

national organization. An outline of the methods of the work, and the results attained, will show what is being done by concerted national action to determine the size and the figure of the earth. From the beginning of the work up to 1887, the results were largely of local importance. Each State Government reported on the operations within its borders, and which were intended primarily to serve as bases of maps for the various countries. The triangulation, measure of base lines, astronomical observations, precise levels, and tidal observations, found their greatest use locally, but in the last ten years questions have been taken up which are of the greatest interest to each individual country, and to the world as a whole.

As illustrating the methods which are now being pursued, I may mention that the last undertaking on the part of the International Geodetic Association contemplates a final and definite solution of the variation of latitude. The association proposes to establish four stations, as nearly as possible at equal distances around the earth, and all within half a mile of the same parallel of latitude. The character of latitude variation from season to season is now comparatively well known, and the fact that we are sixty feet nearer the equator at one season of the year than at another no longer appears startling, but the results so far have been to a certain extent vitiated by the fact that the star places are uncertain; and although by an ingenious method of combining the observations this defect to a large extent disappeared, nevertheless the observations do not yield the desired precision. The method proposed by the International Association, and now in progress of being put into practice, will be free of any errors in the accepted position or proper motions of the stars. This can be accomplished by locating the points on the same parallel of latitude, and as nearly as possible equally distant. Four stations have been chosen, all on the parallel of 39 deg. 8 min. Two stations are taken in the United States, one on the Atlantic coast, and one on the Pacific coast; one station in Japan, and one in Italy. At the present time, a most careful examination of the topography of the various regions in which stations are to be established is being made, in order that all the conditions may be comparable and well determined. It is proposed to carry on latitude observations with precision at these four stations, for a period of seven, possibly ten, years; at the end of which time sufficient data will be at hand to predict the position of the pole with all the precision necessary for the most refined astronomical calculations for at least a century to come.

The result of this international effort at co-operation seems so striking, and the ends to be accomplished are so well worthy the efforts of the best thought and the best energy of any nation, that