

EDITORIAL: A. L. O'TOOLE

ON A BEST VALUE OF R IN SAMPLES OF R FROM A FINITE POPULATION OF N .

In recent years the problem of finding the moment coefficients for samples of n drawn from a finite population of N has been of interest to so many writers¹ that it seems worthwhile to make a few further observations² concerning these moment coefficients—particularly with respect to their dependence on n . In many instances the value of n to be used is at the discretion of the investigator and he would like to know if there is one value of n which is better than any other. An answer to that question will be given here.

¹ H. C. Carver, On the fundamentals of the theory of sampling, *Annals of Mathematical Statistics*, Vol. I, No. 1, pp. 101-121; Vol. I, No. 3, pp. 260-274.

C. C. Craig, An application of Thiele's semi-invariants to the sampling problem, *Metron*, Vol. VII, No. 4, 1928, pp. 3-74.

R. A. Fisher, Moments and product moments of sampling distributions, *Proc. London Math. Soc.*, Series 2, xxix, 1929, pp. 309-321; xxx, 1929, pp. 199-238.

L. Isserlis, On a formula for the product moment coefficients of any order of a normal frequency distribution in any number of variables. *Biometrika*, xii, 1918-19, pp. 134-139.

P. R. Rider, Moments of moments, *Proc. of the National Academy of Sciences*, Vol. 15, 1929, pp. 430-434.

H. E. Soper, Sampling moments of samples of n units each drawn from an unchanging sampled population, from the point of view of semi-invariants, *Journal of the Royal Statistical Soc.*, Vol. 93, 1930, pp. 104-114.

A. A. Tchouproff, On the mathematical expectation of the moments of frequency distributions, *Biometrika*, xii, 1918-19, pp. 140-169 and 184-210; xiii, 1920-21, pp. 283-295.

A. L. O'Toole, On symmetric functions and symmetric functions of symmetric functions, *Annals of Mathematical Statistics*, Vol. II, No. 2, May 1931, pp. 102-149. See Chapter III.

² These observations arose as a result of some very far-reaching suggestions on the theory of sampling made by Professor Carver, during recent conversations with the writer.