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HOUSE OF REPRESENTATIVES.

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REPORT

OF

THE SUPERINTENDENT

OF THE

COAST SURVEY

SHOWING

THE PROGRESS OF THE SURVEY

DURING

THE YEAR 1860.

WAS TECHNOLOGICAL
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The special surveys made in Mobile harbor for the commissioners on its improvement, and at their expense, has received their grateful acknowledgments.

The order of the detailed notices of work is as follows :

1. The connection of the survey of Mississippi sound with that of the delta, by triangulation from Point Fortuna, across Isle au Breton sound, to the preliminary base at the head of the passes of the Mississippi river.

2. The completion of the triangulation and topography of Côte Blanche bay, and determination of the magnetic elements at Côte Blanche island. The topography includes a part of Marsh island.

3. An extension westward of the plane-table survey of Lake Pontchartrain to Ragged Point and Bayou Le Bar. This work completes the topography of the eastern half of the lake.

4. Completion of the topography of the North, Northeast, and Southeast Passes, and Passe à Loutre, with intermediate details of the Mississippi delta, and determination of the magnetic elements.

5. A hydrographic re-survey of Mobile harbor, including the adjacent parts of the Mobile, Spanish, and Tensaw rivers, and general reconnaissance of the channel of the entire bay to the Lower Fleet. This work was executed for the commissioners authorized by the State of Alabama to decide in regard to plans for improving the water approaches of Mobile harbor. In connection with it a physical examination was made, including observations of the tides and currents at various points in the bay between its head and the waters of the Gulf of Mexico.

6. Hydrographic surveys of Passe à Loutre, the Northeast, North, and Southeast Passes of the Mississippi river. The records of sounding and other material resulting from this work were lost by the sinking of the steamer Walker. By the same disaster all the notes and journals connected with a hydrographic survey of Chandeleur sound were also lost.

7. Tidal observations at the Mississippi passes, and at Isle Dernieré, for comparison with others made at stations on the eastern coast of the Gulf of Mexico.

In the vicinity of Chandeleur island light, and of the Mississippi delta, views have been drawn for charts of the Gulf coast.

Office-work.—The drawing and engraving of coast map and chart No. 91, from Bon Secours bay to Round island, and of the map of the Rigolets have been completed, and additions made to the progress sketch. Progress has been made in the drawing and engraving of coast map and chart No. 92, from Round island to Grand island, La., and in the drawing of general coast chart No. XIV, from Pensacola bay to the Mississippi delta, and coast map and chart No. 93, from Lake Borgne to Lake Pontchartrain.

Triangulation of the western side of Isle au Breton sound, La.—Resuming work on the 27th of November, at Point Fortuna, (Sketch No. 28,) Sub-Assistant Stephen Harris, with a party in the schooner Twilight, extended the triangulation connected with Mississippi sound, southward and westward over the islands and west shore of Isle au Breton bay, and over both shores of Oyster bay, and part of Bay Rondo, and joined at the head of the passes on the Mississippi river with the preliminary base measured by Assistant Gerdes in 1857. In the course of the work a number of tertiary points were determined for plane-table use in the immediate vicinity of the Mississippi, and on the shores of Isle au Breton sound. The triangulation was closed on the 12th of May, the vessel being laid up during the summer at Pascagoula.

A summary from the report of Mr. Harris gives the following particulars relative to the field-work:

Stations occupied	19
Signals observed on	33
Number of observations	3,720
Area of triangulation, (square miles)	284

On visiting the stations used in other parts of the same range of triangles, and those in

Chandeleur sound, Sub-Assistant Harris found all the marks in good condition, excepting those at the station "Old Harbor key;" and in reference to them he says: "The island on which this station is situated appears to have been swept by the sea in the course of last summer, and all traces of the station are destroyed."

Sub-Assistant R. E. Halter was attached to the triangulation party, and assisted Mr. Harris in his reconnaissance for stations, and also in making the angular measurements. The instruments used were the ten-inch theodolite, C. S. No. 79, and the six-inch, C. S. No. 84.

The triangulation of the eastern coast of Louisiana is now continuous and complete along Mississippi sound and the main land to the western side of the delta, and embraces also the several passes of the Mississippi. It yet remains to connect the Chandeleur islands with the general work near the delta, and for that duty directions are now about to be issued.

Mr. Charles S. Peirce served as aid in the party of Sub-Assistant Harris until the end of the working season at the south, and then resigned.

Sub-Assistant Harris has duplicated and deposited in the office with the originals his records of the horizontal angles measured in Isle au Breton sound, and full descriptions of the marks placed at the stations.

Triangulation of Côte Blanche bay, La.—This work was resumed early in February, and has been completed by Sub-Assistant Oltmanns, with a party operating as heretofore under the general direction of Assistant Gerdes. The triangulation was taken up on the line joining Côte Blanche island and Musquito station, (Sketch No. 28,) and from thence carried westward quite to the entrance of Vermilion bay. Owing to the high stage of water this season the schooner Gerdes, which was used in the triangulation and plane-table work, was taken without difficulty to the vicinity of the station at Côte Blanche island.

All the station-marks westward of Atchafalaya are reported by Mr. Oltmanns as well secured by screw-piles or other sufficient means, and those used in past seasons can so far be readily identified.

Ten points were determined in position within the range of the work of this season. The following additional particulars of the triangulation are given in the usual form:

Signals erected	11
Stations occupied	7
Angles measured	23
Number of observations	330
Area of triangulation, (square miles)	70

Mr. G. U. Mayo aided in the triangulation work of Côte Blanche bay. Sub-Assistant Oltmanns was subsequently employed in Section VII, as already stated.

Topography of Lake Pontchartrain, La.—On the north shore of Lake Pontchartrain the plane-table survey has been extended by Sub-Assistant Malcolm Seaton from Bayou Bonfouca westward to a station two miles beyond Ragged Point. The details include the shell ridge, which lies a little above high water-mark, and the fringe of marsh, varying from a quarter to a mile and a quarter in width, between the lake margin and a belt of pine woods which follows the shore. The shell ridge is covered with brush and scattered live oak trees. Bayou Lacombe, the only stream of note represented on the sheet, has a good depth of water; but the bar at its mouth will admit only vessels drawing less than four feet.

On the south shore of the lake the topography was pushed from Bayou Coushon (Sketch No. 28) westward to Bayou Le Bar, or two miles and a half to the westward of the Jefferson railroad wharf; and from the water-line southward to the Gentilly Ridge, which follows the southern shore at a distance of from two to two and a half miles. The dense cypress swamp, broken by small passages, which lies between the ridge and the lake, constitutes the main topographical feature of the second sheet. Within its limits are also included the Pontchar-