local disturbances, he is the very one who should be made aware of the fact and be obliged by law to discard his compass entirely for accurate surveying over the disturbed region.

Now there are disturbances which manifest themselves principally in the vertical plane and which would hence largely fail to be revealed by a survey with a horizontal needle alone, *i. e.*, a declination survey. Such disturbances likewise demand attention.

Coming now to the geological standpoint, there can be no question whatsoever that if the geologist hopes to gain anything from geomagnetic investigations conducted under his auspices, *all* the elements must be observed, not simply declination. The declination survey can at its best only *indicate* the presence of the phenomena to be studied, and even at that, only a *part* of them. To frame any hypotheses with reference to the relationship between geological formations and disturbances in the distribution of terrestrial magnetism, as based upon declination data alone, can be of but little scientific value, and may even retard real progress in this direction. If, on the other hand, inclination and intensity data are added to the declination data, it is possible to approach the matter under discussion from a scientific and, therefore, practical standpoint. The magnitude of the deflecting forces and true direction of line of action can then be computed, and thus the real data to be utilized in the correlation of disturbances in geological structure and of magnetic distribution can be obtained.

From the purely economical standpoint, likewise, I believe experience will at once teach the desirability of a survey that is complete. The results of the Maryland magnetic survey will bear out the statement that it need not cost much more, either in time or money, to observe the three elements than to observe simply one. Fully 75 per cent of the time and money (if not more) are consumed in the *occupying* of a station. After the observer has once reached his station, it is comparatively a mere trifle to observe a little longer, and the additional observations will entail practically little extra expense. The heaviest part of a magnetic survey consists in the determination of the magnetic declination.

Again, experience will teach that it is just as economical to make