than that of the single fibre. Of the 46 stations there was but one station—Damascus—where the error due to uneliminated torsion may amount to several minutes. But this station is in a disturbed region and additional observations might well be added in this locality, even if the accuracy reached is not more than one-tenth of a degree. It would seem, therefore, that we have no reason for supposing that the observation error of the magnetic portion of the determination of a declination should in general have exceeded the reading error of the horizontal circle of the magnetometer.

A consideration of the *reduction* error follows next. This consists of several parts:

a. The diurnal variation.

b. The disturbance variation.

c. The secular variation.

d. The annual variation.

In reducing the observation made at a specified time to some other time, all of these factors enter in, and all need to be taken into account, with the exception of the last, which for stations in mid-latitudes has a total range of only about 1′. The general method of procedure amounts practically to reducing the observation to the mean of day, making the necessary allowance in case the observation appears to have been made at a magnetically disturbed period, and then applying the correction for secular variation. To carry out this scheme as perfectly as possible it is necessary to have near the base of operation of the magnetic survey a magnetic observatory where by photographic means a continuous record of the variations of the magnetic elements is obtained. It is necessary that this observatory shall be sufficiently close to the area surveyed so that it can be assumed that the diurnal variation as observed at the observatory is practically the same over the entire area. The diurnal variation progresses according to local time, and hence it is not meant by the statement "that the diurnal variation is to be assumed the same over the entire area," that at the same instant of *absolute* time the *correction* for diurnal variation is the same over the whole area, but that at the same instant of *local* time the correction is assumed the same. The disturbance variation on