

These results were based partly on tidal information obtained during the Admiralty surveys and partly on observations arranged for by correspondence, before the Pacific coast was visited (15).

In 1905, several stations were established along the coast; and on reducing the results, it was found possible to divide the whole coast into three regions; namely, the West coast of Vancouver island, the region of the Strait of Georgia, and the Northern coast from Vancouver island northward. Principal stations are maintained in each of these regions; in Clayoquot sound, at Sand Heads, and at Port Simpson. The cities on the coast are quite unsuitable as ports of reference; but tide gauges are maintained at Victoria, Vancouver and Prince Rupert, and tide tables are specially calculated for these harbours, on account of their intrinsic importance.

As a rule, the tide on the Pacific coast is strongly influenced by the declination of the moon, and it is also subject to an annual variation with the change in the declination of the sun. On the open coast the spring and neap tides are quite distinguishable, notwithstanding the other inequalities. In the Strait of Georgia the diurnal inequality becomes so large as to dominate every other feature of the tide. Next in importance is an annual variation, as the influence of the sun is very great relatively to the lunar effect. The turn of the current in the Passes is similarly affected, as the relation between the time of slack water and the tide shows a marked annual variation. To obtain good comparisons, it is thus desirable to have a full year of simultaneous observations. If this is not possible, at least six months are necessary; or else the comparisons with the reference station must be made about the time of the Equinox.

*Variable Tidal Differences.*—The use of variable tidal differences is very valuable in extending as far as possible the region that can be referred to each of the principal stations, and thus avoiding the need for an additional reference station. As a rule, the variation is so largely in some one period, that all others can be neglected; but even if there are two periods involved, their laws of variation can be determined for calculation purposes.

On the Pacific coast generally, the annual variation in the tidal difference, as already explained, is the only one necessary to take into account. For, in most cases, the diurnal inequality is so much the same, both at the principal and secondary station, that it does not cause variation in the difference.

In the Strait of Georgia, where high water and the half tides are so nearly at the same level, it is only the difference for lower low water that is affected by variation. For example, on the Fraser river, from Sand Heads at its mouth to New Westminster, the difference in time