determined how much each star was delayed in observation by this process ; using an ingenious method invented by Bessel of artificially diminishing the light of the stars as seen through the telescope without altering the character of the image, and so found that his own mental processes delay his judgment by about a hundredth of a second per magnitude ; that is, he would observe a star of the eighth magnitude seven-hundredths of a second later than one of the first in the same place ; and so put it forward a second of arc and a small fraction in right ascension.

On the other hand, the Albany observations of right ascension are rather better, one by one, than those made at Helsingfors. This was probably in part due to Krueger's anxiety about his declinations, which gave him more trouble, owing to the weakness of his instrument in that respect. Fearnley, on the other hand, had a zone so far north (65° to 70°) that with the old method he was able to equal the quality of Boss' work in right ascension with the new, while his employment of verniers instead of reading microscopes has somewhat impaired his declinations.

But, all told, the uniformity of the three catalogues, due to the excellent plan formulated by Argelander, is more sensible and far more important than the trifling discrepancies in execution. The plan is in fact the quintessence of modern practical astronomy in the subject with which it deals. That it has been so warmly welcomed and so thoroughly executed by astronomers over the whole civilized globe is at once a proof of the excellence of their training and of the great advance which has been made in giving the human mind control over its own processes and over material objects.

TRUMAN HENRY SAFFORD.

A PROBLEM IN LEAST SQUARES.

BY PROF. MANSFIELD MERRIMAN.

To determine, by the method of least squares, the most probable values of a and b in the formula $y = ax + b$ when the observed values of both y and x are liable to error.

I. LET x_1 and y_1, x_2 and y_2, ... x_n and y_n be n pairs of observed values of two variables known to be connected by the relation

$$y = ax + b.$$