making generally two independent determinations at every station. Since entire reliance had to be put upon this one needle, it was necessary to examine whether any constant error, due, for example, to irregularity of shape of pivots, which the method of observation would not eliminate, was inherent in the results obtained with it. This matter was tested in two independent ways:

(*a*) By observing the dip in different azimuths. Here different parts of the pivots came into play while making the dip observations. This test was made in about the middle of the period of the survey.

(*b*) By comparing the results obtained with my dip circle and Needle No. I with the results obtained with new Kew dip circles, just received by the Coast and Geodetic Survey, which had as yet seen no field use and which had been examined and certified to at the Kew Observatory. The comparison was made in the Coast and Geodetic Survey office at Washington at the close of the magnetic survey in 1896. The result of both tests was that no constant correction need be applied to the results with the dip needle used in the magnetic survey and that furthermore any correction that could be applied to refer the dip results to the Kew standard would lie within the probable error of a dip determination.

The Epoch selected for the Magnetic Maps.

The epoch to which the results of the magnetic survey are to be reduced has been selected as January 1st, 1900. This was done for three reasons:

(*a*) The Coast and Geodetic Survey has undertaken to issue new magnetic charts of the United States for the year 1900.

(*b*) The secular variations of the magnetic elements have been so thoroughly determined by the researches of the Coast and Geodetic Survey that it is possible to make very accurate reductions for a period of from five to ten years.

(*c*) There is every reason to suppose that the attempt is going to be made to issue new magnetic charts for the year 1900 for the entire earth. In this event the results of this magnetic survey will be in shape directly available.