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a violent storm on the 12th of September, the wharf upon which the tide-house stood was broken down, carrying the tide-house, tide-gauge, and the record for a number of days with it. After the storm subsided, the tide-house and gauge were recovered, repaired, and established upon a wharf which since then has been rebuilt and strengthened with new piles, so that there is now a fair prospect of a continuous record for some years to come. The loss of the record while the gauge was being put into working order again was partly remedied by staff observations.

*Determinations of the force of gravity at Montreal, Canada, Albany, N. Y., and Hoboken, N. J.*—Determinations of the force of gravity, both absolute and relative, were continued by Assistant Charles S. Peirce during the fiscal year. At the station Stevens Institute, Hoboken, a regular determination of the absolute force of gravity was made with the Repsold apparatus. Two new invariable reversible pendulums were oscillated; the same that were used at the stations in Washington. These pendulums were then transported to Montreal, Canada, and oscillated at the station selected with the permission of the authorities of McGill College in the basement of the College Observatory. Thence in September they were taken to Albany, where they were oscillated in the transit room of the Dudley Observatory.

In these experiments Mr. Peirce had the aid of Messrs E. D. Preston and F. B. Hall.

In February, 1883, the Stevens Institute Station, Hoboken, was reoccupied in order to continue the work of comparing the yard and the meter by means of reversible pendulums numbered 2 and 3, the latter being the yard pendulum.

Other determinations of gravity made by Mr. Peirce will be referred to under the heads of Sections III and VI.

In Appendix No. 19 is given a paper by Mr. Peirce which was intended for publication as one of the Appendices to my Report for last year, but was omitted for want of space. It relates to results for force of gravity obtained by him at Allegheny, Ebensburg, and York, Pa.

*Hydrography off south coast of Long Island, and lines of deep-sea soundings in the vicinity of New York Bay entrance.*—Upon the completion of the line of deep-sea soundings off Nantucket, reference to which has been made under the heading of Section I, Lieutenant-Commander Brownson was instructed to run a series of lines of soundings normal to the coast off the south shore of Long Island, at distances apart of from seven to ten miles, and far enough out to include the one-hundred-fathom curve. This duty was successfully accomplished in the steamer Blake between September 6 and October 11, 1882. At the date last named, when further work was prevented by bad weather, sixteen lines of soundings had been run. The Blake was then ordered to New York, where her commander prepared her for deep-sea sounding work between the Bahamas and the Bermudas. This will be referred to under the heading of Section VI.

The following-named officers attached to the Blake served in hydrographic duty during the season off the Long Island coast: Lieut. G. W. Mentz, U. S. N.; Masters Henry Morrell and Lucian Flynn, U. S. N.; Ensigns H. C. Wakenshaw, W. M. Constant, and Harry S. Knapp, U. S. N.

Upon the completion of her southern work in the spring of 1883, the Blake returned to New York and, under instructions issued April 16, took up deep-sea sounding work in the approaches to New York Harbor.

For the off-shore and deep-sea sounding work executed in the Blake during the fiscal year ending with June, 1883, Lieutenant-Commander Brownson furnishes the following statistics:

Length of lines in miles.....	1,671
Number of deep-sea soundings.....	191
Number of water temperatures (surface).....	877
Number of water temperatures (intermediate).....	346
Number of water temperatures (bottom).....	159
Number of serial temperatures.....	52
Number of air temperatures (dry bulb).....	756
Number of air temperatures (wet bulb).....	711
Number of specimens of bottom preserved.....	3,477

For the inshore hydrography executed during the same period the statistics are:

Miles of soundings run.....	3,946
Number of soundings.....	4,024

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