

latitude observations are made is indicated by the "level," and its position in turn is the resultant of all the gravitational forces acting on it; that is, the distribution of matter, visible and invisible, about a station determines the position of the "bubble" or "level," the zero of observation. Mountainous regions generally show "deflections of the plumb-line," as the deviation of the zero is termed, due to the anomalous distribution of matter. Were there no anomalies it would be possible theoretically, after establishing an individual point on any parallel of latitude, to establish other points on the parallel from it. Or we may say that, if two points are established in latitude, the direction a straight line must take from the one point to the other is simply a matter of computation.

In the present case the effect of this condition was markedly shown in the 96 miles from the Similkameen to the Columbia. The astronomic stations in this section were, in order from west to east: Similkameen U. S.; Osoyoos Br.; First Crossing or Newhoilpitkw U. S.; Second Crossing, or Inshwointum Br.; Third Crossing, or Statapoosten U. S.; Columbia Br. and U. S. It will be remembered that it was agreed to project the boundary line a short distance east and west from each astronomic station. This was done. From the British station at Osoyoos, the British commission ran lines—cutting the forest where encountered—west and east to meet the United States astronomic stations respectively at Similkameen and at First Crossing; and similarly from the Second Crossing again to the First Crossing and eastward to the Third Crossing. The not-unexpected happened—the lines did not meet, owing to "local deflection of the plumb line," although the discrepancies were greater than expected. At Similkameen the line came 509 feet north of the United States station; at the First Crossing the Osoyoos line came 364 feet north of the United States station, but the line projected from the Second Crossing westward came 300 feet south of this same United States station; i.e., the two British lines run from British stations were 664 feet apart. This was