

a more appropriate term, height 1,695 feet) naturally draws the vertical southward, continuing to do so until the Turtle Mountains (of moderate elevation, 2,550 feet) are reached, which, too, deflect to the south. After entering the Côteau of the Missouri we pass along the southern base of the high ridge, separating the waters flowing into the Gulf of Mexico, from those flowing into Hudson Bay, and find, naturally, a deflection to the north, increasing to a maximum south of the Cypress Hills (3,800 feet). Here the extrusive masses of the Three Buttes produce a violent disturbing effect. When we actually enter the tumultuous Rocky Mountains, with all their varied conditions of composition, of faults and dykes, and our lack of hypsometric maps, we are unable to even make a plausible estimate in which direction the local deflection is to be expected.

It is evident that observations at two places, which are also geodetically connected, can only give the relative deflection of the plumb line.

For the boundary between the Lake of the Woods to the summit of the Rocky Mountains, the Commissioners agreed that the line joining any two adjacent monuments shall be an arc of the parallel. This was to apply, too, in the case of restoring any monument whose position was lost. This agreement differs from that of the boundary commissioners, who had charge, some 17 years previously, of defining the boundary from the Gulf of Georgia to the summit of the Rocky Mountains. They agreed that the connecting line between monuments shall be a straight or direct line, *i.e.*, an arc of a great circle.

Between the extreme east and west points, upon the watershed of the Rocky Mountains, and the eastern shore of the channel which separates the continent of North America from Vancouver Island in west longitude  $114^{\circ} 3' 34''$  and  $123^{\circ} 3' 53''$  respectively, the exact length of the boundary line upon the 49th parallel of north latitude is  $409 \frac{4}{10}$  miles. The position of the parallel was determined by 28 astronomical stations, 11 of which were established by the British Commission, 14 by the American Commission, and 3 were observed by both. Another station was