

These results may be regarded as supplementary to those already published for the Atlantic coast in 1903, in a paper entitled "Tide Levels and Datum Planes in Eastern Canada." It will not, therefore, be necessary to repeat the general explanations there given, or to enlarge upon the permanent value of tide levels and the bench-marks which record them.

In any tidal observations the two essentials are the correct time and a plane of reference for height, 'as these are the coordinates of the tidal curve. The main object of this Survey, as a branch of the Marine Department, is to deal with the time of the tide, since this is the matter of chief importance to navigation, and the question of levels is quite secondary. In the strong tidal currents of British Columbia, it is information as to the time of slack water that is most wanted by the mariner. To obtain correct time for the observations is also the greatest difficulty met with on such a coast. But the value of reliable levels, which can only be obtained from tidal observations, makes it seem right to take the additional trouble necessary to secure them.

The importance of publishing such results is emphasized by what has occurred in British Columbia. Bench-marks, carefully established, are now useless because the record of their elevations is lost through fire; the loss of level notes or the destruction of primary bench-marks leaves elaborate surveys with uncertainty in their datum planes, which it is extremely difficult to re-determine satisfactorily. By publication, these records might have been preserved, and a large amount of good work, and subsequent trouble and expense in replacing it, would have been saved.

The condition of the tide levels as met with at different places, was strongly contrasted. At some places, of course, there was nothing to refer to, and it was even difficult to know at what level to set a tide scale so that the tide would keep within its range. The only course was to place an independent bench-mark, and make a beginning. At the other extreme there was a redundancy of datum planes, established by various engineers and surveyors, with little regard to anything previously done, and often complicated by loss of record. In such a case, to follow the usual precedent of ignoring the past and beginning afresh, would have been unprincipled, especially when valuable tide levels were often carefully referred to an uncertain datum. In contrast with this the service rendered by Mr. H. J. Cambie, the Resident Engineer of the Canadian Pacific Railway at Vancouver, deserves mention. He has taken the trouble to furnish information regarding levels to the Public Works Department, the British Admiralty, and the city of Vancouver, which has kept the various planes of reference in relation, and has prevented uncertainty and confusion.