2	4220.3	3.625342
			246 11 52.3	66 12 01.4	Manatee 2	585.8	2.767747
Terraceia Point No. 1 light	27 32 44.315	1364.0	54 11 05.5	234 09 09.1	Anna Maria Key northwest base	8535.8	3.931245
1908	82 38 39.683	1088.8	84 04 04.6	264 01 24.4	Palm 2	9560.6	3.980436
			117 54 14.8	297 51 00.7	Egmont Key L. H.	13012.0	4.114345
			228 46 34.3	48 47 04.9	Terraceia 2	2407.4	3.381547
Palmetto Schoolhouse dome	27 31 03.302	101.6	97 26 10.5	277 21 35.9	Palm 2	16444.1	4.216011
1908	82 34 31.994	878.0	116 43 05.2	296 37 56.6	Egmont Key L. H.	20478.1	4.311289
			133 17 50.4	313 16 26.4	Terraceia 2	6848.4	3.835589
Palmetto Church, tall thin spire	27 30 52.130	1604.6	98 41 44.7	278 37 12.5	Palm 2	16350.1	4.213521
1908	82 34 37.228	1021.7	117 45 21.8	297 40 15.6	Egmont Key L. H.	20507.8	4.311918
			141 38 39.2	321 34 24.2	Tomlinson	24307.2	4.385735
			136 09 26.6	316 08 05.0	Terraceia 2	6988.4	3.844377
Fogartyville Episcopal Church spire	27 29 49.390	1520.2	123 24 18.2	303 22 39.8	Manatee 2	7002.3	3.845238
1908	82 35 14.523	398.6	123 50 12.0	303 45 23.2	Egmont Key L. H.	20617.3	4.314232
			146 10 56.2	326 06 58.5	Tomlinson	25265.6	4.402529
Braidentown electric power house stack	27 29 50.396	1551.2	117 36 15.4	297 34 12.2	Manatee 2	8254.7	3.916702
1908	82 34 20.968	575.6	121 37 39.2	301 32 25.6	Egmont Key L. H.	21837.4	4.339201
			142 42 11.3	322 40 42.2	Terraceia 2	8724.9	3.940758
			163 25 25.7	343 23 30.2	Pinelos 2	23940.4	4.379132
Braidentown standpipe	27 29 31.339	964.6	121 02 38.1	301 00 34.7	Manatee 2	8554.5	3.932194
1908	82 34 20.451	561.4	122 53 58.9	302 48 45.1	Egmont Key L. H.	22162.6	4.345620
			144 50 43.6	324 49 14.3	Terraceia 2	9206.5	3.964094
			163 46 59.9	343 45 04.2	Pinelos 2	24507.2	4.389293
Southwest Channel light	27 34 48.271	1485.8	146 31 24.9	326 30 59.5	Egmont Key L. H.	2720.1	3.434582
1908	82 44 44.291	1214.8	280 39 31.8	100 42 51.0	Terraceia 2	12020.5	4.079924
			298 37 15.5	118 40 00.5	Manatee 2	11151.9	4.047348
			322 20 50.7	142 22 30.4	Perico 2	9700.7	3.986802
			354 07 09.1	174 07 17.4	Palm 2	4832.6	3.684177
Battery Page	27 34 50.066	1541.0	189 19 53.9	9 20 00.0	Egmont Key L. H.	2243.2	3.350870
1908	82 45 52.267	1433.5	279 26 59.8	99 30 50.6	Terraceia 2	13866.1	4.141954
			314 47 22.7	134 49 34.0	Perico 2	10978.6	4.040547
			334 06 20.6	154 07 00.4	Palm 2	5404.8	3.732778
Egmont Key, pilots' lookout	27 35 10.280	316.4	339 20 31	159 21 06	Palm 2	5861.2	3.767990
1908	82 45 41.605	1141.1	182 34 04	2 34 05	Egmont Key L. H.	1592.9	3.202186
			282 13 14	102 17 01	Terraceia 2	13695.8	4.136588
			318 05 50	138 07 57	Perico 2	11228.1	4.050307
Fort Dade, top of water tank	27 35 41.545	1278.7	196 40 45.1	16 40 48.3	Egmont Key L. H.	656.6	2.817315
1908	82 45 45.875	1258.1	285 57 32.1	106 01 20.0	Terraceia 2	14043.8	4.147486
			320 44 33.0	140 46 41.3	Perico 2	12035.4	4.080460
			335 26 17.7	155 27 38.2	Anna Maria Key, northwest base	11490.8	4.060351
			341 16 37.7	161 17 14.6	Palm 2	6806.9	3.832950
Fort Dade, power house black stack	27 35 41.442	1275.6	194 47 41.2	14 47 44.0	Egmont Key L. H.	653.9	2.815478
1908	82 45 45.091	1236.6	285 58 14.3	106 02 01.8	Terraceia 2	14022.3	4.146820
			320 48 44.3	140 50 52.2	Perico 2	12019.3	4.079880
			341 26 24.8	161 27 01.3	Palm 2	6797.0	3.832318
Fort Dade flagstaff	27 35 41.249	1269.6	174 27 36.7	354 27 35.6	Egmont Key L. H.	641.1	2.806932
1908	82 45 36.746	1007.8	286 12 34.2	106 16 17.8	Terraceia 2	13800.8	4.139903
			301 50 03.1	121 53 12.5	Manatee 2	13216.6	4.121121
			343 16 29.5	163 17 02.1	Palm 2	6722.0	3.827498
Army pier, tower coal shed [1]	27 35 55.02	1693.5	144 20.06	324 20 03	Egmont Key L. H.	264	2.42081
1908	82 45 33.40	916.0	288 00 08	108 03 50	Terraceia 2	13838	4.14106
Egmont Key landing, tower on pavilion	27 35 55.045	1694.3	303 35 11.8	123 38 19.5	Manatee 2	13369.6	4.126120
1908	82 45 33.430	916.8	323 13 50.2	143 15 52.8	Perico 2	12152.6	4.084670
			337 47 56.9	157 49 11.6	Anna Maria Key, northwest base	11736.9	4.069552
			344 57 47.8	164 58 18.9	Palm 2	7105.6	3.851600

[1] No check on this position.

TAMPA BAY—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Supplementary points—Continued	° ′ ″		° ′ ″	° ′ ″		*Meters*	
North Channel light 1908	27 36 42.550	1309.7	297 24 32.5	117 27 39.4	Terraceia 2	12472.3	4.095948
	82 44 17.284	474.0	335 09 22.6	155 10 50.0	Perico 2	12340.1	4.091320
			349 13 56.5	169 14 36.0	Anna Maria Key, northwest base	12550.5	4.098660
			60 52 35.0	240 51 57.3	Egmont Key L. H.	2565.3	3.409146
Fort de Sota flagstaff 1908	27 36 41.390	1274.0	4 08 45.6	184 08 35.5	Palm 2	8310.7	3.919636
	82 44 04.349	119.2	64 57 25.9	244 56 42.0	Egmont Key L. H.	2865.1	3.457136
			298 01 54.0	118 04 54.9	Terraceia 2	12141.7	4.084281
			336 36 13.4	156 37 34.8	Perico 2	12162.6	4.085025
Fort de Sota, water tank 1908	27 36 50.618	1558.0	3 31 41.6	183 31 32.7	Palm 2	8589.3	3.933956
	82 44 06.982	191.4	59 19 31.7	239 18 49.1	Egmont Key L. H.	2934.0	3.467467
			299 02 16.4	119 05 18.5	Terraceia 2	12340.9	4.091346
			336 49 02.6	156 50 25.2	Perico 2	12452.0	4.095240
Fort de Sota power house black stack 1908	27 36 50.308	1548.5	3 18 55.3	183 18 46.9	Palm 2	8577.8	3.933375
	82 44 08.167	223.9	59 09 36.5	239 08 54.4	Egmont Key L. H.	2901.2	3.462583
			222 43 46.5	42 46 23.3	Pinelos 2	13643.8	4.134935
			298 55 33.4	118 58 36.0	Terraceia 2	12364.7	4.092183
Quarantine building, tower on end of wharf 1908	27 36 53.838	1657.1	9 54 56	189 54 30	Palm 2	8803.5	3.944653
	82 43 31.000	850.0	65 33 16	245 32 16	Egmont Key L. H.	3855.9	3.586128
			301 51 06	121 53 52	Terraceia 2	11540.3	4.062217
			341 16 20	161 17 26	Perico 2	12191.5	4.086058
Quarantine station, high water tank 1908	27 37 01.974	60.8	9 04 55.8	189 04 31.7	Palm 2	9035.7	3.955962
	82 43 34.266	939.5	61 38 40.5	241 37 42.7	Egmont Key L. H.	3887.1	3.589624
			220 45 40.0	40 48 01.1	Pinelos 2	12756.8	4.105742
			302 39 29.0	122 42 15.9	Terraceia 2	11749.7	4.070025
Quarantine station, low water tank 1908	27 37 02.723	83.8	9 18 08.3	189 17 43.6	Palm 2	9064.7	3.957353
	82 43 32.846	900.6	61 37 05.2	241 36 06.7	Egmont Key L. H.	3932.3	3.594647
			220 41 46.9	40 44 07.4	Pinelos 2	12713.9	4.104279
			302 51 20.7	122 54 07.0	Terraceia 2	11729.4	4.069276
Hospital (Mullet Key) west gable [1] 1908	27 37 10.54	324.4	344 27 02	164 27 58	Perico 2	12519	4.09756
	82 43 10.65	292.0	12 43 28	192 42 53	Palm 2	9417	3.97393
Burslem (U. S. E.) 1908	27 35 45.345	1395.7	35 08 13.2	215 07 25.9	Terraceia 2	4873.5	3.687840
	82 35 51.439	1410.6	160 05 53.1	340 04 39.4	Pinelos 2	12782.5	4.106615
			214 50 58.4	34 52 42.2	Cockroach (U. S. E.)	10738.2	4.030933
			217 07 33.6	37 09 39.6	Indian Hill 2	12344.3	4.091465
Point Pinelos light 1908	27 41 47.598	1465.1	6 43 11.9	186 42 41.6	Terraceia 2	15240.7	4.183004
	82 36 28.673	785.6	54 50 37.6	234 46 22.1	Egmont Key L. H.	18459.2	4.266212
			104 36 42.6	284 35 46.1	Pinelos 2	3442.5	3.536877
			147 55 28.3	327 54 53.7	Ant 2	3839.7	3.584292
			278 46 26.6	98 48 50.1	Indian Hill 2	8571.2	3.933043
			288 05 56.4	108 07 57.7	Cockroach (U. S. E.)	7528.0	3.876682
St. Petersburg Club House flagstaff 1908	27 41 57.195	1760.5	201 18 17.2	21 18 21.0	Pinelos 2	614.6	2.788580
	82 38 38.411	1052.4	252 45 51.5	72 50 25.9	Mangrove (U. S. E.)	16919.0	4.228374
			283 48 10.7	103 51 12.3	Cockroach (U. S. E.)	11029.5	4.042555
			353 26 08.1	173 26 38.2	Terraceia 2	15533.2	4.191260
Tampa Bay beacon No. 4 1908	27 43 15.064	463.7	296 39 50.3	116 42 05.4	Indian Hill 2	8913.6	3.950053
	82 36 10.234	280.4	307 06 32.8	127 08 25.6	Cockroach (U. S. E.)	8339.0	3.921114
			64 34 29.8	244 33 24.9	Pinelos 2	4247.7	3.628158
Indian Hill light 1908	27 41 53.858	1657.7	310 20 07.8	130 20 37.6	Indian Hill 2	2322.0	3.365864
	82 32 24.135	661.2	349 50 20.2	169 50 27.9	Cockroach (U. S. E.)	2573.8	3.410577
			93 52 29.9	273 49 39.7	Pinelos 2	10053.9	4.002334
			109 19 24.4	289 16 56.0	Ant 2.	9259.0	3.966564
Marshall (U. S. E.) 1908	27 42 16.747	515.5	32 38 01.3	212 37 26.1	Cockroach (U. S. E.)	3844.8	3.584872
	82 30 51.909	1422.2	89 53 46.1	269 50 13.0	Pinelos 2	12557.7	4.098909
			101 50 24.5	281 47 13.2	Ant 2	11508.5	4.061019
			217 32 53.1	37 33 50.5	Mangrove (U. S. E.)	5550.9	3.744366
Moody's house cupola 1908	27 43 05.357	164.9	49 14 09	229 12 56	Indian Hill 2	5671	3.75369
	82 28 42.784	1172.1	139 51 20	319 48 13	Cedar Point (U. S. E.)	17037	4.23139
			155 18 40	335 16 45	Picnic Island	16180	4.20897
			176 58 27	356 58 25	Mangrove (U. S. E.)	2908	3.46365
St. Petersburg: Detroit House tower 1908	27 46 16.324	502.5	224 45 08.3	44 47 37.5	Picnic Island	12425.5	4.094315
	82 38 09.515	260.5	250 41 52.5	70 46 24.2	Gadsden 2	16901.5	4.227926
			280 55 00.2	100 59 21.5	Mangrove (U. S. E.)	15651.1	4.194544
			310 26 46.4	130 29 57.1	Indian Hill 2	14762.2	4.169152
			316 55 21.9	136 58 10.3	Cockroach (U. S. E.)	14523.3	4.162065
Power house stack 1908	27 46 16.050	494.0	223 48 26.4	43 50 50.8	Picnic Island	12238.7	4.087734
	82 37 59.426	1627.2	281 04 55.7	101 09 12.3	Mangrove (U. S. E.)	15378.3	4.186908
			311 07 41.1	131 10 47.1	Indian Hill 2	14547.6	4.162790
			317 42 28.2	137 45 11.9	Cockroach (U. S. E.)	14329.8	4.156240
Schoolhouse cupola 1908	27 46 21.720	668.6	226 50 23.8	46 53 01.2	Picnic Island	12657.7	4.102354
	82 38 27.241	745.9	251 44 44.4	71 49 24.4	Gadsden 2	17307.6	4.238236
			281 10 00.5	101 14 30.1	Mangrove (U. S. E.)	16159.2	4.208421
			309 44 07.7	129 47 26.7	Indian Hill 2	15240.5	4.182999
			315 59 54.0	136 02 50.7	Cockroach (U. S. E.)	14978.0	4.175454

[1] No check on this position.

TAMPA BAY—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Supplementary points—Continued							
	° ′ ″		° ′ ″	° ′ ″		*Meters*	
St. Petersburg—Continued							
Sibley House tower	27 46 07.835	241.2	224 53 33.1	44 56 07.4	Picnic Island	12824.9	4.108055
1908	82 38 20.608	564.3	250 12 41.4	70 17 18.3	Gadsden 2	17275.1	4.237421
			279 47 01.1	99 51 27.6	Mangrove (U. S. E.)	15903.0	4.201478
			308 54 53.6	128 58 09.5	Indian Hill 2	14829.2	4.171117
			315 20 38.7	135 23 32.3	Cockroach (U. S. E.)	14545.4	4.162727
Waterworks standpipe	27 46 24.397	751.0	226 52 40.8	46 55 17.2	Picnic Island	12546.0	4.098504
1908	82 38 24.472	670.0	251 55 39.6	72 00 18.4	Gadsden 2	17209.8	4.235777
			281 30 26.1	101 34 54.4	Mangrove (U.S. E.)	16101.1	4.206856
			310 09 23.3	130 12 40.7	Indian Hill 2	15235.3	4.182852
			316 25 34.0	136 28 29.0	Cockroach (U. S. E.)	14985.1	4.175659
South Cut, lower No. 6 light	27 47 39.362	1211.6	337 45 06.2	157 46 30.4	Indian Hill 2	13113.2	4.117708
1908	82 34 20.728	567.4	344 30 36.1	164 31 38.1	Cockroach (U. S. E.)	13664.1	4.135581
			36 12 19.4	216 10 45.1	Ant 2	9385.2	3.972444
South Cut, upper No. 8 light	27 48 37.006	1139.0	262 41 47.5	82 44 33.8	Gadsden 2	9831.5	3.992621
1908	82 34 22.988	629.2	340 07 57.2	160 09 22.6	Indian Hill 2	14791.6	4.170016
			346 03 05.6	166 04 08.8	Cockroach (U. S. E.)	15396.1	4.187410
			30 23 22.2	210 21 49.1	Ant 2	10836.1	4.034875
North Cut, lower No. 10 light	27 49 50.848	1565.2	318 10 24.7	138 12 50.5	Mangrove (U. S. E.)	12848.2	4.108842
1908	82 34 01.238	33.9	27 36 38.1	207 34 54.7	Ant 2	13113.4	4.117714
			103 19 07.1	283 18 28.4	Cedar Point (U. S. E.)	2332.3	3.367788
			221 23 49.0	41 24 22.3	Picnic Island	2956.4	3.470768
Steamer "Cool" wreck beacon	27 48 03.023	93.0	231 01 58.5	51 02 46.8	Gadsden 2	3645.1	3.561706
1908	82 30 10.222	279.9	340 17 43.7	160 18 21.8	Mangrove (U. S. E.)	6647.1	3.822633
			56 13 38.8	236 10 07.9	Ant 2	14924.0	4.173884
			114 11 21.2	294 08 54.8	Cedar Point (U. S. E.)	9418.2	3.973968
			141 44 49.3	321 43 34.8	Picnic Island	7051.4	3.848277
Lowne (U. S. E. east base)	27 49 33.235	1023.0	346 23 55.5	166 24 32.7	Mangrove (U. S. E.)	9295.4	3.968269
1908	82 30 08.205	224.5	48 22 30.0	228 18 58.0	Ant 2	16669.8	4.221930
			97 08 05.8	277 05 38.2	Cedar Point (U. S. E.)	8713.9	3.940215
Gadsden (U. S. E.)	27 49 18.497	569.4	211 26 25.4	31 28 02.0	Ball	10849.5	4.035410
1908	82 28 21.550	589.8	260 05 38.8	80 07 54.7	Alafia 2	8088.9	3.907890
			4 53 44.6	184 53 32.1	Mangrove (U. S. E.)	8612.7	3.935138
			77 25 41.7	257 25 39.3	Gadsden 2	143.5	2.156916
Young (U. S. E.)	27 48 41.115	1265.5	45 42 49.0	225 40 39.4	Mangrove (U. S. E.)	10638.4	4.026877
1908	82 24 10.320	282.5	99 04 53.9	279 02 54.3	Gadsden 2	7104.9	3.851557
			203 17 37.0	23 17 55.7	Alafia 2	2765.0	3.441694
Alafia River light	27 50 11.051	340.2	75 48 24.8	255 46 33.7	Gadsden 2	6717.9	3.827232
1908	82 24 28.699	785.3	98 52 10.0	278 50 24.9	Catfish Point (U.S. E.)	6228.9	3.794412
			129 12 04.5	309 10 02.1	Ballast Point 2	9236.2	3.965495
			278 09 04.4	98 09 31.6	Alafia 2	1612.6	3.207540
Old (U. S. E.)	27 51 51.407	1582.4	343 34 37.2	163 34 53.9	Alafia 2	3458.9	3.538941
1908	82 24 06.100	166.9	72 33 16.7	252 31 21.0	Catfish Point (U.S. E.)	7099.3	3.851217
			109 28 15.4	289 26 02.4	Ballast Point 2	8247.2	3.916307
			163 44 25.8	343 44.03.0	Ball	4738.1	3.675607
Long Shoal beacon	27 52 43.307	1333.0	23 12 39.5	203 12 12.2	Catfish Point (U. S. E.)	4056.0	3.608097
1908	82 27 15.201	415.9	113 49 07.5	293 48 23.0	Ballast Point 2	2845.8	3.454201
			232 29 12.1	52 30 17.9	Ball	4847.1	3.685480
			308 36 44.8	128 38 29.9	Alafia 2	7874.1	3.896200
Wall's, Judge, house chimney	27 52 39.966	1230.2	245 37 12.0	65 39 07.3	Ball	7402.7	3.869388
1908	82 29 01.165	31.9	297 58 47.7	118 01 22.2	Alafia 2	10250.5	4.010746
			340 15 31.4	160 15 53.6	Catfish Point (U. S. E.)	3851.2	3.585601
Ballast Point Hotel water tank	27 53 22.022	677.9	304 41 21.7	124 43 52.3	Alafia 2	10725.0	4.030395
1908	82 28 52.622	1439.4	304 55 49.2	124 55 50.2	Ballast Point 2	74.6	1.872806
			347 45 40.6	167 45 58.8	Catfish Point (U. S. E.)	5033.8	3.701900
Tampa Yacht Club house flagstaff	27 53 13.316	409.9	189 19 21.1	9 19 21.7	Ballast Point 2	228.3	2.358438
1908	82 28 51.738	1415.2	252 37 32.1	72 39 23.0	Ball	6794.8	3.832175
			303 34 04.9	123 36 35.1	Alafia 2	10554.6	4.023441
			347 21 46.1	167 22 03.9	Catfish Point (U. S. E.)	4767.0	3.678241
Tampa Cut No. 2 light	27 54 17.992	553.8	269 04 33.9	89 05 12.7	Ball	2273.5	3.356700
1908	82 26 17.735	485.1	329 40 18.1	149 41 36.3	Alafia 2	9070.4	3.957626
			25 31 13.6	205 30 19.4	Catfish Point (U. S. E.)	7360.0	3.866880
			67 05 10.0	247 03 58.5	Ballast Point 2	4532.8	3.656371
Tampa Cut No. 4 light	27 55 15.927	490.2	299 06 30.1	119 07 23.8	Ball	3590.2	3.555113
1908	82 26 49.311	1348.3	15 18 46.3	195 18 06.9	Catfish Point (U. S. E.)	8735.6	3.941292
			43 01 19.6	223 00 23.0	Ballast Point 2	4853.6	3.686068
Richard's house (The Gables) cupola.	27 55 00.050	1.6	279 17 54.6	99 20 05.9	Ball	7771.6	3.890512
1908	82 29 35.061	958.7	312 25 24.4	132 28 15.0	Alafia 2	13519.6	4.130965
			338 13 59.2	158 14 20.1	Ballast Point 2	3295.1	3.517864
Spanish Sanitarium south gable	27 55 04.699	144.6	280 27 25.8	100 29 35.6	Ball	7707.3	3.886901
1908	82 29 31.761	868.5	313 07 40.3	133 10 29.4	Alafia 2	13550.6	4.131959
			340 32 31.5	160 32 50.9	Ballast Point 2	3397.3	3.531129

TAMPA BAY—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Supplementary points—Continued	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Spanish Sanitarium west tank 1908	27 55 04.125	127.0	280 17 09.9	100 19 20.2	Ball	7735.0	3.888462
	82 29 32.911	899.9	312 58 56.7	133 01 46.3	Alafia 2	13561.5	4.132308
			344 56 19.3	164 56 56.4	Catfish Point (U. S. E.)	8349.0	3.921635
			339 56 30.0	159 56 49.9	Ballast Point 2	3391.3	3.530362
Tampa west base (U. S. E.) 1908	27 54 51.328	1580.0	281 20 19.9	101 21 44.3	Ball	5028.6	3.701445
	82 27 54.901	1501.2	3 49 18.7	183 49 10.0	Catfish Point (U. S. E.)	7685.6	3.885676
			28 31 45.6	208 31 19.7	Ballast Point 2	3177.4	3.502078
Tampa east base (U. S. E.) 1908	27 55 28.576	878.8	301 38 06.4	121 39 05.7	Ball	4071.9	3.609794
	82 27 01.381	37.8	329 59 55.7	150 01 34.3	Alafia 2	11548.6	4.062528
			12 38 21.6	192 37 47.8	Catfish Point (U. S. E.)	9033.8	3.955869
Tampa Bay Hotel electric plant stack 1908	27 56 52.146	1605.2	314 35 48.1	134 37 09.8	Ball	6705.0	3.826401
	82 27 49.197	1344.8	330 36 19.0	150 38 20.0	Alafia 2	14430.7	4.159288
			3 21 32.7	183 21 21.2	Catfish Point (U. S. E.)	11407.0	4.057172
			14 24 58.3	194 24 29.6	Ballast Point 2	6722.2	3.827514
Tampa Bay Hotel north tower 1908	27 56 47.914	1474.9	313 25 40.2	133 27 03.0	Ball	6658.6	3.823383
	82 27 51.439	1406.2	330 08 10.8	150 10 12.9	Alafia 2	14347.9	4.156788
			3 05 11.1	183 05 00.7	Catfish Point (U. S. E.)	11273.5	4.052058
			14 10 52.4	194 10 24.8	Ballast Point 2	6580.8	3.818282
Tampa:							
Morrison Villa tower 1908	27 56 01.910	58.8	299 35 36.5	119 37 11.8	Ball	6400.8	3.806235
	82 28 18.136	495.9	324 27 55.6	144 30 10.2	Alafia 2	13549.5	4.131923
			359 16 52.2	179 16 54.3	Catfish Point (U. S. E.)	9841.9	3.993078
			10 04 30.9	190 04 15.8	Ballast Point 2	5042.1	3.702609
Hyde Park schoolhouse 1908	27 56 20.467	630.0	305 31 51.8	125 33 21.3	Ball	6422.5	3.807702
	82 28 05.732	156.7	326 59 11.2	147 01 20.0	Alafia 2	13830.6	4.140842
			1 11 16.7	181 11 13.0	Catfish Point (U. S. E.)	10414.5	4.017640
			12 26 32.6	192 26 11.7	Ballast Point 2	5668.6	3.753476
Electric power house stack 1908	27 56 39.118	1204.1	5 15 32.9	185 15 15.7	Catfish Point (U. S. E.)	11032.8	4.042687
	82 27 36.666	1002.4	18 15 53.6	198 15 19.1	Ballast Point 2	6433.6	3.808456
			314 10 52.5	134 12 08.4	Ball	6179.7	3.790968
			331 01 32.1	151 03 27.4	Alafia 2	13913.6	4.143440
Tower, Whiting and Franklin Streets 1908	27 56 43.458	1337.7	317 07 09.5	137 08 20.1	Ball	6059.9	3.782465
	82 27 25.398	694.2	332 24 21.9	152 26 11.8	Alafia 2	13885.3	4.142556
			20 25 20.4	200 24 40.6	Ballast Point 2	6661.7	3.823588
First Presbyterian Church spire 1908	27 57 01.053	32.4	319 57 09.2	139 58 20.9	Ball	6508.2	3.813461
	82 27 27.735	758.2	333 10 43.9	153 12 35.0	Alafia 2	14396.2	4.158248
			18 25 39.6	198 25 00.9	Ballast Point 2	7151.3	3.854388
Courthouse dome 1908	27 56 52.608	1619.4	318 20 36.0	138 21 47.9	Ball	6320.3	3.800738
	82 27 28.224	771.5	332 39 22.9	152 41 14.2	Alafia 2	14170.9	4.151397
			6 13 04.5	186 12 43.3	Catfish Point (U. S. E.)	11469.1	4.059530
			19 00 16.5	198 59 38.0	Ballast Point 2	6900.9	3.838903
Episcopal Church spire 1908	27 56 56.178	1729.3	319 47 44.2	139 48 54.1	Ball	6326.8	3.801183
	82 27 23.952	654.7	333 16 43.0	153 18 32.2	Alafia 2	14215.7	4.152767
			6 44 00.5	186 43 37.2	Catfish Point (U. S. E.)	11591.5	4.064139
			19 36 43.8	199 36 03.3	Ballast Point 2	7043.2	3.847770
Catholic Cathedral dome 1908	27 56 56.818	1749.0	319 25 37.8	139 26 48.9	Ball	6387.4	3.805323
	82 27 26.526	725.1	333 03 40.5	153 05 30.9	Alafia 2	14265.0	4.154271
			6 22 36.4	186 22 14.3	Catfish Point (U. S. E.)	11603.0	4.064569
			19 01 07.0	199 00 27.7	Ballast Point 2	7038.5	3.847479
Convent dome 1908	27 57 01.047	32.2	321 07 25.8	141 08 34.6	Ball	6399.4	3.806141
	82 27 21.482	587.2	333 47 23.0	153 49 11.1	Alafia 2	14319.7	4.155935
			6 58 30.0	186 58 05.6	Catfish Point (U. S. E.)	11748.3	4.069975
			19 43 05.6	199 42 24.0	Ballast Point 2	7207.0	3.857756
Sawmill, Central Avenue and Polk Streets, tall stack 1908	27 57 06.675	205.5	8 12 16.8	188 11 47.7	Catfish Point (U. S. E.)	11956.9	4.077620
	82 27 11.261	307.8	21 17 22.1	201 16 35.7	Ballast Point 2	7467.2	3.873156
			324 03 43.8	144 04 47.8	Ball	6367.3	3.803954
			335 05 49.2	155 07 32.6	Alafia 2	14355.5	4.157018
Post Office building, central flagstaff (west pole) 1908	27 56 58.926	1813.9	319 33 18.6	139 34 30.4	Ball	6460.5	3.810266
	82 27 27.864	761.7	6 09 45.4	186 09 24.1	Catfish Point (U.S.E.)	11663.5	4.066829
			18 34 04.9	198 33 26.3	Ballast Point 2	7088.2	3.850533
Methodist Church spire 1908	27 57 08.553	263.3	320 18 05.2	140 19 19.3	Ball	6775.2	3.830919
	82 27 32.858	898.2	333 05 48.9	153 07 42.3	Alafia 2	14665.5	4.166296
			5 21 20.8	185 21 10.7	Catfish Point (U.S.E.)	11944.6	4.077173
			16 49 03.5	196 48 27.2	Ballast Point 2	7329.0	3.865043
Crematory stack 1908	27 57 18.796	578.6	328 22 47.0	148 23 45.3	Ball	6492.3	3.812400
	82 26 59.078	1614.9	336 54 20.2	156 55 57.8	Alafia 2	14560.9	4.163188
			9 29 08.6	189 28 33.7	Catfish Point (U.S.E.)	12376.9	4.092610
			22 33 10.5	202 32 18.4	Ballast Point 2	7937.7	3.899694
Central Avenue Church spire 1908	27 57 46.069	1418.1	328 08 11.9	148 09 19.7	Ball	7497.7	3.874927
	82 27 19.342	528.7	6 29 39.8	186 29 14.4	Catfish Point (U.S.E.)	13131.5	4.118314
			16 57 01.0	196 56 18.4	Ballast Point 2	8541.3	3.931525
Michigan Avenue schoolhouse 1908	27 57 58.892	1812.8	328 16 10.1	148 17 21.7	Ball	7950.9	3.900417
	82 27 27.518	752.1	336 04 31.1	156 06 22.0	Alafia 2	16002.8	4.204197
			14 49 19.8	194 48 41.0	Ballast Point 2	8859.8	3.947426

TAMPA BAY—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Supplementary points—Con	° ′ ″		° ′ ″	° ′ ″		*Meters*	
West Tampa Waterworks standpipe 1908	27 57 25.690	790.8	313 09 35.0	133 11 19.8	Ball	8390.8	3.923805
	82 28 38.425	1050.4	328 12 56.1	148 15 20.2	Alafia 2	16004.8	4.204249
			356 52 20.6	176 52 32.2	Catfish Point (U.S.E.)	12438.5	4.094768
			2 28 59.7	182 28 54.1	Ballast Point 2	7550.3	3.877964
Ybor City Brewery tower 1908	27 57 31.279	962.8	332 50 07.7	152 50 59.7	Ball	6645.9	3.822554
	82 26 45.560	1245.4	10 49 59.8	190 49 18.7	Catfish Point (U.S.E.)	12820.3	4.107897
			23 52 17.3	203 51 18.9	Ballast Point 2	8436.5	3.926160
Ybor City iron water tank, Twelfth Avenue and Twenty-first Street 1908	27 57 47.468	1461.2	342 19 31.5	162 20 06.5	Ball	6729.1	3.827954
	82 26 09.318	254.7	343 03 21.0	163 04 35.5	Alafia 2	14925.1	4.173918
			14 33 56.0	194 32 57.9	Catfish Point (U.S.E.)	13524.6	4.131126
			28 12 34.2	208 11 18.8	Ballast Point 2	9319.7	3.969403
Ybor City water tank (tall iron), Ninth and Fourteenth Streets 1908	27 57 39.770	1224.2	334 41 01.3	154 41 51.3	Ball	6830.2	3.834435
	82 26 41.412	1132.0	339 34 34.2	159 36 03.6	Alafia 2	14981.7	4.175560
			8 14 28.0	188 13 28.7	Mangrove (U.S.E.)	24261.2	4.384913
			11 06 22.2	191 05 39.0	Catfish Point (U.S.E.)	13098.5	4.117220
			23 51 30.2	203 50 29.8	Ballast Point 2	8721.4	3.940585
Ybor City tobacco factory cupola 1908	27 56 51.110	1573.3	337 48 27.1	157 48 59.8	Ball	5050.8	3.703358
	82 26 04.372	119.5	17 17 58.3	197 16 57.9	Catfish Point (U.S.E.)	11893.0	4.075292
			35 01 42.1	215 00 24.4	Ballast Point 2	7910.8	3.898222
Port Tampa west base (U.S.E.) 1908	27 50 19.316	594.6	333 34 53.4	153 36 21.8	Mangrove (U.S.E.)	11671.1	4.067111
	82 31 57.992	1586.9	37 06 44.6	217 04 03.7	Ant 2	15667.5	4.195000
			86 34 22.2	266 32 45.9	Cedar Point (U.S.E.)	5652.3	3.752224
			133 25 40.6	313 25 16.3	Picnic Island	1951.3	3.290320
Port Tampa:							
Oil tank, top (large yellow, east) 1908	27 51 34.661	1066.9	62 18 08.1	242 16 41.8	Cedar Point (U.S.E.)	5717.0	3.757170
	82 32 19.196	525.2	190 49 47.9	10 50 01.2	Dave	4129.9	3.615942
			40 33 40.7	220 33 26.4	Picnic Island	1287.1	3.109610
Catholic Church spire 1908	27 51 51.379	1581.5	54 10 54.8	234 10 19.5	Picnic Island	2550.0	3.406538
	82 31 34.212	936.0	63 15 13.6	243 13 26.2	Cedar Point (U.S.E.)	7046.8	3.847992
			112 25 28.1	292 22 15.5	Dog	12192.7	4.086101
Electric power house stack 1908	27 51 54.033	1663.2	49 43 58.7	229 43 27.0	Picnic Island	2435.3	3.386545
	82 31 41.870	1145.4	32 42 23.9	212 39 35.4	Ant 2	18312.8	4.262754
			61 51 48.7	241 50 04.8	Cedar Point (U.S.E.)	6898.5	3.838757
Water tank (red iron, head of slip) 1908	27 51 43.511	1339.3	58 20 32.4	238 19 11.3	Cedar Point (U.S.E.)	5582.4	3.746820
	82 32 30.532	835.3	116 41 25.2	296 38 38.9	Dog	10891.1	4.037071
			196 00 50.7	16 01 09.3	Dave	3936.7	3.595136
Long phosphate elevator west gable 1908	27 51 43.129	1327.6	55 31 52.1	235 30 39.6	Cedar Point (U.S.E.)	5156.4	3.712347
	82 32 48.826	1335.8	117 58 40.2	297 56 02.5	Dog	10451.9	4.019194
			202 40 53.1	22 41 20.2	Dave	4113.9	3.614256
			1 12 51.0	181 12 50.5	Picnic Island	1238.8	3.093004
Long phosphate elevator east gable 1908	27 51 43.547	1340.4	56 02 44.5	236 01 30.3	Cedar Point (U.S.E.)	5248.0	3.719990
	82 32 45.099	1233.9	117 39 23.0	297 36 43.6	Dog	10536.0	4.022677
			201 25 31.9	21 25 57.3	Dave	4063.7	3.608923
			5 50 58.2	185 50 56.0	Picnic Island	1257.9	3.099662
East elevator, end of dock 1908	27 51 39.378	1212.1	119 59 30.6	299 57 02.1	Dog	10039.2	4.001698
	82 33 08.406	230.0	208 28 46.4	28 29 22.8	Dave	4449.8	3.648339
			335 35 54.4	155 36 03.1	Picnic Island	1233.2	3.091041
			52 58 01.9	232 56 58.5	Cedar Point (U.S.E.)	4654.1	3.667835
West elevator, end of dock 1908	27 51 40.084	1233.8	120 07 24.6	300 04 57.5	Dog	9956.0	3.998086
	82 33 11.459	313.5	209 33 10.2	29 33 48.0	Dave	4471.3	3.650436
			332 36 52.0	152 37 02.1	Picnic Island	1289.3	3.110339
			52 07 27.8	232 06 25.8	Cedar Point (U.S.E.)	4601.0	3.662850
Frazier's Beach, north house chimney [1] 1908	27 56 45.14	1389.5	66 22 23	246 19 31	Dog	10959	4.03979
	82 32 19.19	524.6	351 58 16	171 58 29	Dave	5555	3.74469
Rocky Point, house chimney 1908	27 57 43.018	1324.2	7 46 12.4	187 45 39.6	Cedar Point (U.S.E.)	14126.6	4.150037
	82 34 14.382	393.1	48 07 46.6	228 05 48.5	Dog	9253.5	3.966304
			331 39 58.8	151 41 06.0	Dave	8272.8	3.917650
Green Springs, chimney Mrs. Cohen's house [1] 1908	27 59 22.87	704.0	284 19 00	104 22 17	Rocky Point	11868	4.07437
	82 41 19.93	544.6	332 50 10	152 51 31	Dog	10398	4.01694
Green Springs, top of water tank [1] 1908	27 59 25.36	780.6	284 45 41	104 48 57	Rocky Point	11818	4.07253
	82 41 17.32	473.3	333 22 41	153 24 01	Dog	10434	4.01843

BOCA CEIGA BAY TO CLEARWATER HARBOR

Principal points							
Turn 1873	27 42 14.710	452.8	269 45 59.9	89 48 21.1	Pinelos	8324.2	3.920341
	82 43 33.168	908.7	16 44 27.7	196 43 29.3	Egmont Key L. H.	11980.1	4.078459

[1] No check on this position.

BOCA CEIGA BAY TO CLEARWATER HARBOR—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Principal points—Contd	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Shell Point	27 42 22.809	702.0	33 53 49.0	213 51 35.7	Egmont Key L. H.	14119.2	4.149810
1873	82 40 51.865	1420.9	86 46 54.9	266 45 39.9	Turn	4426.3	3.646040
Bird	27 40 07.022	216.1	41 03 27.1	221 01 36.0	Egmont Key L. H.	10000.0	4.000012
1873	82 41 39.486	1082.2	141 36 27.2	321 35 34.4	Turn	5015.1	3.700279
			197 20 09.1	17 20 31.2	Shell Point	4378.6	3.641331
			232 44 33.2	52 46 01.5	Pinelos	6545.2	3.815926
Point	27 43 08.782	270.3	313 31 42.5	133 32 07.8	Shell Point	2054.6	3.312720
1873	82 41 46.237	1266.7	358 06 21.8	178 06 25.0	Bird	5597.7	3.748013
			60 24 13.2	240 23 23.5	Turn	3369.2	3.527533
Oyster	27 43 24.022	739.4	278 18 32.1	98 19 26.5	Point	3243.2	3.510974
1873	82 43 43.386	1188.4	352 31 28.2	172 31 32.9	Turn	2151.8	3.332794
Sand	27 44 14.345	441.6	322 54 11.6	142 54 37.5	Point	2530.0	3.403123
1873	82 42 41.943	1148.8	20 51 46.4	200 51 22.5	Turn	3940.8	3.595579
			47 22 40.8	227 22 12.3	Oyster	2287.3	3.359324
Mound	27 44 50.626	1558.3	287 21 48.2	107 22 48.8	Sand	3740.4	3.572917
1873	82 44 52.284	1431.9	324 42 02.2	144 42 34.3	Oyster	3266.1	3.514030
Crab	27 45 10.413	320.5	301 51 01.0	121 51 48.2	Sand	3269.9	3.514531
1873	82 44 23.352	639.5	341 30 52.3	161 31 11.0	Oyster	3452.9	3.538188
			52 27 07.1	232 26 53.7	Mound	999.4	2.999726
Queen	27 45 57.987	1784.9	313 19 15.8	133 19 42.2	Crab	2134.2	3.329240
1873	82 45 20.050	549.0	339 51 33.5	159 51 46.5	Mound	2208.5	3.344088
Cedar	27 46 32.672	1005.7	344 41 00.8	164 41 12.6	Crab	2625.2	3.419167
1873	82 44 48.674	1332.7	1 48 09.2	181 48 07.7	Mound	3142.6	3.497292
			38 49 28.2	218 49 13.6	Queen	1370.4	3.136838
Sague	27 47 13.162	405.1	332 55 28.0	152 55 38.8	Cedar	1399.7	3.146035
1873	82 45 11.943	327.0	5 28 47.3	185 28 43.5	Queen	2324.6	3.366346
Snake	27 47 18.215	560.6	274 30 15.1	94 30 48.7	Sague	1978.6	3.296360
1873	82 46 23.993	656.8	298 14 16.4	118 15 00.8	Cedar	2962.3	3.471635
			324 39 42.7	144 40 12.5	Queen	3027.1	3.481030
Turtle Crawl	27 48 00.996	30.7	307 30 16.1	127 30 48.8	Sague	2418.1	3.383480
1873	82 46 22.014	602.6	2 21 21.2	182 21 20.3	Snake	1317.9	3.119895
Mast	27 47 51.592	1588.0	254 16 11.8	74 16 29.3	Turtle Crawl	1067.9	3.028513
1873	82 46 59.564	1630.5	291 52 08.0	111 52 58.2	Sague	3174.8	3.501713
			316 31 56.0	136 32 12.6	Snake	1415.5	3.150915
Double	27 48 33.692	1037.1	298 10 46.5	118 11 18.5	Turtle Crawl	2130.9	3.328557
1873	82 47 30.632	838.4	326 43 24.3	146 43 38.8	Mast	1550.0	3.190332
Pole	27 48 16.835	518.2	221 45 11.3	41 45 19.2	Double	695.5	2.842315
1873	82 47 47.554	1301.6	281 45 24.5	101 46 04.4	Turtle Crawl	2391.7	3.378703
			300 36 03.8	120 36 26.2	Mast	1526.2	3.183620
Stump	27 48 52.975	1630.6	313 45 51.2	133 46 01.8	Double	858.1	2.933546
1873	82 47 53.274	1458.1	351 59 19.9	171 59 22.6	Pole	1123.4	3.050534
Extra	27 48 39.146	1205.0	248 54 01.7	68 54 20.5	Stump	1182.6	3.072841
1873	82 48 33.585	919.3	275 33 39.8	95 34 09.2	Double	1731.3	3.238360
			298 35 25.7	118 35 47.2	Pole	1435.0	3.156841
Crow	27 49 32.203	991.3	330 20 29.3	150 20 41.0	Stump	1389.5	3.142861
1873	82 48 18.395	503.4	14 16 58.5	194 16 51.4	Extra	1685.2	3.226664
Pass	27 49 28.640	881.6	266 07 55.3	86 08 23.0	Crow	1627.4	3.211505
1873	82 49 17.726	485.2	295 24 02.1	115 24 41.4	Stump	2558.8	3.408040
			321 34 59.3	141 35 19.9	Extra	1944.4	3.288777
Faint	27 50 17.013	523.7	302 47 46.5	122 48 23.0	Crow	2546.1	3.405877
1873	82 49 36.600	1001.6	340 52 04.1	160 52 12.9	Pass	1576.0	3.197560
Indian	27 50 08.808	271.2	254 19 37.6	74 19 53.0	Faint	935.0	2.970820
1873	82 50 09.499	259.9	290 19 35.3	110 20 27.2	Crow	3242.5	3.510885
			311 06 24.2	131 06 48.4	Pass	1880.5	3.274264
Fisherman	27 50 29.555	909.8	296 37 49.2	116 38 02.4	Faint	861.2	2.935109
1873	82 50 04.734	129.5	11 32 28.6	191 32 26.4	Indian	651.8	2.814102
Cutter	27 50 23.928	736.5	248 23 40.6	68 23 48.0	Fisherman	470.4	2.672473
1873	82 50 20.717	566.9	279 59 46.6	100 00 07.2	Faint	1225.8	3.088431
			326 35 29.1	146 35 34.3	Indian	557.5	2.746260
Twice	27 50 41.950	1291.3	294 59 34.4	114 59 48.3	Fisherman	902.9	2.955656
1873	82 50 34.642	947.9	325 30 54.2	145 31 00.7	Cutter	673.0	2.828000
Creek	27 50 58.283	1794.0	332 45 54.6	152 46 02.3	Fisherman	994.5	2.997607
1873	82 50 21.367	584.9	359 02 14.6	179 02 14.9	Cutter	1057.6	3.024327
			35 50 59.0	215 50 52.8	Twice	620.2	2.792556
Cute	27 51 20.169	620.8	312 27 26.1	132 27 38.7	Creek	997.9	2.999097
1873	82 50 48.275	1320.8	342 24 22.7	162 24 29.1	Twice	1234.1	3.091359

BOCA CEIGA BAY TO CLEARWATER HARBOR—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Principal points—Contd	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Pines	27 51 48.824	1502.9	342 37 20.3	162 37 28.6	Creek	1630.1	3.212221
1873	82 50 39.161	1071.4	15 47 09.5	195 47 05.2	Cute	916.6	2.962198
Narrows	27 52 02.129	65.5	307 02 45.4	127 02 54.7	Pines	679.8	2.832367
1873	82 50 58.993	1613.9	347 12 31.5	167 12 36.5	Cute	1324.5	3.122046
Shortest	27 52 16.633	512.0	335 39 11.0	155 39 17.6	Pines	939.5	2.972915
1873	82 50 53.319	1458.6	19 10 20.8	199 10 18.1	Narrows	472.7	2.674544
Short	27 52 22.141	681.5	306 04 38.1	126 04 42.1	Shortest	287.9	2.459258
1873	82 51 01.825	49.9	352 49 51.2	172 49 52.5	Narrows	620.8	2.792979
Indian Rock	27 52 30.654	943.5	345 30 33.6	165 30 35.5	Shortest	445.8	2.649121
1873	82 50 57.396	1570.1	24 48 41.9	204 48 39.8	Short	288.7	2.460452
Polaris	27 52 39.328	1210.6	325 54 13.3	145 54 16.4	Indian Rock	322.4	2.508407
1873	82 51 04.003	109.5	353 34 23.9	173 34 24.9	Short	532.4	2.726228
Thompson	27 52 53.568	1648.9	30 33 09.7	210 33 02.6	Indian Rock	819.0	2.913293
1873	82 50 42.176	1153.6	53 43 00.5	233 42 50.3	Polaris	740.7	2.869625
Sands	27 53 37.285	1147.7	340 22 05.9	160 22 14.1	Thompson	1428.7	3.154945
1873	82 50 59.725	1633.5	3 45 11.7	183 45 09.7	Polaris	1787.8	3.252327
MeKays Point 2	27 54 12.930	398.0	25 32 15.6	205 31 55.6	Thompson	2707.3	3.432539
1873	82 49 59.507	1627.4	56 19 52.5	236 19 24.3	Sands	1978.9	3.296426
Sand Key south base	27 56 03.134	96.5	346 23 02.5	166 23 16.6	MeKays Point 2	3490.3	3.542865
1873	82 50 29.552	808.0	3 23 11.9	183 23 06.0	Thompson	5845.3	3.766809
			10 24 55.9	190 24 41.8	Sands	4564.6	3.659406
Prickly Point	27 55 27.787	855.3	21 26 02.4	201 25 46.9	McKays Point 2	2475.4	3.393641
1873	82 49 26.430	722.7	122 13 59.4	302 13 29.8	Sand Key south base	2040.2	3.309668
Sand Key north base	27 57 43.068	1325.7	349 20 08.2	169 20 21.7	Prickly Point	4237.4	3.627095
1873	82 49 55.109	1506.3	17 01 14.3	197 00 58.2	Sand Key south base	3217.03	3.507455
Clearwater Harbor astronomie station	27 56 36.588	1126.2	30 52 57.4	210 52 35.7	Prickly Point	2467 6	3.392275
	82 48 40.107	1096.4	71 00 55.4	251 00 04.1	Sand Key south base	3164.3	3.500282
1873			134 57 06.5	314 56 31.3	Sand Key north base	2896.7	3.461905
Clearwater Bluff	27 57 32.569	1002.5	19 44 47.4	199 44 36.8	Clearwater Harbor astronomie station	1830.8	3.262652
1861	82 48 17.480	477.8					
			52 40 57.9	232 39 56.0	Sand Key south base	4540.3	3.657081
			96 54 42.6	276 53 56.8	Sand Key north base	2688.0	3.429430
Tomlinson	27 41 11.089	341.3	17 47 22.5	197 46 30.8	Egmont Key L. H.	9991.9	3.999649
1908	82 43 47.684	1306.6	322 08 07.6	142 09 31.5	Mullet Key Shoal light	8075.6	3.907176
Maximo	27 42 23.772	731.7	359 01 35.2	179 01 37.7	Mullet Key Shoal light	8614.9	3.935249
1908	82 40 52.226	1430.8	33 47 47.7	213 45 34.6	Egmont Key L. H.	14138.4	4.150399
			65 03 20.7	245 01 59.2	Tomlinson	5302.5	3.724483
Oyster 2	27 43 25.120	773.2	291 44 21.4	111 45 41.8	Maximo	5095.8	3.707214
1908	82 43 44.997	1232.6	1 01 21.0	181 01 19.8	Tomlinson	4126.2	3.615551
South Point	27 44 39.423	1213.5	303 05 30.5	123 07 19.2	Maximo	7644.5	3.883348
1908	82 44 45.994	1259.7	323 50 53.7	143 51 22.0	Oyster 2	2832.4	3.452147
			346 00 30.9	166 00 58.0	Tomlinson	6608.6	3.820111
Bear Creek	27 45 10.120	311.5	311 44 09.5	131 45 46.9	Maximo	7689.6	3.885906
1908	82 44 21.672	593.5	342 43 57.7	162 44 14.7	Oyster 2	3384.5	3.529496
			352 47 08.6	172 47 24.4	Tomlinson	7416.2	3.870184
			35 11 02.7	215 10 51.4	South Point	1156.1	3.062983
Devils Elbow (U. S. E.)	27 45 39.183	1206.1	293 52 45.2	113 53 19.5	Bear Creek	2209.5	3.344292
1908	82 45 35.447	970.7	323 38 06.1	143 38 29.1	South Point	2284.2	3.358740
Between	27 46 33.312	1025.4	344 12 49.6	164 13 01.9	Bear Creek	2661.1	3.425055
1908	82 44 48.107	1317.2	359 03 15.7	179 03 16.7	South Point	3506.1	3.544821
			37 53 08.5	217 52 46.5	Devils Elbow (U.S.E.)	2111.0	3.324482
Johns Pass (U. S. E.)	27 47 11.462	352.8	292 20 25.4	112 21 14.0	Between	3088.5	3.489750
1908	82 46 32.444	888.2	331 12 40.0	151 13 06.6	Devils Elbow (U.S.E.)	3240.9	3.510667
Turtle	27 48 01.571	48.4	316 31 28.0	136 32 11.8	Between	3743.3	3.573259
1908	82 46 22.177	607.1	343 43 26.2	163 43 47.9	Devils Elbow (U.S.E.)	4565.7	3.659511
			10 19 41.2	190 19 36.4	Johns Pass (U. S. E.)	1567.8	3.195288
Gulf	27 48 27.516	847.0	281 42 26.9	101 43 32.5	Turtle	3932.7	3.594688
1908	82 48 42.856	1173.0	303 14 48.1	123 15 48.9	Johns Pass (U. S. E.)	4269.0	3.630330
Double 2	27 48 34.008	1046.8	298 52 30.5	118 53 01.3	Turtle	2067.3	3.315407
1908	82 47 28.311	774.9	328 57 12.2	148 57 38.2	Johns Pass (U. S. E.)	2965.6	3.472108
			84 24 39.8	264 24 05.0	Gulf	2050.2	3.311789
Wait (U. S. E.)	27 49 34.430	1059.8	298 12 41.1	118 13 40.2	Double	3933.2	3.594750
1908	82 49 34.941	956.3	325 18 33.4	145 18 57.7	Gulf	2504.9	3.398786
Oak	27 49 53.983	1661.6	319 42 10.2	139 42 45.8	Double	3227.4	3.508852
1908	82 48 44.571	1219.7	358 59 22.8	178 59 23.6	Gulf	2662.0	3.425203
			66 24 56.1	246 24 32.6	Wait (U. S. E.)	1504.1	3.177279

BOCA CEIGA BAY TO CLEARWATER HARBOR—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Principal points—Contd	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Rhodes	27 50 01.079	33.2	275 48 41.8	95 49 18.4	Oak	2155.3	3.333514
1908	82 50 02.927	80.1	316 57 50.7	136 58 03.8	Wait (U. S. E.)	1122.3	3.050090
Fisherman (U. S. E.)	27 50 23.358	719.0	294 01 14.0	114 01 48.6	Oak	2220.9	3.346524
1908	82 49 58.699	1606.2	336 38 59.6	156 39 10.7	Wait (U. S. E.)	1640.4	3.214953
			9 34 36.3	189 34 34.3	Rhodes	695.5	2.842276
Sweat	27 50 23.960	737.5	271 46 17.4	91 46 27.6	Fisherman (U. S. E.)	599.2	2.777553
1908	82 50 20.585	563.3	289 20 43.0	109 21 27.8	Oak	2784.7	3.444779
			325 32 46.4	145 32 54.6	Rhodes	854.1	2.931525
Kay	27 54 12.577	387.1	26 20 17.7	206 19 57.1	Thompson	2713.6	3.433553
1906	82 49 58.160	1590.6	165 50 44.6	345 50 29.9	Sand Key south base	3509.7	3.545271
Prickly	27 55 28.037	863.0	21 19 23.9	201 19 08.4	Kay	2493.5	3.396801
1906	82 49 25.006	683.7	23 56 20.8	203 55 44.7	Thompson	5202.1	3.716179
			121 28 40.6	301 28 10.4	Sand Key south base	2069.2	3.315798
Belleview	27 56 34.116	1050.2	29 28 53.0	209 28 33.3	Prickly	2336.5	3.368564
1906	82 48 42.951	1174.1	71 53 13.7	251 52 23.8	Sand Key south base	3066.4	3.486631
Supplementary points							
Plaza Hotel, west flagpole [1]	27 41 59 625	1835.2	262 20 40.2	82 22 14.2	Maximo	5588.8	3.747320
1908	82 44 14.402	394.6	333 53 31.0	153 53 43.4	Tomlinson	1663.7	3.221072
Veteran City pavilion, west gable	27 44 12.314	379.0	21 13 14.7	201 12 37.9	Tomlinson	5983.8	3.776975
	82 42 28.642	784.5	55 13 18.4	235 12 42.8	Oyster 2	2546.4	3.405932
1908			102 30 56.4	282 29 52.5	South Point	3853.3	3.585832
Veteran City machine shops, west gable	27 44 17.652	543.3	20 32 19.3	200 31 42.8	Tomlinson	6132.1	3.787610
	82 42 29.172	799.0	52 06 09.6	232 05 34.3	Oyster 2	2632.1	3.420308
1908			100 08 53.4	280 07 49.7	South Point	3806.8	3.580558
Veteran City, flagpole	27 44 37.131	1142.9	18 55 11.3	198 54 34.4	Tomlinson	6704.1	3.826342
1908	82 42 28.355	776.6	43 26 52.0	223 26 16.3	Oyster 2	3052.9	3.484705
			91 04 52.8	271 03 48.7	South Point	3770.3	3.576373
Veteran City, west electric car pole, end of pier	27 44 10.173	313.1	21 25 37.4	201 25 00.7	Tomlinson	5921.4	3.772425
	82 42 28.741	787.2	56 25 23.8	236 24 48.3	Oyster 2	2507.2	3.399185
1908			103 28 39.9	283 27 36.0	South Point	3865.5	3.587202
Crawl Point, peak of square roof [1]	27 48 10.303	317.2	318 38 26.8	138 39 11.5	Between	3977.2	3.599578
	82 46 24.093	659.5	7 11 39.7	187 11 35.8	Johns Pass (U. S. E.)	1825.6	3.261398
1908							
Lone Palmetto	27 48 30.063	925.3	180 31 58.3	00 31 58.8	Oak	2595.2	3.414170
1908	82 48 45.499	1245.4	282 35 47.0	102 36 53.8	Turtle	4018.6	3.604071
			303 35 44.7	123 36 46.7	Johns Pass (U. S. E.)	4371.5	3.640626
			317 50 52.4	137 50 53.7	Gulf	1105.7	2.024274
Rhodes house, south gable lookout pole	27 50 02.806	86.4	192 09 07.6	12 09 09.9	Fisherman (U. S. E.)	647.1	2.811004
	82 50 03.677	100.6	277 08 42.4	97 09 19.3	Oak	2181.7	3.338802
1908			317 59 59.6	138 00 13.0	Wait (U. S. E.)	1175.3	3.070146
			338 52 03.8	158 52 04.1	Rhodes	57.0	1.755545
Sweat's fish-camp house, south gable lookout pole.	27 50 21.286	655.2	263 46 35.6	83 46 45.6	Fisherman (U. S. E.)	588.7	2.769911
	82 50 20.087	549.6	287 49 04.8	107 49 49.4	Oak	2745.5	3.438628
1908			319 24 51.1	139 25 12.2	Wait (U. S. E.)	1899.1	3.278540
			322 56 48.6	142 56 56.6	Rhodes	779.3	2.891714
Belleview water tower	27 56 15.151	466.4	26 51 51.4	206 50 57.6	Thompson	6955.2	3.842312
1906	82 48 47.274	1292.4	35 25 42.0	215 25 24.3	Prickly	1779.7	3.250352
			82 28 15.5	262 27 27.6	Sand Key south base	2820.6	3.450339
			191 26 41.3	11 26 43.3	Belleview	595.6	2.774963
Belleview Hotel west gable	27 56 36.771	1131.9	25 47 47.0	205 46 50.2	Thompson	7630.5	3.882551
1906	82 48 40.779	1114.8	29 45 05.0	209 44 44.3	Prickly	2436.9	3.386835
			36 00 06.7	216 00 05.7	Belleview	101.0	2.004406
			70 48 35.6	250 47 44.7	Sand Key south base	3148.8	3.498147
Belleview longitude station	27 56 34.14	1050.9	0	180	Belleview	0.81	9.9085
1907	82 48 42.95	1174.1					
Clearwater latitude station	27 56 36.60	1126.6					
1873	82 48 40.34	1102.8					
Clearwater water tower, Col. Scott's estate [1]	27 57 35.22	1084.1	26 10 46	206 10 13	Prickly	4302.2	3.639707
	82 48 14.62	399.6	52 28 05	232 27 01	Sand Key south base	4651.9	3.667633
1906							

GAINESVILLE TO CLEARWATER HARBOR

Principal points							
Odd Fellow	29 38 58.769	1809.4	210 42 56.2	30 43 07.5	Gainesville	1198.6	3.0786873
1897	82 18 45.817	1232.4					
Gainesville courthouse spire	29 39 04.711	145.0	244 18 51.3	64 19 23.7	Gainesville	1955.7	3.291300
	82 19 28.586	768.8	279 02 00.4	99 02 21.6	Odd Fellow	1164.8	3.066235
1897							

[1] No check on this position.

GAINESVILLE TO CLEARWATER HARBOR—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Principal points—Contd	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Colclough Hill 1898	29 37 29.936 82 19 46.314	921.7 1246.0	189 16 47.4 210 44 49.6	9 16 56.2 30 45 19.5	Gainesville courthouse spire Odd Fellow	2956.8 3182.6	3.470819 3.502786
Murphy 1898	29 38 18.327 82 20 41.001	564.3 1102.9	233 44 42.4 315 21 37.2	53 45 18.2 135 22 04.2	Gainesville courthouse spire Colclough Hill	2415.2 2093.8	3.382958 3.320938
Day 1898	29 37 23.865 82 22 27.051	734.8 727.7	239 32 47.2 267 30 49.7	59 33 39.6 87 32 09.1	Murphy Colclough Hill	3309.2 4328.3	3.519717 3.636316
Sutherland 1898	29 34 54.871 82 27 11.047	1689.4 297.3	239 00 14.4	59 02 34.7	Day	8913.1	3.9500275
Dutton 1898	29 29 33.282 82 34 33.795	1024.7 910.4	230 15 29.0	50 19 07.3	Sutherland	15497.0	4.1902464
Bronson 1898	29 26 53.858 82 38 13.360	1658.2 360.0	230 18 06.4	50 19 54.4	Dutton	7687.0	3.8857568
Turn 1898	29 25 19.426 82 40 23.369	598.1 629.9	230 18 29.2	50 19 33.1	Bronson	4553.2	3.6583195
Waccasassa 1898	29 20 42.050 82 44 02.906	1294.7 78.4	214 42 57.0	34 44 44.7	Turn	10391.3	4.0166683
Rosewood 1898	29 13 45.877 82 56 33.189	1412.5 896.3	237 37 39.4	57 43 46.4	Waccasassa	23964.5	4.3795676
Oyster Cove 1898	29 10 46.322 83 01 16.118	1426.2 435.5	234 06 10.3	54 08 28.4	Rosewood	9432.6	3.9746298
Cedar Keys L. H. 1874	29 05 46.455 83 03 55.612	1430.3 1503.8	205 01 16.3	25 02 33.9	Oyster Cove	10189.1	4.008136
Black Point 2 1874	29 10 50.527 83 03 47.139	1555.7 1273.6	271 48 25.2 1 24 07.4	91 49 38.8 181 24 03.3	Oyster Cove Cedar Keys L. H.	4082.6 9364.3	3.610938 3.971477
North Key 1874	29 08 02.383 83 05 09.368	73.4 253.2	203 13 39.6 231 18 03.9 334 31 00.2	23 14 19.7 51 19 57.7 154 31 36.2	Black Point 2 Oyster Cove Cedar Keys L. H.	5633.5 8075.4 4635.7	3.750782 3.907164 3.666111
Pelican Shoal 2 1874	29 09 58.281 83 06 14.944	1794.3 403.8	248 03 11.2 333 34 52.6 334 04 46.6	68 04 23.2 153 35 24.5 154 05 54.4	Black Point 2 North Key Cedar Keys L. H.	4305.7 3984.1 8619.5	3.634040 3.600331 3.935481
Lime Point 2 1874	29 08 46.960 83 03 20.630	1445.8 557.6	9 39 38.8 64 58 42.5 115 00 06.5 169 20 14.0	189 39 21.8 244 57 49.4 294 58 41.6 349 20 01.0	Cedar Keys L. H. North Key Pelican Shoal 2 Black Point 2	5637.1 3243.8 5197.6 3871.2	3.751057 3.511059 3.715804 3.587843
Snake Key 2 1874	29 05 55.767 83 01 56.380	1716.9 1524.5	84 55 35.7 126 46 34.7	264 54 37.7 306 45 00.8	Cedar Keys L. H. North Key	3236.9 6513.1	3.510133 3.813785
South Reef 1874	29 07 19.458 82 58 45.219	599.0 1222.5	63 30 59.3 71 10 58.3	243 29 26.3 251 08 27.3	Snake Key 2 Cedar Keys L. H.	5775.3 8867.5	3.761571 3.947803
Cottrell 1874	29 07 27.149 83 01 53.854	835.8 1455.9	1 23 25.9 46 43 44.1 101 36 41.0 123 24 57.4 136 20 07.0 272 38 44.0	181 23 24.9 226 42 44.9 281 35 05.8 303 22 50.3 316 19 24.9 92 40 16.0	Snake Key 2 Cedar Keys L. H. North Key Pelican Shoal 2 Lime Point 2 South Reef	2814.2 4522.0 5395.5 8452.9 3397.0 5105.2	3.449354 3.655330 3.732033 3.927004 3.531098 3.708014
North Reef 1874	29 09 19.703 83 00 03.415	606.6 92.3	330 16 13.1 25 56 44.4 40 45 06.3 43 43 50.7 96 46 17.0	150 16 51.1 205 55 49.4 220 44 12.4 223 41 57.7 276 43 16.0	South Reef Snake Key 2 Cottrell Cedar Keys L. H. Pelican Shoal 2	4262.9 6981.9 4573.8 9083.3 10110.6	3.629708 3.843974 3.660275 3.958245 4.004775
South Point 2 1874	29 07 36.780 83 03 12.698	1132.4 343.3	277 54 50.9 326 25 48.2 18 51 48.8 104 02 25.5 174 20 01.1	97 55 29.2 146 26 25.3 198 51 27.9 284 01 28.7 354 19 57.3	Cottrell Snake Key 2 Cedar Keys L. H. North Key Lime Point 2	2152.0 3732.2 3589.3 3250.9 2171.3	3.332841 3.571961 3.555009 3.512007 3.336710
Way Key south base 1851	29 07 55.567 83 02 18.544	1710.8 501.3	280 25 01.5 322 39 29.6 68 26 41.7	100 28 08.6 142 39 41.6 248 26 15.3	Oyster Reef south 2 Cottrell South Point 2	5832.2 1100.4 1574.1	3.765834 3.041563 3.197020
Way Key north base 1851	29 08 12.678 83 01 43.410	390.3 1173.5	11 23 18.4 60 59 10.1	191 23 13.3 240 58 53.0	Cottrell Way Key south base	1429.8 1086.05	3.155288 3.035848
Harbor Key 2 1874	29 07 04.464 83 02 27.140	137.4 733.8	128 56 03.3 188 24 05.4 232 10 57.6	308 55 41.1 8 24 09.6 52 11 13.7	South Point 2 Way Key south base Cottrell	1583.3 1590.4 1139.1	3.199561 3.201501 3.056571
Way Key south base 2 1877	29 07 55.566 83 02 18.543	1710.8 501.2	8 24 15.6 68 26 47.8	188 24 11.4 248 26 21.4	Harbor Key 2 South Point 2	1590.4 1574.1	3.201495 3.197028
Daughtry Island northeast base 1877	29 08 09.550 83 02 52.547	294.0 1420.5	295 05 40.9 341 04 40.4 28 21 59.3	115 05 57.5 161 04 52.8 208 21 49.5	Way Key south base 2 Harbor Key 2 South Point 2	1015.0 2118.3 1146.6	3.006485 3.325979 3.059393

GAINESVILLE TO CLEARWATER HARBOR—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Principal points—Contd	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Daughtry Island southwest base	29 07 54.277	1671.1	226 36 04.2	46 36 13.1	Daughtry Island northeast base	684.38	2.835299
1877	83 03 10.943	295.8					
			268 23 31.1	88 23 56.6	Way Key south base 2	1417.1	3.151393
			322 19 23.2	142 19 44.5	Harbor Key 2	1937.6	3.287260
			5 01 53.7	185 01 52.8	South Point 2	540.8	2.733009
Oyster Reef south 2	29 07 21.197	652.6	235 18 19.7	55 20 21.9	Mainland east	8248.0	3.916351
1856	82 58 46.362	1253.4	280 31 20.0	100 33 35.4	Waccasassa Reef	7652.8	3.883823
Mainland	29 10 07.237	222.8	275 03 23.3	95 04 48.5	Mainland east	4744.2	3.676165
1856	82 57 30.290	818.5	319 58 41.5	140 00 19.9	Waccasassa Reef	8501.7	3.929507
			21 54 59.7	201 54 22.6	Oyster Reef south 2	5509.9	3.741147
Oyster Reef B 3	29 09 21.758	669.9	251 19 24.9	71 20 39.6	Mainland	4374.9	3.640968
1856	83 00 03.660	98.9	283 40 00.4	83 42 40.3	Mainland east	8924.9	3.950603
			330 37 07.0	150 37 44.6	Oyster Reef south 2	4259.4	3.629349
Oyster Reef C	29 08 30.597	942.0	219 00 35.2	39 01 18.7	Mainland	3829.4	3.583125
1856	82 58 59.488	1608.0	350 34 12.8	170 34 19.2	Oyster Reef south 2	2165.9	3.335633
			132 14 52.3	312 14 21.1	Oyster Reef B 3	2342.9	3.369759
Depot Key	29 07 27.095	834.2	143 48 52.9	323 47 17.5	Way Key south base	1086.3	3.035934
1851	83 01 54.795	1481.3	192 24 17.4	12 22 59.1	Way Key north base	1436.7	3.157356
			220 23 20.1	40 24 14.2	Oyster Reef B 3	4635.3	3.666077
			247 34 11.2	67 35 36.4	Oyster Reef C	5126.4	3.709809
			272 01 43.5	92 03 15.2	Oyster Reef south 2	5097.5	3.707354
Waccasassa Reef	29 06 35.723	1099.8	84 35 08.6	264 30 22.8	Cedar Keys L. H.	15959.0	4.203006
1856	82 54 08.084	218.6	97 11 50.7	277 08 04.1	Cottrell	12691.9	4.103526
			100 12 21.6	280 10 06.7	South Reef	7612.8	3.881545
			117 44 59.3	297 42 06.3	North Reef	10851.3	4.035481
Mainland east	29 09 53.624	1651.0	353 05 03.2	173 05 16.5	Waccasassa Reef	6137.4	3.787987
1856	82 54 35.416	957.1	54 54 41.7	234 52 40.1	South Reef	8253.3	3.916630
			69 11 46.1	249 08 12.4	Cottrell	12679.6	4.103107
			83 18 10.3	263 15 30.5	North Reef	8925.5	3.950632
Grassy Point	29 09 14.134	435.2	54 09 22.8	234 07 21.3	Waccasassa Reef	8325.2	3.920395
1856	82 49 58.491	1580.8	99 14 45.1	279 12 30.2	Mainland east	7582.1	3.879789
Middle Marsh	29 04 42.654	1313.2	108 53 13.8	288 50 10.6	Waccasassa Reef	10767.7	4.032123
1857	82 47 51.286	1387.1	157 38 32.2	337 37 30.3	Grassy Point	9038.0	3.956072
Basin Rock	29 02 40.067	1233.6	126 19 50.7	306 16 53.3	Waccasassa Reef	12253.2	4.088249
1857	82 48 02.996	81.0	184 47 50.0	4 47 55.7	Middle Marsh	3787.3	3.578334
Crane Island	29 01 13.170	405.5	125 05 37.6	305 04 29.3	Basin Rock	4654.4	3.667868
1857	82 45 42.236	1143.0	151 34 48.2	331 33 45.6	Middle Marsh	7333.7	3.865324
Sand Shoal 1	28 59 25.220	776.4	167 42 33.2	347 42 09.8	Basin Rock	6139.5	3.788134
1857	82 47 14.690	397.7	174 13 00.9	354 12 43.1	Middle Marsh	9822.8	3.992236
			216 58 16.4	36 59 01.2	Crane Island	4160.2	3.619109
Marsh Island	28 59 02.111	65.0	101 27 34.4	281 26 31.5	Sand Shoal 1	3583.7	3.554333
1857	82 45 04.940	133.7	165 57 23.1	345 57 05.0	Crane Island	4159.2	3.619015
Half Moon Bar	28 56 53.840	1657.5	146 36 25.9	326 35 30.9	Sand Shoal 1	5582.4	3.746824
1857	82 45 21.188	573.8	186 21 20.4	6 21 28.3	Marsh Island	3973.4	3.599166
Little Island	28 57 01.188	36.6	86 30 48.3	266 29 42.1	Half Moon Bar	3710.1	3.569383
1857	82 43 04.439	120.2	123 13 11.4	303 11 10.2	Sand Shoal 1	8097.5	3.908350
			138 46 37.4	318 45 39.1	Marsh Island	4950.1	3.694616
Crystal Reef	28 54 28.889	889.4	169 53 22.1	349 53 07.9	Half Moon Bar	4532.9	3.656379
1857	82 44 51.803	1403.3	211 48 01.3	31 48 53.2	Little Island	5517.3	3.741727
Shell Point	28 55 07.452	229.4	75 44 17.3	255 42 54.0	Crystal Reef	4815.3	3.682624
1857	82 41 59.534	1612.7	120 57 51.8	300 56 14.3	Half Moon Bar	6368.4	3.804032
			153 20 47.0	333 20 15.6	Little Island	3918.0	3.593064
Bear Island	28 52 16.533	509.0	123 38 32.0	303 36 42.8	Crystal Reef	7358.0	3.866757
1857	82 41 05.690	154.2	164 30 27.4	344 30 01.4	Shell Point	5460.4	3.737226
Bird Key	28 48 44.452	1368.5	182 59 53.8	3 00 03.7	Crystal Reef	10618.4	4.026058
1857	82 45 12.305	333.6	225 39 37.5	45 41 36.4	Bear Island	9344.6	3.970560
Ragged Island	28 48 53.087	1634.3	87 04 01.2	267 02 29.4	Bird Key	5173.0	3.713741
1858	82 42 01.780	48.3	155 59 11.6	335 57 49.5	Crystal Reef	11318.5	4.053790
Homosassa Point	28 46 24.734	761.4	163 33 11.7	343 32 49.2	Bird Key	4484.9	3.651751
1858	82 44 25.477	691.1	220 27 51.2	40 29 00.4	Ragged Island	6003.9	3.778430
Tuckers Island	28 46 19.994	615.5	91 59 57.0	271 58 42.4	Homosassa Point	4205.1	3.623776
1858	82 41 50.549	1371.2	176 18 10.2	356 18 04.8	Ragged Island	4722.9	3.674210
Chassahowitzka Point	28 43 02.451	75.4	162 37 31.6	342 36 57.1	Homosassa Point	6525.3	3.814598
1858	82 43 13.644	370.3	200 20 09.3	20 20 49.3	Tuckers Island	6485.9	3.811972
Rocky Ridge	28 43 17.744	546.3	83 45 32.9	263 44 16.8	Chassahowitzka Point	4323.5	3.635837
1859	82 40 35.285	957.6	132 40 54.2	312 39 03.5	Homosassa Point	8493.9	3.929108
			160 00 17.9	339 59 41.7	Tuckers Island	5970.7	3.776026
Little Rock	28 39 41.673	1282.9	165 40 26.2	345 39 58.3	Chassahowitzka Point	6379.5	3.804786
1859	82 42 15.482	420.4	202 14 01.2	22 14 49.3	Rocky Ridge	7186.4	3.856514

GAINESVILLE TO CLEARWATER HARBOR—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Principal points—Contd	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Herrings Bluff	28 39 42.573	1310.6	89 40 25.6	269 39 02.6	Little Rock	4700.3	3.672126
1859	82 39 22.390	608.0	163 22 19.2	343 21 44.2	Rocky Ridge	6913.4	3.839689
Raccoon Point	28 36 24.881	765.9	145 51 18.9	325 50 06.4	Little Rock	7320.9	3.864565
1859	82 39 44.159	1199.7	185 32 51.4	5 33 01.8	Herrings Bluff	6114.6	3.786367
New Reef	28 36 43.272	1332.1	191 20 49.8	11 21 09.3	Little Rock	5601.6	3.748313
1859	82 42 56.070	1523.2	276 11 04.1	96 12 36.0	Raccoon Point	5244.5	3.719702
Beacon Rock	28 32 53.207	1638.0	173 08 25.9	353 08 10.9	New Reef	7133.6	3.853306
1859	82 42 24.709	671.7	213 47 40.1	33 48 56.9	Raccoon Point	7842.1	3.894434
Bayport	28 31 44.800	1379.1	114 05 31.9	294 04 09.1	Beacon Rock	5161.2	3.712747
1859	82 39 31.387	853.4	177 41 42.6	357 41 36.5	Raccoon Point	8629.2	3.935968
West Rock	28 29 43.214	1330.3	199 46 00.5	19 46 37.4	Beacon Rock	6215.2	3.793457
1859	82 43 42.033	1143.1	241 12 35.0	61 14 34.6	Bayport	7775.9	3.890752
Long Key	28 26 29.722	915.0	139 41 51.2	319 40 22.6	West Rock	7811.8	3.892750
1859	82 40 36.249	986.4	165 58 39.5	345 57 47.7	Beacon Rock	12168.3	4.085229
			190 18 16.4	10 18 47.3	Bayport	9858.6	3.993815
Coral Rock	28 23 54.612	1681.2	193 22 01.7	13 22 46.4	West Rock	11030.5	4.042595
1860	82 45 15.798	430.0	237 52 11.1	57 54 24.1	Long Key	8982.6	3.953401
Southeast Point	28 22 15.101	464.9	125 20 53.9	305 19 38.5	Coral Rock	5296.2	3.723967
1860	82 42 37.108	1010.4	202 45 37.2	22 46 34.7	Long Key	8500.6	3.929450
Pelican Point	28 19 24.804	763.5	165 08 05.9	345 07 27.4	Coral Rock	8593.5	3.934169
1860	82 43 54.812	1493.1	201 58 41.9	21 59 18.8	Southeast Point	5653.4	3.752311
South St. Martin	28 19 54.725	1684.6	245 58 19.5	66 01 08.7	Southeast Point	10622.5	4.026227
1860	82 48 33.418	910.3	276 54 05.0	96 56 17.2	Pelican Point	7645.0	3.883376
Deer Island	28 15 15.526	477.9	150 03 06.1	330 01 39.9	South St. Martin	9920.3	3.996526
1860	82 45 31.606	861.6	198 57 46.3	18 58 32.2	Pelican Point	8114.3	3.909251
North Anclote	28 12 33.971	1045.7	192 56 54.5	12 57 48.7	South St. Martin	13922.3	4.143710
1860	82 50 27.946	762.1	238 22 02.7	58 24 22.9	Deer Island	9487.5	3.977150
Tiger Point	28 11 08.379	257.9	122 37 51.5	302 36 40.2	North Anclote	4887.6	3.689092
1861	82 47 57.008	1555.0	207 30 58.2	27 32 07.0	Deer Island	8579.0	3.933439
South Anclote	28 10 00.070	2.2	181 50 35.3	1 50 37.9	North Anclote	4740.0	3.675778
1860	82 50 33.536	914.8	243 46 16.7	63 47 30.6	Tiger Point	4759.6	3.677567
Piney Point	28 09 41.239	1269.5	97 40 45.9	277 39 31.4	South Anclote	4343.8	3.637865
1860	82 47 55.742	1520.8	142 01 41.3	322 00 29.4	North Anclote	6746.0	3.829045
Hog Island north	28 04 59.122	1819.9	170 33 19.1	350 32 52.5	South Anclote	9391.4	3.972728
1861	82 49 37.047	1011.5	197 39 12.6	17 40 00.4	Piney Point	9113.8	3.959699
Indian Bluff	28 06 15.976	491.7	61 35 13.4	241 33 58.0	Hog Island north	4970.2	3.696376
1861	82 46 56.932	1554.0	139 25 18.1	319 23 36.0	South Anclote	9084.3	3.958290
			165 45 07.2	345 44 39.5	Piney Point	6519.2	3.814192
Bayonet Point	28 02 58.128	1789.3	134 43 22.5	314 42 17.7	Hog Island north	5293.7	3.723763
1861	82 47 19.282	526.6	185 43 14.2	5 43 24.7	Indian Bluff	6120.7	3.786804
St. Joseph Flat	28 01 48.673	1498.2	167 15 53.0	347 15 30.2	Hog Island north	6010.4	3.778904
1861	82 48 48.517	1325.2	228 44 14.7	48 44 56.6	Bayonet Point	3242.1	3.510829
Orange Grove	28 01 26.993	830.9	107 04 12.6	287 03 35.2	St. Joseph Flat	2274.2	3.356827
1861	82 47 28.929	790.3	151 49 29.2	331 48 28.9	Hog Island north	7408.2	3.869711
			185 21 54.8	5 21 59.3	Bayonet Point	2817.7	3.449894
Elbow Key	28 00 21.223	653.3	170 08 52.7	350 08 44.7	St. Joseph Flat	2732.2	3.436517
1861	82 48 31.402	858.0	220 07 39.5	40 08 08.8	Orange Grove	2648.0	3.422914
Long Reach	27 59 09.415	289.8	155 21 33.1	335 21 15.7	Elbow Key	2431.9	3.385943
1861	82 47 54.292	1483.7	189 17 29.1	9 17 41.0	Orange Grove	4291.3	3.632585
			12 00 12.0	192 00 01.1	Clearwater Bluff	3047.8	3.483982
Blind Key	27 58 49.500	1523.7	194 04 14.4	14 04 26.6	Elbow Key	2910.8	3.464010
1861	82 48 57.303	1566.0	250 23 58.1	70 24 27.7	Long Reach	1827.8	3.261933
			335 18 50.0	155 19 08.7	Clearwater Bluff	2606.2	3.416016
			37 41 33.7	217 41 06.6	Sand Key north base	2584.1	3.412314
Cormorant Rock	29 06 11.124	342.5	327 43 22.8	147 44 36.5	Basin Rock	7684.5	3.885616
1857	82 50 34.672	937.5	97 29 28.0	277 27 44.2	Waccasassa Reef	5819.9	3.764919
Turtle Creek	29 06 59.668	1837.0	73 30 21.0	253 28 50.2	Cormorant Rock	5260.0	3.720983
1857	82 47 28.152	761.1	86 07 36.7	266 04 22.1	Waccasassa Reef	10838.2	4.034958
Harbor Key 3	29 07 04.353	134.0	338 23 51.7	158 24 06.7	Snake Key 2	2271.0	3.356221
1910	83 02 27.300	738.1	44 52 54.4	224 52 11.4	Cedar Keys L. H.	3384.3	3.529469
			112 11 42.9	292 10 24.0	North Key	4731.6	3.675008
South Point 3	29 07 35.900	1105.3	309 50 40.9	129 51 01.8	Harbor Key 3	1515.8	3.180639
1910	83 03 10.346	279.4	327 01 22.3	147 01 58.3	Snake Key 2	3674.6	3.565214
			19 57 55.9	199 57 33.9	Cedar Keys L. H.	3584.9	3.554474
			104 13 41.2	284 12 43.3	North Key	3319.2	3.521033

GAINESVILLE TO CLEARWATER HARBOR—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Principal points—Contd	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Key North	29 07 12.932	398.1	258 29 51.8	78 30 54.4	South Point 3	3548.9	3.550088
1910	83 05 18.984	513.3	293 25 51.4	113 27 30.0	Snake Key 2	5971.0	3.776048
			319 44 20.2	139 45 00.8	Cedar Keys L. H.	3488.5	3.542642
Water	29 02 12.010	369.8	187 51 54.0	7 52 12.3	Cormorant Rock	7431.5	3.871079
1901	82 51 12.280	332.3	260 24 48.7	80 26 20.6	Basin Rock	5193.7	3.715474
Sand	28 59 24.546	755.7	127 55 21.1	307 53 22.4	Water	8391.8	3.923853
1901	82 47 07.623	206.4	155 54 17.0	335 52 36.4	Cormorant Rock	13713.5	4.137147
			166 01 26.9	346 01 00.1	Basin Rock	6203.1	3.792612
Hunt	28 59 35.931	1106.2	81 41 53.1	261 41 10.1	Sand	2425.8	3.384862
1901	82 45 38.946	1054.2	118 03 53.5	298 01 11.8	Water	10220.9	4.009491
			145 29 42.2	325 28 32.2	Basin Rock	6879.9	3.837582
Half Moon	28 56 58.038	1786.8	146 46 16.0	326 45 23.1	Sand	5392.6	3.731795
1901	82 45 18.457	499.8	157 05 05.3	337 03 45.6	Basin Rock	11433.0	4.058159
			173 29 27.7	353 29 17.8	Hunt	4892.5	3.689531
Little Pass	27 58 02.683	82.5	333 43 59.1	153 44 22.2	Belleview	3040.1	3.482886
1910	82 49 32.165	879.2	357 38 43.0	177 38 46.4	Prickly	4764.3	3.677997
			23 05 30.4	203 05 03.5	Sand Key south base	4000.3	3.602097
Stevens	27 59 08.020	246.9	15 32 22.3	195 31 59.7	Belleview	4917.1	3.691710
1910	82 47 54.764	1496.3	52 56 00.3	232 55 14.6	Little Pass	3336.2	3.523258
Big Pass	28 00 18.294	563.1	325 13 34.8	145 14 00.6	Stevens	2633.4	3.420511
1910	82 48 49.725	1358.5	358 27 46.0	178 27 49.2	Belleview	6903.1	3.839044
			15 31 46.2	195 31 26.3	Little Pass	4332.5	3.636736
Curlew	28 02 58.295	1794.4	8 04 30.3	188 04 13.0	Stevens	7159.3	3.854870
1910	82 47 17.963	490.5	26 58 45.5	206 58 02.4	Big Pass	5526.3	3.742436
Mud	28 01 53.673	1652.0	231 32 36.0	51 33 19.1	Curlew	3198.9	3.505001
1910	82 48 49.685	1357.1	343 35 57.0	163 36 22.8	Stevens	5315.3	3.725529
			0 01 17.1	180 01 17.1	Big Pass	2936.0	3.467749
Seaside	28 04 55.864	1719.6	6 57 48.0	186 57 40.4	Curlew	3645.9	3.561809
1910	82 47 01.778	48.5	27 43 34.6	207 42 43.9	Mud	6335.3	3.801768
North Hog Island	28 04 58.594	1803.6	271 07 36.2	91 08 49.1	Seaside	4233.9	3.626740
1910	82 49 36.822	1005.4	314 18 46.1	134 19 51.4	Curlew	5300.0	3.724276
			347 15 15.3	167 15 37.5	Mud	5836.0	3.766115
Palmetto Key	28 10 05.605	172.5	348 05 47.3	168 06 22.0	Seaside	9744.0	3.988736
1910	82 48 15.392	419.9	13 14 17.8	193 13 39.4	North Hog Island	9708.4	3.987147
Anclote L. H.	28 10 00.478	14.7	267 43 14.6	87 44 23.4	Palmetto Key	3985.0	3.600428
1910	82 50 41.350	1128.0	327 24 13.8	147 25 57.3	Seaside	11128.1	4.046420
			349 15 53.6	169 16 24.0	North Hog Island	9458.2	3.975808
North Anclote 2	28 12 38.941	1198.6	322 33 20.5	142 34 23.1	Palmetto Key	5944.5	3.774112
1910	82 50 27.872	760.2	4 18 38.3	184 18 32.0	Anclote L. H.	4891.8	3.689466
Bailey's Bluff	28 12 21.358	657.4	26 55 12.3	206 54 35.6	Palmetto Key	4686.5	3.670849
1910	82 46 57.615	1571.2	54 36 57.9	234 35 12.2	Anclote L. H.	7486.6	3.874283
			95 24 23.0	275 22 43.6	North Anclote 2	5759.3	3.760371
Supplementary points							
Turn beacon	29 06 11.099	341.7	187 37 47.7	7 37 54.0	South Point 3	2634.1	3.420632
1910	83 03 23.283	629.6	222 42 38.1	42 43 05.3	Harbor Key 3	2231.4	3.348582
			281 21 06.2	101 21 48.5	Snake Key 2	2396.8	3.379638
Dredged day beacon	29 07 36.260	1116.3	349 39 59.9	169 40 40.1	Snake Key 2	3144.9	3.497600
1910	83 02 17.241	466.1	15 28 27.3	195 28 22.4	Harbor Key 3	1019.3	3.008286
			89 33 41.3	269 33 15.5	South Point 3	1435.7	3.157054
Depot Key azimuth station	29 07 27.402	843.7	280 56 30.2	100 56 30.9	Cottrell	41.1	1.613766
1874	83 01 55.346	1493.2	46 18 14.8	226 17 16.3	Cedar Keys L. H.	4498.1	3.653028
Outer beacon	28 58 30.294	932.6	201 36 49.6	21 38 44.2	Key North	17309.1	4.238275
1910	83 09 14.814	401.1	212 43 39.1	32 46 14.0	Cedar Keys L. H.	15965.7	4.203189
			220 49 45.8	40 53 18.6	Snake Key 2	18133.3	4.258478
Taylor [1]	28 57 56.69	1745.3	165 13 42	345 13 29	Sand	2797.2	3.446717
1901	82 46 41.28	1117.7	208 54 29	28 54 59	Hunt	3490.2	3.542853
South base (U.S.E.)	28 59 34.411	1059.4	82 45 35.5	262 44 52.7	Sand	2407.9	3.381644
1901	82 45 39.378	1065.9	194 00 55.1	14 00 55.3	Hunt	48.2	1.683362
North base (U. S. E.)	29 00 19.827	610.4	335 14 36.0	155 14 47.2	Hunt	1488.1	3.172646
1901	82 46 01.968	53.0	336 22 38.7	156 22 49.7	South base (U. S. E.)	1526.1	3.183570
			46 14 31.9	226 14 00.1	Sand	2460.6	3.391040
Windmill	28 59 40.946	1260.6	354 42 38.0	174 42 46.3	Half Moon	5036.8	3.702152
1901	82 45 35.604	963.7	78 32 51.0	258 32 06.4	Sand	2541.5	3.405089
			144 07 53.3	324 03 41.8	Basin Rock	6805.8	3.832882
Inglis flagstaff	28 59 39.752	1223.8	354 18 08.3	174 18 17.2	Half Moon	5003.3	3.699256
1901	82 45 36.801	996.1	79 13 29.4	259 12 45.4	Sand	2502.6	3.398398
			144 31 58.2	324 30 47.4	Basin Rock	6816.8	3.833582
Cage stake	28 59 07.648	235.5	170 57 27.3	350 57 08.7	Basin Rock	6822.0	3.820088
1901	82 47 24.529	664.0	221 20 13.5	41 20 21.7	Sand	692.9	2.840652
			253 02 56.4	73 03 47.6	Hunt	2887.8	3.475347

[1] No check on this position.

GAINESVILLE TO CLEARWATER HARBOR—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Supplementary points—Con	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Barrel stake	28 59 08.391	258.3	170 22 41.1	350 22 21.3	Basin Rock	6609.8	3.820188
1901	82 47 22.161	600.1	218 21 14.4	38 21 21.4	Sand	634.2	2.802238
			253 06 43.9	73 07 33.9	Hunt	2919.8	3.465352
Withlacoochee River light	28 58 53.810	1656.6	254 14 03.7	74 15 26.0	Hunt	4776.0	3.679068
1910	82 48 28.750	778.3	304 39 40.5	124 41 12.7	Half Moon	6265.0	3.796922
			185 42 50.4	5 42 55.7	Basin Rock	7000.6	3.845135
Alfred [1]	28 56 38.27	1178.2	206 04 04	26 05 41	Basin Rock	12401.2	4.093465
1901	82 51 24.42	661.3	233 37 14	53 39 18	Sand	8634.0	3.936211
New Alfred [1]	28 56 27.75	854.3	205 48 00	25 49 39	Basin Rock	12732.8	4.104922
1901	82 51 27.82	753.4	232 17 40	52 19 46	Sand	8902.7	3.949521
Price [1]	28 55 37.18	1144.6	214 45 30	34 48 11	Basin Rock	15850.9	4.200055
1901	82 53 37.01	1002.4	236 23 42	56 26 50	Sand	12655.6	4.102283
Pry [1]	28 55 34.98	1076.9	214 24 22	34 27 03	Basin Rock	15866.2	4.200473
1901	82 53 34.37	931.0	235 57 32	56 00 39	Sand	12633.9	4.101538
New Shoal [1]	28 56 33.33	1026.1	222 17 00	42 20 04	Basin Rock	15267.1	4.183757
1901	82 54 22.65	613.4	245 51 43	65 55 13	Sand	12904.3	4.110734
Shoal [1]	28 56 36.80	1132.9	223 39 52	43 43 03	Basin Rock	15466.7	4.189398
1901	82 54 37.70	1021.0	247 00 12	67 03 50	Sand	13235.1	4.121726
Slatts [1]	28 57 28.00	862.0	219 04 55	39 07 15	Basin Rock	12380.2	4.092728
1901	82 52 51.48	1393.9	248 53 57	68 56 43	Sand	9976.8	3.998993
Cage [1]	28 57 43.45	1337.7	220 38 31	40 40 51	Basin Rock	12038.1	4.080558
1901	82 52 52.80	1429.6	251 33 23	71 36 10	Sand	9849.7	3.993423
Norwest [1]	28 57 57.21	1761.3	235 23 26	55 27 12	Basin Rock	15344.2	4.185944
1901	82 55 49.78	1347.8	259 11 43	79 15 56	Sand	14389.5	4.158047
North [1]	28 58 34.51	1062.4	230 19 17	50 22 00	Basin Rock	11846.1	4.073577
1901	82 53 39.98	1082.4	261 43 16	81 46 26	Sand	10732.8	4.030712
New North [1]	28 58 30.04	924.8	229 47 58	49 50 41	Basin Rock	11931.0	4.076675
1901	82 53 39.82	1078.1	260 59 33	81 02 43	Sand	10749.0	4.031367

CEDAR KEYS TO ST. MARKS RIVER

Principal points							
Number 6	29 10 25.340	780.2	260 49 58.5	80 51 25.3	Black Point 2	4873.8	3.687866
1877	83 06 45.214	1221.7	329 30 50.5	149 31 37.2	North Key	5107.0	3.708165
Reef	29 13 33.581	1033.9	304 33 18.6	124 35 30.2	Black Point 2	8846.4	3.946768
1876	83 08 16.785	453.2	333 34 37.1	153 36 08.5	North Key	11385.0	4.056331
			336 52 44.2	156 53 28.9	Number 6	6301.3	3.799433
Cabbage	29 13 33.273	1024.4	357 03 13.4	177 03 22.9	North Key	10200.7	4.008630
1876	83 05 28.764	776.9	19 38 56.2	199 38 18.9	Number 6	6143.5	3.788419
			90 07 52.2	270 06 30.2	Reef	4537.9	3.656854
Mallard	29 17 13.195	406.3	312 28 14.8	132 30 28.6	Cabbage	10024.2	4.001051
1876	83 10 02.540	68.6	337 05 54.2	157 06 45.9	Reef	7339.6	3.865673
River	29 16 07.105	218.8	31 49 22.2	211 48 29.2	Reef	5562.4	3.745262
1876	83 06 28.186	761.0	109 23 19.6	289 21 34.8	Mallard	6133.6	3.787719
			341 16 49.5	161 17 18.5	Cabbage	5000.6	3.699018
Number 5	29 15 13.423	413.3	237 16 03.1	57 17 47.0	Mallard	6822.4	3.833935
1876	83 13 35.160	949.3	289 39 07.8	109 41 43.3	Reef	9130.4	3.960492
Ready	29 22 02.515	77.4	336 44 32.8	156 45 42.2	Mallard	9694.8	3.986537
1876	83 12 24.365	657.1	8 37 47.2	188 37 12.6	Number 5	12739.2	4.105142
Number 4	29 18 45.788	1409.7	223 05 02.1	43 06 45.0	Ready	8295.0	3.918814
1876	83 15 54.446	1469.3	286 41 01.8	106 43 54.0	Mallard	9916.0	3.996337
Bird	29 25 43.384	1335.7	311 36 25.9	131 38 45.2	Ready	10237.1	4.010176
1876	83 17 08.171	220.2	351 12 13.8	171 12 50.0	Number 4	13009.9	4.114274
Number 3	29 22 20.932	644.5	222 38 50.7	42 40 35.3	Bird	8476.3	3.928207
1876	83 20 41.218	1111.6	272 23 20.9	92 27 24.6	Ready	13412.1	4.127496
Scaffold	29 28 30.952	953.0	318 49 16.1	138 50 38.4	Bird	6853.4	3.835908
1874	83 19 55.578	1497.4	6 09 59.7	186 09 37.3	Number 3	11458.6	4.059132
Number 2	29 25 54.557	1679.7	227 06 55.2	47 08 29.8	Scaffold	7077.4	3.849876
1876	83 23 08.057	217.2	272 00 23.1	92 03 19.9	Bird	9706.5	3.987064
Horseshoe Point west base	29 27 51.159	1575.1	340 42 34.9	160 43 00.0	Bird	4167.9	3.619920
1876	83 17 59.253	1596.6	66 41 11.8	246 38 40.0	Number 2	9063.4	3.957292
			111 21 30.9	291 20 33.7	Scaffold	3365.2	3.527009

[1] No check on this position.

CEDAR KEYS TO ST. MARKS RIVER—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Principal points—Contd	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Horseshoe Point east base	29 26 19.680	605.9	20 11 23.4	200 11 15.9	Bird	1190.7	3.075787
1876	83 16 52.926	1426.5	85 39 02.9	265 35 58.6	Number 2	10140.4	4.006055
			147 36 15.2	327 35 42.6	Horseshoe Point west base	3335.79	3.523199
Bowlegs Point	29 31 03.812	117.4	305 03 03.6	125 05 06.2	Scaffold	8191.5	3.913361
1874	83 24 04.476	120.5	350 55 32.8	170 56 00.6	Number 2	9642.1	3.984173
Charybdis	29 29 25.864	796.3	243 22 02.6	63 23 52.6	Bowlegs Point	6731.1	3.828084
1874	83 27 47.896	1290.2	277 32 10.4	97 36 02.9	Scaffold	12836.2	4.108435
Fog Island azimuth station	29 35 51.053	1571.9	353 59 45.4	174 00 02.4	Bowlegs Point	8892.6	3.949031
1874	83 24 39.015	1049.9	23 13 21.5	203 11 48.4	Charybdis	12904.0	4.110723
Scylla	29 34 12.713	391.4	240 52 24.8	60 54 04.5	Fog Island azimuth station	6223.3	3.794024
1874	83 28 01.038	27.9	312 23 05.5	132 25 02.1	Bowlegs Point	8625.2	3.935767
Steinhatchee	29 40 11.556	355.8	350 17 13.9	170 17 39.1	Fog Island azimuth station	8137.3	3.910482
1874	83 25 30.032	807.5	20 11 57.0	200 10 42.4	Scylla	11771.9	4.070845
Reliable	29 36 21.914	674.7	204 10 58.3	24 11 56.7	Steinhatchee	7751.3	3.889372
1874	83 27 28.115	756.5	281 47 01.1	101 48 24.6	Fog Island azimuth station	4648.4	3.667302
Lamp	29 37 28.421	875.1	3 49 50.0	183 49 46.3	Fog Island azimuth station	3004.6	3.477790
1874	83 24 31.556	848.9	66 41 33.9	246 40 06.6	Reliable	5172.9	3.713732
			162 37 01.9	342 36 33.0	Steinhatchee	5263.3	3.721262
Snipe	29 41 14.257	439.0	288 23 50.8	108 25 37.6	Steinhatchee	6112.2	3.786198
1874	83 29 05.715	153.7	343 44 03.9	163 44 52.2	Reliable	9376.1	3.972024
Neptune	29 38 40.173	1236.9	200 32 12.2	20 32 44.9	Snipe	5066.3	3.704692
1874	83 30 11.820	318.0	249 36 43.5	69 39 02.9	Steinhatchee	8083.8	3.907617
Point Edwards	29 43 16.194	520.8	308 28 45.4	128 30 13.0	Snipe	6067.8	3.783030
1874	83 32 02.389	64.2	340 45 30.8	160 46 25.6	Neptune	9024.5	3.955423
Oceanus	29 40 58.187	1791.6	205 02 09.7	25 02 46.5	Point Edwards	4714.5	3.673437
1874	83 33 16.622	446.9	265 47 16.1	85 49 20.4	Snipe	6764.1	3.830212
Piney Point	29 45 33.931	1043.8	310 29 31.5	130 31 02.6	Point Edwards	6493.8	3.812502
1874	83 35 06.136	164.9	340 52 11.0	160 53 05.3	Oceanus	8985.0	3.953518
Amphitrite	29 43 23.187	713.9	217 12 46.0	37 13 42.4	Piney Point	5054.1	3.703647
1874	83 36 59.006	1610.1	271 21 47.8	91 24 15.3	Point Edwards	7998.6	3.903013
Live Oak Point	29 50 31.317	964.3	340 29 51.5	160 30 51.5	Piney Point	9714.4	3.987415
1874	83 37 06.847	183.8	359 11 21.2	179 11 24.6	Amphitrite	13183.5	4.120031
Narayda	29 47 34.270	1055.2	211 29 03.4	31 30 05.3	Live Oak Point	6393.0	3.805706
1874	83 39 11.224	301.5	299 21 35.7	119 23 37.4	Piney Point	7555.1	3.878240
Clearwater Creek	29 53 53.937	1660.8	326 31 39.6	146 32 56.1	Live Oak Point	7478.3	3.873801
1873	83 39 40.491	1086.4	356 09 11.3	176 09 25.9	Narayda	11716.5	4.068798
Triton	29 51 05.313	163.6	199 52 55.2	19 53 30.1	Clearwater Creek	5521.3	3.742041
1874	83 40 50.479	1355.0	279 52 32.4	99 54 23.7	Live Oak Point	6093.6	3.784876
Soft	29 56 00.523	16.1	308 20 19.4	128 21 51.0	Clearwater Creek	6281.7	3.798079
1873	83 42 44.137	1183.8	341 26 44.2	161 27 40.8	Triton	9587.7	3.981713
Syrinx	29 53 43.155	1328.8	193 47 18.5	13 47 37.8	Soft	4355.2	3.639007
1873	83 43 22.839	612.8	266 47 59.5	86 49 50.3	Clearwater Creek	5974.8	3.776324
Solid	29 57 37.023	1140.0	301 21 04.5	121 22 35.3	Soft	5709.0	3.756558
1873	83 45 45.919	1231.3	331 56 07.8	151 57 19.2	Syrinx	8159.8	3.911678
Doris 2	29 55 10.243	315.4	196 32 25.2	16 32 50.2	Solid	4714.7	3.673454
1873	83 46 35.978	965.1	256 00 13.1	76 02 08.8	Soft	6408.3	3.806741
Hard	29 58 59.124	1820.5	291 05 28.1	111 07 30.1	Solid	7019.6	3.846313
1873	83 49 50.180	1345.1	323 31 28.8	143 33 05.7	Doris 2	8762.8	3.942641
Rock Island	29 58 15.945	490.9	178 18 37.1	358 18 36.4	Hard	1330.1	3.123888
1873	83 49 48.718	1306.2	280 24 51.6	100 26 52.9	Solid	6619.2	3.820806
			290 05 08.3	110 08 40.4	Soft	12124.8	4.083673
Nereus	29 56 30.182	929.3	191 58 34.1	11 58 52.2	Hard	4688.2	3.671002
1873	83 50 26.470	709.9	254 40 49.6	74 43 09.7	Solid	7799.5	3.892069
False	30 00 49.744	1531.7	305 14 40.8	125 16 10.7	Hard	5900.6	3.770896
1873	83 52 49.948	1338.6	314 15 29.1	134 16 59.6	Rock Island	6784.1	3.831493
			334 17 24.0	154 18 35.7	Nereus	8869.6	3.947904
Kelple	29 58 55.348	1704.2	192 56 55.0	12 57 10.1	False	3614.3	3.558029
1873	83 53 20.169	540.6	268 48 06.6	88 49 51.6	Hard	5630.4	3.750536
Econfenee	30 02 12.363	380.7	296 43 19.7	116 44 54.0	False	5654.9	3.752423
1873	83 55 58.425	1565.4	306 16 40.8	126 19 45.5	Rock Island	12295.3	4.089738
			325 01 48.5	145 03 07.6	Kelple	7401.9	3.869346

CEDAR KEYS TO ST MARKS RIVER—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Principal points—Contd	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Undine	30 00 25.006	770.0	204 31 54.0	24 32 22.2	Econfenee	3633.8	3.560360
1873	83 56 54.737	1467.0	263 21 35.8	83 23 38.2	False	6604.3	3.819827
Topog	30 03 50.211	1546.0	314 09 42.7	134 10 40.7	Econfenee	4324.0	3.635883
1873	83 57 54.201	1451.8	345 50 38.4	165 51 08.2	Undine	6516.3	3.814003
Naiad	30 02 17.269	531.7	212 11 12.4	32 11 46.1	Topog	3381.7	3.529135
1873	83 59 01.454	39.0	271 45 05.9	91 46 37.5	Econfenee	4906.1	3.690733
Ocilla River	30 04 37.704	1161.0	301 51 44.3	121 52 28.3	Topog	2769.8	3.442442
1859	83 59 22.026	589.8	352 44 09.1	172 44 19.4	Naiad	4359.2	3.639403
Oyster Bar	30 03 42.491	1308.4	229 55 09.1	49.55 46.9	Ocilla River	2640.7	3.421723
1873	84 00 37.471	1003.7	266 52 37.2	86 53 59.0	Topog	4379.7	3.641445
			315 33 56.1	135 34 44.2	Naiad	3674.5	3.565200
Marsh	30 06 04.349	133.9	305 28 24.8	125 29 34.9	Ocilla River	4596.2	3.662401
1873	84 01 41.790	1118.9	338 28 26.9	158 28 59.1	Oyster Bar	4695.4	3.671672
Coral	30 04 41.151	1267.1	210 02 05.1	30 02 32.8	Marsh	2959.3	3.471183
1873	84 02 37.110	993.8	271 09 01.3	91 10 39.0	Ocilla River	5225.7	3.718143
			299 24 03.2	119 25 03.1	Oyster Bar	3678.4	3.565655
Torrey	30 05 55.957	1723.0	266 45 16.2	86 46 41.9	Marsh	4580.8	3.660942
1859	84 04 32.601	872.9	306 40 14.1	126 41 12.0	Coral	3856.2	3.586159
Grey Mares	30 04 44.078	1357.2	211 36 35.6	31 37 01.1	Torrey	2598.9	3.414796
1859	84 05 23.475	628.5	247 22 46.0	67 24 37.3	Marsh	6430.3	3.808230
			271 08 51.1	91 10 14.5	Coral	4456.3	3.648979
Palmetto Island	30 05 04.004	123.3	247 35 33.4	67 36 46.1	Torrey	4198.5	3.623089
1859	84 06 57.563	1541.5	283 40 42.8	103 41 30.0	Grey Mares	2593.3	3.413857
Denham	30 06 44.890	1382.2	287 18 35.6	107 20 06.1	Torrey	5060.4	3.704183
1859	84 07 33.033	884.4	342 59 50.5	163 00 08.3	Palmetto Island	3248.4	3.511668
New East River	30 06 34.088	1049.6	263 45 00.5	83 45 57.5	Denham	3059.0	3.485583
1859	84 09 26.616	712.6	304 47 21.9	124 48 36.6	Palmetto Island	4860.3	3.686667
St. Marks L. H.	30 04 25.329	779.9	208 32 23.1	28 33 03.5	New East River	4513.4	3.654501
1859	84 10 47.158	1263.0	259 01 22.8	79 03 17.9	Palmetto Island	6263.1	3.796787
Port Leon	30 07 30.243	931.2	296 31 55.1	116 33 00.0	New East River	3869.7	3.587674
1855	84 11 35.931	961.8	347 04.43.7	167 05 08.1	St. Marks L. H.	5841.7	3.766538
West Bayou Point	30 06 37.180	1144.8	236 11 48.6	56 12 34.4	Port Leon	2937.4	3.467967
1855	84 13 07.115	190.5	317 16 48.2	137 17 58.4	St. Marks L. H.	5525.2	3.742349
			270 54 29.7	90 56 20.4	New East River	5904.1	3.771156
Walker	30 08 28.708	884.0	308 22 05.3	128 22 47.9	Port Leon	2899.9	3.462383
1855	84 13 00.868	23.2	2 47 17.8	182 47 14.7	West Bayou Point	3438.2	3.536337
St. Marks south base	30 08 32.132	989.4	342 38 50.7	162 39 01.9	Port Leon	1996.5	3.300274
1855	84 11 58.176	1557.0	27 32 24.3	207 31 49.7	West Bayou Point	3991.8	3.601167
			86 24 31.8	266 24 00.3	Walker	1681.2	3.225619
Fort St. Marks	30 09 00.871	26.8	308 53 07.4	128 53 28.0	St. Marks south base	1409.6	3.149091
1855	84 12 39.172	1048.4	9 35 48.5	189 35 34.4	West Bayou Point	4487.3	3.651989
			30 23 00.9	210 22 50.0	Walker	1148.0	3.059954
St. Marks north base	30 09 08.839	272.2	340 20 34.0	160 20 41.6	St. Marks south base	1200.22	3.079260
1855	84 12 13.261	354.9	70 31 03.2	250 30 50.2	Fort St. Marks	735.5	2.866606
Trot	29 29 39.905	1228.6	87 27 18.7	267 24 22.6	Charybdis	9643.9	3.984251
1874	83 21 50.249	1353.6	125 33 29.1	305 32 23.0	Bowlegs Point	4443.5	3.647721
			304 29 24.1	124 30 20.5	Scaffold	3748.4	3.573842
Number 1	29 27 30.308	933.2	169 21 03.4	349 20 40.8	Bowlegs Point	6688.8	3.825349
1876	83 23 18.580	500.7	210 48 23.9	30 49 07.3	Trot	4645.9	3.667072
			251 08 17.8	71 09 57.7	Scaffold	5779.7	3.761903
Gibbs	30 06 50.382	1551.3	243 06 03.5	63 06 48.9	Port Leon	2713.5	3.433537
1907	84 13 06.333	169.5	320 08 57.7	140 10 07.5	St. Marks L. H.	5817.0	3.764700
Four Mile	30 06 34.186	1052.6	351 34 47.0	171 34 57.8	St. Marks L. H.	4011.0	3.603250
1907	84 11 09.087	243.3	99 02 08.8	279 01 10.0	Gibbs	3178.3	3.502195
			157 23 55.8	337 23 42.3	Port Leon	1869.7	3.271776
Leon	30 07 43.369	1335.4	329 47 41.1	149 48 04.3	Four Mile	2464.9	3.391793
1907	84 11 55.405	1483.2	49 19 56.3	229 19 20.7	Gibbs	2503.4	3.398533
Pan	30 08 20.402	628.2	256 40 18.2	76 40 46.8	St. Marks south base	1567.0	3.195067
1907	84 12 55.147	1476.0	305 29 21.4	125 29 51.4	Leon	1964.0	3.293145
			319 01 56.6	139 02 49.7	Four Mile	4331.0	3.636587
			6 09 57.4	186 09 51.8	Gibbs	2788.0	3.445296
Fort St. Marks astronomic station	30 09 00.830	25.6	250 12 22.4	70 12 35.2	St. Marks north base	728.2	2.862244
	84 12 38.864	1040.1	309 03 27.7	129 03 48.1	St. Marks south base	1402.4	3.146872
1907			334 00 00.9	154 00 22.7	Leon	2653.7	3.423847
			19 17 43.1	199 17 34.9	Pan	1318.9	3.120219

CEDAR KEYS TO ST MARKS RIVER—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Principal points—Contd	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Stack	30 09 22.645	697.2	341 06 57.4	161 07 07.4	St. Marks south base	1643.9	3.215866
1907	84 12 18.055	483.2	343 12 28.6	163 12 31.0	St. Marks north base	444.1	2.647432
			39 39 45.3	219 39 34.9	Fort St. Marks astronomic station	872.5	2.940770
Harrall	30 09 26.943	829.6	331 53 32.2	151 53 33.5	Stack	150.0	2.176215
1907	84 12 20.697	553.8	340 21 24.2	160 21 27.9	St. Marks north base	591.9	2.772255
Long	30 09 27.672	852.1	4 02 08.3	184 02 08.1	Stack	155.2	2.190862
1907	84 12 17.647	472.2	74 36 52.4	254 36 50.9	Harrall	84.6	1.927596
Supplementary points							
Mill	30 09 25.819	795.0	30 06 23.9	210 06 22.8	Stack	113.0	2.053007
1907	84 12 15.937	426.5	105 12 08.4	285 12 05.9	Harrall	132.0	2.120507
			141 16 48.9	321 16 48.0	Long	73.1	1.864159
Tank	30 09 16.669	513.3	343 42 12.7	163 42 20.2	St. Marks south base	1428.8	3.154964
1907	84 12 13.156	352.1	0 40 11.8	180 40 11.7	St. Marks north base	241.1	2.382221
			54 40 17.6	234 40 04.7	St. Marks astronomic station	843.3	2.925979
			147 28 09.9	327 28 06.1	Harrall	375.2	2.574314
			160 28 16.3	340 28 14.0	Long	359.5	2.555708
			165 12 12.1	345 12 10.8	Mill	291.4	2.464527
Aux	30 08 33.637	1035.8	340 59 36.8	160 59 37.2	St. Marks south base	49.1	1.690726
1907	84 11 58.772	1573.0	356 40 02.3	176 40 04.0	Leon	1550.5	3.190463
			74 53 22.5	254 52 54.2	Pan	1562.9	3.193930
			127 58 15.2	307 57 55.1	Fort St. Marks astronomic station	1361.0	3.133862
St Marks magnetic azimuth station	30 09 04.550	140.1	350 13 39.7	170 13 47.8	Leon	2536.5	3.404237
	84 12 11.489	307.4	40 40 58.1	220 40 36.2	Pan	1792.5	3.253466
1907			81 06 55.3	261 06 41.6	Fort St. Marks astronomic station	741.5	2.870106
			160 14 48.6	340 14 47.7	St. Marks north base	140.3	2.146996
St. Marks longitude station	30 09 27.64	851.1	182 38	2 38	Long	0.87	9.939519
1907	84 12 17.65	472.3					

ST. MARKS RIVER TO ST. ANDREWS SOUND

Principal points							
Shell Point	30 03 26.181	806.1	229 27 53.3	49 30 02.1	West Bayou Point	9052.4	3.956765
1859	84 17 24.089	645.2	260 15 06.0	80 18 24.9	St. Marks L. H.	10786.6	4.032884
Bald Point	29 56 54.027	1663.6	202 20 39.0	22 22 11.6	Shell Point	13056.3	4.115821
1859	84 20 29.389	788.1	228 16 18.8	48 21 10.0	St. Marks L. H.	20894.2	4.320027
Porters Island	30 01 21.129	650.6	242 14 24.3	62 16 41.1	Shell Point	8272.3	3.917625
1859	84 21 57.364	1537.2	252 25 19.6	72 30 55.2	St. Marks L. H.	18828.9	4.274826
			343 59 38.4	164 00 22.4	Bald Point	8555.8	3.932261
Piccoline Bayou	29 58 39.300	1210.1	200 03 17.6	20 03 51.5	Porters Island	5304.7	3.724664
1859	84 23 05.250	140.7	307 47 17.4	127 48 35.2	Bald Point	5288.8	3.723354
Chaires	29 57 38.580	1187.9	174 49 15.5	354 49 12.4	Piccoline Bayou	1877.3	3.273529
1859	84 22 58.929	1580.1	288 52 34.4	108 53 49.1	Bald Point	4238.0	3.627164
Lansing	29 57 52.937	1630.0	244 52 49.4	64 53 46.2	Piccoline Bayou	3363.8	3.526836
1859	84 24 58.861	1578.2	277 49 08.4	97 50 08.3	Chaires	3245.9	3.511333
Sopchoppy	29 59 02.007	61.8	281 34 09.7	101 35 13.3	Piccoline Bayou	3483.7	3.542036
1859	84 25 12.557	336.6	305 37 57.4	125 39 04.2	Chaires	4408.3	3.644273
			350 12 12.1	170 12 18.9	Lansing	2158.2	3.334095
Lansing 2	29 57 52.934	1629.9	244 52 44.4	64 53 41.2	Piccoline Bayou	3363.9	3.526843
1873	84 24 58.861	1578.2	277 49 02.0	97 50 01.9	Chaires	3245.9	3.511334
Sopchoppy 2	29 59 02.016	62.1	281 34 25.0	101 35 28.6	Piccoline Bayou	3483.7	3.542046
1873	84 25 12.558	336.7	305 38 06.8	125 39 13.6	Chaires	4408.5	3.644291
			350 12 17.0	170 12 23.8	Lansing 2	2158.6	3.334168
Robinson	29 58 05.831	179.5	236 59 45.8	57 00 35.5	Sopchoppy	3176.2	3.501907
1859	84 26 51.923	1392.1	277 27 12.9	97 28 09.4	Lansing	3057.2	3.485329
Houston	29 57 19.343	595.6	127 19 00.6	307 18 25.6	Robinson	2361.5	3.373179
1859	84 25 41.875	1122.9	193 57 40.8	13 57 55.4	Sopchoppy	3257.4	3.512872
Ellis	29 56 39.063	1202.8	163 05 35.0	343 05 19.9	Robinson	2792.4	3.445978
1859	84 26 21.634	580.2	220 40 49.2	40 41 09.1	Houston	1635.5	3.213662
Forbes	29 56 08.836	272.1	123 56 42.9	303 56 17.2	Ellis	1666.9	3.221909
1859	84 25 30.070	806.5	171 42 15.3	351 42 09.4	Houston	2193.9	3.341226
Bailey	29 55 46.151	1421.0	196 07 06.7	16 07 15.5	Ellis	1695.9	3.229395
1858	84 26 39.191	1051.1	249 20 59.0	69 21 33.5	Forbes	1981.1	3.295899

ST. MARKS RIVER TO ST. ANDREWS SOUND—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Principal points—Contd	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Franklin	29 55 20.356	626.8	104 32 43.0	284 31 46.0	Bailey	3164.2	3.500265
1858	84 24 44.998	1207.0	141 00 03.1	320 59 40.6	Forbes	1920.9	3.283497
			175 28 34.4	355 28 27.4	Lansing 2	4712.7	3.673271
			213 44 58.1	33 45 51.0	Chaires	5119.2	3.709198
Peninsula Point	29 54 23.875	735.1	143 45 03.2	323 44 28.7	Bailey	3141.5	3.497141
1858	84 25 29.933	803.1	214 43 24.4	34 43 46.8	Franklin	2116.0	3.325514
Turkey Point	29 54 40.291	1240.6	245 43 57.2	65 45 20.9	Bailey	4936.3	3.693398
1858	84 29 26.972	723.5	274 31 42.2	94 33 40.4	Peninsula Point	6379.0	3.804754
Southwest Cape	29 53 32.463	999.6	100 49 39.2	280 46 15.8	Turkey Point	11146.3	4.047132
1858	84 22 38.867	1042.9	109 02 30.5	289 01 05.2	Peninsula Point	4855.0	3.686185
			122 34 28.2	302 32 28.4	Bailey	7649.1	3.883609
			134 28 54.7	314 27 51.9	Franklin	4742.0	3.675960
Dog Island east	29 49 22.869	704.1	221 48 56.4	41 51 38.8	Turkey Point	13118.4	4.117881
1857	84 34 53.017	1423.5	248 38 34.6	68 44 40.1	Southwest Cape	21150.5	4.325321
St. James Island	29 53 10.147	312.5	252 31 07.0	72 33 51.0	Turkey Point	9251.5	3.966214
1858	84 34 55.915	1500.4	359 21 46.9	179 21 48.3	Dog Island east	6998.5	3.845002
Palmetto Point	29 51 09.793	301.5	234 49 21.0	54 50 58.6	St. James Island	6434.5	3.808518
1858	84 38 11.922	320.0	301 38 32.5	121 40 11.5	Dog Island east	6273.1	3.797482
Dog Island A. M.	29 47 00.248	7.6	200 11 25.6	20 12 17.9	Palmetto Point	8187.0	3.913126
1858	84 39 57.194	1536.3	215 21 36.6	35 24 06.6	St. James Island	13969.2	4.145171
			241 43 02.2	61 45 33.4	Dog Island east	9274.2	3.967277
Crooked River	29 49 55.734	1716.1	276 09 43.3	96 12 36.2	Dog Island east	9390.7	3.972699
1856	84 40 40.748	1094.0	347 46 59.6	167 47 21.2	Dog Island A. M.	5528.4	3.742599
Royal Bluff	29 47 33.553	1033.1	237 51 43.0	57 53 52.1	Crooked River	8233.6	3.915592
1856	84 45 00.439	11.8	258 17 55.6	78 22 57.6	Dog Island east	16655.2	4.221550
			277 09 17.9	97 11 48.5	Dog Island A. M.	8209.2	3.914300
St. George Island east base	29 44 56.460	1738.4	140 52 52.6	320 51 39.9	Royal Bluff	6235.3	3.794859
1856	84 42 33.962	912.6	198 15 16.3	18 16 12.5	Crooked River	9703.5	3.986927
			227 50 39.0	47 51 56.8	Dog Island A. M.	5680.2	3.754363
St. George Island west base	29 43 51.507	1585.9	165 52 50.7	345 52 18.9	Royal Bluff	7049.9	3.848185
1856	84 43 56.407	1515.9	227 55 17.6	47 55 58.5	St. George Island east base	2984.6	3.474884
Marsh Point	29 46 04.585	141.2	239 20 13.0	59 21 38.5	Royal Bluff	5373.3	3.730238
1856	84 47 52.530	1411.3	283 44 54.1	103 47 32.2	St. George Island east base	8812.2	3.945085
			302 50 22.1	122 52 19.3	St. George Island west base	7552.6	3.878095
Gap Island	29 42 04.927	151.7	182 08 11.1	2 08 16.2	Marsh Point	7384.2	3.868303
1856	84 48 02.776	74.6	243 37 18.5	63 39 20.6	St. George Island west base	7390.5	3.868673
Cat Point	29 43 21.075	648.9	239 52 41.0	59 55 21.4	Marsh Point	10038.8	4.001680
1856	84 53 15.750	423.3	285 33 05.6	105 35 40.7	Gap Island	8733.1	3.941170
Bulkhead Point	29 40 14.417	443.9	153 41 01.3	333 40 08.9	Cat Point	6412.1	3.807000
1856	84 51 29.983	806.2	238 34 13.1	58 35 55.7	Gap Island	6527.9	3.814776
Cedar Point	29 38 57.310	1764.6	201 04 14.4	21 05 12.0	Cat Point	8703.7	3.939702
1856	84 55 12.176	327.5	248 18 59.6	68 20 49.5	Bulkhead Point	6429.8	3.808199
Apalachicola	29 43 13.066	402.3	268 28 54.8	88 31 49.2	Cat Point	9458.8	3.975835
1856	84 59 07.560	203.2	294 03 37.4	114 07 24.2	Bulkhead Point	13475.2	4.129534
			321 11 45.1	141 13 41.7	Cedar Point	10102.6	4.004433
Cape St. George L. H.	29 35 15.109	465.2	202 03 02.9	22 04 52.6	Apalachicola	15879.3	4.200830
1857	85 02 49.365	1328.6	240 53 08.9	60 56 54.8	Cedar Point	14074.9	4.148446
Green Point 2	29 42 23.763	731.7	299 37 47.7	119 41 13.2	Cedar Point	12846.1	4.108770
1856	85 02 07.340	197.3	4 53 52.7	184 53 31.9	Cape St. George L. H.	13246.4	4.122097
Shell Bank	29 42 01.094	33.7	286 57 15.5	87 05 35.0	Green Point 2	13600.6	4.133557
1856	85 10 32.618	876.9	315 03 34.2	135 07 23.3	Cape St. George L. H.	17649.6	4.246736
Cape San Blas L. H. (old tower)	29 39 45.952	1414.8	257 01 33.5	77 07 07.4	Shell Bank	18599.1	4.269492
1860	85 21 46.824	1259.3	285 09 56.3	105 19 18.7	Cape St. George L. H.	31716.3	4.501282
Dead Oak Point	29 41 06.002	184.8	260 23 24.0	80 26 29.3	Shell Bank	10188.1	4.008092
1860	85 16 46.286	1244.5	295 34 43.2	115 41 37.1	Cape St. George L. H.	24970.8	4.397433
			73 03 34.3	253 01 05.5	Cape San Blas L. H. (old tower).	8448.8	3.926795
Blacks Island	29 43 37.364	1150.4	313 40 40.2	133 42 10.0	Dead Oak Point	6746.8	3.829097
1860	85 19 47.773	1284.0	24 11 51.6	204 10 52.6	Cape San Blas L. H. (old tower)	7811.0	3.892704
Eagle Point	29 45 16.890	520.0	297 13 56.3	117 15 46.1	Blacks Island	6693.2	3.825636
1861	85 23 29.215	785.0	344 52 39.3	164 53 30.0	Cape San Blas L. H. (old tower)	10554.7	4.023445

ST. MARKS RIVER TO ST. ANDREWS SOUND—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Principal points—Contd	° ′ ″		° ′ ″	° ′ ″		*Meters*	
St. Joseph	29 47 24.559	756.2	20 57 34.9	200 56 45.4	Blacks Island	7490.7	3.874520
1868	85 18 08.072	216.8	22 37 10.7	202 35 22.2	Cape San Blas L. H. (old tower)	15295.4	4.184562
			65 31 31.6	245 28 52.1	Eagle Point	9480.3	3.976823
Powell	29 48 07.573	233.2	277 08 55.6	97 12 10.2	St. Joseph	10602.5	4.025408
1868	85 24 39.757	1067.7	340 10 03.6	160 10 38.6	Eagle Point	5586.5	3.747140
San Carlos	29 51 08.074	248.6	333 24 53.8	153 25 57.6	St. Joseph	7695.2	3.886218
1868	85 20 16.292	437.3	25 36 51.6	205 35 15.7	Eagle Point	11990.1	4.078824
			51 51 43.3	231 49 32.3	Powell	8995.8	3.954042
Consort	29 54 55.236	1700.8	331 04 27.1	151 05 38.8	San Carlos	7990.7	3.902583
1860	85 22 40.280	1080.5	14 20 22.8	194 19 23.3	Powell	12955.3	4.112449
St. Andrews Point	29 57 46.960	1445.9	297 39 48.4	117 42 55.9	Consort	11378.9	4.056100
1869	85 28 55.980	1501.0	338 54 20.5	158 56 28.1	Powell	19118.8	4.281460
Pine Point	29 59 24.384	750.8	300 17 08.5	120 18 44.2	St. Andrews Point	5945.9	3.774214
1869	85 32 07.473	200.3	330 00 32.5	150 04 15.6	Powell	24053.7	4.381182
Franklin Point 2	30 00 24.302	748.3	318 14 38.7	138 15 59.3	St. Andrews Point	6493.2	3.812458
1869	85 31 37.257	998.5	23 42 09.4	203 41 54.3	Pine Point	2014.9	3.304247
Nigel	30 01 53.229	1639.0	294 29 56.3	114 31 48.4	Franklin Point 2	6599.2	3.819492
1869	85 35 21.323	571.3	311 24 19.7	131 25 56.7	Pine Point	6927.7	3.840591
Spring Hill 2	30 03 10.413	320.6	311 55 07.0	131 56 53.3	Franklin Point 2	7653.8	3.883877
1869	85 35 09.759	261.4	324 55 28.6	144 56 59.9	Pine Point	8502.7	3.929559
			7 25 42.1	187 25 36.3	Nigel	2396.7	3.379615
Hurricane Point	30 04 33.881	1043.3	133 35 53.6	313 34 19.8	Laguna	6911.1	3.839545
1869	85 39 34.274	917.9	289 55 10.4	109 57 22.9	Spring Hill 2	7536.8	3.877185
			306 06 46.1	126 08 52.8	Nigel	8389.5	3.923735
Cypress Point	30 06 20.934	644.6	305 19 28.1	125 22 02.9	Spring Hill 2	10140.5	4.006061
1869	85 40 18.611	498.3	315 58 15.5	136 00 44.4	Nigel	11460.7	4.059213
			340 11 21.4	160 11 43.6	Hurricane Point	3503.7	3.544522
			111 02 40.0	291 01 28.5	Laguna	4090.9	3.611816
Laurel	29 43 13.076	402.6	321 12 02.5	141 13 59.0	Cedar Point	10102.3	4.004420
1909	84 59 07.528	202.3	22 05 01.3	202 03 11.5	Cape St. George L. H.	15879.8	4.200846
West Pass 2	29 37 32.900	1013.0	225 31 47.9	45 35 04.5	Laurel	14958.6	4.174890
1909	85 05 44.694	1202.4	311 57 08.5	131 58 35.1	Cape St. George L. H.	6344.7	3.802408
West Pass	29 37 31.979	984.6	230 26 46.1	50 26 46.7	West Pass 2	44.5	1.648360
1860	85 05 45.968	1236.6	261 11 44.3	81 16 57.7	Cedar Point	17249.8	4.236783
			311 33 18.6	131 34 45.9	Cape St. George L. H.	6351.4	3.802868
St. Vincent Point 2	29 40 23.741	731.0	343 54 57.4	163 55 47.7	Cape St. George L. H.	9889.4	3.995168
1910	85 04 31.170	838.1	20 36 30.0	200 35 53.6	West Pass 2	5619.5	3.749701
New Inlet 2	29 35 57.667	1775.5	73 58 09.3	253 56 45.7	Cape St. George L. H.	4741.6	3.675925
1910	85 00 00.030	0.8	107 34 11.6	287 31 21.3	West Pass 2	9725.9	3.987932
			138 20 24.3	318 18 10.3	St. Vincent Point 2	10968.5	4.040148
Cat Point 2	29 43 20.788	640.0	20 51 17.3	200 50 20.4	Cedar Point	8680.7	3.938555
1909	84 53 17.276	464.3	45 51 19.6	225 46 36.6	Cape St. George L. H.	21455.8	4.331544
			88 34 45.1	268 31 51.5	Laurel	9416.7	3.973897
Bulkhead 2	29 40 14.063	433.0	68 39 13.7	248 37 22.5	Cedar Point	6487.8	3.812097
1909	84 51 27.506	739.6	114 03 11.6	293 59 23.6	Laurel	13539.8	4.131611
			152 50 12.3	332 49 17.9	Cat Point 2	6462.3	3.810390
Yent	29 45 27.381	843.1	18 49 35.3	198 48 34.7	Bulkhead 2	10191.8	4.008251
1909	84 49 25.197	677.0	58 00 36.5	237 58 41.4	Cat Point 2	7354.3	3.866540
Gap Island 2	29 42 05.759	177.3	58 56 21.0	238 54 35.9	Bulkhead 2	6662.7	3.823652
1909	84 47 55.258	1485.4	104 57 56.8	284 55 17.2	Cat Point 2	8958.6	3.952240
			158 43 57.2	338 43 12.6	Yent	6661.9	3.823598
Marsh Point 2	29 46 06.635	204.3	0 20 00.1	180 19 59.3	Gap Island 2	7416.7	3.870210
1909	84 47 53.653	1441.4	63 50 08.1	243 49 22.7	Yent	2740.3	3.437804
Spartan	29 43 01.247	38.4	65 23 10.6	245 22 01.9	Gap Island 2	4100.5	3.612837
1909	84 45 36.582	983.2	126 14 04.8	306 12 11.4	Yent	7615.0	3.881668
			147 10 35.5	327 09 27.5	Marsh Point 2	6793.3	3.832080
Royal Bluff 2	29 47 34.226	1053.8	6 34 47.0	186 34 29.1	Spartan	8460.7	3.927408
1909	84 45 00.512	13.7	59 54 09.1	239 52 43.1	Marsh Point 2	5376.1	3.730471
St. George Island east	29 45 32.261	993.3	49 06 31.8	229 04 52.7	Spartan	7100.9	3.851315
1909	84 42 16.865	453.1	96 41 41.7	276 38 54.5	Marsh Point 2	9109.7	3.959503
			130 31 03.5	310 29 42.2	Royal Bluff 2	5781.6	3.762046
Crooked River 2	29 49 56.442	1737.9	17 13 55.8	197 13 09.1	St. George Island east	8516.2	3.930245
1909	84 40 42.962	1153.4	57 40 38.1	237 38 30.0	Royal Bluff 2	8185.6	3.913049
Dog Island west	29 47 05.213	160.5	50 21 10.5	230 20 06.7	St. George Island east	4484.7	3.651730
1909	84 40 08.336	223.9	96 30 52.0	276 28 26.8	Royal Bluff 2	7898.2	3.897526
			170 00 01.3	349 59 44.1	Crooked River 2	5353.6	3.728642

ST. MARKS RIVER TO ST. ANDREWS SOUND—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Principal points—Contd	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Old outer beacon, Carrabelle	29 50 06.842	210.7	13 02 01.0	193 01 37.0	Dog Island west	5740.2	3.758928
1909	84 39 20.140	540.6	81 48 38.3	261 47 57.1	Crooked River 2	2246.4	3.351495
Dog Island east 2	29 49 22.225	684.3	63 29 53.9	243 27 17.4	Dog Island west	9446.9	3.975289
1909	84 34 53.584	1438.7	96 25 56.7	276 23 02.9	Crooked River 2	9439.2	3.974937
			100 53 04.7	280 50 52.1	Old outer beacon, Carrabelle	7287.2	3.862560
Palmetto 2	29 51 10.972	337.8	302 14 51.4	122 16 29.7	Dog Island east 2	6272.9	3.797469
1909	84 38 11.176	299.9	22 34 56.1	202 33 57.8	Dog Island west	8194.9	3.913542
			43 09 29.8	223 08 55.5	Old outer beacon, Carrabelle	2706.7	3.432440
St. James Island 2	29 53 17.641	543.2	4 19 46.4	184 19 36.2	Dog Island east 2	7269.3	3.861494
1909	84 34 33.145	889.4	56 19 45.5	236 17 56.9	Palmetto 2	7032.0	3.847081
Lands end	30 05 25.677	793.6	119 37 03.1	299 36 18.9	Spanish Shanty	2713.7	3.433554
1910	85 40 14.903	399.1	128 15 52.8	308 14 43.3	Laguna 2	4720.3	3.673971
			161 08 50.3	341 08 35.4	Middle	2450.7	3.389284
Weiley	30 06 19.316	594.7	1 12 22.8	181 12 22.2	Lands end	1652.0	3.218011
1910	85 40 13.604	364.2	82 36 32.8	262 35 48.0	Spanish Shanty	2413.9	3.382725
			108 46 26.7	288 45 16.7	Laguna 2	3951.2	3.596728
Hurricane West	30 04 44.264	1363.0	129 41 14.0	309 40 45.2	Lands end	1997.0	3.300382
1910	85 39 17.513	469.0	152 50 16.6	332 49 48.5	Weiley	3289.7	3.517158
St. Andrews Bay rear range light	30 05 29.999	923.7	26 14 30.0	206 14 17.0	Hurricane West	1570.1	3.195914
1910	85 38 51.591	1381.5	86 35 31.3	266 34 49.5	Lands end	2234.9	3.349253
			124 40 13.8	304 39 32.6	Weiley	2669.9	3.426492
Hurricane East	30 04 09.343	287.8	121 31 34.7	301 31 01.9	Hurricane West	2056.6	3.313153
1910	85 38 12.054	322.9	156 55 03.9	336 54 44.1	St. Andrews Bay rear range light	2699.5	3.431281
			159 24 51.9	339 24 37.6	St. Andrews Bay front range light	2173.3	3.337127
Sand Bluff	30 04 56.049	1725.7	11 27 55.7	191 27 50.2	Hurricane East	1467.4	3.166554
1910	85 38 01.163	31.1	79 56 28.0	259 55 49.7	Hurricane West	2076.6	3.317362
			127 44 50.6	307 44 25.3	St. Andrews Bay rear range light	1707.7	3.232421
Celestine	30 03 32.327	995.5	117 17 18.1	297 16 36.8	Hurricane East	2486.5	3.395592
1910	85 36 49.548	1327.2	143 21 14.6	323 20 38.9	Sand Bluff	3213.2	3.506938
Bayou Bluff	30 04 12.021	370.2	15 30 59.3	195 30 52.9	Celestine	1268.5	3.103280
1910	85 36 36.880	987.8	88 09 12.7	268 08 25.0	Hurricane East	2550.4	3.406612
			120 59 39.1	300 58 56.9	Sand Bluff	2633.1	3.420461
Spring	30 03 21.017	647.2	97 54 22.9	277 53 36.0	Celestine	2533.7	3.403763
1910	85 35 15.856	424.7	107 30 42.4	287 29 14.1	Hurricane East	4948.5	3.694476
			125 53 48.7	305 53 08.1	Bayou Bluff	2678.9	3.427952
Anchor	30 01 34.043	1048.3	132 29 28.7	312 28 14.4	Celestine	5393.0	3.731829
1910	85 34 21.089	565.1	155 59 34.5	335 59 07.1	Spring	3605.9	3.557015
Astral	30 00 43.692	1345.3	130 49 46.4	310 47 29.4	Hurricane East	9688.9	3.986274
1910	85 33 38.334	1027.4	143 32 21.3	323 31 59.9	Anchor	1927.8	3.285053
			151 39 54.4	331 39 05.6	Spring	5504.0	3.740679
Areola	30 01 51.784	1594.6	20 56 08.3	200 55 53.3	Astral	2244.8	3.351180
1910	85 33 08.404	225.2	74 20 12.4	254 19 36.0	Anchor	2022.7	3.305938
			117 36 17.3	297 34 26.6	Celestine	6684.6	3.825075
			128 49 54.9	308 48 51.1	Spring	4382.7	3.641745
Abbot	30 00 57.107	1758.4	119 07 07.3	299 06 29.2	Anchor	2337.5	3.368754
1910	85 33 04.879	130.7	176 47 19.0	356 47 17.3	Areola	1686.2	3.226913
Agog	30 00 01.575	48.5	135 38 13.3	315 37 49.4	Astral	1814.0	3.258644
1910	85 32 51.006	1367.1	167 44 01.6	347 43 54.7	Abbot	1749.9	3.243002
			172 10 41.3	352 10 32.5	Areola	3425.3	3.534704
Arrow	30 01 06.015	185.3	23 25 09.6	203 24 53.6	Agog	2162.3	3.334914
1910	85 32 18.941	507.6	77 26 30.7	257 26 07.7	Abbot	1261.2	3.100792
			136 45 35.6	316 45 10.9	Areola	1934.6	3.286596
Atom	29 59 19.378	596.6	130 26 35.5	310 26 07.1	Agog	2003.1	3.301705
1910	85 31 54.127	1450.8	168 33 07.9	348 32 55.5	Arrow	3350.2	3.525066
Asp	30 00 25.927	798.3	12 55 12.3	192 55 03.5	Atom	2102.3	3.322703
1910	85 31 36.591	980.6	69 24 02.9	249 23 25.7	Agog	2130.7	3.328523
			137 24 24.2	317 24 03.0	Arrow	1676.8	3.224485
Acorn	29 59 33.948	1045.3	79 56 31.3	259 55 44.2	Atom	2567.1	3.409450
1910	85 30 19.829	531.5	127 53 08.1	307 52 29.7	Asp	2606.6	3.416077
Apex	29 57 58.527	1802.2	123 43 42.6	303 42 33.1	Atom	4484.6	3.651727
1910	85 29 34.984	938.0	144 19 17.2	324 18 16.4	Asp	5588.0	3.747253
			157 45 00.5	337 44 38.1	Acorn	3174.6	3.501685
St. Joseph Point 2	29 51 56.716	1746.3	139 43 14.0	319 40 18.3	Apex	14608.0	4.164591
1910	85 23 42.732	1146.9	196 56 58.7	16 57 29.8	Consort	5746.5	3.759403

ST. MARKS RIVER TO ST. ANDREWS SOUND—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Principal points—Contd	° ′ ″		° ′ ″	° ′ ″		*Meters*	
San Carlos 2	29 50 59.716	1838.7	107 18 53.7	287 17 09.2	St. Joseph Point 2	5901.7	3.770979
1910	85 20 12.798	343.5	151 23 16.0	331 22 02.5	Consort	8261.4	3.917054
Pompano	29 49 00.102	3.1	192 08 15.8	12 08 37.5	St. Joseph Point	5562.4	3.745265
1910	85 24 26.311	706.5	241 33 48.1	61 35 54.2	San Carlos 2	7738.6	3.888665
			194 34 47.3	14 35 40.1	Consort	11299.0	4.053040
St. Joseph 2	29 47 24.601	757.5	106 07 45.2	286 04 36.7	Pompano	10601.6	4.025370
1910	85 18 07.029	188.8	152 59 38.5	332 58 36.0	San Carlos 2	7434.7	3.871262
Eagle Point 2	29 45 11.727	361.1	167 59 36.9	347 59 09.2	Pompano	7189.1	3.856673
1910	85 23 30.617	822.6	206 21 33.5	26 23 11.9	San Carlos 2	11959.4	4.077709
			244 46 25.1	64 49 05.8	St. Joseph 2	9607.3	3.982603
Blacks Island A. M.	29 43 36.680	1129.4	115 58 52.9	295 57 01.9	Eagle Point 2	6684.0	3.825035
1910	85 19 46.991	1262.9	200 56 05.6	20 56 55.2	St. Joseph 2	7514.1	3.875875
Cape San Blas L. H.	29 40 00.603	18.6	161 48 30.3	341 47 32.2	Eagle Point 2	10083.9	4.003630
1910	85 21 33.447	899.5	202 04 22.2	22 06 04.6	St. Joseph 2	14753.4	4.168891
			203 16 07.2	23 17 00.0	Blacks Island A. M.	7242.4	3.859884
Supplementary points							
Lanark, flag on wharf house	29 52 40.114	1235.1	239 11 22.2	59 11 58.2	St. James Island 2	2256.3	3.353391
1909	84 35 45.365	1217.4	347 08 46.3	167 09 12.1	Dog Island east 2	6249.6	3.795854
			54 57 53.7	234 56 41.1	Palmetto 2	4779.9	3.679422
Lanark, bathhouse wharf on reef, north end [1]	29 52 24.43	752.2	65 09 52	245 08 22	Palmetto 2	5382.4	3.730973
1909	84 35 09.20	246.9	210 33 27	30 33 46	St. James Island 2	1902.8	3.279395
Lanark, bathhouse wharf on reef, south end [1]	29 52 23.62	727.3	65 28 28	245 26 57	Palmetto 2	5386.0	3.731264
1909	84 35 08.62	231.3	209 46 53	29 47 10	St. James Island 2	1916.6	3.282534
Carabelle:							
Colored Methodist Church	29 50 55.066	1695.5	291 02 25.0	111 04 42.6	Dog Island east 2	7955.2	3.900651
1909	84 39 30.115	808.4	8 15 13.3	188 14 54.3	Dog Island west	7151.3	3.854383
			47 17 49.2	227 17 13.0	Crooked River 2	2661.3	3.425092
			55 08 36.3	235 05 52.0	Royal Bluff 2	10813.9	4.033981
Covington's house west chimney	29 50 47.662	1467.5	289 35 38.4	109 37 55.2	Dog Island east 2	7837.1	3.894153
1909	84 39 28.567	766.8	8 51 51.8	188 51 32.0	Dog Island west	6932.0	3.840859
			51 42 29.1	231 41 52.1	Crooked River 2	2544.8	3.405647
			56 16 13.8	236 13 28.7	Royal Bluff 2	10719.8	4.030185
Weather signal	29 50 55.450	1707.3	289 56 48.4	109 59 14.8	Dog Island east 2	8406.1	3.924594
1909	84 39 47.874	1285.1	4 25 59.5	184 25 49.3	Dog Island west	7110.4	3.851891
			39 08 48.3	219 08 20.9	Crooked River 2	2342.7	3.369711
Carrabelle River Bar rear range light	29 50 39.938	1229.7	285 54 48.8	105 57 24.1	Dog Island east 2	8715.4	3.940289
1909	84 40 05.744	154.2	0 36 12.2	180 36 10.9	Dog Island west	6611.8	3.820321
			36 43 35.5	216 43 17.0	Crooked River 2	1670.9	3.222952
Carrabelle River Bar front range light	29 50 27.012	831.7	335 55 37.4	155 55 41.6	Timber Island U. S. E. station D	550.0	2.740344
1910	84 39 54.846	1472.3	3 20 14.6	183 20 07.8	Dog Island west	6224.0	3.794069
			53 55 22.7	233 54 58.8	Crooked River 2	1598.3	3.203649
Timber Island U. S. E. station D	29 50 10.703	329.5	5 51 57.8	185 51 46.9	Dog Island west	5741.3	3.759013
1910	84 39 46.490	1248.1	73 51 04.1	253 50 36.0	Crooked River 2	1578.4	3.198213
			74 29 16.4	254 28 08.4	Crooked River rear range L. H.	3809.0	3.580806
Rear range light, new white	29 50 02.132	65.6	14 58 25.2	194 57 58.2	Dog Island west	5638.8	3.751184
1910	84 39 14.095	378.1	85 48 21.7	265 47 37.5	Crooked River 2	2392.2	3.378804
			106 52 55.4	286 52 39.3	Timber Island U. S. E. station D	908.9	2.958493
Front range light, new red	29 49 47.145	1451.6	14 55 58.9	194 55 34.2	Dog Island west	5160.1	3.712660
1910	84 39 18.831	505.6	97 13 43.0	277 13 01.1	Crooked River 2	2276.8	3.357319
			134 19 49.4	314 19 35.6	Timber Island U. S. E. station D	1038.0	3.016218
Crooked River rear range L. H.	29 49 37.599	1157.7	254 55 10.3	74 55 50.2	Crooked River 2	2230.7	3.348449
1909	84 42 03.190	85.6	272 19 13.2	92 22 46.9	Dog Island east 2	11544.3	4.062368
			326 40 22.3	146 41 19.4	Dog Island west	5615.0	3.749348
			2 47 03.6	182 46 56.8	St. George Island east	7562.9	3.878691
Crooked River front range light	29 49 31.830	980.0	249 50 51.6	69 51 29.9	Crooked River 2	2200.2	3.342464
1910	84 41 59.898	1608.3	251 30 43.8	71 31 50.2	Timber Island U. S. E. station D	3776.4	3.577074
			326 25 20.6	146 26 16.1	Dog Island west	5418.0	3.733842
Six-foot Spot light	29 43 07.791	239.9	43 45 04.0	223 43 29.7	Bulkhead 2	7403.4	3.869431
1909	84 48 17.116	460.0	92 51 38.0	272 49 09.2	Cat Point 2	8077.3	3.907267
			156 56 49.2	336 56 15.4	Yent	4671.2	3.669426
			186 31 48.1	6 31 59.7	Marsh Point 2	5542.6	3.743713
			272 39 44.6	92 41 04.2	Spartan	4319.5	3.635434
			342 53 58.0	162 54 08.8	Gap Island 2	1998.3	3.300655

[1] No check on this position.

ST. MARKS RIVER TO ST. ANDREWS SOUND—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Supplementary points—Continued	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Porter Bar light 1909	29 41 56.810	1749.2	48 55 52.9	228 54 46.1	Bulkhead 2	4814.5	3.682553
	84 49 12.522	336.6	111 28 22.4	291 26 21.1	Cat Point 2	7068.8	3.849344
			176 59 35.5	356 59 29.2	Yent	6492.4	3.812407
			251 06 52.8	71 08 39.8	Spartan	6134.3	3.787762
			262 26 17.6	82 26 55.9	Gap Island 2	2095.2	3.321233
Bulkhead Cut rear range light 1909	29 42 50.691	1560.8	316 42 40.1	136 44 03.8	Bulkhead 2	6623.9	3.821117
	84 54 16.410	441.1	11 47 24.7	191 46 57.1	Cedar Point	7340.5	3.865726
			95 03 14.4	275 00 50.0	Laurel	7855.0	3.895144
			239 45 05.8	59 45 35.1	Cat Point 2	1839.8	3.264772
Bulkhead Cut front range light 1909	29 42 37.563	1156.6	320 58 11.7	140 59 17.7	Bulkhead 2	5687.0	3.754883
	84 53 40.686	1093.6	19 56 39.3	199 55 54.0	Cedar Point	7213.9	3.858170
			97 07 03.1	277 04 21.0	Laurel	8852.8	3.947080
			205 18 07.4	25 18 19.0	Cat Point 2	1472.2	3.167952
St. Marks River east 1910	29 44 49.775	1532.6	296 09 07.4	116 10 50.3	Cat Point 2	6213.3	3.793319
	84 56 44.787	1203.5	26 42 40.4	206 41 48.7	Apalachicola jetty light	6231.0	3.794558
			52 11 32.2	232 10 21.4	Laurel	4855.8	3.686265
Apalachicola: Rear range light 1910	29 44 03.047	93.8	247 52 39.3	67 53 44.7	St. Marks River east	3822.0	3.582289
	84 58 56.555	1519.8	278 05 52.6	98 08 40.8	Cat Point 2	9210.5	3.964283
			349 48 53.2	169 49 06.8	Apalachicola jetty light	4193.7	3.622600
Front range light 1910	29 43 33.131	1020.1	170 16 37.4	350 16 34.5	Apalachicola rear range light	934.5	2.970596
	84 58 50.682	1362.1	235 05 39.8	55 06 42.3	St. Marks River east	4124.9	3.615413
			272 24 20.4	92 27 05.8	Cat Point 2	8968.7	3.952731
			349 40 59.6	169 41 10.4	Apalachicola jetty light	3259.2	3.513114
			36 14 59.8	216 14 51.5	Laurel	765.7	2.884057
Jetty, north end pole 1910	29 42 45.214	1392.1	138 32 26.9	318 32 12.9	Laurel	1144.7	3.058707
	84 58 39.328	1057.1	168 18 53.6	348 18 47.9	Apalachicola front range light	1506.6	3.178000
			169 04 00.0	349 03 51.4	Apalachicola rear range light	2440.8	3.387533
			218 44 36.9	38 45 33.7	St. Marks River east	4917.8	3.691771
Jetty light 1909	29 41 48.989	1508.4	284 26 01.1	104 29 29.8	Bulkhead 2	11702.7	4.068286
	84 58 28.970	778.8	314 57 18.0	134 58 55.3	Cedar Point	7479.5	3.873874
			30 01 34.5	209 59 25.6	Cape St. George L. H.	14004.6	4.146272
			158 11 07.7	338 10 48.5	Laurel	2788.8	3.445416
Jetty, south end 1909	29 41 38.213	1176.6	313 26 29.1	133 28 05.3	Cedar Point	7203.1	3.857518
	84 58 26.628	715.8	30 56 43.7	210 54 33.7	Cape St. George L. H.	13750.7	4.138324
			159 22 34.4	339 22 14.1	Laurel	3120.9	3.494276
Colored Baptist Church spire 1909	29 43 28.091	864.9	205 46 09.7	25 46 19.3	Apalachicola rear range light	1195.2	3.077427
	84 59 15.890	427.0	238 12 59.4	58 14 14.4	St. Marks River east	4776.4	3.679101
			271 18 42.5	91 21 40.4	Cat Point 2	9640.8	3.984115
White Baptist Church spire 1909	29 43 21.280	655.2	235 52 39.8	55 53 54.0	St. Marks River east	4858.6	3.686509
	84 59 14.476	389.1	270 03 57.3	90 06 54.4	Cat Point 2	9600.3	3.982285
			294 37 52.7	114 41 44.1	Bulkhead 2	13813.9	4.140317
Armory flagpole 1909	29 43 34.751	1070.0	194 40 27.1	14 40 31.3	Apalachicola rear range light	900.6	2.954533
	84 59 05.045	135.6	272 36 35.1	92 39 27.5	Cat Point 2	9356.5	3.971115
			296 38 31.6	116 42 18.3	Bulkhead 2	13764.9	4.138772
			323 44 43.8	143 46 39.1	Cedar Point	10591.0	4.024939
Episcopal Church spire 1909	29 43 31.828	980.0	200 34 44.0	20 34 50.7	Apalachicola rear range light	1026.8	3.011470
	84 59 09.985	268.4	272 01 45.8	92 04 40.7	Cat Point 2	9485.5	3.977062
			322 52 41.4	142 54 39.2	Cedar Point	10598.2	4.025232
Convent round tower 1902	29 43 18.113	557.7	321 58 33.2	142 00 28.8	Cedar Point	10191.4	4.008234
	84 59 05.587	150.2	22 02 54.0	202 01 03.3	Cape St. George L. H.	16043.2	4.205290
			45 19 05.9	225 15 47.7	West Pass	15148.9	4.180380
Catholic Church spire 1902	29 43 27.482	846.2	295 49 43.4	115 53 29.8	Bulkhead 2	13653.5	4.135244
	84 59 04.530	121.8	323 04 41.3	143 06 36.3	Cedar Point	10403.1	4.017161
			21 45 39.2	201 43 47.9	Cape St. George L. H.	16321.4	4.212758
Water tower 1909	29 43 30.051	925.3	271 42 15.1	91 45 09.5	Cat Point 2	9456.0	3.975709
	84 59 08.953	240.6	295 54 31.2	115 58 19.9	Bulkhead 2	13795.0	4.139721
			322 49 08.6	142 51 05.9	Cedar Point	10537.8	4.022751
			21 16 14.0	201 14 25.0	Cape St. George L. H.	16351.5	4.213556
			44 06 09.5	224 01 53.6	West Pass 2	15302.3	4.184756
Franklin Hotel flagpole 1909	29 43 33.201	1022.3	296 40 11.9	116 43 56.6	Bulkhead 2	13645.5	4.134988
	84 59 00.965	25.9	324 04 29.7	144 06 23.0	Cedar Point	10487.9	4.020688
			21 50 36.6	201 48 43.6	Cape St. George L. H.	16520.5	4.218023
Weather signal 1909	29 43 25.469	784.2	295 53 04.2	115 56 47.7	Bulkhead 2	13484.5	4.129834
	84 58 58.659	1576.5	323 34 31.3	143 36 23.4	Cedar Point	10259.1	4.011110
			22 21 23.9	202 19 29.7	Cape St. George L. H.	16323.2	4.212805
St. George light 1902	29 36 18.230	561.3	32 10 37.5	212 10 15.1	Cape St. George L. H.	2296.0	3.360979
	85 02 03.931	105.8	110 49 37.2	290 47 47.4	West Pass	6390.9	3.805564

ST. MARKS RIVER TO ST. ANDREWS SOUND—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Supplementary points—Continued	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Sand Island Cut front range light	29 36 32.826	1010.7	114 43 57.2	294 42 43.4	West Pass 2	4422.7	3.645683
	85 03 15.377	413.7	164 00 18.5	343 59 41.0	St. Vincent Point 2	7396.3	3.869014
1910			281 37 24.0	101 39 00.4	New Inlet 2	5366.7	3.729707
Sand Island Cut rear range light	29 36 21.629	665.9	116 20 39.5	296 19 18.0	West Pass 2	4947.0	3.694338
	85 02 59.905	1611.8	161 46 43.4	341 45 58.3	St. Vincent Point 2	7848.3	3.894778
1910			278 39 14.2	98 40 43.0	New Inlet 2	4896.1	3.689846
A (U. S. E.)	29 38 07.356	226.5	207 26 25.4	27 27 05.5	St. Vincent Point 2	4731.8	3.675028
1910	85 05 52.263	1405.9	349 08 06.8	169 08 10.5	West Pass 2	1080.2	3.033517
B (U. S. E.)	29 37 58.136	1790.0	234 54 23.0	54 54 30.4	A (U. S. E.)	493.76	2.693516
1910	85 06 07.282	195.9	321 58 20.6	141 58 31.8	West Pass 2	986.4	2.994047
West Pass Cut front range light	29 38 05.832	179.6	189 45 03.4	9 45 16.8	St. Vincent Point 2	4308.4	3.634319
	85 04 58.307	1568.5	296 09 50.3	116 12 17.6	New Inlet 2	8942.7	3.951469
1910			50 54 27.3	230 54 04.3	West Pass 2	1607.9	3.206250
			91 51 19.6	271 50 52.9	A (U. S. E.)	1452.2	3.162012
West Pass old rear range light	29 38 05.898	181.6	292 35 34.8	112 38 28.8	New Inlet 2	10266.3	4.011414
	85 05 52.268	1406.0	348 39 39.0	168 39 42.7	West Pass 2	1036.2	3.015452
1910			59 23 14.7	239 23 07.3	B (U. S. E.)	469.3	2.671446
			180 09 26.7	0 09 26.7	A (U. S. E.)	44.9	1.652016
West Pass Cut rear range light	29 38 21.602	665.1	302 49 20.3	122 51 26.4	New Inlet 2	8172.1	3.912333
	85 04 15.238	409.9	58 04 38.9	238 03 54.7	West Pass 2	2835.4	3.452610
1910			80 27 57.1	260 27 09.2	A (U. S. E.)	2646.5	3.422670
			173 30 03.0	353 29 55.2	St. Vincent Point 2	3784.9	3.578056
D (U. S. E.)	29 37 24.951	768.2	150 22 17.5	330 22 06.8	B (U. S. E.)	1175.5	3.070208
1910	85 05 45.680	1228.9	172 16 30.8	352 16 27.5	A (U. S. E.)	1317.6	3.119775
			186 10 43.7	6 10 44.1	West Pass 2	246.2	2.391247
			199 59 54.8	20 00 31.6	St. Vincent Point 2	5858.3	3.767770
C (U. S. E.)	29 37 37.755	1162.4	12 13 18.9	192 13 18.3	West Pass 2	152.9	2.184513
1910	85 05 43.491	1170.0	134 26 17.0	314 26 05.2	B (U. S. E.)	896.3	2.952467
			165 29 03.9	345 28 59.6	A (U. S. E.)	941.5	2.973798
Remains of day beacon [1]	29 37 12.20	375.6	150 04 09	330 03 06	St. Vincent Point 2	6805.7	3.83287
1910	85 02 24.89	669.6	300 28 45	120 29 56	New Inlet 2	4523.1	3.65544
San Pedro 2	29 42 43.128	1328.0	221 42 47.3	41 45 10.1	St. Joseph 2	11613.4	4.064959
1910	85 22 54.743	1471.2	251 53 33.1	71 55 06.2	Blacks Island A. M.	5308.8	3.724999
Warehouse, outer end	29 48 50.495	1554.8	335 04 27.1	155 04 49.9	St. Joseph 2	2916.3	3.464829
1910	85 18 52.789	1417.5	91 54 53.2	271 52 07.4	Pompano	8960.5	3.952334
			151 38 31.7	331 37 51.9	San Carlos 2	4521.6	3.655288
Summer house	29 53 47.893	1474.6	26 51 11.0	206 49 47.8	Pompano	9931.3	3.997004
1910	85 21 39.244	1052.8	44 04 38.1	224 03 36.6	St. Joseph Point 2	4764.4	3.678005
			141 42 21.9	321 41 51.5	Consort	2642.1	3.421951
St. Joseph Point front range light	29 55 05.277	162.5	330 50 10.3	150 51 28.6	San Carlos 2	8657.7	3.937404
	85 22 49.973	1340.5	12 57 23.1	192 56 35.1	Pompano	11537.4	4.062108
1910			13 42 21.8	193 41 55.5	St. Joseph Point 2	5976.0	3.776411
St. Joseph Point rear range L. H.	29 55 08.343	256.9	332 10 33.6	152 11 48.6	San Carlos 2	8655.3	3.937284
	85 22 43.303	1161.6	13 42 34.4	193 41 43.1	Pompano	11670.5	4.067090
1910			15 07 37.4	195 07 07.8	St. Joseph Point 2	6112.0	3.786181
			115 25 08.9	295 21 40.6	Apex	12220.2	4.087078
A	30 01 47.612	1466.0	358 33 10.6	178 33 10.7	Anchor	417.9	2.621110
1910	85 34 21.483	575.6	153 08 31.7	333 08 04.4	Spring	3223.9	3.508387
			266 14 28.1	86 15 04.7	Areola	1962.3	3.292765
			291 18 00.3	111 19 01.7	Arrow	3524.6	3.547108
			307 08 30.0	127 09 08.3	Abbot	2575.3	3.410820
B	30 02 08.699	267.9	10 34 57.1	190 34 53.3	Anchor	1085.6	3.035662
1910	85 34 13.649	365.7	143 11 33.7	323 11 02.5	Spring	2781.3	3.444254
			286 35 11.9	106 35 44.6	Areola	1824.1	3.261040
			302 07 09.6	122 08 07.1	Arrow	3629.4	3.559832
			320 06 07.7	140 06 42.1	Abbot	2873.2	3.458359
Hog Island	30 03 43.723	1346.3	60 16 12.1	240 16 00.6	Celestine	707.6	2.849777
1910	85 36 26.609	712.8	162 28 44.4	342 28 39.3	Bayou Bluff	913.7	2.960813
			290 14 40.1	110 15 15.6	Spring	2020.1	3.305365
St. Andrews Bar rear range light	30 04 34.443	1060.5	61 17 20.0	241 16 53.6	Hurricane East	1608.6	3.206455
	85 37 19.378	519.0	120 44 04.0	300 43 43.1	Sand Bluff	1301.9	3.114567
1910			301 14 11.5	121 14 32.8	Bayou Bluff	1331.2	3.124250
St. Andrews Bar front range light	30 03 55.275	1701.9	111 55 20.1	291 54 59.9	Hurricane East	1160.4	3.064617
	85 37 31.861	853.4	157 15 00.1	337 14 45.4	Sand Bluff	2029.2	3.307331
1910			250 41 50.9	70 42 18.4	Bayou Bluff	1560.3	3.193202
Fish house gable	30 04 56.185	1730.0	77 50 46.3	257 50 14.4	Hurricane West	1742.9	3.241266
1910	85 38 13.893	372.1	105 39 47.3	285 38 46.6	Lands end	3365.4	3.527033
			128 37 02.3	308 36 02.3	Welley	4102.1	3.613011
St. Andrews Bay front range light	30 05 15.424	474.8	45 51 21.1	225 51 02.6	Hurricane West	1377.6	3.139113
	85 38 40.601	1087.4	97 07 58.0	277 07 10.7	Lands end	2544.9	3.405670
1910			128 18 56.4	308 18 09.8	Welley	3173.6	3.501556

[1] No check on this position.

ST. ANDREWS BAY

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Principal points	° ′ ″		° ′ ″	° ′ ″		*Meters*	
St. Andrews Bay west base 1870	30 07 36.688 85 44 17.438	1129.8 466.8	127 06 00.0	307 02 32.1	C	13873.3	4.142180
Davis Point 2 1869	30 07 14.295 85 41 10.806	440.2 289.3	97 52 15.7	277 50 42.0	St. Andrews Bay west base	5043.3	3.702715
Dyers Point 2 1870	30 10 38.947 85 43 53.541	1199.2 1432.6	325 20 23.2 6 30 09.6	145 21 44.9 186 29 57.6	Davis Point 2 St. Andrews Bay west base	7660.1 5648.4	3.884236 3.751928
St. Andrews Bay east base 1870	30 06 18.191 85 42 45.759	560.2 1225.0	134 34 04.9 235 47 38.5	314 33 18.9 55 48 26.1	St. Andrews Bay west base Davis Point 2	3444.71 3073.5	3.537152 3.487638
Courtney Point 2 1869	30 08 48.923 85 42 36.376	1506.4 973.5	321 49 28.2 3 05 53.5 148 38 38.9	141 50 11.2 183 05 48.8 328 38 00.1	Davis Point 2 St. Andrews Bay east base Dyers Point 2	3706.2 4648.1 3967.5	3.568930 3.667277 3.598516
Laguna 1869	30 07 08.621 85 42 41.233	265.5 1103.8	182 24 35.3 265 51 55.3	2 24 37.7 85 52 40.7	Courtney Point 2 Davis Point 2	3091.2 2427.0	3.490131 3.385076
Vista Buena 2 1870	30 09 56.869 85 42 04.587	1751.2 122.7	343 57 16.6 22 07 45.8 113 58 14.5	163 57 43.6 202 07 29.9 293 57 19.8	Davis Point 2 Courtney Point 2 Dyers Point 2	5208.8 2258.5 3190.2	3.716735 3.353824 3.503812
West Bay Point 1870	30 12 57.662 85 44 30.399	1775.6 813.0	347 00 00.0	167 00 18.6	Dyers Point 2	4383.7	3.641836
North Bay Point 1870	30 14 02.705 85 43 16.146	83.3 431.7	44 45 30.0	224 44 52.6	West Bay Point	2820.3	3.450296
Crane Point 1871	30 15 07.423 85 47 39.976	228.6 1068.7	308 13 58.1	128 15 33.7	West Bay Point	6454.6	3.809868
Pelican Point 2 1910	30 14 19.250 85 45 35.472	592.8 948.5	277 46 38.6 325 17 14.7 114 01 38.1	97 47 48.8 145 17 47.5 294 00 35.3	North Bay Point West Bay Point Crane Point	3760.0 3056.1 3644.3	3.575193 3.485163 3.561620
Clio 2 1910	30 15 36.993 85 44 06.806	1139.1 181.9	334 59 13.7 7 19 42.6 44 43 28.8 80 56 13.9	154 59 39.2 187 19 30.7 224 42 44.1 260 54 26.4	North Bay Point West Bay Point Pelican Point 2 Crane Point	3203.7 4946.6 3369.0 5771.0	3.505656 3.694304 3.527495 3.761253
Medway 2 1910	30 17 10.529 85 46 39.620	324.2 1058.8	305 10 45.5 341 59 04.6 23 03 31.7	125 12 02.5 161 59 36.9 203 03 01.2	Clio 2 Pelican Point 2 Crane Point	4997.9 5545.9 4119.8	3.698785 3.743970 3.614874
Orcus 2 1910	30 17 07.207 85 50 05.689	221.9 152.0	268 55 16.9 313 25 50.1	88 57 00.8 133 27 03.5	Medway 2 Crane Point	5508.2 5364.2	3.741009 3.729504
Swan 2 1910	30 14 12.957 85 49 22.562	399.0 603.2	167 52 35.7 218 31 46.4 238 32 52.1	347 52 14.0 38 33 08.6 58 33 43.8	Orcus 2 Medway 2 Crane Point	5488.0 6990.7 3214.9	3.739417 3.844522 3.507165
Iris 2 1910	30 12 18.689 85 42 27.539	575.5 736.5	110 04 17.5 157 54 49.6	290 03 15.7 337 54 25.2	West Bay Point North Bay Point	3498.2 3456.6	3.543848 3.538653
Ceres 2 1910	30 14 55.712 85 40 48.214	1715.6 1289.0	28 47 17.7 67 35 10.0	208 46 27.7 247 33 55.5	Iris 2 North Bay Point	5516.6 4278.8	3.741672 3.631325
Juno Bayou 2 1910	30 15 23.722 85 41 57.135	730.5 1527.4	295 04 46.6 8 07 22.7	115 05 21.3 188 07 07.4	Ceres 2 Iris 2	2034.4 5755.3	3.308442 3.760069
Sulphur Point 2 1910	30 11 08.497 85 43 59.742	261.7 1598.3	166 17 34.0 192 15 37.1 228 45 51.9	346 17 18.6 12 15 59.0 48 46 38.3	West Bay Point North Bay Point Iris 2	3460.0 5489.5 3279.4	3.539079 3.739536 3.515797
Perdita 2 1910	30 12 07.554 85 44 42.746	232.6 1143.3	213 08 42.4 264 34 27.7 327 40 48.5	33 09 25.8 84 35 35.7 147 41 10.1	North Bay Point Iris 2 Sulphur Point 2	4235.1 3632.6 2151.8	3.626867 3.560221 3.332800
Aliena 2 1910	30 11 00.810 85 45 07.255	25.0 194.1	197 41 28.9 262 31 44.3	17 41 41.2 82 32 18.2	Perdita 2 Sulphur Point 2	2157.2 1821.6	3.333896 3.260447
Bluff 1910	30 10 08.479 85 44 52.797	261.0 1412.7	166 30 09.4 184 11 37.2 217 31 23.0	346 30 02.1 4 11 42.3 37 31 49.7	Aliena 2 Perdita 2 Sulphur Point 2	1657.2 3676.4 2330.3	3.219364 3.565425 3.367411
Dyers Point 3 1910	30 10 39.558 85 43 53.175	1218.1 1422.7	59 02 38.5 108 16 39.3 168 50 50.2 294 20 07.7	239 02 08.6 288 16 02.1 348 50 46.9 114 21 02.3	Bluff Aliena 2 Sulphur Point 2 Vista Buena 2	1860.3 2087.1 908.2 3189.0	3.269572 3.319550 2.958203 3.503649
Bear Point 1910	30 09 41.104 85 43 26.753	1265.7 715.8	110 06 51.6 132 23 39.5 158 33 29.2 257 32 39.9	290 06 08.4 312 22 49.0 338 33 15.9 77 33 21.2	Bluff Aliena 2 Dyers Point 3 Vista Buena 2	2451.8 3640.6 1933.8 2251.6	3.389483 3.561178 3.286404 3.352496
Courtney Point 3 1910	30 08 49.809 85 42 36.562	1533.8 978.5	139 37 32.2 148 45 44.6 202 30 23.4	319 37 07.0 328 45 06.1 22 30 39.5	Bear Point Dyers Point 3 Vista Buena 2	2073.4 3952.6 2235.2	3.316679 3.596883 3.349310

ST. ANDREWS BAY—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Principal points—Contd	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Red Fish Point 3	30 08 29.978	923.1	98 59 30.4	278 58 17.9	Courtney Point 3	3911.4	3.592334
1910	85 40 12.206	326.7	131 39 57.2	311 39 00.8	Vista Buena 2	4025.3	3.604797
Drumond	30 09 46.744	1439.4	333 37 20.6	153 37 42.6	Red Fish Point 3	2638.4	3.421343
1910	85 40 56.004	1498.6	56 55 24.5	236 54 34.0	Courtney Point 3	3211.7	3.506732
Davis Point 3	30 07 23.404	720.7	139 29 51.6	319 29 09.0	Courtney Point 3	3499.3	3.543982
1910	85 41 11.641	311.6	163 18 41.2	343 18 14.7	Vista Buena 2	4933.4	3.693142
			185 24 55.3	5 25 03.2	Drumond	4433.5	3.646746
Laguna 2	30 07 00.594	18.3	178 31 59.4	358 31 57.8	Courtney Point 3	3364.0	3.526857
1910	85 42 33.345	892.7	252 11 30.8	72 12 11.8	Davis Point 3	2297.2	3.361201
Spanish Shanty	30 06 09.223	284.0	139 34 32.5	319 34 07.2	Laguna 2	2078.0	3.317638
1910	85 41 43.012	1151.7	163 50 12.9	343 49 46.0	Courtney Point 3	5148.3	3.711663
			200 11 10.5	20 11 26.2	Davis Point 3	2433.7	3.386258
Middle	30 06 40.995	1262.2	58 01 39.0	238 01 09.7	Spanish Shanty	1847.4	3.266553
1910	85 40 44.482	1191.0	77 59 59.8	257 59 00.0	E. B. P.	3264.1	3.513761
			101 42 22.6	281 41 28.0	Laguna 2	2976.2	3.473669
Bunkers Point	30 08 41.927	1291.1	73 20 05.5	253 19 42.4	Red Fish Point 3	1282.7	3.108129
1910	85 39 26.293	703.8	92 44 32.2	272 42 56.7	Courtney Point 3	5098.0	3.707396
			129 44 40.9	309 43 55.8	Drumond	3122.0	3.494436
Palmetto Point 2	30 07 24.942	768.0	129 06 41.1	309 05 54.9	Red Fish Point 3	3175.0	3.501739
1910	85 38 40.160	1075.1	152 29 18.8	332 28 55.6	Bunkers Point	2672.8	3.426971
Town Point 2	30 08 07.788	239.8	346 43 35.7	166 43 41.5	Palmetto Point 2	1355.5	3.132101
1910	85 38 51.786	1386.1	107 37 04.1	287 36 23.7	Red Fish Point 3	2258.3	3.353777
			138 42 06.2	318 41 48.9	Bunkers Point	1399.3	3.145904
Cromanton	30 07 17.429	536.7	100 59 12.7	280 58 50.3	Palmetto Point 2	1214.3	3.084319
1910	85 37 55.630	1489.3	135 53 41.1	315 53 12.9	Town Point 2	2159.6	3.334382
Military Point 2	30 07 31.703	976.2	65 24 44.6	245 24 26.6	Cromanton	1056.2	3.023762
1910	85 37 19.751	528.7	84 28 53.6	264 28 13.2	Palmetto Point 2	2162.5	3.334955
			114 17 00.1	294 16 13.9	Town Point 2	2702.5	3.431767
Watson Point 2	30 08 09.573	294.8	323 50 03.8	143 50 19.8	Military Point 2	1444.4	3.159674
1910	85 37 51.592	1380.9	3 51 04.5	183 51 02.5	Cromanton	1609.2	3.206621
			43 24 48.7	223 24 24.3	Palmetto Point 2	1891.7	3.276859
Parker Point 2	30 07 33.985	1046.5	86 21 21.7	266 21 01.0	Military Point 2	1104.6	3.043191
1910	85 36 38.571	1032.5	119 16 56.0	299 16 19.3	Watson Point 2	2240.8	3.350402
Gainer	30 08 14.964	460.8	320 58 50.6	140 59 09.8	Parker Point 2	1624.0	3.210593
1910	85 37 16.767	448.8	3 25 52.2	183 25 50.7	Military Point 2	1334.5	3.125305
			79 54 18.9	259 54 01.4	Watson Point 2	946.8	2.976243
Ferry Point	30 07 22.759	700.8	141 49 09.4	321 48 48.1	Watson Point 2	1833.9	3.263373
1910	85 37 09.239	247.3	172 51 19.7	352 51 15.9	Gainer	1620.1	3.209532
			247 09 50.2	67 10 05.6	Parker Point 2	890.8	2.949762
Gabel 2	30 06 17.103	526.6	174 00 56.8	354 00 52.8	Ferry Point	2032.7	3.308083
1910	85 37 01.323	35.4	194 25 37.6	14 25 49.0	Parker Point 2	2444.4	3.388179
Oyster east	30 06 20.830	641.4	85 05 09.2	265 04 44.2	Gabel 2	1338.8	3.126729
1910	85 36 11.501	308.0	140 58 32.9	320 58 03.9	Ferry Point	2454.7	3.389998
Oyster west	30 06 29.285	901.7	71 30 06.1	251 29 45.1	Gabel 2	1182.1	3.072660
1910	85 36 19.453	520.8	141 00 50.0	321 00 25.0	Ferry Point	2118.4	3.326009
			165 35 35.6	345 35 26.0	Parkers Point 2	2056.9	3.313216
Viola 2	30 05 37.516	1155.2	121 21 16.4	301 20 38.9	Gabel 2	2343.0	3.369774
1910	85 35 46.592	1247.6	153 26 00.6	333 25 48.1	Oyster east	1491.2	3.173535
Shoal Bayou 2	30 05 48.415	1490.8	69 27 12.6	249 26 55.8	Viola 2	956.1	2.980496
1910	85 35 13.158	352.4	106 58 12.7	286 57 18.4	Gabel 2	3027.9	3.481135
			122 34 50.9	302 34 21.6	Oyster east	1853.8	3.268063
Dixon 2	30 07 04.907	151.1	35 12 36.2	215 12 05.1	Shoal Bayou 2	2882.6	3.459784
1910	85 34 11.087	296.8	67 10 38.8	247 09 38.4	Oyster east	3497.8	3.543795
East Point 2	30 05 37.743	1162.2	97 46 08.9	277 45 23.9	Shoal Bayou 2	2432.7	3.386093
1910	85 33 43.138	1155.1	108 28 43.2	288 27 28.8	Oyster east	4188.2	3.622026
			164 25 23.9	344 25 09.9	Dixon 2	2786.3	3.445026
Didi Point 2	30 05 35.501	1093.1	91 04 20.0	271 03 10.3	East Point 2	3722.4	3.570827
1910	85 31 24.147	646.5	121 38 29.5	301 37 05.8	Dixon 2	5249.4	3.720111
Laird	30 07 14.545	447.9	343 04 20.5	163 04 37.9	Didi Point 2	3187.8	3.503491
1910	85 31 58.810	1574.3	43 08 52.1	223 07 59.8	East Point 2	4084.9	3.611186
			85 13 07.0	265 12 00.6	Dixon 2	3553.5	3.550657
Drogan 2	30 04 36.168	1113.8	118 46 47.1	298 45 42.4	East Point 2	3939.3	3.595415
1910	85 31 34.197	915.8	172 18 19.9	352 18 07.6	Laird	4921.0	3.692055
			188 22 45.5	8 22 50.5	Didi Point 2	1846.7	3.266392
Supplementary points							
Old west base	30 04 50.269	1548.0	137 18 48.9	317 17 35.2	Laguna	5796.4	3.763158
1854	85 40 14.433	386.5	161 12 28.1	341 11 59.8	Davis Point 2	4684.6	3.670676
			295 07 59.8	115 08 19.9	Hurricane Point	1188.0	3.074825

ST. ANDREWS BAY—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Supplementary points—Contd	° ′ ″		° ′ ″	° ′ ″		*Meters*	
E. B. P. 1910	30 06 18.941 85 42 43.731	583.3 1170.8	231 09 19.6 280 25 27.8	51 10 05.8 100 25 58.3	Davis Point 3 Spanish Shanty	3165.1 1653.0	3.500391 3.218272
North base (U. S. E.) 1910	30 08 46.425 85 42 38.344	1429.6 1026.2	317 45 39.5 342 58 57.2 357 38 53.9	137 46 23.0 162 59 25.0 177 38 56.4	Davis Point 3 Spanish Shanty Laguna 2	3452.7 5062.1 3261.5	3.538153 3.704329 3.513417
South base (U. S. E.) 1910	30 08 13.556 85 43 08.549	417.4 228.8	296 15 28.2 329 06 36.1 337 14 31.2 218 36 47.5	116 16 26.9 149 07 19.0 157 14 48.8 38 37 02.6	Davis Point 3 Spanish Shanty Laguna 2 North base (U. S. E.)	3489.6 4461.0 2436.3 1295.3	3.542776 3.649427 3.386723 3.112385
Lowell's house chimney 1910	30 10 11.599 85 45 03.223	357.2 86.2	175 55 43.8 188 43 16.7 224 06 19.0 245 19 21.9	355 55 41.8 8 43 27.1 44 06 51.0 65 19 57.1	Aliena 2 Perdita 2 Sulphur Point 2 Dyers Point 3	1519.1 3612.3 2440.1 2062.4	3.181600 3.557782 3.387408 3.314383
Trousdale Boat Works stack 1910	30 10 36.204 85 42 43.920	1114.7 1175.1	356 33 36.5 34 02 33.4 76 06 11.0	176 33 40.2 214 02 11.9 256 05 06.3	Courtney Point 3 Bear Point Bluff	3282.0 2047.5 3552.3	3.516143 3.311219 3.550514
Bay Bottling Works chimney 1910	30 10 33.940 85 42 39.202	1045.1 1048.8	358 44 15.0 38 01 50.7 77 38 17.7	178 44 16.3 218 01 26.8 257 37 10.6	Courtney Point 3 Bear Point Bluff	3207.2 2065.4 3659.4	3.506123 3.314997 3.563414
Shepherd's house highest chimney 1910	30 10 26.703 85 42 20.430	822.2 546.6	8 14 01.2 51 39 13.7 82 10 23.0	188 13 53.1 231 38 40.4 262 09 06.5	Courtney Point 3 Bear Point Bluff	3014.6 2262.9 4158.6	3.479234 3.354670 3.618952
Shepherd's residence west chimney 1910	30 10 21.166 85 42 15.844	651.7 423.9	11 09 00.9 56 58 29.0 84 41 45.9	191 08 50.5 236 57 53.4 264 40 27.1	Courtney Point 3 Bear Point Bluff	2867.2 2263.1 4217.6	3.457454 3.354709 3.625069
Ware Mecantile Co. wharf-house flagstaff 1910	30 10 03.401 85 42 15.571	104.7 416.6	304 23 03.1 13 55 24.5 70 10 59.4 113 05 47.1	124 23 08.6 193 55 13.9 250 10 23.6 293 04 58.0	Vista Buena 2 Courtney Point 3 Bear Point Dyers Point 3	356.2 1854.5 2024.7 2838.9	2.551652 3.268216 3.306356 3.453153
St. Andrews ice plant stack 1910	30 09 53.870 85 41 36.354	1658.8 972.8	281 29 03.7 318 54 50.8 39 14 46.7 82 25 43.1	101 29 24.0 138 55 33.1 219 14 16.5 262 24 47.7	Drumond Red Fish Point 3 Courtney Point 3 Bear Point	1101.8 3426.9 2546.9 2980.2	3.042087 3.534905 3.406017 3.474241
St. Andrews flag, end of ice plant wharf 1910	30 09 42.803 85 41 36.033	1318.0 964.2	119 32 58.4 263 32 01.1 314 58 58.2	299 32 44.1 83 32 21.2 134 59 40.3	Vista Buena 2 Drumond Red Fish Point 3	878.3 1078.0 3171.9	2.943626 3.032605 3.501320
Fish 1910	30 09 45.089 85 41 36.306	1388.3 971.6	43 27 15.4 87 37 49.0 115 36 39.7 267 17 32.3 315 46 30.7	223 26 45.1 267 36 53.5 295 36 25.5 87 17 52.5 135 47 12.8	Courtney Point 3 Bear Point Vista Buena 2 Drumond Red Fish Point 3	2344.7 2958.0 839.2 1079.6 3227.1	3.370085 3.471000 2.923849 3.033270 3.508818
Panama City ice plant stack 1910	30 09 22.708 85 39 54.684	699.2 1463.4	16 06 36.5 76 50 59.6 114 16 56.9	196 06 27.7 256 49 38.3 294 16 26.1	Red Fish Point 3 Courtney Point 3 Drumond	1690.0 4448.9 1800.1	3.227888 3.648256 3.255288
Panama City, U.S. Weather Bureau signal 1910	30 09 18.066 85 39 51.402	556.3 1375.5	20 36 30.9 108 32 36.6 117 03 48.1	200 36 20.4 288 31 29.7 297 03 15.6	Red Fish Point 3 Vista Buena 2 Drumond	1581.9 3758.8 1941.2	3.199189 3.575055 3.288071
Railroad wharf, gable of freight house 1910	30 09 13.402 85 40 01.256	412.7 33.6	316 00 15.3 317 22 25.2 326 58 25.4	136 00 32.9 137 23 00.1 146 59 06.1	Bunkers Point Town Point 2 Palmetto Point 2	1347.1 2745.7 3983.0	3.129415 3.438649 3.600214
Crawford's house, center gable 1910	30 09 10.984 85 39 44.998	338.2 1204.2	29 58 25.0 81 55 46.7 98 53 54.8 110 43 44.7 120 05 51.5	209 58 11.3 261 54 20.5 278 52 03.4 290 42 34.6 300 05 15.8	Red Fish Point 3 Courtney Point 3 Bear Point Vista Beuna 2 Drumond	1457.6 4637.4 6006.2 3993.6 2196.1	3.163630 3.666278 3.778603 3.601363 3.341652
House south of Red Fish Point, chimney 1910	30 07 54.002 85 40 38.630	1662.7 1034.0	118 34 22.3 148 42 17.9 172 22 21.7	298 33 25.1 328 41 34.8 352 22 13.0	Courtney Point 3 Vista Buena 2 Drumond	3593.9 4427.8 3502.5	3.555561 3.646184 3.544382
Donaldson house west chimney 1910	30 07 15.768 85 36 18.404	485.5 492.7	98 59 34.7 123 35 53.3 136 05 58.9 106 38 25.5	278 59 09.2 303 35 06.5 316 05 48.8 286 37 54.7	Ferry Point Watson Point 2 Parkers Point 2 Military Point 2	1377.8 2994.5 778.5 1713.9	3.139171 3.476325 2.891209 3.233996

CHOCTAWHATCHEE BAY TO ST. ANDREWS BAY

Principal points							
Exit 1871	30 23 39.635 86 35 45.324	1220.5 1210.0	97 03 18.8 131 01 53.8	277 02 49.4 311 01 37.6	Gulf Burlison	1561.7 1134.4	3.193592 3.054772
Stevens 1871	30 24 21.742 86 35 14.309	669.5 381.9	32 33 40.8 65 04 55.5	212 33 25.1 245 04 10.4	Exit Gulf	1538.4 2621.9	3.187066 3.418611

CHOCTAWHATCHEE BAY TO ST. ANDREWS BAY—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Principal points—Contd	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Choctawhatchee	30 23 33.188	1022.0	94 10 10.2	274 09 18.5	Exit	2734.9	3.436941
1871	86 34 03.148	84.0	128 12 36.5	308 12 00.5	Stevens	2417.4	3.383350
Garnier	30 25 51.063	1572.4	14 05 11.5	194 04 51.3	Choctawhatchee	4377.2	3.641194
1871	86 33 23.242	620.2	47 09 01.6	227 08 05.4	Stevens	4043.8	3.606789
Cobbs Point	30 25 04.666	143.7	69 46 17.9	249 43 53.1	Choctawhatchee	8139.1	3.910576
1872	86 29 17.074	455.7	102 17 11.9	282 15 07.2	Garnier	6723.2	3.827575
Tripod	30 27 38.469	1184.6	353 13 15.4	173 13 26.1	Cobbs Point	4769.4	3.678466
1872	86 29 38.168	1018.2	43 07 59.0	223 05 44.8	Choctawhatchee	10346.7	4.014800
			61 10 21.7	241 08 27.6	Garnier	6855.9	3.836063
White Point	30 27 05.979	184.1	59 52 00.9	239 49 58.8	Cobbs Point	7437.5	3.871428
1872	86 25 16.062	428.5	98 09 38.8	278 07 25.9	Tripod	7063.9	3.849044
Shaker	30 24 37.734	1162.0	99 44 10.7	279 42 38.9	Cobbs Point	4910.4	3.691113
1872	86 26 15.741	420.1	135 52 11.4	315 50 28.8	Tripod	7755.8	3.889624
			199 13 41.6	19 14 11.8	White Point	4834.8	3.684376
Stake Point	30 27 08.126	250.2	39 35 47.7	219 34 35.0	Shaker	6009.2	3.778815
1872	86 23 52.244	1393.9	66 20 27.0	246 17 42.4	Cobbs Point	9465.0	3.976120
			88 18 45.9	268 18 03.4	White Point	2237.2	3.349711
Four Mile Point	30 25 23.152	712.9	83 19 00.9	263 15 15.5	Shaker	11961.7	4.077793
1872	86 18 50.637	1351.5	111 54 14.3	291 51 41.5	Stake Point	8673.0	3.938168
Blunt	30 28 18.086	556.9	12 34 30.9	192 34 08.1	Four Mile Point	5519.2	3.741873
1872	86 18 05.611	149.7	62 36 45.4	242 32 37.1	Shaker	14733.3	4.168309
			76 54 36.3	256 51 40.6	Stake Point	9494.9	3.977489
Live Oak Point	30 25 44.508	1370.6	83 58 26.9	263 56 29.0	Four Mile Point	6247.5	3.795709
1872	86 14 57.833	1543.4	133 21 42.3	313 20 07.1	Blunt	6889.5	3.838188
Alaqua	30 28 27.256	839.3	15 49 24.8	195 48 57.8	Live Oak Point	5208.9	3.716744
1872	86 14 04.610	123.0	53 24 44.8	233 22 19.8	Four Mile Point	9506.8	3.978033
			87 30 06.6	267 28 04.4	Blunt	6434.7	3.808530
La Grange	30 25 54.338	1673.3	88 08 14.0	268 05 19.6	Live Oak Point	9192.6	3.963439
1872	86 09 13.544	361.5	121 15 08.4	301 12 40.9	Alaqua	9081.7	3.958167
Alligator 2	30 25 08.800	271.0	116 31 40.6	296 30 58.8	Live Oak Point	2462.4	3.391353
1872	86 13 35.277	941.6	172 42 14.3	352 41 59.4	Alaqua	6161.1	3.789655
			258 37 48.2	78 40 00.7	La Grange	7124.3	3.852740
Criglar	30 23 15.463	476.2	148 58 54.2	328 57 04.6	Alaqua	11205.0	4.049410
1872	86 10 28.143	751.3	202 08 27.5	22 09 05.3	La Grange	5281.9	3.722793
Blue Mountain	30 20 50.499	1555.0	167 53 34.8	347 52 37.5	Alaqua	14385.4	4.157922
1872	86 12 11.497	307.1	206 54 28.1	26 55 58.1	La Grange	10493.2	4.020908
High	30 20 21.859	673.1	188 40 01.0	8 40 03.5	Blue Mountain	892.1	2.950415
1872	86 12 16.530	441.5					
I	30 18 13.452	414.2	109 48 04.7	289 44 36.8	High	11688.3	4.067753
1872	86 05 24.812	663.0					
G	30 16 27.619	850.4	112 41 04.6	292 38 37.3	I	8457.4	3.927236
1872	86 00 32.781	876.1					
E	30 14 37.401	1151.7	115 35 02.1	295 32 48.4	G	7864.6	3.895677
1872	85 56 07.388	197.5					
C	30 12 08.282	255.0	120 06 55.0	300 04 25.9	E	9157.2	3.961764
1872	85 51 11.121	297.8					
Alligator Point 2	30 25 17.327	533.6	260 41 19.0	80 43 31.2	La Grange	7057.7	3.848662
1910	86 13 34.535	921.7	307 00 41.3	127 02 15.6	Criglar	6231.8	3.794616
Alaqua Point 2	30 28 26.357	811.6	302 08 03.2	122 10 24.7	La Grange	8796.0	3.944284
1910	86 13 52.664	1404.8	355 14 54.4	175 15 03.6	Alligator Point 2	5840.9	3.766482
Live Oak Point 2	30 25 44.780	1378.9	199 03 52.2	19 04 24.9	Alaqua Point 2	5264.4	3.721348
1910	86 14 57.128	1524.6	268 08 13.6	88 11 07.7	La Grange	9173.6	3.962539
			290 58 37.4	110 59 19.2	Alligator Point 2	2360.7	3.373048
Blunt 2	30 28 18.514	570.1	267 55 54.0	87 58 02.3	Alaqua Point 2	6750.5	3.829335
1910	86 18 05.573	148.6	313 15 46.0	133 17 21.5	Live Oak Point 2	6905.7	3.839210
Four Mile Point 2	30 25 23.518	724.2	192 34 31.6	12 34 54.4	Blunt 2	5521.2	3.742035
1910	86 18 50.638	1351.4	234 40 24.6	54 42 55.6	Alaqua Point 2	9742.0	3.988646
			263 59 09.2	84 01 07.4	Live Oak Point 2	6266.0	3.796990
Stake Point 2	30 27 08.054	248.0	256 46 59.2	76 49 55.1	Blunt 2	9506.9	3.978039
1910	86 23 52.535	1401.7	291 45 35.6	111 48 08.6	Four Mile Point 2	8675.1	3.938275
Shaker 2	30 24 37.448	1153.2	219 24 13.8	39 25 26.1	Stake Point 2	6002.8	3.778355
1910	86 26 15.357	409.9	242 27 05.0	62 31 13.1	Blunt 2	14735.5	4.168366
			263 09 10.7	83 12 55.9	Four Mile Point 2	11953.9	4.077508
White Point 2	30 27 05.630	173.4	268 04 13.9	88 04 56.1	Stake Point 2	2223.7	3.347079
1910	86 25 15.836	422.5	19 11 49.2	199 11 19.1	Shaker 2	4831.6	3.684087

CHOCTAWHATCHEE BAY TO ST. ANDREWS BAY—Continued.

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Principal points—Contd	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Cobbs Point 2	30 25 05.336	164.3	240 09 13.4	60 11 16.0	White Point 2	7447.0	3.871980
1910	86 29 17.936	478.7	279 58 53.2	100 00 25.6	Shaker 2	4948.2	3.694443
Tripod 2	30 27 40.165	1236.8	278 43 37.0	98 45 48.3	White Point 2	6994.5	3.844758
1910	86 29 34.964	932.8	316 33 19.3	136 35 00.4	Shaker 2	7747.7	3.889174
			354 33 18.1	174 33 26.7	Cobbs Point 2	4789.3	3.680272
Garnier 2	30 25 52.828	1626.7	241 14 33.5	61 16 28.0	Tripod 2	6873.7	3.837188
1910	86 33 20.843	556.2	282 41 44.9	102 43 47.9	Cobbs Point 2	6645.5	3.822526
Choctawhatchee 2	30 23 34.070	1049.1	197 09 30.3	17 09 55.3	Garnier 2	4471.9	3.650494
1910	86 34 10.281	274.5	224 05 42.2	44 08 01.6	Tripod 2	10555.1	4.023463
			250 10 24.2	70 12 52.1	Cobbs Point 2	8294.1	3.918769
Stevens 2	30 24 18.897	581.9	226 43 38.8	46 44 37.1	Garnier 2	4220.3	3.625343
1910	86 35 15.991	426.8	308 11 45.2	128 12 18.5	Choctawhatchee 2	2232.1	3.348713
Santa Rosa east base	30 23 38.249	1177.8	79 13 34.8	259 13 22.0	Choctawhatchee 2	688.3	2.837788
1910	86 33 44.952	1200.1	117 15 25.0	297 14 38.9	Stevens 2	2733.6	3.436738
			188 49 28.3	8 49 40.5	Garnier 2	4193.8	3.622606
Santa Rosa west base	30 23 42.317	1303.1	161 34 37.6	341 34 30.5	Stevens 2	1187.3	3.074552
1910	86 35 01.934	51.6	213 52 10.2	33 53 01.4	Garnier 2	4840.6	3.684900
			273 28 56.4	93 29 35.4	Santa Rosa east base	2058.9	3.313637
			280 25 51.4	100 26 17.5	Choctawhatchee 2	1402.1	3.146785
Exit 2	30 23 42.870	1320.1	214 02 35.1	34 02 49.3	Stevens 2	1338.9	3.126745
1910	86 35 44.071	1176.6	276 10 11.6	96 10 59.1	Choctawhatchee 2	2518.4	3.401129
Lane 2	30 23 42.321	1303.2	87 21 29.7	267 19 45.9	Choctawhatchee 2	5482.9	3.739007
1910	86 30 45.119	1204.5	98 52 20.8	278 50 03.7	Stevens 2	7317.9	3.864386
			134 02 46.6	314 01 27.8	Garnier 2	5781.5	3.762039
East Pass 2	30 23 06.527	201.0	99 35 27.6	279 33 52.3	Choctawhatchee 2	5097.3	3.707340
1910	86 31 02.012	53.7	144 07 08.4	324 05 58.0	Garnier 2	6321.1	3.800791
			202 15 05.8	22 15 14.3	Lane 2	1190.9	3.075877
Bar	30 23 05.947	183.1	90 33 24.0	270 32 48.9	East Pass 2	1855.4	3.268447
1910	86 29 52.518	1402.4	128 34 49.2	308 34 22.6	Lane 2	1796.3	3.254369
Saddle	30 23 24.831	764.6	46 23 31.8	226 23 20.2	Bar	843.1	2.925866
1910	86 29 29.653	791.6	77 07 50.5	257 07 03.8	East Pass 2	2529.3	3.403007
			104 58 20.2	284 57 42.0	Lane 2	2085.4	3.319186
Supplementary points							
Choctawhatchee East Pass	30 23 19.699	606.6	72 31 00.3	252 30 34.8	Bar	1409.3	3.148991
rear range light	86 29 02.172	58.0	82 47 00.9	262 46 00.3	East Pass 2	3225.1	3.508537
1910			102 09 29.2	282 09 15.3	Saddle	750.5	2.875352
			104 13 49.7	284 12 57.6	Lane 2	2835.2	3.452587
Choctawhatchee East Pass	30 23 17.598	541.9	74 30 51.8	254 30 27.3	Bar	1343.4	3.128221
front range light	86 29 04.025	107.5	83 49 53.5	263 48 53.9	East Pass 2	3168.4	3.500837
1910			108 02 00.3	288 01 47.3	Saddle	719.5	2.857054
East day beacon	30 23 55.700	1715.2	99 21 21.2	279 19 58.9	Stevens 2	4399.2	3.643371
1910	86 32 33.376	890.9	160 38 56.5	340 38 32.5	Garnier 2	3822.8	3.582379
			278 06 19.7	98 07 14.6	Lane 2	2987.1	3.475255
West day beacon	30 23 58.992	1816.6	100 03 05.9	280 02 00.3	Stevens 2	3515.0	3.545928
1910	86 33 06.328	168.8	173 41 39.8	353 41 32.5	Garnier 2	3526.7	3.547374
			277 44 40.5	97 45 52.1	Lane 2	3804.4	3.580281
Santa Rosa Sound rear	30 24 02.616	80.5	244 06 58.0	64 07 17.6	Stevens 2	1148.6	3.060152
range light	86 35 54.703	1460.2	334 58 38.1	154 58 43.5	Exit 2	671.0	2.826741
1910			68 04 18.1	248 03 54.0	Gulf 2	1369.8	3.136669
			94 15 36.6	274 15 25.3	Burlison 2	597.5	2.776311
Santa Rosa Sound front	30 24 03.052	94.0	231 37 09.0	51 37 20.8	Stevens 2	785.9	2.895375
range light	86 35 39.071	1043.0	12 07 15.7	192 07 13.2	Exit 2	635.6	2.803203
1910			91 45 10.5	271 44 51.3	Burlison 2	1013.6	3.005849

SANTA ROSA SOUND

Principal points							
Entrance	30 19 31.399	966.9	86 40 52.3	266 39 47.0	Pond	3460.7	3.539158
1870	87 11 40.192	1073.7	166 02 28.3	346 02 09.4	Fair Point 2	4139.4	3.616938
Deer Point 2	30 20 33.063	1018.1	30 31 28.2	210 31 07.0	Entrance	2204.2	3.343259
1870	87 10 58.284	1556.7	65 21 15.4	245 19 48.9	Pond	5032.9	3.701818
			81 17 45.7	261 14 30.0	Fort Pickens	10469.9	4.019944
			91 04 36.0	271 02 03.0	Navy Yard wharf	8089.8	3.907936
			135 00 41.3	315 00 01.2	Fair Point 2	2995.4	3.476459
Sabine Hill	30 19 43.049	1325.6	84 19 48.8	264 18 40.6	Entrance	3625.2	3.559335
1870	87 09 25.153	671.9	121 46 01.9	301 45 14.9	Deer Point 2	2925.8	3.466247

SANTA ROSA SOUND—Continued.

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Principal points—Contd	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Grassy Point	30 21 03.576	110.2	348 56 02.1	168 56 11.3	Sabine Hill	2526.6	3.402538
1870	87 09 43.307	1156.6	47 44 00.4	227 43 01.4	Entrance	4219.5	3.625259
			64 52 10.9	244 51 33.0	Deer Point 2	2212.0	3.344785
Stumps	30 21 45.301	1395.0	32 12 46.4	212 12 01.6	Sabine Hill	4449.0	3.648267
1871	87 07 56.372	1505.4	65 47 03.2	245 46 09.2	Grassy Point	3131.5	3.495752
Sharp	30 20 02.918	89.8	161 55 20.3	341 55 00.8	Stumps	3316.4	3.520670
1871	87 07 17.835	476.4	79 48 39.6	259 47 35.3	Sabine Hill	3455.6	3.538523
			115 41 04.6	295 39 51.1	Grassy Point	4311.1	3.634592
Range	30 20 43.726	1346.5	72 45 17.0	252 44 00.5	Sharp	4236.1	3.626963
1871	87 04 46.381	1238.8	110 30 11.5	290 28 35.5	Stumps	5416.7	3.733735
Creek	30 22 26.025	801.4	346 46 26.2	166 46 40.2	Range	3235.9	3.509992
1871	87 05 14.100	376.5	36 52 29.0	216 51 26.5	Sharp	5508.1	3.740998
			73 52 15.5	253 50 53.5	Stumps	4510.9	3.654264
Marsh	30 22 39.292	1209.9	33 04 18.8	213 03 34.9	Range	4246.3	3.628012
1871	87 03 19.625	524.0	82 23 42.9	262 22 45.0	Creek	3083.8	3.489081
Bower	30 21 06.572	202.4	78 12 24.3	258 11 20.6	Range	3439.4	3.536484
1871	87 02 40.325	1077.0	120 47 49.7	300 46 32.0	Creek	4780.0	3.679430
			159 49 16.8	339 48 57.0	Marsh	3041.9	3.483143
			78 12 09.6	258 11 05.8	Range 2	3442.5	3.536867
			121 09 39.9	301 08 22.7	Creek 2	4766.5	3.678204
			160 29 58.9	340 29 39.5	Marsh 2	3068.1	3.486866
Sand Hill	30 21 32.425	998.5	80 01 25.5	259 59 59.9	Bower	4590.0	3.661809
1871	86 59 51.062	1363.6	110 18 17.6	290 16 32.2	Marsh	5937.6	3.773614
Ranch	30 23 12.778	393.5	11 02 20.9	191 02 09.5	Sand Hill	3148.4	3.498089
1871	86 59 28.488	760.5	52 49 38.7	232 48 01.7	Bower	6429.9	3.808203
			80 31 49.4	260 29 52.5	Marsh	6256.7	3.796343
Agassiz	30 21 52.535	1617.7	78 29 17.1	258 28 19.6	Sand Hill	3100.7	3.491455
1871	86 57 57.291	1529.9	135 25 32.2	315 24 46.1	Ranch	3469.1	3.540219
Two Points	30 23 29.192	898.9	1 58 43.9	181 58 41.9	Agassiz	2978.2	3.473947
1871	86 57 52.440	1399.9	41 08 38.9	221 07 39.4	Sand Hill	4774.1	3.678890
			78 44 28.1	258 43 40.0	Ranch	2587.4	3.412856
Peak	30 22 14.469	445.6	81 07 45.8	261 06 24.0	Agassiz	4374.5	3.640932
1871	86 55 15.433	412.0	118 37 12.4	298 35 52.5	Two Points	4805.4	3.681726
Deserted	30 23 44.913	1383.0	6 45 13.7	186 45 07.4	Peak	2804.5	3.447854
1871	86 55 03.081	82.3	53 21 49.9	233 20 21.8	Agassiz	5797.4	3.763231
			83 56 10.0	263 54 43.8	Two Points	4573.6	3.660254
Cove	30 22 32.932	1014.1	79 43 16.5	259 42 17.2	Peak	3183.7	3.502929
1871	86 53 18.117	483.7	128 20 58.0	308 20 04.9	Deserted	3573.0	3.553027
Big River	30 23 51.493	1585.6	358 18 41.6	178 18 42.9	Cove	2420.2	3.383846
1871	86 53 20.787	554.8	45 42 05.1	225 41 07.0	Peak	4277.3	3.631165
			85 45 49.3	265 44 57.5	Deserted	2738.2	3.437472
John	30 22 50.354	1550.6	79 55 40.6	259 54 43.4	Cove	3065.2	3.486453
1871	86 51 25.089	669.8	121 22 14.3	301 21 15.8	Big River	3617.3	3.558389
Bluff	30 24 01.621	49.9	355 22 27.6	175 22 30.9	John	2201.7	3.342760
1871	86 51 31.739	847.2	56 07 41.5	226 06 47.6	Cove	3940.1	3.595502
			83 53 31.5	263 52 36.3	Big River	2927.6	3.466517
Eagle's Nest	30 24 04.199	129.3	47 16 16.4	227 15 29.7	John	3350.8	3.525152
1871	86 49 52.898	1412.0	88 17 01.7	268 16 11.7	Bluff	2639.6	3.421545
Tuck	30 23 08.326	256.4	83 04 43.3	263 03 17.1	John	4584.5	3.661288
1871	86 48 34.634	924.7	129 28 32.5	309 27 52.9	Eagle's Nest	2706.6	3.432419
Long	30 24 07.943	244.6	45 33 54.0	225 33 18.5	Tuck	2621.9	3.418624
1871	86 47 24.509	654.2	88 20 36.1	268 19 21.0	Eagle's Nest	3962.7	3.597995
Beach	30 23 25.900	797.6	82 28 50.3	262 27 32.7	Tuck	4129.4	3.615886
1871	86 46 01.294	34.6	120 14 20.5	300 13 38.4	Long	2571.2	3.410131
Narrows	30 24 12.019	370.1	44 48 05.9	224 47 39.2	Beach	2001.3	3.301319
1871	86 45 08.469	226.1	88 01 48.6	268 00 39.8	Long	3633.5	3.560330
Fender	30 23 35.655	1098.0	84 01 12.5	264 00 18.2	Beach	2879.7	3.459346
1871	86 44 14.014	374.1	127 36 39.8	307 36 12.2	Narrows	1834.9	3.263620
Field	30 24 30.241	931.2	55 35 16.1	235 34 29.6	Fender	2973.7	3.473302
1871	86 42 42.116	1124.2	81 50 12.2	261 48 58.1	Narrows	3946.6	3.596226
Surf	30 23 41.903	1290.3	87 03 50.8	267 02 39.9	Fender	3743.3	3.573249
1871	86 41 53.980	1441.0	139 12 05.6	319 11 41.2	Field	1966.4	3.293666
Kitrel	30 24 22.747	700.5	25 46 46.9	205 46 35.4	Surf	1396.7	3.145111
1871	86 41 31.225	833.5	96 57 29.4	276 56 53.5	Field	1906.2	3.280177
Cut	30 23 46.038	1417.7	87 04 04.3	267 03 17.3	Surf	2483.7	3.395107
1871	86 40 21.062	562.2	121 07 04.3	301 06 28.8	Kitrel	2187.6	3.339970

SANTA ROSA SOUND—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Principal points—Contd	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Rogers	30 24 23.009	708.5	56 13 30.7	236 12 58.4	Cut	2047.6	3.311249
1871	86 39 17.303	461.8	89 52 48.4	269 51 40.6	Kitrel	3574.7	3.553239
Pirate	30 23 50.096	1542.6	87 16 41.5	267 15 51.8	Cut	2625.2	3.419161
1871	86 38 42.833	1143.4	137 45 58.7	317 45 41.3	Rogers	1368.9	3.136363
Davis	30 24 16.042	494.0	57 58 03.5	237 57 39.3	Pirate	1506.2	3.177879
1871	86 37 55.001	1468.2	95 34 59.8	275 34 18.2	Rogers	2207.3	3.343865
Small	30 23 50.311	1549.3	89 47 46.4	269 47 11.9	Pirate	1821.3	3.260381
1871	86 37 34.607	923.8	145 30 31.8	325 30 21.5	Davis	961.3	2.982870
Payne	30 24 12.911	397.6	46 35 20.4	226 35 06.4	Small	1012.6	3.005440
1871	86 37 07.051	188.2	94 18 39.5	274 18 15.2	Davis	1283.6	3.108414
Gulf	30 23 45.860	1412.2	95 43 38.9	275 43 13.0	Small	1374.3	3.138083
1871	86 36 43.382	1158.1	142 49 14.6	322 49 02.6	Payne	1045.5	3.019322
Burlison	30 24 03.818	117.6	51 27 21.9	231 27 08.8	Gulf	887.4	2.948122
1871	86 36 17.382	464.0	101 55 42.5	281 55 17.4	Payne	1355.1	3.131965
Entrance 2	30 19 31.358	965.6	85 00 28.6	264 59 26.3	Clapps Woods 2	3310.1	3.519847
1910	87 11 34.740	928.1	165 44 13.7	345 43 54.8	Fair Point 1910	4066.3	3.609197
Deer Point beacon	30 20 23.799	732.8	32 21 31.6	212 21 12.2	Entrance 2	1911.6	3.281391
1910	87 10 56.442	1507.6	66 14 08.2	246 12 46.5	Clapps Woods 2	4721.0	3.674036
			93 04 34.1	273 02 00.1	Navy Yard wharf	8149.3	3.911118
			138 58 03.0	318 57 24.7	Fair Point 1910	3083.9	3.489100
Grassy Point 2	30 21 05.519	169.9	45 38 47.1	225 37 51.0	Entrance 2	4147.0	3.617732
1910	87 09 43.742	1168.2	56 30 55.2	236 30 18.5	Deer Point beacon	2328.3	3.367033
Quarantine	30 20 20.835	641.6	66 03 10.1	246 02 05.3	Entrance 2	3752.2	3.574282
1910	87 09 26.376	704.5	92 10 43.4	272 09 57.9	Deer Point beacon	2407.5	3.381558
			161 22 21.9	341 22 13.1	Grassy Point 2	1452.0	3.161980
Bald	30 21 55.719	1715.8	49 31 42.6	229 30 37.8	Quarantine	4500.6	3.653273
1910	87 07 18.197	485.9	68 19 21.5	248 18 07.9	Grassy Point 2	4182.9	3.621482
Sharp Point	30 20 29.462	907.2	86 04 52.7	266 03 39.5	Quarantine	3877.1	3.588504
1910	87 07 01.565	41.8	104 23 19.3	284 21 57.3	Grassy Point 2	4471.6	3.650461
			170 30 26.1	350 30 17.7	Bald	2693.0	3.430235
Creek 2	30 22 26.645	820.5	38 46 04.1	218 45 09.3	Sharp Point	4627.5	3.665346
1910	87 05 13.082	349.3	74 05 56.2	254 04 53.0	Bald	3473.9	3.540822
Range 2	30 20 43.699	1345.6	83 04 52.0	263 03 43.8	Sharp Point	3634.3	3.560425
1910	87 04 46.490	1241.7	118 42 20.7	298 41 04.2	Bald	4618.8	3.664528
			167 22 28.8	347 22 15.4	Creek 2	3248.6	3.511692
Marsh 2	30 22 40.491	1246.8	33 06 38.3	213 05 53.9	Range 2	4293.3	3.632788
1910	87 03 18.683	498.8	82 03 42.1	262 02 44.3	Creek 2	3084.2	3.489136
Sand Hill 2	30 21 31.515	970.4	80 16 41.4	260 15 16.7	Bower	4543.0	3.657343
1910	86 59 52.664	1406.4	111 07 31.3	291 05 47.2	Marsh 2	5897.1	3.770635
Ranch 2	30 23 13.216	407.0	10 00 18.7	190 00 08.2	Sand Hill 2	3180.0	3.502432
1910	86 59 31.976	853.7	52 13 24.4	232 11 49.2	Bower	6364.2	3.803743
			80 33 49.1	260 31 54.5	Marsh 2	6136.1	3.787896
Agassiz 2	30 21 55.692	1714.9	77 19 49.5	257 18 46.9	Sand Hill 2	3392.1	3.530474
1910	86 57 48.736	1301.4	130 53 59.7	310 53 07.5	Ranch 2	3646.6	3.561882
Two Points 2	30 23 29.758	916.3	356 10 57.0	176 11 00.6	Agassiz 2	2903.0	3.462847
1910	86 57 55.974	1494.3	40 33 45.0	220 32 45.9	Sand Hill 2	4792.2	3.680534
			78 45 58.0	258 45 09.4	Ranch 2	2613.1	3.417154
Deserted 2	30 23 45.586	1403.7	53 23 18.7	233 21 52.5	Agassiz 2	5672.5	3.753777
1910	86 54 58.222	1554.2	84 08 52.4	264 07 22.5	Two Points 2	4770.2	3.678538
Peak 2	30 22 15.747	484.9	81 37 02.3	261 35 43.1	Agassiz 2	4230.6	3.626400
1910	86 55 12.001	320.5	117 30 40.9	297 29 18.0	Two Points 2	4935.6	3.693342
			187 34 25.7	7 34 32.7	Deserted 2	2790.8	3.445723
Cove 2	30 22 37.473	1153.9	79 12 49.6	259 11 43.1	Peak 2	3571.7	3.552876
1910	86 53 00.603	16.1	123 44 54.0	303 43 54.5	Deserted 2	3776.2	3.577059
Big River 2	30 23 52.152	1605.9	346 02 11.4	166 02 22.2	Cove 2	2369.6	3.374677
1910	86 53 22.018	587.8	44 41 42.6	224 40 46.9	Peak 2	4175.5	3.620710
			85 30 19.3	265 29 30.6	Deserted 2	2576.1	3.410967
John 2	30 23 01.941	59.8	72 58 54.2	252 58 07.6	Cove 2	2573.4	3.410510
1910	86 51 28.442	759.3	117 01 34.1	297 00 36.7	Big River 2	3403.6	3.531933
Bluff 2	30 24 02.383	73.4	357 09 42.9	177 09 44.6	John 2	1863.5	3.270327
1910	86 51 31.898	851.5	42 10 26.9	222 09 42.0	Cove 2	3527.7	3.547491
			83 53 24.8	263 52 29.1	Big River 2	2956.4	3.470766
Eagle's Nest 2	30 24 05.531	170.3	52 41 15.5	232 40 26.8	John 2	3229.9	3.509188
1910	86 49 52.224	1394.1	87 55 14.1	267 54 23.7	Bluff 2	2662.4	3.425280
Tuck 2	30 23 10.109	311.3	87 02 16.2	267 00 44.5	John 2	4846.6	3.685436
1910	86 48 27.154	724.9	108 05 19.1	288 03 45.7	Bluff 2	5187.9	3.714994
			126 55 47.7	306 55 04.7	Eagle's Nest 2	2840.8	3.453436

SANTA ROSA SOUND—Continued.

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Principal points—Contd	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Long 2	30 24 09.176	282.6	42 24 48.3	222 24 16.8	Tuck 2	2463.4	3.391534
1910	86 47 24.921	665.3	88 22 31.0	268 21 16.5	Eagle's Nest 2	3933.6	3.594795
Beach 2	30 23 25.021	770.5	82 29 13.8	262 28 07.9	Tuck 2	3507.7	3.545022
1910	86 46 16.897	451.1	126 49 44.7	306 49 10.3	Long 2	2268.5	3.355742
Narrows 2	30 24 13.459	414.4	54 20 00.9	234 19 21.5	Beach 2	2557.8	3.407867
1910	86 44 59.059	1576.5	88 04 12.1	268 02 58.3	Long 2	3895.8	3.590592
Fender 2	30 23 35.223	1084.6	84 23 49.8	264 22 49.2	Beach 2	3213.1	3.506925
1910	86 44 17.117	457.0	136 26 36.1	316 26 14.9	Narrows 2	1624.8	3.210789
Field 2	30 24 28.823	887.5	57 55 20.3	237 54 30.4	Fender 2	3107.3	3.492382
1910	86 42 38.492	1027.4	82 49 23.8	262 48 12.7	Narrows 2	3781.8	3.577701
Surf 2	30 23 42.935	1322.1	86 35 31.6	266 34 16.3	Fender 2	3982.5	3.600160
1910	86 41 48.200	1286.7	136 28 13.2	316 27 47.8	Field 2	1949.1	3.289831
Kitrel 2	30 24 23.052	709.8	6 43 17.2	186 43 14.4	Surf 2	1243.9	3.094773
1910	86 41 42.746	1141.0	96 48 54.3	276 48 26.1	Field 2	1498.6	3.175671
Cut 2	30 23 54.870	1689.6	81 06 03.4	261 05 18.9	Surf 2	2374.1	3.375492
1910	86 40 20.338	542.9	111 32 07.2	291 31 25.5	Kitrel 2	2364.7	3.373782
Rogers 2	30 24 23.411	720.9	62 28 33.1	242 28 01.1	Cut 2	1901.5	3.279107
1910	86 39 17.167	458.2	89 50 49.5	269 49 35.8	Kitrel 2	3885.9	3.589487
Pirate 2	30 23 49.443	1522.5	93 31 30.6	273 30 39.1	Cut 2	2723.3	3.435098
1910	86 38 38.513	1028.1	135 23 37.6	315 23 18.0	Rogers 2	1469.3	3.167097
Davis 2	30 24 16.213	499.2	54 47 45.0	234 47 22.8	Pirate 2	1429.8	3.155280
1910	86 37 54.748	1461.4	95 45 32.3	275 44 50.6	Rogers 2	2211.1	3.344610
Small 2	30 23 48.932	1506.8	90 27 46.6	270 27 09.3	Pirate 2	1967.5	3.293922
1910	86 37 24.811	662.4	136 25 56.2	316 25 41.1	Davis 2	1159.4	3.064250
			274 32 45.7	94 33 07.2	Gulf 2	1138.4	3.056289
Payne 2	30 24 12.323	379.5	45 12 46.9	225 12 33.1	Small 2	1022.4	3.009618
1910	86 36 57.629	1538.3	94 29 46.3	274 29 17.4	Davis 2	1529.4	3.184515
			283 12 45.5	103 13 06.0	Burlison 2	1113.5	3.046683
			333 12 54.8	153 13 02.5	Gulf 2	908.0	2.958073
Gulf 2	30 23 46.001	1416.5	246 15 39.8	66 16 23.5	Stevens 2	2516.9	3.400867
1910	86 36 42.305	1129.4	273 32 41.4	93 33 10.9	Exit 2	1557.6	3.192443
Burlison 2	30 24 04.057	124.9	306 33 39.9	126 33 56.6	Exit 2	1095.2	3.039488
1910	86 36 17.023	454.4	50 31 04.8	230 30 52.0	Gulf 2	874.4	2.941715

PENSACOLA BAY

Principal points							
Bauer Point	30 19 32.363	996.6	54 02 30.9	234 01 33.2	Lagoon II	3772.9	3.576680
1889	87 21 03.043	81.3	89 27 57.4	269 27 06.8	Red Bluff	2680.5	3.428210
Lagoon I	30 18 48.164	1483.1	76 34 54.6	256 33 47.0	Lagoon II	3681.4	3.566008
1889	87 20 43.324	1157.5	112 37 04.0	292 36 03.5	Red Bluff	3474.3	3.540870
			158 50 30.2	338 50 20.3	Bauer Point	1459.4	3.164174
Fort Pickens	30 19 41.450	1276.4	72 44 57.7	252 43 17.9	Lagoon I	5528.7	3.742624
1856	87 17 25.702	686.6	87 15 21.5	267 13 31.8	Bauer Point	5812.8	3.764384
Pensacola L. H.	30 20 45.659	1406.0	319 32 42.5	139 33 14.4	Fort Pickens	2598.2	3.414678
1867	87 18 28.811	769.6	44 48 47.5	224 47 39.6	Lagoon I	5099.2	3.707501
			61 17 42.1	241 16 24.2	Bauer Point	4697.5	3.671869
Fort McRee flagstaff	30 19 32.379	997.1	190 51 08.1	10 51 16.3	Pensacola L. H.	2297.6	3.361274
1856	87 18 45.007	1202.4	262 29 00.2	82 29 40.3	Fort Pickens	2136.9	3.329781
Navy Yard wharf	30 20 37.902	1167.1	52 26 02.0	232 25 19.3	Fort Pickens	2850.8	3.454970
1860	87 16 01.112	29.7	65 16 05.6	245 14 41.8	Fort McRee flagstaff	4820.5	3.683093
			93 28 31.2	273 27 16.6	Pensacola L. H.	3952.1	3.596830
Pickens (U. S. E.)	30 19 33.889	1043.5	143 08 52.3	323 08 21.0	Pensacola L. H.	2762.0	3.441226
1901	87 17 26.789	715.6	229 15 21.5	49 16 04.8	Navy Yard wharf	3020.4	3.480069
Bight	30 18 59.676	1837.6	115 53 57.8	295 53 07.7	Fort Pickens	2945.7	3.469190
1870	87 15 46.508	1242.6	172 39 05.9	352 38 58.5	Navy Yard wharf	3049.7	3.484260
Pond	30 19 24.875	766.0	76 03 56.9	256 02 57.8	Bight	3220.4	3.507914
1870	87 13 49.515	1322.7	95 03 56.0	275 02 06.7	Fort Pickens	5797.8	3.763263
			122 36 59.6	302 35 53.1	Navy Yard wharf	4172.9	3.620443
Fair Point 2	30 21 41.855	1288.9	30 12 42.2	210 11 55.8	Pond	4880.7	3.688479
1870	87 12 17.584	469.7	48 11 22.0	228 09 36.5	Bight	7488.8	3.874411
			65 46 07.9	245 43 32.3	Fort Pickens	9026.2	3.955505
			71 45 32.5	251 43 39.6	Navy Yard wharf	6286.2	3.798387
Lagoon	30 20 45.087	1388.4	273 42 06.7	93 43 11.2	Navy Yard wharf	3418.5	3.533834
1856	87 18 08.833	235.9	329 32 41.7	149 33 03.5	Fort Pickens	2273.1	3.356627

PENSACOLA BAY—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Principal points—Contd	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Fort McRee	30 19 32.294	994.4	203 08 49.7	23 09 07.8	Lagoon	2437.8	3.387000
1856	87 18 44.712	1194.5	245 10 39.0	65 12 01.6	Navy Yard wharf	4814.5	3.682547
			262 23 08.7	82 23 48.6	Fort Pickens	2129.4	3.328259
Warrington west base	30 20 55.098	1696.7	357 17 15.3	177 17 17.3	Fort Pickens	2270.4	3.356099
1856	87 17 29.724	793.8	38 09 25.3	218 08 47.4	Fort McRee	3242.5	3.510874
Warrington east base	30 20 46.318	1426.3	41 52 44.2	221 52 10.3	Fort Pickens	2682.6	3.428550
1856	87 16 18.666	498.6	59 42 44.7	239 41 30.9	Fort McRee	4518.2	3.654968
			98 06 46.4	278 06 10.5	Warrington west base	1917.00	3.282623
Santa Rosa 2	30 19 24.690	760.3	94 47 51.6	274 45 55.0	Fort Pickens	6191.2	3.791778
1859	87 13 34.751	928.4	119 58 45.4	299 57 31.5	Navy Yard wharf	4513.0	3.654468
Fair Point	30 21 42.587	1311.4	25 09 07.3	205 08 29.6	Santa Rosa 2	4690.8	3.671249
1857	87 12 20.122	537.3	71 21 59.9	251 20 08.2	Navy Yard wharf	6229.0	3.794419
Bayou Grande	30 22 59.292	1825.8	293 10 18.7	113 12 03.1	Fair Point	5999.0	3.778082
1856	87 15 46.645	1245.4	331 55 51.9	151 56 58.5	Santa Rosa 2	7488.4	3.874389
Barkley Point	30 24 28.645	882.1	358 06 49.2	178 06 52.4	Fair Point	5116.2	3.708948
1856	87 12 26.429	705.4	62 46 30.3	242 44 49.0	Bayou Grande	6011.5	3.778982
Town Point	30 22 13.021	401.0	58 19 16.6	238 18 47.9	Fair Point	1784.3	3.251469
1856	87 11 23.261	621.1	101 28 18.8	281 26 05.6	Bayou Grande	7175.4	3.855845
			158 00 55.7	338 00 23.7	Barkley Point	4503.9	3.653591
Emanuel Point	30 25 18.040	555.5	8 25 32.8	188 25 16.8	Town Point	5759.5	3.760381
1856	87 10 51.656	1378.6	58 59 15.6	238 58 27.6	Barkley Point	2951.6	3.470055
Plantation Hill	30 22 06.319	194.6	92 47 35.0	272 46 14.6	Town Point	4252.2	3.628612
1856	87 08 44.206	1180.4	126 28 11.1	306 26 18.6	Barkley Point	7376.0	3.867822
			150 03 13.4	330 02 08.9	Emanuel Point	6813.9	3.833398
Town Point 2	30 22 12.740	392.3	188 09 39.2	8 09 54.5	Emanuel Point	5764.4	3.760751
1860	87 11 22.316	595.8	272 40 14.1	92 41 34.0	Plantation Hill	4226.6	3.625989
Barkley Point 2	30 24 31.126	958.5	240 17 12.8	60 18 00.7	Emanuel Point	2915.2	3.464671
1860	87 12 26.526	707.9	306 54 02.8	126 55 55.3	Plantation Hill	7423.7	3.870621
			338 04 54.6	158 05 27.1	Town Point 2	4593.2	3.662113
Clapp's Woods	30 19 23.462	722.4	95 09 21.9	275 07 25.5	Fort Pickens	6182.9	3.791190
1889	87 13 35.188	940.1	107 54 21.7	287 51 53.4	Pensacola L. H.	8241.5	3.916006
			120 28 06.0	300 26 52.3	Navy Yard wharf	4522.0	3.655328
Fair Point 3	30 21 41.844	1288.5	25 38 52.7	205 38 14.0	Clapp's Woods	4726.7	3.674558
1889	87 12 18.605	496.8	80 06 01.7	260 02 54.6	Pensacola L. H.	10037.2	4.001611
			71 41 01.7	251 39 09.2	Navy Yard wharf	6260.2	3.796586
			65 41 58.4	245 39 23.2	Fort Pickens	9001.2	3.954298
Grande	30 22 40.140	1236.0	286 56 15.3	106 58 06.8	Fair Point 3	6156.2	3.789316
1889	87 15 59.137	1578.8	327 34 56.6	147 36 09.3	Clapp's Woods	7173.5	3.855730
Chico	30 23 42.197	1299.4	314 49 34.9	134 50 45.5	Fair Point 3	5256.2	3.720669
1889	87 14 38.203	1019.8	348 04 07.5	168 04 39.3	Clapp's Woods	8143.0	3.910784
			48 31 00.1	228 30 19.2	Grande	2884.5	3.460075
Harbor-master	30 24 15.881	489.0	350 43 55.8	170 44 10.4	Fair Point 3	4806.0	3.681781
1890	87 12 47.589	1270.3	60 02 56.0	240 01 19.1	Grande	5902.6	3.771047
			70 39 09.4	250 38 13.4	Chico	3129.6	3.495495
Town Point 3	30 22 11.222	345.6	62 33 24.7	242 32 51.7	Fair Point 3	1962.6	3.292822
1889	87 11 13.384	357.4	96 40 36.5	276 38 12.0	Grande	7681.7	3.885460
			117 08 23.1	297 06 39.4	Chico	6144.3	3.788470
			146 46 26.6	326 45 39.0	Harbor-master	4589.2	3.661736
Hickory	30 23 09.140	281.4	73 23 52.4	253 21 59.2	Town Point 3	6236.2	3.794921
1890	87 07 29.575	789.5	103 37 50.9	283 35 10.0	Harbor-master	8734.8	3.941251
Emanuel Point 3	30 25 17.157	528.3	305 45 43.6	125 47 27.3	Hickory	6742.9	3.828844
1890	87 10 54.515	1454.9	5 01 45.5	185 01 35.8	Town Point 3	5747.6	3.759489
			57 59 39.0	237 58 41.8	Harbor-master	3559.3	3.551368
Red Fish Point 3	30 23 58.415	1798.8	67 37 43.6	247 36 33.8	Hickory	3985.0	3.600424
1890	87 05 11.548	308.2	92 33 42.6	272 29 51.8	Harbor-master	12185.3	4.085835
			104 51 34.5	284 48 40.9	Emanuel Point 3	9469.9	3.976347
Sand String	30 26 46.197	1422.6	342 54 32.7	162 55 02.8	Red Fish Point 3	5405.2	3.732808
1890	87 06 11.056	295.0	17 24 49.5	197 24 09.8	Hickory	7004.7	3.845391
			70 05 42.8	250 03 19.3	Emanuel Point 3	8045.7	3.905564
			43 38 38.1	223 36 05.1	Town Point 3	11696.9	4.068070
Magnolia Bluff	30 25 51.366	1581.7	256 02 43.0	76 04 52.2	Sand String	7010.3	3.845737
1891	87 10 26.041	694.9	292 29 07.7	112 31 46.9	Red Fish Point 3	9085.9	3.958368
			316 40 15.7	136 41 45.0	Hickory	6865.9	3.836698
Trout Crawl	30 29 50.097	1542.7	4 13 58.9	184 13 50.9	Sand String	5678.4	3.754224
1891	87 05 55.347	1476.0	44 30 27.2	224 28 09.9	Magnolia Bluff	10304.8	4.013038
			353 50 16.9	173 50 39.0	Red Fish Point 3	10892.3	4.037121
Devils Point 2	30 29 28.065	864.2	262 12 47.2	82 14 21.8	Trout Crawl	5015.6	3.700325
1890	87 09 01.692	45.1	317 35 09.1	137 36 35.6	Sand String	6750.1	3.829309
			18 38 27.9	198 37 45.1	Mangolia Bluff	7042.1	3.847703
			328 48 46.6	148 50 43.2	Red Fish Point 3	11863.8	4.074226

PENSACOLA BAY—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Principal points—Contd	° ′ ″		° ′ ″	° ′ ″		*Meters*	
East Escambia	30 31 58.567	1803.5	321 11 26.8	141 12 27.4	Trout Crawl	5076.3	3.705545
1891	87 07 54.647	1456.8	21 05 51.7	201 05 17.7	Devil's Point 2	4967.3	3.696124
West Escambia	30 30 53.565	1649.4	234 39 13.6	54 40 07.3	East Escambia	3460.6	3.539156
1891	87 09 40.535	1080.8	288 00 48.1	108 02 42.4	Trout Crawl	6314.7	3.800356
			338 31 19.8	158 31 39.5	Devil's Point 2	2829.3	3.451674
East Head	30 34 49.805	1533.7	323 25 09.2	143 26 23.8	East Escambia	6565.7	3.817281
1891	87 10 21.428	571.0	351 28 33.6	171 28 54.4	West Escambia	7355.9	3.866638
West Head	30 32 39.078	1203.4	194 33 28.0	14 33 48.0	East Head	4159.2	3.619005
1891	87 11 00.663	17.7	284 06 31.3	104 08 05.8	East Escambia	5113.0	3.708679
			326 40 18.5	146 40 59.2	West Escambia	3888.5	3.589778
Gurley	30 23 52.477	1615.9	92 49 46.8	272 48 36.4	Red Fish Point 3	3716.4	3.570126
1892	87 02 52.496	1401.3	135 17 02.9	315 15 22.4	Sand String	7529.8	3.876783
White Point 3	30 26 49.325	1518.9	340 34 57.4	160 35 33.8	Gurley	5774.0	3.761475
1892	87 04 04.403	117.5	18 48 28.0	198 47 54.0	Red Fish Point 3	5559.6	3.745044
			88 22 34.2	268 21 30.0	Sand String	3380.6	3.529000
Rogers	30 25 04.328	133.3	70 43 46.0	250 41 46.1	Gurley	6698.4	3.825973
1892	86 58 55.629	1484.7	111 26 46.9	291 24 10.5	White Point 3	8851.4	3.947012
Highland	30 28 15.763	485.4	17 12 34.9	197 12 00.2	Rogers	6171.1	3.790360
1892	86 57 47.218	1259.6	45 09 30.3	225 06 55.7	Gurley	11493.2	4.060439
			75 12 37.0	255 09 25.8	White Point 3	10408.7	4.017395
Lowland	30 26 27.107	834.7	46 20 00.8	226 19 10.1	Rogers	3691.3	3.567182
1894	86 57 15.581	415.8	165 50 38.6	345 50 22.5	Highland	3450.7	3.537908
Pond	30 27 15.714	483.9	49 07 37.3	229 07 04.5	Lowland	2287.1	3.359282
1894	86 56 10.768	287.3	125 42 36.6	305 41 47.7	Highland	3168.5	3.500858
Guerrilla	30 27 46.688	1437.6	322 37 47.2	142 38 01.0	Pond	1200.1	3.079230
1894	86 56 38.071	1015.7	22 12 59.6	202 12 40.6	Lowland	2647.0	3.422761
Middle beacon	30 28 12.220	376.3	316 31 47.2	136 33 31.3	Rogers	7970.5	3.901487
1892	87 02 21.087	562.5	5 59 04.0	185 58 48.1	Gurley	8042.1	3.905372
			47 12 15.5	227 11 23.1	White Point 3	3756.7	3.574812
Escribano Point 2	30 30 15.901	489.6	339 39 45.8	159 40 53.4	Rogers	10231.7	4.009946
1892	87 01 08.864	236.4	26 49 59.8	206 49 23.2	Middle beacon	4268.0	3.630221
			36 22 04.0	216 20 35.0	White Point 3	7898.6	3.897552
Lindsay	30 30 05.419	166.9	263 07 50.3	83 08 41.3	Escribano Point 2	2701.4	3.431589
1892	87 02 49.443	1318.5	326 03 07.5	146 05 06.0	Rogers	11174.6	4.048233
			347 45 24.3	167 45 38.7	Middle beacon	3566.9	3.552292
			18 19 34.8	198 18 56.8	White Point 3	6360.9	3.803517
Grass Point 2	30 31 22.004	677.6	18 11 28.8	198 11 16.0	Escribano Point 2	2142.6	3.330948
1892	87 00 43.779	1167.2	54 52 09.5	234 51 05.7	Lindsay	4097.4	3.612508
Eagle Point 2	30 31 46.255	1424.4	287 04 36.3	107 05 22.6	Grass Point 2	2542.1	3.405198
1892	87 02 14.926	397.9	327 39 33.4	147 40 06.9	Escribano Point 2	3293.0	3.517592
			16 30 41.0	196 30 23.5	Lindsay	3238.6	3.510360
Weaver Mouth	30 32 44.577	1372.7	23 44 50.3	203 44 29.0	Grass Point 2	2777.9	3.443715
1892	87 00 01.819	48.5	63 09 44.8	243 08 37.2	Eagle Point 2	3976.8	3.599536
Robinson Point 2	30 32 53.047	1633.5	280 31 41.1	100 32 07.9	Weaver Mouth	1426.9	3.154403
1892	87 00 54.453	1451.4	354 12 14.6	174 12 20.0	Grass Point 2	2818.0	3.449935
			46 12 36.7	226 11 55.8	Eagle Point 2	2971.9	3.473028
Turtle Point	30 33 29 432	906.4	328 48 12.4	148 48 28.4	Weaver Mouth	1614.7	3.208094
1892	87 00 33.198	884.8	26 49 21.6	206 49 10.8	Robinson Point 2	1255.5	3.098815
Yellow River	30 33 48.067	1480.2	25 34 11.2	205 33 53.4	Weaver Mouth	2167.3	3.335927
1892	86 59 26.724	712.1	54 04 39.1	234 03 54.5	Robinson Point 2	2887.5	3.460516
			72 03 20.5	252 02 46.7	Turtle Point	1862.2	3.270022
Bay Point	30 34 11.015	339.2	302 20 30.1	122 20 51.4	Yellow River	1320.8	3.120844
1892	87 00 08.598	229.1	356 07 00.0	176 07 03.5	Weaver Mouth	2667.9	3.426168
			26 58 44.1	206 58 20.8	Robinson Point 2	2694.1	3.430408
			27 06 44.1	207 06 31.6	Turtle Point	1438.6	3.157934
Ward's Basin 2	30 34 39.101	1204.1	14 12 43.2	194 12 35.6	Yellow River	1621.1	3.209817
1892	86 59 11.789	314.2	39 57 43.2	219 56 51.0	Robinson Point 2	4260.4	3.629450
			60 15 48.1	240 15 19.2	Bay Point	1743.4	3.241400
Peterson Point 2	30 34 38.860	1196.6	269 39 11.1	89 39 34.6	Ward's Basin 2	1235.0	3.091658
1892	86 59 58.136	1549.0	331 50 36.2	151 50 52.1	Yellow River	1774.0	3.248957
			1 35 52.2	181 35 50.3	Weaver Mouth	3520.6	3.546616
			18 00 38.6	198 00 33.2	Bay Point	901.6	2.955030
Shield's Point	30 34 49.547	1525.7	284 49 52.3	104 50 16.0	Peterson Point 2	1285.4	3.109054
1892	87 00 44.771	1193.0	320 54 33.6	140 54 52.0	Bay Point	1528.7	3.184331
Milligan	30 35 10.611	326.8	299 03 20.7	119 03 54.3	Peterson Point 2	2012.9	3.303832
1892	87 01 04.174	111.2	321 05 44.5	141 06 12.7	Bay Point	2358.2	3.372572
			321 26 39.1	141 26 48.8	Shield's Point	829.4	2.918787

PENSACOLA BAY—Continued.

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Principal points—Contd	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Last Point	30 35 15.195	467.9	323 00 49.2	143 01 05.3	Peterson Point 2	1400.7	3.146348
1892	87 00 29.762	793.0	344 04 22.0	164 04 32.8	Bay Point	2055.2	3.312860
			26 51 20.7	206 51 13.0	Shield's Point	885.2	2.947065
			81 15 02.6	261 14 45.1	Milligan	927.6	2.967370
Clapps Woods 2	30 19 21.988	677.4	108 22 47.5	288 20 20.7	Pensacola L. H.	8179.8	3.912741
1910	87 13 38.175	1019.9	121 29 10.8	301 27 58.6	Navy Yard wharf	4476.9	3.650976
Fair Point 1910	30 21 39.340	1211.4	28 29 26.8	208 28 43.3	Clapp Woods 2	4812.0	3.682321
1910	87 12 12.255	327.3	65 19 41.1	245 17 02.2	Pickens (U. S. E.)	9246.6	3.965983
			72 49 03.1	252 47 07.4	Navy Yard wharf	6398.2	3.806056
			80 41 32.4	260 38 22.1	Pensacola L. H.	10191.5	4.008239
Supplementary points							
Fort McRee water tank	30 19 34.256	1054.8	246 26 26.9	66 27 51.9	Navy Yard wharf	4905.6	3.690696
1910	87 18 49.470	1321.5	250 01 08.4	70 04 29.1	Fair Point 1910	11286.9	4.052576
			270 17 15.4	90 17 57.1	Pickens (U. S. E.)	2208.8	3.344150
Fort McRee Cut-off rear range light	30 19 31.327	964.7	191 26 07.7	11 26 16.5	Pensacola L. H.	2335.2	3.368332
	87 18 46.146	1232.8	245 02 54.9	65 04 18.3	Navy Yard wharf	4861.7	3.686789
1910			267 51 48.5	87 52 28.6	Pickens (U. S. E.)	2121.4	3.326628
Caucus Cut front range light	30 19 33.422	1029.2	189 05 32.0	9 05 38.7	Pensacola L. H.	2252.7	3.352701
1910	87 18 42.139	1125.7	245 12 37.2	65 13 58.5	Navy Yard wharf	4737.5	3.675546
			269 35 07.6	89 35 45.6	Pickens (U. S. E.)	2013.0	3.303836
Caucus Cut rear range light	30 20 13.310	409.9	217 33 44.1	37 33 58.6	Pensacola L. H.	1256.7	3.099214
1910	87 18 57.494	1535.7	260 51 22.9	80 52 52.0	Navy Yard wharf	4771.7	3.678670
			280 28 25.4	100 31 06.7	Clapps Woods 2	8675.1	3.938276
			296 36 15.4	116 37 01.2	Pickens (U. S. E.)	2710.0	3.432973
Pensacola Bay front range light	30 20 09.731	299.6	195 05 21.2	15 05 26.9	Pensacola L. H.	1145.8	3.059121
	87 18 39.979	1067.9	258 26 06.9	78 27 27.2	Navy Yard wharf	4331.2	3.636604
1910			299 26 24.0	119 27 01.0	Pickens (U. S. E.)	2245.1	3.351239
Fort Barrancas front range light	30 20 43.352	1334.9	334 06 31.7	154 06 51.3	Pickens (U. S. E.)	2377.5	3.376128
	87 18 05.652	151.0	96 33 16.4	276 33 04.7	Pensacola L. H.	622.6	2.794220
1910			272 52 45.3	92 53 48.2	Navy Yard wharf	3330.6	3.522520
Fort Barrancas range tower	30 20 51.858	1596.9	292 15 22.7	112 17 30.5	Clapps Woods 2	7300.8	3.863371
1910	87 17 51.100	1364.8	344 51 47.4	164 51 59.7	Pickens (U. S. E.)	2487.1	3.395693
			79 16 27.3	259 16 08.3	Pensacola L. H.	1025.1	3.010775
Fort Pickens water tank	30 19 41.678	1283.4	142 37 20.7	322 36 52.2	Pensacola L. H.	2479.4	3.394345
1910	87 17 32.457	867.0	247 01 04.6	67 03 46.4	Fair Point 1910	9288.1	3.967927
			234 38 08.2	54 38 54.3	Navy Yard wharf	2991.8	3.475928
			327 44 18.0	147 44 20.8	Pickens (U. S. E.)	283.6	2.452761
Barrancas wharf shed [1]	30 20 41.38	1274.1	291 38 49	111 40 43	Clapps Woods	6499	3.81287
1891	87 17 21.32	569.3	3 38 02	183 38 00	Fort Pickens	1849	3.26693
Revenue flagstaff [1]	30 20 44.50	1370.3	294 06 10	114 07 55	Clapps Woods	6107	3.78583
1891	87 17 03.86	103.0	16 43 49	196 43 38	Fort Pickens	2027	3.30691
Fort Barrancas barracks flagstaff	30 20 59.508	1832.4	260 59 29.6	81 02 05.5	Fair Point 3	8345.5	3.921451
	87 17 27.263	728.1	295 29 22.2	115 31 19.4	Clapps Woods	6868.4	3.836855
1891			359 00 23.4	179 00 24.2	Fort Pickens	2404.0	3.380933
Warrington National cemetery flagstaff	30 21 12.026	370.3	221 20 07.3	41 21 24.3	Chico	6159.6	3.789553
	87 17 10.596	283.0	263 15 50.0	83 18 17.6	Fair Point 3	7851.7	3.894964
1891			300 08 30.2	120 10 19.1	Clapps Woods	6654.4	3.823112
Warrington Catholic Church spire	30 20 46.380	1428.2	255 39 23.6	75 41 30.2	Fair Point 3	6902.2	3.838990
	87 16 29.016	774.9	298 47 38.3	118 49 06.1	Clapps Woods	5299.0	3.724192
1891			37 08 27.4	217 07 58.8	Fort Pickens	2508.0	3.399333
Commandant's cupola	30 20 55.021	1694.2	256 38 17.2	76 40 12.2	Fair Point 3	6246.2	3.795615
1891	87 16 06.173	164.9	304 56 43.7	124 58 00.0	Clapps Woods	4920.8	3.692036
			43 09 48.6	223 09 08.4	Fort Pickens	3105.6	3.492146
Navy Yard flagstaff	30 20 43.636	1343.7	253 44 45.8	73 46 42.2	Fair Point 3	6410.0	3.806856
1891	87 16 09.044	241.6	300 58 58.0	121 00 15.7	Clapps Woods	4794.3	3.680726
			46 55 26.8	226 54 48.0	Fort Pickens	2803.5	3.447696
Navy Yard tallest big chimney	30 20 47.642	1467.0	334 46 22.2	154 46 24.9	Navy Yard wharf	3315.3	3.520521
	87 16 06.401	171.0	43 24 02.2	223 23 21.6	Pickens (U. S. E.)	3125.4	3.494910
1910			89 05 25.5	269 04 13.6	Pensacola L. H.	3804.0	3.580245
Navy Yard water tank	30 20 50.669	1560.3	303 28 43.5	123 30 01.6	Clapps Woods 2	4948.9	3.694506
1910	87 16 12.688	338.9	39 56 25.9	219 55 48.5	Pickens (U. S. E.)	3083.4	3.489033
			87 34 46.9	267 33 38.1	Pensacola L. H.	3638.9	3.560971
Navy Yard derrick	30 20 38.609	1188.9	251 40 45.4	71 42 36.8	Fair Point 3	6199.7	3.792368
1891	87 15 58.995	1575.7	301 03 14.2	121 04 26.8	Clapps Woods	4484.5	3.651715
			52 46 24.0	232 45 40.3	Fort Pickens	2908.9	3.463736
Life Saving station flagstaff	30 19 02.810	86.5	139 29 32.8	319 28 45.5	Navy Yard wharf	3851.6	3.585637
1891	87 14 27.445	733.2	159 54 24.2	339 53 37.9	Grande	7126.2	3.852857
			215 05 17.7	35 06 22.8	Fair Point 3	5985.4	3.777090

[1] No check on this position.

PENSACOLA BAY—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Supplementary points—Contd	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Fair Point beacon	30 21 51.786	1594.6	18 24 52.6	198 24 23.5	Clapps Woods 2	4861.5	3.686771
1910	87 12 40.690	1086.6	66 59 10.1	246 57 28.8	Navy Yard wharf	5816.0	3.764625
			77 40 13.7	257 37 17.8	Pensacola L. H.	9517.4	3.978516
Marine railroad stack	30 22 08.086	249.0	65 10 42.4	245 10 09.3	Fair Point 3	1924.6	3.284333
1891	87 11 13.194	352.3	97 23 10.3	277 20 45.7	Grande	7698.6	3.886412
			117 54 47.9	297 53 04.2	Chico	6193.4	3.791928
Chico flagstaff	30 23 59.458	1830.9	303 16 33.8	123 18 09.9	Town Point 3	6072.4	3.783361
1891	87 14 23.508	627.4	321 47 22.9	141 48 26.1	Fair Point 3	5392.4	3.731783
			351 21 47.9	171 22 12.3	Clapps Woods	8596.1	3.934303
Chico white chimney	30 24 00.735	22.6	303 46 06.3	123 47 41.8	Town Point 3	6064.9	3.782822
1891	87 14 22.194	592.4	322 20 24.0	142 21 26.5	Fair Point 3	5401.8	3.732542
			351 37 58.2	171 38 22.0	Clapps Woods	8629.8	3.936002
Clump	30 23 52.64	1620.9	299 00 38	119 02 25	Town Point 3	6436	3.80865
1891	87 14 44.19	1179.6	316 00 28	136 01 42	Fair Point 3	5597	3.74798
Pensacola:							
Stevedores flagstaff	30 24 23.530	724.6	346 30 50.5	166 31 13.1	Fair Point 3	5119.9	3.709263
1891	87 13 03.317	88.6	5 15 53.2	185 15 37.1	Clapps Woods	9279.1	3.967506
			55 51 49.2	235 50 20.3	Grande	5671.6	3.753707
			63 19 36.8	243 18 48.8	Chico	2834.7	3.452510
Scandinavian Church spire	30 24 17.615	542.4	327 01 04.1	147 01 52.0	Town Point 3	4639.4	3.666465
1891	87 12 47.968	1280.4	350 42 57.3	170 43 12.1	Fair Point 3	4860.3	3.686665
			69 40 18.4	249 39 22.6	Chico	3138.3	3.496690
Post Office north flagstaff	30 24 33.729	1038.6	328 39 02.5	148 39 53.1	Town Point 3	5138.0	3.710793
1891	87 12 53.490	1427.8	350 01 03.8	170 01 21.4	Fair Point 3	5374.2	3.730311
			60 25 24.9	240 24 31.9	Chico	3214.2	3.507073
Episcopal Church spire	30 24 32.514	1001.2	354 45 19.3	174 45 28.4	Fair Point 3	5277.5	3.722429
1856	87 12 36.670	978.8	57 23 12.1	237 21 29.7	Grande	6417.9	3.807390
			64 28 46.3	244 27 44.8	Chico	3595.2	3.555722
Colored Church spire	30 24 39.656	1221.1	354 30 31.5	174 30 41.4	Fair Point 3	5500.06	3.740410
1856	87 12 38.316	1022.7	8 52 09.3	188 51 40.4	Clapps Woods	9854.3	3.993625
			55 32 42.2	235 31 00.6	Grande	6502.7	3.813094
			61 04 14.3	241 03 13.6	Chico	3656.8	3.563096
Wright's mill chimney [1]	30 24 43.29	1332.9	248 29 18	68 32 21	Sand String	10333	4.01424
1891	87 12 11.36	303.1	291 03 26	111 05 49	Hickory	8061	3.90641
Muscogie outer gable [1]	30 24 37.36	1150.4	276 31 18	96 34 36	Red Fish Point 3	10514	4.02176
1891	87 11 42.86	1143.8	291 52 14	111 54 22	Hickory	7287	3.86253
Ice Works tall chimney	30 24 53.484	1647.1	352 56 48.2	172 57 02.0	Fair Point 3	5946.1	3.774234
1891	87 12 45.946	1226.3	7 22 33.0	187 22 08.1	Clapps Woods	10247.0	4.010598
			51 29 15.5	231 27 37.8	Grande	6592.2	3.819029
Railroad station cupola	30 25 03.088	95.1	334 20 19.5	154 21 07.7	Town Point 3	5871.1	3.768717
1891	87 12 48.599	1297.1	352 38 06.6	172 38 21.8	Fair Point 3	6248.5	3.795773
			6 47 12.8	186 46 49.3	Clapps Woods	10531.9	4.022505
Herron's house cupola	30 25 08.871	273.2	332 07 51.4	152 08 46.2	Town Point 3	6187.6	3.791524
1891	87 13 01.705	45.5	349 45 56.9	169 46 18.7	Fair Point 3	6478.0	3.811440
			4 48 26.2	184 48 09.3	Clapps Woods	10673.7	4.028313
Standpipe	30 25 17.717	545.6	349 49 26.3	169 49 48.9	Fair Point 3	6753.6	3.829534
1891	87 13 03.286	87.7	28 52 04.5	208 50 34.6	Navy Yard wharf	9837.8	3.992898
			44 03 49.0	224 02 20.1	Grande	6751.3	3.829389
Wells' chimney [1]	30 25 21.15	651.2	298 42 16	118 44 36	Hickory	8458	3.92727
1891	87 12 07.45	198.8	346 08 01	166 08 28	Town Point 3	6024	3.77987
Oak	30 25 11.891	366.1	299 09 00.8	119 11 09.1	Hickory	7755.6	3.889618
1891	87 11 43.278	1155.1	351 50 05.7	271 50 20.8	Town Point 3	5620.3	3.749760
			8 17 55.1	188 17 37.2	Fair Point 3	6536.4	3.815337
Jose [1]	30 25 19.14	589.3	304 26 21	124 28 11	Hickory	7076	3.84976
1891	87 11 08.15	217.4	1 23 05	181 23 02	Town Point 3	5788	3.76254
Magnolia wharf [1]	30 25 55.71	1715.5	318 43 59	138 45 25	Hickory	6823	3.83395
1890	87 10 18.13	483.8	12 02 57	192 02 29	Town Point 3	7068	3.84931
Magnolia wharf flagstaff	30 25 55.800	1718.3	197 22 03.3	17 22 42.0	Devils Point 2	6848.8	3.835613
1890	87 10 18.347	489.6	256 44 53.1	76 46 58.4	Sand String	6778.6	3.831142
			318 42 44.5	138 44 08.0	Hickory	6828.7	3.834336
Bohemia shingle mill stack	30 28 45.872	1412.6	221 47 02.9	41 47 24.9	Devils Point 2	1742.6	3.241186
1891	87 09 45.229	1206.4	252 06 19.1	72 08 15.7	Trout Crawl	6442.1	3.809025
			320 27 28.9	140 29 47.5	Red Fish Point 3	11475.4	4.059766
Bohemia round brick chimney	30 28 49.967	1538.7	224 21 24.8	44 21 46.6	Devils Point 2	1640.9	3.215072
1891	87 09 44.706	1192.4	253 08 35.2	73 10 31.5	Trout Crawl	6391.1	3.805574
			303 45 21.3	123 47 09.6	Sand String	6856.4	3.836098
			320 54 33.1	140 56 51.5	Red Fish Point 3	11564.1	4.063112

[1] No check on this position.

PENSACOLA BAY—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Supplementary points—Contd	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Devils Point red beacon 1891	30 29 17.677 87 08 03.067	544.3 81.8	101 33 59.4 182 35 38.7 253 39 21.3 327 20 59.2 335 01 32.2	281 33 29.7 2 35 43.0 73 40 26.2 147 21 56.0 155 02 58.5	Devils Point 2 East Escambia Trout Crawl Sand String Red Fish Point 3	1595.9 4959.5 3549.4 5539.5 10844.2	3.203002 3.695436 3.550159 3.743474 3.035196
Devils Point old beacon 1891	30 29 27.387 87 08 25.331	843.3 675.5	91 14 12.2 189 57 54.9 260 04 20.4 324 10 31.2	271 13 53.8 9 58 10.5 80 05 36.6 144 11 39.4	Devils Point 2 East Escambia Trout Crawl Sand String	969.9 4726.7 4060.5 6121.0	2.986746 3.674562 3.608582 3.786822
Escambia trestle northeast chimney 1891	30 31 15.145 87 09 03.670	466.4 97.9	55 56 24.2 233 59 26.9 297 31 51.1 359 05 00.4	235 56 05.5 54 00 01.9 117 33 26.7 179 05 01.4	West Escambia East Escambia Trout Crawl Devils Point 2	1186.5 2274.6 5663.4 3297.8	3.074251 3.356912 3.753080 3.518224
Skinner's sawmill stack [1] 1891	30 31 11.91 87 10 28.15	366.7 750.6	162 06 32 250 38 38	342 06 18 70 39 56	West Head East Escambia	2821 4337	3.45036 3.63722
Skinner's planing mill stack[1] 1891	30 31 11.62 87 10 21.34	357.9 568.8	158 43 57 249 42 07	338 43 37 69 43 21	West Head East Escambia	2890 4169	3.46090 3.62006
Lone chimney [1] 1891	30 32 00.00 87 11 21.75	0.0 579.8	205 01 07 270 25 58	25 01 18 90 27 43	West Escambia East Escambia	1329 5521	3 12356 3.74203
Wreck 1891	30 32 23.966 87 10 39.683	738.0 1057.7	186 10.53.4 280 04 08.4 330 28 00.0	6 11 02.7 100 05 32.3 150 28 30.0	East Head East Escambia West Escambia	4517.2 4468.3 3199.4	3.654873 3.650146 3.505062
Leaning chain house, higher gable 1891	30 32 24.216 87 09 48.517	745.7 1293.3	103 23 32.0 168 55 58.7 284 34 36.6 355 38 24.3	283 22 55.4 348 55 42.0 104 35 34.4 175 38 28.4	West Head East Head East Escambia West Escambia	1976.8 4568.3 3136.5 2799.6	3.295964 3.659750 3.496444 3.447092
Chain house, east gable 1891	30 33 03.976 87 09 42.456	122.4 1131.6	69 48 43.2 162 19 36.0 305 01 08.8 359 16 08.5	249 48 03.5 342 19 16.3 125 02 03.6 179 16 09.5	West Head East Head East Escambia West Escambia	2221.0 3420.4 3509.3 4016.2	3.346556 3.534073 3.545219 3.603812
White Point beacon 1892	30 26 01.529 87 02 42.044	47.1 1121.9	286 14 09.4 4 00 58.5 123 49 02.1	106 16 04.1 184 00 53.2 303 48 20.4	Rogers Gurley White Point 3	6293.9 3983.7 2644.9	3.798919 3.600287 3.422415
Escribano Point beacon 1892	30 31 13.913 87 01 44.412	428.4 1184.1	261 14 01.8 332 02 52.1 39 25 42.3 140 45 32.3	81 14 32.6 152 03 10.1 219 25 09.4 320 45 16.8	Grass Point 2 Escribano Point 2 Lindsay Eagle Point 2	1635.6 2022.3 2730.4 1286.0	3.213686 3.305844 3.436233 3 109225
Two Trees 1892	30 31 38.004 87 00 11.778	1170.3 314.0	59 59 40.5 153 47 36.4 187 22 40.2	239 59 24.3 333 47 14.8 7 22 45.3	Grass Point 2 Robinson Point 2 Weaver Mouth	985.2 2575.7 2067.2	2.993521 3.410889 3.315372
Catfish Point 1892	30 31 59.401 87 00 11.486	1829.2 306.2	36 46 57.6 145 16 10.0 190 29 36.1	216 46 41.2 325 15 48.2 10 29 41.0	Grass Point 2 Robinson Point 2 Weaver Mouth	1437.8 2010.1 1414.8	3.157704 3.303228 3.150697
Scaffold 1892	30 33 00.542 86 59 54.527	16.7 1453.4	23 24 02.8 58 34 28.9 81 46 53.8	203 23 37.8 238 33 17.6 261 46 23.4	Grass Point 2 Eagle Point 2 Robinson Point 2	3306.2 4386.3 1613.8	3.519333 3.642096 3.207860
Mill chimney 1892	30 34 10.819 87 00 07.007	333.2 186.7	303 07 39.4 357 01 09.8 27 50 10.8	123.07 59.9 177 01 12.4 207 49 46.6	Yellow River Weaver Mouth Robinson Point 2	1281.9 2659.3 2708.2	3.107854 3.424772 3.432685
Shingle mill stack [1] 1892	30 35 26.17 87 01 28.62	806.0 762.5	282 09 38 306 20 13	102 10 08 126 20 25	Last Point Milligan	1604 809	3.20527 2.90778
Oak [1] 1892	30 35 41.98 87 01 43.47	1292.7 1158.1	292 46 48 312 41 45	112 47 26 132.42 05	Last Point Milligan	2130 1424	3.32835 3.15365
Dry dock derrick 1892	30 36 05.303 87 01 33.748	163.2 899.1	312 08 48.3 330 46 35.5 334 55 36.2	132 09 20.8 150 47 00.4 154 55 51.2	Last Point Shields Point Milligan	2299.3 2672.9 1859.3	3.361592 3.426988 3.269361

PERDIDO BAY.

Principal points							
Cotton (Ala.) 1889	30 16 20.852 87 34 02.802	642.1 74.9	74 02 25.4	254 00 48.9	Azimuth V	5321.57	3.726040
Perdido Range (Ala.) 1889	30 16 45.586 87 32 52.994	1403.6 1416.3	67 47 59.7	247 47 24.5	Cotton	2015.3	3.304332
Johnson (Ala.) 1889	30 17 36.265 87 32 45.835	1116.7 1224.8	6 59 25.1 41 32 26.0	186 59 21.5 221 31 47.2	Perdido Range Cotton	1572.2 3102.2	3.196512 3.491667
Perdido III 1889	30 16 56.892 87 30 49.652	1751.9 1327.0	83 58 47.7 111 20 14.9	263 57 45.5 291 19 16.3	Perdido Range Johnson	3314.8 3333.2	3.520460 3.522866

[1] No check on this position.

PERDIDO BAY—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Principal points—Contd	° ′ ″		° ′ ″	° ′ ″		*Meters*	
Bear Point (Ala.)	30 18 03.401	104.7	357 54 26.9	177 54 28.3	Perdido III	2049.3	3.311614
1889	87 30 52.452	1401.6	53 21 56.8	233 20 56.0	Perdido Range	4024.0	3.604663
			74 35 23.5	254 34 26.3	Johnson	3142.9	3.497334
Perdido II	30 17 18.074	556.6	78 07 00.4	258 06 01.9	Perdido III	3165.4	3.500432
1889	87 28 53.751	1436.5	113 45 29.9	293 44 30.0	Bear Point	3465.5	3.539767
Hummock	30 18 50.531	1556.0	6 56 02.1	186 55 55.6	Perdido II	2867.9	3.457571
1889	87 28 40.795	1090.0	44 32 50.4	224 31 45.4	Perdido III	4909.3	3.691016
			67 35 26.3	247 34 19.9	Bear Point	3805.4	3.580397
Goat	30 17 55.764	1717.1	63 13 40.7	243 12 19.9	Perdido Range	4795.5	3.680836
1889	87 30 12.800	342.0	102 31 03.3	282 30 43.3	Bear Point	1085.3	3.035557
			235 32 35.8	55 33 22.2	Hummock	2981.2	3.474390
Perdido I	30 17 29.512	908.8	78 16 32.2	258 16 00.2	Perdido II	1732.5	3.238666
1889	87 27 50.276	1343.5	151 35 11.1	331 34 45.6	Hummock	2836.6	3.452796
Nelson	30 18 49.862	1535.4	32 23 53.0	212 23 23.4	Perdido I	2930.2	3.466894
1889	87 26 51.527	1376.6	49 08 07.2	229 07 05.6	Perdido II	4319.1	3.635394
			72 48 13.0	252 46 31.5	Goat	5630.0	3.750511
			90 24 43.2	270 23 48.1	Hummock	2919.4	3.465300
Lagoon III	30 17 50.644	1559.5	80 56 40.5	260 55 23.5	Perdido I	4129.6	3.615911
1889	87 25 17.671	472.3	126 01 41.3	306 00 53.9	Nelson	3100.7	3.491457
Piney	30 18 47.178	1452.8	12 34 05.8	192 33 58.5	Lagoon III	1783.5	3.251285
1889	87 25 03.147	84.1	61 50 29.9	241 49 05.6	Perdido I	5065.8	3.704652
			91 38 33.9	271 37 39.2	Nelson	2896.8	3.461924
Lagoon II	30 18 20.402	628.3	76 16 40.5	256 15 29.7	Lagoon III	3860.1	3.586599
1889	87 22 57.340	1532.2	103 47 26.0	283 46 22.5	Piney	3461.1	3.539209
Red Bluff	30 19 31.541	971.3	9 39 58.2	189 39 51.1	Lagoon II	2222.1	3.346764
1889	87 22 43.376	1158.8	53 00 27.5	232 59 09.6	Lagoon III	5162.1	3.712828
			69 54 57.0	249 53 46.4	Piney	3976.2	3.599464
Inerarity west	30 19 00.198	6.1	16 24 57.5	196 24 46.5	Goat	2068.4	3.315637
1889	87 29 50.925	1360.5	43 13 54.1	223 13 23.1	Bear Point	2400.3	3.380259
Rockwood (Ala.)	30 18 32.651	1005.4	242 50 48.8	62 51 20.0	Inerarity west	1858.9	3.269265
1889	87 30 52.836	1411.7	316 42 50.6	136 43 10.8	Goat	1560.3	3.193212
			359 20 48.0	179 20 48.2	Bear Point	900.7	2.954603
Ross (Ala.)	30 19 11.426	351.8	280 36 39.3	100 37 14.1	Inerarity west	1876.7	3.273406
1889	87 30 59.970	1602.2	331 35 09.6	151 35 33.4	Goat	2648.9	3.423062
			350 55 47.7	170 55 51.3	Rockwood	1209.1	3.082460
Red Bluff (Ala.)	30 20 36.755	1131.8	312 05 37.2	132 06 46.0	Nelson	4909.3	3.691018
1889	87 29 07.877	210.4	347 31 34.9	167 31 48.6	Hummock	3350.0	3.525041
			21 08 51.7	201 08 30.1	Inerarity west	3187.9	3.503499
			30 37 00.6	210 36 08.0	Bear Point	5486.7	3.739310
			48 44 27.3	228 43 30.9	Ross	3983.7	3.600282
Manuel (Ala.)	30 21 37.485	1154.3	343 03 41.5	163 04 11.2	Nelson	5395.5	3.732035
1889	87 27 50.363	1345.0	14 41 11.8	194 40 46.3	Hummock	5314.5	3.725466
			33 37 41.6	213 36 40.8	Inerarity west	5816.2	3.764636
			36 26 05.0	216 24 33.1	Bear Point	8192.5	3.913417
			47 54 45.5	227 54 06.4	Red Bluff	2789.8	3.445566
Dupont	30 21 56.308	1733.9	6 46 30.4	186 46 17.5	Nelson	5781.6	3.762045
1889	87 26 25.998	694.2	32 11 43.3	212 10 35.3	Hummock	6739.3	3.829904
			45 16 51.2	225 15 07.9	Inerarity west	7705.1	3.886777
			55 15 55.4	235 13 37.3	Ross	8906.5	3.949709
			60 28 26.2	240 27 04.5	Red Bluff	4969.0	3.696270
			75 34 41.1	255 33 58.5	Manuel	2326.3	3.366660
Suarez (Ala.)	30 22 54.134	1667.0	331 01 00.5	151 01 19.2	Dupont	2035.5	3.308671
1889	87 27 02.933	78.3	28 13 14.2	208 12 50.2	Manuel	2678.6	3.427900
Nix	30 23 26.709	822.5	22 08 42.8	202 08 21.4	Dupont	3005.4	3.477898
1890	87 25 43.573	1163.3	45 11 45.9	225 10 41.9	Manuel	4772.1	3.678710
			64 40 14.9	244 39 34.8	Suarez	2344.2	3.369997
Chagrin (Ala.)	30 24 16.026	493.5	332 09 04.2	152 09 19.4	Nix	1717.5	3.234898
1890	87 26 13.626	363.7	4 23 27.5	184 23 21.3	Dupont	4315.0	3.634981
			27 34 02.8	207 33 37.9	Suarez	2844.6	3.454021
Cummings	30 24 07.334	225.8	11 11 23.0	191 11 18.3	Nix	1275.2	3.105579
1890	87 25 34.303	915.7	18 53 17.3	198 52 51.2	Dupont	4264.2	3.629840
			46 23 42.8	226 22 58.0	Suarez	3267.9	3.514270
			104 18 29.4	284 18 09.5	Chagrin	1083.2	3.034723
Grassy (Ala.)	30 25 23.150	712.9	47 01 45.4	227 00 12.1	Suarez	6730.4	3.828038
1890	87 23 58.484	1560.8	47 36 53.6	227 36 05.1	Cummings	3462.8	3.539430
			60 11 41.1	240 10 32.7	Chagrin	4157.2	3.618805
Double	30 24 40.782	1255.8	72 50 02.2	252 48 59.0	Cummings	3488.0	3.542575
1890	87 23 29.456	786.1	80 08 34.8	260 07 11.8	Chagrin	4447.8	3.648148
			149 17 57.2	329 17 42.5	Grassy	1517.4	3.181088
River East	30 27 13.511	416.0	10 08 26.0	190 08 10.0	Double	4777.6	3.679211
1890	87 22 57.941	1545.9	25 25 46.9	205 25 16.2	Grassy	3762.8	3.575510

PERDIDO BAY—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Principal points—Contd	° ′ ″		° ′ ″	° ′ ″		*Meters*	
River West (Ala.)	30 26 47.335	1457.6	214 29 39.8	34 29 50.3	River East	978.0	2.990337
1890	87 23 18.701	499.0	4 12 46.5	184 12 41.0	Double	3907.5	3.591902
			22 16 21.6	202 16 01.3	Grassy	2801.3	3.447353
Boom	30 27 08.692	267.7	264 56 52.9	84 57 24.8	River East	1686.5	3.226983
1891	87 24 00.908	24.2	300 16 54.5	120 17 15.9	River West	1304.1	3.115308
Squid (Ala.)	30 27 01.259	38.8	224 00 20.2	44 00 24.4	Boom	318.2	2.502711
1891	87 24 09.194	245.3	258 46 14.1	78 46 50.2	River East	1938.1	3.287377
			287 39 04.0	107 39 29.6	River West	1413.8	3.150387
Juniper (Ala.)	30 27 14.003	431.2	281 59 28.5	101 59 43.1	Boom	787.1	2.896016
1891	87 24 29.765	796.1	305 33 50.7	125 34 01.1	Squid	674.7	2.829111
Hirse	30 27 33.054	1017.8	310 35 32.3	130 35 48.9	Boom	1152.9	3.061798
1891	87 24 33.722	899.6	326 14 25.8	146 14 38.2	Squid	1177.6	3.071012
			349 47 53.6	169 47 55.6	Juniper	596.1	2.775302
Hard	30 27 36.924	1137.0	282 01 55.1	102 02 05.7	Hirse	571.6	2.757123
1891	87 24 54.678	1464.2	316 43 07.3	136 43 19.9	Juniper	969.5	2.986559
Wire (Ala.)	30 27 33.799	1040.8	247 18 57.4	67 19 01.8	Hard	249.5	2.397139
1891	87 25 03.308	88.2	271 39 46.8	91 40 01.8	Hirse	789.7	2.897437
			304 15 34.5	124 15 51.5	Juniper	1082.8	3.034553
Steamboat	30 27 58.030	1787.0	317 47 48	137 47 59	Hard	877.3	2.94317
1891	87 25 16.770	447.4	334 17 52	154 17 58	Wire	828.1	2.91807
Roots (Ala.)	30 28 08.606	265.0	293 25 02	113 25 17	Steamboat	819.4	2.91350
1891	87 25 44.957	1199.3	306 01 38	126 02 04	Hard	1658.6	3.21973
			313 58 04	133 58 25	Wire	1543.8	3.18858
Kee	30 28 12.344	380.1	305 05 16	125 05 28	Steamboat	766.8	2.88467
1891	87 25 40.291	1074.8	311 52 11	131 52 33	Hard	1634.1	3.21327
			320 15 54	140 16 11	Wire	1543.4	3.18848
			47 14 16	227 14 13	Roots	169.5	2.22927
Alabama Cut-off (Ala.)	30 28 28.393	874.3	323 06 12	143 06 19	Kee	618.0	2.79096
1891	87 25 54.199	1445.7	337 58 15	157 58 19	Roots	657.3	2.81776
Florida Cut-off	30 28 32.796	1009.9	347 55 25	167 55 28	Kee	644.1	2.80892
1891	87 25 45.342	1209.5	359 12 35	179 12 35	Roots	745.0	2.87214
			60 08 43	240 08 39	Alabama Cut-off	272.4	2.43521
Titi (Ala.)	30 28 45.514	1401.5	301 04 51	121 05 03	Florida Cut-off	758.6	2.88000
1891	87 26 09.699	258.7	321 53 53	141 54 01	Alabama Cut-off	670.0	2.82607
Bay	30 28 46.825	1441.9	308 47 55	128 48 05	Florida Cut-off	689.4	2.83848
1891	87 26 05.486	146.3	332 03 31	152 03 36	Alabama Cut-off	642.5	2.80786
			70 14 48	250 14 46	Titi	119.4	2.07701
Log (Ala.)	30 28 58.436	1799.4	358 40 41	178 40 41	Bay	357.6	2.55345
1891	87 26 05.795	154.6	14 39 52	194 39 50	Titi	411.3	2.61416
Goat 2	30 17 56.004	1724.5	81 23 10.3	261 21 54.6	Johnson	4053.3	3.607809
1911	87 30 15.868	424.0	200 08 46.6	20 09 20.9	Red Bluff	5272.7	3.722035
			236 31 49.1	56 32 37.1	Hummock	3045.1	3.483597
			275 08 50.7	95 08 52.3	Goat	82.32	1.915505
Ross 2	30 19 12.494	384.7	229 22 47.8	49 23 45.0	Red Bluff	3986.0	3.600537
1911	87 31 01.153	30.8	332 48 25.6	152 48 48.5	Goat 2	2647.9	3.422908
Inerarity west 2	30 18 59.392	1828.9	200 46 45.3	20 47 06.7	Red Bluff	3206.7	3.506060
1911	87 29 50.470	1348.4	19 10 23.3	199 10 10.5	Goat 2	2066.5	3.315236
			102 03 52.6	282 03 16.9	Ross 2	1931.0	3.285784
Bear Point 2	30 18 03.558	109.6	211 01 31.2	31 02 24.7	Red Bluff	5505.3	3.740783
1911	87 30 54.114	1446.0	224 40 50.5	44 41 22.6	Inerarity west 2	2418.2	3.383490
			247 53 27.0	67 54 34.3	Hummock	3844.7	3.584857
			282 49 11.5	102 49 30.8	Goat 2	1048.1	3.020404
			74 17 07.9	254 16 11.5	Johnson	3101.5	3.491567
Inlet	30 17 03.169	97.6	117 05 39.0	297 05 01.4	Johnson	2238.0	3.349853
1911	87 31 31.279	835.9	208 06 15.6	28 06 34.4	Bear Point 2	2108.1	3.323900
			216 57 41.2	36 58 32.0	Inerarity west 2	4479.3	3.651211
			231 04 50.3	51 05 28.4	Goat 2	2590.0	3.413300
Ala (Ala.)	30 16 43.910	1352.1	196 34 10.7	16 34 19.7	Johnson	1682.0	3.225824
1911	87 33 03.785	101.2	234 42 08.7	54 43 14.1	Bear Point 2	4245.4	3.627921
			256 30 18.4	76 31 05.0	Inlet	2542.5	3.405255
Supplementary points							
Main Shore 1	30 19 30.375	935.3	240 46 42.7	60 48 01.1	Pensacola L. H.	4750.2	3.676711
1871	87 21 04.028	107.6	269 02 18.7	89 03 28.9	Fort McRee flagstaff	3714.4	3.569887
West Beach 2	30 18 27.948	860.6	225 32 59.2	45 33 36.2	Main Shore 1	2745.3	3.438589
1871	87 22 17.388	464.6	235 12 19.9	55 14 15.3	Pensacola L. H.	7434.2	3.871236
			250 42 44.6	70 44 31.8	Fort McRee flagstaff	6011.0	3.778946
North Range	30 16 41.715	1284.5	95 56 19.8	275 56 07.6	Ala	653.4	2.815164
	87 32 39.470	1054.9	174 13 02.7	354 12 59.5	Johnson	1688.3	3.227452
			250 04 14.9	70 04 49.3	Inlet	1938.5	3.287471

PERDIDO BAY—Continued

Station	Latitude and longitude	Seconds in meters	Azimuth	Back azimuth	To station	Distance	Logarithm
Supplementary points—Continued	° ′ ″		° ′ ″	° ′ ″		*Meters*	
South Range	30 16 40.737	1254.4	98 21 02.3	278 20 49.8	Ala	673.0	2.828005
	87 32 38.872	1038.9	173 47 20.8	353 47 16.8	Johnson	1719.9	3.235515
			249 04 13.0	69 04 47.1	Inlet	1934.1	3.286472
Ono	30 16 56.854	1750.7	64 56 47.7	244 56 31.6	Ala	941.1	2.973642
1911	87 32 31.886	852.2	162 55 29.5	342 55 22.4	Johnson	1269.5	3.103647
			231 49 17.5	51 50 06.8	Bear Point 2	3323.5	3.521597
Tarkill	30 20 05.762	177.4	62 13 56.6	242 12 33.5	Hummock	4970.5	3.696398
1889	87 25 56.180	1500.7	78 22 18.9	258 19 45.7	Rosa	8286.1	3.918349
			100 34 16.5	280 32 39.7	Red Bluff	5208.5	3.716715
Bend	30 22 34.644	1066.8	51 58 00.5	231 57 31.9	Dupont	1915.8	3.282353
1890	87 25 29.448	786.2	64 56 07.4	244 54 56.2	Manuel	4153.1	3.618376
			103 31 54.5	283 31 07.2	Suarez	2566.1	3.409279
			159 19 27.5	339 19 05.1	Chagrin	3336.8	3.523336
Fell (Ala.)	30 24 00.169	5.2	263 59 23.3	84 00 03.1	Cummings	2109.2	3.324125
1890	87 26 52.886	1411.7	299 06 19.7	119 06 54.8	Nix	2117.8	3.325895
			349 20 19.1	169 20 32.8	Dupont	3881.0	3.588946
			7 30 55.6	187 30 50.5	Suarez	2051.0	3.311974
May (Ala.)	30 25 04.553	140.2	284 17 08.4	104 18 02.9	Double	2964.9	3.472009
1890	87 25 17.104	456.5	14 36 18.6	194 36 09.9	Cummings	1820.8	3.260256
			45 16 40.0	225 16 11.4	Chagrin	2123.4	3.327035
Cove[1]	30 23 53.43	1645.3	191 24 08	11 24 18	Grassy	2818.5	3.45002
1890	87 24 19.36	516.8	222 24 38	42 25 03	Double	1975.1	3.29559
Fish house southeast gable (Ala.)	30 24 59.65	1836.7	278 45 00	98 46 11	Double	3815.3	3.58153
1890	87 25 50.74	1354.2	344 46 05	164 46 13	Cummings	1669.6	3.22262
Powell	30 24 59.975	1846.7	77 57 17.3	257 56 24.8	Double	2830.4	3.451853
1890	87 21 45.746	1221.0	101 23 56.4	281 22 49.2	Grassy	3613.8	3.557960
			143 07 28.6	323 06 41.7	River West	4133.1	3.616276
			154 54 06.0	334 53 29.5	River East	4540.9	3.657143
Head	30 26 51.322	1580.4	14 27 12.8	194 26 56.0	Powell	3540.8	3.549096
1890	87 21 12.634	337.1	42 15 33.9	222 14 24.6	Double	5430.5	3.734837
			58 28 58.7	238 27 34.7	Grassy	5192.1	3.715343
			87 55 06.9	267 54 03.2	River West	3365.9	3.527099
			103 40 32.2	283 39 38.8	River East	2891.5	3.461127
Hester	30 24 52.170	1606.5	80 03 24.5	260 02 46.6	Double	2029.7	3.307439
1890	87 22 14.553	388.4	108 59 13.2	288 58 20.6	Grassy	2933.3	3.467356
			154 14 14.0	334 13 41.7	River West	3937.9	3.595262
			252 38 15.4	72 38 30.0	Powell	805.5	2.906085
Marcus	30 26 10.618	327.0	40 15 32.9	220 14 57.9	Powell	2850.4	3.454899
1890	87 20 36.730	980.2	59 02 35.8	239 01 08.2	Double	5376.0	3.730462
			74 49 30.7	254 47 48.4	Grassy	5578.9	3.746550
			104 40 17.8	284 38 55.8	River West	4467.3	3.650046
Millview Seminole Mill smokestack	30 25 12.469	384.0	73 50 41.9	253 49 38.0	Double	3505.0	3.544685
1890	87 21 23.325	622.4	94 33 09.3	274 31 50.7	Grassy	4154.0	3.618463
			133 30 12.9	313 29 14.6	River West	4244.2	3.627791
			185 21 12.4	5 21 17.8	Head	3057.3	3.485344
Millview schoolhouse flagstaff	30 25 23.327	718.3	121 58 14.5	301 56 55.8	River West	4887.1	3.689051
1890	87 20 43.320	1156.1	133 22 30.0	313 21 21.8	River East	4941.2	3.693833
			163 53 56.9	343 53 42.0	Head	2820.3	3.450291

[1] No check on this position.

STANDARD TRIANGULATION STATION MARKS.

DESCRIPTIONS OF STATIONS.

This list may be conveniently consulted by reference to the illustrations at the end of this publication or to the index. All azimuths given in these descriptions are reckoned continuously from true south around by west to 360°, south being 0°, west 90°, north 180°, and east 270°. Where magnetic azimuths are given they are indicated as such.

In general the surface and underground marks are not in contact, so that a disturbance of the surface mark will not necessarily affect the underground mark. The underground mark should be resorted to only in cases where there is evidence that the surface mark has been disturbed.

The dates and initials given in each description immediately after the county refer to the date of establishment of the station, the man by whom it was established, and the date when the station was last visited.

Any person who finds that one of the stations herein described has been disturbed, or that the description no longer fits the facts, is requested to send such information to the Superintendent, Coast and Geodetic Survey, Washington, D. C.

MARKING OF STATIONS.

The standard triangulation disk station mark referred to in the following notes and descriptions consists of a disk and shank, as shown in illustration No. 1, made of brass and cast in one piece. The disk is 90 mm. in diameter, with a small hole at the center surrounded by a 20 mm. equilateral triangle, and has the following inscribed legend: "U. S. Coast and Geodetic Survey triangulation station. For information write to Superintendent, Washington, D. C. $250 fine or imprisonment for disturbing this mark." The shank is 25 mm. in diameter and 80 mm. long, with a slit at the lower end into which a wedge is inserted so that when it is driven into a drill hole in the rock it will bulge at the bottom and hold the mark securely in place.

Another type of station mark shown in illustration No. 1 and referred to in the following notes and descriptions is made in the form of a cap to fit a 3-inch pipe instead of with the shank, but in other respects is exactly similar to the disk station mark described above.

GENERAL NOTES IN REGARD TO STATION AND REFERENCE MARKS.

NOTE 1.—The station is marked by a copper nail in the squared top of a live oak stake or an auger hole in the top of a pine scantling stake. The underground mark is a copper tack or diagonal lines in the flat side of a brick 2 or 3 feet below the surface of the ground. Four posts with an iron nail in the top of each form a square about the station.

NOTE 2.—The station is marked by a copper nail in the top of a 4-inch or 6-inch tile which is filled and surrounded with concrete and projects a few inches above the ground. The underground mark is the center of the mouth of a small earthen jug which is filled with cement or is the center of the mouth of a bottle set in cement. Four reference posts with a copper nail in the top of each are each 4 feet from the station, north, east, south, and west, respectively.

NOTE 3.—The surface mark is a block of concrete with the upper part finished in the form of a truncated pyramid 8 or 10 inches square on top in which is set a standard disk station mark. The underground mark is a bottle set in concrete 3 feet below the surface.

NOTE 4.—The surface mark is a round concrete post in the top of which is set a standard disk station mark. The underground mark is a bottle set in concrete 3 feet below the surface.

NOTE 5.—The surface mark is a block of concrete finished at the upper end in the form of a truncated pyramid 6 or 8 inches square on top, marked with diagonal lines with a nail at the intersection or with a bottle embedded flush with the surface of the concrete. No underground mark was used. This type of marking was used chiefly as a reference mark.

NOTE 6.—The surface mark is a round concrete post with a bottle embedded in the center flush with the top. No underground mark was used. This type of marking was used chiefly as a reference mark.

NOTE 7.—The surface mark is a square concrete post with diagonal lines on top or with a bottle or a copper nail embedded in it flush with the surface. No underground mark was used. This type of marking was used chiefly as a reference mark.

NOTE 8.—The surface mark is a concrete post finished square above the surface of the ground with a standard disk station mark set in the top. The underground mark is a bottle set in concrete 3 feet below the ground.

NOTE 9.—The surface mark is a 4-inch tile filled with concrete with a spike in the center of the top, set flange down in a mass of concrete about 20 inches square (or 20 inches in diameter) and about 2 feet deep, with the top projecting a few inches above the surface. On the surface of the concrete is inscribed "C. & G. S.", with the year in which the mark was set. The underground mark is a concrete post 8 inches in diameter and 2½ feet long with a spike in the center of the top, set 2 or 3 feet befow the surface of the ground.

NOTE 10.—This is the same as note 9, except that the underground mark is a 4-inch tile with flange down filled and surrounded with concrete with a spike in the center of the top.

NOTE 11.—The surface mark is a concrete post about 10 inches square (or 10 inches in diameter) and 24 inches long, with a spike in the center of the top which projects a little above the surface. No underground mark was used. This type of marking was used chiefly as a reference mark.

NOTE 12.—The surface mark is a standard disk station mark in the top of a 6-inch tile which is filled with concrete and set about level with the surface of the ground. The underground mark is an iron nail, a copper bolt, or a bottle embedded in a block of concrete 12 inches square and 6 inches thick about 30 inches below the surface of the ground.

NOTE 13.—The surface mark is a 3-inch galvanized-iron pipe 4 feet long projecting 12 to 16 inches above the ground with a standard cap station mark screwed to the top. No underground mark was used. This type of marking was used chiefly as a reference mark and should not be confused with the station mark.

CAPE SABLE TO SAN CARLOS BAY.

PRINCIPAL POINTS.

Cape Sable west base (Monroe County, A. D. B., 1855; 1909).—About 40 meters from the shore line at the end of the vista cut through the woods along the base line. The station is marked by a broken screw pile with a pile of stones placed over it. Four smaller screw plies, each surrounded by a bed of shells and marked with a cross and a copper bolt in the top, are at the following distances from the station: South, 15.21 meters; east, 15.15 meters; north, 15.24 meters; and west, 15.24 meters.

Cape Sable latitude station (Monroe County, J. H., 1886; 1909).—In a large grove of coconut trees about 70 meters from the sand beach. The concrete tombstone of Guy M. Bradley is 300 meters east and 80 meters south of the station and a coconut tree marked with a triangular blaze is 41 meters from the station. The north gable of the nearest of several deserted houses is 38 meters south 71° east from the station and an old deep ditch is about 6 meters distant. The station is marked by a brick pier 18 by 24 inches in cross section, which was found leaning to the north in 1909.

Palm Point (Monroe County, J. H., 1886).—On Palm Point, known also as Middle Cape in a grove of coconut trees 50 meters from high water. The station is marked by a cross in the top of a marble post. A tile used as a reference mark is 7.1 meters to the northward of the station in line with a large palmetto tree and another tile is 6.8 meters distant in azimuth 310° 40′. Four clumps of buttonwood are toward the shore at the following distances from the station: 25 meters, 9 meters, 9 meters, and 12 meters.

Northwest Cape (Monroe County, J. H., 1887).—On open ground on Northwest Cape, 10 meters from the beach line and about 300 meters south of the point where the woods extend to the shore. The station is marked by a cross in the top of a granite post projecting 6 inches above the ground.

Shark (Monroe County, J. H., 1887).—On a sharp sand spit, the only one in the vicinity, on a point about 3 miles north of Northwest Cape and about 5 miles south of the mouth of the Shark River. High-water mark is about 3 meters distant on the north, west, and south sides of the station. The station is marked by a cross in the top of a granite post 4 inches square and 3 feet long.

Rodgers (Monroe County, J. H., 1887).—On the western extremity of Shark Point, about 3 miles northwest of the mouth of Shark River and about 200 meters south of the mouth of a small creek that winds back of the station. There are several dead trees and fallen trunks along the shore and a large number of trees were cut around the station. The station is marked by a cross in the top of a granite post 4 inches square. Two red mangrove trees and a mangrove stump, each marked with a triangular blaze, are at the following distances, respectively, from the station: 21.0 meters, N. 38° E., 13.3 meters N. 80° E., and 1.2 meters N. 15° E.

Fig (Monroe County, J. H., 1887).—On a sand ridge about 5 feet high, on Highland Point on the western shore of Lostmans Key, about 2 miles south of the mouth of Lostmans River and about 100 meters north of the mouth of a small creek. The station is marked by a cross in the top of a stone post 4 inches square and 3 feet long. Two fig trees, each marked with a triangular blaze, are, respectively, 11.1 meters S. 34° E. and 10.4 meters S. 65° E. from the station.

Seminole (Monroe County, J. H., 1887).—On a sand ridge at the edge of the timber on Seminole Point, which is the southwestern end of a small key. A coral reef covered with grass, mangroves, and dead trees extends around the extremity of the point. The station is marked by a cross in the top of a granite post which projects 4 inches above the surface. A red mangrove and two black mangroves, each marked with a triangular blaze and a nail, are at the following distances from the station: 11.9 meters north, 15.2 meters west-northwest, and 19.2 meters east by north.

Reef (Monroe County, S. F., 1887).—On the southeastern part of a small coral island about 2 miles east of Pavilion Key, about 10 meters from the shore line and just southeast of a small pond. There are a few old mangroves on the northern part of the island. The station is marked by a cross in the top of a granite post 4 inches square and 2½ feet long which projects 4 inches above the ground.

Pavilion Key (Monroe County, S. F., 1887).—On the most western part of Pavilion Key, 6 meters inside of high-water line. The station is marked by a cross in the top of a marble post. A blazed buttonwood is 7.05 meters northeast, another 4.79 meters northwest, and a blazed mangrove 7.92 meters west from the station.

Freeland (Monroe County, S. F., 1887).—On a high rocky key, the most westerly one in the vicinity, about 4 miles northwest of Pavilion Key. There is a conspicuous white sand beach at low water on the key just to the eastward of this key. The station is marked by a cross in the top of a marble post.

Coral (Lee County, J. H., 1887).—On the southern extremity of Indian Key, 10 meters back from the rocky bluff that forms the end of the point. The station is marked by a marble post.

Fire (Lee County, J. H., 1887).—On the southwestern extremity of Round Key, about 6 meters back of the high bluff bank and about 200 meters from the point of the coral reef which extends around the end of the key. The station is marked by a tile. Three palmetto trees, each marked with a blaze and a nail, are at the following distances, respectively, from the station: 6.2 meters northeast, 4.3 meters northwest, and 5.8 meters west.

Horse Key (Lee County, J. H., 1887).—On the southwest end of the first key northwest of Panther Key, 10 meters north of the edge of the bluff, below which are many dead trees. The station is marked by a cross on the top of a marble post.

Coon Key (Lee County, J. H., 1887).—On a small hill on the key just north of Coon Key, 200 meters across the east channel into Goodland Point from the west end of Coon Key. The station is marked by a small hole in the top of a marble post. A nail in a gumbo limbo tree is 4.5 meters west, and a nail in a buttonwood tree is 4.9 meters northwest from the station.

Cape Romano (Lee County, J. H., 1885; 1887).—On Cape Romano 6 meters back of high-water line and 315 meters north of the most southern point of the cape. The station is marked by a hole in the top of a marble post. A tile is buried 16.04 meters due north of the station and another 15.50 meters east by north. A large buttonwood tree marked with a blazed cross is at the edge of the woods about 125 meters north-northeast from the station and a large red mangrove tree similarly marked is at the edge of the woods about 160 meters east by north.

Johnson (Lee County, J. H., 1887; 1889).—On Caximbas hill, just north of the house belonging to Charles Johnson. The station is marked by a cross in the top of a marble post. A galvanized tack in the northeast corner of the house is 5.60 meters from the station, and a similar mark in the northwest corner of the house is 3.82 meters distant.

Caximbas (Lee County, J. H., 1885; 1890).—Lost.

Big Marco (Lee County, J. H., 1885; 1890).—Lost.

Little Marco (Lee County, J. H., 1885).—On the west side of the point just south of the entrance to Little Marco Pass. The station is marked by a copper tack in the top of a cedar stub surrounded by three bottles each buried 5 feet from the station, north-northeast, southeast, and west, respectively. There is a pond and a sand ridge west of the station.

Johns Pass (Lee County, J. H., 1885).—A little east and north of the extremity of the point, on the north side of the entrance to Johns Pass. The station is marked with a copper nail in the top of a cedar stub.

Gordons Pass (Lee County, J. H., 1885).—At the edge of the grass about 270 meters south of the entrance to Gordons Pass. The station is marked by a copper tack in the top of a cedar stub, surrounded by three bottles, each buried 5 feet from the station, north, east-southeast, and west-southwest, respectively. Two palmettos, each marked with a triangular blaze, are, respectively, 16.1 meters north and about 20 meters east from the station.

Doctors Pass (Lee County, J. H., 1885).—On the shore on the north side of the entrance to Doctors Pass, 34 meters nearly due west of two prominent palm trees growing very close together. The station is marked by an iron nail in the top of a yellow pine stub.

Wiggins Pass (Lee County, J. H., 1884).—On the shore just north of Wiggins Pass, 18 meters back from the edge of the grass. The station is marked by a cross in the top of a granite post, projecting 6 inches above the surface, and inscribed "U. S. B. M. 1880." Two bottles, each buried 6 inches below the surface, are, respectively, 3.71 meters east and 4.36 meters south from the station.

Big Hickory (Lee County, J. H., 1884).—On the sandy point at the north end of Little Hickory Island just south of Big Hickory Pass, at the northern edge of the woods 8 meters from a creek to the east and about 25 meters from the Gulf shore to the west. The station is marked by a copper tack in the top of a cedar stub and underground by an inverted bottle 5 feet below the surface. A triangular blaze on the middle one of three mangroves near the Gulf shore is 17 meters N. 84° W. from the station and a copper nail in the top of a pine stake is in the woods 12.2 meters S. 30° E.

Big Carlos (Lee County, J. H., 1884).—On Estero Island, on the point just north of the entrance to Big Carlos Pass, 6 meters from the edge of the grass and 18 meters from high-water mark. The station is marked by a cross in the top of an iron screw pile projecting 6 inches above the surface. Two stakes with a copper tack in the top of each are, respectively, 9.1 meters, east-northeast and 8.9 meters due north from the station.

Little Carlos (Lee County, J. H., 1884).—On the key just north of Little Carlos Pass, 27 meters from high water to the south. The station is marked by a copper tack in the top of a cedar post.

Oyster Key (Lee County, J. H., 1884).—On a mangrove point on the eastern side of Estero Bay. An oyster bank bare at low water surrounds the point. The station is marked by a copper tack in the top of a cedar stub. Three trees, each marked with a triangular blaze, with a nail at the center of the blaze, are at the following distances from the station: 5.8 meters N. 40° W., 8.3 meters N. 80° E., and 7.7 meters S. 16° W.

Bowditch Point 2 (Lee County, J. H., 1883; 1888).—On the south side of Bowditch Point, at the western end of Estero Island, 41 meters back from the edge of the grass 65 meters from high-water mark to the west and 140 meters from low-water mark in the same direction. The station is marked by a cross in the top of a marble monument.

Mound Key (Lee County, J. H., 1884).—On the highest mound on Mound Key in Estero Bay. The mound is about 60 feet high and 2½ miles from the mainland shore of the bay. The station is marked by a copper tack in the top of a cedar post, projecting 8 inches above the surface, and underground by a small hole in the top of a granite block 18 inches below the surface.

Point Ybel 2 (Lee County, J. H., 1883; 1909).—East of Sanibel Island lighthouse on the eastern extremity of Sanibel Island, at the edge of the bushes 18 meters from ordinary high-water mark. The station is marked by a cross in the top of a marble post embedded in a mass of concrete which projects 5 inches above the ground and is inscribed "C. & G. S., 1888." The undergound mark is 4-inch tile 3 feet below the surface.

Summerlin (Lee County, J. H., 1884).—On the eastern shore of San Carlos Bay on a tower adjoining the house of Mr. Summerlin, and formerly used by the Signal Service as an observatory. The station is marked by a copper tack driven flush with the roof. A copper tack in the northeast corner of the roof is 2.65 meters distant, one in the northwest corner 1.94 meters, and one in the southwest corner 3.37 meters.

CALOOSAHATCHEE RIVER TO CHARLOTTE HARBOR.

PRINCIPAL POINTS.

Middle Point (Lee County, I. C. C., 1858; 1908).—Lost.

Sword Point (Lee County, W. R. T., 1860; 1892).—On Sword Point on the east side of the southern end of Matlacha Pass, 11 meters from high-water mark to the south. The station is marked by a cross in the top of a granite monument 5 inches square and 2½ feet long, surrounded by four stakes, each 2 feet distant, north, east, south, and west, respectively.

Punta Rasa (Lee County, I. C. C., 1859).—Near the south side of Punta Rasa about 100 paces south of the Government storehouse and 18 paces from high-water mark. The station is marked by a cross in the top of a granite monument 5 inches square and 2½ feet long surrounded by four stakes each 2 feet distant, north, east, south, and west, respectively.

South End (Lee County, J. H., 1884; 1909).—On a point covered with a heavy growth of buttonwood and mangroves at the southeastern extremity of Pine Island, near the location of an old fish camp, 11 meters from the shore. The station is marked by a 1-inch iron bolt 12 inches long set in a mass of concrete which projects 8 inches above the ground and is inscribed "C. & G. S., 1909." Four large trees each marked with a triangular blaze, with a spike at the center of the blaze, are at the following distances and azimuths from the station: 11.34 meters, 61° 52′; 14.75 meters, 92° 48′; 5.65 meters, 134° 58′; and 8.91 meters, 169° 00′.

Caloosa (Lee County, W. R. T., 1860).—On a sand bar submerged at high tide about half way between two keys just off the southeastern extremity of Pine Island. The station is marked by a screw pile surrounded by four stakes, each 6 feet distant, north, east, south, and west, respectively.

White (Lee County, W. R. T., 1860).—On a small shell heap between the shore and the edge of the black mangroves at the northeastern extremity of a prominent point on the west side of the southern end of Matlacha Pass. The station is marked by a granite post set in concrete surrounded by four stakes each 6 feet distant, north, east, south, and west, repectively.

Sanibel east base (Lee County, I. C. C., 1858; 1866).—On the south or Gulf shore of Sanibel Island, about half a mile from the southeastern extremity of the island, just back of high-water line. The station is marked by a cross on a plug in the top of an iron screw pile 5 feet long, projecting 10 inches above the surface. It was searched for without success in 1866.

Sanibel west base (Lee County, I. C. C., 1858; 1866).—On the Gulf shore of Sanibel Island, about 3 miles from the southeastern extremity of the island. The station is marked by a

nail in the center of a wooden plug in the top of a screw pile, projecting 6 inches above the surface of the ground. It was searched for without success in 1866.

Sanibel (Lee County, I. C. C., 1858).—On the Gulf shore of Sanibel Island, about 7 miles from the southeastern extremity of the island, and 25 meters from high-water line. The station is marked by a cross in the top of a granite monument 5 inches square and 2 feet long, projecting 2 inches above the surface of the ground. Four stakes, with a copper tack in the top of each, are each 4 feet from the station north, east, south, and west, respectively.

Havelock (Lee County, I. C. C., 1858).—Near the center of a small circular key about 30 meters in diameter, in the eastern part of the southern end of Pine Island Sound, about 1 mile east of Chino Island. The station is marked by a cross in the top of a granite monument 5 inches square and 2 feet long, surrounded by four stakes each 4 feet distant north, east, south, and west, respectively.

Blind Pass (Lee County, I. C. C., 1858).—Near the southern end of Captiva Island, on the west side of Blind Pass, 65 meters from high-water mark of the Pass and 100 meters from the shore line of the Gulf. The station is marked by a cross in the top of a granite monument 5 inches square and 2 feet long, surrounded by four stakes each 4 feet distant north, east, south, and west, respectively. A new channel has been formed through the island in this vicinity and the station is probably lost.

Captiva (Lee County, I. C. C., 1858).—On the narrow part of Captiva Island, about midway between Captiva Pass and Blind Pass, 31 paces from high-water mark of the Gulf shore and 79 paces from high-water mark of the Sound shore. The station is marked by a cross in the top of a granite monument 5 inches square and 2 feet long, projecting 3 inches above the surface and surrounded by four stakes each 4 feet distant north, east, south, and west, respectively.

Lucknow (Lee County, I. C. C., 1858; 1909).—This station has been destroyed.

Boca Captiva (Lee County, W. R. T., 1859; 1895).—On the southern end of Lacosta Island. The station is marked by a diagonal cross in the top of a granite monument, surrounded by four stakes each 2 feet distant north, east, south, and west, respectively. The station was searched for without success in 1895.

Bocillas (Lee County, W. R. T., 1859).—On one of the small keys just north of the north end of Pine Island. The station is marked by a cross in the top of a granite post, which is surrounded by four stakes, each 2 feet distant north, east, south, and west, respectively.

Boca Grande (Lee County, W. R. T., 1859; 1895).—Lost.

Oso (De Soto County, W. R. T., 1858; 1895).—Lost.

El Gabo (De Soto County, W. R. T., 1859).—On a very small key just off Cape Haze, in the northern part of Charlotte Harbor. There are a few mangrove bushes to the south of the station and a sand bar projects to the north from the north side of the island. The station is marked by a granite monument surrounded by four stakes each 4 feet distant north, east, south, and west, respectively.

Mound (De Soto County, W. R. T., 1860).—On a very peculiar and well-known mound about 25 feet above high water, on a small point of land near the center of Shoalwater Bay, an arm of Charlotte Harbor. The station is marked by a granite post surrounded by four stakes each 6 feet distant north, east, south, and west, respectively.

Torrey (De Soto County, W. R. T., 1859; 1909).—Lost.

Punta Gorda (De Soto County, W. R. T., 1859).—On the extremity of Punta Gorda, on the east side of Charlotte Harbor, about 6 paces from high-water mark. The station is marked by a granite post, surrounded by four stakes, each 4 feet distant north, east, south, and west, respectively.

Pelican (De Soto County, W. R. T., 1859).—On the western part of the most western one of a group of small mangrove keys, in the eastern part of Charlotte Harbor. The station is marked by a granite post surrounded by four stakes each 4 feet distant north, east, south, and west, respectively.

Dana (De Soto County, W. R. T., 1859).—On the western shore of the northern end of Charlotte Harbor, on a small mangrove point about 5 miles north of Cape Haze. The station

is marked by a granite post surrounded by four cedar stakes each 4 feet distant north, east, south, and west, respectively.

Locust Point (De Soto County, W. R. T., 1860).—On Locust Point, at the eastern extremity of the island east of the mouth of the Miakka River. The station is probably marked by a granite post. Two mangrove trees, each marked with a triangular blaze, are, respectively, 7.9 meters southwest and 6.9 meters east by north.

Shoal Point (De Soto County, W. R. T., 1860).—On the southwestern extremity of Shoal Point, on the south side of the island, just east of the mouth of the Miakka River. The station is 5 meters from high-water mark and is probably marked by a granite post.

Bruce (De Soto County, W. R. T., 1860).—On a small sand flat, submerged at high water, at the northern end of Charlotte Harbor, on the west side of the entrance to the Miakka River. The station is marked by a granite post, surrounded by four stakes each 6 feet distant north, east, south, and west, respectively.

Palmetto (De Soto County, W. R. T., 1860).—On a sand ridge just above high water on a point on the west side of a large island in the northern part of Charlotte Harbor just east of the mouth of the Miakka River. To the east of the station is a large open space covered with dead mangroves, and to the north are palmetto trees and bushes covering the northern end of the island. The station is marked by a granite post surrounded by four stakes, which are north, east, south, and west, respectively.

Miakka (De Soto County, W. R. T., 1860).—On the first prominent point north of the entrance on the west side of the Miakka River. The station is marked by a granite post surrounded by four stakes, north, east, south, and west, respectively.

Eureka (De Soto County, W. R. T., 1860).—On the east side of the northern end of Charlotte Harbor, about 3 miles southwest of the town of Punta Gorda, on a small oyster-shell bank. The station is marked by a screw pile, surrounded by four stakes, which are north, east, south, and west, respectively.

Grassy Point (De Soto County, W. R. T., 1860).—In about 8 inches of water at the edge of the mangrove bushes at the southern extremity of Grassy Point on the north side of the mouth of the Peace River. The station is marked by a granite post surrounded by four stakes, which are north, east, south, and west, respectively.

Cooper (De Soto County, W. R. T., 1860).—On the south side of the mouth of the Peace River on the first point about 2 miles west of the town of Punta Gorda. The station is marked by a granite post surrounded by four stakes, which are north, east, south, and west, respectively.

Live Oak Point (De Soto County, W. R. T., 1860).—On Live Oak Point, a prominent point on the north side of the Peace River opposite the town of Punta Gorda. The station is marked by a granite post surrounded by four stakes, which are north, east, south, and west, respectively.

Willow Point (De Soto County, W. R. T., 1860).—On a point on the south side of the Peace River in the town of Punta Gorda. The station is marked by a granite post surrounded by four stakes, which are north, east, south, and west, respectively.

Piney Point (De Soto County, W. R. T., 1860).—On Piney Point, a prominent point on the north side of the Peace River northeast of the town of Punta Gorda. The station is marked by a granite post surrounded by four stakes, which are north, east, south, and west, respectively. Two dwarfed pines, each marked with two blazes, are about 50 meters from the station.

New Point (De Soto County, W. R. T., 1860).—On New Point, on the south side of the Peace River, a short distance northeast of the town of Punta Gorda. The station is marked by a granite post, surrounded by four stakes, which are north, south, east, and west, respectively.

Middle (De Soto County, W. R. T., 1860).—At the western extremity of a small key, near the south shore of the Peace River. about 2 miles above the town of Punta Gorda. The station is marked by a granite post surrounded by four stakes, which are north, east, south, and west, respectively.

Trout (De Soto County, W. R. T., 1860; 1909).—At the edge of the mangroves on a point overflowed at high tide on the south shore of Peace River, about 2 miles northeast of the town of Punta Gorda and one-half mile northeast of a long wharf. There is a small creek about 300 meters southwest of the station and another about 15 meters northeast. The station is marked by a cross in the top of a granite post embedded in a mass of concrete projecting 4 inches above the ground and inscribed "C. & G. S. 1909." A reference mark, a 4-inch tile embedded in a mass of concrete inscribed "R. M. 1909," is on a ridge between the creek and the marsh 8.36 meters from the station in azimuth 6° 48′. Two trees marked with triangular blazes are at the following distances from the station: Mangrove, 21.16 meters S. 54° E.; palmetto, 15.20 meters S. 33° E.

Peace Creek (De Soto County, W. R. T., 1860; 1909).—About 3 miles east of the town of Punta Gorda, on the north bank of Peace Creek, at the edge of high marsh grass, not more than 7 meters from deep water and about 25 meters north of a small creek. About 300 meters south of the station is another small, deep creek, near the mouth of which are some bushes and a few palmettos. The station is marked by a cross in the top of a granite post embedded in a mass of concrete, which projects 8 inches above the ground and is inscribed "C. & G. S. 1909." A reference mark, a spike in the top of a concrete post 15 inches square inscribed "R. M. 1909," is 14.73 meters from the station in azimuth 151° 31′.

Darling (Lee County, W. R. T., 1859).—On the point of a mangrove key on the eastern side of Pine Island, and near the northern end of Matlacha Pass. The station is marked only by the signal.

Belinda (Lee County, W. R. T., 1859).—On the eastern shore of Charlotte Harbor, directly east of the northern end of Pine Island. The station is marked by a granite post surrounded by four stakes, each 6 feet distant, north, east, south, and west, respectively.

Dorr (Lee County, W. R. T., 1861).—On a sand spit about 3 feet high on the west side of a small key in the eastern part of the northern end of Matlacha Pass. There are numerous other small keys between this key and the mainland. The station is marked by a granite post set in concrete and surrounded by four stakes, each 6 feet distant, north, east, south, and west, respectively.

Matlacha (Lee County, W. R. T., 1861).—Near the eastern side of a small key just east of Pine Island, in the western part of Matlacha Pass, opposite several well-known oyster bars. The station is on the highest part near the northern end of a mound, the only high ground in this region. It is marked by a granite post set in concrete surrounded by four stakes, each 6 feet distant, north, east, south, and west, respectively.

Rubber (Lee County, W. R. T., 1861).—On the southeastern part of a small key in the western part of Matlacha Pass. The key is overflowed occasionally during storms, but has a growth of grass on it. The station is marked by a granite post set in cement, surrounded by four stakes, each 6 feet distant, north, east, south, and west, respectively.

Gull (Lee County, W. R. T., 1861).—On a sand ridge thrown up by the water on the west side of a key in the eastern part of Matlacha Pass. There is a low place back of the station on which there are some black mangroves and small ponds of salt water. The station is marked by a granite post surrounded by four stakes, each 6 feet distant, north, east, south, and west, respectively.

Owl (Lee County, W. R. T., 1861).—Near the east side of Pine Island, about one-half mile from the shore and about one-fourth mile north of a prominent point of pines. The station is in the long grass near the edge of the palmettos, the nearest of which is about 60 meters distant. It is marked by a granite post set in concrete, with a stake to the east and another to the west.

Meridian (Lee County, W. R. T., 1860).—On a point of the mainland on the east side of Matlacha Pass. The station is marked by a granite post set in concrete, surrounded by four stakes, each 6 feet distant, north, east, south, and west, respectively.

Lumber (Lee County, W. R. T., 1860).—On the southern extremity of a long, narrow key on the west side of Matlacha Pass. The station is marked by a granite post set in concrete surrounded by four stakes, each 6 feet distant, north, east, south, and west, respectively.

Deer (Lee County, W. R. T., 1860).—On the east side of Matlacha Pass, on the flat back of a long narrow key which is covered with a thick growth of mangroves. The station is marked by a granite post set in concrete, surrounded by four stakes, each 6 feet distant.

Narrows (Lee County, W. R. T., 1860).—On the west side of Matlacha Pass, on a prominent point covered with a thick growth of red mangroves. The station is 1½ feet above high-water mark, and is marked by a granite post set in concrete, surrounded by four stakes, each 4 feet distant, north, east, south, and west, respectively.

Grape (Lee County, W. R. T., 1860).—On the western extremity of a prominent point on the east side of Matlacha Pass. The station is marked by a granite post set in concrete and surrounded by four stakes, each 4 feet distant, north, east, south, and west, respectively.

Bailey (Lee County, W. R. T., 1860).—On a shell heap 3 feet high on a point on the east side of Pine Island. The station is marked by a cross in the top of a granite monument set in concrete and surrounded by four stakes, each 6 feet distant, north, east, south, and west, respectively.

Buttonwood (Lee County, W. R. T., 1860).—On the western extremity of a prominent point, on which there is a large number of buttonwood trees, on the east side of Matlacha Pass. The station is marked by a granite post set in concrete, surrounded by four stakes, each 4 feet distant.

Brown (Lee County, W. R. T., 1860; 1909).—At the center of a thicket of large cacti on the highest part of the large shell mound about 35 feet high, known as Brown's mound, in the yard of Mr. Stafford, in the town of Pineland. The station is marked by a cross in the top of a granite post embedded in a mass of concrete which projects 4 inches above the ground and is inscribed "C. & G. S. 1909."

Las (Lee County, W. R. T., 1859).—On the northwest side of one of the Las Bocillas Keys, just west of the northern end of Pine Island. The station is marked by a cedar stake at the center of an iron cone which is 1 foot below the surface. Four cedar stakes are each 6 feet from the station, north, east, south, and west, respectively.

Oyster (Lee County, J. H., 1892; 1909).—On a long oyster reef, submerged at high tide, on the northwest side of the main channel into the Caloosahatchee River and directly opposite the Punta Rasa Hotel. The station is marked by a spike in the top of a concrete post which projects 3 inches above the shells.

Bird Island (Lee County, J. H., 1892).—About 2 miles northwest of Punta Rasa, on an oyster reef covered at high tide, 12 meters northeast of the northeast corner of Bird Island. The station is marked by a nail in the top of a yellow-pine stub.

Pine (Lee County, J. H., 1892).—A pole and flag in the top of a high pine tree situated on the first pine hummock from the entrance on the south side of the Caloosahatchee River. Between the pines and the shore is low ground covered with mangroves and grass. The tree is cleated up from the ground, the cleats nailed on blazed surfaces.

A (Lee County, J. H., 1892).—On a prominent point, covered with a dense growth of mangroves, near the mouth on the north shore of the Caloosahatchee River. The station is on the beach and covered at high tide and is marked by a nail and a triangle in the top of a concrete post. A mangrove tree and a grape bush, each marked with a triangular blaze and a nail, are, respectively, 4.4 meters north and 5.5 meters northwest from the station.

B (Lee County, J. H., 1892).—On a point on the south side of the Caloosahatchee River, almost due south of Red Fish Point. The land around the station is covered with buttonwood and mangrove trees. The station is marked by a nail in the center of a triangle in the top of a concrete post. A brass tack in a triangular blaze on an old buttonwood stump is 1.82 meters north-northwest, and a similar mark on a mangrove tree is 5.58 meters south-southwest from the station.

Red Fish Point (Lee County, J. H., 1892).—On the north side of the Caloosahatchee River, on Red Fish Point, 10 meters from high-water mark, and 21 meters from a single palmetto that stands at the edge of the woods to the north of the station. The station is marked by a nail surrounded by a triangle in the top of a concrete post, and underground by a bottle.

Palmetto Point (Lee County, J. H., 1892).—On Palmetto Point, on the south side of the Caloosahatchee River, 3 meters from high-water mark. The station is marked by a nail and a triangle in the top of a concrete post. Two palm stumps, each marked with a nail, and a palm tree, marked with a triangular blaze and a nail, are at the following distances, respectively, from the station: 0.51 meters north, 2.79 meters east, and 6.19 meters south.

Harney Point (Lee County, J. H., 1892).—At the extremity of Harney Point, on the north side of the Caloosahatchee River, 3 meters from high-water mark. The station is marked by a triangle and nail in the top of a concrete post. Two palm trees, each marked with a triangular blaze and a nail, are, respectively, 4.84 meters northeast and 11.60 meters north-northwest from the station.

Harris (Lee County, J. H., 1892).—On the east end of Dr. Harris's place, about 40 meters east of the end of the cultivated field east of the house, 45 meters from high-water mark, and 50 meters from the line fence running to Nigger Head Point. The station is marked by a triangle and a nail in the top of a concrete block, and underground by a bottle. Two pine stumps, each marked with a nail in the center of a triangular blaze, are, respectively, 5.95 meters south and 10.99 meters northeast from the station.

C (Lee County, J. H., 1892).—In the water at the end of a mangrove point on the northwest side of the Caloosahatchee River, about a mile northeast of Harney Point and about 7 meters outside the mangrove trees. The station is in 6 inches of water at low tide and is marked only by the signal which was left standing. Two old mangrove stumps, each marked with a triangular blaze and a nail, are, respectively, 11.37 meters north-northeast and 9.57 meters west from the station.

Travers (Lee County, J. H., 1892).—On the Travers place, on the southeast side of the Caloosahatchee River, on the bank in front of the house, 1 meter outside of the front fence, 10 meters east of the inner end of the wharf, and 3 meters from high-water mark. The station is marked by a nail and a triangle in the top of a concrete post. Two bottles are buried, one 1.05 meters east and the other 0.72 meter south from the station.

Four Mile Point (Lee County, J. H., 1892).—On the southeastern extremity of Four Mile Island, a prominent mangrove point on the northwest side of the Caloosahatchee River 4 miles below Fort Myers. The station is marked by a nail in the top of a mangrove stump 4 feet high. The signal pole was left standing on the stump.

No Name (Lee County, J. H., 1892).—On the southeast side of the Caloosahatchee River, on the first prominent point, about 1½ miles southwest of Rylander's house. The point is dry and sandy and is covered with palm trees. The station is 3 meters from high-water mark and is marked by a nail at the center of an inscribed triangle in the top of a concrete post, and underground by a bottle. Three palm trees, each marked by a nail at the center of a triangular blaze, are, respectively, 3.58 meters east, 3.27 meters north, and 3.96 meters west from the station.

Edison (Lee County, J. H., 1892).—Near the end of the pier in front of Mr. Edison's house, on the southeast side of the Caloosahatchee River. The station is 8.31 meters from the northwest corner of the pier, 7.04 meters from the northeast corner, and is marked by a galvanized tack at the center of a small inscribed triangle. Two marks similar to the station mark are at the north and south edge of the pier, 2.55 meters north-northeast and 2.84 meters south-southeast from the station, respectively. The east end of a galvanized cleat on the north edge of the pier is 2.48 meters northwest of the station.

Hancock (Lee County, J. H., 1892).—On a point on the northwest side of the Caloosahatchee River, opposite Mr. Edison's house and just southwest of the mouth of Hancock Creek. The station is on a sand ridge 5 meters from high-water mark and is marked by a nail at the center of an inscribed triangle in the top of a concrete block, and underground by a bottle.

Sawmill (Lee County, J. H., 1892).—On a low point on the northwest side of the Caloosahatchee River, opposite Fort Myer, south of a sawmill on the point and 4 meters from high-water mark. There is a shed about midway between the station and the sawmill. The station is marked by a nail at the center of an inscribed triangle in the top of a concrete post and under-

ground by a bottle. Two palm trees, each marked with a triangular blaze, are in range with the station to the northwest and at distances of 19.98 meters and 76 meters, respectively.

Experimental (Lee County, J. H., 1892).—On the southwest side of the Caloosahatchee River, about 1 mile east of the experimental farm, on a sand bank outside of a mangrove point. The station is marked by a nail at the center of an inscribed triangle in the top of a cement post, and underground by a bottle. A nail in a triangular blaze on a mangrove tree is 8.57 meters southeast, and a similarly marked palm is 15.00 meters southwest from the station.

Marsh Point (Lee County, J. H., 1892).—On Marsh Point, on the northwest side of the Caloosahatchee River, on high sandy ground at the edge of the palmettos, just back of the marsh that forms the end of the point. The station is marked by a nail at the center of an inscribed triangle in the top of a concrete post which is very close to a palmetto stump. The underground mark is a nail in a root of the stump. Three palm trees, each marked with a nail, are, respectively, 0.10 meter south, 4.21 meters northeast, and 2.21 meters northwest from the station.

Caloosa (Lee County, J. H., 1892).—On Currys Point, a prominent, sandy, palmetto point on the north side of the Caloosahatchee River, north of the western extremity of Beautiful Island. The station is 8 meters back of high-water mark and is marked by a nail at the center of an inscribed triangle in the top of a cement post and underground by a bottle. Two palm trees, each marked with a nail at the center of a triangular blaze, are, respectively, 6.44 meters north-northeast and 6.16 meters north-northwest from the station.

Useppa Inn (Lee County, W. B. F., 1909).—The center of the square cupola on Useppa Inn, which is on Useppa Island at the northern end of Pine Island Sound. The island is owned by Mr. Roche of Chicago.

Jug Point (Lee County, W. B. F., 1909).—At the northern end of Pine Island, on Jug Point, the second sandy point about 400 meters north of the entrance to Jug Creek, and about ½ mile southwest of Martin's store and Bokeelia post office. The point is covered with a growth of grapes, mangroves and palmettos and the station is on hard ground just inside the wood line, about 12 meters from high-water mark. The station is marked according to note 9,[1] except that a 6-inch granite post takes the place of the tile. Three trees marked with triangular blazes, with a spike at the center of each blaze, are at the following distances and azimuths from the station: Mangrove, 31.68 meters, 63° 38′; grape, 6.05 meters, 288° 17′; and palmetto, 6.54 meters, 27° 52′.

Cape Haze (De Soto County, W. B. F., 1909).—On the highest part of the shell ridge which runs along the shore on the south side of Cape Haze on the northern shore of Charlotte Harbor. The ridge is about 15 feet high and is covered with a growth of large gumbo limbo, cacti and wild fig and just back of the ridge there is a dense growth of mangroves. The station is 25 meters from the shore line and is marked according to note 9,[1] except that there is no underground mark. Three trees, each marked with a triangular blaze, with a spike at the center of the blaze, are at the following distances and azimuths from the station: Gumbo limbo, 4.87 meters, 38° 13′; wild fig, 11.66 meters, 82° 55′; and gumbo limbo, 14.33 meters, 277° 22′.

Torrey 1909 (De Soto County, W. B. F., 1909).—On the east shore of Charlotte Harbor, north of what is known as Burnt Shore Coast, on the south point of the second bayou about 1¼ miles south of Key Point. The station is on a sand ridge about 10 meters from the shore line and is marked according to note 9,[1] except that there is no tile in the concrete of the surface mark. Three large black mangrove trees, each marked with a triangular blaze, with a spike at the center of the blaze, are at the following distances and azimuths from the station: 8.13 meters, 126° 34′; 11.03 meters, 257° 47′; and 14.79 meters, 23° 14′.

Mellie (Lee County, I. C. C., 1860, 1909).—On the east side of Captiva Island, on the eastern extremity of the first prominent point south of Captiva Pass. The point is low and covered with a dense growth of mangroves and is overflowed at high tide. The station is 12 meters back from the edge of the mangroves, and is marked by a cross in the top of a

[1] See pp. 61–62.

granite post embedded in a mass of concrete which projects 6 inches above the ground and is inscribed "C. & G. S. 1909." Four black mangrove trees, each marked with a triangular blaze, with a spike at the center of each blaze, are at the following distances and azimuths from the station: 10.48 meters, 157° 53′; 8.28 meters, 330° 30′; 11.41 meters, 26° 13′; and 8.66 meters, 94° 08′.

Demorest (Lee County, W. B. F., 1909).—On the highest part of a high shell mound on Demorest Key, a well known key in the eastern part of Pine Island Sound. There are some lime trees and wild lemon trees on the mound. The station is marked according to note 9.[1] Three large trees, each marked with a triangular blaze, with a spike at the center of the blaze, are at the following distances from the station: Sappadillo, 5.73 meters, S. 39° W.; tamarind, 13.48 meters, N. 56° W.; and gumbo limbo, 8.86 meters, N. 3° E.

Captiva Pass (Lee County, W. B. F., 1909).—On the north shore of Captiva Pass, at the south end of Lacosta Island, 30 meters south of the palmetto growth and 50 meters from high-water mark. The station is marked according to note 9.[1] Three palmetto trees, each marked with a triangular blaze, with a spike at the center of the blaze, are at the following distances from the station: 11.78 meters, N. 68° E.; 31.39 meters, S. 43° W.; and 12.08 meters, N. 63° W.

Punta Gorda Hotel cupola (De Soto County, W. B. F., 1909).—The flagstaff on the cupola of the large hotel at Punta Gorda. The cupola is about 10 feet square with a dome-shaped roof and about 80 feet above the ground.

Live Oak Point 1909 (De Soto County, W. B. F., 1909).—On Live Oak Point, on the north shore of Peace River, opposite the town of Punta Gorda, on a sand ridge at the edge of the marsh, about 80 meters from the extremity of the point. A long cattle dock extends from the point and the station is 16.65 meters west of the prolongation of this dock and 19.62 meters from the northeast corner of a cattle pen. The station is marked according to note 9.[1] The largest of three live oak trees in the cattle pen is marked with a triangular blaze with a spike at the center of the blaze and is 25.56 meters from the station in azimuth 301° 47′.

Cooper 1909 (De Soto County, W. B. F., 1909).—On the south shore of Peace River, on a point about 2 miles west of the town of Punta Gorda, the last point to the westward from which the town is visible. The station is in the mangroves about 15 meters from ordinary high-water mark. It is marked according to note 9,[1] except that there is no underground mark. Three mangrove trees, marked with triangular blazes, with a spike at the center of each blaze, are at the following distances and azimuths from the station: 10.91 meters, 124° 52′; 7.74 meters, 235° 56′; and 9.93 meters, 334° 22′.

Grassy Point 1909 (De Soto County, W. B. F., 1909).—On the north shore of Peace River, in the marsh just back of a sandy ridge on the first small point about 400 meters east of Grassy Point. The station is 25 meters from high water and is marked according to note 9,[1] except that there is no underground mark. Three palmetto trees, marked with triangular blazes, with a spike at the center of each blaze, are at the following distances and azimuths from the station: 13.99 meters, 284° 50′; 10.61 meters, 26° 28′; and 10.16 meters, 38° 54′.

Locust Point 1909 (De Soto County, W. B. F., 1909).—On Locust Point, a sandy grassy point covered with palmetto trees at the north end of Charlotte Harbor, near the mouth of Peace River. The station is near a fishing camp, 12 meters from high-water mark, and is marked according to note 9,[1] except that there is no underground mark. Four palmetto trees marked with triangular blazes, with a spike at the center of each blaze, are at the following distances and azimuths from the station: 21 paces, 324° 50′; 5 paces, 12° 18′; 14 paces, 54° 18′; and 14 paces, 86° 59′.

SUPPLEMENTARY POINTS.

Punta Rasa Hotel cupola (Lee County, W. B. F., 1909).—The flagstaff of the Punta Rasa Hotel.

Middle Point 1909 (Lee County, W. B. F., 1909).—On Sanibel Island on the west side of the north end of San Carlos Bay, on a shell bank just at the edge of the woods at the north-

[1] See pp. 61-62.

eastern extremity of Middle Point, 6 meters from high-water mark and 1 meter west of the trail that runs along the shore. A station of the U. S. Engineers (see *Middle Point (U. S. E.)* below) is in the water 31 meters to the northwest. The station is marked by a cross in the top of a granite post set in a mass of concrete which projects 6 inches above the ground and is inscribed "C. & G. S. 1909." Three large mangroves, each marked with a triangular blaze with a spike at the center of the blaze, are at the following distances and azimuths from the station: 5.81 meters, 329° 19′; 9.14 meters, 7° 09′; and 14.36 meters, 97° 17′.

Middle Point (U. S. E.) (Lee County, W. B. F., 1909).—In the water 31.01 meters from Middle Point 1909 (see p. 72) in azimuth 124° 59′. The station is marked by an iron pipe 2½ inches in diameter.

Punta Rasa astronomic station (Lee County, E. S., 1874; 1909).—The center of the pier in the corner of the cowpen belonging to Mr. George R. Shultz east of the Punta Rasa Hotel.

Shultz' house flagstaff (Lee County, W. B. F., 1909).—The flagstaff on the house of Mr. George Shultz on the shore of San Carlos Bay about one-half mile below the Punta Rasa Hotel.

Harris' house (Lee County, J. H., 1892).—The pinnacle on the north gable of Dr. Harris's concrete dwelling house, on the south side of the Caloosahatchee River, opposite Harney Point.

Rylander's house (Lee County, J. H., 1892).—The west gable of Rylander's house, about 2 miles southwest of Fort Myers, on the southeast side of the Caloosahatchee River.

Edison's house (Lee County, J. H., 1892).—The apex of the northeast gable of Thos. A. Edison's house, just below Fort Myers.

Edison's laboratory (Lee County, J. H., 1892).—The center of the top of the smokestack on Edison's laboratory, just below Fort Myers.

Parker's house (Lee County, J. H., 1892).—The lightning rod on the pinnacle of Parker's house at Fort Myers.

Fort Myers Methodist church (Lee County, J. H., 1892).—The northeast corner of the top of the tower of the Methodist Church at Fort Myers.

Fort Myers, Caloosa hotel (Lee County, J. H., 1892; 1893).—Lost.

Experimental station house (Lee County, J. H., 1892).—The pinnacle on the west end of the house on the experimental station farm about 1 mile east of Fort Myers.

West Jetty (Lee County, J. H., 1892).—A pole nailed to a palmetto pile at the west end of the jetty south of Beautiful Island in the Caloosahatchee River.

East Jetty (Lee County, J. H., 1892).—A pole nailed to a palmetto pile at the east end of the jetty south of Beautiful Island in the Caloosahatchee River.

Kennedy (Lee County, W. R. T., 1859).—A pole fastened to the south gable of the old store of Kennedy & Darling, on the east shore of Charlotte Harbor, a little north of east of the northern end of Pine Island.

Key Point (De Soto County, W. R. T., 1859).—On the northern point of a mangrove key in the eastern part of Charlotte Harbor, directly east of Cape Haze. The station is marked by an iron cone, surrounded by four stakes, each 4 feet distant north, east, south, and west, respectively.

Alligator (De Soto County, W. R. T., 1860).—On a small key in the eastern part of Charlotte Harbor, about one-half mile south of the mouth of the Alligator River. The station is marked by a granite post, surrounded by four stakes, north, east, south, and west, respectively.

Koonty (De Soto County, W. R. T., 1860).—A pole lashed to the top of a tall, live oak tree, which stands on a small sand hill on a point southwest of the entrance to a large lagoon in the northern part of Charlotte Harbor.

Punta Gorda astronomic station (De Soto County, W. H. B., 1909).—The center of the concrete pier on the water front west of the Punta Gorda Hotel.

GASPARILLA SOUND TO SARASOTA BAY.

PRINCIPAL POINTS.

Gasparilla (De Soto County, W. H. T., 1859; 1895).—Lost.

Flat (De Soto County, W. R. T., 1860).—Near the center of a large sand flat southeast of a large bayou on the east side of Gasparilla Sound. The flat is covered at high tide and is about two hundred meters across. The station is marked by a granite post, surrounded by four stakes, each 6 feet distant, north, east, south, and west, respectively.

Trepador (De Soto County, W. R. T., 1860).—On the eastern shore of Gasparilla Sound, nearly due north of Gasparilla Pass. The palmetto and pine trees are near the shore in this vicinity. The station is marked by a granite monument, surrounded by four stakes, each 6 feet distant, north, east, south, and west, respectively.

Hog (De Soto County, J. H., 1879).—In the pine woods, about one-third mile back from the shore on the eastern side of the northern end of Gasparilla Sound. The marking of the station is not given. Three pine trees, each marked with a nail at the center of a triangular blaze, are, respectively, 8.8 meters south, 20.9 meters east, and 12.6 meters northwest from the station.

Bocilla (De Soto County, J. H., 1879; 1882).—On the Gulf beach about 800 meters north of Bocilla Pass, and 22 meters from high-water mark of a cove to the northeast. The station is marked by a brass nail in the top of a cedar stake.

Lemon (De Soto County, J. H., 1879; 1882).—At the southeast end of Lemon Bay, about 75 meters back of high-water mark at the edge of the grass back of the mangrove bushes along the shore, and about 100 meters east of the pine woods. The station is marked by a brass nail in the top of a cedar stub.

Buttonwood (De Soto County, J. H., 1879).—On the east shore of Lemon Bay, on a prominent point on the north side of the entrance to Crooked Creek, about 1¼ miles from the south end of the bay. The station is marked by a triangle cut in the top of a buttonwood stump 4 meters from high-water mark.

Speedwell (De Soto County, J. H., 1879).—On the Gulf shore about 2 miles northwest of Bocilla Pass, on the narrow strip of land that separates the Gulf from an arm of Lemon Bay, 20 meters from high-water mark to the west. The station is on a sand hill and is marked by a nail in a wooden plug in the top of a screw pile.

Merchant (De Soto County, J. H., 1879).—On the east side of Lemon Bay on a low mangrove point just south of the mouth of a small creek, 10 meters from high-water mark. The station is marked by a cross in the top of a granite monument.

Stump Pass (De Soto County, J. H., 1879).—On the Gulf shore directly west of the mouth of Oyster Creek, and about one-half mile north of Stump Pass, 22 meters from high-water mark of the Gulf and 150 meters from high-water mark of a deep cove to the east. The station is marked by a cross in the top of a long iron screw pile. Two palm trees, each marked with a triangular blaze, are, respectively, 37.7 meters northeast and 30.1 meters east from the station.

Lopez (Manatee County, J. H., 1879).—On the east shore of Lemon Bay, about 150 meters northwest of Loper's house, 5 meters southeast of a fence line, and 5 meters back of high-water line. The station is marked by a brass nail in the top of an iron screw pile. Three palmetto trees, each marked with a triangular blaze, are, respectively, 8.4 meters north, 4.1 meters east, and 6.5 meters southeast from the station.

Jacobs (Manatee County, J. H., 1879).—On a sand ridge on the narrow strip of land between the Gulf and Lemon Bay about midway between Stump Pass and Rocky Point. The station is just back of Jacob's house and clearing and 20 meters from high-water mark of the Gulf. It is marked by a cross in the top of a long iron screw pile. Three palm trees, each marked by a nail in a triangular blaze, are, respectively, 19.8 meters southeast, 13.6 meters east, and 23 meters northeast from the station.

Porpoise (Manatee County, J. H., 1882).—On a prominent point on the eastern side of Lemon Bay, about a mile almost due north of Jacob's house and clearing, and 10 meters inside of

high-water line. The station is marked by a copper nail in the top of a cedar stake. Two palm trees, each marked with a nail at the center of a triangular blaze, are, respectively, 38.3 meters north and 27.8 meters east from the station.

Rocky Point (Manatee County, J. H., 1882).—On Rocky Point, a prominent point on the Gulf shore of the strip of land between Lemon Bay and the Gulf, about 6 meters from high-water mark. The station is marked by a cross in the top of an iron screw pile. Three palmetto trees, each marked by a nail in a triangular blaze, are, respectively, 19.7 meters northeast, 15.4 meters east, and 20.5 meters southeast from the station.

Horse and Chaise (Manatee County, J. H., 1882).—On Horse and Chaise Point, on the Gulf shore about 3 miles south of Caseys Pass, 25 meters from high water of the Gulf, and 50 meters from the shore of a pond to the east. The station is marked by a cross in the top of a marble monument. Two palm trees, each marked with a nail in a triangular blaze, are, respectively, 54.4 meters northeast and 34.4 meters east from the station.

Keg (Manatee County, J. H., 1878).—On the narrow strip of land between Little Sarasota Bay and the Gulf of Mexico a short distance north of the mouth of South Creek, 20 meters from high-water line of the Gulf. The station is marked by a nail in a wooden plug in the top of an iron screw pile. Triangular blazes on two palmetto trees are, respectively, 36.6 meters east and 35.7 meters north of the station.

Northwest (Manatee County, J. H., 1878).—On the narrow strip of land between Little Sarasota Bay and the Gulf, about 5 meters back of the second line of sand hills, 40 meters from high-water mark of the Gulf, and 100 meters from the shore of the bay. The station is marked by a brass nail in the top of a cedar stub.

Huckleberry Camp (Manatee County, J. H., 1878).—On the east side of the south end of Little Sarasota Bay about 200 meters from high-water line and about west of Mr. Blackburn's house. The station is marked by a brass nail in the top of a cedar stub. A pine tree marked with a triangular blaze is 16 meters west of the station.

Webb (Manatee County, J. H., 1878).—On a prominent point on the east shore of Little Sarasota Bay, near the edge of the bluff 20 meters west of Webb's house. The station is marked by a cross in the top of a block of granite.

Quick (Manatee County, J. H., 1878).—On the narrow strip of beach between Little Sarasota Pass and the Gulf, about 1¼ miles south of the mouth of the pass, 5 meters from high-water mark of the Gulf, and 23 meters from the shore of the pass. The station is marked by a brass nail in the top of a cedar stub. There is a prominent clump of pines about 300 meters north of the station on the opposite side of the pass.

Clower (Manatee County, J. H., 1878).—Near the center of a small sand spit 9 meters from the end of a point on the east side of Little Sarasota Bay just north of the mouth of North Creek. The station is marked by a brass nail in the top of a cedar stub.

Hull (Manatee County, J. H., 1878).—At the edge of the pine woods just east of a deep cove on the east side of Little Sarasota Bay, about 200 meters north of the frame of an old house, about 300 meters northwest of Hull's house, and about 300 meters from the shore. The station is marked by a galvanized nail in the top of a cedar stub surrounded by three buried bottles, each 4 feet distant. Three pine trees, each marked by a nail at the center of a triangular blaze, are, respectively, 15.5 meters northwest, 10.6 meters southwest, and 13.9 meters southeast from the station.

Little Sarasota (Manatee County, J. H., 1878).—On Little Sarasota Point, the first prominent point north of Little Sarasota Pass, on the bluff 5 meters from the edge of the bank, and about 40 meters south of the cove in the north part of the point. The station is marked with a nail in the top of a cedar stub. Three bottles are buried, each 2 feet from the station.

Young (Manatee County, J. H., 1878; 1908).—Lost.

Sarasota (Manatee County, H. G. O., 1878; 1908).—This station is in a cluster of Spanish bayonets 19.4 meters from Sarasota 2 (see p. 78), in azimuth 211° 01′. It is marked by an iron screw pile projecting 4 inches above the ground surrounded by three bottles, each 2 feet distant.

Cedar Point (Manatee County, J. H., 1878; 1908).—Lost.

New Pass (Manatee County, J. H., 1878; 1908).—Lost.

Stephens (Manatee County, J. H., 1878).—On Stephens Point on the east side of Sarasota Bay, about 3 meters from the edge of the marsh to the east. The station is marked by a piece of granite surrounded by three buried bottles, each 2 feet distant.

Mangrove (Manatee County, J. H., 1878; 1908).—Lost.

Bowlegs (Manatee County, J. H., 1878; 1908).—Lost.

Shell (Manatee County, J. H., 1878; 1908).—Lost.

Tom (Manatee County, H. G. O., 1878; 1908).—On the west side of Sarasota Bay on a prominent mangrove point nearly opposite Coon Key and about 2½ miles south of Longboat Pass. It is about 3 meters back from the edge of the mangroves and is submerged at high tide. The station is marked according to note 9.[1]

Key (Manatee County H. G. O., 1878; 1908).—On the west end of Coon Key, in the eastern part of Sarasota Bay about 2 miles southeast of the town of Cortez. The key is small, covered with mangroves, and is overflowed at high tide. The station is marked according to note 9.[1]

Longboat (Manatee County, J. H., 1878; 1908).—Lost.

Cut (Manatee County, J. H., 1878).—On the east side of the northern end of Sarasota Bay, about a mile south of the entrance to Plamasola Sound, in pine woods very near the shore. In front of the station is a sand bar dry at low tide. The station is marked by a nail in the top of a cedar stub. There are two bottles each 2 feet from the station to the east and north, respectively. A nail in a pine stump is 2.8 meters north, and a nail in a pine stub is 1.2 meters to the southeast of the station.

Anna Maria Key southeast base (Manatee County, H. G. O., 1873; 1908).—This station has been destroyed.

Mound (Manatee County, J. H., 1878; 1908).—This station has been destroyed.

Coral (De Soto County, W. R. T., 1860; 1909).—On a small coon-oyster key or coral reef in the eastern part of Gasparilla Bay. The reef is the first one south of the channel into Catfish Bay, and is devoid of all vegetation and submerged at high tide. The station is marked by a cross in the top of a granite post embedded in a mass of concrete which projects a few inches above the surface and is inscribed "C. & G. S. 1909."

Boca Nueva (De Soto County, W. R. T., 1860; 1879).—Lost.

Llano (De Soto County, W. R. T., 1860).—On the eastern side of the northern end of Gasparilla Sound nearly due east of Boca Nueva. Tall grass extends between the station and the narrow strip of mangroves along the shore, which is about 300 meters distant. The station is marked by a granite post surrounded by four stakes which are north, east, south, and west, respectively. A small pine tree with two pieces of board nailed to it is a short distance southeast of the station.

Palayo (Lee County, W. R. T., 1860; 1909).—In the western part of the south end of Gasparilla Sound on a coon-oyster reef, just outside the mangroves on the east side of the southern one of the two keys known as the Two Sisters. The station is marked by a cross in the top of a granite post embedded in a mass of concrete which projects about 1 foot above the surface and is inscribed "C. & G. S. 1909." Three large black mangrove trees marked with triangular blazes with a spike at the center of each blaze, are at the following distances and azimuths from the station: 17.61 meters, 38° 15′; 17.15 meters, 59° 21′; and 24.13 meters, 147° 45′.

Plow (De Soto County, W. B. F., 1909).—On a shell ridge on the most western point of Plow Key, a large mangrove key, owned by Mr. George Collins of Kansas City, in the eastern part of the south end of Gasparilla Sound. The key is just east of the channel leading up the Sound to the fishing camps, the first camp being about one-third mile northwest of the station. The station is 15 meters from high water and is marked by a half-inch iron bolt in the top of a concrete post 16 inches square and 3 feet long, the top of which is marked with diagonal lines and inscribed "C. & G. S. 1909." Four trees marked with triangular blazes with a spike at the center of each blaze are at the following distances and azimuths from the station: 10.26 meters, 91° 51′; 13.30 meters, 246° 26′; 26.24 meters, 266° 40′; and 10.44 meters, 317° 11′.

[1] See pp. 61–62.

Gasparilla 1909 (Lee County, W. B. F., 1909).—Near the northern end of Gasparilla Island, about 400 meters south of Gasparilla Pass, and about 250 meters from high-water mark on the highest hill of the second line of sand hills from the Gulf, which are about 15 feet high and overgrown with grass and bushes. The station is about 300 meters west of the west end of the railroad trestle and about 150 meters north of a lone cluster of mangroves. It is marked by a half-inch iron bolt 15 inches long set in the top of a concrete post 10 inches in diameter and 6 feet long, which projects a few inches above the sand.

Placida (De Soto County, W. B. F., 1909).—The center of the peak of the cupola of the large office building of the Southern Investment Co. at Placida. The building is the only one of any size or importance in the town.

Mound 2 (Manatee County, W. B. F., 1908).—About one-half mile north of the town of Cortez on the highest part and near the middle of a high shell mound on the point on the south side of the entrance to Palma Sola Bay from Sarasota Pass. The station is marked according to note 9.[1] A reference mark, described in note 11,[1] is 28.29 meters from the station.

Anna Maria Key southeast base 2 (Manatee County, W. B. F., 1908).—One of the reference marks of *Anna Maria Key southeast base* (see p. 76) was recovered, and this new station was established as near the location of the old station as possible, probably within a tenth of a meter. The station is on the Gulf side of Anna Maria Key, about the center of the key in a north and south direction, and about 75 meters back from the shore line. It is about 400 meters west of the house of Mr. A. G. Brunsman in lot 1, sec. 4, T. 35, R. 16 E. The station is marked by a cross in the top of a granite monument surrounded by a mass of concrete, and underground by a spike in the top of a 4-inch drain tile filled with concrete. The reference mark, a spike in the top of a 4-inch tile filled and surrounded with concrete, is 20.010 meters from the station in azimuth 157° 43′.

Cortez (Manatee County, W. B. F., 1908).—On the east side of Sarasota Bay about one-fourth mile south of the town of Cortez on the western extremity of Hamilton Key. The key is entirely covered with mangroves and is overflowed at high tide. The station is marked according to note 9.[1]

Longboat 2 (Manatee County, W. B. F., 1908).—About 400 meters north of Longboat Pass and about midway between the Gulf and Sarasota Bay on land owned by Mrs. Palmer, 7 meters from the west fence of her garden. The station is marked according to note 9.[1] A reference mark, described in note 11,[1] is 21.06 meters from the station in azimuth 8° 18′.

Bolees Creek (Manatee County, W. B. F., 1908).—On the east side of Sarasota Bay, on a point on the mainland just south of the mouth of Bolees Creek. The station is on hard land among the pines, 10 meters from the bluff shore and 8 meters north of a path leading from a landing to a deserted house, about 65 meters distant. The station is marked according to note 9.[1] A reference mark, described in note 11,[1] is in line to the south gable of the house, 22.66 meters from the station in azimuth 283° 04′.

Long Bar Point (Manatee County, W. B. F., 1908).—On a shell ridge on the south side of the small key that forms the western extremity of Long Bar Point, which is the first prominent point north of Bolees Creek on the east side of Sarasota Bay. The station is just south of a small clump of mangroves, the only mangroves on the point, and is marked according to note 9[1] except that there is no underground mark.

Whale Key (Manatee County, W. B. F., 1908).—In the western part of Sarasota Bay on the east side of Whale or Mangrove Key just at the entrance to Buttonwood Harbor, and about 15 meters from the shore. The key is covered with a dense growth of mangrove, and is completely submerged at high tide. The station is marked according to note 9,[1] except that there is no underground mark.

Cedar Point 2 (Manatee County, W. B. F., 1908).—On Cedar Point, a low narrow sand and shell spit covered with a growth of mangroves and palmettos, between Sarasota Bay and Sarasota Harbor. The station is about 60 meters from the southern end of the point about 10 meters from the shore line to the west and the same distance from the shore line to the east. It is marked according to note 9.[1]

[1] See pp. 61-62.

New Pass 2 (Manatee County, W. B. F., 1908).—On the west side of Sarasota Bay just north of the mouth of New Pass and on the north side of Quick Point, which is a low point covered with mangroves and completely submerged at very high tide. The station is about 8 meters from ordinary high water and 100 meters northwest of the mouth of a small bayou. The station is marked according to note 9,[1] except that there is no underground mark.

Sarasota 2 (Manatee County, W. B. F., 1908).—Just south of the second line of sand hills on the north side of Sarasota Point, which is just south of the outer entrance to Big Sarasota Pass. There are some low grassy sand hills west of the station. The station is at the edge of the palmetto growth 150 meters from high water mark, and is marked according to note 9.[1] A reference mark, described in note 11,[1] is 28.18 meters from the station in azimuth 285° 30′.

Young 2 (Manatee County, W. B. F., 1908).—On a shell point on the east side of the south end of Sarasota Bay near the north end of the cut that leads into Little Sarasota Bay. The station is on a shell bank near the shore on land owned by Mr. E. Peck about 150 meters south of his house, 1.3 meters west of the fence running along the shore and 3 meters northwest of an angle in the fence. It is marked according to note 9.[1]

SUPPLEMENTARY POINTS.

Long Pine (Manatee County, W. B. F., 1908).—A pole in a very prominent pine tree on Fishing Point on the south side of Big Sarasota Pass. The station is not marked on the ground.

TAMPA BAY.

PRINCIPAL POINTS.

Anna Maria Key northwest base (Manatee County, H. G. O., 1873; 1908).—On the Gulf side of Anna Maria Key about one-half mile southwest of the house of Mr. S. C. Cobb, which is on the Bay side of the key. It is about 100 meters back from the shore line and on land belonging to Capt. Jones, who lives east of the station on the Bay shore of the key. The station is marked by a cross in the top of a granite monument surrounded by a mass of concrete and underground by a spike in the top of a 4-inch tile filled with concrete. The reference mark, a spike in the top of a 4-inch tile filled and surrounded with concrete, is 20.00 meters from the station in azimuth 337° 43′. The diagonal lines from four iron pipes each 4 feet distant intersect at the station.

Nell (Manatee County, J. H., 1878).—On the west shore of Perico Island at the entrance to Sarasota Bay and on the first mangrove point south of Perico Point. The station is at ordinary high water and is marked by a copper nail in a cedar stub. Two reference marks, each a copper nail in a mangrove tree, are at the following distances from the station: 3.8 meters northeast and 2.9 meters southeast.

Perico (Manatee County, H. G. O., 1873; 1908).—On the northwest end of Perico Island. It is marked by a nail in the top of a live oak post surrounded by four iron pipes the diagonals from which intersect at the station. No trace of the station could be found in 1908.

Palm (Manatee County, H. G. O., 1873; 1908).—This station has been destroyed, due to the receding of the shore line.

Terraceia (Manatee County, H. G. O., 1873; 1908).—On the northwest side of Terraceia Island and marked by a nail in the top of a cedar post. No trace of this station could be found in 1908.

Pinelos (Hillsboro County, H. G. O., 1873; 1908).—On Point Pinelos on the north shore of Tampa Bay and marked by a nail in the top of a cedar post. No trace of this station could be found in 1908, and it has probably been destroyed by the receding of the shore line.

Roach (Hillsboro County, H. G. O., 1873; 1908).—On Cockroach Point, a narrow strip of land between Tampa Bay and a creek, and marked by a nail in the top of a cedar post. No trace of the station could be found in 1908.

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[1] See pp. 61-62.

Terraceia 2 (Manatee County, W. B. F., 1908).—On a low ridge about 20 meters wide on a shell point on the western side of Terraceia Island, about 1¼ miles northeast of the southwest point of the island. The station is about 15 meters from high-water mark and is marked according to note 9.[1]

Palm 2 (Manatee County, W. B. F., 1908).—On firm ground at the northern extremity of Anna Maria Key and about 50 meters east of the Bean house, which is the only house on this part of the key. The station is 125 meters from the west or Gulf shore, 150 meters from the north shore, and 75 meters from the east or bay shore, high-water mark being considered the shore line in each case. The station is marked by a spike in the top of a 4-inch tile, which is filled and surrounded with concrete, and underground by a spike in the top of a concrete post buried 3 feet below the surface of the ground. The top of the surface mark is inscribed "C. & G. S. 1908." The reference mark, a spike in the top of a concrete post, is 21.780 meters from the station in azimuth 295° 09′, and the chimney of Bean's house is in azimuth 95° 02′.

Perico 2 (Manatee County, W. B. F., 1908).—On hard ground on the north point of Perico Island about 15 meters from high-water mark. There is a marsh back of the station and beyond the marsh the point is covered with mangroves, pines, and palmettos. The station is marked according to note 10.[1] A reference mark, described in note 11,[1] is 19.22 meters from the station in azimuth 302° 09′.

Pinelos 2 (Hillsboro County, W. B. F., 1908).—On Pinelos Point on the north side of Tampa Bay in the northwest quarter of section 18, T. 32, R. 17 E., on land belonging to the Forest estate. The station is among the pines 40 meters from the bluff shore and 30 meters southeast of the county road from St. Petersburg to Maximo Point. It is marked according to note 9.[1] A reference mark, described in note 11,[1] is in a fence line 23.34 meters from the station in azimuth 161° 09′.

Cockroach (*U. S. E.*) (Hillsboro County, W. B. F., 1908).—On Cockroach Island, a long narrow island 1 mile from the mainland on the eastern side of Tampa Bay. The island is not more than 25 meters wide and is covered with mangroves and palmettos. The station is about 15 meters from high-water mark, 10 meters outside the palmettos and 400 meters south of the north point of the island. It is marked by a 1-inch iron pipe 4 feet long at the center of a 4-inch tile embedded in a block of concrete 20 inches square and 2 feet deep. The top of the concrete is inscribed "C. & G. S. 1908" and the iron pipe projects 10 inches above the surface.

Ant 2 (Hillsboro County, W. B. F., 1908).—On a point on the west shore of Tampa Bay about midway between Point Pinelos and St. Petersburg and about one-third the distance from Little Bayou to Big Bayou. The station is on firm ground among palmetto trees 40 meters from the low bluff shore and 400 meters south of the most eastern part of the point. It is marked according to note 9.[1] A reference mark, described in note 11,[1] is 20.02 meters from the station in azimuth 118° 33′.

Indian Hill 2 (Hillsboro County, W. B. F., 1908).—On the highest part of a very prominent shell mound on the east side of Tampa Bay about 3 miles south of the Little Manatee River. The mound is about 40 feet high, with no trees growing on it except at its base. There is a deserted house on the north slope of the mound and a grave about 2 meters southeast of the station. The station is marked according to note 9.[1]

Mangrove (*U. S. E.*) (Hillsboro County, W. B. F., 1908).—At the edge of the mangroves at the western extremity of Mangrove Point, which is on the eastern shore of Tampa Bay, about 2 miles north of the Little Manatee River. The station is marked by a 1-inch iron pipe set in cement in a 2-inch iron pipe, which in turn, is at the center of a 4-inch tile, the whole embedded in a block of concrete 20 inches square and 22 inches deep. The top of the concrete is inscribed "C. & G. S. 1908" and the iron pipes project 8 inches above the surface. A reference mark, a 4-inch tile set in concrete, is 22.31 meters from the station in azimuth 325° 36′.

Cedar Point (*U. S. E.*) (Hillsboro County, W. B. F., 1908).—On the island just north of the entrance to Papys Bayou, about 1500 meters north of Papys Point and 250 meters south of the north end of the island. There is a large pond or bayou west of the station with a fringe of mangroves and palmettos along the shore, and the station is near the middle of the strip of land

[1] See pp. 61–62.

about 25 meters wide which separates this pond from the bay. The station is marked by an iron pipe 1½ inches in diameter at the center of a 4-inch tile embedded in a block of concrete 19 inches square and 24 inches deep. The concrete projects 4 inches above the ground and is inscribed "C. & G. S. 1908" and the iron pipe projects about 8 inches above the concrete. Four 1-inch iron pipes are each 2½ feet from the station north, east, south, and west, respectively.

Gadsden 2 (Hillsboro County, W. B. F., 1908).—On Gadsden Point on the west shore of Hillsboro Bay, on firm ground among pine and palmetto trees, about 40 meters from high-water mark. There is another point about 500 meters west of the station. The station is marked according to note 9.[1] A reference mark, described in note 11[1] is 18.47 meters from the station in azimuth 146° 31′.

Alafia 2 (Hillsboro County, W. B. F., 1908).—On a well-known shell mound on the east shore of Hillsboro Bay, on the south side of the entrance to Bull Frog Creek and just south of the Alafia River. The station is on the highest part and near the west end of the mound, but may soon be destroyed by the digging away of the shells. It is marked according to note 9.[1]

Ball (Hillsboro County, W. B. F., 1908).—On a sandy, grassy point on the east side of Hillsboro Bay about 1½ miles south of Dulaneys Creek and about 80 meters from high-water mark. The station is between two round ponds, one about 100 meters north and the other about 150 meters south, the latter being connected with the bay by a deep, narrow slough on the north edge of which 10 meters from high-water mark is the United States Engineers' station *Ball*. There are three tall palmettos on the point, the nearest or north one about 100 meters distant and the farthest or south one 250 meters distant. There are no other trees near the station, the edge of the pines being about 600 meters distant. The station is marked according to note 9.[1] A reference mark, described in note 11,[1] is 17.92 meters from the station in azimuth 216° 41′.

Catfish Point (*U. S. E.*) (Hillsboro County, W. B. F., 1908).—On Catfish Point on the west shore of Hillsboro Bay just back of where a long shoal makes out into the bay, bare at low water. The station is on firm ground about 300 meters south of the house of Mr. M. T. Jones and about 8 meters from high-water mark. It is marked by an iron pipe 1½ inches in diameter and 3 feet long at the center of a 4-inch tile embedded in a round block of concrete 20 inches in diameter and 2 feet long. The concrete projects 4 inches above the ground and is inscribed "C. & G. S. 1908" and the iron pipe projects 4 inches above the concrete. Two half-inch iron pipes are each 1 foot distant, one north and the other south. A reference mark, described in note 11,[1] is 26.02 meters from the station in azimuth 116° 01′.

Ballast Point 2 (Hillsboro County, W. B. F., 1908).—On the northeast corner of the upper east balcony of the Ballast Point hotel, 3 feet 9½ inches from the north edge and 3 feet 7 inches from the east edge of the balcony and 3 feet 11 inches from the corner post. It is marked with four brass screws in the floor, one for center and three forming a triangle about it.

Picnic Island (Hillsboro County, W. B. F., 1908).—About one-half mile south of Port Tampa dock on the highest part of a sand ridge on the western extremity of Picnic Island about one-half mile south of the north end of the island. The ridge is covered with mangroves and palmettos and there is a pond just back of the ridge. The station is about 300 meters south of an old fish camp, about 15 meters from high-water mark and about 12 meters east of a lone cedar tree. The station is marked according to note 9.[1]

Dave (Hillsboro County, W. B. F., 1908).—On the eastern shore of Old Tampa Bay, about 2 miles north of Port Tampa dock. The station is on sandy ground covered with short grass and is 20 meters from high-water mark, 100 meters south of a slough that makes into a small pond nearly dry at low water, and about 100 meters from the edge of the pine and palmetto woods. The station is marked according to note 10.[1] A reference mark, described in note 11,[1] is 29.05 meters from the station in azimuth 345° 56′.

Pete (Hillsboro County, W. B. F., 1908).—On the west side of Old Tampa Bay, about 2 miles southeast of Cedar Point, and on the southern side of the entrance to a large shallow

[1] See pp. 61–62.

bayou. The point is a long narrow sand ridge, covered with mangroves, and separated from firm ground by a wide marsh, which is probably submerged at high tide. The station is 50 meters south of the end of the point, 10 meters from high water, and is marked according to note 9.[1]

Gun (Hillsboro County, W. B. F., 1908).—On the east side of Old Tampa Bay about 100 meters south of the mouth of a small stream known as Gun Branch and about 1½ miles south of Frazer's beach. The station is on solid ground just at the edge of the pine woods 25 meters from high-water mark. It is marked according to note 9.[1] A reference mark, described in note 11,[1] is 26.31 meters from the station in azimuth 295° 27′.

Dog (Hillsboro County, W. B. F., 1908).—About one-third of a mile north of the southern end of an island called Cedar Point on the west side of Old Tampa Bay, on the highest point of a strip of land about 12 meters wide between the bay on the east and a pond on the west. The island is covered with mangroves and there are a few cedars north of the station. The station is marked according to note 10.[1]

Rocky Point (Hillsboro County, W. H. B., 1906; 1908).—On the western corner of the point of land known as Rocky Point in Old Tampa Bay, 20.0 meters from the end of the main part of the point, 13.0 meters from the north shore line, and 9.5 meters from the southwest shore line. A house on the south side of the point is about 150 meters distant. The station is marked by a nail in the top of a 4-inch tile which is filled and surrounded with concrete and underground by a nail in the cement stopper of a bottle surrounded with concrete. The reference mark, a 4-inch tile which is filled and surrounded with concrete, projects 3 inches above the ground, and is 25.560 meters from the station in azimuth 253° 49′.

SUPPLEMENTARY POINTS.

Manatee 2 (Manatee County, W. B. F., 1908).—On the north point of a low, swampy island covered with mangroves and palmettos and known as Sneeds Island, on the north side of the entrance to the Manatee River. The station is on a shell bank on the river side of the point about 25 meters from high-water mark, 20 meters south of an old fish camp, and about 100 meters from Mr. Emerson's house, which is also on the river side of the point. The station is marked according to note 10.[1]

BOCA CEIGA BAY TO CLEARWATER HARBOR.

PRINCIPAL POINTS.

Turn (Hillsboro County, H. G. O., 1873).—On the point on the north side of the inner end of Pass a Grille near the southern end of Boca Ceiga Bay. The station is marked by a nail in the top of a 10-inch cedar post.

Shell Point (Hillsboro County, H. G. O., 1873).—On Maxima Point just east of Bird Island on the east side of the southern end of Boca Ceiga Bay. The station is marked by a nail in the top of a 11-inch cedar post.

Bird (Hillsboro County, H. G. O., 1873).—On the north point of Bush Island at the south end of Boca Ceiga Bay. The station is marked by a nail in the top of a large post.

Point (Hillsboro County, H. G. O., 1873).—On a hook-shaped point on the east side of Boca Ceiga Bay, just across the bay southwest from Veteran City. The station is marked by a nail in the top of a 9-inch live-oak post.

Oyster (Hillsboro County, H. G. O., 1873).—On an oyster shoal about 30 feet in diameter off a prominent point on the west side of Boca Ceiga Bay. The shoal is covered at high water. The station is marked by a pine stake surrounded by four pieces of iron pipe about 1 foot apart. This station could not be recovered in 1908.

Sand (Hillsboro County, H. G. O., 1873).—On a prominent point on the east or mainland shore of Boca Ceiga Bay just west of Veteran City. The station is marked by a pine stub surrounded by four iron pipes each 1 foot distant.

[1] See pp. 61-62.

Mound (Hillsboro County, H. G. O., 1873).—On the southeast side of Roost Island, a small island in the western part of Boca Ceiga Bay. The station is marked by a pine stub.

Crab (Hillsboro County, H. G. O., 1873).—On a prominent point on the east side of Boca Ceiga Bay. The station is marked by a copper tack in a pine stub surrounded by four iron pipes, the diagonal lines from which intersect at the station. A nail in an 8-inch mangrove stump is one-half meter from the station in azimuth 168° 44′.

Queen (Hillsboro County, H. G. O., 1873).—On the southeastern side of an island in the western part of Boca Ceiga Bay. The station is marked by a pine stub.

Cedar (Hillsboro County, H. G. O., 1873).—On the mainland or eastern shore of Boca Ceiga Bay. The station is marked by a pine stub.

Sague (Hillsboro County, H. G. O., 1873).—On a small point extending southward from the mainland or eastern shore of Boca Ceiga Bay just south of the entrance to Long or Four Mile Bayou. The station is marked by a nail in the top of a 7-inch cedar post.

Snake (Hillsboro County, H. G. O., 1873).—On the eastern point of an island in Johns Pass in the northeastern part of Boca Ceiga Bay. The station is marked by a pine stub.

Turtle Crawl (Hillsboro County, H. G. O., 1873; 1908).—On a point on the mainland or eastern shore of Boca Ceiga Bay just north of the entrance to Long or Four Mile Bayou. The station is marked by a pine stub. No trace of the station could be found in 1908, and it has probably been destroyed by the receding of the shore line.

Mast (Hillsboro County, H. G. O., 1873).—On the east side of an island in the western part of Boca Ceiga Bay and directly across the bay from Turtle Crawl Point. The station is marked by a small stub.

Double (Hillsboro County, H. G. O., 1873; 1908).—On a flat covered by high water just off a prominent point on the mainland or eastern shore of Boca Ceiga Bay. The station is marked by an old pine stump with two iron pipes each 16 inches distant on opposite sides of the stump. No trace of the station could be found in 1908.

Pole (Hillsboro County, H. G. O., 1873).—On the eastern side of a small island in the western part of Boca Ceiga Bay. The station is marked by a mangrove stump, which is surrounded by water at high tide.

Stump (Hillsboro County, H. G. O., 1873).—On a small shell island in the eastern part of Boca Ceiga Bay. The station is marked by a pine stub.

Extra (Hillsboro County, H. G. O., 1873).—On the northeastern part of a prominent point on the west shore of Boca Ceiga Bay. The station is marked by a hole in the top of a 6 by 6 inch pine post.

Crow (Hillsboro County, H. G. O., 1873).—On a shell bank at the end of a curved point on the mainland or eastern shore of the northern part of Boca Ceiga Bay. The station is marked by a small pine stub.

Pass (Hillsboro County, H. G. O., 1873).—On the eastern side of an island in the western part of the northern end of Boca Ceiga Bay. The station is marked by a hole in the top of a 6 by 6 inch pine post.

Faint (Hillsboro County, H. G. O., 1873).—On a small shell bank on the mainland shore at the north end of Boca Ceiga Bay. The station is marked by a cross in the top of a 6 by 6 inch pine post.

Indian (Hillsboro County, H. G. O., 1873).—On a small shifting sand hill on the east neck of Indian Pass. The station is marked by a small pine stub.

Fisherman (Hillsboro County, H. G. O., 1873).—On a point of the mainland opposite Indian Pass and near a fish house. The station is marked by a nail in an auger hole in the top of a pine post.

Cutter (Hillsboro County, H. G. O., 1873; 1908).—On the narrow neck of land between Indian Pass and the Gulf. The station is marked by a copper tack in the top of a pine stub surrounded by four iron pipes each one foot distant, the diagonal lines from which intersect at the station. No trace of this station could be found in 1908.

Twice (Hillsboro County, H. G. O., 1873).—On the Gulf shore of Sand Key about one-half mile north of Indian Pass. The station is marked by a nail in the top of a live-oak post.

Creek (Hillsboro County, H. G. O., 1873).—On the mainland shore of the Narrows on the point just south of the mouth of a small creek. The station is marked by a nail in the top of a 6-inch live-oak post.

Cute (Hillsboro County, H. G. O., 1873).—On the Gulf shore of Sand Key, just west of some clumps of scrub palms. The station is marked by a nail in the top of a 5-inch live-oak post.

Pines (Hillsboro County, H. G. O., 1873).—On a prominent point on the mainland or eastern shore of the Narrows. The station is marked by a nail in the top of a 9-inch live-oak post.

Narrows (Hillsboro County, H. G. O., 1873).—On the Gulf shore of Sand Key. The station is marked by a nail in the top of a 4-inch mangrove stump.

Shortest (Hillsboro County, H. G. O., 1873).—On a point on the mainland or east shore of the Narrows. The station is marked by a nail in the top of a 9-inch live-oak post which projects 15 inches above the ground.

Short (Hillsboro County, H. G. O., 1873).—On Sand Key about midway between the Gulf and the Narrows. The station is marked by a nail in the top of an 8-inch live-oak post.

Indian Rock (Hillsboro County, H. G. O., 1873; 1906).—On the mainland at the narrowest part of the Narrows on the bank just back of the rocky point. The station is marked by a hole in the top of a 6-inch live-oak post. No trace of the station could be found in 1906.

Polaris (Hillsboro County, H. G. O., 1873).—On a sand ridge on the Gulf side of Sand Key. The station is marked by a hole in the top of a live-oak post. Two pieces of iron pipe are, respectively, 22 paces south and 10 paces north.

Thompson (Hillsboro County, H. G. O., 1873; 1906).—On the mainland shore of Clearwater Harbor at the entrance to the Narrows and about one-fourth mile south of Mears landing and fish house (originally known as Thompson's landing). The station is marked by a nail in the top of a 6-inch live-oak post which in 1906 was within 8 inches of the shore line. Two reference marks, each consisting of a nail in the top of a concrete post which projects 3 inches above the ground and of an underground mark, a bottle with a cement stopper, are located as follows: One 18.457 meters from the station in azimuth 288° 47′ and the other 34.265 meters in azimuth 288° 58′. An 18-inch pine is on the edge of a swamp 45 meters from the station and in line with the reference marks and the station. A blazed pine is 6.20 meters north of the near reference mark, 15.25 meters northwest of the far reference mark, and 21 paces from the station in azimuth 272° 13′.

Sands (Hillsboro County, H. G. O., 1873; 1906).—On the north end of a small sand ridge on the Gulf side of Sand Key. The station is marked by a hole in the top of a large post. No trace of the station could be found in 1906.

Sand Key south base (Hillsboro County, H. G. O., 1873; 1910).—On the Gulf coast of Sand Key about 2 miles south of Little Pass and about one-fourth mile south of a very dense group of palmettos. It is on a sand ridge, 28 paces from low water and about 2 meters east of the crest of the ridge. The station is marked by a standard disc station mark in the top of a 6-inch tile which is filled with concrete and projects about 10 inches above the ground. Below the tile is the original surface mark, a cross in the top of a granite monument. A reference mark, a small drill hole in the top of a concrete post which projects about 5 inches above the ground, is 26.650 meters from the station in azimuth 296° 43′. This reference mark is in line with a large blazed pine tree 42.5 meters from the station, one of the most prominent trees on the key. Another reference mark, a standard cap station mark screwed to the top of a 3-inch iron pipe which projects 1 foot above the ground, is 24.034 meters from the station in azimuth 255° 49′.

Prickly Point (Hillsboro County, H. G. O., 1873; 1906).—On Prickly Point on the east shore of Clearwater Harbor. The station is marked by a nail in the top of a 7-inch live-oak post. No trace of the station could be found in 1906, and it has probably been washed away.

Sand Key north base (Hillsboro County, H. G. O., 1873; 1906).—This station has been destroyed.

Clearwater Harbor astronomic station (Hillsboro County, E. S., 1873; 1906).—This station has been destroyed.

Clearwater Bluff (Hillsboro County, G. H. B., 1861; 1906).—This station has been destroyed.

Tomlinson (Hillsboro County, W. B. F., 1908).—On the west side of Pine Key just opposite the landing at Pass a Grille, among the pine trees 125 meters from high-water mark. The station is directly beneath a 70-foot skeleton observation tower built by Mr. Tomlinson, who owns the land in the vicinity of the station. It is marked according to note 9.[1]

Maximo (Hillsboro County, W. B. F., 1908).—On the western extremity of Maximo Point, about 30 meters from high-water mark. The station is marked according to note 9.[1] A reference mark, described in note 11,[1] is 15.12 meters from the station in azimuth 203° 05′.

Oyster 2 (Hillsboro County, W. B. F., 1908).—This station is identical with a station of the United States Engineers. It is on the east point of a small mangrove key on the west side of Boca Ceiga Bay, about midway between Blind Pass and Pass a Grille and about 8 meters from high-water mark. The station is marked by an iron pipe at the center of a 4-inch tile embedded in a mass of concrete 30 inches in diameter and 2 feet deep. The concrete projects 6 inches above the ground and is inscribed "C. & G. S. 1908", and the iron pipe projects 15 inches above the concrete.

South Point (Hillsboro County, W. B. F., 1908).—On the west shore of Boca Ceiga Bay on the first point south of Deadmans Key. The point is low and wet and is covered with a dense growth of mangroves. The station is on a narrow sand ridge near the shore and is marked according to note 9.[1] A reference mark described in note 11[1] is 11.06 meters from the station in azimuth 51° 42′. A station of the United States Engineers marked by a 1-inch iron pipe driven into the sand is close to the water line 6.67 meters from the station in azimuth 298° 38′.

Bear Creek (Hillsboro County, W. B. F., 1908).—On the east side of Boca Ceiga Bay opposite Deadmans Key on the western extremity of a low point covered with grass and a few mangroves just north of Bear Creek. The station is on the most solid part of the point about 20 meters from the shore line and about 100 meters south of a small bayou leading into the marsh back of the point. The station is marked according to note 9.[1]

Devils Elbow (*U. S. E.*) (Hillsboro County, W. B. F., 1908).—On the sand flat on the south side of a mangrove key near the northeast end of the channel known as Blind Pass leading into Boca Ceiga Bay from the Gulf. The channel along the side of the key is very crooked and is known as the Devils Elbow. The station is in the water 200 feet from the edge of the mangroves and is marked by an iron pipe 1½ inches in diameter driven into the sand.

Between (Hillsboro County, W. B. F., 1908).—On the mainland shore of Boca Ceiga Bay on a point nearly opposite Blind Pass and between two bayous 150 meters north and 100 meters south, respectively. The station is on solid ground among scattering pines about 20 meters from high-water mark and is marked according to note 9.[1] A large pine marked with a triangular blaze is 6.71 meters from the station in azimuth 163° 19′. A station established by the United States Engineers marked by a 1-inch iron pipe driven into the ground is near high-water mark 15.92 meters from the station in azimuth 50° 14′.

Johns Pass (*U. S. E.*) (Hillsboro County, W. B. F., 1908).—On the highest part of the little grassy sand key near a small mangrove key one-half mile east of the mouth of Johns Pass. The station is marked by an iron pipe 1½ inches in diameter at the center of a 4-inch tile embedded in a mass of concrete 3 feet in diameter and 2 feet deep. The concrete projects 4 inches above the ground and is inscribed "C. & G. S. 1908," and the iron pipe projects 18 inches above the concrete.

Turtle (Hillsboro County, W. B. F., 1908).—On the mainland shore of Boca Ceiga Bay at the extremity of Turtle Crawl Point on firm ground among the palmettos and small bushes 60 meters from high-water mark. The station is marked according to note 9.[1]

[1] See pp. 61–62.

Gulf (Hillsboro County, W. B. F., 1908).—On a sandy grass-covered plain on the strip of land between Boca Ceiga Bay and the Gulf, about midway between Johns Pass to the south and Indian Pass to the north and about 65 meters from the bluff shore of the Gulf. There is a lone palmetto about 150 meters north of the station about the same distance from the Gulf shore as the station, and on the bay shore there is one tall palmetto and a cluster of three south of it. The station is marked according to note 9.[1] Two reference marks, described in note 11,[1] are in line to the lone palmetto on the bay shore, one 32.85 meters from the station in azimuth 249° 22′ and the other 45.50 meters in azimuth 249° 29′.

Double 2 (Hillsboro County, W. B. F., 1908).—On the extremity of the first sandy point north of Turtle Crawl Point on the east side of Boca Ceiga Bay 15 meters from high-water mark and just clear of the low trees. The station is marked according to note 9.[1] A reference mark, described in note 11,[1] is in a cluster of small oaks 96.42 meters from the station in azimuth 184° 48′.

Wait (*U. S. E.*) (Hillsboro County, W. B. F., 1908).—On the west shore of Boca Ceiga Bay, on the first prominent mangrove point south of Rhodes house. The station is at the edge of the mangroves and is submerged at high tide. It is marked by an iron pipe 1½ inches in diameter at the center of a 4-inch tile embedded in a mass of concrete 20 inches in diameter and 2 feet deep. The concrete is inscribed "C. & G. S. 1908," and the iron pipe projects 15 inches above the surface.

Oak (Hillsboro County, W. B. F., 1908).—On the mainland shore of Boca Ceiga Bay on the first well-defined point northwest of Mears Landing and about one-third mile distant. The station is among the small oaks and palmettos 40 meters from the bluff shore and is marked according to note 9.[1]

Rhodes (Hillsboro County, W. B. F., 1908).—This station is identical with a United States Engineers' station, the name of which is not known. It is on the east side of Indian Pass on the narrow strip of land between the pass and Boca Ceiga Bay 25 meters from high-water mark of the pass and about 125 meters south of Rhodes' house. The station is marked by an iron pipe 1½ inches in diameter at the center of a 4-inch tile embedded in a mass of concrete 20 inches in diameter and 2 feet deep. The concrete projects 4 inches above the ground and is inscribed "C. & G. S. 1908."

Fisherman (*U. S. E.*) (Hillsboro County, W. B. F., 1908).—On the east shore of Boca Ceiga Bay opposite the inner end of Indian Pass and the Sweat fish camp. The station is on firm ground at the edge of the palmettos and is marked by an iron pipe 1½ inches in diameter at the center of a 4-inch tile embedded in a mass of concrete 20 inches in diameter and 2 feet deep. The concrete projects 2 inches above the ground and is inscribed "C. & G. S. 1908." A reference mark, described in note 11,[1] is on firm ground among the palmettos 16.99 meters from the station in azimuth 222° 01′.

Sweat (Hillsboro County, W. B. F., 1908).—This station is one of the United States Engineers stations of 1907, the name of which is not known. It is on a sand hill on the west side of Indian Pass on the narrow strip of land between the pass and the Gulf, 150 meters north of the Sweat fish camp and 10 meters southeast of a well with a wooden curb. The station is marked by an iron pipe embedded in a mass of concrete 20 inches in diameter and 2 feet deep which projects 4 inches above the ground and is inscribed "C. & G. S. 1908."

Kay (Hillsboro County, W. H. B., 1906).—On a crescent-shaped sand bar at the extremity of McKays Point, on the east side of the southern end of Clearwater Harbor. The station is marked by a nail in the top of a 4-inch tile which is filled with concrete and projects 10 inches above the sand. A reference mark similar to the station mark is on the mainland shore directly opposite the end of the spit, 6 meters back from the shore line and 159.12 meters from the station in azimuth 292° 49′ 43″. A blazed pine is 4.83 meters east of the reference mark in line with the reference mark and the station.

Prickly (Hillsboro County, W. H. B., 1906; 1910).—On the mainland shore of Clearwater Harbor, on a sand spit known as Prickly Point. The spit extends in a southwesterly direction and a narrow strip of it about 5 meters wide and 100 meters long is above high water and is

[1] See pp. 61-62.

covered with grass and a few scrub bayonets. The station is near the outer edge of the grass and is marked by a standard disk station mark in the top of a 6-inch tile which is filled with concrete and underground by a nail in the cement stopper of a bottle. The reference mark, a standard cap station mark, screwed to the top of a 3-inch iron pipe which projects about a foot above the surface of the ground, is 31.899 meters from the station in azimuth 243° 17′.

Belleview (Hillsboro County, W. H. B., 1906; 1910).—About 2 miles south of the town of Clearwater near the center of a circle of palm trees, 100 paces south-southwest of the southwest corner of the Belleview hotel. The station is marked by a nail in the top of a 4-inch tile which is filled and surrounded with concrete and underground by a nail in the cement stopper of a bottle. The top of the surface mark is slightly below the ground. The reference mark is a nail in the top of a 4-inch tile which is filled and surrounded with concrete. It is in the line from the station to the eastern one of the gables on the south side of the hotel and is 43.36 meters from the station in azimuth 252°, approximately. This reference mark is in a small plot of ground, about 10 by 40 feet, which separates the two parts of the roadway along the west side of the hotel, is about 60 paces south of the walk along the south side of the hotel and is 8 paces west of the line of the west gable of the hotel. The foundation of the concrete pier of *Belleview longitude station* is 32 inches north of the station. (See below.)

SUPPLEMENTARY POINTS.

Belleview longitude station (Hillsboro County, O. B. F., 1907; 1910).—Thirty-two inches directly north of *Belleview* (see above). The station is marked by the foundation of the concrete pier, which is just below the surface of the ground.

Clearwater latitude station (Hillsboro County, E. S., 1873; 1906).—Lost.

GAINESVILLE TO CLEARWATER HARBOR.

PRINCIPAL POINTS.

Odd Fellow (Alachua County, H. G. O., 1897).—One-half mile east of the city of Gainesville on the line of the Florida Central & Peninsular Railroad. It is 4½ meters north of the range of the courthouse on the east or north gable of the Odd Fellows' Home and is 6 meters east of the east rail of the track. Marked by a bottle buried underneath a section of gas pipe in the form of an inverted T; the bottle and the lower end of the pipe are set in cement, and the upper end of the pipe projects about 6 inches above the ground.

Colclough Hill (Alachua County, H. G. O., 1898).—About 1¼ miles south of the Florida Central & Peninsular Railroad on the land of Charles Colclough, on the east side of the road from Gainesville to Rocky Point. The station is some distance north of the top of the hill known as Colclough Hill and nearly in the prolongation of the first tangent of the railroad northeast of Gainesville. The station is marked by a 2-inch iron pipe which projects 8 inches above the ground, and underground by a bottle. A large live-oak tree with four nails in the side facing the station is 41.1 meters south 81° 15′ west from the station.

Murphy (Alachua County, H. G. O., 1898).—On the north side of the Florida Central & Peninsular Railroad, about 1½ miles southwest of Gainesville. The station is near the intersection of two wagon roads, one of which crosses the railroad in that vicinity. It is across the track from and a short distance to the east of the house of W. W. Murphy and 9.5 meters north of the south rail of the railroad. The station is marked by a copper tack in the top of a pine stub at the center of a 6-inch tile and underground by a bottle.

Day (Alachua County, H. G. O., 1898).—At Dayville, on the Florida Central & Peninsular Railroad, about 3½ miles from Gainesville and very nearly in the prolongation of the south rail of the tangent from Sutherland. The station is on the property of Dutton & Robinson, of Gainesville, and 36.0 meters from the south rail of the track at a point of the curve abreast the station. It is closely on the intersection of the south rail tangent from Archer and the west rail of the short tangent just north of the station. The station is marked by a copper nail in a pine stub at the center of a 6-inch tile and underground by a bottle.

Sutherland (Alachua County, H. G. O., 1898).—At the end of the tangent of the Florida Central & Peninsular Railroad that extends north from Archer to Palmer and nearly in the prolongation of that tangent. The station is 135 meters from the point of curve at the end of the tangent, 347 meters from the station board north of Palmer, and near the wagon road from Archer to Gainesville. The station is the center of a 4-inch iron pipe.

Dutton (Alachua County, H. G. O., 1898).—On the prolongation of the tangent of the Florida Central & Peninsular Railroad from Palmer to Archer and 144.5 meters southwest of the railroad cut for Dutton switch, the measurement being made on the line from Archer. The station is the center of a 6-inch tile.

Bronson (Levy County, H. G. O., 1898).—Three hundred and three meters northeast of the northeast end of the railroad station at Bronson, 16.5 meters north of the south rail of the Florida Central & Peninsular Railroad at a point opposite a curve in the track and in the prolongation of the south rail of the tangent from Turn. The station is 13.8 meters from the southeast corner of J. F. Jackson's lot and 16.8 meters from the southwest corner of Mrs. L. U. Coulter's lot, which is across the street, and 8.1 meters east of the first-mentioned lot. The station is marked by a quarter-inch iron rod at the center of a 6-inch tile, which is filled and surrounded with concrete, and underground by an inverted bottle.

Turn (Levy County, H. G. O., 1898).—About 2½ miles southwest of Bronson, on the north side of the Florida Central & Peninsular Railroad, near a curve of the railroad and on the prolongation of the line of the south rail of the tangent from Bronson. The station is 166 meters west of milepost 125 and is marked by a quarter-inch iron rod in the center of a 6-inch tile which is filled with concrete.

Waccasassa (Levy County, H. G. O., 1898).—On a small island in the Waccasassa River, a short distance south of the Florida Central & Peninsular Railroad. The station is at the intersection of the tangent lines of the railroad from Rosewood through Otter Creek and from *Turn* (see above), and is 98.8 meters from the north rail of the track at a point very near the west end of the trestle over the Waccasassa River. The station is marked by the center of a 4-inch iron pipe which was driven into the ground and filled with concrete. Four blazed trees are at the following distances and magnetic azimuths from the station: Cypress, 20.7 meters, 20° 12′; oak, 14.0 meters, 140° 00′; oak, 19.5 meters, 267° 09′; and sweet gum, 25.6 meters, 322° 30′. The first-mentioned oak and the sweet gum are on the island, the other oak is on the west bank of the river, and the cypress is on the east bank of the river.

Rosewood (Levy County, H. G. O., 1898).—About 1 mile southwest of the village of Rosewood and 10.717 meters north of the south rail of the Florida Central & Peninsular Railroad at a point a short distance west of a curve of the railroad. The station is nearly in the prolongation of the tangent of the railroad between Waccasassa River and Rosewood. It is marked by a quarter-inch iron rod in the center of a 6-inch tile which is filled and surrounded with concrete. The underground mark is a bottle.

Oyster Cove (Levy County, H. G. O., 1898; 1910).—On the mainland near the shore, about 3 miles from Cedar Keys, on the southeast side of the Florida Central & Peninsular Railroad, and near a road crossing. The station is 9.75 meters from a point on the south rail which is 35 meters northeast of the end of a curve of the railroad track and 118 meters southwest of a wood rack that stands beside the track. The station is marked by a quarter-inch iron rod at the center of a 6-inch tile which is filled and surrounded with concrete. The underground mark is a stone bottle 3 feet below the ground.

Black Point 2 (Levy County, A. T. M., 1874; 1910).—On the mainland northwest of Way Key and near the end of what is known as Black Point. It is on land belonging to Mr. Demary, and when the station was established his house stood 100 meters northwest, but it has since been burned or demolished. The station is marked by a marble block 18 inches below the ground. No trace of the station was found in 1910.

North Key (Levy County, H. G. O., 1874; 1910).—On the northern extremity of North Key. The station is marked by a screw pile, and when visited in 1910 was about 6 meters out from the shore line and completely submerged at high tide. At that time an eccentric station was

established back on firm ground, 25.32 meters from the original station, in azimuth 48° 41′. The eccentric station is marked according to note 12,[1] except that the underground mark is an inverted bottle 26 inches below the surface. From the eccentric station it is 17 paces north to the high-water mark, 18 paces east to high-water mark, and 8 paces south to the edge of the marsh. The reference mark, described in note 13,[1] is 29.94 meters from the eccentric station and 53.30 meters from the original station, in azimuth 65° 22′ from the latter.

Pelican Shoal 2 (Levy County, A. T. M., 1874; 1897).—Lost.

Lime Point 2 (Levy County, A. T. M., 1874, 1910).—On the extreme southeastern point of the island called Lime Point, on a narrow tongue of sand extending into the marsh to the eastward from the high shell bank that forms the main part of the island. The station is marked by a standard disk station mark in the top of a 6-inch tile which is filled with concrete and projects 3 inches above the ground. The underground mark is a bottle set in concrete 2½ feet below ground, 6 inches of sand separating it from the surface mark. A reference mark, a standard cap station mark screwed to the top of a 3-inch iron pipe, is 32.660 meters N. 42° W. from the station. Two palmetto trees, each marked with a trianuglar blaze with a nail at the center and each vertex, are, respectively, 29.071 meters N. 63° W. and 5.460 meters N. 88° W. from the station.

Snake Key 2 (Levy County, A. T. M., 1874; 1910).—On the northwestern end of Snake Key on a high bank covered with palmettos, 7 meters from the north edge of the bank and 36 meters from the west edge. The station is marked according to note 12,[1] except that the underground mark is a bottle 30 inches below the ground. A reference mark, described in note 13,[1] is 13.415 meters from the station in azimuth 56° 10′. Two palmetto trees, marked with triangular blazes with a nail at the center and each vertex of the triangle are, respectively, 10.82 meters from the station in azimuth 299° 10′ and 16.67 meters in azimuth 90° 21′.

South Reef (Levy County, A. T. M., 1874; 1910).—On the extreme southern oyster bank forming Oyster or Cowigans Reef. The bank is very small and is covered at extreme high tides. The station is marked by a screw pile which was found leaning slightly to the northward in 1910.

Cottrell (Levy County, A. T. M., 1874; 1910).—This station has been destroyed.

North Reef (Levy County, A. T. M., 1874; 1910).—This station has been destroyed.

South Point 2 (Levy County, A. T. M., 1874; 1910).—This station has been destroyed.

Way Key south base (Levy County, F. H. G., 1851; 1910).—This station has been destroyed.

Way Key north base (Levy County, F. H. G., 1851; 1898).—On the narrow sand beach north of the railroad at the northeast end of the town of Cedar Keys. The station is marked by a screw pile. No trace of it could be found in 1898.

Harbor Key 2 (Levy County, A. T. M., 1874; 1910).—Lost.

Daughtry Island northeast base (Levy County, F. W. P., 1877; 1910).—On high sandy ground near a bight at the northeastern end of Daughtry Island, about 200 paces from the eastern shore line of the island and 12.6 meters back of the edge of the marsh which borders the shore line of the bight. The station was marked originally by a marble block placed 3 feet underground. In 1910 a surface mark, a standard disk station mark in the top of a 6-inch tile filled with concrete, was placed above the block with 12 inches of sand separating the two marks. A reference mark, a standard cap station mark screwed to the top of a 3-inch iron pipe projecting 15 inches above the ground, is near the edge of the marsh 14.960 meters N. 43° E. from the station. Two blazed pines are at the following distances and azimuths from the station: 14.3 meters, 282°; and 24.1 meters, 6°.

Daughtry Island southwest base (Levy County, F. W. P., 1877; 1910).—On high sandy ground near the western shore at about the middle of Daughtry Island and about 7 meters from the edge of the marsh that borders the shore. The station was marked originally by a marble block placed 3 feet below the ground. In 1910 a surface mark, a standard disk station mark in the top of a 6-inch tile filled with concrete, was placed above the block with 13 inches of sand

[1] See pp. 61-62.

separating the two marks. A reference mark, a standard cap station mark screwed to the top of a 3-inch iron pipe, which projects 20 inches above the ground, is on the edge of a hard strip of land between the brush and the marsh grass 9.612 meters N. 83° W. from the station. A pine tree having a triangular blaze with a nail at the center and each corner of the triangle is at the western edge of the brush, 8 paces from the edge of the marsh, 23.530 meters N. 10° W. from the station. A palmetto tree with a triangular blaze is 22.8 meters from the station in azimuth 251° 06′, and a pine tree stump 31.2 meters, in azimuth 235° 36′.

Oyster Reef south 2 (Levy County, B. H., 1856; 1874).—Lost.

Mainland (Levy County, B. H., 1856).—On a point about 2 miles east of Cedar Keys, on a small hammock 20 paces east and west by 6 paces north and south covered with bushes. The station is marked by a copper tack in the top of a 3 by 4 inch stake. Similar stakes are near the station, one in line with each of the old tripod legs.

Oyster Reef B3 (Levy County, B. H., 1856; 1874).—Lost.

Oyster Reef C (Levy County, B. H., 1856).—East of Cedar Keys on a small Oyster reef, the first one from the southward on which there are any mangrove bushes. The station is about 8 feet north of a small clump of bushes and just east of some mangroves that border a small creek or bayou. It is marked by a nail in the top of a piece of Bermuda stone which is sunk 6 inches below the surface.

Depot Key (Levy County, F. H. G., 1851; 1874).—About the center of Depot Key near the tall pine on the middle of the hill about one-fourth mile east of the settlement. The station is marked by a nail in the top of a large Bermuda stone. The west corner of a house is 15.9 meters distant and a small cabbage tree blazed and marked with copper nails is 16.2 meters in a northerly direction from the station. Four poles marked with copper nails are near the station.

Waccasassa Reef (Levy County, B. H., 1856; 1910).—Lost.

Mainland East (Levy County, B. H., 1856; 1910).—On a point of land about halfway between Cedar Keys and Waccasassa River, at the outer edge of the marsh grass on the south side of a bayou. The station is marked by a nail in a block of Bermuda stone which projects 4 inches above the surface and may be seen from the shore line when landing. Parts of the old tripod legs were found in position in 1910, and between each of these legs and the station and 4 feet from the station is a stake with a nail in the top. In 1910 a reference mark, a standard cap station mark screwed to the top of a 3-inch iron pipe, was set 17.375 meters N. 27° E. from the station.

Grassy Point (Levy County, B. H., 1856; 1910).—This station has been destroyed.

Middle Marsh (Levy County, G. H. B., 1857; 1910).—About 1 mile east of South Mangrove Point, on the eastern side of a bayou at a place where there is a bight in the bayou containing an island. The station is 6 meters from the shore of this bight and about 50 meters from the outer point of the marsh. The station is marked by a screw pile. In 1910 a reference mark, a standard cap station mark screwed to the top of a 3-inch iron pipe, was set 9.372 meters south 21° east from the station.

Basin Rock (Levy County, G. H. B., 1857; 1910).—On a prominent rock about 4 miles north of Withlacoochee River. The station is marked by a screw pile. There is a cup-shaped depression 6 or 8 feet wide in the rock just south of the station.

Crane Island (Levy County, G. H. B., 1857; 1910).—Lost.

Sand Shoal 1 (Levy County, G. H. B., 1857; 1901).—This station has been destroyed.

Marsh Island (Citrus County, G. H. B., 1857; 1901).—This station has been destroyed.

Half Moon Bar (Citrus County, G. H. B., 1857; 1901).—This station has been destroyed.

Little Island (Citrus County, G. H. B., 1857; 1901).—This station has been destroyed.

Crystal Reef (Citrus County, G. H. B., 1857; 1910).—This station has been destroyed.

Shell Point (Citrus County, G. H. B., 1857; 1910).—At the outer edge of the trees at the point of a bold palmetto bluff on the western end of Shell Island about one-half mile south of the entrance to Crystal River. The station is marked by a screw pile which was found well preserved in 1910.

Bear Island (Citrus County, G. H. B., 1857; 1910).—On a high shell mound on the north side of Bear Island about 1 mile south of Mullet Key and near the mouth of Salt River. The station is marked by a screw pile which projects about 23 inches above the ground. In 1910 a reference mark, a standard cap station mark screwed to the top of a 3-inch iron pipe, was set 4.686 meters S. 85° W. from the station. Two palmetto trees, each marked with four nails in the form of a triangle with center nail, are, respectively, 10.278 meters N. 32° E., and 14.758 meters N. 85° E. from the station.

Bird Key (Citrus County, G. H. B., 1857; 1910).—On the western part of a low mangrove key, the northwest one of the Homosassa Islands. The key is about 25 meters wide by 60 meters long and the station is in the mangroves about 10 meters from the west shore of the key and about the same distance from the north shore. The station is marked by a screw pile which projects 19 inches above the ground. In 1910 a reference mark, a standard cap station mark screwed to the top of a 3-inch iron pipe, was set 23.401 meters S. 78° 30′ E. from the station.

Ragged Island (Citrus County, G. H. B., 1858; 1910).—On a small island covered with low mangroves about 3 miles north of Homosassa River. The island is about 15 meters north and south by 20 meters east and west and has a hook-shaped spur on the northeast end. The station is about 6 meters from the north side of the island and is marked by a screw pile. In 1910 a reference mark, a standard cap station mark screwed to the top of a 3-inch iron pipe which projects 20 inches above the ground, was set 7.875 meters N. 50° 30′ E. from the station.

Homosassa Point (Citrus County, G. H. B., 1858; 1910).—On the west point of the first key north of Homosassa Bay. The station is marked by a screw pile which projects 23 inches above the ground and may be seen from the water in approaching the station from the northwest. In 1910 a reference mark, a standard cap station mark screwed to the top of a 3-inch iron pipe, was set 27.305 meters N. 79° 30′ E. from the station.

Tuckers Island (Citrus County, G. H. B., 1858; 1910).—This station has been destroyed.

Chassahowitzka Point (Citrus County, G. H. B., 1858; 1910).—On the west point of the northern part of the key known as Chassahowitzka Point. The station is near the edge of the marsh grass and is marked by a screw pile which projects 22 inches above the ground. In 1910 a reference mark, a standard cap station mark screwed to the top of a 3-inch iron pipe, was set 18.818 meters N. 64° 30′ E. from the station.

Rocky Ridge (Citrus County, G. H. B., 1859; 1910).—On a rocky strip of marsh about 3 miles east of Chassahowitzka Point. The station is marked by a screw pile set in Bermuda rock and projecting 2 feet. In 1910 a reference mark, a standard cap station mark screwed to the top of a 3-inch iron pipe which projects 22 inches above the ground, was set 15.854 meters S. 22° W. from the station.

Little Rock (Hernando County, G. H. B., 1859; 1910).—Lost.

Herrings Bluff (Hernando County, G. H. B., 1859; 1910).—Near a high prominent palmetto bluff about 1 mile south of the Chassahowitzka River and 25 meters north of the north bank of a large bayou about 1 mile above its mouth. The station is marked by a screw pile set in the Bermuda rock. A reference mark, a standard cap station mark screwed to the top of a 3-inch iron pipe which projects 20 inches above the ground, is 18.818 meters N. 64° 30′ E. from the station.

Raccoon Point (Hernando County, G. H. B., 1859; 1910).—On the northwest side of a prominent sandy point or island about 5 miles north of the village of Bayport. The station is in the water about 3 meters from shore at high tide and is about 300 meters N. 30° W. from the southern extremity of the island. A reference mark, a standard cap station mark screwed to the top of a 3-inch iron pipe which projects 15 inches above the ground, is 6.821 meters S. 63° 30′ E. from the station. A triangular blaze on a palmetto tree with a nail at the center and each corner of the triangle is 22.041 meters N. 36° 30′ E. from the station.

New Reef (Hernando County, G. H. B., 1859; 1910).—Lost.

Beacon Rock (Hernando County, G. H. B., 1859; 1910).—On a high prominent rock 6 feet east and west by 10 feet north and south about 4 miles west of the village of Bayport on the

north side of the channel. The station is under water at high tide. It was originally marked by a drill hole in the rock and in 1910 a standard disc station mark was cemented in this hole. The reference mark, a crowsfoot drilled in the rock, is 9 inches from the station.

Bayport (Hernando County, G. H. B., 1859; 1910).—This station has been destroyed.

West Rock (Hernando County, G. H. B., 1859; 1910).—About 4 miles south of Beacon Rock on the southeast end of a rock ledge which is about 10 feet east and west by 12 feet north and south. It is under water at high tide. The station was originally marked by a drill hole in the rock and a standard disc station mark was cemented in this hole in 1910.

Long Key (Hernando County, G. H. B., 1859; 1910).—On a narrow marshy key at Gun Point, just north of the mouth of Hammock Creek. It is at the western end of the key about 17 meters west of the edge of the marsh grass and in 1 foot of water at high tide. The station is marked by a screw pile, which in 1910 was found leaning to the north and projecting about 2½ feet above the ground, but in a good state of preservation. A reference mark, a 3-inch pipe with a standard cap station mark screwed to the top, was placed 31.660 meters S. 83° 30′ E. from the station. The reference mark is in the marsh grass about 17 meters from the edge of the grass and projects 15 inches above the ground.

Coral Rock (Pasco County, G. H. B., 1860).—In the Gulf about 3 miles west of Cedar Point in about 3 feet of water at low tide. Marking unknown.

Southeast Point (Pasco County, G. H. B., 1860; 1910).—On a prominent point about 2¼ miles south of Cedar Point. This station has been destroyed. A new mark was placed near the location of the old station in 1910, but its position was not determined by triangulation. The new mark consists of a standard disc station mark in the top of a 6-inch tile which is filled with concrete, and underground, of a quarter-inch brass bolt in the top of a block of concrete.

Pelican Point (Pasco County, G. H. B., 1860; 1910).—This station has been destroyed, as the screw pile with which the station was originally marked was found lying on top of the ground in 1910. At that time a 3-inch iron pipe with a standard cap station mark screwed to the top was set about 20 feet north of a small creek, near the position of the old station, but the position of this new mark was not determined by triangulation.

Deer Island (Pasco County, G. H. B., 1860; 1910).—This station has been destroyed.

North Anclote (Pasco County, G. H. B., 1860; 1906).—This station has been destroyed.

Tiger Point (Pasco County, G. H. B., 1861; 1906).—On the level grassy point just north of the mouth of the Anclote River, 30 meters from the shore line to the south and 10 meters from the shore line to the west. The station is marked by a screw pile. It could not be recovered in 1906.

South Anclote (Pasco County, G. H. B., 1860; 1906).—On the east side of the south end of the largest one of the Anclote Keys. The station is marked by a screw pile. No trace of it could be found in 1906.

Piney Point (Hillsboro County, G. H. B., 1860; 1906).—On a high sandy wooded point about 1 mile south of the mouth of Anclote River. The station is marked by a screw pile. No trace of it could be found in 1906.

Hog Island north (Hillsboro County, G. H. B., 1861).—On the eastern part of the north end of Hog Island. The station is marked by a screw pile.

Indian Bluff (Hillsboro County, G. H. B., 1861; 1906).—On the north end of a prominent round point on the mainland shore of St. Josephs Sound. The station is marked by a screw pile. No trace of it could be found in 1906.

Bayonet Point (Hillsboro County, G. H. B., 1861; 1906).—On the west side of a small island in the eastern part of St. Josephs Sound. The station is marked by a screw pile. No trace of it could be found in 1906.

St. Joseph Flat (Hillsboro County, G. H. B., 1861; 1906).—On a point on the east coast of Hog Island. The station is marked by three copper nails in the form of a triangle in the top of a cedar post. No trace of the station could be found in 1906.

Orange Grove (Hillsboro County, G. H. B., 1861; 1906).—This station has been destroyed.

Elbow Key (Hillsboro County, G. H. B., 1861).—On the northeastern end of Elbow Key. The station is probably marked by a cedar post.

Long Reach (Hillsboro County, G. H. B., 1861; 1906).—This station has been destroyed.

Blind Key (Hillsboro County, G. H. B., 1861; 1906).—On the northeastern part of Blind Key. The station is marked by a copper nail in a pine stub surrounded by pieces of iron pipe. No trace of the station could be found in 1906.

Cormorant Rock (Levy County, G. H. B., 1857; 1910).—On a rock reef which is covered at high tide about 3 miles southeast of the mouth of Waccasassa River. The station is marked by a screw pile which was found bent toward the south in 1910. A reference mark, a standard cap station mark screwed to the top of a 3-inch iron pipe, is 4.402 meters S. 59° W. from the station.

Turtle Creek (Levy County, G. H. B. 1857; 1910).—About 3 miles south of Waccasassa River on the eastern bank of a bayou about 200 meters north of the junction of the bayou with Turtle Creek. The station is marked by a cross on the top of a 5 by 5 inch granite block which projects 4 inches above the ground, and underground by an iron cone.

Harbor Key 3 (Levy County, G. H. R., 1910).—On a narrow sand ridge on the northeast side of a small key called Grassy Key about 1 mile south of the town of Cedar Keys. Except for the sand ridge the key is low and grassy. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 15.65 meters from the station in azimuth 61° 17′.

South Point 3 (Levy County, G. H. R., 1910).—On a sand ridge 3 or 4 feet high and 10 meters wide which extends along the south and southwest end of the point at the southern extremity of Way Key about 1 mile southwest of the town of Cedar Keys. The station is at the north edge of the small brush that covers the point. From the station it is 25 paces south to high-water mark, 14 paces north to the edge of the hard marsh, 45 paces S. 70° W. to the point of the sand ridge where the beach turns to the northward and 154 paces N. 70° E. to the eastern end of the sand ridge. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 15.361 meters from the station in azimuth 169° 41′.

Key North (Levy County, G. H. R., 1910).—On a sand bank 4 feet above high water on the southern extremity of North Key 14 paces from high-water mark to the south and 20 paces from the edge of the marsh to the north. There are several palmettos and a few live oak trees on the point and a large pond about 70 meters back of the station. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 21.89 meters from the station in azimuth 155° 09′. Two palmetto trees, marked with triangular blazes with a nail at each vertex, are, respectively, 18.14 meters from the station in azimuth 280° 04′ and 12.01 meters in azimuth 135° 07′.

Sand (Levy County, H. L. M., 1901).—On the southern point of a broken shell reef on the northern edge of the channel at the entrance to the Withlacoochee River and about $1\frac{3}{4}$ miles west of Chambers Island. The station is marked by an iron pipe which projects about 2 feet above the shell.

Hunt (Levy County, H. L. M., 1901).—On the southwestern end of Chambers Island near a house occupied by Mr. Hunt. The station is marked by a 3-inch iron pipe which projects 10 inches above the ground. The southwest corner post of Hunt's house marked by 3 nails is 7.41 meters north of the station and the southeast corner post similarly marked is 14.9 meters northeast of the station. *South Base* (*U. S. E.*) (see p. 94) is 48.23 meters from the station in azimuth 14° 01′.

Half Moon (Citrus County, H. L. M., 1901).—On a small shell reef, one of a long chain of reefs known locally as Half Moon Bar. The station is covered at high tide. It is marked by a 3-inch iron pipe set in cement, the pipe projecting 18 inches above the reef.

Little Pass (Hillsboro County, G. H. R., 1910).—On the sand spit extending northwest and southeast which forms the southern end of the large island between Little Pass and Big Pass on the western side of Clearwater Harbor. High-water mark is at the following distances from the station: Southeastern extremity of spit, 90 paces; southwest shore, 60 paces; and northeast shore, 40 paces. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 31.765 meters from the station in azimuth 103° 51′.

See pp. 61-62.

Stevens (Hillsboro County, G. H. R., 1910).—On a prominent point just south of the mouth of Stevens Creek, 1¼ miles north of the town of Clearwater. The station is 8 meters from the edge of the bank and 11 meters from high water mark at a point 60 meters south of where the shore line turns sharply to the eastward. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 26.097 meters from the station in azimuth 262° 54′. Two large pine trees, marked with triangular blazes with nails driven in the vertices, are, respectively, 25.96 meters from the station in azimuth 289° 18′ and 20.36 meters in azimuth 30° 43′.

Big Pass (Hillsboro County, G. H. R., 1910).—On the southern extremity of Hog Island just north of the inner end of Big Pass and about 300 meters west of a small island. The station is at the eastern edge of an open sandy space at the edge of the thick hedge of mangroves which borders the shore and is 21 meters from high-water mark to the east and about 120 meters from high-water mark to the south. Several palmetto trees are about 200 meters west of the station. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 28.88 meters from the station in azimuth 99° 47′. A palmetto tree, marked with a triangular blaze with a nail at each vertex, is 56.84 meters from the station in azimuth 47° 12′.

Curlew (Hillsboro County, G. H. R., 1910).—On an island three-eighths of a mile northeast of the mouth of Curlew Creek and 2¼ miles north of the town of Dunedin. There are a few scattering pines on the island and the ground is about 3 feet above high-water mark. The station is 25 paces from the edge of the bank to the west, 34 paces from the edge of the bank to the southwest, and 135 paces from high-water mark at the southwestern extremity of the island. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 15.327 meters from the station in azimuth 256° 46′. Two pines marked with triangular blazes with a nail at each vertex, are, respectively, 38.16 meters from the station in azimuth 298° 48′ and 32.74 meters in azimuth 324° 41′.

Mud (Hillsboro County, G. H. R., 1910).—About 2 miles northwest of the town of Dunedin on a prominent point on the eastern shore of Hog Island about 2 miles from the southern extremity of the island. The point forms the northeast side of a small bay in which are several small islands and is covered with mangroves to within 12 meters of the station. At low tide a long mud flat extends out from the end of the point. The station is 12 meters from the southern extremity of the point and is marked according to note 12.[1] A reference mark, described in note 13,[1] is 6 meters back from the edge of the mangroves and 17.64 meters from the station in azimuth 107° 40′.

Seaside (Hillsboro County, G. H. R., 1910).—On the most western point of a peninsula three-fourths of a mile south of the town of Seaside and directly east of the northern end of Hog Island, 12 paces from the edge of the bank along the shore. The ground is about 3 feet above high water and there are a few scattering pine trees near the station. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 18.694 meters from the station in azimuth 274° 31′. Two pine trees, marked with triangular blazes with a nail at each vertex, are respectively 9.94 meters from the station in azimuth 244° 03′ and 19.80 meters in azimuth 293° 21′.

North Hog Island (Hillsboro County, G. H. R., 1910).—On the narrow peninsula covered with mangroves at the northeastern extremity of Hog Island, 8 meters from high-water mark to the east, 20 meters from high-water mark to the west, and 60 meters north of the southern end of the peninsula. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 9.142 meters from the station in azimuth 91° 17′.

Palmetto Key (Hillsboro County, G. H. R., 1910).—On the western side of Palmetto Key about one-half mile south of the entrance to Anclote River and almost directly east of the Anclote River lighthouse. High-water mark is at the following distances from the station: 30 paces south, 40 paces west, and 70 paces north. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 17.764 meters from the station in azimuth 295° 44′.

North Anclote 2 (Hillsboro County, G. H. R., 1910).—On the eastern end of the most northerly of the North Anclote group of islands. High-water mark is at the following distances

[1] See pp. 61-62.

from the station: 17 paces east, 9 paces south, and 14 paces north. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 20.092 meters from the station in azimuth 108° 35′.

Baileys Bluff (Hillsboro County, G. H. R., 1910).—Near the southwestern edge of a point known as Baileys Bluff about 2 miles north of the mouth of the Anclote River. The station is on a bank 8 feet above high water about 30 meters southeast of a barn and from 100 to 200 meters south of some houses. It is 10 paces from high-water mark to the west and 25 paces from high-water mark to the south, and is marked according to note 12.[1] A reference mark, described in note 13,[1] is 11.44 meters from the station in azimuth 247° 37′. A palmetto tree, marked with a triangular blaze with a nail at each vertex, is 19.44 meters from the station in azimuth 196° 50′.

SUPPLEMENTARY POINTS.

Depot Key azimuth station (Levy County, A. T. M., 1874).—This station is 13.53 meters north and 14.33 meters west of *Depot Key* (see p. 89). Marking not stated.

South base (*U. S. E.*) (Levy County, H. L. M., 1901).—This station is 48.23 meters from *Hunt* (see p. 92) in azimuth 14° 01′. Marking not stated.

Windmill (Levy County, H. L. M., 1901).—The top of the tripod of the iron windmill frame on Chambers Island on the north side of the bungalow belonging to Captain Inglis.

Inglis flagstaff (Levy County, H. L. M., 1901).—The high flagstaff on Chambers Island in front of the bungalow belonging to Capt. Inglis.

CEDAR KEYS TO ST. MARKS RIVER.

PRINCIPAL POINTS.

Number 6 (Levy County, F. W. P., 1877).—In about 1 foot of water at low tide near what is known as No. 4 channel. The station is marked by a copper tack in the top of a stake.

Reef (Levy County, F. W. P., 1876).—On the northeast edge of an oyster reef, just opposite the east mouth of the Suwanee River. The reef is generally partly dry or just awash at high tide, and about 100 meters north of the station there is a deep passage through the reef. The station is marked by a marble block 4 inches below the surface.

Cabbage (Levy County, F. W. P., 1876).—On Cabbage Island in the southern part of Suwanee Sound, on hard sand near the southern end of the island about 25 meters from the edge of the marsh to the south and about 15 meters from the edge of the marsh to the west. The station is marked by a marble block 1½ feet below the surface.

Mallard (Levy County, F. W. P., 1876).—On the western edge of a small marshy island near the western or principal mouth of the Suwanee River. The ground near the station is soft and overflows at high tide. The station is marked by a marble block 8 inches below the surface of the ground.

River (Levy County, F. W. P., 1876).—On the eastern extremity of a hard sandy point just south of the mouth of the East Pass to the Suwanee River. The station is marked by a marble block 8 inches below the surface of the ground.

Ready (La Fayette County, F. W. P., 1876).—At the southeast end of Horseshoe Cove near the mouth of California Creek, on a small marshy island which has a high sandy ridge a few feet wide along the northern side. The station is 30 meters from the grass line to the south and 10 meters from the grass line to the north. It is marked by a marble block 16 inches below the surface of the ground. The east point of the island is 63 meters east by south from the station, and a tree is 37.0 meters west by south.

Bird (La Fayette County, F. W. P., 1876).—On the highest point of Bird Island, a small island about three-fourths of a mile south of the mainland at Horseshoe Point. The southern part of the island is high, shelly ground of great fertility and was once a roosting place for birds. The station is marked by an earthen jar 30 inches below the ground. A peck of bituminous coal

[1] See pp. 61-62.

was mixed with the earth placed above the jar. The following reference marks are near the station: Cedar stump, 14.5 meters southwest; blazed live oak, 35.6 meters northwest; blazed cedar, 30.7 meters directly north; and a blazed palmetto, 9.6 meters northeast of the station.

Scaffold (La Fayette County, F. W. P., 1874; 1876).—Near the southwest end of a prominent rocky point about 1 mile southeast of the mouth of Little Boggy Creek. The soil around the station is sandy and is covered with stub grass. The station is marked by two earthen crocks, one 2 feet below the ground and the other one-half foot below the ground.

Horseshoe Point west base (La Fayette County, F. W. P., 1876).—On a piece of hard land surrounded by marsh about 2 miles north of Horseshoe Point. There is a small creek on the east side of the station and another on the west side. A small boat can ascend the western creek at high tide to within two or three hundred meters of the station. The station is marked by a cross in the top of a marble block which is 5 inches square and 16 inches below the surface of the ground. Three blazed pine trees are at the following distances from the station: 19.6 meters west; 18.5 meters west; and 9.8 meters northeast.

Horseshoe Point east base (La Fayette County, F. W. P., 1876).—On soft marsh 30 meters from the shore line, about 600 or 700 meters from the store at Horseshoe Point, and a short distance west of a small bayou. The station is marked by a marble block 18 inches below the ground above which is a small mound of earth. A drain was dug around the station and on both sides of the base line.

Bowlegs' Point (La Fayette County, F. W. P., 1874; 1876).—On the highest part of Pine Point, near the southwest extremity of the point. The soil around the station is firm, sandy soil and is covered with palmetto shrubs. The marking of the station is not stated. A spike driven in an oak tree is 14.5 meters from the station and a scantling driven in the ground with a row of tacks in the top is 3 feet from the station, both in azimuth 243°.

Fog Island azimuth station (La Fayette County, F. W. P., 1874).—Near the western end of Fog Island, a small island near the entrance to a small creek about 6 miles north of Pine Point. The station is marked by a cedar block 14 inches square and 6 feet long projecting 3 feet 3 inches above the ground. The lower end of the cedar block is in a hole in the solid rock 16 inches square and 14 inches deep, in the center of which a spike was driven for the underground mark.

Steinhatchee (Taylor County, F. W. P., 1874).—On a small piece of firm, grassy land surrounded by marsh on a point just north of the extreme outer entrance to the Steinhatchee River. The station is marked by a stone block which projects 3 inches above the ground. Three stubs surround the station each 2.5 feet distant. A large boiler from a wreck is about $1\frac{1}{4}$ miles from the station in azimuth 49° 33′, and a house at the edge of the woods is in azimuth 179° 18′.

Lamp (La Fayette County, F. W. P., 1874).—Near the north end of a small island which forms a prominent point of land between the Steinhatchee River and Fog Island. The point at the north end of the island is rocky and slopes gradually into the water. The station is marked by an earthen crock, the top of which is level with the surface of the ground.

Snipe (Taylor County, F. W. P., 1874).—Near the outer end of a very prominent point about midway between the Steinhatchee River and Point Edwards. The station is 26 meters from high-water mark to the westward, and is marked by a screw pile sunk in a rock, the top of the pile being level with the surface of the ground. Three stubs were driven near the station and a pile of rocks made over the station and surrounded by a ditch.

Point Edwards (Taylor County, F. W. P., 1874).—Near the southeast extremity of Point Edwards on dry sandy ground which is covered with scrubby brush and a few palmettos. The station is marked by a granite block surrounded by three stubs. Three cedar stumps each marked with a spike are at the following distances and magnetic bearings from the station: 14.6 meters N. 48° W., 19.6 meters N. 38° 30′ W., and 20.3 meters N. 35° 45′ E.

Piney Point (Taylor County, F. W. P., 1874).—Near the southwestern extremity of Piney Point 23.5 meters from the water line and 8 meters back of the edge of the grass. The soil about the station is firm and is covered with grass and a few scattered clumps of bushes. The station is marked by a screw pile $2\frac{1}{2}$ feet long, the top of which is 2 inches below the surface of the ground.

Four pine trees each marked with a triangular blaze with an iron spike at the center of the triangle are at the following distances from the station: 109.1 meters north, 105.5 meters northeast, 119.5 meters east, and 106.1 meters east.

Live Oak Point (Taylor County, F. W. P., 1874).—Near the western extremity of Live Oak Point on a sandy hummock on which there is a scanty growth of coarse grass and nine live oak and eight palmetto trees. The hummock is about 90 meters in diameter and the station is located near the shore line about halfway from the north edge to the south edge of the hummock. The station is marked by a granite block a few inches below the surface of the ground. Four trees, each marked with a triangular blaze with a spike at the center, are at the following distances from the station: Live oak, 18.3 meters southeast; live oak, 5.5 meters northeast; live oak, 25.6 meters northeast; and a palmetto, 9.1 meters north by west.

Clearwater Creek (Taylor County, F. W. P., 1873; 1874).—Near the southern end of a small grassy island at the mouth of Clearwater Creek. The station is marked by a short screw pile, the top of which is level with the general surface of the ground. A triangular pile of earth and rocks is above the station. The following measurements were taken from the station to the shore line: N. 83° W., 7 meters; S. 16° W., 23 meters; and S. 41° E., 16 meters.

Soft (Taylor County, F. W. P., 1873; 1874).—Near the southern end of a marshy point about 1¾ miles northwest of the mouth of Warrior River. The station is marked by a stone block, the top of which is level with the general surface of the ground. A triangular mound of earth surrounded by a trench of the same shape is over the station. The following measurements were made from the station to the shore line: S. 8° E., 16 meters, and west, 14 meters.

Solid (Taylor County, F. W. P., 1873).—On a marshy point about 1½ miles southeast of the mouth of Fenholloway River. The station is marked by a spike driven in the limestone bottom 3½ feet below the ground with an earthen jar inverted over the spike. A triangular mound of earth surrounded by a trench of the same shape is over the station. The following measurements were made from the station to the shore line: N. 63° W., 19 meters; S. 9° W., 27 meters; and N. 67° E., 15 meters.

Hard (Taylor County, F. W. P., 1873).—On a point of the mainland nearly north of Rock Island. The end of the point is divided into two parts by a small bight and the station is on the western one of these parts. The station is marked by a spike driven in the solid limestone bottom 1 foot below the surface of the ground, with a stone pot inverted over the spike. A triangular mound of earth surrounded by a trench of the same shape is over the station. A spike in the rock is 13.34 meters S. 53° 00′ W. from the station and the shore line at the end of the point is 20 meters south of the station.

Rock Island (Taylor County, F. W. P., 1873; 1874).—On the southwest side of Rock Island. The station is marked by a spike driven in the solid limestone bottom surrounded by a triangle cut in the rock with a stone pot inverted over the spike. A circular mound of earth surrounded by a circular trench 8 feet in diameter is over the station. Three spikes in the rock near the water's edge are at the following distances and magnetic bearings from the station: 24.11 meters, N. 61° 10′ W.; 26.70 meters, S. 84° 20′ W.; and 35.36 meters, S. 41° 50′ W.

False (Taylor County, F. W. P., 1873).—On a small marshy point between two small creeks about 3 miles southeast of the mouth of the Econfenee River. The station is marked by a short screw pile, the top of which is level with the surface of the ground. A triangular mound of earth surrounded by a trench of the same shape is over the station. The nearest point of the shore line is 13 meters southwest of the station.

Econfenee (Taylor County, F. W. P., 1873).—On the end of the prominent marshy point just west of the mouth of the Econfenee River. The station is marked by an iron screw pile, the top of which is 4 inches below the ground. A circular mound of earth surrounded by a circular trench 8 feet in diameter is over the station. The shore line at the end of the point south by east from the station is 6.5 meters distant and the shore line to the northeast of the station is 9.5 meters distant.

Topog (Taylor County, F. W. P., 1873).—On the western end of a small marshy island about 1¾ miles southeast of the mouth of the Aucilla River. The station is marked by a short

iron screw pile, the top of which is level with the surface of the ground. A circular earthen mound surrounded by a circular trench 8 feet in diameter is over the station. The following measurements were made from the station to the shore line: south by east, 12 meters; southwest, 18 meters; and northwest, 14 meters.

Ocilla River (Taylor County, S. C. M., 1859; 1873).—Near the southwest end of the point of marsh just south of the mouth of the Aucilla River. The station is marked by a granite block. In 1873 a circular mound of earth surrounded by a circular trench 8 feet in diameter was placed over the station. It is 31 meters to the shore line at the end of the point south by west from the station, and 15 meters to the shore line west of the station.

Oyster Bar (Jefferson County, F. W. P., 1873; 1910).—On the southeast end of an oyster bar about 1½ miles southwest of the mouth of the Aucilla River. The station is marked by a granite block, the top of which is level with the surface of the bar. A mound of shells was placed over the station when established and the instrument stubs left in place. The station was searched for without success in 1910.

Marsh (Jefferson County, F. W. P., 1873; 1910).—This station is marked by a granite block. It was searched for without success in 1910. The shore line in this vicinity has changed and the station, if not lost, can be located only by triangulation.

Coral (Jefferson County, F. W. P., 1873; 1910).—On one of the central rocks of the group known as Cobb Rocks, in Apalachee Bay, about 3 miles west of the mouth of the Aucilla River. The station is marked by a standard disk station mark, set in concrete in a hole in the rock and surrounded by a circle of rocks 6 feet in diameter. The station is covered by water except at low tide.

Torrey (Jefferson County, S. C. M., 1859; 1910).—About 5 miles west of the mouth of the Aucilla River and 200 meters from the shore of Apalachee Bay, on the south side of a small palmetto hummock and near a small winding bayou on which is a fisherman's landing. The station is marked by a standard disk station mark in the top of a block of concrete which projects 6 inches above the ground. The underground mark is a standard disk station mark set in cement in a hole in the solid rock 2 feet below the surface. A reference mark, a block of concrete built in the shell of a root of a palmette tree with a bottle at the center and an inscribed arrow pointing to the station, is 5.37 meters distant in a direction 62° 50′ to the right of St. Marks Lighthouse.

Grey Mares (Wakulla County, S. C. M., 1859; 1910).—On the largest of the Grey Mares Rocks in Apalachee Bay, about 5 miles east of St. Marks Lighthouse. The station is about 5 feet from the south edge of the rock, 6 feet 5 inches from the west edge, and 3 feet from the north edge, and is marked by a drill hole in the solid rock 1 foot 6 inches deep and 6 inches in diameter, surrounded by four iron spikes in the form of a square.

Palmetto Island (Wakulla County, S. C. M., 1859; 1910).—Lost.

Denham (Wakulla County, S. C. M., 1859).—About 2 miles inland on the marsh near the northeast side of a deep cove in the woods and about 1 mile east of Stony Bayou. The station is marked by a nail in the top of a live-oak stake. Four stakes are each 3 feet 7 inches from the station, and a mound of earth is over the station. A lone palmetto tree is 24.4 meters N. 10° E. and a corner stake marked 28 is 100 meters S. 10° W. from the station.

New East River (Wakulla County, S. C. M., 1859; 1910).—This station is marked by a stone block. It was searched for without success in 1910, and if it still exists it can be located only by triangulation.

St. Marks L. H. (Wakulla County, S. C. M., 1859; 1910).—The lighthouse at the entrance to St. Marks River, rebuilt in 1867, apparently on the same site.

Port Leon (Wakulla County, S. C. M., 1855; 1910).—On firm ground among scattering pine trees one-fourth of a mile from the St. Marks River at a point three-eighths of a mile below where the old railway grade touches the river. The station is marked by a standard disk station mark in a block of concrete built around and above the top of a stone block which is about 4½ inches square. Two other stone blocks, each with a drill hole in the top and sur-

rounded by a square block of concrete, are in line with the station and 2 feet distant, one to the northwest and the other to the southeast. An old stone foundation is across a pond from the station in azimuth 352° 17′ and a palmetto near a stone pile east of the stone foundation is in azimuth 330° 43′.

West Bayou Point (Wakulla County, S. C. M., 1855; 1907).—Lost.

Walker (Wakulla County, S. C. M., 1855; 1910).—This station is marked by stone blocks. It was searched for without success in 1910 and if it still exists it can be located only by triangulation.

St. Marks south base (Wakulla County, S. C. M., 1855; 1910).—About 1 mile north of Old Port Leon, in the center of the grade of the St. Marks & Port Leon R. R. The station is marked by a standard disk station mark in a block of concrete 1 foot square 6 inches below the surface, and underground by a bottle 2½ feet below the surface. A reference mark, a bottle in a round block of concrete which projects 6 inches above the ground, is on the east side of the railroad grade 6.62 meters from the station in azimuth 348° 51′. Station *Aux* (see p. 99) is 49.06 meters distant in azimuth 161° 00′.

Fort St. Marks (Wakulla County, S. C. M., 1855; 1910).—At a distance of 8.30 meters from *Fort St. Marks astronomic station* (see p. 99) in azimuth 98° 50′. The station is marked by a square block of coral with two similar but smaller blocks 0.60 meters west and 0.53 meter south, respectively.

St. Marks north base (Wakulla County, S. C. M., 1855; 1910).—In the center of the grade of the St. Marks & Port Leon R. R. 105 meters south of the south bank of the St. Marks River. The station is marked by a standard disk station mark in a block of concrete 1 foot square 6 inches below the surface, and underground by a bottle 22 inches below the surface. Two rough granite blocks are in line with the station, one to the north 6 inches below the surface and 0.70 meters distant and the other to the south 2 inches below the surface and 0.67 meters distant. A reference mark, a bottle in a round block of concrete which projects 6 inches above the ground and is inscribed "Ref. 1910 for N. B. 1855," is on the east side of the grade, about 20 paces from the bank of the St. Marks River and 97.93 meters from the station in azimuth 159° 36′. *St. Marks magnetic azimuth station* (see p. 99) is 140.28 meters from the station in azimuth 340° 15′.

Trot (La Fayette County, F. W. P., 1874; 1876).—Near the eastern end of the eastern one of the Pepperfish Keys, a small island 95 meters long by 10 meters wide. The soil around the station is firm and is covered with short grass and small shrubs. The station is marked by a spike in the top of a piece of scantling driven in the center of an earthen crock. The top edge of the crock is level with the surface of the ground.

Gibbs (Wakulla County, W. H. B., 1907).—About 1 mile west of St. Marks River and about 250 meters north of Gibbs Point, near the east side of a small hummock 15 meters in diameter, the most southeastern one of several hummocks about 100 meters east of the hard land. The station is best approached by going up Little West Bayou about as far as possible in a small boat and from there the station is across the marsh to the westward. It is marked by a piece of 4-inch tile projecting 3 inches above the surface and underground by a black bottle 2 feet below the surface.

Four Mile (Wakulla County, W. H. B., 1907).—About 1 mile east of Four Mile Point and 200 meters south of a large "cabbage" hummock, in small bushes near the center of a small hummock about 10 meters in diameter, the eastern one of the two most southern hummocks in the group. The station is marked by two pieces of 4-inch tile, one piece projecting 3 inches above the surface and the other piece 18 inches below the surface.

Leon (Wakulla County, W. H. B., 1907; 1910)—On an embankment parallel to the shore line at Old Port Leon, 50.2 meters south of the intersection of the center line of this embankment with the center line of the railway embankment. The station is marked by a standard disk station mark in a block of concrete built around and above a piece of 4-inch tile. The underground mark is a piece of 4-inch tile 25 inches below the surface.

Pan (Wakulla County, W. H. B., 1907; 1910).—On the west bank of the St. Marks River, on the east end of the second point of trees south of the confluence of the St. Marks and the

Wakulla Rivers, the first prominent point of trees north of Gibbs Point. Fort St. Marks is just visible past the point of trees east of the confluence of the rivers. An old roadway leads to the southeast across the marsh to the river and the station is just southwest of where this road enters the marsh and about 150 meters southwest of the most easterly palmetto hummock in the vicinity. The station is marked by a standard disk station mark in a concrete block built around and above a piece of 4-inch tile and underground by a piece of 4-inch tile 20 inches below the surface. A reference mark, a bottle in a round block of concrete which projects 6 inches above the surface, is 8.71 meters from the station in azimuth 70° 38′. Three trees, each marked with a triangular blaze with a spike at the center of the blaze, are at the following distances and azimuths from the station: Palmetto, 11.95 meters, 14° 15′; oak, 25.16 meters, 27° 51′; oak, 5.39 meters, 136° 37′.

Fort St. Marks astronomic station (Wakulla County, W. H. B., 1907; 1910).—Just south of old Fort St. Marks and just east of the highest part of the open grassy plot on the point at the confluence of the St. Marks and Wakulla Rivers, 5 paces from high-water mark to the southeast, 11 paces from high-water mark to the west, and 11 paces south of where the road grade from the fort enters the grassy plot. The station is marked by a standard disk station mark in a block of concrete which is built around and above a piece of 4-inch tile. The underground mark is a piece of 4-inch tile 2 feet below the surface. Four cedar trees, each marked with from one to four nails, are at the following distances from the station: 10.58 meters east, 13.33 meters southwest, 11.36 meters northwest, and 20.86 meters north.

Stack (Wakulla County, W. H. B., 1907; 1910).—The center of the tall iron smokestack of the ruined mill of the Coast Cypress Lumber Co. in the village of St. Marks.

Long (Wakulla County, W. H. B., 1907; 1910).—In the village of St. Marks, on property belonging to Mellen Bros., 23.68 meters southeast of the southeast corner post of the lot of William H. Harrall and 84.66 meters from the east rail of the railway, measured along the line passing just to the north of Jackson's shanty. The station is marked by a 4-inch tile with top 2 inches below the surface. *St. Marks longitude station* is 0.87 meter south and 0.04 meter west of the station.

SUPPLEMENTARY POINTS.

Tank (Wakulla County, W. H. B., 1907; 1910).—Lost.

Aux (Wakulla County, W. H. B., 1907; 1910).—In the center of the roadbed of the St. Marks & Port Leon Railroad, 49.06 meters from *St. Marks south base* (see p. 98) in azimuth 161° 00′. The station is marked by a standard disk station mark set in a block of concrete which is built around and above the top of a 4-inch tile and which projects 6 inches above the ground.

St. Marks magnetic azimuth station (Wakulla County, W. H. B., 1907; 1910).—In the center of the roadbed of the St. Marks & Port Leon Railroad and 140.28 meters from *St. Marks north base* (see p. 98) in azimuth from the latter 340° 15′. The station is marked by a standard disk station mark in a block of concrete built around and above a piece of a 4-inch tile and underground by a piece of 4-inch tile 2 feet below the surface.

ST. MARKS RIVER TO ST. ANDREWS SOUND.

PRINCIPAL POINTS.

Shell Point (Wakulla County, S. C. M., 1859; 1910).—This station is marked by a stone block. Four oak stakes are north, south, east, and west from the station, each distant 3 feet. The station was searched for without success in 1910, and if it still exists it can be located only by triangulation.

Bald Point (Franklin County, S. C. M., 1859; 1910).—Lost.

Porters Island (Wakulla County, S. C. M., 1859; 1910).—Lost.

Piccoline Bayou (Wakulla County, S. C. M., 1859; 1910).—This station has been destroyed.

Chaires (Franklin County, S. C. M., 1859; 1910).—On the middle point of the south side of Ocklockonee Bay, about 12 meters from ordinary high-water and 6 meters from storm-water mark and about 12 meters in front of the scrub palmetto and oak which cover the point. The station is marked by a standard disk station mark in a round block of concrete built above the top of a granite post 4 inches square and 2 feet long. One reference mark, described in note 7,[1] is at the edge of the scrub 10.18 meters from the station in azimuth 00° 09′. Another reference mark, a bottle in the cone-shaped top of a round block of concrete, is 9.88 meters from the station in azimuth 86° 51′. A small oak and three small pine trees are in azimuths 108° 14′, 114° 29′, 273° 49′, and 335° 42′, respectively, from the station.

Lansing (Franklin County, S. C. M., 1859; 1873).—Lost.

Sopchoppy (Wakulla County, S. C. M., 1859; 1873).—Lost.

Lansing 2 (Franklin County, F. W. P., 1873; 1910).—Lost.

Sopchoppy 2 (Wakulla County, F. W. P., 1873; 1910).—Near the head of Ocklockonee Bay, on a rounded point on the north shore about one-half mile west of the mouth of a small creek, and about 25 meters back from high water. The station is marked according to note 4,[1] except that the underground mark is a stone pot 14 inches below the surface. The station is surrounded by a circle of small clamshells from a shell mound a few meters to the north. A reference mark, a round block of concrete with a sharp-pointed stone in the center, is on the shell mound 12.12 meters from the station in azimuth 201° 22′. Another reference mark, described in note 7,[1] is 9.69 meters from the station in azimuth 289° 41′. Two pine trees, each marked with a triangular blaze, are, respectively, 17.83 meters from the station in azimuth 20° 30′ and 17.28 meters in azimuth 68° 12′.

Robinson (Franklin County, S. C. M., 1859).—On a shell bank west of an oak thicket on St. James Island about 1 mile south of the mouth of the Ocklockonee River. The station is marked by four oak stakes each 3 feet from the station and by the three instrument pegs. Three blazed pine trees are at the following distances from the station: 20.0 meters west, 3.2 meters north by west, and 19.6 meters northeast.

Houston (Franklin County, S. C. M., 1859).—On St. James Island about one-third of a mile inland and 1½ miles southeast of the mouth of the Ocklockonee River. The station is about 32 meters southeast of the southeast edge of a pond. It is marked by four oak stakes each 3 feet from the station, north, south, east, and west, and by the three instrument pegs. Three blazed pine trees are at the following distances from the station: 6.7 meters west, 18.6 meters north by east, and 8.2 meters south. The center of a pine stump is 15.5 meters northwest of the station.

Ellis (Franklin County, S. C. M., 1859).—On the western end of a small hill on St. James Island, about 2 miles south of the mouth of the Ocklockonee River and 60 meters south of the south edge of a pond. There is another small hill a short distance west of the station and a wagon road just beyond this hill. The station is marked by four oak stakes each 3 feet from the center north, south, east, and west, and by the three instrument pegs. Three blazed pine trees are at the following distances from the station: 21.6 meters N. 45° W., 17.1 meters S. 45° W., and 9.4 meters N. 45° E. A pine stump is 10.1 meters from the station in azimuth 304°.

Forbes (Franklin County, S. C. M., 1859).—On St. James Island, on the western end of a small hill about 25 meters north of the road to Baileys. The station is marked by four oak posts each 3 feet from the center north, south, east, and west and by the three instrument pegs. Three blazed pine trees are at the following distances from the station: 5.5 meters S. 10° E., 7.2 meters S. 80° W., and 25.1 meters N. 60° E.

Bailey (Franklin County, S. C. M., 1858; 1873).—This station is marked by a stone block 2½ feet below the ground. It was searched for without success in 1873, and if it still exists it can be located only by triangulation.

Franklin (Franklin County, S. C. M., 1858; 1910).—On the north shore of Alligator Harbor, opposite Peninsula Point, about 95 meters east of the mouth of a small creek and about 3 meters

[1] See pp. 61–62.

back from the edge of the grass and roots at high-water mark. The station is marked by a standard disk station mark in a square block of concrete built around and above the top of a granite post 4 inches square and 2 feet long, the concrete projecting 8 inches above the ground. One reference mark described in note 6,[1] is 10.07 meters north 12° west from the station, and another, described in note 7,[1] is 11.68 meters north 11° 08′ east. Two pine trees, each marked with a triangular blaze and three nails, are, respectively, 11.80 meters N. 40° 40′ E. from the station and 19.20 meters N. 76° 07′ E. Four other pine trees are near the station, the nearest one being about 1 meter distant.

Peninsula Point (Franklin County, S. C. M., 1858; 1873).—Lost.

Turkey Point (Franklin County, S. C. M., 1858; 1873).—This station has been destroyed.

Southwest Cape (Franklin County, S. C. M., 1858; 1859).—Lost.

Dog Island east (Franklin County, S. C. M., 1857; 1909).—Lost.

St. James Island (Franklin County, S. C. M., 1858; 1909).—This station is marked by a stone block surrounded by four oak posts each 4 feet distant. It was searched for without success in 1909, and if it still exists it can be located only by triangulation.

Palmetto Point (Franklin County, S. C. M., 1858; 1909).—Lost.

Dog Island A. M. (Franklin County, S. C. M., 1858; 1909).—Lost.

Crooked River (Franklin County, S. C. M., 1856; 1909).—Lost.

Royal Bluff (Franklin County, S. C. M., 1856; 1909).—This station has been destroyed.

St. George Island east base (Franklin County, S. C. M., 1856; 1909).—Lost.

St. George Island west base (Franklin County, S. C. M., 1856; 1909).—Lost.

Marsh Point (Franklin County, S. C. M., 1856; 1909).—Lost.

Gap Island (Franklin County, S. C. M., 1856; 1909).—Lost.

Cat Point (Franklin County, S. C. M., 1856; 1909).—Lost.

Bulkhead Point (Franklin County, S. C. M., 1856; 1909).—Lost.

Cedar Point (Franklin County, S. C. M., 1856; 1909).—Near Farleys landing on Cedar Point on the north shore of St. George Island, on hard land nearly surrounded by marsh, about 2 meters from high-water mark and about 40 meters west of a clump of scrub palmettos and oaks. The station is marked by a bottle neck embedded in the top of a mass of concrete which is built around and above the top of a granite post. The underground mark is a 4-inch tile set in concrete 2 feet below the surface. A reference mark, a diagonal cross in the top of a square concrete post at the surface and a bottle set in concrete 2 feet below the surface, is 15.76 meters from the station in azimuth 271° 36′. Another reference mark, a 4-inch tile set in concrete with the top projecting 6 inches above the surface and a bottle 2 feet below the surface, is 33.81 meters from the station in azimuth 271° 25′.

Apalachicola (Franklin County, S. C. M., 1856; 1909).—Lost.

Green Point 2 (Franklin County, S. C. M., 1856; 1895).—Near the outer end of Green Point, a prominent marshy point about 3 miles west of Apalachicola. The station is 4 meters from high-water mark and near a small grove of palmetto bushes. It is marked by a stone block surrounded by four stakes. No trace of the station could be found in 1895, and it has probably been destroyed by the receding of the shore line.

Shell Bank (Franklin County, S. C. M., 1856; 1895).—On the north shore of St. Vincent Sound, about 3 miles northeast of Indian Pass. The stone which originally marked the station was found in the water about 20 meters out from high-water mark in 1895. The stone was placed in an upright position and a stick of timber driven down beside it. The recovery of this station is very doubtful, and it should be used with great caution.

Dead Oak Point (Calhoun County, S. C. M., 1860).—On a sand hillock surrounded by dead oak trees on the mainland shore about halfway between Indian Pass and St. Josephs Bay. The station is marked by a stone monument surrounded by four stakes in the form of a square.

Blacks Island (Calhoun County, S. C. M., 1860; 1910).—Lost.

St. Joseph (Calhoun County, S. C. M., 1868; 1910).—Lost.

Powell (Calhoun County, S. C. M., 1868; 1910).—Lost.

[1] See pp. 61-62.

San Carlos (Calhoun County, S. C. M., 1868; 1910).—Lost.

Consort (Calhoun County, S. C. M., 1860; 1910).—On the bluff on the north or mainland shore at the entrance to St. Josephs Bay and just east of the lighthouse reservation. The station is about 9 meters from the edge of the bluff, and the foot of the bluff is about 60 meters from high-water mark. A fine spring is at the foot of the bluff a little west of the station. The station is marked by a standard disk station mark in the top of a round concrete block and underground by a hole in the top of a granite post 5 inches square and 2 feet long. A reference mark, a 6-foot galvanized iron pipe projecting 18 inches above the surface and set in a square block of concrete, is 10.58 meters from the station in azimuth 229° 32′. Another reference mark, similar to the first, except that the concrete is finished round, is 21.07 meters from the station in the same azimuth.

St. Andrews Point (Calhoun County, S. C. M., 1869; 1910).—Lost.

Pine Point (Calhoun County, S. C. M., 1869; 1910).—Lost.

Franklin Point 2 (Calhoun County, S. C. M., 1869; 1910).—Lost.

Nigel (Calhoun County, S. C. M., 1869; 1902).—Lost.

Spring Hill 2 (Calhoun County, S. C. M., 1869; 1910).—Lost.

Hurricane Point (Washington County, S. C. M., 1869; 1910).—Lost.

Cypress Point (Calhoun County, S. C. M., 1869; 1910).—Lost.

Laurel (Franklin County, E. S., 1909).—On a bluff on the shore of Apalachicola Bay near the southeast line of Laurel Street, Apalachicola. The station is marked by the neck of a bottle embedded in the top of a concrete post, which is 18 inches square below the surface and 10 inches square and 4 inches high above the surface, and is inscribed with a diagonal cross and a triangle. The underground mark is a 4-inch tile set in concrete 2 feet below the surface. A reference mark, the neck of a bottle, and a cross in the top of a square concrete block at the surface and a piece of 4-inch tile set in concrete 15 inches below the surface, is near the front fence in the lot of J. E. Grady, 1.5 meters southwest of the line fence of Laurel Street and 39.85 meters from the station in azimuth 90° 26′. Another reference mark, described in note 7,[1] is near the front fence in the lot of J. G. Ruge, 1.9 meters northeast of the line fence of Laurel Street and 30.06 meters from the station in azimuth 134° 37′.

West Pass 2 (Franklin County, E. S., 1909).—On the southern part of the northwest end of Sand Island. The station is marked by a 4-inch tile embedded in a block of concrete 10 inches square, which projects 8 inches above the ground. The underground mark is a bottle embedded in a block of concrete 2 feet below the surface. A reference mark, a 1-inch galvanized iron pipe 6 feet long, projecting 1 foot above the ground and surrounded by a block of concrete 10 inches square, is in line to a pine tree 79 paces beyond, and is 33.13 meters from the station in azimuth 321° 45′. Another reference mark, similar to the first, except that the iron pipe is 1½ inches in diameter, is in line to a pine tree 180 paces beyond and is 39.51 meters from the station in azimuth 252° 46′.

West Pass (Franklin County, S. C. M., 1860; 1909).—On the southern part of the northwest end of Sand Island. The station is marked by a cross in the top of a granite post just below the surface of the ground. *West Pass 2* (see above) is 44.5 meters from the station in azimuth 230° 27′.

St. Vincent Point 2 (Franklin County, E. S., 1910).—On St. Vincent Point, at the northeast corner of St. Vincent Island, near the southern part of an area of firm ground between the sand spit at the eastern end of the point and the marsh to the westward. The station is marked by a standard disk station mark set in concrete at the surface and a similar mark set in concrete 3 feet below the surface. A reference mark, described in note 6,[1] is in line to the only oak tree on the point 13.08 meters from the station in azimuth 198° 24′. The oak and three palmettos, each marked with a triangular blaze, are at the following distances and azimuths from the station: 21.50 meters, 197° 08′; 12.60 meters, 7° 26′; 6.40 meters, 63° 32′; and 15.10 meters, 108° 15′.

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[1] See pp. 61-62.

New Inlet 2 (Franklin County, E. S., 1910).—Near the middle of a crescent-shaped sand hill on the ocean side of St. Georges Island, just west of an inlet known as New Inlet, which has been closed for many years. The station is marked by a standard disk station mark set in concrete at the surface and a similar mark set in concrete 3 feet below the surface. A reference mark, described in note 7,[1] is in line to a crooked palmetto tree 42.58 meters from the station in azimuth 96° 47′. Another reference mark, described in note 6,[1] is 33.46 meters from the station in azimuth 171° 31′. Two palmetto trees, each marked with a triangular blaze, are, respectively, 46.20 meters from the station in azimuth 97° 04′ and 72.80 meters in azimuth 172° 01′.

Cat Point 2 (Franklin County, E. S., 1909).—On Cat Point, at the northwest end of Apalachicola Bay, from 50 to 75 meters west of a wharf on the south side of the point and about the same distance from a shell heap north of the wharf. The station is marked by the intersection of the median lines of an inscribed triangle in the top of a concrete post, the top of which is finished in the form of a triangular column 13 inches on a side. The underground mark is a tile set in concrete 2 feet below the surface. A reference mark, a 4-inch tile set in concrete at the surface, and a bottle set in concrete 2 feet below the surface is among some small oaks 15.80 meters from the station in azimuth 165° 38′. Another reference mark, a diagonal cross in the top of a square concrete post at the surface, and a bottle set in concrete 2 feet below the surface is 15.80 meters from the station in azimuth 211° 33′.

Bulkhead 2 (Franklin County, E. S., 1909).—On Bulkhead Point, on the north shore of St. Georges Sound, on a small sand hill 10 feet high, 15 meters from high-water mark. The station is marked by a cross in the top of a concrete post 10 inches square and underground by a 4-inch tile set in concrete 2 feet below the surface. A reference mark, a diagonal cross in the top of a square concrete post at the surface, and a bottle set in concrete 2 feet below the surface is near two small oak trees 68.55 meters from the station in azimuth 292° 53′. Another reference mark, a tile set in concrete with the top 3 inches above the surface and a bottle 2 feet below the surface, is on a small island 159.98 meters from the station in azimuth 224° 22′.

Yent (Franklin County, E. S., 1909).—On Green Point, on the north shore of St. Georges Sound, on a narrow strip of sand separated by a marsh from the pine woods to the north. The station is marked by a 4-inch tile set in concrete. Three pine trees, each marked with a triangular blaze, are at the edge of the woods in azimuths from the station as follows: 109° 56′, 167° 44′, and 199° 48′.

Gap Island 2 (Franklin County, E. S., 1909).—On a sand ridge at the northern extremity of Gap Island, just north of a marsh pond, which separates the ridge from the hard marsh to the south. The station is marked by a cross in the top of a concrete post 10 inches square and underground by a piece of 4-inch tile 2 feet below the surface. A reference mark, a 4-inch tile set in concrete, with the top 5 inches above the surface, and a bottle set in concrete 2 feet below the surface, is 20.58 meters from the station in azimuth 264° 34′. Another reference mark, a diagonal cross in the top of a square concrete post at the surface and a brick set in concrete 2 feet below the surface, is 21.10 meters from the station in azimuth 325° 09′. A pine tree marked with a triangular blaze is in azimuth 312° 08′ from the station and another pine tree marked with three horizontal gashes is in azimuth 314° 24′.

Marsh Point 2 (Franklin County, E. S., 1909).—On Marsh Point, on the north shore of St. Georges Sound. The station is marked by a cross in the top of a concrete post 10 inches square and underground by a 4-inch tile set in concrete 2 feet below the surface. A reference mark, a 4-inch tile set in concrete, with its top projecting 3 inches above the surface, and a bottle set in concrete 2 feet below the surface, is 21.66 meters from the station in azimuth 118° 06′. Another reference mark, a diagonal cross in the top of a concrete post at the surface and a bottle set in concrete 2 feet below the surface, is 56.56 meters from the station in azimuth 152° 12′. Three pine trees, each marked with a triangular blaze, are at the edge of the woods at the following distances and azimuths from the station: 19.70 meters, 91° 00′; 9.15 meters, 166° 23′; and 20.70 meters, 201° 15′.

[1] See pp. 61–62.

Spartan (Franklin County, E. S., 1909).—On low ground just back of a narrow strip of marsh on a rounded point on the north shore of St. George Island, about 2½ miles east of Gap Island. The station is marked by a 4-inch tile set in concrete with the top projecting 5 inches and underground by a similar tile set in concrete 2 feet below the surface. Two reference marks, each described in note 7,[1] are, respectively, 38.32 meters from the station in azimuth 295° 04′ and 28.83 meters in azimuth 328° 00′.

Royal Bluff 2 (Franklin County, E. S., 1909).—On Royal Bluff, on the north shore of St. George Sound. The station is marked by a 4-inch tile set in concrete with the top projecting 3 inches and underground by a piece of 4-inch tile set in concrete 2 feet below the surface. A reference mark, a cross in the top of a concrete post at the surface of the ground and a bottle embedded in concrete 2 feet below the surface, is 10.69 meters from the station in azimuth 96° 56′. Another reference mark, similar to the first, is 9.96 meters from the station in azimuth 164° 37′.

St. George Island east (Franklin County, E. S., 1909).—On a sand hill near the eastern end of St. George Island. The station is marked by a galvanized iron pipe 1½ inches in diameter and 8 feet long at the center of a 4-inch tile embedded in a mass of concrete 5 feet deep, the pipe and the tile projecting 1 foot above the ground. A reference mark, described in note 7,[1] is on a sand hill 20.70 meters from the station in azimuth 261° 30′. Another reference mark, a 4-inch tile set in concrete projecting 6 inches above the surface and a bottle set in concrete 2 feet below the surface, is 37.79 meters from the station in azimuth 17° 41′.

Crooked River 2 (Franklin County, E. S., 1909).—On a sand hill on the point about three-fourths mile west of the mouth of the Crooked River. The station is marked by a 4-inch tile set in concrete, the top of the tile projecting 4 inches above the concrete. The underground mark is a bottle embedded in the top of a concrete post 2 feet long 2 feet below the surface. A reference mark, a diagonal cross in the top of a concrete post at the surface and a bottle embedded in concrete 18 inches below the surface, is on a sand bluff 94.25 meters from the station in azimuth 89° 36′. A pine tree marked with a triangular blaze is at the foot of the hill, 15.90 meters from the station in azimuth 125°.

Dog Island west (Franklin County, E. S., 1909).—On the north side of the point at the west end of Dog Island, about midway between the end of the point and a clump of pine trees consisting of three large trees and one small one. The station is marked by a galvanized iron pipe 1½ inches in diameter and 8 feet long at the center of a 4-inch tile embedded in concrete, the top of the iron pipe projecting 1 foot above the top of the tile and 2 feet above the ground. A reference mark, a 4-inch tile set in concrete with its top projecting 6 inches above the surface and a bottle set in concrete 2 feet below the surface, is in line to the most northerly of the pine trees, 16.19 meters from the station in azimuth 316° 09′. Another reference mark, described in note 7,[1] is 31.36 meters from the station in azimuth 46° 09′. The southwestern one of the four pine trees mentioned above is in azimuth 341° 35′ and the next pine to the northeast is in azimuth 333° 51′.

Dog Island east 2 (Franklin County, E. S., 1909).—On a sand hill near the northeast point of Dog Island and just north of a lone pine tree. The station is marked by a galvanized iron pipe 1½ inches in diameter and 8 feet long at the center of a 4-inch tile embedded in concrete, the iron pipe projecting about 10 inches above the top of the tile. A reference mark, a 4-inch tile set in concrete at the surface and a bottle embedded in concrete 2 feet below the surface, is on the same sand hill 28.10 meters from the station in azimuth 70° 18′. Another reference mark, described in note 7,[1] is on a sand hill 62.21 meters from the station in azimuth 205° 36′. Two pine trees, each marked with a triangular blaze, are, respectively, 19.5 meters from the station in azimuth 258° 48′ and 44.10 meters in azimuth 320° 17′.

Palmetto 2 (Franklin County, E. S., 1909).—On St. James Island, on the second point east of the mouth of the Crooked River. The point is sandy, and there are a few scattered pine trees near the station and a cleared field just to the northwest. The station is marked by a 4-inch tile set in concrete and projecting 3 inches above the surface and underground by a

[1] See pp. 61–62.

bottle set in concrete 2 feet below the surface. A reference mark, a diagonal cross in the top of a concrete post set flush with the surface and a bottle set in concrete 2 feet below the surface, is 16.86 meters from the station in azimuth 192° 37′. Four pine trees, each marked with a triangular blaze, are at the following distances and azimuths from the station: 9.07 meters, 119°; 29.95 meters, 151°; 44.60 meters, 178°; and 16.08 meters, 224°.

St. James Island 2 (Franklin County, E. S., 1909).—On low ground covered with grass and scrubs about 1 mile east of Lanark. The station is marked by a 4-inch tile set in concrete with its top projecting a few inches above the ground. A reference mark, a concrete post 10 inches square inscribed with a diagonal cross and an arrow pointing to the station, is 10.12 meters distant in azimuth 120° 11′. Another reference mark, similar to the first except that there is a bottle embedded in the top of the concrete, is 10.31 meters from the station in azimuth 215° 35′.

Lands end (Washington County, E. S., 1910).—On the south shore of the lower part of St. Andrews Bay, on a sand hill near the extremity of the sand spit known as Lands End. The station is marked according to note 4.[1]

Weiley (Calhoun County, E. S., 1910).—This station is identical with the United States Engineers station *D* of 1908. It is on the north shore of the lower part of St. Andrews Bay, about 48 meters from high-water mark and just back of a palmetto tree to which the signal was fastened. The station is marked according to note 3.[1] A reference mark, described in note 6,[1] is 11.28 meters from the station in azimuth 163° 41′, and another, described in note 5,[1] is 13.98 meters distant in azimuth 237° 51′. Three trees marked with triangular blazes, are at the following distances and azimuths from the station: Palmetto, 16.16 meters, 176° 46′; Palmetto, 2.74 meters, 201°; and pine, 15.70 meters, 206° 56′.

Hurricane West (Calhoun County, E. S., 1910).—This station is identical with the United States Engineers station *F* of 1908. It is on the highest sand hill on the Gulf side of the west end of Hurricane Island. The station is marked by a copper pin in the top of a concrete post 5 inches square.

Hurricane East (Calhoun County, E. S., 1910).—This station is identical with the United States Engineers station *H* of 1908. It is on a sand hill on the east end of Hurricane Island and about midway between St. Andrews Bay and the Gulf. The station is marked by a cross in the top of a concrete post 7 inches square.

Sand Bluff (Calhoun County, E. S., 1910).—On a sand hill rising from a broad stretch of low sand on the north shore of the lower part of St. Andrews Bay and nearly opposite the east end of Hurricane Island. Low grass land is north of the station and beyond the grass is sand and pine trees. The station is marked according to note 3.[1] Two pine trees marked with triangular blazes are, respectively, 36.70 meters from the station in azimuth 164° 54′ and 44.50 meters in azimuth 247° 53′.

Bayou Bluff (Calhoun County, E. S., 1910).—On the west end of a sand bluff opposite the entrance to St. Andrews Bay and a little east of the entrance to a bayou that winds back of the bluff. The underground mark at the station is a well pipe 2½ feet long set in concrete. This concrete extends to the surface and is finished in the form of a truncated pyramid 8 inches square on top, in which is set a standard disk station mark for the surface mark. Three pine trees, the first two marked with three blazes each and the other two with single triangular blazes, are at the following distances and azimuths from the station: 14.9 meters, 109° 49′; 10.95 meters, 137° 19′; 38.30 meters, 292° 14′; and 41.65 meters, 298° 15′.

Spring (Calhoun County, E. S., 1910).—On a low sand hill on the mainland shore of St. Andrews Sound, about 60 meters back from high-water mark in the bight east of Hog Island. The station is marked according to note 3.[1] A reference mark, described in note 5,[1] is 20.35 meters from the station in azimuth 170° 45′, and another, described in note 6,[1] is 28.02 meters distant in azimuth 231° 14′. Three trees marked with triangular blazes are at the following distances and azimuths from the station: 15.75 meters, 139° 17′; 8.78 meters, 191° 49′; and 21.20 meters, 212° 05′.

[1] See pp. 61–62.

Anchor (Calhoun County, E. S., 1910).—On the low shifting sand spit near the southwest end of what is known as Crooked Island and about midway between St. Andrews Sound and the Gulf near where the sand spit bends to the northward. The station is marked according to note 3.[1]

Astral (Calhoun County, E. S., 1910).—On the highest of a group of sand hills on the Gulf side of the west end of Crooked Island and about 30 meters from high-water mark. The station is marked according to note 3.[1]

Areola (Calhoun County, E. S., 1910).—On a sand hill on the first point east of the entrance on the north or mainland shore of St. Andrews Sound and about 6 meters from high-water mark. The station is marked according to note 3.[1] A reference mark, described in note 6,[1] is on a sand hill 57.73 meters from the station in azimuth 160° 22′. Three pine trees marked with triangular blazes are at the following distances and azimuths from the station: 10.05 meters, 205° 43′; 17.10 meters, 230° 46′; and 10.80 meters, 292° 45′.

Abbot (Calhoun County, E. S., 1910).—On the first point east of the entrance on the southwest shore of St. Andrews Sound, about 25 meters from high-water mark and the same distance from a small sand hill back of the station. The station is marked according to note 3.[1] A reference mark, described in note 6,[1] is under a large pine tree 46.40 meters from the station in azimuth 4° 11′. Two pine trees marked with triangular blazes are, respectively, 52.10 meters from the station in azimuth 8° 01′ and 59.60 meters in azimuth 51° 09′. The distance between the blazed pines is 41.6 meters and from the reference mark to the first-mentioned blazed pine is 6.50 meters.

Agog (Calhoun County, E. S., 1910).—On the Gulf side of the southeast end of the sand bluff on Crooked Island southeast of the entrance to St. Andrews Sound. The station is marked according to note 3.[1]

Arrow (Calhoun County, E. S., 1910.)—On a sand ridge on a point near the middle of the northeast shore of St. Andrews Sound. The station is marked according to note 3.[1] A reference mark, described in note 5,[1] is 44.27 meters from the station in azimuth 196° 09′, and another, described in note 6,[1] is 40.43 meters distant in azimuth 247° 53′. Three pine trees marked with triangular blazes are at the following distances and azimuths from the station: 19.5 meters, 173° 09′; 17.3 meters, 204° 12′; and 17.1 meters, 250° 12′.

Atom (Calhoun County, E. S., 1910).—On an isolated sand hill about 25 feet high between the Gulf and the southeastern end of St. Andrews Sound. The station is marked according to note 3.[1]

Asp (Calhoun County, E. S., 1910).—On a small sand hill near a large pine tree on a point on the northeast shore of St. Andrews Sound and about 40 meters from high-water mark. The station is marked according to note 3.[1] A reference mark, described in note 5,[1] is 38.93 meters from the station in azimuth 178° 38′, and another, described in note 6,[1] is 45.06 meters distant in azimuth 247° 56′. The large pine tree mentioned above is marked with a triangular blaze and is 3.10 meters from the station in azimuth 292°.

Acorn (Calhoun County, E. S., 1910).—On a sand hill on the northeast shore of St. Andrews Sound, on the last point before reaching Goose Bayou, and 68 paces from high-water mark. The station is marked according to note 3.[1] A reference mark, described in note 6,[1] is 24.46 meters from the station in azimuth 239° 04′. Three trees marked with triangular blazes are at the following distances and azimuths from the station: 24 meters, 4° 59′; 14.55 meters, 189° 32′; and 16.14 meters, 287° 22′.

Apex (Calhoun County, E. S., 1910).—On a bluff about 20 feet high a mile or more west of St. Andrews Point and the Bell Shoals. The station is about 2 meters from the edge of the bluff, and at very high water the Gulf washes the foot of the bluff. The station is marked according to note 3.[1] A reference mark, described in note 5,[1] is on the first ridge of sand hills inland, and is 78.67 meters, horizontal distance, from the station in azimuth 171° 06′. Another reference mark, described in note 6,[1] is on this same ridge, 74.04 meters, horizontal distance,

[1] See pp. 61–62.

from the station in azimuth 220° 39′. The distance between the reference marks is 64.13 meters.

St. Joseph Point 2 (Calhoun County, E. S., 1910).—On the highest sand hill on the bay side of St. Josephs Point. The station is marked according to note 4.[1] A reference mark, a 6-foot galvanized iron pipe projecting 18 inches above the surface and set in a mass of concrete which is finished round above the ground, is on the ridge of sand hills back of the station 38.77 meters from the station in azimuth 203° 53′. Another reference mark, similar to the first except that the concrete is finished square above the ground, is on the same ridge 46.10 meters distant in azimuth 149° 45′.

San Carlos 2 (Calhoun County, E. S., 1910.)—On the sand bluff well back from the shore on what is locally known as Six Mile Point. The station is marked according to note 4.[1] A reference mark, a 6-foot galvanized iron pipe projecting 18 inches above the surface and set in a mass of concrete which is finished square above the ground, is on a sand ridge 32.81 meters from the station in azimuth 337° 08′. Another reference mark, similar to the first except that the concrete is finished round above the ground, is on the same ridge 33.82 meters distant in azimuth 34° 32′. The distance between the reference marks is 31.74 meters. Two pine trees marked with triangular blazes are, respectively, 20.25 meters from the station in azimuth 347° 19′ and 25.40 meters in azimuth 58° 31′.

Pompano (Calhoun County, E. S., 1910).—On a point on the west side of St. Josephs Bay on low sand 65 meters from high-water mark. There are some sand hills just back of the station. The station is marked according to note 4.[1] A reference mark, described in note 6,[1] is 27.17 meters from the station in azimuth 82° 33′.

St. Joseph 2 (Calhoun County, E. S., 1910).—In the old railroad grade at the site of the old town of St. Joseph and about 3 meters from high-water mark. The station is marked according to note 8.[1] A reference mark, described in note 6,[1] is 10.65 meters from the station in azimuth 273° 30′.

Eagle Point 2 (Calhoun County, E. S., 1910).—About three-fourths of a mile southeast of Eagle Harbor, on a narrow sand ridge, back of which is a small pond and marsh. The station is marked according to note 4.[1]

Blacks Island A. M. (Calhoun County, E. S., 1910).—On the north end of Blacks Island, in St. Josephs Bay, and about 10 meters from high-water mark. The station is marked according to note 8.[1] A reference mark, described in note 7,[1] is 7.52 meters from the station in azimuth 56° 50′. Two palmetto trees marked with triangular blazes are, respectively, 7.08 meters from the station in azimuth 100° 56′ and 9.67 meters in azimuth 55° 00′.

SUPPLEMENTARY POINTS.

St. Marks River east (Franklin County, E. S., 1910).—About 3 miles east of Apalachicola, on the point just east of the west mouth of the St. Marks River, on a bank of sand about 2 feet deep about 30 meters from the water's edge. The station is marked by a standard disk station mark set in concrete level with the surface of the sand.

Catholic church spire, Apalachicola (Franklin County, P. A. W., 1902; 1909).—A cone-shaped spire rising from a square belfry. The belfry is painted white and has green window blinds.

St. George light (Franklin County, P. A. W., 1902; 1910).—A white channel beacon in Apalachicola Bay about 3½ miles east of West Pass and nearly abreast of Cape St. George Lighthouse.

A (U. S. E.) (Franklin County, E. S., 1910).—On St. Vincent Island opposite Sand Island, at the northeast end of a short base line. The station is marked by a copper pin one-fourth inch in diameter in the top of a concrete post 4 inches square on top which projects 1 foot above the ground.

B (U. S. E.) (Franklin County, E. S., 1910).—On St. Vincent Island opposite Sand Island, at the southwest end of a short base line. The station is marked by a copper pin one-

[1]See pp. 61–62.

fourth inch in diameter in the top of a concrete post 4 inches square on top which projects 1 foot above the ground.

San Pedro 2 (Calhoun County, E. S., 1910).—About 3 miles north of Cape San Blas Lighthouse, on a high sand hill on the second sand ridge from St. Josephs Bay and about midway between the bay and the Gulf. The station is marked by a standard disk station mark in the top of a round concrete block and underground by a granite post 5 inches square and 2 feet long set 2 feet below the surface.

Hog Island (Calhoun County, E. S., 1910).—In the lower part of St. Andrews Bay, on the most westerly sand hill on what is known as Hog Island. The station is marked according to note 3.[1]

ST. ANDREWS BAY.

PRINCIPAL POINTS.

St. Andrews Bay, west base (Washington County, S. C. M., 1870).—Lost.

Davis Point 2 (Calhoun County, S. C. M., 1869; 1910).—Lost.

Dyers Point 2 (Washington County, S. C. M., 1870; 1910).—Lost.

St. Andrews Bay, east base (Washington County, S. C. M., 1870).—Lost.

Courtney Point 2 (Washington County, S. C. M., 1869; 1910).—Lost.

Laguna (Washington County, S. C. M., 1869; 1910).—Lost.

Vista Buena 2 (Washington County, S. C. M., 1870; 1910).—On Buena Vista Point on the north shore of St. Andrews Bay, just below the bluff on which the house of Mrs. L. M. Ware is situated. The station is marked by a cross in the top of a granite post 2 feet long and 6 inches square at the top which is buried 15 inches below the surface of the ground. Around the upper 6 inches of this stone and extending to the surface is a concrete block in the top of which is a standard disk station mark. On the bluff back of the station and just outside the fence surrounding the residence of Mrs. Ware are two reference marks, one, described in note 6,[1] at the west end of the fence 44.29 meters, horizontal distance, from the station in azimuth 149° 22′, and the other, described in note 7,[1] at the east end of the fence 37.51 meters, horizontal distance, from the station in azimuth 209°. A cedar tree is 12.26 meters from the station in azimuth 60° 43′, and an oak is 43.33 meters distant in azimuth 275° 08′.

West Bay Point (Washington County, S. C. M., 1870; 1910).—At storm water line on West Bay Point, known locally as Shell Point, at the entrance to the west arm of St. Andrews Bay. The station is marked according to note 3,[1] except that the underground mark is a granite block 4 inches square and 2 feet long 18 inches below the surface. A reference mark, described in note 5,[1] is on a shell mound 17.17 meters from the station in azimuth 44° 46′. Another reference mark, described in note 6,[1] is 11.12 meters from the station in azimuth 100° 14′. A cedar tree marked with a triangular blaze is 12.79 meters from the station in azimuth 352° 07′.

North Bay Point (Washington County, S. C. M., 1870; 1910).—On a sand ridge covered by a low bushy growth on the west side of North Bay Point between the north and west arms of St. Andrews Bay, 2 meters south of the crest of the ridge and about 2½ meters from ordinary high-water mark. The station is marked by a standard disk station mark in the top of a concrete block 2 feet in diameter and underground by a granite block 4 inches square and 2 feet long 1 foot below the surface. A reference mark, described in note 7,[1] is 5.26 meters from the station in azimuth 160° 09′. Another reference mark, described in note 6,[1] is 15.105 meters from the station in azimuth 289° 21′. A lone pine tree near the old salt works on the point is in azimuth 254° 43′.

Crane Point (Washington County, S. C. M., 1871; 1910).—On Crane Point on the south shore of the west arm of St. Andrews Bay, about 700 meters northwest of the entrance to a shallow, circular lagoon. The station is at high-water mark near the west end of a strip of

[1] See pp. 61-62.

firm ground which is between the marsh and the bay. It is marked according to note 3,[1] except that the underground mark is a granite block 2 feet below the surface. A reference mark, described in note 7,[1] is 12.33 meters from the station in azimuth 302° 46′, and another, described in note 6,[1] is 5.42 meters distant in azimuth 2° 12′. A small cedar tree near the east end of the ridge is 50.40 meters from the station in azimuth 294° 20′ and a second cedar is 5.7 meters distant in azimuth 21°.

Pelican Point 2 (Washington County, E. S., 1910).—Near the center of a hummock on the western one of two projections of a low rounded point on the south side of the west arm of St. Andrews Bay. The hummock extends to the water's edge and is covered with scrub palmetto. The station is marked according to note 4.[1] A reference mark, described in note 7,[1] is 8.99 meters from the station in azimuth 108° 09′. Another reference mark, described in note 6,[1] is 6.71 meters from the station in azimuth 294° 38′. A lone live oak marked with a triangular blaze is on the hummock 5.90 meters from the station in azimuth 101° 30′.

Clio 2 (Washington County, E. S., 1910).—On the first rounded point north of North Bay Point, on the north shore of the west arm of St. Andrews Bay. It is near the center in a north and south direction of a hummock known locally as Cedar Hummock and about 8 meters from high-water mark. The station is marked according to note 4[1] except that the bottle of the underground mark is replaced by a cedar peg. A reference mark, described in note 7,[1] is 4.23 meters from the station in azimuth 239° 22′. Another reference mark, described in note 6,[1] is near a large live-oak tree, 15.13 meters from the station in azimuth 308° 14′. Two cedar trees and one oak tree, each marked with a triangular blaze, are at the following distances and azimuths, respectively, from the station: 14.75 meters, 164° 24′; 8.05 meters, 238° 04′; and 12.94 meters, 329° 45′.

Medway 2 (Washington County, E. S., 1910).—On the sand ridge at the end of the point on the west side of the mouth of Burnt Mill Creek, on the north side of the west arm of St. Andrews Bay. The station is marked according to note 4.[1] The end of the sand spit is 40 paces from the station in azimuth 41°, and a clump of small cedars near the water's edge is 65 paces distant in azimuth 194°.

Orcus 2 (Washington County, E. S., 1910).—On the high sand ridge near the shore on the north side of the entrance to West Bay Creek, at the head of the west arm of St. Andrews Bay. The station is marked according to note 4.[1] A reference mark, described in note 6,[1] is 9.86 meters from the station in azimuth 127° 45,′ and another, described in note 7,[1] is 9.76 meters from the station in azimuth 178° 15′. Five trees, each marked with a triangular blaze, are at the following distances and azimuths from the station: Pine near the water's edge, 14.56 meters, 17° 36′; oak, 15.35 meters, 118° 14′; oak, 15.47 meters, 131° 46′; double oak, 7.20 meters, 154° 49′; oak, 12.18 meters, 177° 56′.

Swan 2 (Washington County, E. S., 1910).—On a rounded point on the east side of the head of the west arm of St. Andrews Bay, on the crest of a long narrow sand ridge on which there are a few cedar trees and back of which are marsh ponds bare at low water. The station is marked according to note 4.[1] A reference mark, described in note 7,[1] is 7.83 meters from the station in azimuth 332° 38′, and a conspicuous, umbrella-shaped cedar tree is 6.23 meters distant in azimuth 78°.

Iris 2 (Washington County, E. S., 1910).—Near the highest point of a shell bank on a rounded point on the east side of St. Andrews Bay a little south of east from West Bay Point. The station is marked according to note 4.[1] A reference mark, described in note 6,[1] is 91.12 meters from the station in azimuth 6° 13′, and another, described in note 7,[1] is 9.22 meters distant in azimuth 164° 02′. Both reference marks are on the shell bank. There are several pine trees with old blazes in the vicinity said to be old landmarks, and one of these is 12.24 meters from the station in azimuth 248° 27′. Three pine trees, each marked with a triangular blaze, are at the following distances and azimuths from the station: 5.34 meters, 150° 15′; 13.83 meters, 271° 51′; and 12.30 meters, 34° 21′.

[1] See pp. 61-62.

Ceres 2 (Washington County, E. S., 1910.)—On a long low point known as Little Oyster Bar Point just north of Upper Goose Bayou on the east side of the north arm of St. Andrews Bay. The station is on the crest of a scrub-covered sand ridge which is just back of the bare sand at the tip of the point, and is marked according to note 3.[1] A reference mark, described in note 6,[1] is near a small oak tree 7.60 meters from the station in azimuth 299° 33′. Two oak trees, the first marked with a triangular blaze, are, respectively, 10.60 meters from the station in azimuth 305° 35′ and 16.60 meters in azimuth 356° 22′.

Juno Bayou 2 (Washington County, E. S., 1910).—On a point of hummock land south of the entrance to Alligator Bayou on the northwest side of the north arm of St. Andrews Bay. The station is marked according to note 3.[1] A reference mark, described in note 6,[1] is 7.99 meters from the station in azimuth 200° 31′. Two burnt stumps, one near the water and the other on the marsh, are, respectively, 18.80 meters from the station in azimuth 306° 02′ and 10.10 meters in azimuth 116° 02′.

Sulphur Point 2 (Washington County, E. S., 1910).—In a clump of bushes just west of the edge of the woods on Sulphur Point, a long, low, sandy point on the northeast side of St. Andrews Bay. The station is marked according to note 3.[1] A reference mark, described in note 6,[1] is under a large crooked oak 15.37 meters from the station in azimuth 267° 52′. Two oak trees are, respectively, 15.20 meters from the station in azimuth 260° 36′ and 11.65 meters in azimuth 299° 01′.

Perdita 2 (Washington County, E. S., 1910).—On the first point south of West Bay Point on the west side of St. Andrews Bay, just north of a small bayou and 14 meters from high-water mark. The station is marked according to note 3.[1] A reference mark, described in note 6,[1] is 10.40 meters from the station in azimuth 103° 25′. Other distances and azimuths were measured as follows: Double pine, marked with a triangular blaze, 8.10 meters, 152° 07′; small pine, 10.36 meters, 84°; and two small oaks, 19.80 meters, 350° 29′.

Aliena 2 (Washington County, E. S., 1910).—On a rounded point on the west side of St. Andrews Bay, opposite Sulphur Point, on the property of J. C. Halley, about midway between the shore and a road parallel to the shore. The station is marked according to note 3.[1] A reference mark, described in note 5,[1] is 11.07 meters from the station in azimuth 90° 20′, and another, described in note 6,[1] is 11.11 meters distant in azimuth 30° 56′. Three pine trees, marked with old blazes, are at the following distances and azimuths from the station: 21.96 meters, 30° 56′; 18.87 meters, 90° 21′; and 20.93 meters, 186° 44′.

Bluff (Washington County, E. S., 1910).—On a bluff on the southwest shore of St. Andrews Bay, opposite Dyers Point, just east of an old field and the ruins of a house. The station is marked according to note 4.[1] A reference mark, described in note 7,[1] is 7.23 meters from the station in azimuth 26° 20′, and another, described in note 6,[1] is 12.55 meters distant in azimuth 106° 53′.

Dyers Point 3 (Washington County, E. S., 1910).—On Dyers Point, on the north side of St. Andrews Bay, on top of the bluff, which is composed of sand and oystershells and is covered with small oak trees. The station is marked according to note 3.[1] A reference mark, described in note 5,[1] is 5.86 meters from the station in azimuth 237° 28′, and another, described in note 6,[1] is 12.39 meters distant in azimuth 237° 23′. Five oak trees, each marked with a triangular blaze, are at the following distances and azimuths from the station: 2.92 meters, 32°; 3.49 meters, 135°; 5.91 meters, 224°; 3.85 meters, 241°; and 6.53 meters, 270°.

Bear Point (Washington County, E. S., 1910).—On the low sandy beach at Bear Point, on the southwest side of St. Andrews Bay, about midway between the shore line and the edge of the woods. The station is marked according to note 4.[1] A reference mark, described in note 7,[1] is at the edge of the woods 21.38 meters from the station in azimuth 359° 20′. Two pine trees, each marked with a triangular blaze, are, respectively, 20.02 meters from the station in azimuth 2° 33′ and 17.80 meters in azimuth 35° 56′.

Courtney Point 3 (Washington County, E. S., 1910).—On Courtney Point, on the southwest side of St. Andrews Bay, just east of the edge of the woods. The station is marked according

[1] See pp. 61-62.

to note 3.[1] A reference mark, described in note 6,[1] is just within the woods 12.55 meters from the station in azimuth 49° 54′. An old dead oak is 14 meters from the station in azimuth 309° 27′, and an oak marked with a triangular blaze is 11.20 meters distant in azimuth 108° 34′.

Red Fish Point 3 (Calhoun County, E. S., 1910).—On Red Fish Point, on the south side of the entrance to the east arm of St. Andrews Bay, on the northwest side of the point just north of a pond. The station is between two old cedar posts and is marked according to note 3.[1] A reference mark, described in note 5,[1] is 15.96 meters from the station in azimuth 304° 28′, and another, described in note 6,[1] is 18.57 meters distant in azimuth 26° 37′. A lone pine tree is 55 paces from the station in azimuth 239° 37′.

Drumond (Washington County, E. S., 1910).—On a rounded point on the north shore of St. Andrews Bay, a short distance east of the town of St. Andrews, on property laid out in town lots just east of the entrance to a large bayou. North of the station is the St. Andrews and Panama City road, and there is a wire fence along this road and along the shore. The station is marked according to note 3.[1] A reference mark, described in note 5,[1] is 6.02 meters from the station in azimuth 168° 18′, and another, described in note 6,[1] is 7.71 meters distant in azimuth 284° 47′. Three pine trees, each marked with a triangular blaze, are at the following distances and azimuths from the station: 6.55 meters, 31° 35′; 14.25 meters, 284° 04′; and 20.00 meters, 297° 44′.

Davis Point 3 (Calhoun County, E. S., 1910).—This station is identical with the United States Engineers station *B* of 1908. It is south of Red Fish Point, on the west shore of the main part of St. Andrews Bay and is marked by a copper pin in the top of a concrete post 5 inches square. A reference mark, described in note 7,[1] is near an oak tree 12.66 meters from the station in azimuth 238° 36′, and another, described in note 6,[1] is near an oak tree 13.77 meters distant in azimuth 309° 28′. Two trees marked with triangular blazes are at the following distances and azimuths from the station: Oak, 13.45 meters, 229° 36′; and palmetto, 15.98 meters, 310° 36′.

Laguna 2 (Washington County, E. S., 1910).—This station is identical with the United States Engineers station *A* of 1908. It is on a narrow sand ridge on a prominent point on the southern shore of the main part of St. Andrews Bay, and is marked by a copper pin in the top of a concrete post 5 inches square.

Spanish Shanty (Washington County, E. S., 1910).—This station is identical with the United States Engineers station *C* of 1908. It is on Spanish Shanty Point, on the south shore of the lower part of St. Andrews Bay, near an oak tree about 15 meters from high-water mark. The station is marked by a copper pin in the top of a concrete post 5 inches square. A reference mark, described in note 5,[1] is 22.90 meters from the station in azimuth 5° 43′, and another, described in note 6,[1] is 11.64 meters distant in azimuth 68° 19′. An oak marked with a triangular blaze is 2.90 meters from the station in azimuth 36°.

Middle (Calhoun County, E. S., 1910).—On a sand ridge on the north shore of the lower part of St. Andrews Bay and about 12 meters from high-water mark. The land back of the station is marshy and most of the trees are palmetto. The station is marked according to note 3.[1] A reference mark, described in note 6,[1] is 11.80 meters from the station in azimuth 238° 02′. Three palmetto trees, marked with triangular blazes, are at the following distances and azimuths from the station: 7.08 meters, 201° 15′; 8.86 meters, 228° 56′; and 16.03 meters, 276° 45′.

Bunkers Point (Washington County, E. S., 1910).—On the point opposite Redfish Point on the north side of the entrance to the east arm of St. Andrews Bay, and just west of Bunkers Cove. The point is a sand ridge mostly covered with a low growth of oaks and palmettos and back of the ridge is a marsh and pond. The station is marked according to note 3.[1] A reference mark, described in note 5,[1] is 5.97 meters from the station in azimuth 210° 05′, and another, described in note 6,[1] is 9.71 meters distant in azimuth 277° 05′.

Palmetto Point 2 (Calhoun County, E. S., 1910).—On the bluff on Palmetto Point on the south side of the east arm of St. Andrews Bay, and on the property of Mr. Mosher. The station is marked according to note 3.[1] A reference mark, described in note 5,[1] is close to a fence on

[1] See pp. 61–62.

the east and 5.75 meters from the station in azimuth 287° 57′. Another reference mark, described in note 6,[1] is 7.83 meters distant in azimuth 2° 12′. Two palmetto trees are, respectively, 8.75 meters from the station in azimuth 352° 59′, and 2.60 meters, in azimuth 107°.

Town Point 2 (Washington County, E. S., 1910).—On Town Point, the first point east of Bunkers Cove and about one-half mile southwest of Watson Bayou. The station is marked according to note 3.[1] A small oak marked with a triangular blaze is 8.80 meters from the station in azimuth 317° 51′, and an oak marked with three blazes is 10.40 meters distant in azimuth 178° 15′.

Military Point 2 (Calhoun County, E. S., 1910).—On a long sand-spit point on the east side of the east arm of St. Andrews Bay. The station is well in toward the main shore and is marked according to note 3.[1] A reference mark, described in note 6,[1] is near a fence corner 17.43 meters from the station in azimuth 23° 17′. Two oak trees marked with triangular blazes are, respectively, 10.58 meters from the station in azimuth 4° 50′, and 20.65 meters in azimuth 29° 07′.

Watson Point 2 (Washington County, E. S., 1910).—On the point a little east of the entrance to Watson Bayou, in a clump of palmettos below the bluff. The station is marked according to note 3.[1] Two oaks marked with triangular blazes are, respectively, 7.96 meters from the station in azimuth 90° 51′ and 3.93 meters in azimuth 164° 48′.

Parker Point 2 (Washington County, E. S., 1910).—On the low land below the high bluff just opposite Ferry Point. The station is marked according to note 3.[1] A reference mark, described in note 5,[1] is on the bluff 35.55 meters, horizontal distance, from the station in azimuth 207° 46′, and another, described in note 6,[1] is on the bluff 44.76 meters, horizontal distance, from the station in azimuth 271° 13′. The distance between the reference marks is 42.95 meters. Three trees with triangular blazes are at the following distances and azimuths from the station: 1.70 meters, 170° 05′; 31.85 meters, 224° 39′; and 16.3 meters, 265° 25′.

Ferry Point (Calhoun County, E. S., 1910).—On the next point above Military Point on the same side of the Bay and well in toward the woods. The station is marked according to note 3.[1] A reference mark, described in note 5,[1] is 10.35 meters from the station in azimuth 7° 06′, and another, described in note 6,[1] is 5.02 meters distant in azimuth 67° 16′. A triple oak is 3.75 meters distant in azimuth 56°.

Gabel 2 (Calhoun County, E. S., 1910).—On a point a little west of Pearl Bayou, on the sand slope back of the marsh. The station is marked according to note 3.[1] A reference mark, described in note 5,[1] is 6.66 meters from the station in azimuth 46° 12′, and another, described in note 6,[1] is 10.24 meters distant in azimuth 158° 06′. An oak tree marked with a triangular blaze is 18.90 meters from the station in azimuth 166° 51′, and the western one of two pine trees marked with old blazes is 15.3 meters distant in azimuth 225° 07′.

Oyster east (Washington County, E. S., 1910).—On the east side of Oyster Point. The station is marked according to note 3.[1] A reference mark, described in note 5,[1] is 12.85 meters from the station in azimuth 31° 10′, and another, described in note 6,[1] is 12.58 meters distant in azimuth 206° 11′. Two pine trees with old blazes, marked with new triangular blazes in 1910, are, respectively, 10.38 meters from the station in azimuth 39° 15′ and 25.30 meters in azimuth 226° 05′.

Oyster west (Washington County, E. S., 1910).—Below the bluff on the west side of Oyster Point. The station is marked according to note 3.[1] A reference mark, described in note 6,[1] is on the bluff 20.99 meters from the station in azimuth 203° 58′, and another, described in note 5,[1] is on the bluff 15.52 meters distant in azimuth 245° 14′. The distance between the reference marks is 13.85 meters. An old oak tree below the bluff, marked with a triangular blaze, is 20.07 meters from the station in azimuth 172° 45′.

Viola 2 (Calhoun County, E. S., 1910).—Below the bluff on the eastern shore of St. Andrews Bay, about 50 meters southwest from the wharf in front of the house belonging to Mrs. Pain and Miss Young. The station is marked according to note 3.[1] A reference mark, described in note 5,[1] is 6.07 meters from the station in azimuth 334° 33′, and another, described in note 6,[1]

[1] See pp. 61–62.

is 11.09 meters distant in azimuth 41° 37′. A large pine, marked with a triangular blaze, is 16.68 meters from the station in azimuth 239° 29′.

Shoal Bayou 2 (Calhoun County, E. S., 1910).—On a point on the eastern shore of St. Andrews Bay northeast of a very shoal bayou. The station is marked according to note 3.[1] A reference mark, described in note 5,[1] is 7.82 meters from the station in azimuth 289° 55′, and another, described in note 6,[1] is 4.96 meters distant in azimuth 349° 49′. An oak tree, marked with a triangular blaze, is 5.22 meters from the station in azimuth 333° 40′.

Dixon 2 (Washington County, E. S., 1910).—On the northern shore of St. Andrews Bay, on a sand ridge about 40 meters from high-water mark. The station is marked according to note 3.[1] A reference mark, described in note 6,[1] is 9.37 meters from the station in azimuth 32° 10′, and another, described in note 5,[1] is 9.95 meters distant in azimuth 227° 27′. A pine tree, marked with a triangular blaze, is 12.54 meters from the station in azimuth 200° 57′. Another pine tree, marked with an old blaze, is 19.88 meters distant in azimuth 269° 13′.

East Point 2 (Calhoun County, E. S., 1910).—About 3 miles east of Oyster Point, on a shell bank on what is locally known both as East Point and as Shell Point. The station is about 15 meters from high-water mark and is marked according to note 3.[1] A reference mark, described in note 5,[1] is 9.01 meters from the station in azimuth 26° 48′, and another, described in note 6,[1] is 12.5 meters distant in azimuth 69° 40′. A small cedar, marked with a triangular blaze, is 10.97 meters from the station in azimuth 9° 31′.

Didi Point 2 (Washington County, E. S., 1910).—On a sand ridge on the west side of Didi Point about 10 meters from high-water mark and just west of a marsh which occupies the middle of the point and which is drained by a small run emptying at the end of the point, about 40 meters south of the station. The station is marked according to note 3.[1] Two reference marks, described in note 5,[1] are, respectively, 9.95 meters from the station in azimuth 179° 59′ and 35.60 meters in azimuth 295° 50′.

Laird (Washington County, E. S., 1910).—On the north shore of the east arm of St. Andrews Bay, just east of the pine woods to the west of Lairds Bayou and about 10 meters from high-water mark. The station is marked according to note 3.[1] A reference mark, described in note 6,[1] is 9.56 meters from the station in azimuth 175° 34′, and another, described in note 5,[1] is 5.61 meters distant in azimuth 243° 21′. Two pine trees, marked with triangular blazes, are, respectively, 10.80 meters from the station in azimuth 118° 12′ and 11.86 meters in azimuth 161° 07′.

Drogan 2 (Calhoun County, E. S., 1910).—On a narrow sand ridge at the end of a point of marsh opposite Didi Point and just west of a thick growth of yupon bushes. The station is marked according to note 3.[1]

SUPPLEMENTARY POINTS.

E. B. P. (Washington County, E. S., 1910).—On a sand hill on a narrow neck of land that separates a bight of St. Andrews Bay from the Gulf. The station is marked according to note 4.[1]

North base (U. S. E.) (Washington County, E. S., 1910).—On the west shore of the main part of St. Andrews Bay a short distance around the point southwest from Courtney Point 3, see p. 110. The station is marked by a copper pin in the top of a concrete post 5 inches square.

South base (U. S. E.) (Washington County, E. S., 1910).—On the west shore of the main part of St. Andrews Bay and on the north shore of Grand Lagoon. The station is marked by a copper pin in the top of a concrete post 5 inches square.

St. Andrews, ice-plant stack (Washington County, E. S., 1910).—The center of the stack of the ice-plant power house at St. Andrews.

Fish (Washington County, E. S., 1910).—The flagpole on the warehouse about halfway out on the ice-plant wharf at St. Andrews.

[1] See pp. 61-62

CHOCTAWHATCHEE BAY TO ST. ANDREWS BAY.

PRINCIPAL POINTS.

Exit (Santa Rosa County, H. G. O., 1871).—This station is in the shifting sand hills on the Gulf coast of Santa Rosa Island and was not searched for in 1910. It is marked according to note 1[1] except that the reference posts are on a line with the station, two on the east side and two on the west.

Stevens (Santa Rosa County, H. G. O., 1871; 1910).—Lost.

Choctawhatchee (Santa Rosa County, H. G. O., 1871; 1910).—This station is marked according to note 1.[1] It was searched for without success in 1910.

Garnier (Walton County, H. G. O., 1871; 1910).—This station is marked according to note 1.[1] It was searched for without success in 1910.

Cobbs Point (Washington County, H. G. O., 1872; 1910).—This station is marked according to note 1.[1] It was searched for without success in 1910.

Tripod (Walton County, H. G. O., 1872; 1910).—Lost.

White Point (Walton County, H. G. O., 1872; 1910).—This station is marked according to note 1.[1] It was searched for without success in 1910.

Shaker (Washington County, H. G. O., 1872; 1910).—This station is marked according to note 1.[1] It was searched for without success in 1910.

Stake Point (Walton County, H. G. O., 1872; 1910).—This station is marked according to note 1.[1] It was searched for without success in 1910.

Four Mile Point (Washington County, H. G. O., 1872; 1910).—This station is marked according to note 1.[1] It was searched for without success in 1910.

Blunt (Walton County, H. G. O., 1872; 1910).—This station is marked according to note 1.[1] It was searched for without success in 1910.

Live Oak Point (Washington County, H. G. O., 1872; 1910).—This station is marked according to note 1.[1] It was searched for without success in 1910.

Alaqua (Walton County, H. G. O., 1872; 1910).—On Alaqua Point on the north shore of Choctawhatchee Bay. The station is marked by a stone monument inscribed on the top with a cross and the letters "U. S. C. S." It could not be recovered in 1910.

La Grange (Walton County, H. G. O., 1872; 1910).—On the north shore of Choctawhatchee Bay, about 1½ miles south of the mouth of La Grange Bayou. The station is on a narrow point of hard land extending eastward into the marsh and near a log canal which extends from near the station through the marsh southward to the shore of the bay. The station is marked by a standard disk station mark in the top of a 6-inch tile which is filled and surrounded with concrete. The underground mark is a copper nail in a brick surrounded by concrete 2½ feet below the ground. A reference mark, a standard cap station mark screwed to the top of a 3-inch iron pipe 4 feet long which projects 1 foot above the ground, is 27.329 meters from the station in azimuth 198° 10′. Two live oak trees, each marked with a blaze and four iron nails, are at the following distances and azimuths from the station: 33.97 meters, 134° 23′; and 26.46 meters, 249° 11′. The trees were blazed and the reference mark and the surface mark at the station were set in 1910.

Alligator 2 (Washington County, H. G. O., 1872).—On Alligator Point, on the south shore of Choctawhatchee Bay. The station is marked by a nail in the stump of a pine tree. The stump is about 2 feet high and the nail is a little south of the center.

Criglar (Washington County, H. G. O., 1872; 1910).—On the south shore of Choctawhatchee Bay, about 4 miles southeast of Alligator Point, on rising ground about 4 meters east of a small creek. The station is marked by a stone monument inscribed on the top with a cross and the letters "U. S. C. S." A reference mark, consisting of a standard cap station mark screwed to the top of a 3-inch iron pipe which projects 1 foot above the ground, is 13.63 meters from the station in azimuth 122° 18′. Three pine trees, with triangular blazes with a nail at the center and at each vertex of the triangle, are at the following distances and azimuths from the station:

[1] See pp. 61–62.

9.16 meters, 52° 16′; 8.14 meters, 159° 29′; and 2.80 meters, 186° 52′. The trees were blazed and the reference mark set in 1910.

Blue Mountain (Washington County, F. W. P., 1872).—On the top of a high hill known as Blue Mountain, about one-half mile inland from the Gulf coast. The hill is nearly devoid of vegetation in the immediate vicinity of the station. There is a small pond at the foot of the hill on the northern side. The station is marked by a copper nail in a plug in the top of an iron screw pile.

High (Washington County, F. W. P., 1872).—On the top of a very prominent hill which is close to the water line and is covered with a thick growth of scrub oak and chaparral. The station is marked by a copper nail in a plug in the top of an iron screw pile.

I (Washington County, F. W. P., 1872).—On a small grass-covered sand knoll close to the level sand beach. The station is marked by a copper tack in a plug in the top of an iron screw pile.

G (Washington County, F. W. P., 1872).—On a small knoll near the level sand beach a short distance northwest of Pass Icola. The station is marked by a copper nail in the top of a 4 by 4 inch pine stub.

E (Washington County, F. W. P., 1872).—On a small knoll near the level sand beach and about midway between two small runs. The station is marked by a copper nail in the top of a 4 by 4 inch pine stub.

C (Washington County, F. W. P., 1872).—On a small knoll near the level sand beach about 300 meters southeast of the mouth of a small creek which is the outlet for a small fresh-water pond. The station is marked by a copper nail in the top of a 4 by 4 inch pine stub.

Alligator Point 2 (Washington County, G. H. R., 1910).—On Alligator Point, on the south side of the east end of Choctawhatchee Bay, on a narrow sand ridge about 100 meters west of the northeastern extremity of the point, 4 paces from mean high-water mark and 2 paces from the edge of the marsh to the south. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 23.176 meters from the station in azimuth 94° 07′.

Alaqua Point 2 (Walton County, G. H. R., 1910).—On Alaqua Point, on the north shore of Choctawhatchee Bay, 4 paces from mean high-water mark, 45 paces from the mouth of a creek to the west, 17 paces from the edge of a marsh to the north, and about 150 meters from the edge of a dense woods to the east. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 19.86 meters from the station in azimuth 240° 03′. Two live oak trees, each marked with a triangular blaze with a nail at the center and each vertex, are, respectively, 3.71 meters from the station in azimuth 170° 45′ and 14.69 meters in azimuth 219° 40′.

Live Oak Point 2 (Washington County, G. H. R., 1910).—On Live Oak Point, on the south shore of Choctawhatchee Bay, near the eastern end of a narrow level sand ridge surrounded by marsh, 7 paces from mean high-water mark to the north and 17 paces from mean high-water mark to the west. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 36.565 meters from the station in azimuth 67° 09′. Two live oak trees, each marked with a triangular blaze with a nail at the center and each vertex, are, respectively, 19.74 meters from the station in azimuth 69° 02′ and 45.42 meters in azimuth 73° 08′.

Blunt 2 (Walton County, G. H. R., 1910).—On Hammock Point, on the north side of Choctawhatchee Bay, on the sand beach 14 paces from high-water mark. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 42.74 meters from the station in azimuth 168° 09′. A pine tree and a magnolia tree, each marked with a triangular blaze with a nail at the center and each vertex, are, respectively, 39.50 meters from the station in azimuth 85° 57′ and 5.61 meters in azimuth 108° 23′. A house is about 250 meters north 63° west from the station.

Four Mile Point 2 (Washington County, G. H. R., 1910).—On Four Mile Point, on the south side of Choctawhatchee Bay, 13 paces from the edge of the bank to the north and 20 paces from mean high-water mark to the west. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 27.286 meters from the station in azimuth 339° 53′. Two live

[1] See pp. 61–62.

oak trees, each marked with a triangular blaze with a nail at the center and each vertex, are, respectively, 27 meters from the station in azimuth 291° 38′ and 30.38 meters in azimuth 18° 44′.

Stake Point 2 (Walton County, G. H. R., 1910).—On Stake Point on the north side of Choctawhatchee Bay, 8 paces from mean high-water mark and 12 paces from the edge of the thick woods to the north. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 28.945 meters from the station in azimuth 173° 38′. A lone pine tree near the western edge of the point and a live oak on the edge of the woods, each marked with a triangular blaze with a nail at the center and each vertex, are, respectively, 33.92 meters from the station in azimuth 90° 06′ and 20.76 meters in azimuth 224° 09′.

Shaker 2 (Washington County, G. H. R., 1910).—Near the eastern side of Piney Point on the south side of Choctawhatchee Bay, 8 paces from mean high-water mark. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 28.19 meters from the station in azimuth 34° 58′. Two pine trees, each marked with a triangular blaze with a nail at each vertex, are, respectively, 67.06 meters south 1° 12′ west from the station and 27.19 meters south 46° 14′ west.

White Point 2 (Walton County, G. H. R., 1910).—On White Point on the north side of Choctawhatchee Bay, 100 paces from the extremity of the point to the south, 58 paces from mean high-water mark to the east and 52 paces from mean high-water mark to the west. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 31.24 meters from the station in azimuth 192° 21′. A live oak scrub and a pine scrub, each marked with a triangular blaze with a nail at the center and each vortex, are, respectively, 6.16 meters from the station in azimuth 173° 41′ and 22.82 meters in azimuth 200° 02′.

Cobbs Point 2 (Washington County, G. H. R., 1910.)—On Cobbs Point, on the south shore of Choctawhatchee Bay, 37 paces from mean high-water mark to the north and about the same distance from mean high-water mark to the east and to the west. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 42.83 meters from the station in azimuth 20° 03′. Two pine trees, each marked with a triangular blaze and three nails, are, respectively, 72.88 meters south 68° east and 128.36 meters south 32° west from the station.

Tripod 2 (Walton County, G. H. R., 1910).—On the north shore of Choctawhatchee Bay, on a bank 5 feet high, 20 paces from mean high-water mark and 12 paces from the edge of a marsh to the north. There is a large pond north of the station and the mouth of a small creek is 60 paces to the west. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 26.28 meters from the station in azimuth 105° 17′. Two magnolia trees, each marked with a triangular blaze with a nail at the center and each vertex, are, respectively, 5.33 meters south 27° west and 28.56 meters north 84° west from the station.

Garnier 2 (Walton County, G. H. R., 1910).—Near the eastern side of Black Point on the north side of the western end of Choctawhatchee Bay, 100 paces from mean high-water mark to the east, 75 paces from mean high-water mark to the south, and 40 paces from the edge of a large pond to the northwest. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is on the bank of the pond 33.10 meters from the station in azimuth 125°42′. Two pine trees, each marked with a triangular blaze and three nails, are, respectively, 39.02 meters north 12° west and 11.30 meters south 80° west from the station.

Choctawhatchee 2 (Santa Rosa County, G. H. R., 1910).—On a sand hill on the Gulf shore of Santa Rosa Island, about 5 miles west of the eastern end of the island. The hills in this vicinity are all about the same height. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is on level ground 75.08 meters (horizontal distance) from the station in azimuth 182° 51′.

Stevens 2 (Santa Rosa County, G. H. R., 1910).—On the prominent point on the north side of the junction of the Narrows with Choctawhatchee Bay, just east of a large bayou and 33 paces from the high-water mark to the east and 98 paces from high-water mark to the south. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is near the edge of the bayou 42.48 meters from the station in azimuth 133° 29′. Three trees, each

[1] See pp. 61–62.

marked with a blaze and three nails in the form of a triangle, are at the following distances from the station: 29.02 meters N. 20° W., 43.54 meters N. 60° W., and 77.24 meters, S. 77° W.

Santa Rosa east base (Santa Rosa County, G. H. R., 1910).—On the north shore of Santa Rosa Island, about 4¾ miles west of the eastern end of the island, on a small sand knoll 10 feet high 125 paces from the shore and about 100 meters west of the western edge of the pine timber. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 32.37 meters from the station in azimuth 25° 13′.

Santa Rosa west base (Santa Rosa County, G. H. R., 1910).—On a small sand hill 10 feet high on Santa Rosa Island, about twice as far from Choctawhatchee Bay as from the Gulf. There is a ridge of sand hills 100 meters south of the station and another 150 meters north. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 32.84 meters, inclined distance, from the station in azimuth 207° 18′.

Exit 2 (Santa Rosa County, G. H. R., 1910).—On Santa Rosa Island, on a prominent sand hill, the highest in the vicinity, almost due south of a point midway between the two range beacons in the Narrows and about 150 meters from the Gulf shore. There are some high sand hills about 125 meters north of the station, but the ground to the eastward is level. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is on level ground 44.72 meters, inclined distance, from the station in azimuth 351° 50′.

Lane 2 (Washington County, G. H. R., 1910).—On the highest and most prominent sand hill on the western end of the peninsula between Choctawhatchee Bay and East Pass, about 125 meters from the shore and about 150 meters northwest of a house. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 38.30 meters, inclined distance, from the station in azimuth 347° 27′.

East Pass 2 (Santa Rosa County, G. H. R., 1910).—On the last prominent sand hill on the east end of Santa Rosa Island, quite close to the Gulf and almost due south of the end of the peninsula on the north side of East Pass. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 53.35 meters, inclined distance, from the station in azimuth 162° 41′.

Bar (Santa Rosa County, G. H. R., 1910).—On a sand spit known as Norriego Point on the south side of East Pass. The station is in shifting sand 12 paces from high-water mark and is marked by a 2 by 4 inch stake. A reference mark, described in note 13,[1] is 92.08 meters from the station in azimuth 190° 05′.

Saddle (Santa Rosa County, G. H. R., 1910).—On the highest point of a sand bluff about 45 feet high on the north side of East Pass, almost due north of the end of the sand spit on the south side of the Pass. The station is 7 meters back from the edge of the bluff and is marked according to note 12.[1] A reference mark, described in note 13,[1] is on a sand ridge 35.25 meters, inclined distance, from the station in azimuth 147° 38′.

SANTA ROSA SOUND.

PRINCIPAL POINTS.

Entrance (Santa Rosa County, H. G. O., 1870; 1910).—On the north shore of Santa Rosa Island, at the western end of the sound. The station is marked according to note 1.[1] It was searched for without success in 1910.

Deer Point 2 (Santa Rosa County, H. G. O., 1870; 1890).—Lost.

Sabine Hill (Santa Rosa County, H. G. O., 1870; 1910).—On a sand hill on the south shore of Little Sabine Bay, near the western end of the bay. The station is marked according to note 1[1] except that the underground mark is a cross in the lead stopper of a large iron powder canister which is filled with sand. The station was searched for without success in 1910.

Grassy Point (Santa Rosa County, H. G. O., 1870; 1910).—On Grassy Point, a prominent point on the mainland shore of Santa Rosa Sound. The station is marked according to note 1.[1] It was searched for without success in 1910.

[1] See pp. 61-62.

Stumps (Santa Rosa County, H. G. O., 1871; 1910).—This station has been destroyed.

Sharp (Santa Rosa County, H. G. O., 1871; 1910).—This station is on the shifting sand hills on the Gulf coast of Santa Rosa Island and could not be recovered in 1910. The station is marked according to note 1.[1]

Range (Santa Rosa County, H. G. O., 1871; 1910).—This station is 3.087 meters from *Range 2* (see p. 120). It is marked by a hole in the upper end of a brick 16 inches below the ground.

Creek (Santa Rosa County, H. G. O., 1871; 1910).—Lost.

Marsh (Santa Rosa County, H. G. O., 1871; 1910).—This station has been destroyed.

Bower (Santa Rosa County, H. G. O., 1871; 1910).—On a sand hill just back of a prominent point on the north side of Santa Rosa Island. The station was originally marked according to note 1,[1] but was re-marked in 1910 according to note 12.[1] The eastern end of the long neck of land that forms the end of the point bears N. 5° E. from the station, and the eastern end of a foot-shaped projection on the eastern side of the point bears N. 38° E.

Sand Hill (Santa Rosa County, H. G. O., 1871; 1910).—On the eastern end of a snake-shaped sand hill on Santa Rosa Island. The station is marked according to note 1,[1] except that there are no reference stakes. It was searched for without success in 1910.

Ranch (Santa Rosa County, H. G. O., 1871; 1910).—Lost.

Agassiz (Santa Rosa County, H. G. O., 1871; 1910).—Lost.

Two Points (Santa Rosa County, H. G. O., 1871; 1910).—On the western one of two points near together on the mainland shore of Santa Rosa Sound. The station is marked according to note 1.[1] It could not be recovered in 1910.

Peak (Santa Rosa County, H. G. O., 1871; 1910).—Lost.

Deserted (Santa Rosa County, H. G. O., 1871; 1910).—Lost.

Cove (Santa Rosa County, H. G. O., 1871; 1910).—This station is in the shifting sand hills on the Gulf coast of Santa Rosa Island and could not be recovered in 1910. It is marked according to note 1.[1]

Big River (Santa Rosa County, H. G. O., 1871; 1910).—Lost.

John (Santa Rosa County, H. G. O., 1871; 1910).—In the shifting sand hills on the Gulf coast of Santa Rosa Island. The station is marked according to note 1.[1] It could not be recovered in 1910.

Bluff (Santa Rosa County, H. G. O., 1871; 1910).—On a small white bluff on the mainland shore of Santa Rosa Sound. The station is marked according to note 1.[1] It was searched for without success in 1910.

Eagle's Nest (Santa Rosa County, H. G. O., 1871; 1910).—On a prominent point on the mainland shore of Santa Rosa Sound. The station is marked according to note 1.[1] It could not be recovered in 1910.

Tuck (Santa Rosa County, H. G. O., 1871; 1910).—In the shifting sand hills on the Gulf coast of Santa Rosa Island. The station is marked according to note 1.[1] It could not be recovered in 1910.

Long (Santa Rosa County, H. G. O., 1871; 1910).—Near the end of a prominent point, known as Long Pritchard Point, on the mainland side of Santa Rosa Sound. The station is marked according to note 1,[1] except that the underground brick is in two parts, one above the other. It was searched for without success in 1910.

Beach (Santa Rosa County, H. G. O., 1871; 1910).—In the shifting sand hills on the Gulf coast of Santa Rosa Island. The station is marked according to note 1.[1] It could not be recovered in 1910.

Narrows (Santa Rosa County, H. G. O., 1871; 1910).—On a low sand point of the mainland at the western end of the Narrows. The station is marked according to note 1.[1] It could not be recovered in 1910.

Fender (Santa Rosa County, H. G. O., 1871; 1910).—In the shifting sand hills on the Gulf coast of Santa Rosa Island. The station is marked by an iron spike in the top of an old ship

[1] See pp. 61–62.

fender, 18 inches in diameter and 5 feet long, which projects 2 feet above the sand. It could not be recovered in 1910.

Field (Santa Rosa County, H. G. O., 1871; 1910).—On a point on the mainland shore of the Narrows. The station is marked according to note 1.[1] It was searched for without success in 1910.

Surf (Santa Rosa County, H. G. O., 1871).—This station is in the shifting sand hills on the Gulf coast of Santa Rosa Island and was not searched for in 1910. It is marked according to note 1.[1]

Kitrel (Santa Rosa County, H. G. O., 1871; 1910).—On a point on the mainland shore of the Narrows. The station is marked according to note 1.[1] It was searched for without success in 1910.

Cut (Santa Rosa County, H. G. O., 1871; 1910).—In the shifting sand hills on the Gulf coast of Santa Rosa Island. The station is marked according to note 1.[1] It could not be recovered in 1910.

Rogers (Santa Rosa County, H. G. O., 1871; 1910).—This station has been destroyed.

Pirate (Santa Rosa County, H. G. O., 1871).—This station is in the shifting sand hills on the Gulf coast of Santa Rosa Island and was not searched for in 1910. The station is marked according to note 1.[1]

Davis (Santa Rosa County, H. G. O., 1871; 1910).—Lost.

Small (Santa Rosa County, H. G. O., 1871).—This station is in the shifting sand hills on the Gulf coast of Santa Rosa Island and was not searched for in 1910. The station is marked according to note 1.[1]

Payne (Santa Rosa County, H. G. O., 1871).—Among tall pine trees near a small bight on the mainland shore of the Narrows and just west of Payne's house. The station is marked according to note 1,[1] except that there is no underground mark. Three blazed pine trees are near the station. The station was not searched for in 1910, as it was thought impossible of recovery.

Gulf (Santa Rosa County, H. G. O., 1871; 1910).—In the shifting sand hills on the Gulf shore of Santa Rosa Island. The station is marked according to note 1.[1] It could not be recovered in 1910.

Burlison (Santa Rosa County, H. G. O., 1871).—On a small plot of hard land on the mainland shore of the Narrows, about 1 mile east of Choctawhatchee Bay. The station is marked according to note 1.[1]

Entrance 2 (Santa Rosa County, G. H. R., 1910).—Near the eastern side of a sand point on the north shore of Santa Rosa Island, 23 paces from mean high-water mark. The station is marked according to note 12,[1] except that there is no underground mark. A reference mark, described in note 13,[1] is 37.54 meters from the station in azimuth 13° 51′.

Grassy Point 2 (Santa Rosa County, G. H. R., 1910).—On a prominent point covered with grass and scattering trees and known as Grassy Point, on the north shore near the western end of Santa Rosa Sound. The station is marked according to note 12,[1] except that there is no underground mark. A reference mark, described in note 13,[1] is 25.56 meters from the station in azimuth 280° 31′. One pine tree and two live oak trees, each marked with a blaze and three copper nails in the form of a triangle, are at the following respective distances from the station: 34.84 meters N. 88° W., 53.89 meters N. 35° E., and 23.93 meters S. 55° E.

Quarantine (Santa Rosa County, G. H. R., 1910).—On made land near the northeastern end of the quarantine station grounds, on the north shore of Santa Rosa Island, 18 paces from the water's edge to the north, 95 paces from the water's edge to the east, and 34.3 meters southwest from the corner of a house. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 24.95 meters from the station in azimuth 271° 36′.

Bald (Santa Rosa County, G. H. R., 1910).—On the north shore of Santa Rosa Sound, 35 paces east of the edge of a hill known locally as Bald Hill, 115 paces east of the center of the hill,

[1] See pp. 61–62.

8 paces from mean high-water mark to the south, and 100 paces west of where the shore line turns to the northward. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is on the slope of the hill, 38.57 meters from the station in azimuth 133° 13′. A pine tree and a live oak tree, each marked with a blaze and three copper nails in the form of a triangle, are, respectively, 17.53 meters N. 48° W. and 42.15 meters due west from the station.

Sharp Point (Santa Rosa County, G. H. R., 1910).—On a prominent timbered point on the north shore of Santa Rosa Island 2 miles east of Sabine Bay, 40 paces from mean high-water mark to the north and 65 paces from mean high-water mark to the west. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 27.70 meters from the station in azimuth 341° 33′. Three pine trees, each marked with a blaze and three copper nails in the form of a triangle, are at the following distances from the station: 12.10 meters S. 73° E., 20.42 meters S. 41° E., and 34.38 meters N. 43° W.

Creek 2 (Santa Rosa County, G. H. R., 1910).—On the north shore of Santa Rosa Sound north about 20° west from Range Point, 90 paces east of a creek and 12 paces from mean high-water mark. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 38.22 meters from the station in azimuth 158° 39′. Two pine trees, each marked with a blaze and three copper nails in the form of a triangle, are, respectively, 37.37 meters N. 65° E. and 21 meters N. 5° W. from the station.

Range 2 (Santa Rosa County, G. H. R., 1910).—On a prominent sand hill covered with small brush on the north and northeast slopes 150 paces from the north shore of Santa Rosa Island, near the cove on the west side of Range Point. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is on level ground 25.60 meters, inclined distance, from the station in azimuth 191° 59′. Station *Range* (see p. 118) is 3.087 meters distant in azimuth 255° 24′.

Marsh 2 (Santa Rosa County, G. H. R., 1910).—On the north shore of Santa Rosa Sound N. 28° W. from Bower Point, 27 paces from high-water mark to the south and 28 paces from high-water mark to the east. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 27.95 meters from the station in azimuth 140° 18′. Three pine trees, each marked with a blaze and three copper nails in the form of a triangle, are at the following distances from the station: 23.84 meters N. 58° E., 30.72 meters N. 48° W., and 24.11 meters S. 80° W.

Sand Hill 2 (Santa Rosa County, G. H. R., 1910).—On the most prominent of several sand hills on Santa Rosa Island about 3 miles east of Bowers Point and a little nearer the south shore of the island than the north shore. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is on level ground 23.21 meters, inclined distance, from the station in azimuth 142° 28′.

Ranch 2 (Santa Rosa County, G. H. R., 1910).—On the north shore of Santa Rosa Sound 25 paces from high-water mark. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 18.43 meters from the station in azimuth 166° 40′. Two live oak trees, each marked with a blaze and three iron nails in the form of a triangle, are, respectively, 21 meters N. 65° E. and 15.18 meters due west from the station.

Agassiz 2 (Santa Rosa County, G. H. R., 1910).—On a very prominent, conspicuous sand hill on Santa Rosa Island about midway between the Gulf and Santa Rosa Sound. The top of the hill is a narrow circular ridge covered with vegetation inclosing a large deep hollow. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is in the hollow mentioned above 21.32 meters, inclined distance, from the station in azimuth 305° 04′.

Two Points 2 (Santa Rosa County, G. H. R., 1910).—On the north shore of Santa Rosa Sound, 80 paces east of a small creek and 7 paces from mean high-water mark. The station is marked according to note 12.[1] A reference mark described in note 13,[1] is 30.42 meters from the station in azimuth 202° 48′. A live oak tree and a magnolia tree, each marked with a blaze and three iron nails in the form of a triangle, are, respectively, 15.36 meters N. 55° W. and 22.62 meters N. 20° E.

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[1] See pp. 61–62.

Deserted 2 (Santa Rosa County, G. H. R., 1910).—On the north shore of Santa Rosa Sound about 1¾ miles west of Williams Creek and about 150 meters west of a farmhouse which is about 200 meters back from the shore. The station is just back of some small live oak trees, about 3 meters from high-water mark, and is marked according to note 12.[1] A reference mark, described in note 13,[1] is 39.92 meters from the station in azimuth 169° 58′.

Peak 2 (Santa Rosa County, G. H. R., 1910).—On a prominent sand hill on the Gulf shore of Santa Rosa Island opposite a large cove on the north side of the island formed by two rather prominent points. The western point is covered with timber and the eastern edge of this timber is north and a little west of the station. There are some small sharp-pointed sand hills to the westward of the station, but no high hills to the eastward. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is on level ground 57.19 meters, inclined distance, from the station in azimuth 126° 04′.

Cove 2 (Santa Rosa County, G. H. R., 1910).—On a lone sand hill near the Gulf shore of Santa Rosa Island, nearly due south from the mouth of Williams Creek. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is on a small knoll 22.62 meters, inclined distance, from the station in azimuth 2° 35′. A clump of pine trees on the point of an island three-fourths mile distant is north 85° west from the station.

Big River 2 (Santa Rosa County, G. H. R., 1910).—On a timbered point on the north shore of Santa Rosa Sound about 150 meters east of Williams Creek, about 300 meters west of the Woodrack boat landing, and 20 paces from mean high-water mark. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 28.15 meters from the station in azimuth 161° 24′. Two pine trees, each marked with a blaze and three iron nails in the form of a triangle, are, respectively, 10.79 meters N. 15° W. and 24.38 meters N. 86° W.

John 2 (Santa Rosa County, G. H. R., 1910).—On a sand hill covered with shrubs, near the north side of Santa Rosa Island. The hill is the most prominent one in the vicintiy and its north edge is 10 paces from mean high-water mark. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is on a small rise of ground near the base of the hill 48.54 meters, inclined distance, from the station in azimuth 318° 48′. The outer edge of the timber on the point one-half mile to the eastward is N. 65° E. from the station and the end of the point five-eighths mile to the westward is S. 81° W.

Bluff 2 (Santa Rosa County, G. H. R., 1910).—On the north shore of Santa Rosa Sound, about 2 miles east of Williams Creek and 15 paces from mean high-water mark. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 32.24 meters from the station in azimuth 209° 22′. Two pine trees, each marked with a blaze and three iron nails in the form of a triangle, are respectively, 26.06 meters N. 32° E. and 21 meters N. 77° W. from the station.

Eagles Nest 2 (Santa Rosa County, G. H. R., 1910).—On a prominent point on the north shore of Santa Rosa Sound, 63 paces from mean high-water mark to the eastward and 58 paces from mean high-water mark to the westward. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 25.52 meters from the station in azimuth 151° 17′. Two pine trees, each marked with a blaze and three iron nails in the form of a triangle, are respectively 4.76 meters N. 32° E. and 6.22 meters S. 4° E. from the station.

Tuck 2 (Santa Rosa County, G. H. R., 1910).—On a sand ridge on the Gulf shore of Santa Rosa Island. To the eastward the ridge is about the same height as at the station, but to the westward there is an abrupt drop of about 8 feet. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is on level ground 52.01 meters inclined distance from the station in azimuth 178° 03′.

Long 2 (Santa Rosa County, G. H. R., 1910).—On a prominent point on the north side of Santa Rosa Sound, about 2 miles west of the western end of the Narrows, 77 paces from the edge of the bank to the south, 45 paces from mean high-water mark to the east, and 40 paces from mean high-water mark to the west. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 38.73 meters from the station in azimuth 172° 04′. Two pine

[1] See pp. 61–62.

trees, each marked with a blaze and three copper nails in the form of a triangle are respectively 21.73 meters S. 25° E. and 14.60 meters N. 47° W. from the station.

Beach 2 (Santa Rosa County, G. H. R., 1910).—On a sand ridge on the Gulf shore of Santa Rosa Island. The ridge is lower to the eastward, but to the westward are two sand hills higher than the station at distances of 30 meters and 60 meters, respectively. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is on level ground 52.76 meters, inclined distance, from the station in azimuth 128° 59′.

Narrows 2 (Santa Rosa County, C. H. R., 1910).—On the north shore of the western end of the Narrows 12 paces from mean high-water mark. The shore line in this vicinity is nearly straight. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 26.07 meters from the station in azimuth 80° 14′.

Fender 2 (Santa Rosa County, G. H. R., 1910).—About 2 meters west of the eastern end of a sand ridge on the Gulf shore of Santa Rosa Island and about 300 meters from the nearest sand hills to the eastward. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is on a spur of the ridge 31.42 meters from the station in azimuth 136° 52′.

Field 2 (Santa Rosa County, G. H. R., 1910).—On the north shore of the Narrows, about 160 meters east of the mouth of a small creek, about 275 meters east of a house and 20 paces from mean high-water mark. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 27.42 meters from the station in azimuth 172° 14′. Two pine trees, each marked with a blaze and three nails in the form of a triangle, are, respectively, 9.63 meters S. 5° W. and 20.06 meters N. 73° W. from the station.

Surf 2 (Santa Rosa County, G. H. R., 1910).—On a sand ridge on the Gulf shore of Santa Rosa Island. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is on level ground, 54.62 meters inclined distance, from the station in azimuth 172° 27′.

Kitrel 2 (Santa Rosa County, G. H. R., 1910).—On the north shore of the Narrows, about 2½ miles west of Mary Esther post office, and 7 paces from high-water mark. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 26.76 meters from the station in azimuth 171° 34′. Two live oak trees, each marked with a blaze and three nails in the form of a triangle, are, respectively, 7.10 meters N. 28° W. and 5.09 meters N. 65° W. from the station. The southeast corner of a house is 55.01 meters N. 34° W. from the station.

Cut 2 (Santa Rosa County, G. H. R., 1910).—On the highest point of a sand ridge on Santa Rosa Island, about midway between the Gulf and Santa Rosa Sound and east and southeast, respectively, of two clumps of small pine trees. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 46.80 meters, inclined distance, from the station, in azimuth 351° 20′.

Rogers 2 (Santa Rosa County, G. H. R., 1910).—On the north shore of the Narrows in the inclosed field just east of the house in which the Mary Esther post office is located, 6 paces from high-water mark and 3 paces north of the fence along the shore. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 30.37 meters from the station in azimuth 158° 23′. Two live oak trees, each marked with a blaze and three nails in the form of a triangle, are, respectively, 23.40 meters N. 33° W. and 36.94 meters N. 18° E. from the station. The southeast corner of the house mentioned above is 29.17 meters N. 48° W. from the station.

Pirate 2 (Santa Rosa County, G. H. R., 1910).—On a sand ridge on the Gulf shore of Santa Rosa Island, about one-half mile east of Pirates Cove. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is on level ground 68.41 meters, inclined distance, from the station in azimuth 184° 56′. The end of Pirates Cove Point is N. 65° W. from the station.

Davis 2 (Santa Rosa County, G. H. R., 1910).—On a point covered with scrubs and scattering pines on the north side of the Narrows, about one mile west of Camp Walton and about 150 meters east of a thick clump of pine trees. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 19.67 meters from the station in azimuth 186° 05′.

[1] See pp. 61-62.

Two pine trees each marked with a blaze and three copper nails in the form of a triangle, are, respectively, 26.37 meters N. 2° W. and 21.22 meters N. 15° W. from the station. The end of Pirates Cove Point is S. 85° W. from the station.

Small 2 (Santa Rosa County, G. H. R., 1910).—On a lone sand hill on the Gulf shore of Santa Rosa Island, about 400 meters from the nearest sand hills to the westward, and about 150 meters from the nearest sand hills to the eastward. The station is marked according to note 12.[1] A reference mark described in note 13,[1] is 48.38 meters, inclined distance, from the station in azimuth 177° 01′.

Payne 2 (Santa Rosa County, G. H. R., 1910).—On the north shore of the Narrows, about 500 meters west of the store at Camp Walton and 2 meters from high-water mark. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 37.03 meters from the station in azimuth 184° 28′. A pine tree, marked with a blaze and three nails in the form of a triangle, is 29.14 meters N. 80° E. from the station.

Gulf 2 (Santa Rosa County, G. H. R., 1910).—On a sand ridge on the Gulf side of Santa Rosa Island. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 45.16 meters, inclined distance, from station in azimuth 157° 18′. The store at Camp Walton is N. 5° W. from the station.

Burlison 2 (Santa Rosa County, G. H. R., 1910.—On the north shore of the Narrows at the eastern end of Camp Walton, about 550 meters from the post office, 3 meters east of a fence and 8 paces from mean high-water mark. The station is marked according to note 12.[1] A reference mark, described in note 13,[1] is 65.90 meters from the station in azimuth 162° 26′. Three pine trees, each marked with a blaze, and three nails in the form of a triangle, are at the following distances from the station: 16.98 meters N. 52° E.; 12.77 meters N. 12° E.; and 15.03 meters N. 48° W.

PENSACOLA BAY.

PRINCIPAL POINTS.

Bauer Point (Escambia County, P. A. W., 1889).—On the first sharp point from the entrance on the north shore of Big Lagoon. The station is on the highest sand hill in the vicinity, about 75 meters from the end of the point, and just at the edge of the timber. It is marked according to note 2.[1]

Lagoon 1 (Escambia County, P. A. W., 1889).—On the neck of land between the Gulf and Big Lagoon, on the first prominent sand hill west of the beacons at Fort McRee. The station is marked according to note 2,[1] except that the north reference post is 2.7 feet from the station, and the other three 2 feet distant.

Fort Pickens (Santa Rosa County, F. H. G., 1856; 1910).—This station has been destroyed.

Navy Yard wharf (Escambia County, F. H. G., 1860; 1910).—Just east of the steps at the outer end of the Navy Yard wharf, at Warrington. The station is the joint of three granite blocks in the wall of the wharf and is 5.01 feet from the south edge of the wall and 4.22 feet east of the east edge of the steps.

Pickens (*U. S. E.*) (Santa Rosa County, O. B. F., 1901; 1910).—On the southwest corner of Fort Pickens. The station is marked by a half-inch copper bolt set in the top of a square concrete post which projects 6 inches above the ground. The following measurements are from the station to the outer edge of the fort: 10.64 meters south; 22.25 meters southwest (corner of fort); 16.37 meters west; 17.01 meters northwest (angle of wall); and 9.05 meters north (angle of wall).

Bight (Santa Rosa County, H. G. O., 1870; 1891).—Lost.

Pond (Santa Rosa County, H. G. O., 1870).—In a grove of pine trees on a prominent point of Santa Rosa Island, about 3½ miles east of Fort Pickens. The station is marked by a stake, surrounded by four other stakes the diagonal lines from which intersect at the station. The underground mark is a hole drilled in a large, flat conglomerate stone about 2 feet below the ground. Three pine trees, blazed and marked with nails, are south, southwest, and west, respectively, from the station, the one to the south being 14.1 meters distant.

[1] See pp. 61–62.

Fair Point 2 (Santa Rosa County, H. G. O., 1870; 1889).—Lost.

Lagoon (Escambia County, F. H. G., 1856; 1891).—Lost.

Fort McRee (Escambia County, F. H. G., 1856; 1891).—Lost.

Warrington west base (Escambia County, F. H. G., 1856; 1910).—Just north of the military road at a point near a bend in the road opposite the Barrancas Barracks and in the prolongation of the straight part of the road extending from the Navy Yard on which the base line was measured. The station is marked by the center of a wooden plug in the top of an iron screw pile, which was found badly out of plumb in 1910. The southwest corner of the grounds of the Barrancas Barracks is 21.1 meters northeast of the station.

Warrington east base (Escambia County, F. H. G., 1856; 1910).—Near the west Navy Yard gate at Warrington and just opposite the east end of the military road along which the base line was measured. The station is marked by a granite monument. The Navy Yard wall opposite the station is marked by copper nails.

Santa Rosa 2 (Santa Rosa County, F. H. G., 1859; 1890).—Lost.

Fair Point (Santa Rosa County, F. H. G., 1857; 1889).—Lost.

Bayou Grande (Escambia County, F. H. G., 1856; 1891).—Lost.

Barkley Point (Escambia County, F. H. G., 1856; 1891).—Lost.

Town Point (Santa Rosa County, F. H. G., 1856; 1860).—Lost.

Emanuel Point (Escambia County, F. H. G., 1856; 1890).—Lost.

Plantation Hill (Santa Rosa County, F. H. G., 1856; 1891).—Lost.

Town Point 2 (Santa Rosa County, F. H. G., 1860; 1889).—Lost.

Barkley Point 2 (Escambia County, F. H. G., 1860; 1891).—Lost.

Clapps Woods (Santa Rosa County, P. A. W., 1889; 1910).—Lost.

Fair Point 3 (Santa Rosa County, P. A. W., 1889; 1910).—This station is marked according to note 2.[1] It was searched for without success in 1910.

Grande (Escambia County, P. A. W., 1889; 1910).—On the end of the sand point just south of the mouth of Bayou Grande. The station is marked according to note 2.[1] It was found in 1910 that a car line had been built along the point and the station could not be recovered.

Chico (Escambia County, P. A. W., 1889; 1910).—Lost.

Harbor-master (Escambia County, P. A. W., 1890; 1901).—The weather vane on the cupola of the building containing the harbor master's office, on the water front on the west side of Palafox Street, Pensacola. Five tacks in the under side of the roof on the inside of the cupola are directly under the weather vane and mark the station.

Town Point 3 (Santa Rosa County, P. A. W., 1889).—On a sand ridge about 20 meters from high-water mark near the first clump of small pine trees east of the extremity of Town Point. The station is marked according to note 2.[1] The stump of a small tree, blazed and marked with copper nails, is 14.21 meters east of the station. Two small trees, blazed and marked with copper nails, are at the following distances from the station: 11.95 meters south-southeast and 9.96 meters southeast.

Hickory (Santa Rosa County, P. A. W., 1890).—On the north shore of the United States Live Oak Plantation, about 2½ miles southeast of Red Fish Point. The station is just below the bluff, close to high-water mark, and is marked according to note 2.[1] Four trees, blazed and marked with copper nails, are at the following distances from the station: Small pine tree, 10.33 meters east; live oak tree, 13.52 meters southeast; hickory tree, 8.75 meters south; and a hickory tree, 17.26 meters southwest.

Emanuel Point 3 (Escambia County, P. A. W., 1890).—About 1½ miles northeast of Pensacola, on a small green knoll on the first bluff above high-water mark at Emanuel Point. The station is between the Pensacola & Andalusia Railroad track and the shore of Pensacola Bay and is 6.55 meters from the south rail of the track. The station is marked according to note 2.[1] A cypress tree, a live oak tree, and a fence post, each blazed and marked with copper nails, are at the following distances from the station: Cypress tree, 53.5 meters southwest by west; live oak tree, 50.0 meters northeast by north; and the fence post, 23.2 meters northwest by north.

[1] See pp. 61–62.

Red Fish Point 3 (Santa Rosa County, P. A. W., 1890).—On the beach at Red Fish Point. The station is marked according to note 2.[1] Four pine trees, blazed and marked with copper nails, are at the following distances and azimuths from the station: 12.76 meters, 305° 57′; 29.53 meters, 319° 15′; 41.12 meters, 17° 33′; and 52.30 meters, 66° 13′.

Sand String (Santa Rosa County, P. A. W., 1890).—On Hernandez Point, on the east side of Escambia Bay, on a string of hard sand which separates the bay from the salt marsh to the eastward. The station is marked according to note 2.[1]

Magnolia Bluff (Escambia County, P. A. W., 1891).—On a sand mound near Magnolia Bluff 4.82 meters east of the east rail of the Pensacola & Andalusia Railroad. The station is marked according to note 2[1] except that the surface mark is a marble post 6 inches square and 28 inches long with diagonal grooves in the upper end, the intersection of which mark the station. A block of wood having a nail in its upper surface to mark the station is between the surface mark and the underground mark. Four trees, blazed and marked with copper nails, are at the following distances and azimuths from the station: Oak, 34.7 meters, 208° 36′; pine, 41.7 meters, 215° 50′; pine, 61.1 meters, 2° 33′; and an oak, 54.1 meters, 37° 07′. A milepost marked F 46 on the north side, L 655 on the west side, and C 159 on the south side is 84.4 meters south by west from the station.

Trout Crawl (Santa Rosa County, P. A. W., 1891).—On the beach on the east side of Escambia Bay, about halfway between the mouths of Trout and Crawl Bayous and about 50 meters south of a wharf. The station is marked according to note 2.[1] Three blazed pine trees are at the following distances and azimuths from the station: 22.93 meters, 218° 47′; 43.10 meters, 275° 21′; and 23.64 meters, 344° 42′.

Devils Point 2 (Escambia County, P. A. W., 1890).—About 100 meters from the end of Devils Point, on a small sand hill near the corner of a picket fence on land belonging to Dr. Brosenham. The station is marked according to note 2.[1] Three blazed oak trees are at the following distances from the station: 14.84 meters west-northwest, 16.92 meters west, and 20.71 meters west-southwest. A copper nail in the post at the corner of the fence is 5.76 meters from the station.

East Escambia (Santa Rosa County, P. A. W., 1891).—On the beach at Live Oak Point, about 15 meters from the shore and about 12 meters north of the north rail of the Pensacola & Andalusia Railroad at the northeast end of the Escambia trestle. The station is marked according to note 2.[1]

West Escambia (Escambia County, P. A. W., 1891).—On a sand ridge on Lora Point about 5 meters above high-water mark and 18.1 meters northwest of the inner rail of the Pensacola & Andalusia Railroad at the southwest end of the Escambia trestle. The station is marked by the intersection of diagonal grooves in the upper end of a marble post 6 inches square and 26 inches long which projects about 6 inches above the ground. The underground mark is the center of the mouth of a bottle filled and surrounded with cement about 3 feet below the ground. Four large pine posts with a copper nail in each are, respectively, 3.77 feet northeast, 4.22 feet southwest, 4.00 feet southeast, and 4.00 feet northwest. Three trees, blazed and marked with copper tacks, are at the following distances from the station: Oak, 33.0 meters northwest by north; magnolia, 30.1 meters west by north; and a pine, 52.6 meters southwest by south.

East Head (Santa Rosa County, P. A. W., 1891).—On a point at the north end of Escambia Bay, on land owned by Mr. Murphy, a timber inspector, and near an old fish house which stands on a sand ridge between the beach and a large salt marsh to the northward. The station is marked according to note 2,[1] except that the surface mark is a marble post 6 inches square and 26 inches long with diagonal grooves in the upper end, the intersection of which marks the station. Four blazed trees are at the following distances from the station: pine, 13.6 meters north by east; pine, 12.2 meters northeast by east; cypress, 17.2 meters south; and pine, 14.6 meters west-northwest.

West Head (Escambia County, P. A. W., 1891).—On the north shore of a bight which is just south of the south mouth of the Escambia River and about north by west from Skinner's

[1] See pp. 61–62.

Mill. The station is on a sand ridge which separates the bay from the large salt marsh to the northward, and is marked according to note 2.[1] A blazed pine tree is 5.5 meters west-northwest of the station and another blazed pine tree is west by north from the station a little farther away than the first.

Gurley (Santa Rosa County, P. A. W., 1892; 1910).—On the south shore of East Bay about one-fourth mile east of the house of Mr. Gurley, 6 meters from high-water mark and 3 meters outside the fence which surrounds a small clearing belonging to Mr. Gurley. The station is marked according to note 2,[1] and was found in good condition in 1910.

White Point 3 (Santa Rosa County, P. A. W., 1892; 1910).—Near the end of White Point, on the west shore of East Bay, 6 meters from high-water mark and at the edge of a field of salt wire grass which extends to the edge of the woods three-fourths of a mile distant. The station is marked according to note 2[1] except that there is a standard disk station mark in the top of the tile and the reference posts are northeast, southeast, southwest, and northwest, respectively.

Rogers (Santa Rosa County, P. A. W., 1892; 1910).—On the south shore of East Bay about 4 miles southwest of the mouth of East River, one-fourth mile west of the house of Mr. Rogers and about midway between the mouths of two bayous each about three-eighths mile distant. The station is in a clearing on a small elevation about 10 meters from high-water mark. It is marked according to note 2.[1] A live oak stump, marked with a blaze and three copper nails, is 17.2 meters northeast by north from the station. It was found in 1910 that a live oak tree had grown up from this stump.

Highland (Santa Rosa County, P. A. W., 1892).—On the northeast shore of East Bay, about 1½ miles northwest of the mouth of East River. The station is in a small clearing on a shell bank about 1 meter above high water and about 12 meters from high-water mark. The station is marked by a marble post 8 by 8 by 30 inches, the top of which is dressed down to 6 by 6 inches and marked with deep diagonal grooves in the top surface, the intersection of which marks the station. The post projects a little above the ground and is surrounded with concrete. The underground mark is a bottle set in cement. Four pine reference posts, marked with copper nails, are each 4 feet from the station, northeast, southeast, southwest, and northwest, respectively.

Lowland (Santa Rosa County, P. A. W., 1894).—On the southeast shore of East Bay, about 1½ miles southwest of the mouth of East River. The station is on a mound among palmetto stumps about 5 meters from high-water mark. It is marked according to note 2.[1] Three large pine trees, blazed and with three copper nails in the blaze of each tree, are at the following distances from the station: 18.0 meters south by east, 35.4 meters south by west, and 24.6 meters east.

Pond (Santa Rosa County, P. A. W., 1894).—On the east shore of East Bay, on the point just south of the mouth of East River. The station is on a narrow neck of land 30 meters southwest of the mouth of a small bayou, 6 meters from the nearest point of the bayou, and 3 meters from high-water mark of the bay shore. The station is marked according to note 2,[1] except that the reference posts are at the following distances from the station: 4.62 feet north, 4.13 feet east, 3.87 feet south, and 4.04 feet west.

Guerrilla (Santa Rosa County, P. A. W., 1894).—On the northeast shore of East Bay, about 1 mile from the mouth of East River. The station is 8 meters from high-water mark on a clear stretch of sand near Guerrilla Bayou, which winds around back of the station and approaches within 5 meters of it. The station is marked according to note 2,[1] except that the reference posts are at the following distances from the station: 3.90 feet north, 3.71 feet east, 3.77 feet south, and 4.10 feet west.

Middle beacon (Santa Rosa County, P. A. W., 1892).—The red channel beacon in East Bay, south of Escribano Point.

Escribano Point 2 (Santa Rosa County, P. A. W., 1892).—On Escribano Point, on the east side of the south end of Blackwater Bay, in the center of a small knoll about 1 meter high and

[1] See pp. 61-62.

about 15 meters from high-water mark at the extremity of the point. The station is marked according to note 2,[1] except that the reference posts are at the following distances from the station: south, 4.09 feet; west, 4.18 feet; north, 3.82 feet; and east, 3.84 feet.

Lindsay (Santa Rosa County, P. A. W., 1892).—On the west shore of Blackwater Bay, about 3 meters from high-water mark and about 7½ meters outside the fence line of Mr. Lindsay's land. The station is marked by a copper nail in the cement that fills the top of a screw pile, which in turn is set in cement. Four pine posts marked with copper nails are each 4 feet from the station north, east, south, and west, respectively. The diagonal lines joining these posts intersect at the station. Three blazed pine trees, each marked with three copper nails, are at the following distances from the station: 10.41 meters north by west, 12.30 meters west, and 16.66 meters southwest.

Grass Point 2 (Santa Rosa County, P. A. W., 1892).—On Grassy Point, a prominent point on the east side of Blackwater Bay, on a sand knoll about 6 meters from high-water mark on the outermost spit of marshy land that forms the end of the point. The station is marked according to note 2.[1]

Eagle Point 2 (Santa Rosa County, P. A. W., 1892).—On Eagle Point, on the west shore of Blackwater Bay, about 5 meters from high-water mark. The station is marked according to note 2.[1] Two live oak trees, blazed and marked with three copper nails in each, are at the following distances from the station: 11.6 meters west-southwest, and 11.5 meters northwest. A pine stump, also blazed and marked with three copper nails, is 9.4 meters north-northeast of the station.

Weaver Mouth (Santa Rosa County, P. A. W., 1892).—On the south shore of the stream known as Broad Mouth, which is the lower mouth of the Yellow River. The station is on the sand beach, 3 meters from the high-water mark of the river and 50 meters from the high-water mark of Blackwater Bay. The station is marked according to note 2.[1]

Robinson Point 2 (Santa Rosa County, P. A. W., 1892).—On Robinson Point, on the west shore of Blackwater Bay, on a small knoll 30 meters from high-water mark. The station is marked according to note 2,[1] except that three of the reference posts are slightly more than 4 feet from the station.

Turtle Point (Santa Rosa County, P. A. W., 1892).—Near high-water line on Turtle Point, on the west shore of Blackwater Bay. The station is marked by a pole held in place by braces.

Yellow River (Santa Rosa County, P. A. W., 1892).—On the east shore of Blackwater Bay, on the south edge of the hard land north of the marshy point which is just north of the north mouth of the Yellow River. The station is 30 meters from the river and 10 meters from high-water mark of the bay, and is marked according to note 2.[1]

Bay Point (Santa Rosa County, P. A. W., 1892).—On Bay Point, on the west side of Blackwater Bay just back of the Bay Point sawmill and at the south edge of the road running to the mill. The station is about centrally located on the point, being midway between the high-water marks of Blackwater River to the north and Blackwater Bay to the south. The station is marked according to note 2,[1] except that there are only three reference posts and these are somewhat nearer than 4 feet to the station. The following distances are from the station: Northwest corner of the brick machine shop of the Bay Point sawmill, 25.34 meters east-southeast; northwest corner of the brick blacksmith shop of the Bay Point sawmill, 29.67 meters east; and a large live oak tree, blazed and marked with three copper nails, 37.72 meters west-northwest.

Wards Basin 2 (Santa Rosa County, P. A. W., 1892).—On the east shore of Blackwater Bay, about one-eighth of a mile southeast of the point at the entrance to Wards Basin. The station is 5 meters from high-water mark and at the edge of the first heavy timber south of the entrance to Wards Basin. The station is marked according to note 2.[1] Three trees, blazed and marked with three copper nails in each tree, are at the following distances from the station: Pine, 17.5 meters east by south; cypress, 17.8 meters northeast; and a pine, 18.3 meters southeast by east.

[1] See pp. 61–62.

Peterson Point 2 (Santa Rosa County, P. A. W., 1892).—On Peterson Point, at the north end of Blackwater Bay, on the east side of the mouth of Blackwater River and directly across from Bay Point. The station is on the extremity of the point, just within the high-water line. It is marked by a copper nail, surrounded by three other copper nails in the top surface of a live oak stump.

Shields Point (Santa Rosa County, P. A. W., 1892).—On Shields Point, on the west shore of Upper Blackwater Bay or Blackwater River. The station is about 5 meters from high-water mark and about 5 meters from a bluff back of the station. It is marked according to note 2.[1]

Milligan (Santa Rosa County, P. A. W., 1892).—On the west shore of Upper Blackwater Bay or Blackwater River, on land belonging to Mr. Milligan about three-eighths of a mile north of Shields Point. The station is at the base of a small bluff covered with young black oak trees and about 5 meters from high-water mark. It is marked according to note 2.[1]

Last Point (Santa Rosa County, P. A. W., 1892).—On the east shore of Upper Blackwater Bay, or Blackwater River, on what is known locally as Graveyard Point, which is the first point south of the mouth of the narrow part of Blackwater River. The point is just south of the mouth of a small stream, and the station is among the trees about 15 meters from high-water mark. The station is marked according to note 2.[1] Three pine trees, blazed and with three copper nails in the blaze of each tree, are at the following distances from the station: 7.7 meters north-northwest, 11.6 meters north-northeast, and 6.6 meters east-northeast.

Clapps Woods 2 (Santa Rosa County, G. H. R., 1910).—On Santa Rosa Island about 150 meters west of the eastern edge of Clapps Woods and about 37 meters from high-water mark. The station is marked according to note 12[1] except that the tile of the surface mark is surrounded with concrete. Three pine trees, each marked with a blaze and with three copper nails in the form of a triangle, are at the following distances from the station: 20.06 meters, N. 41° W.; 48.40 meters, N. 75° W.; and 61.63 meters S. 31° W.

Fair Point 1910 (Santa Rosa County, G. H. R., 1910).—On a long, narrow sand point known as Fair Point, on the south side of Pensacola Bay, about 300 meters from the extremity of the point, about 175 meters from the edge of the woods, 60 paces from high-water mark to the southwest, and 50 paces from high-water mark to the northeast. The station is marked according to note 12.[1] A reference mark, a 3-inch galvanized-iron pipe 4 feet long projecting 1 foot above the ground, is 40.26 meters from the station in azimuth 285° 38′. Two live oak trees, each marked with a blaze and with three iron nails in the form of a triangle, are, respectively, 38.0 meters S. 41° E. from the station and 39.0 meters S. 59° W.

SUPPLEMENTARY POINTS.

Barrancas wharf shed (Escambia County, P. A.W., 1891).—The ventilator of the shed near the end of the Barrancas Wharf.

Revenue flagstaff (Escambia County, P. A. W., 1891).—The flagpole on the Revenue building at Warrington.

Fort Barrancas barracks flagstaff (Escambia County, P. A. W., 1891).—The tall flagpole at the Barrancas Barracks grounds.

Warrington National cemetery flagstaff (Escambia County, P. A.W., 1891).—The tall flagpole in the grounds of the National Cemetery at Warrington.

Warrington Catholic Church spire (Escambia County, P. A. W., 1891; 1901).—The cross on the spire of the Catholic Church at Warrington.

Commandant's cupola (Escambia County, P. A. W., 1891; 1901).—The top of the cupola on the commandant's residence at the Pensacola Navy Yard.

Navy-yard flagstaff (Escambia County, P. A. W., 1891; 1901).—The tall flagpole in the grounds of the Pensacola Navy Yard.

Navy Yard derrick (Escambia County, P. A. W., 1891; 1901).—Lost.

Life saving station flagstaff (Santa Rosa County, P. A. W., 1891).—The top of the tall flagstaff at the life saving station near the eastern end of Santa Rosa Island.

[1] See pp. 61–62.

Marine railroad stack (Santa Rosa County, P. A. W., 1891; 1901).—The iron smokestack on the power house of the marine railroad at Town Point on the United States Live Oak Plantation.

Chico flagstaff (Escambia County, P. A. W., 1891).—The tall flagpole a little south of the bridge that crosses the mouth of Bayou Chico near Brent's mill.

Chico white chimney (Escambia County, P. A. W., 1891).—The white chimney on a residence just opposite Brent's mill at the mouth of Bayou Chico.

Clump (Escambia County, P. A. W., 1891).—A flag in a tree near the mouth of Bayou Chico.

Stevedores flagstaff (Escambia County, P. A. W., 1891; 1901).—Lost.

Scandinavian Church spire (Escambia County, P. A. W., 1891; 1901).—The cross on the Scandinavian Church spire, near the foot of Palafox Street, Pensacola.

Pensacola Post Office (Escambia County, P. A. W., 1891; 1901).—The north flagpole on the post-office building at Pensacola. It is the flagpole used for the United States flag, the other flagpole being used for the flags of the Signal Service.

Episcopal Church spire (Escambia County, F. H. G., 1856; 1891).—The cross of the spire of the Episcopal Church, opposite Savilla Square, at the corner of Adams and Saragossa Streets, Pensacola.

Colored Church spire (Escambia County, F. H. G., 1856; 1891).—The spire of the Colored Church on Intendentia Street between Tarragona and Alconiz Streets, Pensacola.

Wright's mill chimney (Escambia County, P. A. W., 1891; 1901).—The large, round chimney used for burning sawdust at Wright's mill, which is at the eastern end of Intendentia Street, Pensacola.

Muscogie outer gable (Escambia County, P. A. W., 1891; 1901).—Lost.

Pensacola Ice Works (Escambia County, P. A. W., 1891).—The tall brick chimney of the ice works at the corner of Tarragona and Chase Streets, Pensacola.

Pensacola railroad station (Escambia County, P. A. W., 1891; 1901).—The top of the cupola of the station of the Pensacola & Andalusia, and Louisville & Nashville R. R., at the corner of Tarragona and Wright Streets, Pensacola.

Herron's house (Escambia County, P. A. W., 1891; 1901).—The top of the cupola on Mr. Herron's residence at the corner of Palafox and Jackson Streets, Pensacola.

Pensacola standpipe (Escambia County, P. A. W., 1891; 1901).—The center of the top of the waterworks standpipe near the corner of Strong and Palafox Streets, Pensacola.

Well's chimney (Escambia County, P. A. W., 1891).—The brick chimney on the southern end of Mr. Well's residence, at the corner of Fourth Street and Twelfth Avenue, Pensacola.

Oak (Escambia County, P. A. W., 1891).—A flag in a tree near the mouth of Bayou Texas.

Magnolia Wharf (Escambia County, P. A. W., 1890).—On the end of the wharf at Magnolia Bluff, on the east side of the southern end of Escambia Bay. The station is marked by five copper nails.

Magnolia Wharf flagstaff (Escambia County, P. A. W., 1890; 1901).—Lost.

Bohemia shingle mill (Escambia County, P. A. W., 1891).—The smokestack on the shingle mill at Bohemia.

Bohemia, round brick chimney (Escambia County, P. A. W., 1891).—The tall, round, brick chimney at Bohemia.

Escambia Trestle, northeast chimney (Escambia County, P. A. W., 1891).—The chimney on the northeast end of the dwelling house on the Escambia Trestle.

Skinner's sawmill stack (Escambia County, P. A. W., 1891).—The iron smokestack at Skinner's sawmill, Escambia.

Skinner's planing mill stack (Escambia County, P. A. W., 1891).—The iron smokestack at Skinner's planing mill at Escambia.

Lone chimney (Escambia County, P. A. W., 1891).—The round brick chimney standing alone on the west shore of Escambia Bay about 1½ miles northwest of Skinner's mill.

Wreck (Escambia County, P. A. W., 1891).—A flagpole on the wreck of an old scow near the southern entrance to the Escambia River.

Leaning chain house (Escambia County, P. A. W., 1891).—This station has been destroyed. The chain house has been torn down and a new one built about 15 yards east of it.

Chain house, east gable (Escambia County, P. A. W., 1891).—The east gable of the shanty which is used as a chain house near the middle of the bay, about half a mile north of the entrance to the Escambia River.

White Point beacon (Santa Rosa County, P. A. W., 1892).—The red channel beacon in East Bay, off White Point.

Escribano Point beacon (Santa Rosa County, P. A. W., 1892).—The red channel beacon in Blackwater Bay above Escribano Point.

Two Trees (Santa Rosa County, P. A. W., 1892).—On the east shore of Blackwater Bay in the bight between Grassy Point and Catfish Point. The station is marked only by a signal, a 4 by 9 inch stick of timber 25 feet long, to which boards are nailed. It is near two isolated pine trees, to one of which the stick of timber is fastened.

Catfish Point (Santa Rosa County, P. A. W., 1892).—On the east shore of Blackwater Bay, on Catfish Point just south of the entrance to Catfish Bayou. The station is marked only by a signal, a pine sapling 6 inches in diameter and 30 feet long, held firmly erect by means of cross pieces of scantling, with boards nailed the entire length.

Scaffold (Escambia County, P. A. W., 1892).—On the east shore of Blackwater Bay, about 250 yards above the mouth of Broad River, which is the lower mouth of the Yellow River, and about one-half mile below the middle mouth of the Yellow River. The station is about 3 meters from high water, on a slightly elevated strip of sand at the outer edge of the marsh and about 150 meters from the edge of thin woods. The station is marked by a copper nail in the top of a stake surrounded by four pine posts, each 4 feet long, with a copper nail in the top of each, approximately north, south, east, and west from the station, at distances of 4.09 3.75, 4.22, and 3.55 feet, respectively.

Mill chimney (Santa Rosa County, P. A. W., 1892).—The tall brick chimney of the Bayport sawmill.

Shingle-mill stack (Santa Rosa County, P. A. W., 1892).—The larger iron stack of Carey & Oldinger's shingle mill, north of Shields Point on the west shore of Blackwater River.

Oak (Santa Rosa County, P. A. W., 1892).—A flag at the top of a tall pine tree on the northwest shore of Oakland Basin.

Dry-dock derrick (Santa Rosa County, P. A. W., 1892).—The top of the derrick of the Bagdad Dry Dock.

PERDIDO BAY.

PRINCIPAL POINTS.

Perdido Range (Baldwin County, Ala., A. T. M., 1889).—On a sand hill about 25 feet high on the island south of Perdido Entrance. The station is marked according to note 2,[1] except that the reference posts are each 6 feet distant, northeast, southeast, southwest, and northwest, respectively.

Johnson (Baldwin County, Ala., A. T. M., 1889; 1911).—On the north shore of a small bay north of the old entrance to Perdido Bay, on a sand ridge covered with oak and palmetto scrub about 100 meters from the shore and about 100 meters southwest of the abandoned house belonging to Mr. Johnson. The station is marked by a standard disk station mark in a block of concrete 10 inches square on top and underground by a jug. A reference mark, a square concrete post marked with an inscribed triangle with a nail at each vertex and the center, is on the sand ridge 25.85 meters from the station in azimuth 105° 21′. Another reference mark, a round concrete post marked with an inscribed circle with a nail at the center, is on the sand ridge 10.71 meters from the station in azimuth 285° 05′

[1] See pp. 61-62.

Perdido III (Escambia County, A. T. M., 1889).—On the neck of land between Old River and the Gulf, on the second sand ridge back from the Gulf shore. The station is marked according to note 2,[1] except that the reference posts are each 6 feet distant. A pine tree near the river shore is about 300 meters N. 53° W. from the station and the river shore at the west end of the woods is about 300 meters N. 27° E.

Bear Point (Baldwin County, Ala., A. T. M., 1889; 1911).—Lost.

Perdido II (Escambia County, A. T. M., 1889).—On the neck of land which separates Old River from the Gulf, on the second sand ridge back from the Gulf shore. The station is marked according to note 2,[1] except that the reference posts are each 9 feet distant.

Hummock (Escambia County, A. T. M., 1889; 1911).—On Inerarity Peninsula a few meters south of the highest part of a hill which is about 25 feet high and about one-fourth mile west of the narrow neck of the peninsula. To reach the station, land on the Inner Bay shore of the narrow neck and follow the edge of the woods until a large pine tree marked with a triangular blaze is reached just south of an old road, and then follow a blazed trail up the hill. The station is marked by a standard disk station mark in a mass of concrete 10 inches square on top in the lower part of which is embedded a tile. The underground mark is a stone jug filled and surrounded with concrete. A pine tree and an oak tree, each marked with a triangular blaze, are, respectively, 14.15 meters N. 70° W. and 12.98 meters N. 65° W. from the station.

Goat (Escambia County, A. T. M., 1889; 1911).—This station is 82.32 meters from *Goat 2* (see p. 134) in azimuth 95° 08′. It is marked by a spike at the center of a tile which is filled and surrounded with concrete and underground by a bottle set in concrete. Three pine trees, each marked with a triangular blaze, are at the following distances and azimuths from the station: 41.21 meters, 24° 27′; 31.02 meters, 184° 10′; and 20.77 meters, 215° 06′.

Perdido I (Escambia County, A. T. M., 1889).—On the second ridge of sand hills back of the Gulf shore south of the east end of Ono Island. The station is marked by a spike in the top of a tile which is filled and surrounded with concrete and underground by a bottle set in concrete 3 feet below the surface. Four hard pine posts, each about 7 feet distant, form a square about the station.

Nelson (Escambia County, A. T. M., 1889; 1911).—About 30 paces from the edge of a bluff, which is about 35 feet high and is covered with a dense growth of small trees, on the south shore of Inerarity Peninsula northeast of the eastern end of Ono Island. A little mound, the remains of an old house, is about 6 paces east by north from the station and an oleander is 10 paces north by east. Two magnolias about 150 meters apart can be seen from Old River, and together with the oleander they are the best marks for finding the locality. The station is marked by a standard disk station mark in a block of concrete 10 inches square on top and projecting about 1 foot, in the lower part of which is embedded a tile. The underground mark is a bottle. Three trees, each marked with a triangular blaze, and two old oak stumps are at the following distances from the station: Oak, 19.83 meters N. 39° E.; pine, 7.92 meters N. 46° E.; stump, 26.65 meters S. 62° E.; magnolia, 24.36 meters S. 54° E.; and stump, 12.88 meters S. 37° W.

Lagoon III (Escambia County, P. A. W., 1889).—On one of the numerous sand ridges on the Gulf shore just abreast of the head of Big Lagoon. The station is marked according to note 2.[1]

Piney (Escambia County, P. A. W., 1889).—On the north side of the eastern end of Big Lagoon, about 500 meters from the shore, on a heavily timbered sand ridge which is bordered with swamp and water on all sides but the east. The station is marked according to note 2.[1]

Lagoon II (Escambia County, P. A. W., 1889).—On one of the low sand hills on the neck of land between Big Lagoon and the Gulf and near the New Inlet which has been cut since the station was established. The station is marked according to note 2.[1]

Red Bluff (Escambia County, P. A. W., 1889).—On the highest part of the prominent sand hill known as Red Bluff, on the north shore of Big Lagoon. The hill is covered with a

[1] See pp. 61–62.

dense growth of scrub oak and on the top are a few small dead pine trees. The station is marked according to note 2.[1]

Inerarity west (Escambia County, A. T. M., 1889; 1911).—This station has been destroyed.

Rockwood (Baldwin County, Ala., A. T. M., 1889).—Near the northeastern extremity of the point just south of the entrance to Bay La Launch, on a bluff just south of a wharf which extends to the northward from the end of the point, and about 300 meters northeast of Mr. Rockwood's house. The station is marked according to note 2,[1] except that there are no reference posts. A live oak tree and two live oak stumps, each marked with a blaze, are at the following distances, respectively, from the station: 4.2 meters S. 87° E., 4.3 meters S. 13° W., and 4.2 meters N. 45° E.

Ross (Baldwin County, Ala., A. T. M., 1889; 1911).—In the water at the end of Ross Point, on the west side of Perdido Bay. The station is marked according to note 2,[1] except that the reference posts are each about 6 feet distant. A stump is in the water 13.5 meters south of the station and another stump is at the water's edge 4.5 meters west.

Red Bluff (Baldwin County, Ala., A. T. M., 1889; 1911).—On the northwest shore of Perdido Bay, on a bluff about 50 feet high known as Red Bluffs, about 4 meters from the edge of the bluff midway between two cottages owned by Mr. M. P. LeGrand. The station is marked by a brass cartridge case in the top of a tile which is filled and surrounded with concrete. A driven well is 68.48 meters from the station in azimuth 130° 41′. A reference mark, a bottle at the center of a square block of concrete, is in line to the well 23.35 meters from the station. Three small pines, each marked with a triangular blaze, are at the following distances and azimuths from the station: 5.61 meters, 122° 07′; 9.34 meters, 125° 39′; and 8.17 meters, 153° 14′.

Manuel (Baldwin County, Ala., A. T. M.,1889; 1911).—Lost.

Dupont (Escambia County, A. T. M., 1889; 1911).—On Dupont Point, a long, sandy point on the east side of Perdido Bay, near the middle of the point about 15 meters west of the woods and grass line. The station is marked according to note 4.[1] A reference mark, a round block of concrete inscribed with a triangle with a nail at the center and each vertex, is on hard land in the palmetto scrub 25.05 meters from the station in azimuth 291° 47′. Another reference mark, a nail at the center of a piece of tile embedded in a round block of concrete, is 46.51 meters from the station in the same azimuth as the first reference mark. Four pine trees, each marked with a triangular blaze, are at the following distances and azimuths from the station: 16.23 meters, 239° 28′; 21.75 meters, 253° 26′; 20.10 meters, 284° 31′; and 20.73 meters, 312° 22′.

Suarez (Baldwin County, Ala., A. T. M., 1889; 1911).—At high-water mark on a sand ridge on Suarez Point, on the west side of Perdido Bay. The station is marked according to note 8.[1] A reference mark, an iron pipe at the center of a round block of concrete, is back of the sand ridge 14.64 meters from the station in azimuth 74° 35′. Another reference mark, a square block of concrete inscribed with a triangle, with a nail at the center and each vertex is back of the sand ridge 20.97 meters from the station in azimuth 123° 43′. A pine tree and a bay tree, each marked with a triangular blaze, are, respectively, 22.65 meters from the station in azimuth 78° 40′ and 24.92 meters in azimuth 111° 23′. A dead tree is 15.32 meters distant in azimuth 160° 50′, and a stump is 4.28 meters distant in azimuth 324°.

Nix (Escambia County, S. F., 1890; 1911).—Lost.

Chagrin (Baldwin County, Ala., S. F., 1890; 1911).—Lost.

Cummings (Escambia County, S. F., 1890; 1911).—Lost.

Grassy (Baldwin County, Ala., S. F., 1890; 1911).—In the water at the end of Grassy Point, on the northwest side of Perdido Bay. The station is marked by a galvanized iron pipe 7 feet long which projects about 2 feet above low water. A reference mark, a galvanized iron pipe 11 feet long projecting 2 feet above the ground and surrounded by a mass of concrete, is in line to station *Double* 21.20 meters from the station in azimuth 329° 17′ 42″. Four stumps

[1] See pp. 61–62.

are at the following distances from the station: 1.9 meters N. 74° E, 7.2 meters S. 59° E, 5.7 meters S. 35° W., and 1.7 meters S. 65° W.

Double (Escambia County, S. F., 1890; 1911).—In the water at the end of the western one of two points known as Double Point, on the southeast side of Perdido Bay. Just back of the station is a small area of hard ground on which there are some small trees and palmetto scrub. The station is marked by a galvanized iron pipe 12 feet long projecting 2 feet above high water and surrounded by a square block of concrete from 1 foot below ground to within 1 foot of the top. A reference mark, a galvanized iron pipe 6 feet long projecting 2 feet above the ground and surrounded by a mass of concrete which extends from 6 inches above the ground to 2 feet below, is on hard ground in line with station *Grassy*, 28.02 meters from the station in azimuth 329° 17′ 42″. Another reference mark, described in note 7,[1] is on hard ground 36.6 meters from the station in azimuth 358° 35′. Five stumps are at the following distances from the station: 12.6 meters N. 80° E., 1.2 meters S. 5° E., 1.0 meter S. 80° W., 1.7 meters N. 5° W., and 3.7 meters N. 49° W. A pine tree and a pine stump, each marked with a triangular blaze, are, respectively, 2.44 meters and 3.50 meters from the first reference mark.

River East (Escambia County, S. F., 1890; 1911).—Lost.

River West (Baldwin County, Ala., S. F., 1890; 1911).—In the water at the end of the point on the southwest side of the mouth of the Perdido River. The station is marked by a galvanized iron pipe 6 feet long surrounded by concrete. A reference mark, a galvanized iron pipe 12 feet long projecting 2 feet above the ground and surrounded by concrete, is in the marsh 26.45 meters from the station in azimuth 63° 57′. Two old stumps are, respectively, 6.1 meters from the station in azimuth 256° and 3.7 meters in azimuth 355°.

Boom (Escambia County, S. F., 1891; 1911).—On the southern part of a point on the northeast side of Perdido River, about a mile from the mouth of the river. The station is marked by a nail in the top of a cypress stub 6 inches in diameter and 5 feet long which projects 6 inches above the ground. A dead cypress tree, a pine tree, and a cypress stump, each marked with a triangular blaze, are at the following distances, respectively, from the station: 17.86 meters N. 46° W., 25.52 meters N. 7° W., and 4.10 meters S. 12° W.

Squid (Baldwin County, Ala., S. F., 1891; 1911).—Lost.

Juniper (Baldwin County, Ala., S. F., 1891; 1911).—Lost.

Hirse (Escambia County, S. F., 1891; 1911).—On a small point known as Hirse's Landing on the northeast shore of Perdido River, about 2 miles above the mouth. The station is marked by a nail in the top of a 4-inch tile filled with concrete. Three pine trees, each marked with a triangular blaze, are at the following distances from the station: 7.98 meters N. 6° W., 19.10 meters N. 19° E., and 6.55 meters N. 32° E.

Hard (Escambia County, S. F., 1891; 1911).—Lost.

Wire (Baldwin County, Ala., S. F., 1891; 1911).—Lost.

Steamboat (Escambia County, S. F., 1891; 1911).—On a small, narrow point on the northeast shore of Perdido River, opposite the upper end of Steamboat Island. The station is marked by a nail in the top of a juniper stub 6 inches in diameter and about 4 feet long which is surrounded with concrete. A pine stump is 5.5 meters west of the station.

Roots (Baldwin County, Ala., S. F., 1891; 1911).—On the southwest shore of Perdido River, about three-fourths mile above Steamboat Island and about 60 yards above the mouth of a small stream that empties into the river. The station is marked by a nail in the top of a juniper stub 6 inches in diameter and 5 feet long. A pine stump, a cypress tree, and two pine trees, each marked with a triangular blaze, with a nail at the center of the blaze, are at the following distances, respectively, from the station: 1.83 meters, 9.30 meters, 10.67 meters, and 7.92 meters.

Kee (Escambia County, S. F., 1891; 1911).—On soft ground on the northeast side of Perdido River, about three-fourths mile above Steamboat Island. The station is marked by a nail

[1] See pp. 61–62.

in the top of a tile which is filled with concrete. Three small pine trees, each marked with a triangular blaze, with a nail at the center of the blaze, are at the following distances from the station: 5.20 meters northeast, 5.67 meters south-southeast, and 1.98 meters north-northeast.

Alabama Cut-off (Baldwin County, Ala., S. F., 1891; 1911).—On soft ground on the southwest point of the island which is between the main channel of Perdido River and Alabama Cut-off. The station is marked by a nail in the top of a juniper stub 6 inches in diameter and 5 feet long. A pine tree, a pine stump, and a juniper stump, each marked with a triangular blaze, with a nail at the center of the blaze, are at the following distances from the station: 3.35 meters north, 2.13 meters west-northwest, and 1.98 meters east-southeast.

Florida Cut-off (Escambia County, S. F., 1891; 1911).—On firm ground on the northeast side of Perdido River just below the mouth of a creek known as Florida Cut-off. The station is marked by a nail in the top of a tile which is filled with concrete. A pine stump, a dead pine tree, and a juniper tree, each marked with a triangular blaze with a nail at the center of the blaze, are at the following distances, respectively, from the station: 2.01 meters west-northwest, 6.35 meters north-northeast, and 5.60 meters northwest.

Titi (Baldwin County, Ala., S. F., 1891; 1911).—On the west shore of Perdido River just north of the entrance to Alabama Cut-off and about one-fourth mile south of the mouth of Blackwater River. The station is marked by a nail in the top of a tile which is filled with concrete. Two juniper trees and a cypress tree, each marked with a triangular blaze with a nail at the center of the blaze, are at the following distances, respectively, from the station: 4.49 meters north, 4.27 meters northeast, and 5.03 meters southeast.

Bay (Escambia County, S. F., 1891; 1911).—Lost.

Log (Baldwin County, Ala., S. F., 1891; 1911).—On soft ground near the southwest extremity of the point between Blackwater and Perdido Rivers. The station is marked by a nail in the top of a juniper stub 6 inches in diameter and 5 feet long. A pine tree, a juniper stump, and a dead juniper tree, each marked with a triangular blaze with a nail at the center of the blaze, are at the following distances, respectively, from the station: 3.89 meters north, 3.20 meters southeast, and 6.25 meters southwest.

Goat 2 (Escambia County, E. S., 1911).—On the north shore of Ono Island just in front of a clump of small oak trees about 20 meters from the extremity of Goat Point. The station is marked according to note 4.[1] A reference mark, described in note 6,[1] is 10.48 meters from the station in azimuth 280° 43′. Five pine trees and one oak tree, each marked with a triangular blaze, are at the following distances and azimuths from the station: 18.52 meters, 101° 34′; 18.46 meters, 105° 27′; 20.90 meters, 184° 51′; 22.04 meters, 189° 03′; (oak) 12.30 meters, 295° 55′; and 16.89 meters, 3° 55′.

Ross 2 (Baldwin County, Ala., E. S., 1911).—At the western end of Perdido Bay, on a sand ridge just back of the marsh on Ross Point and about one-fourth mile from Josephine post office. The station is marked according to note 8.[1] Three pine trees, each marked with a triangular blaze, are at the following distances and azimuths from the station: 19.75 meters, 29° 05′; 19.77 meters, 51° 17′; and 22.02 meters, 132° 18′.

Inerarity west 2 (Escambia County, E. S., 1911).—At the southwest end of Perdido Bay, on the high part of a hummock about 50 meters from the northwest extremity of Inerarity Peninsula and about midway between the shore to the north and the marsh to the south. The station is marked according to note 8.[1] A reference mark, described in note 6,[1] is 7.39 meters from the station in azimuth 284° 12′. Four pine trees and one magnolia, each marked with a triangular blaze, are at the following distances and azimuths, respectively, from the station: 17.66 meters, 39° 04′; 10.79 meters, 110° 15′; 9.33 meters, 175° 01′; 18.10 meters, 271° 36′; and 38.50 meters, 283° 28′.

Bear Point 2 (Baldwin County, Ala., E. S., 1911).—On a sand ridge near the shore on Bear Point and separated by a marsh from a high sand hill covered with oaks and palmettos back of the station. The station is marked according to note 8.[1] A reference mark, described in note 6,[1] is on the hill mentioned above, 57.90 meters from the station in azimuth 150° 09′.

[1] See pp. 61-62.

Inlet (Escambia County, E. S., 1911).—On a bluff on the south shore of Ono Island directly opposite the inlet to Perdido Bay that was opened in the storm of 1906. The station is marked by a standard disk station mark in the top of a galvanized-iron pipe 7 feet long which projects 6 inches above the ground and is surrounded by a block of concrete 10 inches square and 2 feet deep. Two pine trees, each marked with a triangular blaze, are, respectively, 70 meters from the station in azimuth 152° 41′ and 57 meters in azimuth 180° 28′.

Ala (Baldwin County, Ala., E. S., 1911).—On the most easterly sand hill on Alabama Point. The station is marked by a standard disk station mark in the top of a galvanized-iron pipe 7 feet long which projects 8 inches above the surface and is surrounded at the upper end by a round block of concrete 2 feet deep. The only pine tree on the point, marked with a triangular blaze, is 50.50 meters from the station in azimuth 226° 45′.

SUPPLEMENTARY POINTS.

Tarkill (Escambia County, A. T. M., 1889).—On a rounded point, just south of Tarkill Bay on the east side of Perdido Bay, on a hard sand hill about 5 feet high. The station is marked by a nail in the top of a stake. A burnt stump and a pine stump, each marked with a blaze and a spike, are, respectively, 7.6 meters S. 44° E. and 5.9 meters N. 41° W. from the station.

Bend (Escambia County, S. F., 1890; 1911).—Lost.

Fell (Baldwin County, Ala., S. F., 1890; 1911).—On the west side of Perdido Bay about a mile north of Suarez Point and about one-half mile north of Fells Point, on the beach below a bluff just north of a break in the bluff, and about 15 meters from high-water mark. The station is marked according to note 8[1] except that there is a standard disk station mark in the bottle of the underground mark. It was reported in 1913 that the disk had been removed from the surface mark. A reference mark, a nail in the top of a juniper stake embedded in a square block of concrete, is on the bluff 61.84 meters from the station in azimuth 210° 16′. Another reference mark, similar to the first except that the concrete is finished round, is below the bluff 50.45 meters from the station in azimuth 236° 46′. A pine tree marked with a triangular blaze with a spike at the center of the blaze is on the bluff in azimuth 120° 07′ from the station. A dead juniper tree, similarly marked, is 9.21 meters from the station in azimuth 323° 44′. Other distances and azimuths were measured as follows: Stump, 13.30 meters, 40° 15′; pine tree, 9.16 meters, 219° 43′; and stump, 9.21 meters, 323° 44′.

May (Baldwin County, Ala., S. F., 1890; 1911).—Lost.

Cove (Escambia County, S. F., 1890; 1911).—Lost.

Powell (Escambia County, S. F., 1890; 1911).—Lost.

Head (Escambia County, S. F., 1890; 1911).—Lost.

Hester (Escambia County, S. F., 1890; 1911).—Lost.

Marcus (Escambia County, S. F., 1890; 1911).—Lost.

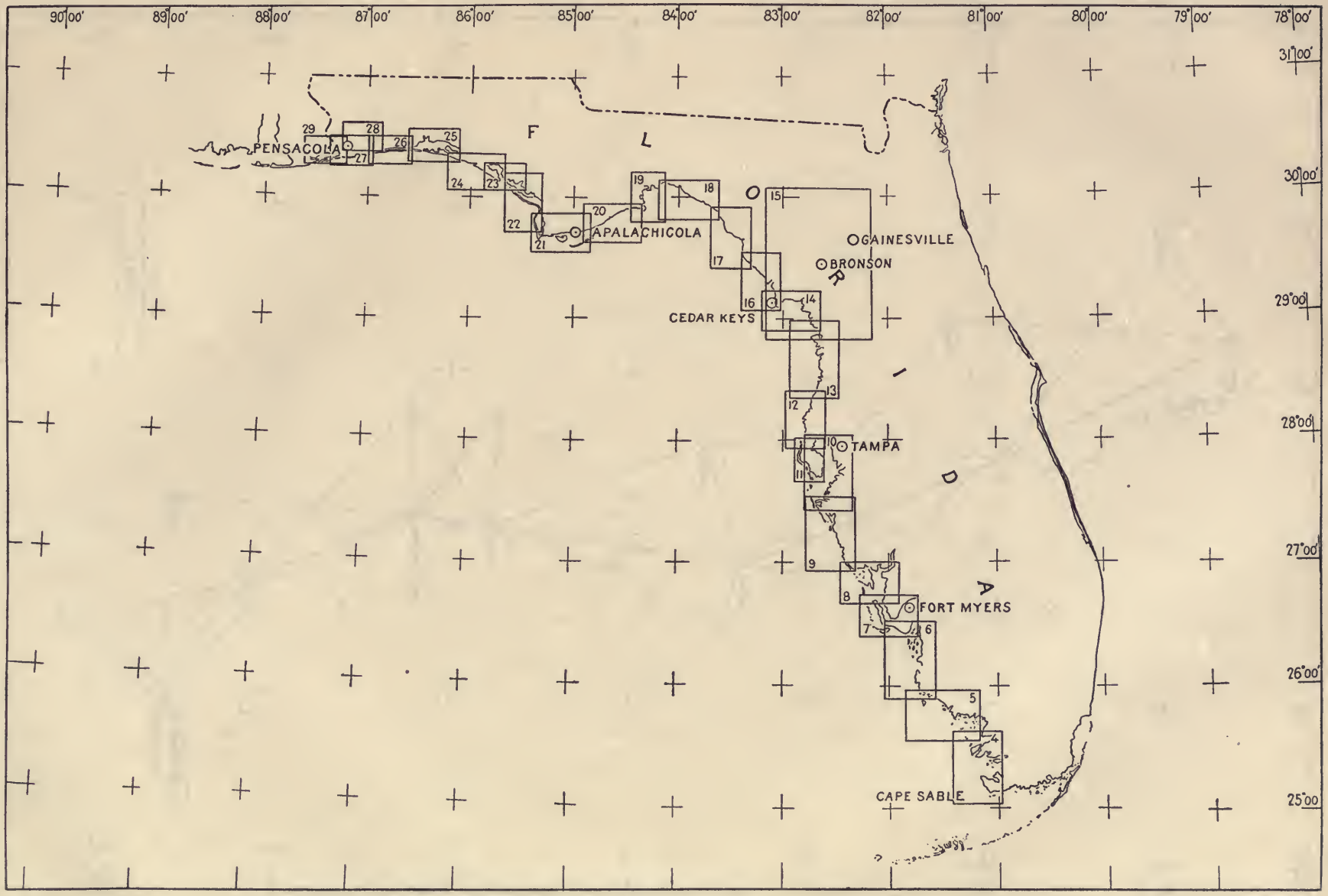
SKETCHES.

On the following sketches are shown the location of all the triangulation stations given in this publication. The lines of the main scheme are also shown, full lines when observed over from both of the stations connected and broken at one end when observed over only from the station at the full end of the line. Occupied stations are given by triangles and unoccupied or intersection stations are given by circles. On several sketches, where old work and recent work overlap, the recent work has been shown in red to avoid confusion. In case an old station and a new station plot at the same point, a black triangle or circle is shown with both names. In the same way, where a red line of the scheme coincides with a black line, only the black line is shown. The beach measures referred to on page 6 are shown with heavy lines and the measured bases with still heavier lines.

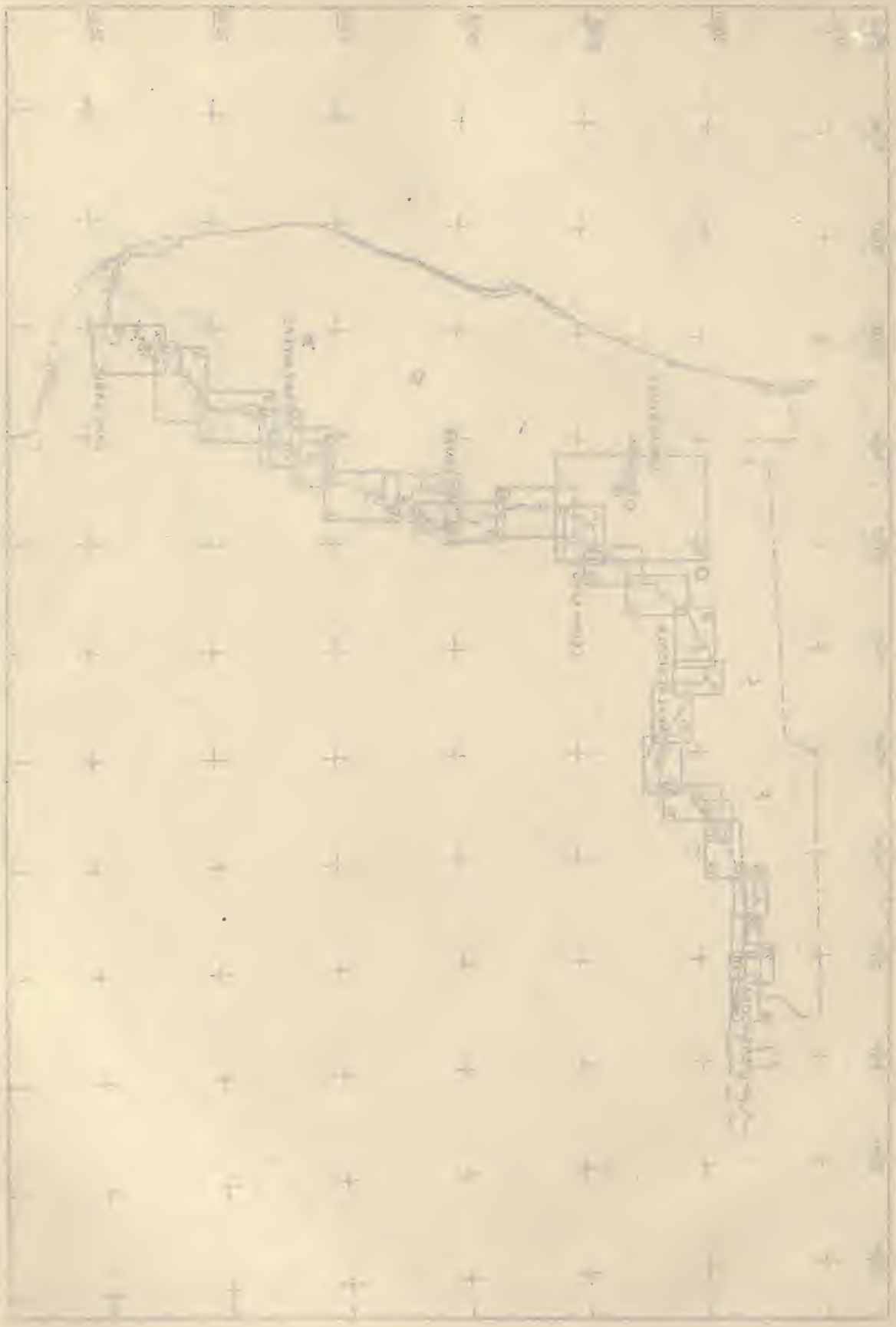
The first two of the following sketches are index sketches, one showing the general location of the whole triangulation and the other showing on a map of Florida the limits of each separate triangulation sketch.

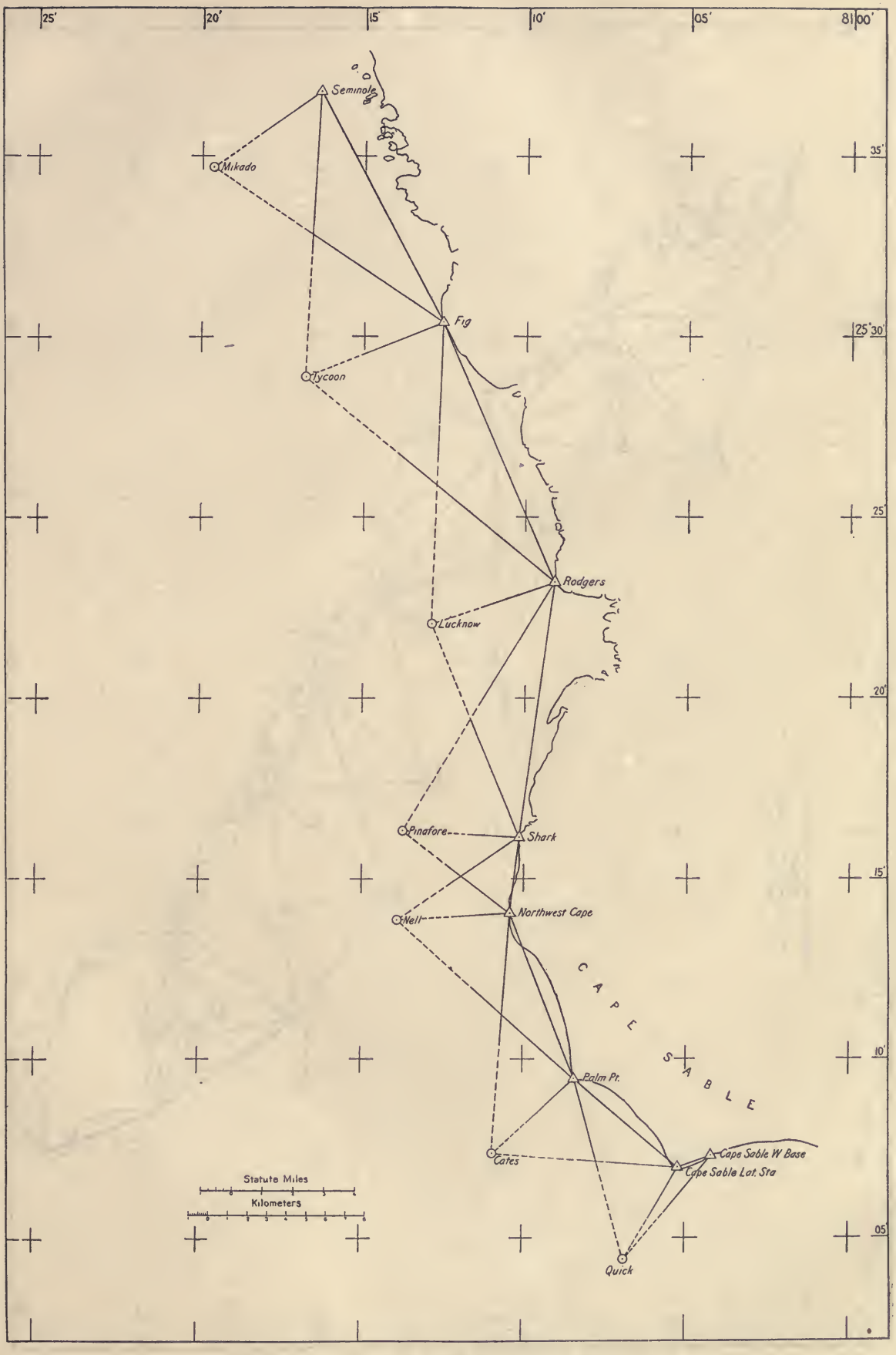
[1] See pp. 61-62.

INDEX MAP SHOWING GENERAL LOCATION OF THE TRIANGULATION.

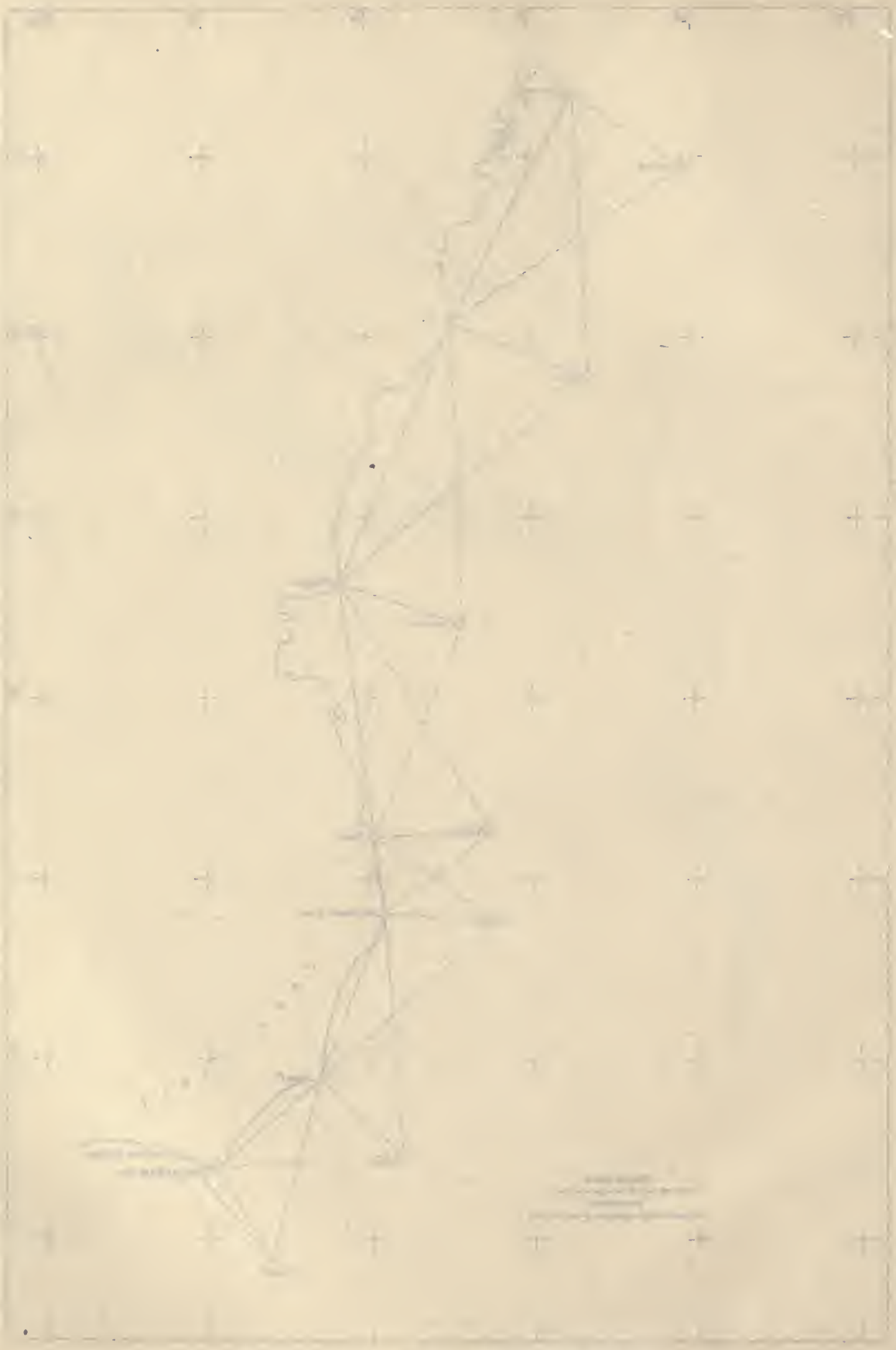


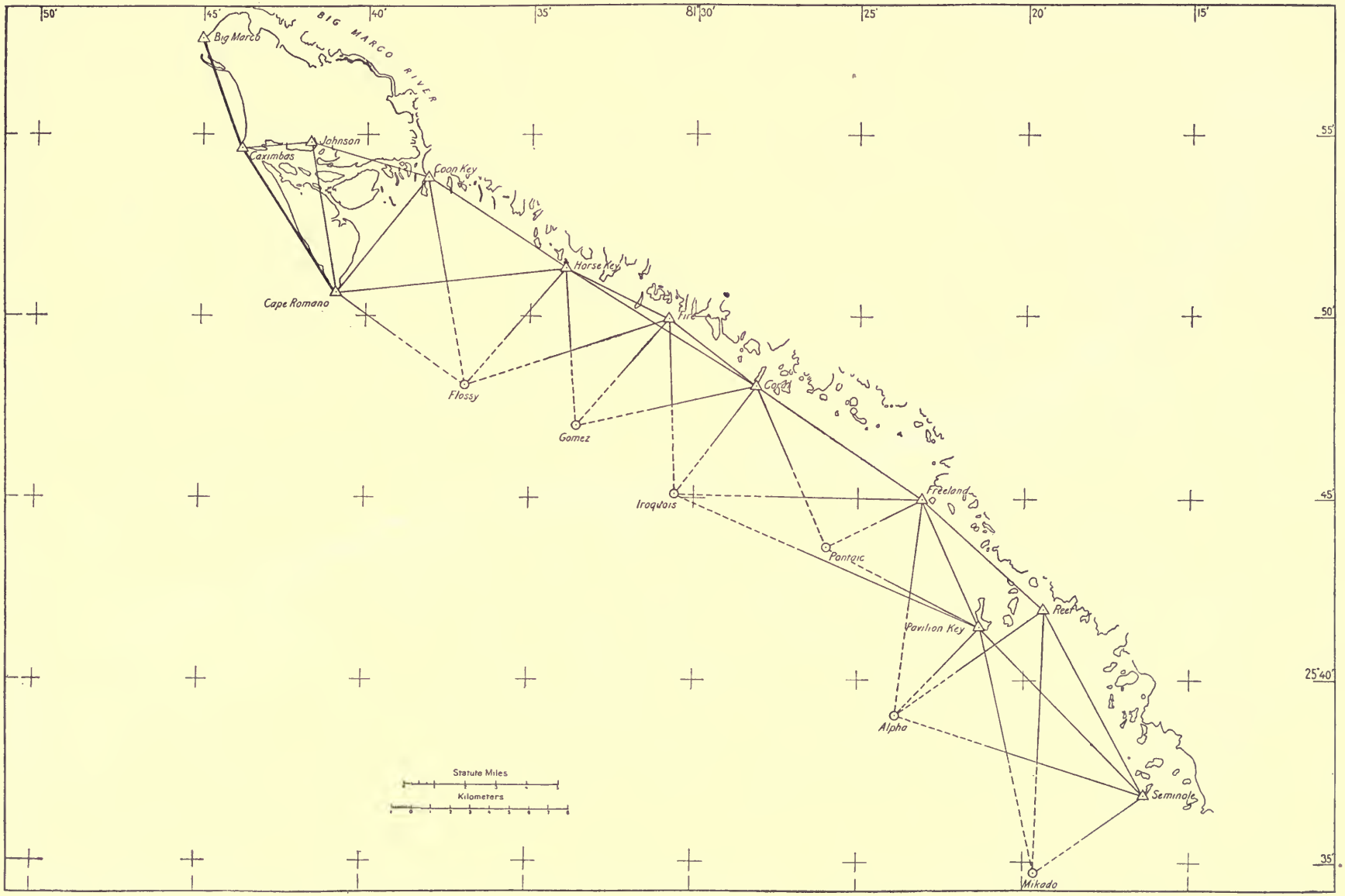
INDEX MAP SHOWING THE LIMITS OF EACH OF THE FOLLOWING SKETCHES.



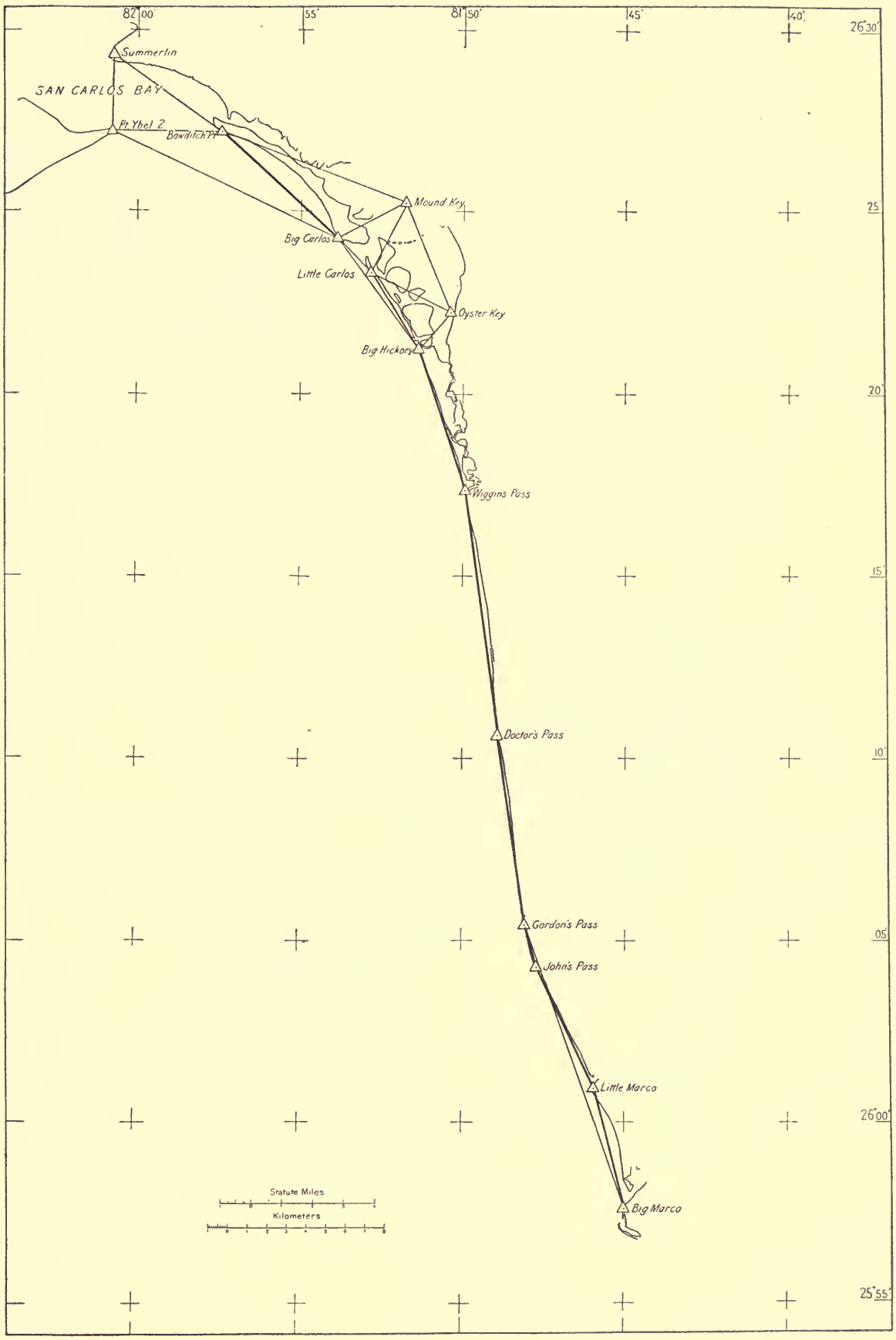


TRIANGULATION, CAPE SABLE TO MIKADO-SEMINOLE.

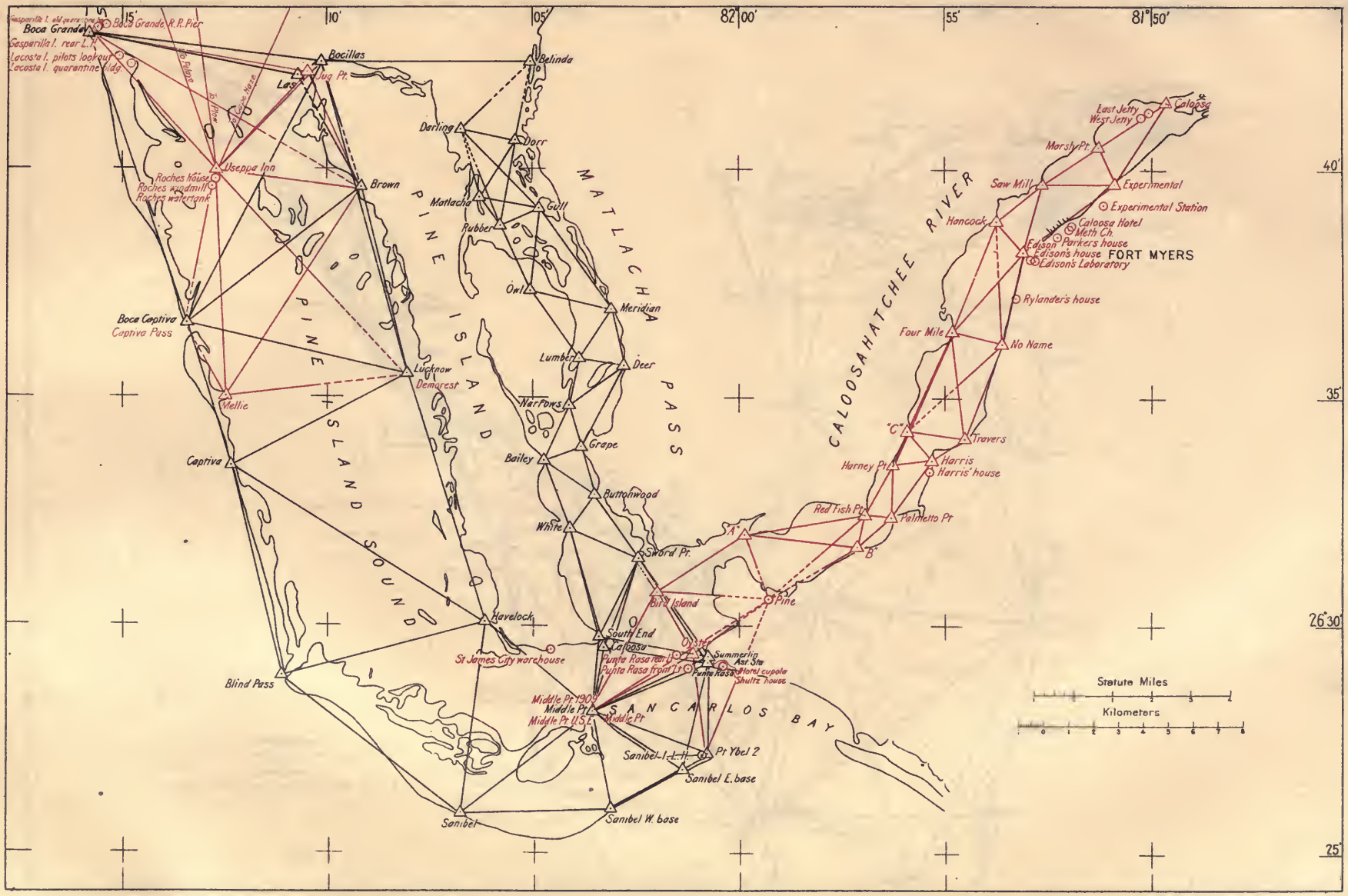




TRIANGULATION, MIKADO-SEMINOLE TO BIG MARCO RIVER.



TRIANGULATION, BIG MARCO RIVER TO SAN CARLOS BAY.



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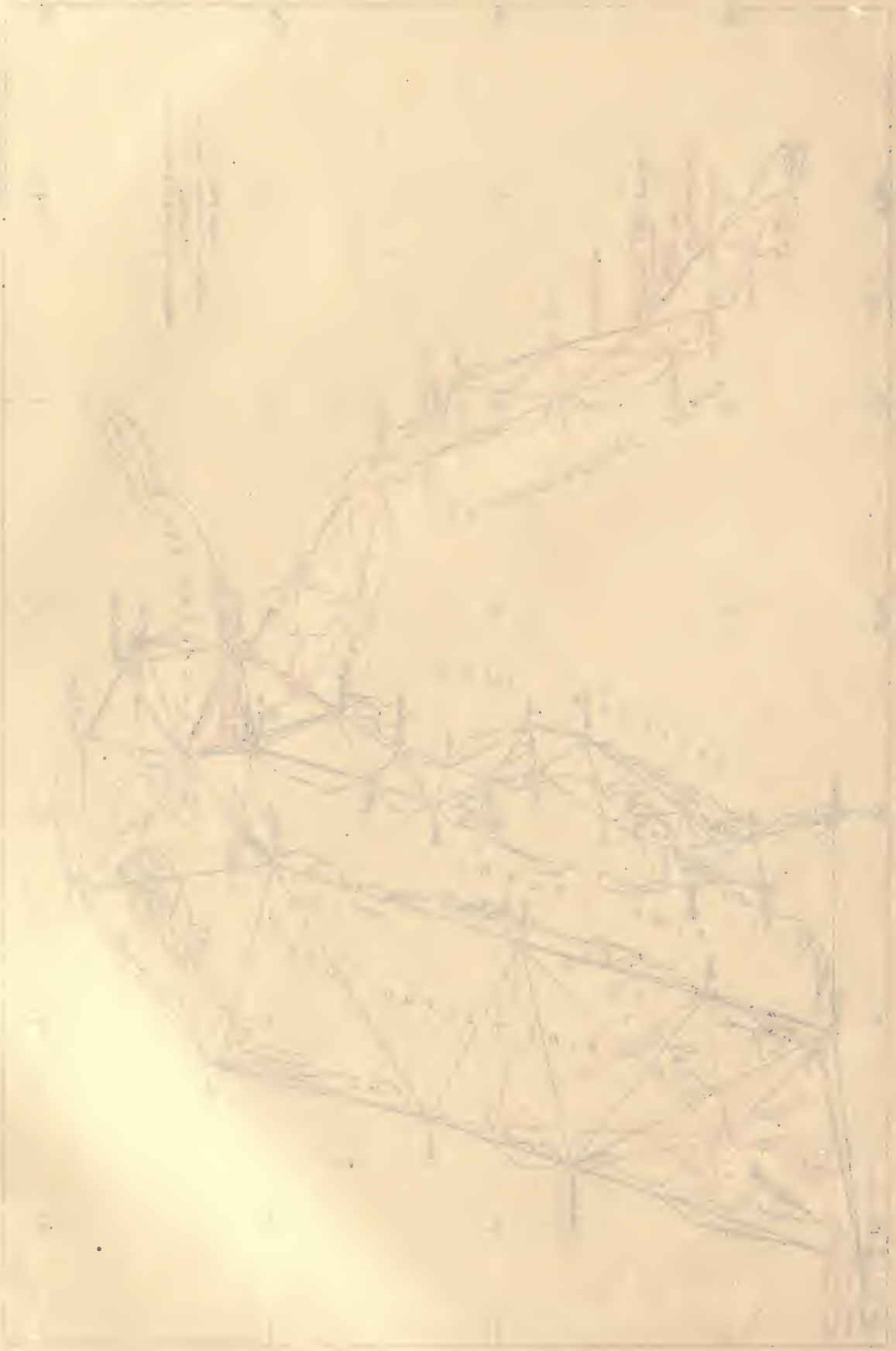
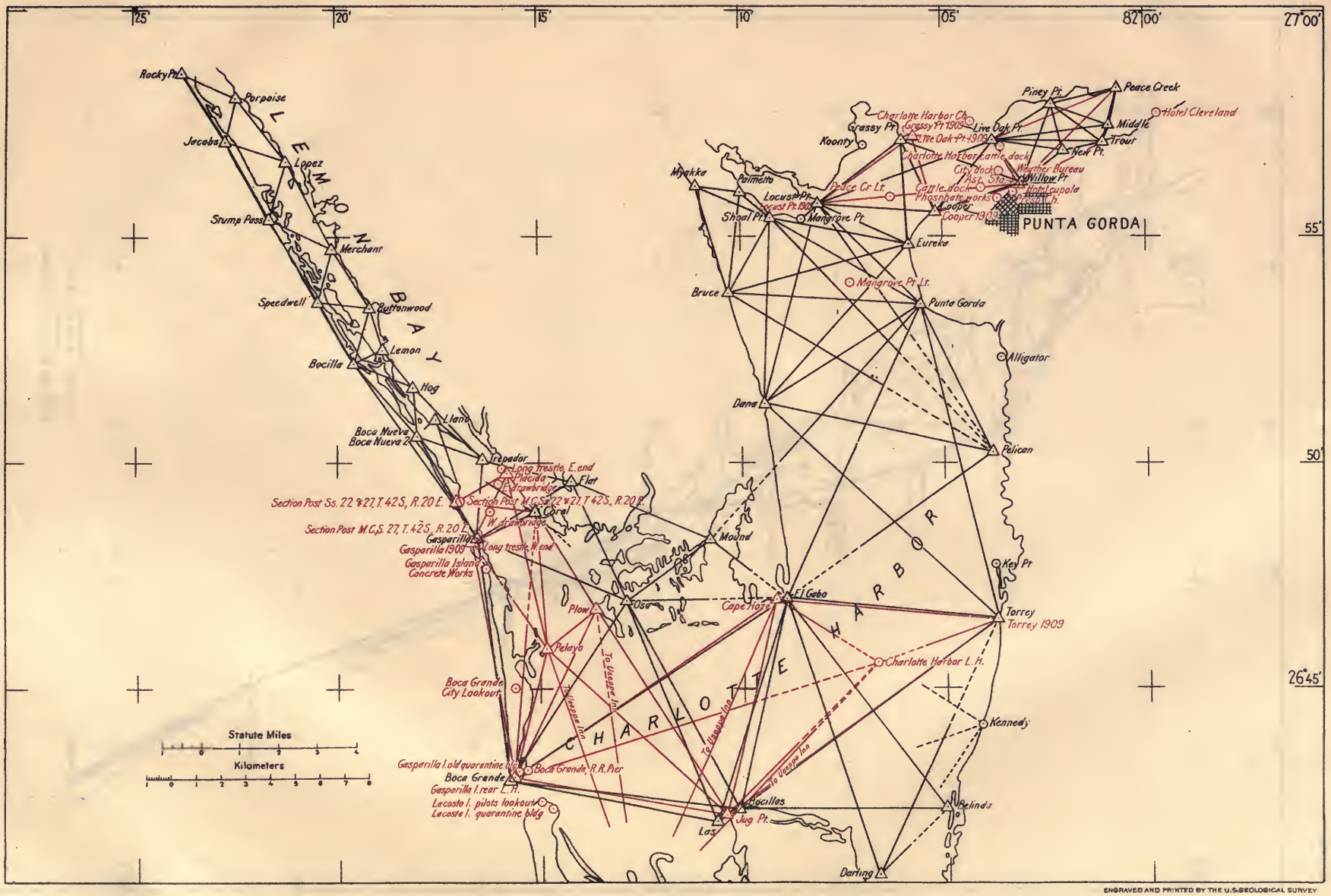
TRIANGULATION, CALOOSAHATCHEE RIVER TO CHARLOTTE HARBOR.





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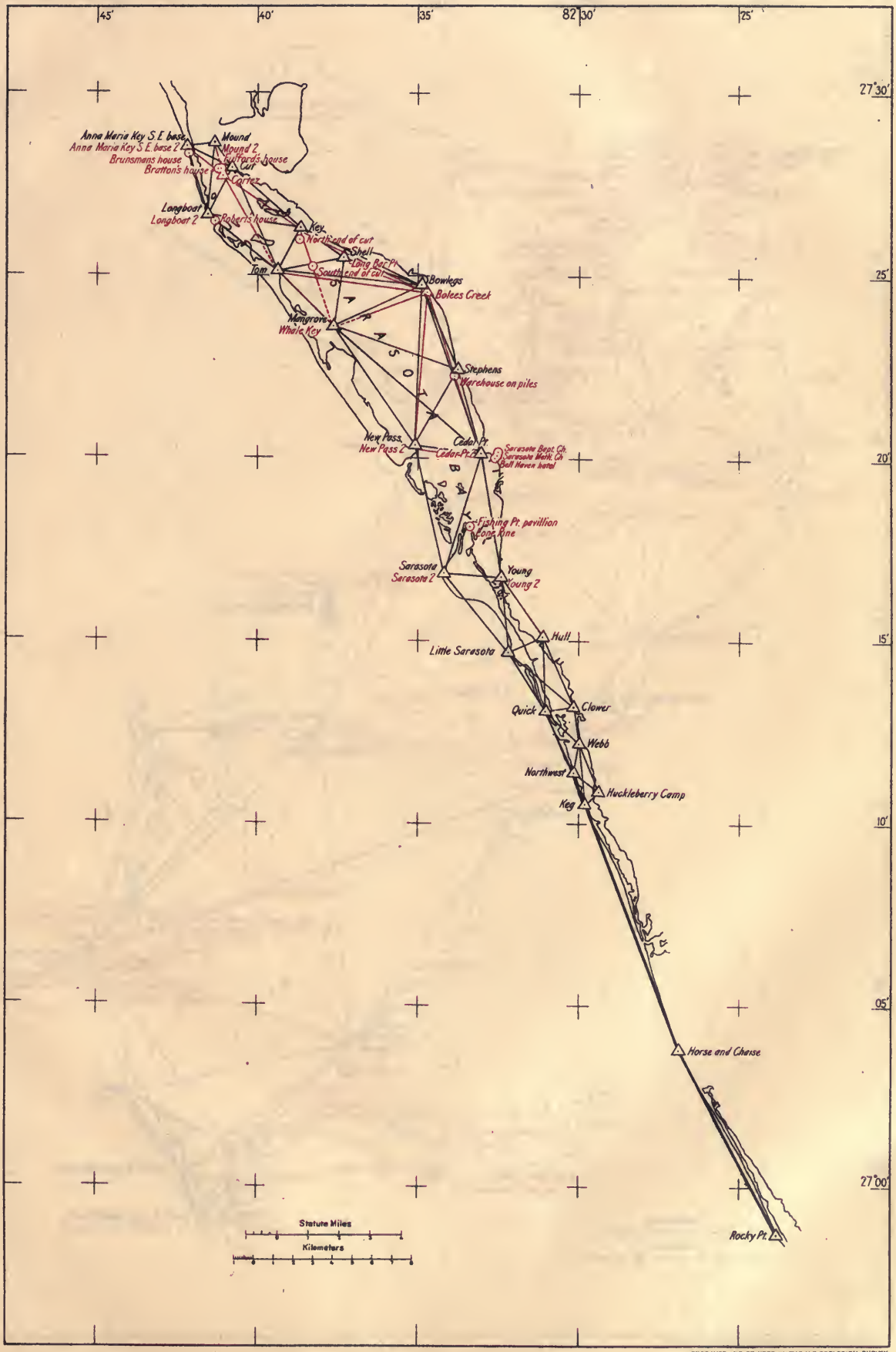
TRIANGULATION. CHARLOTTE HARBOR.



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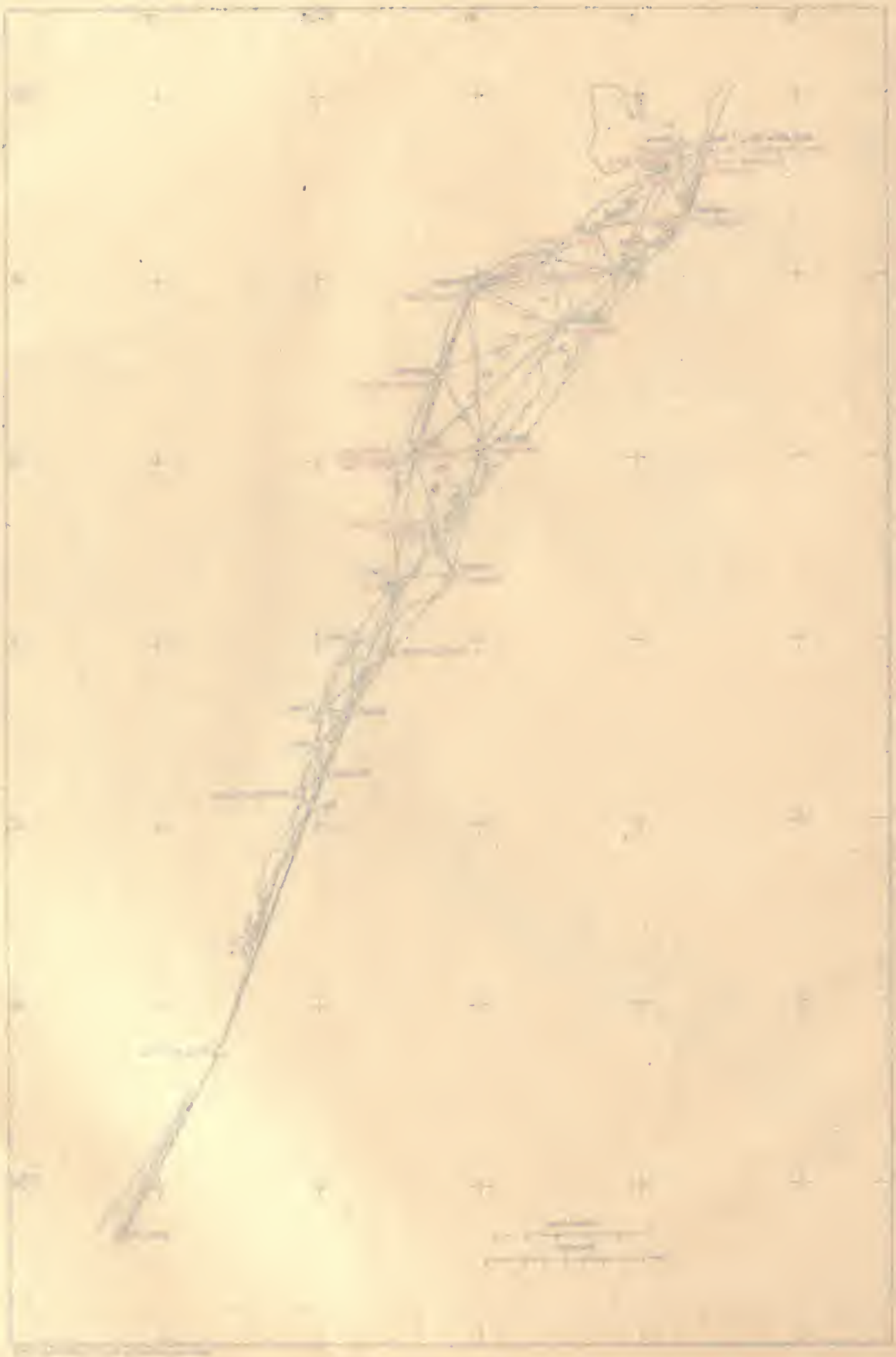
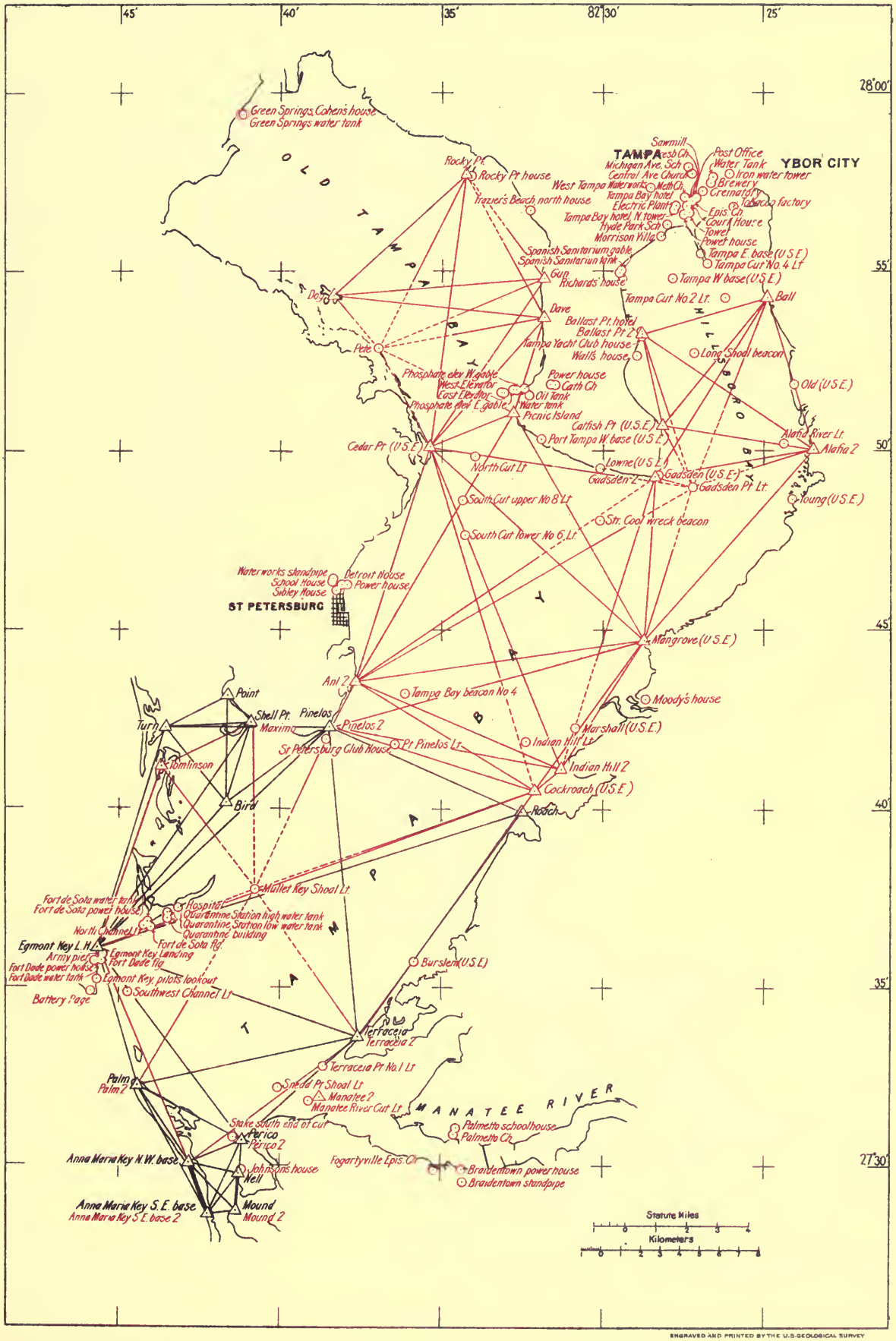
TRIANGULATION, LEMON BAY TO SARASOTA BAY.





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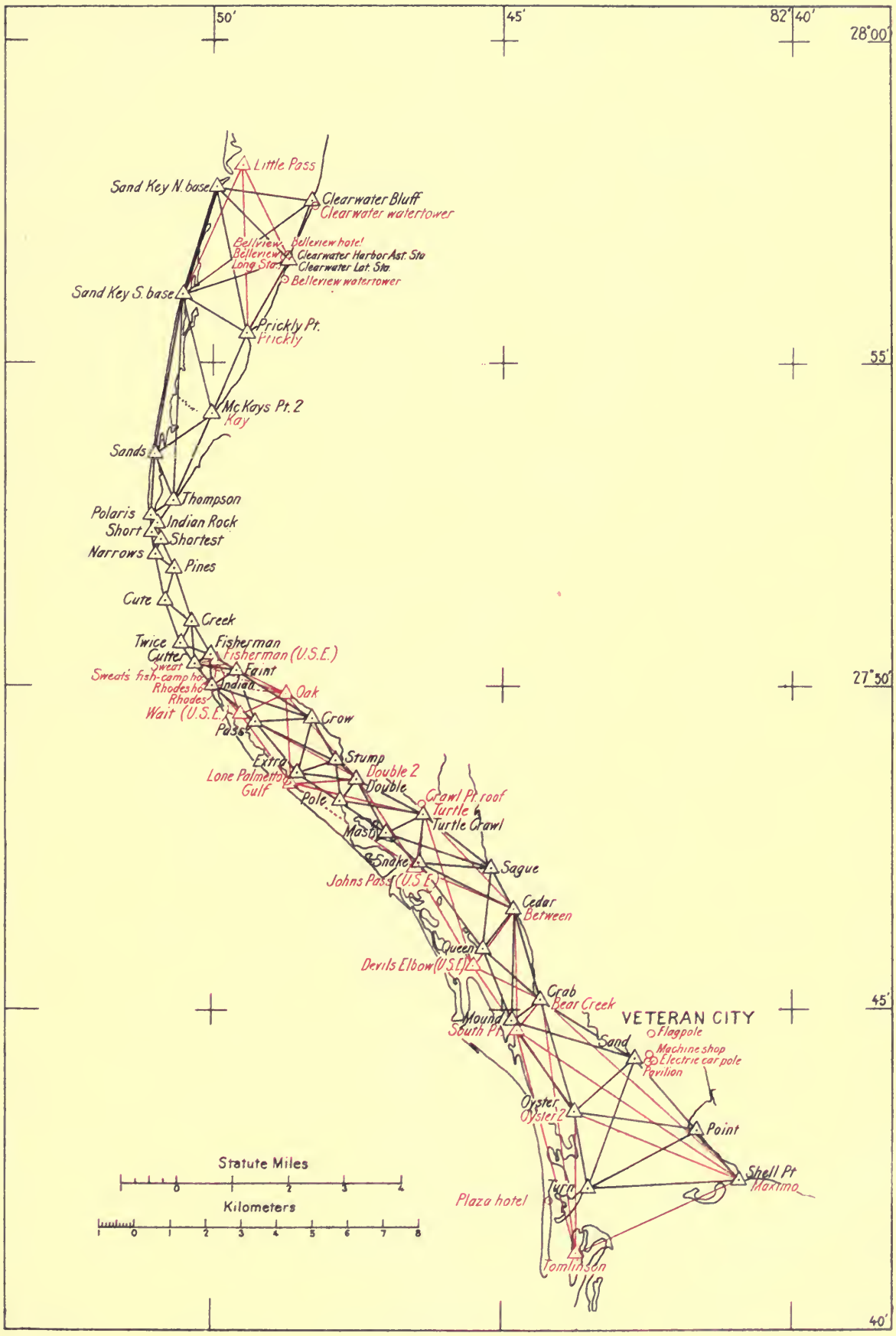
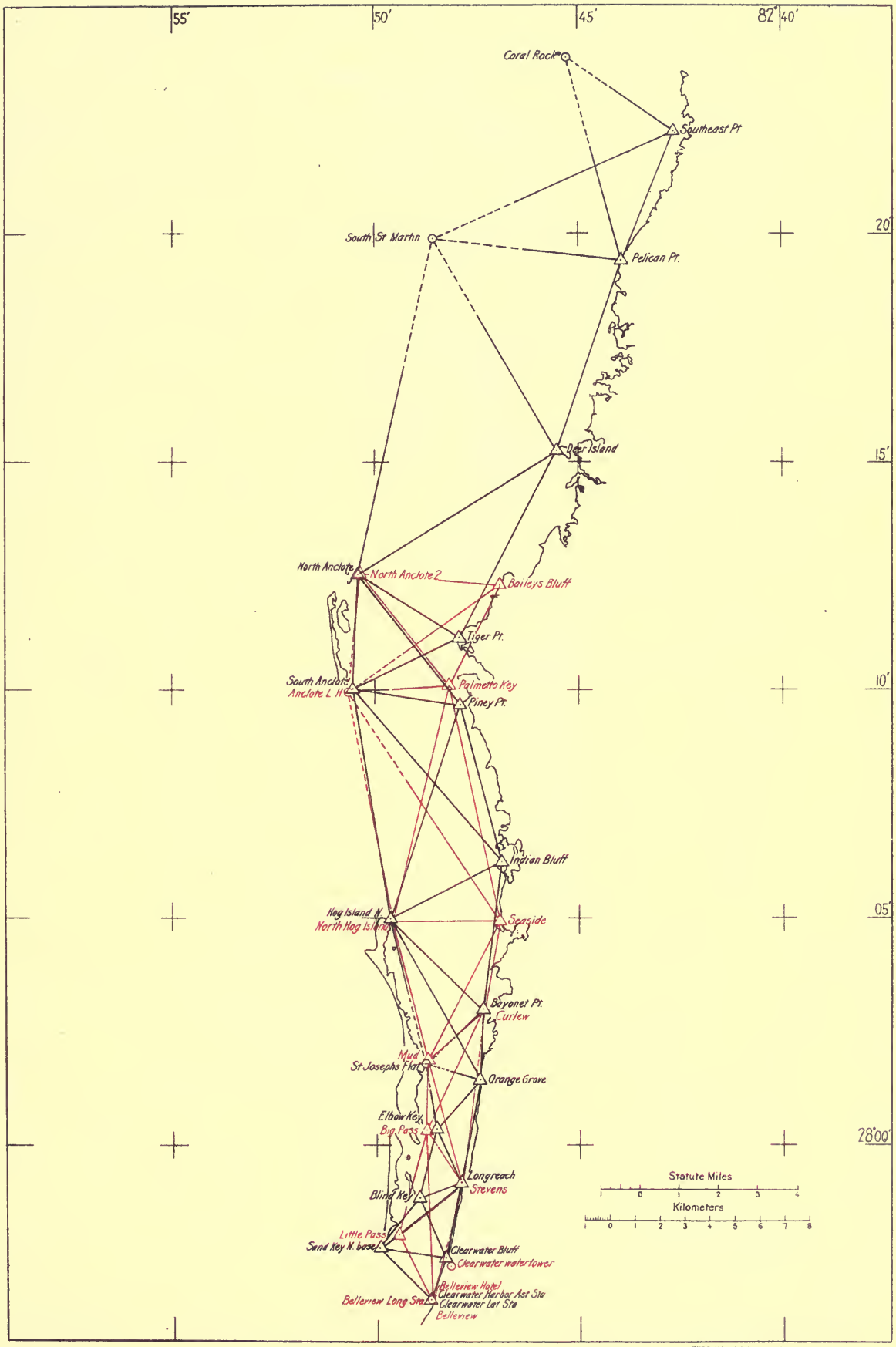
TRIANGULATION, TAMPA BAY.



TRIANGULATION, BOCA CEIGA BAY



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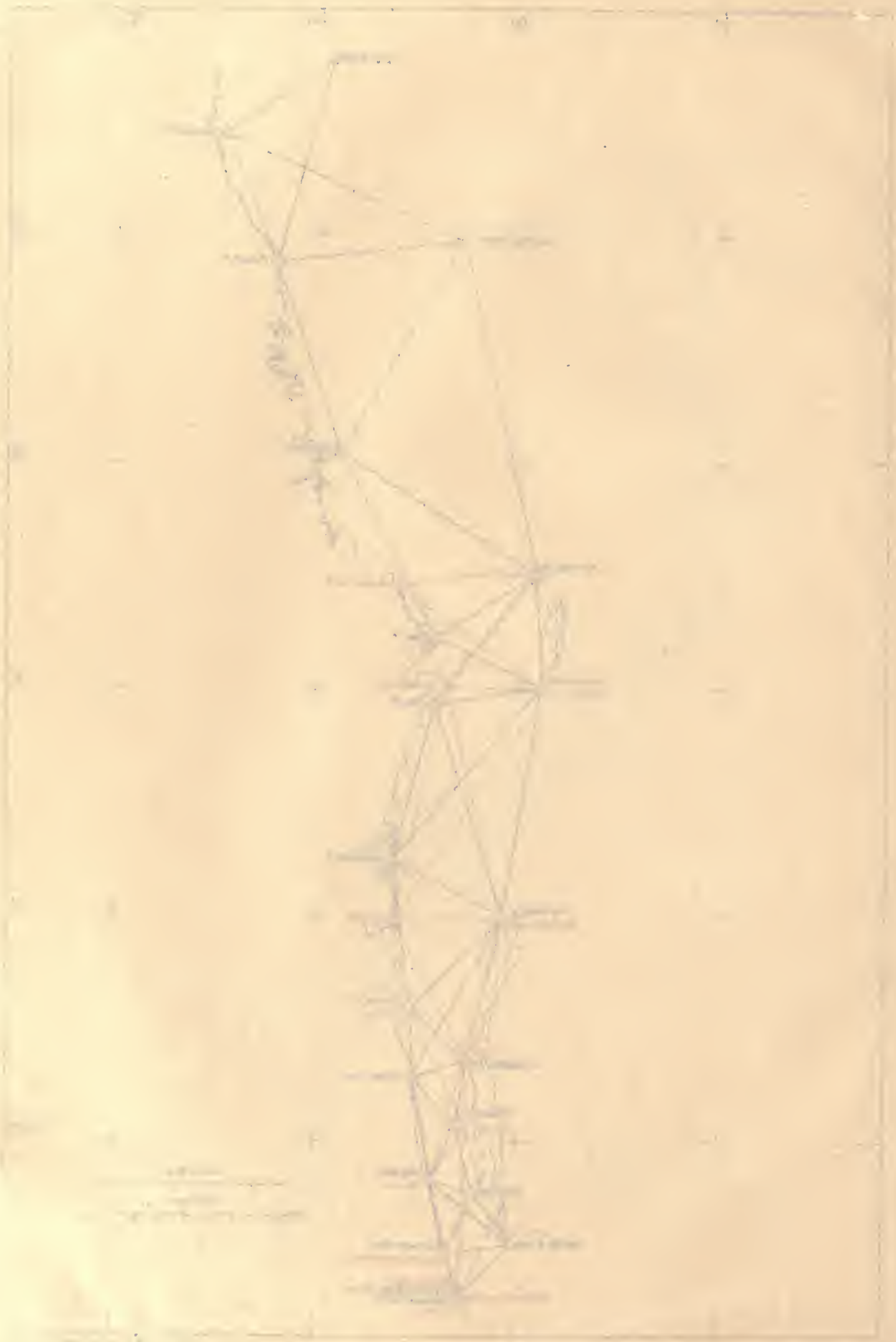
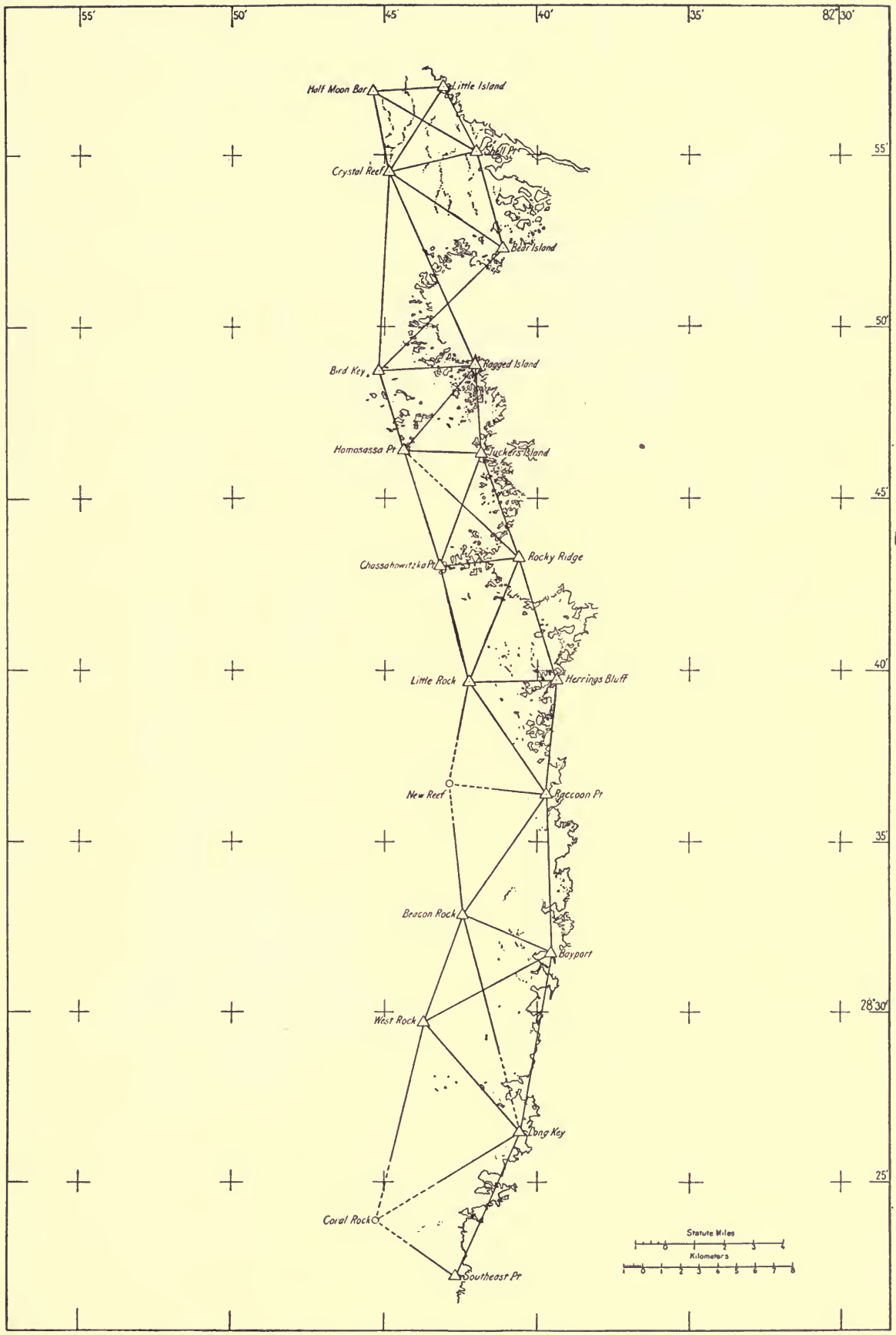
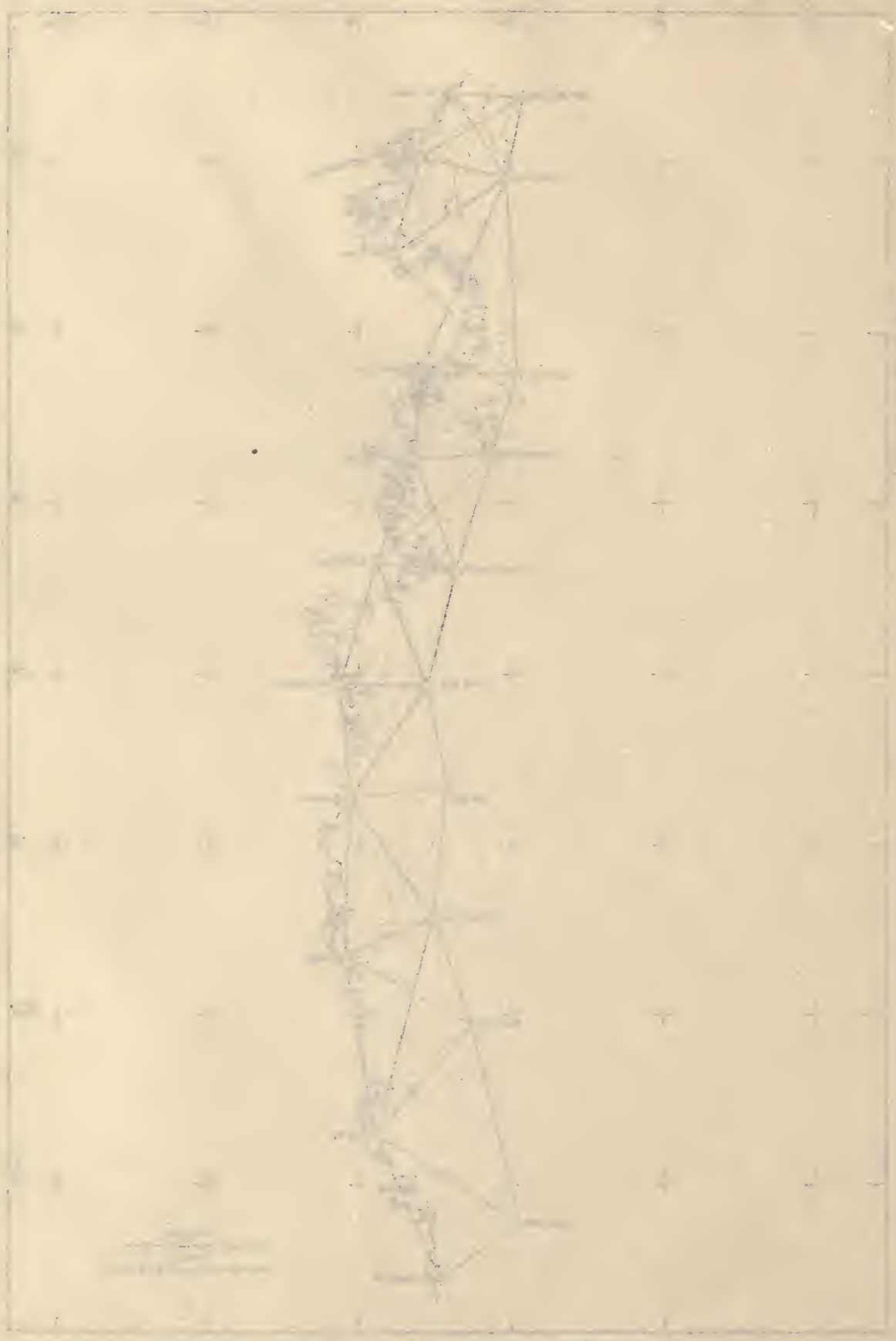
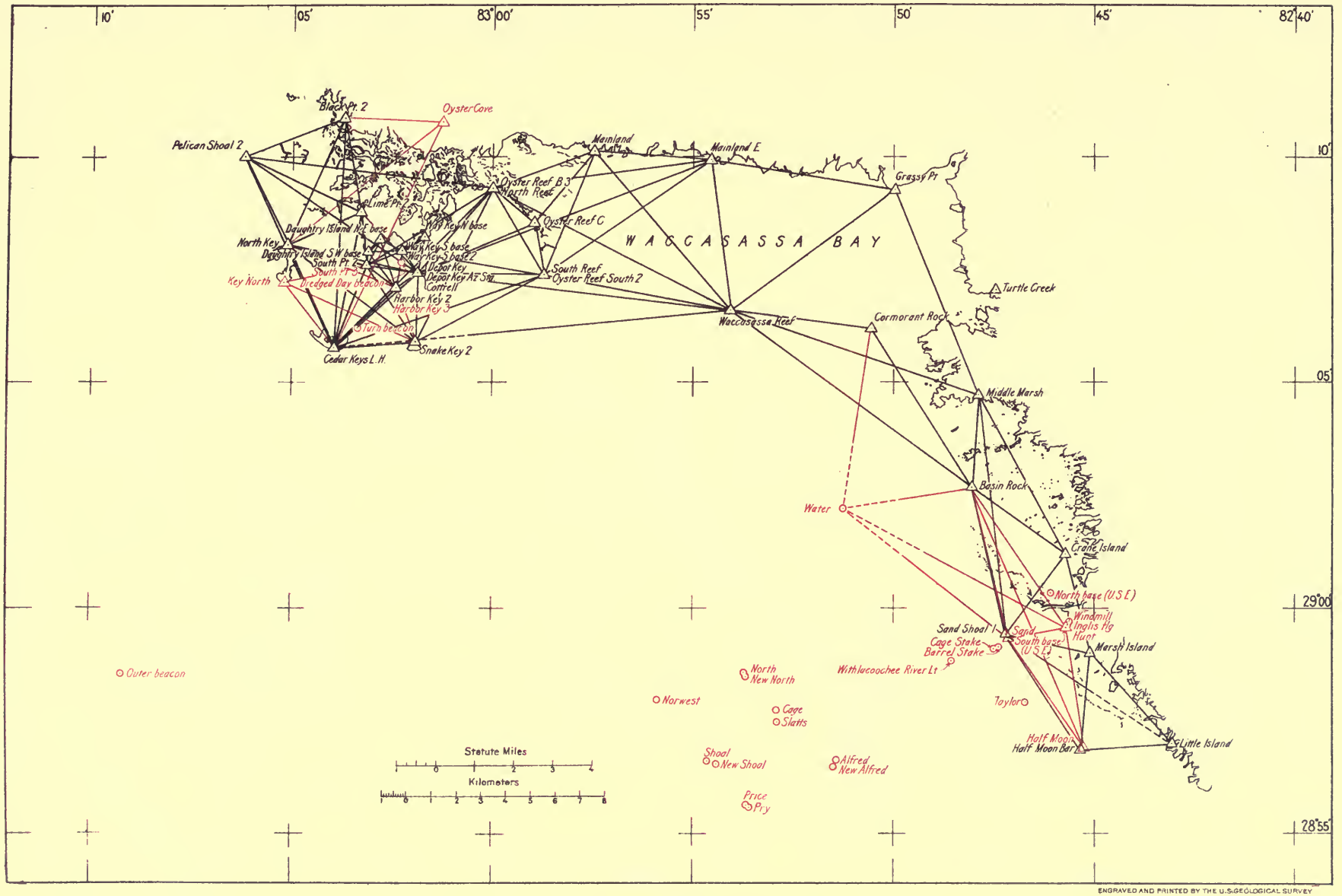
TRIANGULATION, CLEARWATER HARBOR TO CORAL ROCK, SOUTHEAST POINT.





TRIANGULATION, CORAL ROCK-SOUTHEAST POINT TO WITHLACOOCHEE RIVER.





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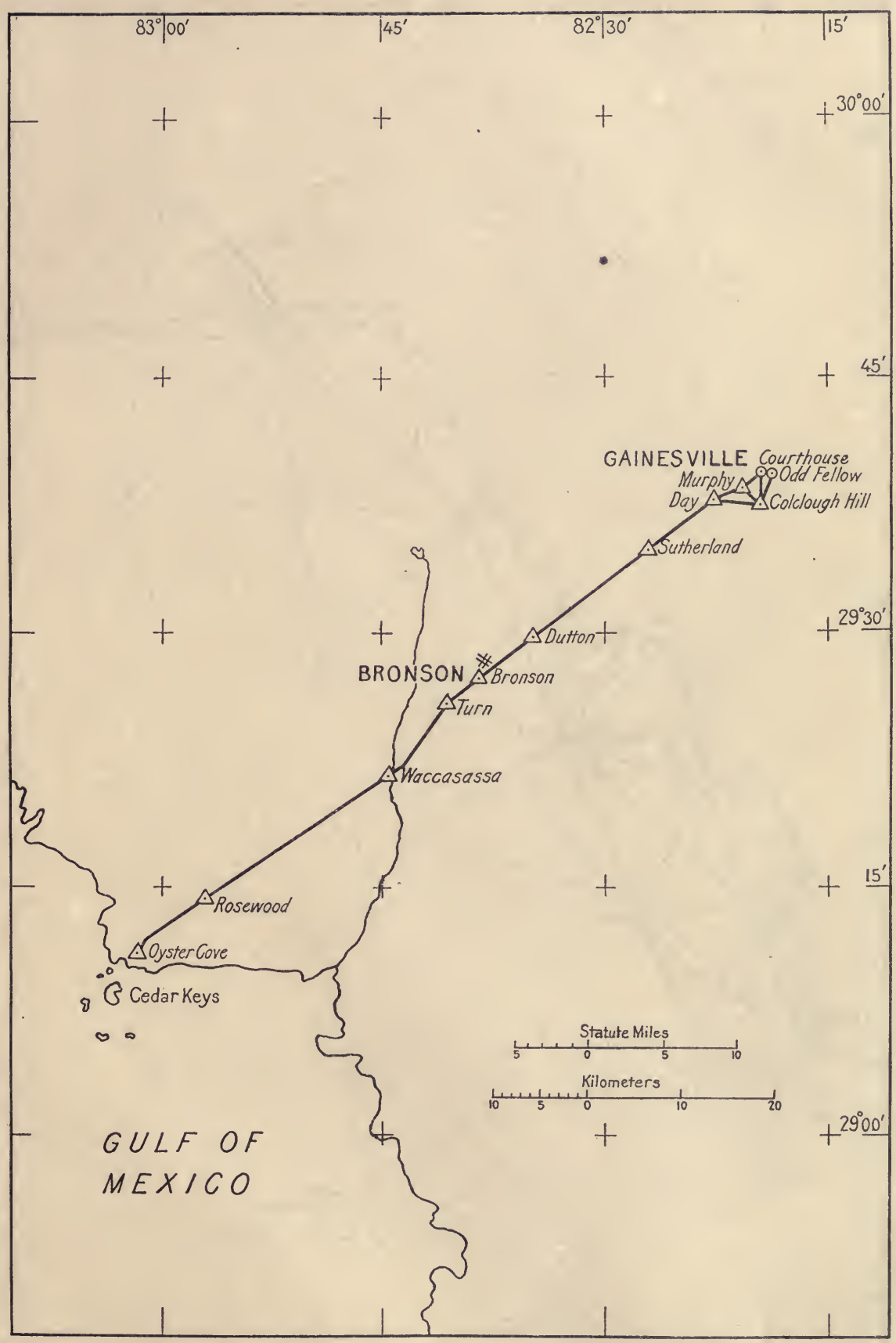
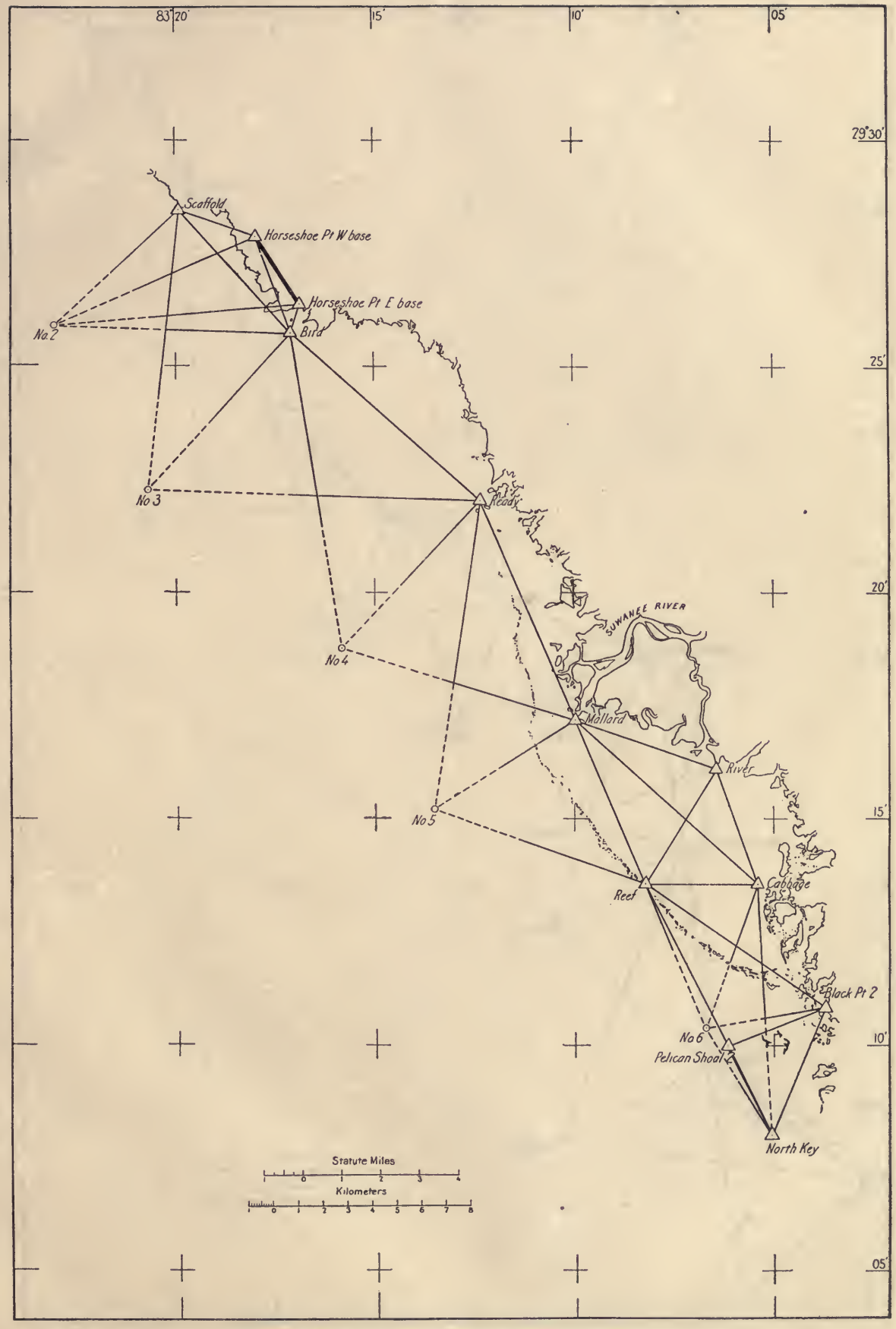
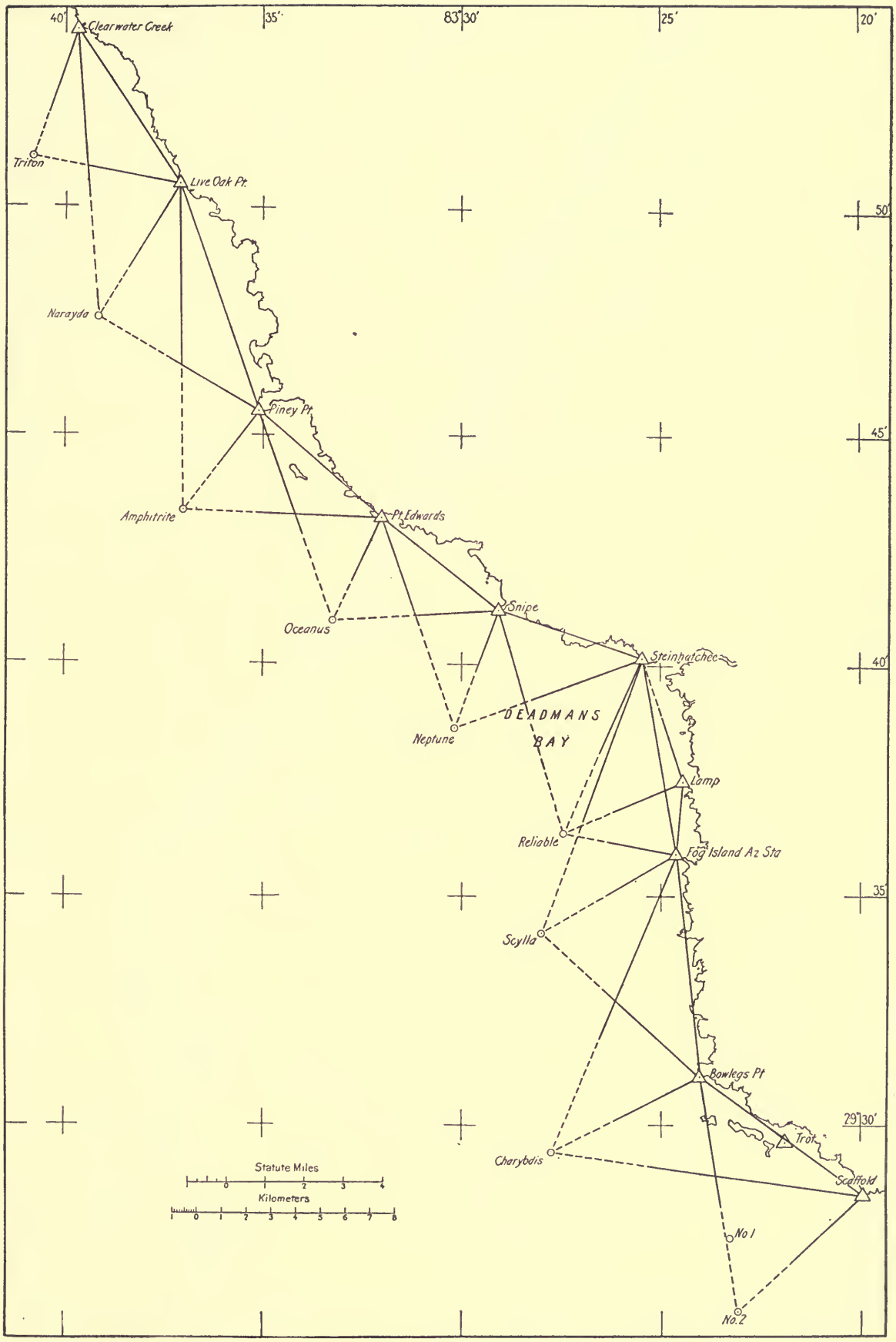
TRIANGULATION, WITHLACOOCHEE RIVER TO CEDAR KEYS.



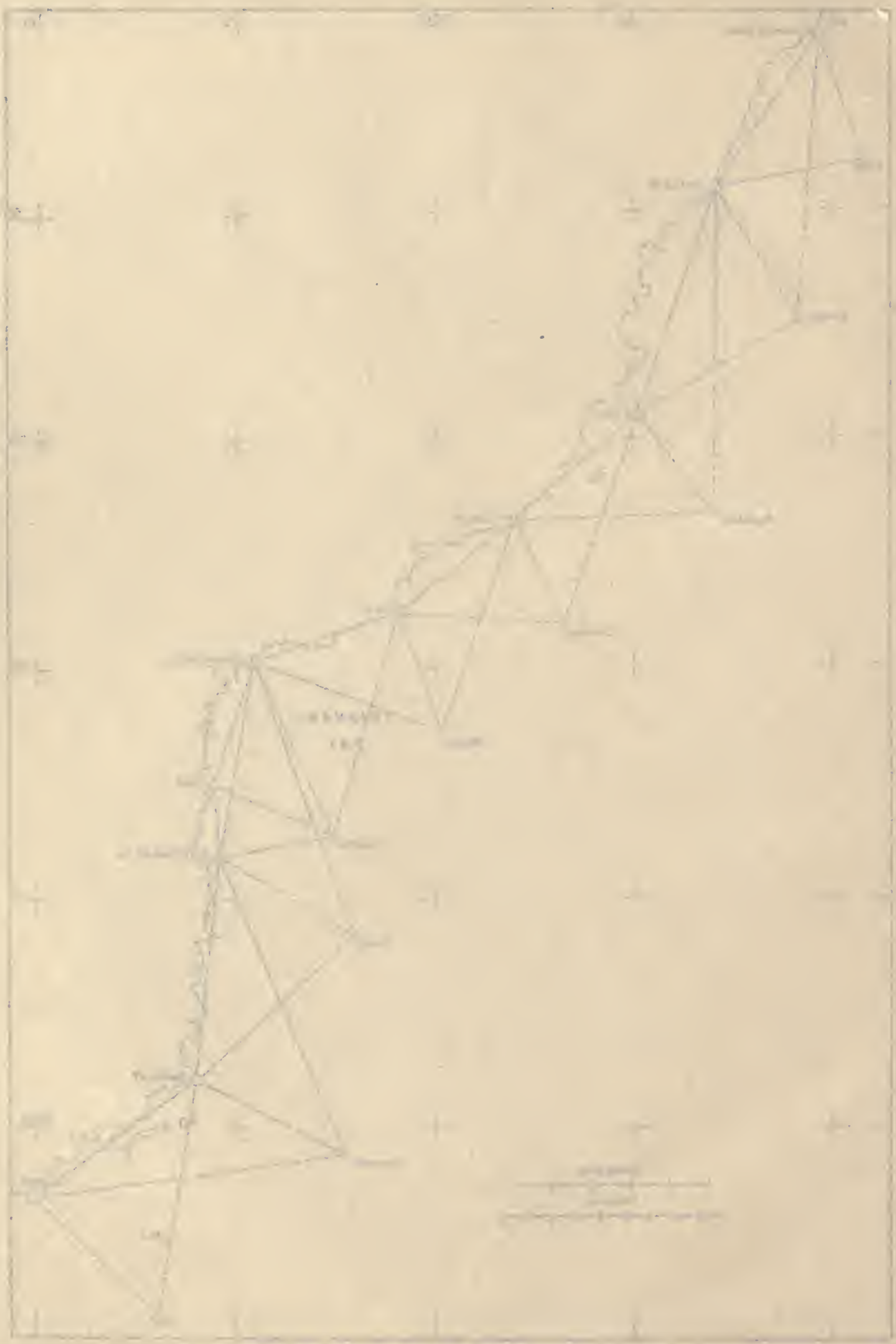
TRIANGULATION, GAINESVILLE TO CEDAR KEYS.



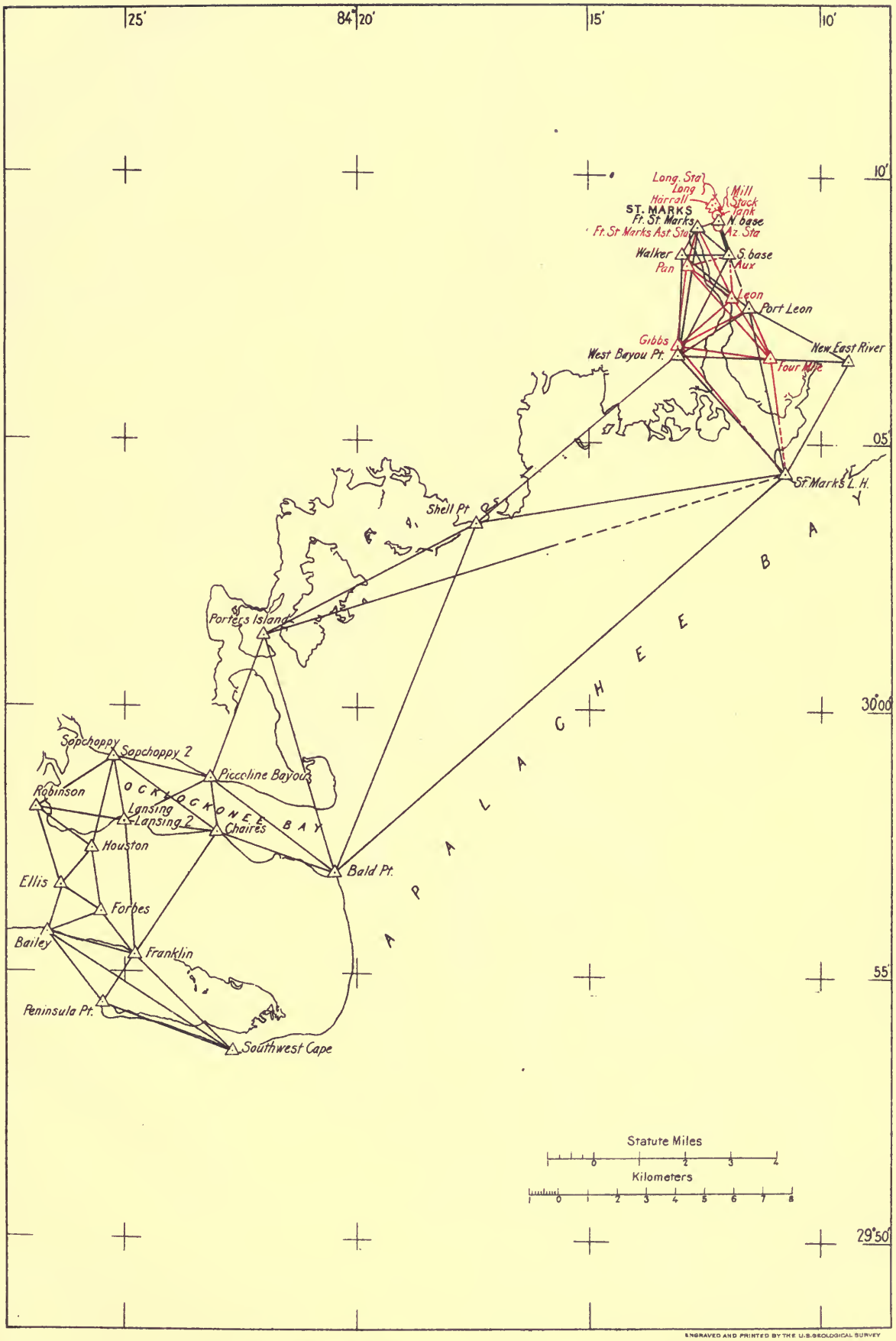
TRIANGULATION, CEDAR KEYS TO NUMBER 2-SCAFFOLD.



TRIANGULATION, NUMBER 2-SCAFFOLD TO TRITON-CLEARWATER CREEK.



TRIANGULATION, TRITON-CLEARWATER CREEK TO ST. MARKS RIVER.



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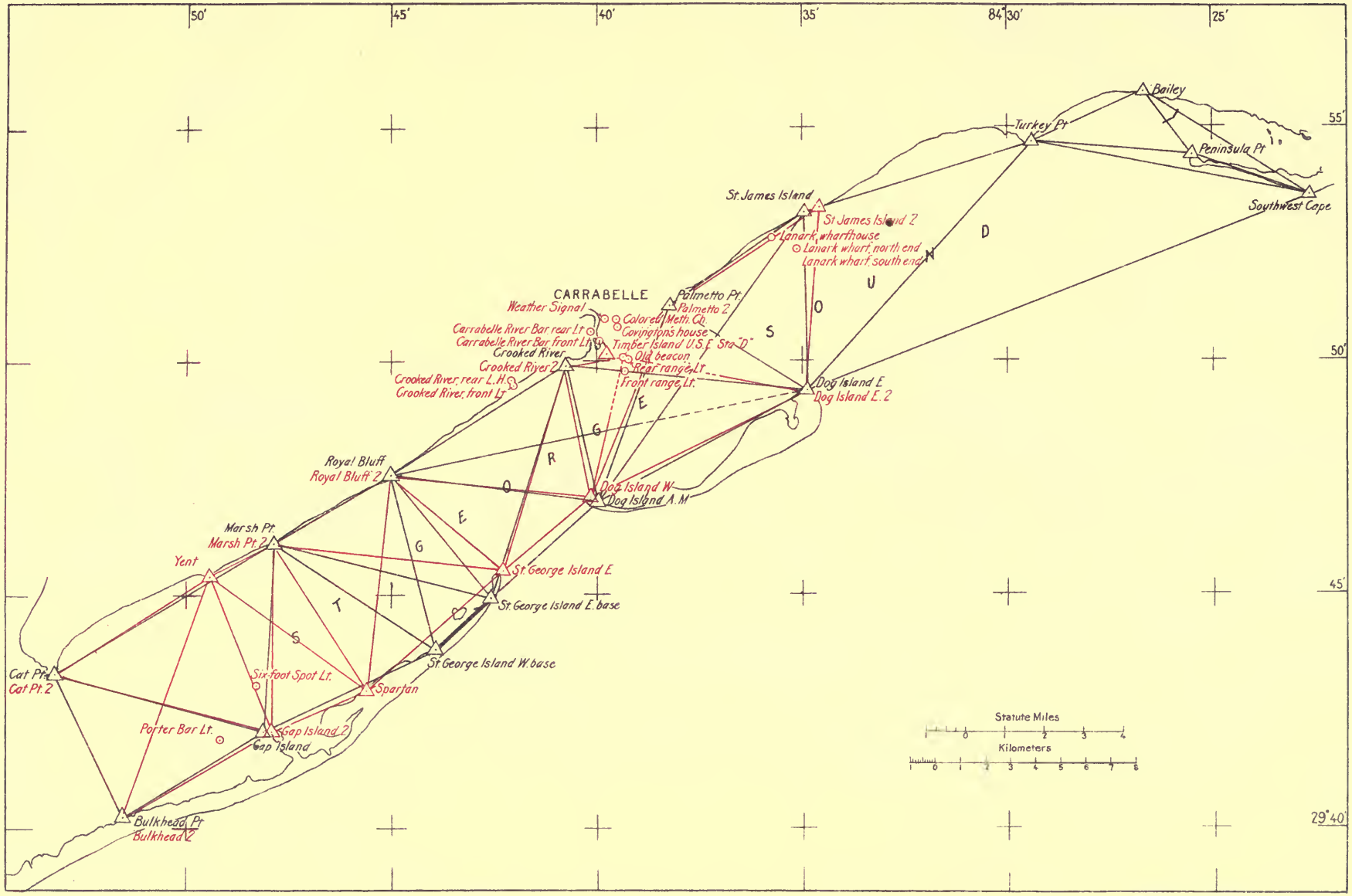
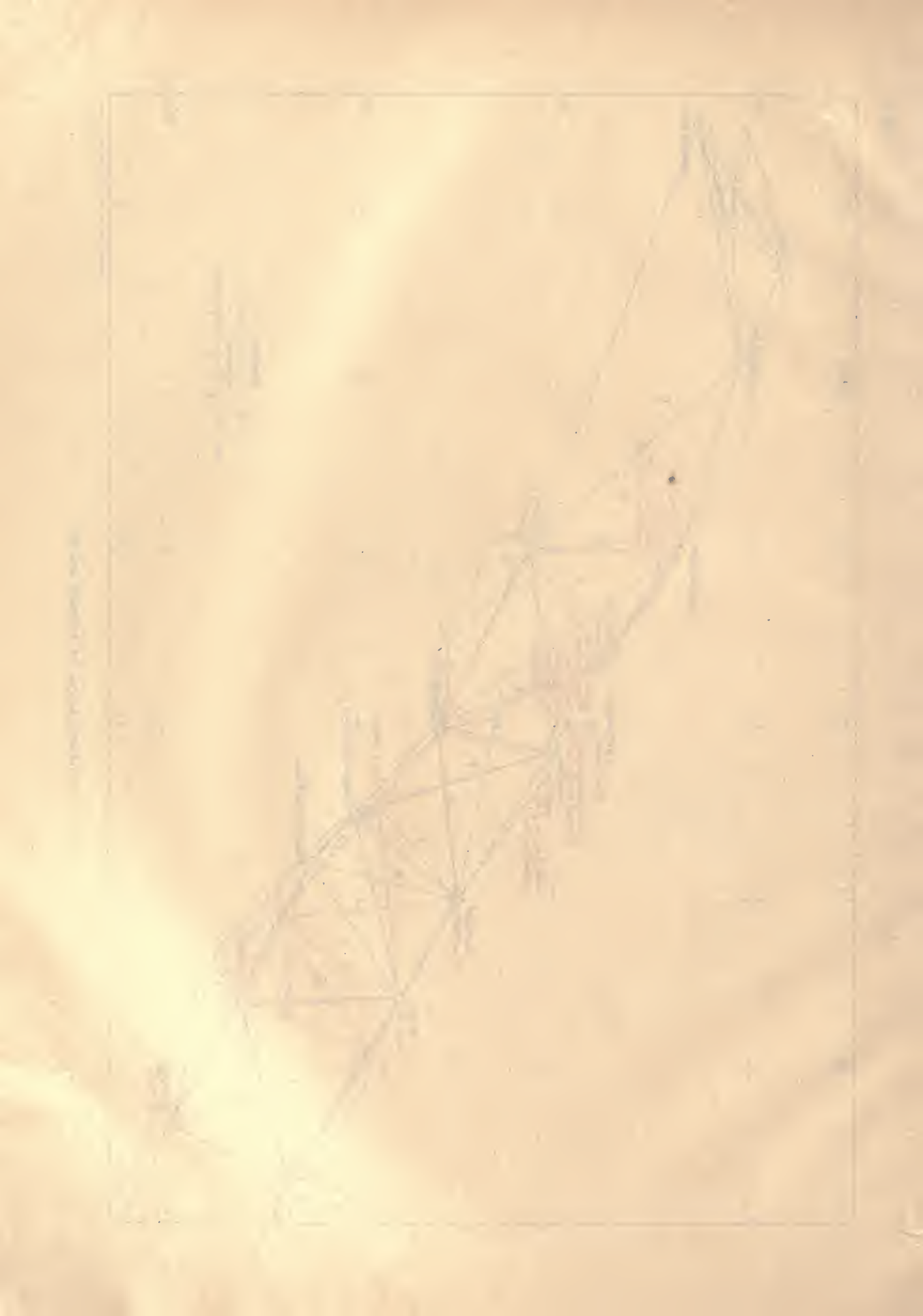
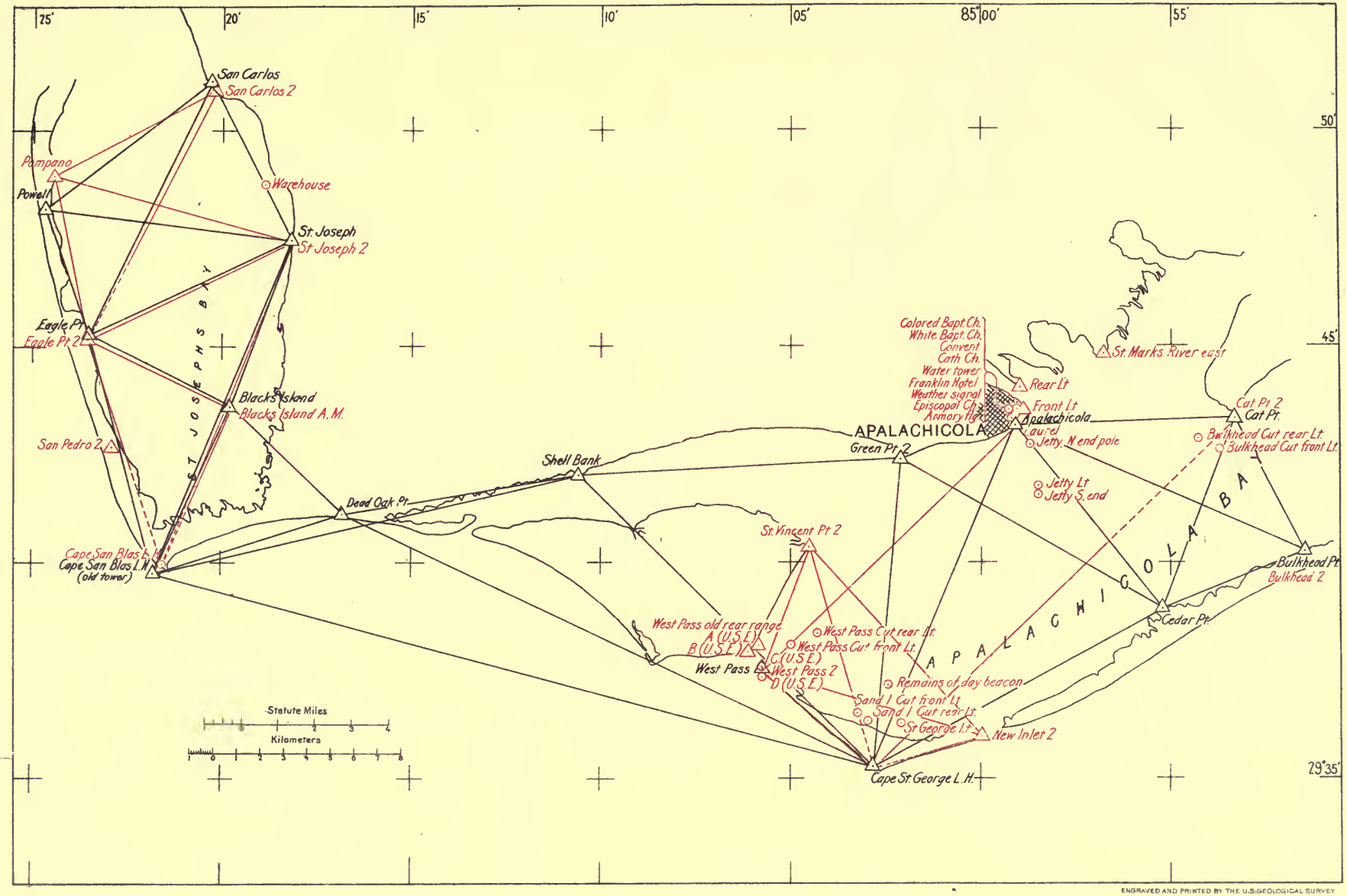
TRIANGULATION, ST. MARKS RIVER TO ST. GEORGE SOUND.



ENGRAVED AND PRINTED BY THE U.S. GEOLOGICAL SURVEY

TRIANGULATION, ST. GEORGE SOUND.





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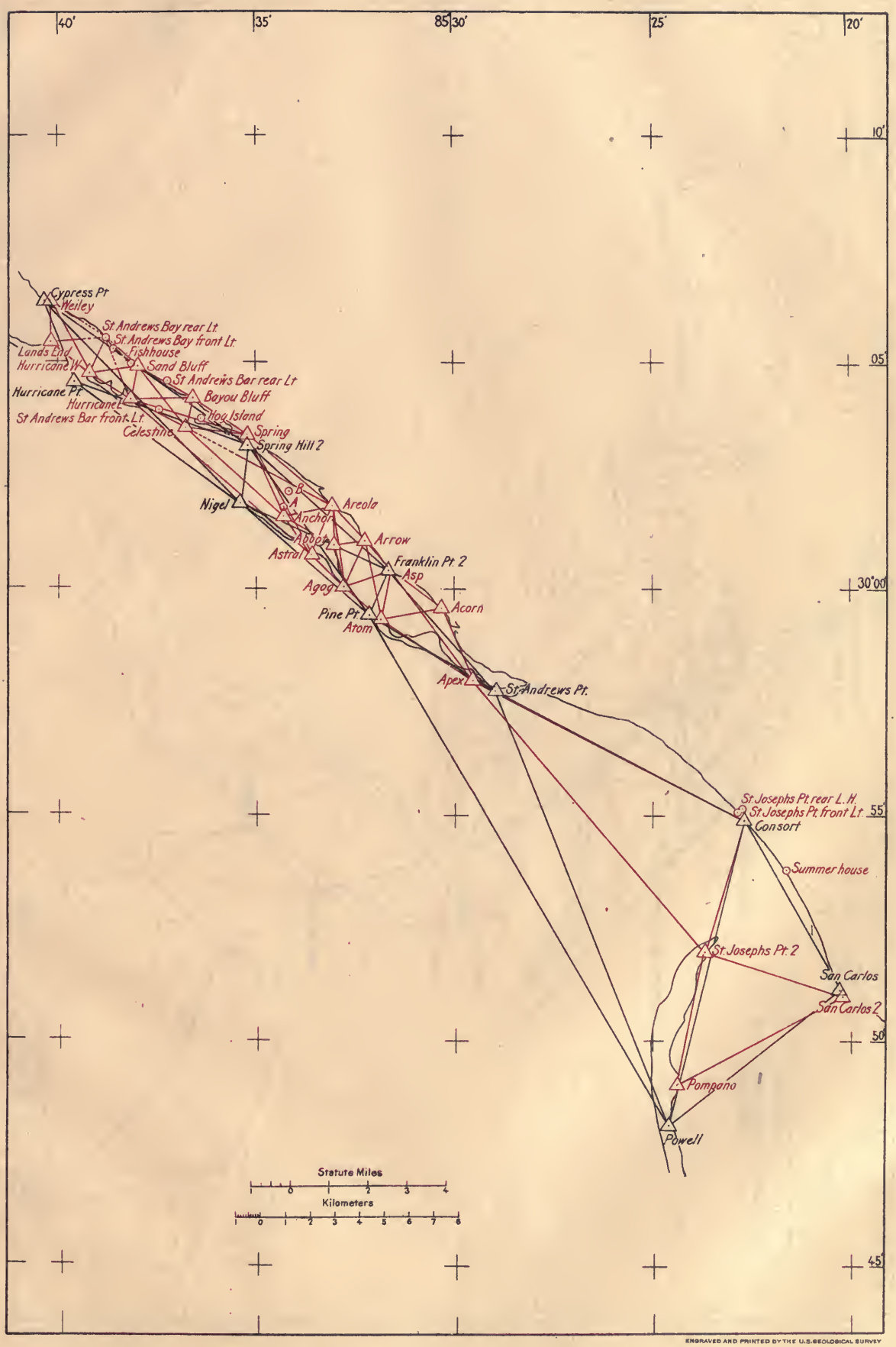
TRIANGULATION, APALACHICOLA BAY TO ST. JOSEPHS BAY



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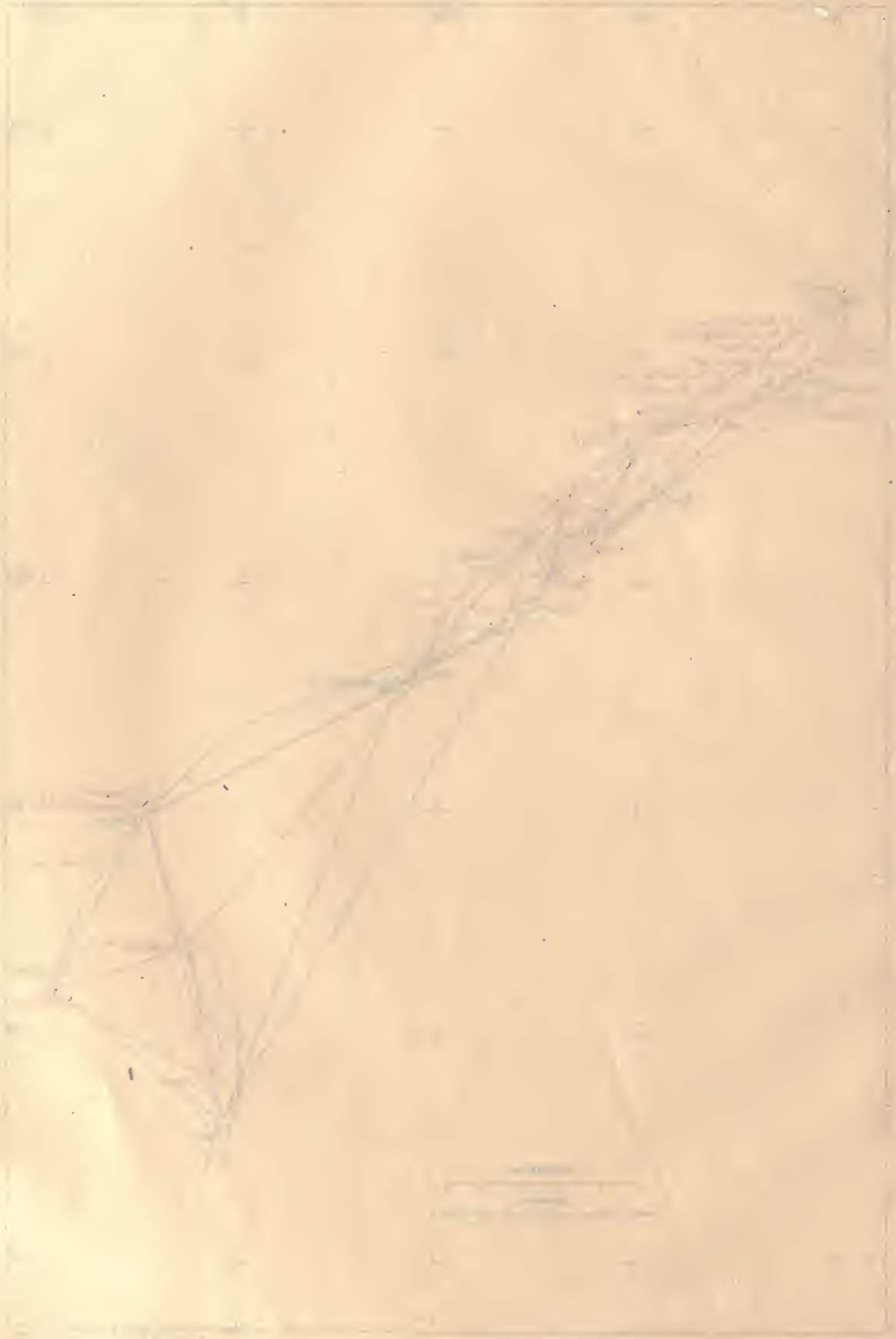
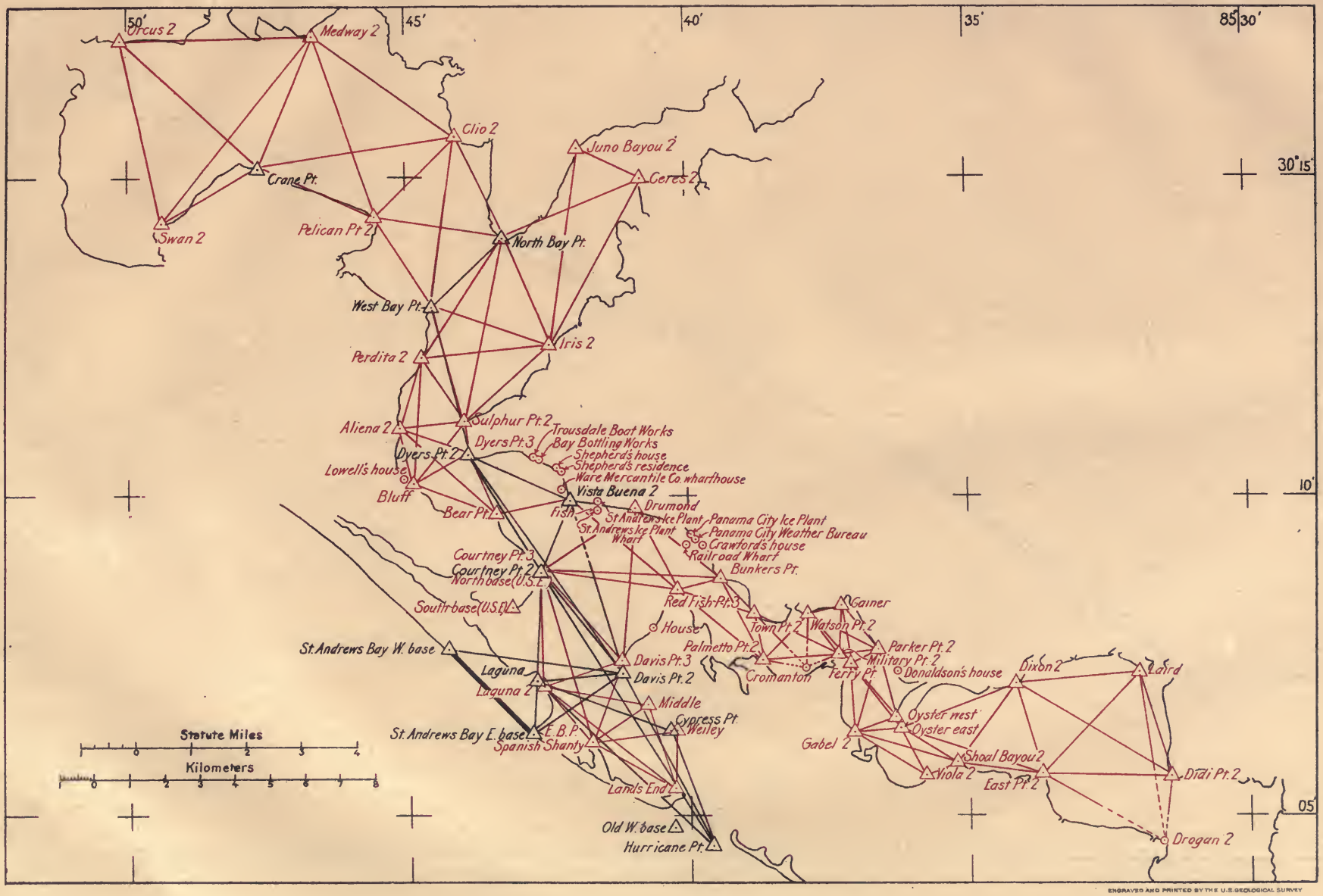
TRIANGULATION, ST. JOSEPHS BAY TO ST. ANDREWS SOUND.





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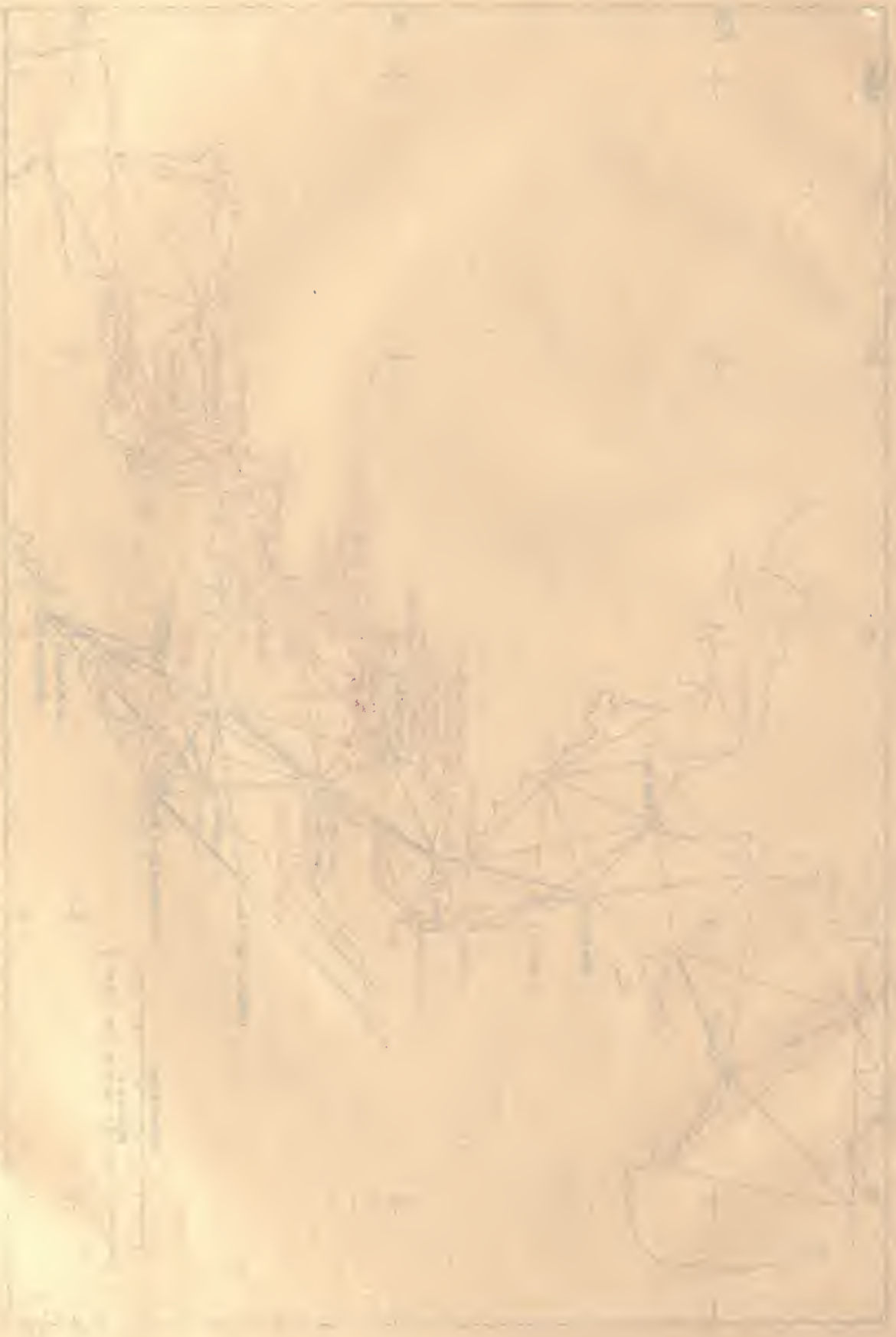
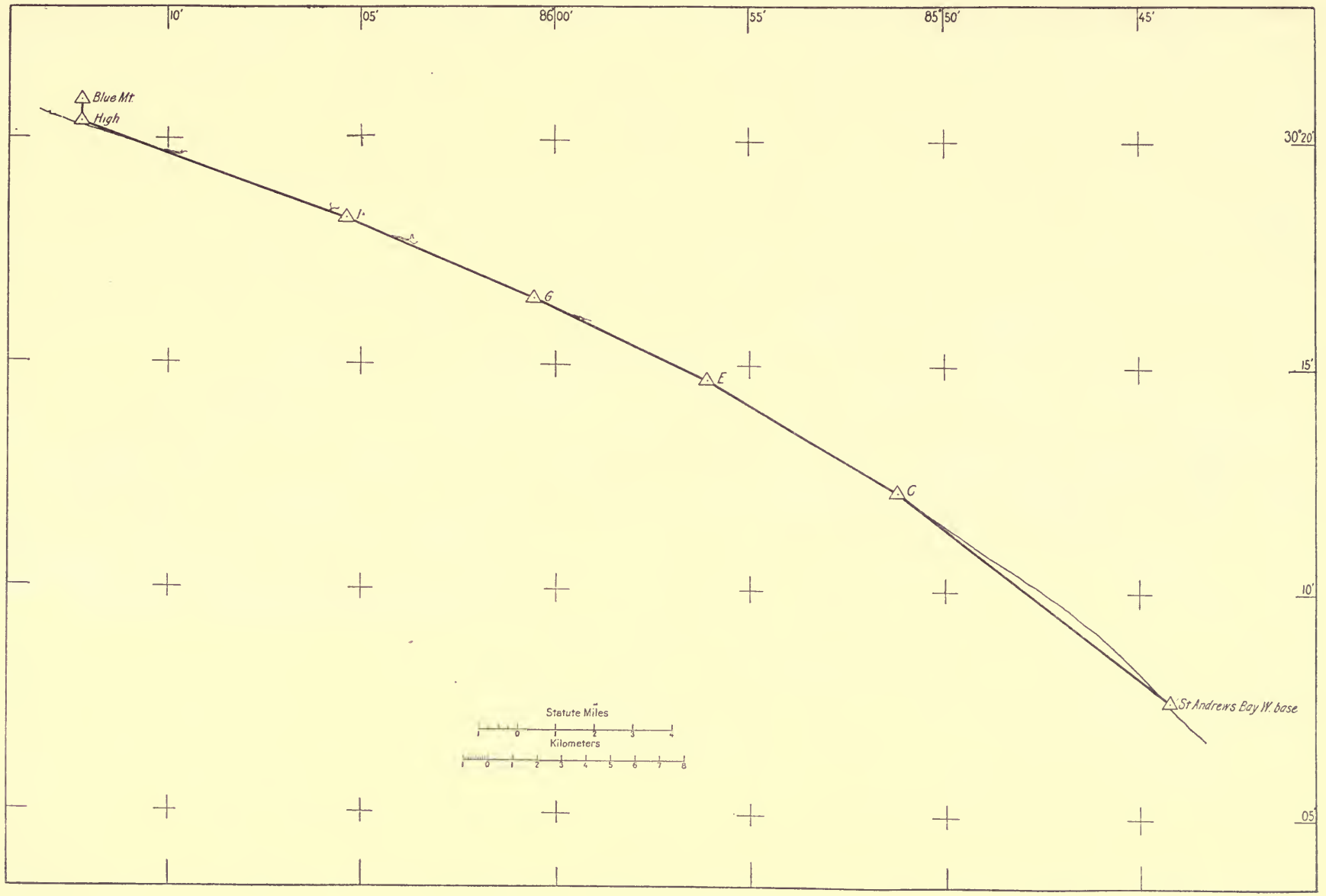
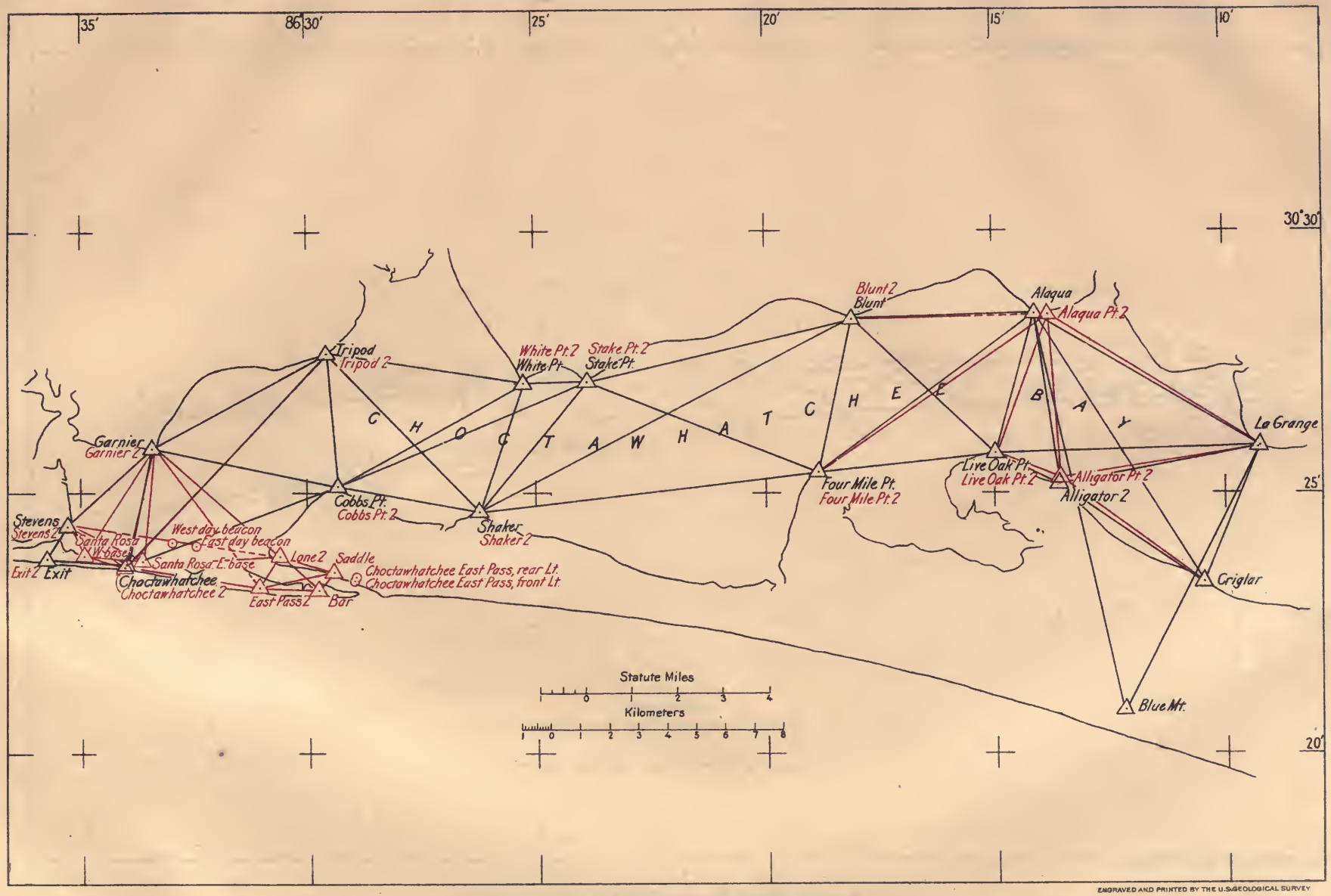
TRIANGULATION, ST. ANDREWS BAY.





TRIANGULATION, ST. ANDREWS BASE TO BLUE MOUNTAIN.



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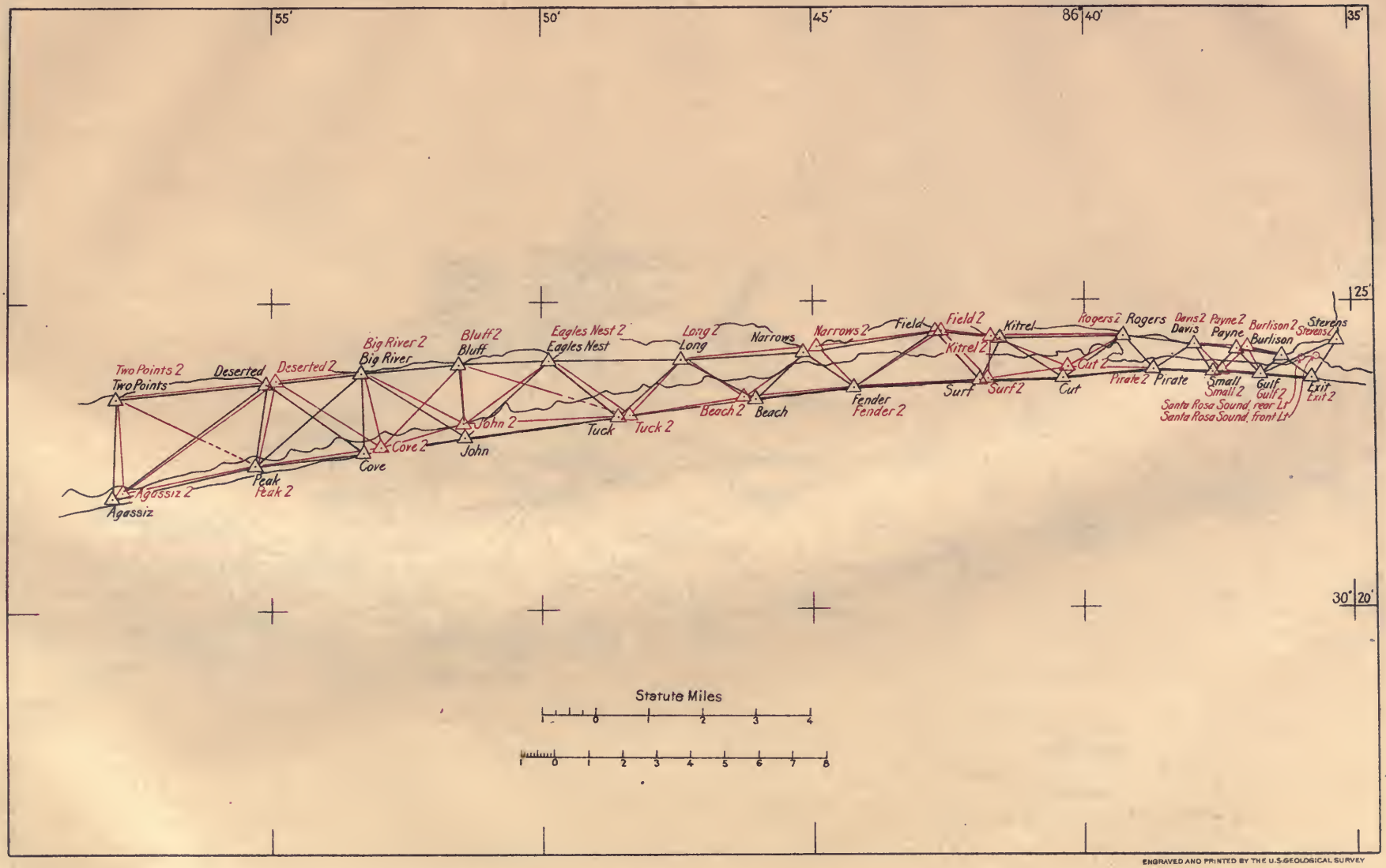
TRIANGULATION, CHOCTAWHATCHEE BAY.



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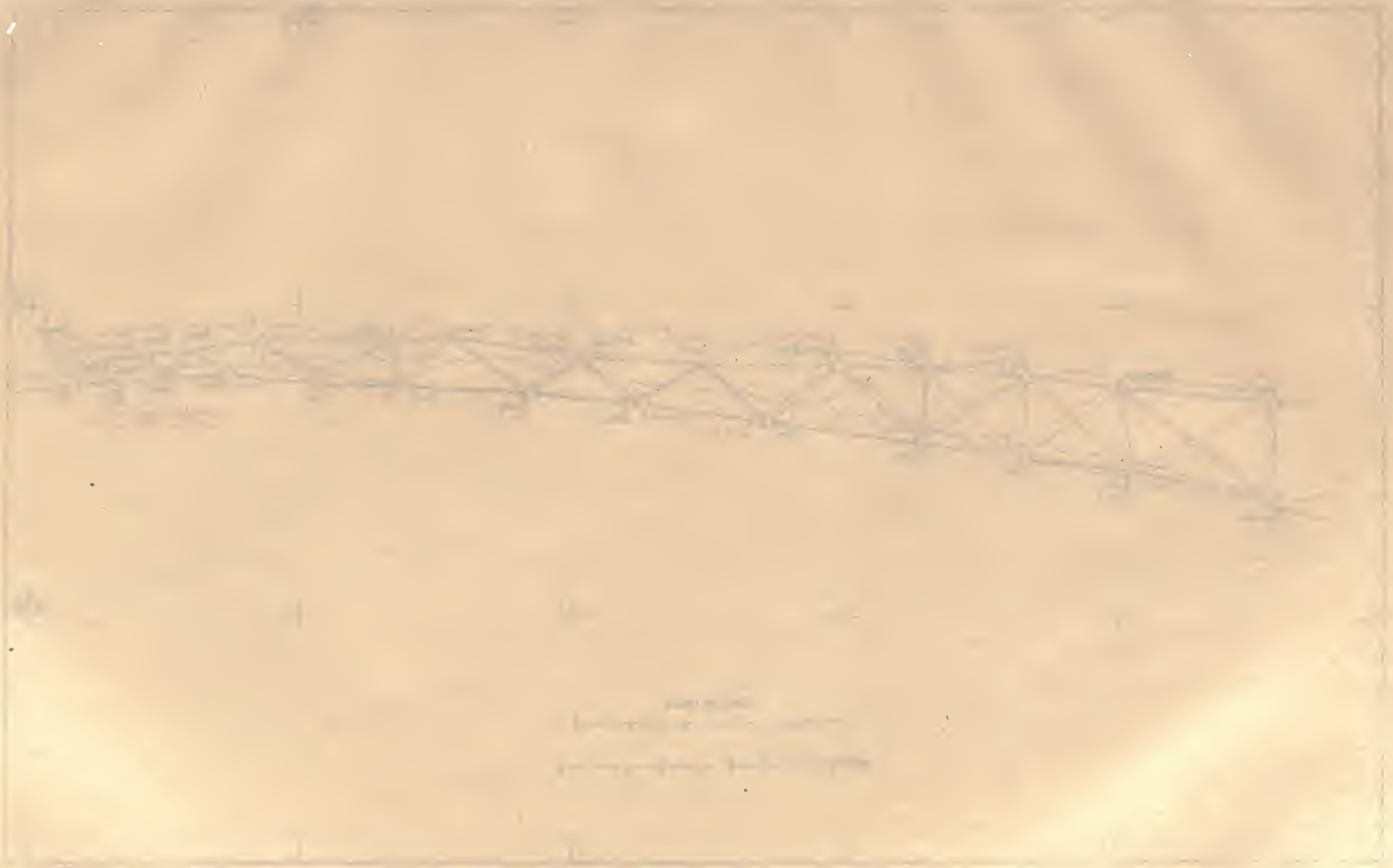
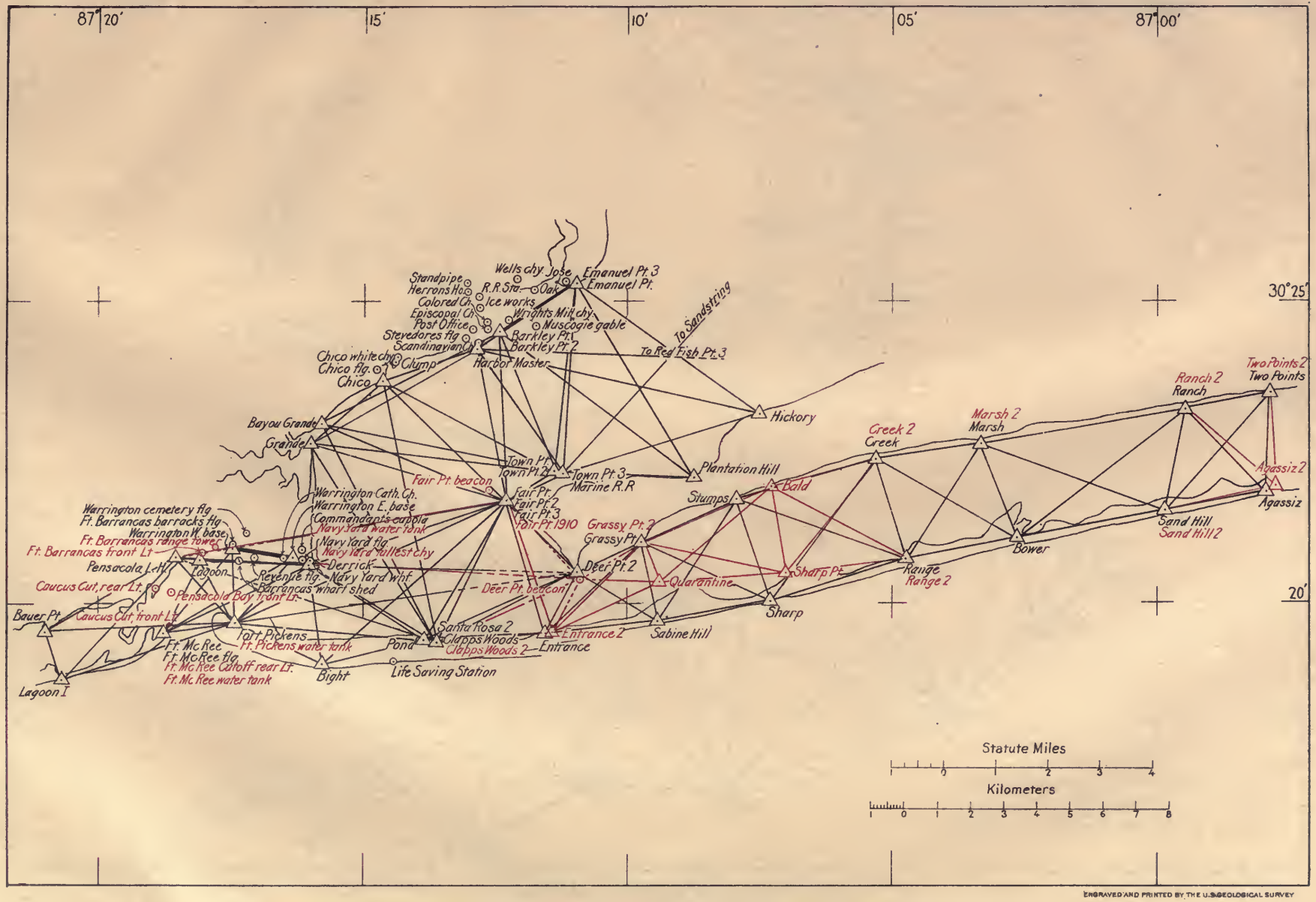
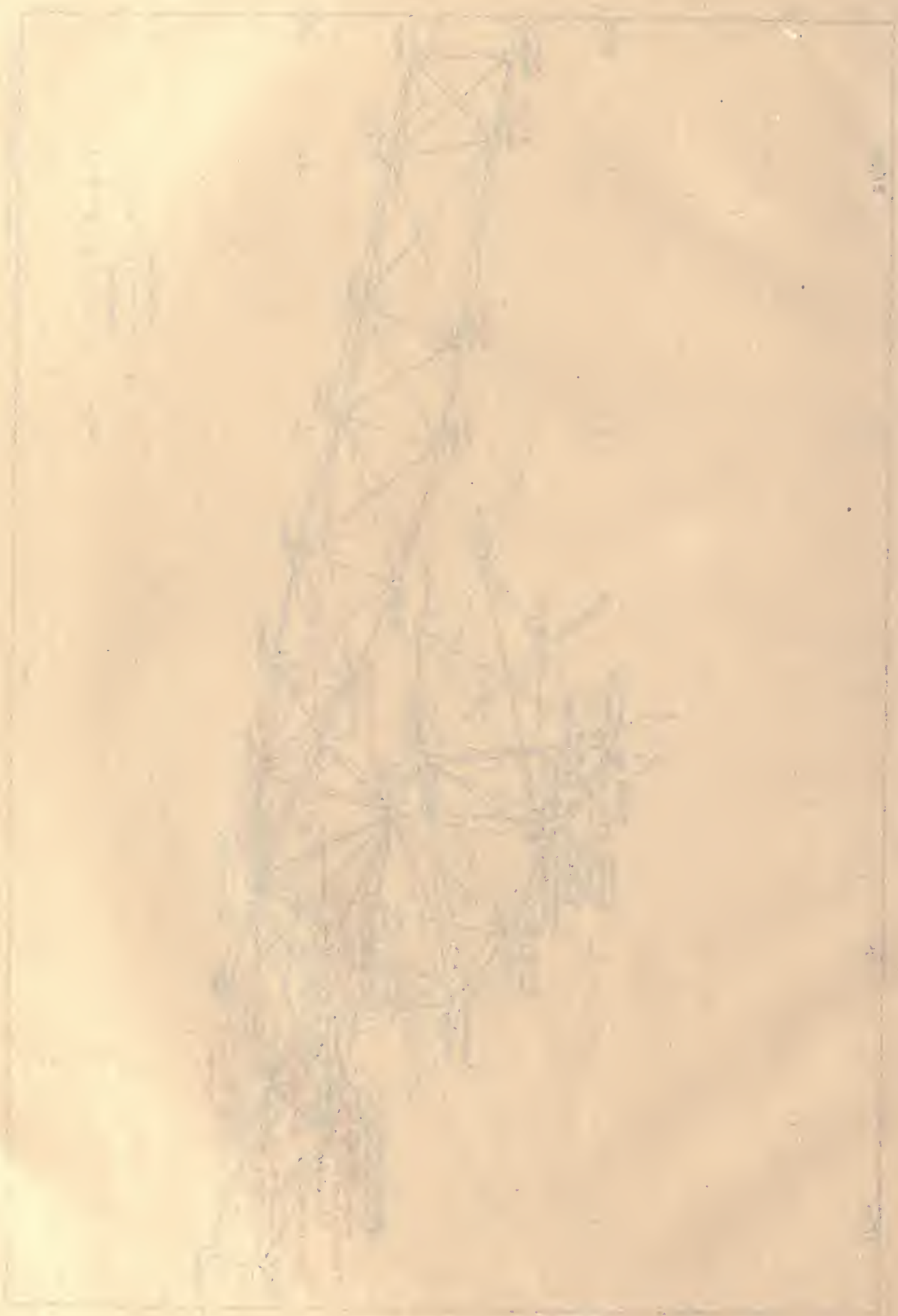
TRIANGULATION, EASTERN END OF SANTA ROSA SOUND.

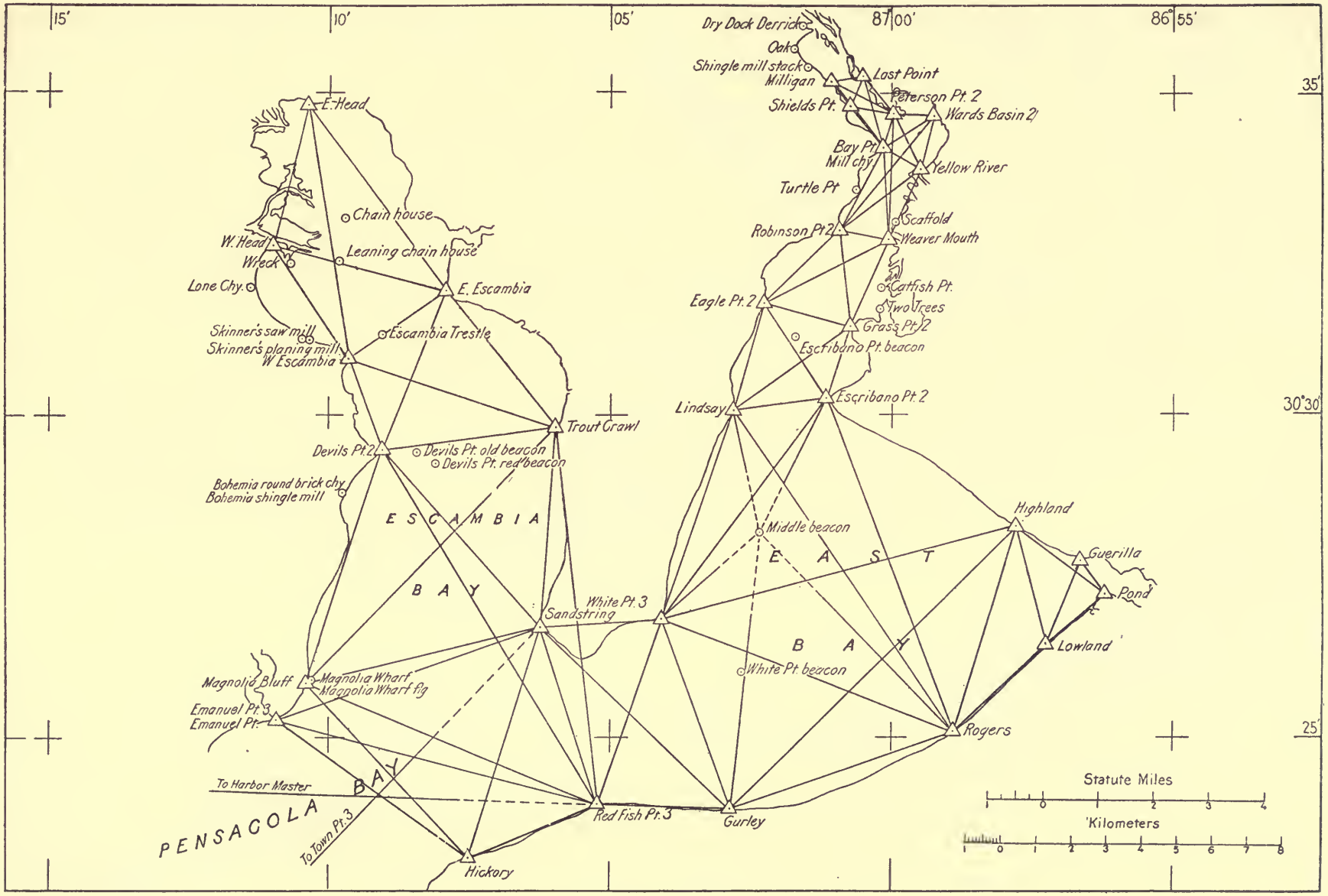




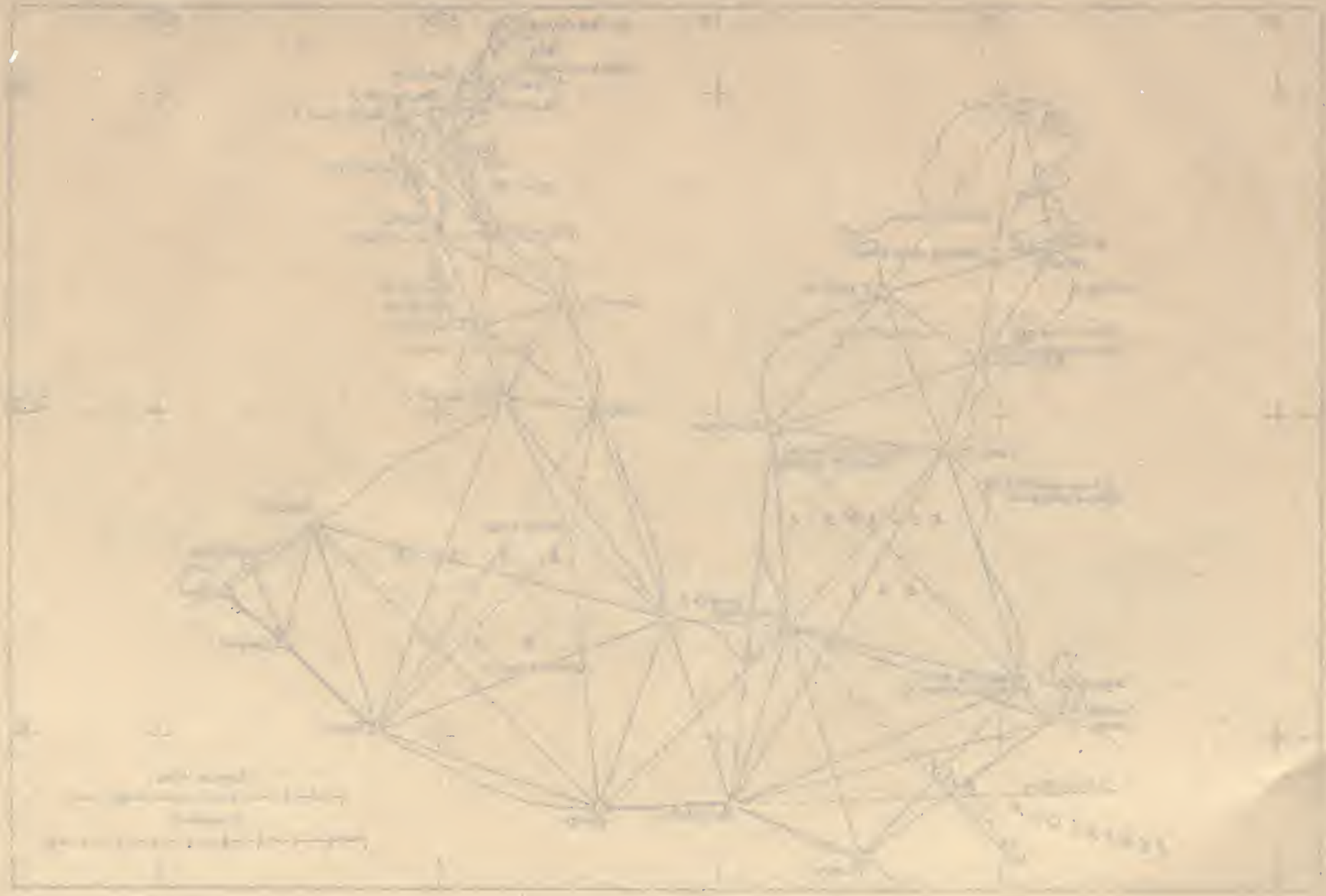
ENGRAVED AND PRINTED BY THE U.S. GEOLOGICAL SURVEY

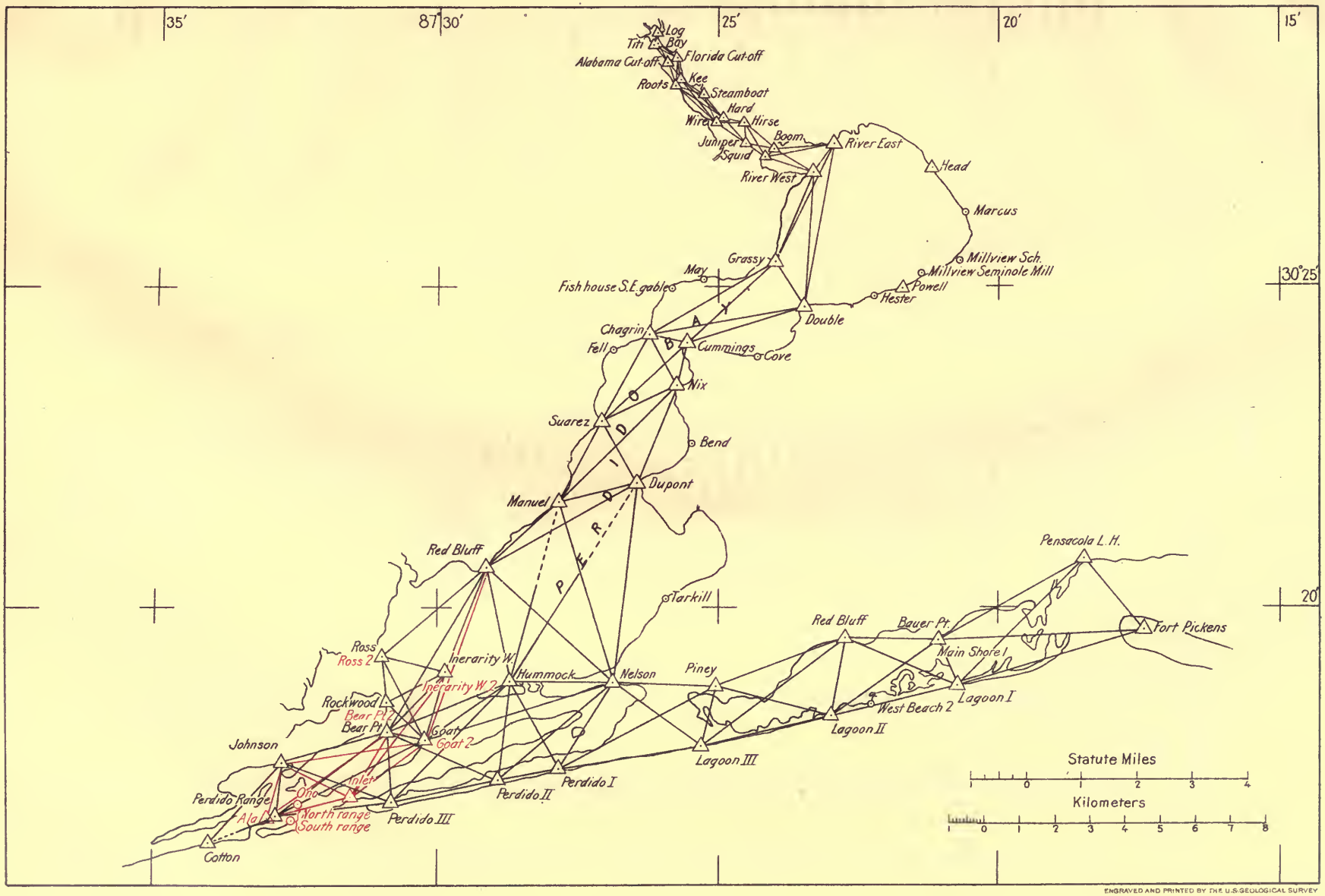
TRIANGULATION, WESTERN END OF SANTA ROSA SOUND AND SOUTHERN PART OF PENSACOLA BAY.





TRIANGULATION, ESCAMBIA BAY AND EAST BAY.





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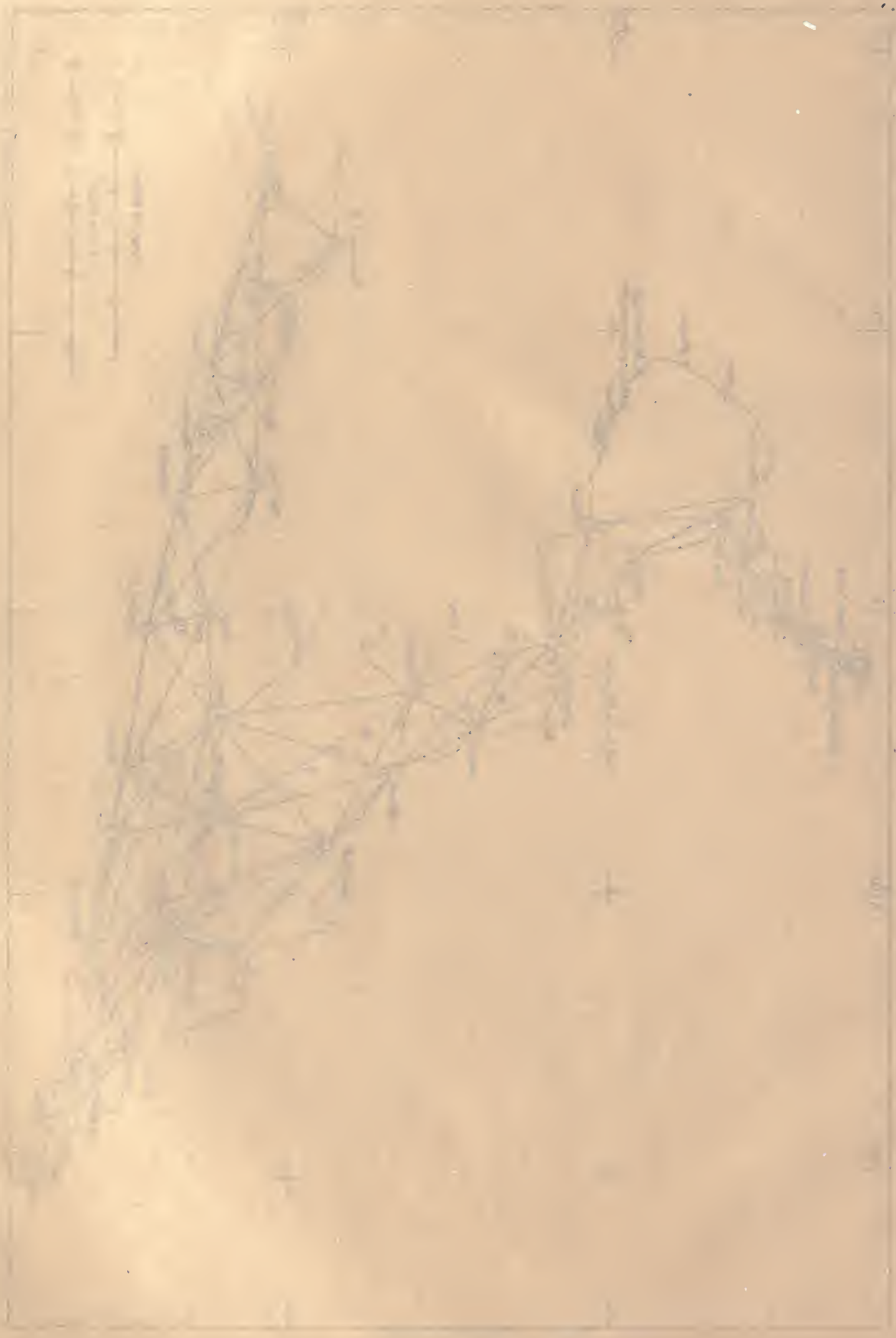
TRIANGULATION, PERDIDO BAY.



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[1] This point is not shown on the sketches. It plots just north of Fort Pickens on sketch No. 27.