endeavor was therefore made to find an estuary tide there of the same type. Bremerhaven in the mouth of the Weser was selected as very similar, and although numerous comparisons were made with other places in the North sea, this original choice proved to be a correct one. The difference of time between Bremerhaven and Nelson is remarkably constant, more especially for high water ; as the variation in the difference is actually less than between two estuaries in the Gulf of St. Lawrence, or from one end of Northumberland strait to the other.

By following this clue with regard to the similarity of Hudson bay and the North sea, an investigation on similar lines showed that Harwich is the best port of reference for Churchill. Most of the harbors on the eastern coast of Britain are in estuaries ; but Harwich affords a suitable open-water type, and it shows the same unusual feature as at Churchill, in that the rise is slower than the fall. The result in this case is equally satisfactory ; as the difference in time between Harwich and Churchill, for both high water and low water, is remarkably constant.

The success of this method is valuable in avoiding the necessity for the establishment of permanent tidal stations at these harbors. To obtain definite data for the calculation of tide tables for Nelson, the time of the tide as observed at Bremerhaven was obtained from Germany, to make a simultaneous comparison. A value was thus obtained by which high water is calculated by means of a direct difference ; but as for most European ports the time of low water is not published, it was found best to compute this from the duration of the fall of the tide. This duration varies throughout the course of the synodic month, but the law of variation was ascertained. The calculation of the height of the tide was a matter of much greater difficulty ; because the observations available were for short periods, which happened to be of the same type from an astronomical standpoint, as the effect of the moon's distance was always superposed similarly on the springs and neaps. By a method of successive approximations however, a satisfactory solution was reached, by