

vation is now known through Mr. Wilmot's levels, as already explained.

*Tidal Survey Datum.*—This is the Low Water datum established for the recent tidal observations at Victoria. When these observations were begun in 1900, by Mr. F. N. Denison, of the Meteorological Service, the Public Works tide scale no longer existed, and all their records were already lost in the fire of 1898. On consultation with Mr. Gamble and Mr. Worsfold, a plane of reference was adopted, to correspond as nearly as might be with the former Public Works datum. The new datum plane was fixed by reference to a new bench-mark, and also connected with the Standard bench-mark on Wharf street, the elevations being given below. A complete year of the new tidal observations is included in the basis of the tide tables, the record being obtained in 1903 to 1904, by Mr. E. Baynes Reed, Superintendent of the Meteorological Office, and Mr. Denison.

Much trouble has been taken to ascertain the relation of this datum to the chart soundings. With this object, special soundings were taken in the harbour by Captain Walbran, of the Marine Department, for comparison with the tidal record. Simultaneous observations of the water level at Victoria and at Esquimalt were also made, in the hope of obtaining a connection there. But the results need not be detailed, as these methods are necessarily uncertain, and the relation has now been ascertained from instrumental levels.

This datum is in use for the dredging operations now in progress, and for the check soundings taken by Captain J. M. Newcombe, who is in charge. The depths as dredged are thus brought into correspondence with the zero level of the tide-tables. This datum is also cited by Mr. Thos. C. Corby, on the plan of Victoria harbour, which he compiled and published in 1904. The following bench-marks serve to fix this datum:—

*Tidal Survey Bench-mark.*—At the rear of the old Custom House building on Wharf street at the foot of Broughton street. The top of a brass bolt drilled vertically into the granite rock, at 16 feet from the north-west corner of the building, with the letters "B. M." cut beside it on the sloping surface of the rock. Elevation above the Tidal Survey datum, or zero of the present tide scale, 15.40 feet.

*Standard Bench-mark.*—On the building at the north-east corner of Wharf and Fort streets, now occupied by the Hamilton Powder Co's offices. The top of the sandstone foundation below the brick-work, at the street corner, nearly on a level with the sidewalk. Elevation above the Tidal Survey datum, 36.36 feet. The surface of the same course of sandstone forms the door sills along the