

With the aid of the preceding data the final table (No. XII) has been prepared, giving the values of the magnetic declination in degrees and minutes, for every five years between 1700 and 1900 at each of the county-seats. This table was obtained thus: First, an auxiliary table was constructed giving the secular changes in the declination for every five years during the interval 1700 to 1900 at eight different localities well distributed over the state. These eight localities were obtained by suitable combinations of the C. and G. S. secular variation stations, as given in the preceding table. They are as follows:

I. N. W. corner of state:	$\frac{1}{2} [\frac{1}{2} (A + M) + \frac{1}{8} (2 Ch + Hu)].$
II. Near Hagerstown:	$\frac{1}{8} [\frac{1}{8} (2 Ch + Hu) + III].$
III. Near Laurel:	$\frac{1}{2} [Wa + B].$
IV. N. E. corner of state:	$\frac{1}{8} [\frac{1}{8} (Ph + Ht + Wc) + III].$
V. Near Denton:	$\frac{1}{3} [III + IV + VI + VII + VIII].$
VI. Capes May and Henlopen:	$\frac{1}{2} [May + H'n].$
VII. Near Leonardtown:	$\frac{1}{8} [2 III + \frac{1}{2} (Wi + H'y)].$
VIII. Near Crisfield:	$\frac{1}{2} [VI + \frac{1}{2} (Wi + H'y)].$

The formulae explain the various combinations, the letters standing for the stations used. For example, in I, *A* stands for Athens, *M* for Marietta, *Ch* for Chambersburg, and *Hu* for Huntingdon. First, Chambersburg and Huntingdon were combined, giving the former double weight; next the mean of Athens and Marietta was taken; and finally, the mean of the two means was formed. In order to check the results obtained for each locality they were represented graphically and compared. In this way slight improvements were obtained.

The auxiliary table is exhibited below in a somewhat condensed form. If D_{1900} and D_t represent, respectively, the values of the magnetic declination on January 1st, 1900, and at some time t between 1700 and 1900, and c is the change in the declination between t and 1900, we have

$$D_t = D_{1900} + c.$$

West declination is reckoned as *positive* and *east* declination as *negative*. The quantities c are given in the auxiliary table with the proper sign. Suppose the value of the declination at Hagerstown on Janu-