

DISCUSSION OF DATA FROM PAIRS OF STATIONS.

SACKETTS HARBOR AND CHARLOTTE.

In 1874 the zeros of gages at these stations were points marked on docks, and readings were made by means of graduated vertical rods attached to floats. They give the distance of the water surface below the gage zeros. At the time of each observation record was also made of the direction and force of the wind. The work was under the direction of the United States Lake Survey. Mr. A. Wilder was the observer at Charlotte, and Mr. Henry Metcalf at Sacketts Harbor.

The gage at Charlotte was put in place in November, 1871, and the measurements showed its zero to be 32.7 feet below a bench mark. In January, 1873, its zero was found to be 32.959 feet below the same bench mark. On May 11, 1874, it was again compared with the bench mark, and the difference was found to have increased to 33.003 feet. It is probable that this change of .044 foot was occasioned by the settling of the dock to which the gage was attached. A manuscript report dated February 3, 1875, says: "The bank is here partly of timbers and partly of earth. The earth has been washed out and has fallen away from the timber in some places." The gage at Sacketts Harbor was also found unstable. The report of an inspection in May, 1874, states that the zero of gage "has been lowered 0.555 foot;" and a report dated February, 3, 1875, says: "This gage is fastened to the timbers of an old and unused dock. The whole structure is quite dilapidated and unstable." The instability of gages determined the selection of time for the comparison of stations. Both gages having been compared with benches in May, 1874, that at Charlotte on the 11th and that at Sacketts Harbor probably on the 14th, the computations were based on a period including these dates. Within this period selection was made of those times of observation when the wind force at both stations was less than 3 on a scale of 10. Thus treated, the observations of 54 days gave 51 comparisons.