The writer does not believe that with one night's observing he could have obtained as good results with the same instrument by any other method, nor with any other instrument equally portable, which had stood an equal amount of rough usage and knocking about. On the other hand, the calculations, though quite simple, are certainly found long and tiresome. A little good judgment on the part of the computer will materially reduce the time and labour of the calculations. As in nearly all calculations, a ruled form is of great assistance, saving time and mistakes.

A copy (reduced) of the form used is appended. The corresponding calculations for the different stars should be carried along together. All calculations may be made with the slide rule except in the case of finding the hour angle t by (2), where seven-figure logarithms must be used. The writer used logarithms throughout, and checked everything, except the above-mentioned seven-figure logarithmic calculation, with the slide rule.

Mr. Cooke, in his paper, does not apply any level correction with the smaller instruments, but by means of screw "Y" brings the latitude bubble to exactly the same position just prior to each observed transit.

The writer is of the opinion that very fair results might be obtained with the ordinary transit which has the level attached to the telescope, by levelling the instrument very carefully at the beginning of the observation with this level, and handling the instrument very lightly throughout the observation. To test this, the observation mentioned was calculated without applying any correction for level or watch rate. The result differed by 1".3 from the true observed latitude. The writer is therefore probably justified in considering that, using this method, an ordinary six-inch railway transit in good condition would give results about as good as the above 1".3, and that by no other method with such an instrument could an equally good determination be obtained.

For all reconnaissance work, this method might no doubt be used to advantage. It entails a good deal more work than the usual *Polaris* latitude used by so many on railway reconnaisance, but the writer thinks the results would justify the extra work incurred. The observation is quite simple, and the computation can be left to some convenient time.

Mr. Cooke also recommends the same method for azimuth determinations, and gives formulae for the same, but as it was thought that for simplicity and accuracy the method of circumpolars can hardly be excelled, his method was not tried.