postulate; the geodesics of the field of m_1 and m_2 can also be obtained in the limiting case $m_1 = 0$. The question in which one is interested is this. Will the equations of motion for the case $m_1 = 0$ as derived from (2) be identical with the corresponding equations derived from the geodesic postulate applied to the field satisfying (1)? If one studies the procedure of Einstein and his collaborators there is nothing to indicate that the two should be identical; and in fact their work is guided by the supposition that the two results need not be identical. On carrying out the necessary calculations we obtain the surprising result that the equations of motion of Einstein's new relativity such as (2) are fully in accord with the geodesic postulate at least up to the second order of the masses. The calculations in question are lengthy and they will be published elsewhere. It looks as if the result is not accidental for the number of terms involved in the equations is large. The two methods of deriving the equations, although so different apparently, might be logically interconnected.[3]

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[1] Einstein, Infeld and Hoffmann, *Ann. Math.*, 1938, **65**, 5, 39.
[2] Narlikar, V. V., *J. Bombay Univ.*, 1939, **51**, 8.
[3] Narlikar, V. V., and Singh, J., *Phil. Mag.*, 1937, **628**, 23.

STANDARD ERROR OF THE DIFFERENCE BETWEEN TWO ESTIMATES FOR INCOMPLETE BLOCK EXPERIMENTS

THE calculation of the standard error for comparing two treatment estimates in the case of simple experiments, like randomized blocks or Latin squares, is easy and is equal to $\sqrt{2s^2/n}$, where s^2 and n are the residual variance and the number of times each treatment is repeated in the experiment. But in designs involving incomplete blocks, the algebraic expression giving the treatment differences will have to be written down for calculating their standard error. This is a very laborious and cumbersome procedure. A simple method for calculating the standard error of the difference between two treatment estimates for any experiment is given below:

First we determine the residual error of the whole experiment by subtracting the reduction in the sum of squares for blocks and treatments from the total sum of squares. To obtain now the standard error for the difference between any two treatments, calculate the sum of squares for the difference between the two treatments, as explained in a previous paper,[1] by subtracting the reduction in the sum of squares for blocks and treatments, assuming that there is no difference between the two treatments in question, from the sum of squares for blocks and treatments which has been determined before. Let this difference be A and the residual variance be s^2. It can be now shown that the standard error for the difference between the two treatments is equal to

$$\frac{s(t_1 - t_2)}{\sqrt{A}},$$

where t_1 and t_2 are the least square estimates of the treatments.

In the case of balanced incomplete blocks experiments, it is easy to see that the standard error for the difference between any two treatments is the same. But for asymmetrical experiments, this will be different for different differences.

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[1] *Proc., Ind. Acad. Sci.*, **11**, 369.

"EXPECTATION" OF GROWTH OF POPULATION

IN the *Indian Journal of Economics* of June 1940, Mr. D. Sen Gupta obtains the formula

$$y - d = \frac{k}{1 + ce^{rt}} \quad \ldots \quad \ldots \text{(A)}$$

where y is the population, t is the time measured from a base year and c, d, k and r are