

The most important fact to note is that these various movements of the moon have a very different effect upon the tide in different regions. As a rule, in any particular region some one of these movements has so preponderating an effect that the influence of the others is obscured. Or, it may be that two of them have a nearly equal effect and the influence of the third is difficult to detect.

In the North Atlantic and notably on the coasts of Europe, the most marked feature of the tide is the variation from springs to neaps in the synodic month. This probably accounts for the explanation of this feature exclusively, in the physical atlas and the school geography. But to assume that this is the leading characteristic of the tide everywhere in the world and that all other influences may practically be ignored, is a mistake which has probably placed the chief obstacle in the way of a correct understanding of the tides generally.

An example of the dominance of the anomalistic month is given by the Bay of Fundy ; where the variation in the range of the tide from perigee to apogee is distinctly greater than the variation from springs to neaps, with the moon's phases.

The large development of diurnal inequality during the course of the declination-month is illustrated by Northumberland strait, where the difference in range between the two tides of the day is at times half as much again as the true difference between springs and neaps. The tide on the Pacific coast of Canada, and notably in the Strait of Georgia, is also of the declination type. The diurnal inequality is there so developed that it obscures every other feature in the tide ; and the springs and neaps can only be detected by a careful analysis.

In regions where declination is thus the dominant element, the change in the declination of the sun during the year may have a greater effect than any other of the moon's own motions. There is consequently a marked annual variation ; and the extreme tides of the year, due to inequality, necessarily occur at the moon's maximum declination which is nearest to the date of the solstice, in summer and in winter.