believed that the best results possible under the conditions imposed have been obtained.

Some objections might be raised to the method of reducing each magnetic element to its particular daily mean. Now the mean declination takes place at a certain instant or instants, the mean inclination at other times, and the mean horizontal intensity at still another time during the day. And yet the method of discussion would lead one to suppose that they all referred to the same instant of time. When we combine three such mean quantities the resulting vector cannot be physically interpreted; we are combining quantities that really do not belong together, but this is a matter that need not concern us at the present moment.

No fixed order was followed in making the entire set of observations. It was believed that the utmost freedom in this regard would be most conducive to success. The order followed at any particular station was controlled by the conditions prevailing at the time. When possible, the endeavor was made to follow that particular order which at the time of day when the observations were made would give the best results for each element.

It is not possible to describe in detail in this paper the methods of observation employed for *dip* and *intensity*. Essentially the same methods in general use were adopted. Absolute observations of the *intensity* were made at each station. By means of the observations made from time to time at the base station it will be possible likewise to treat each set of intensity observations—deflections and oscillations —separately and thus the two results may be compared. The deflection experiments were frequently made with two distances, so that the distribution coefficient can be determined from a large number of field observations. In the *dip* observations the polarity of the needle was reversed at every station. At the beginning of the work two different dip needles were used and the dip determined independently with each. The results with Needle No. II exhibiting decided peculiarities, it was subjected to an examination and the pivots found to be imperfect. I therefore worked entirely with Needle No. I,