THE INTERRELATIONS OF VARIOUS PROBABILITY TABLES
AND A MODIFICATION OF STUDENT'S PROBABILITY
TABLE FOR THE ARGUMENT "t"1

J. R. Livermore2

Since 1900 several different types of tables of the probability integral have been introduced. This multiplicity of tables has caused considerable confusion and the experimentalist is often at a loss to know which table he should use and how the probability values or odds should be interpreted. It would seem advisable, therefore, to establish the interrelations that exist among the tables in an endeavor to avoid further confusion in the minds of many research workers.

The fact that in one major group of tables the probability values are equivalent to the area \( \frac{1}{2} (1 + a) \) and that in the other group the probability values are derived from the area \( "a" \), is not generally recognized. The odds in tables of the first group are determined by the ratio of \( \frac{1}{2} (1 + a) \) to \( \frac{1}{2} (1 - a) \) and in the second group by the ratio of \( "a" \) to \( (1 - a) \), where \( "a" \) equals the middle area of the curve. Tables in the first group are often referred to as one-tailed tables and those in the second group as two-tailed tables.

Some of the probability tables and tables of odds in rather general use at one time or another are classified as follows:

One-tailed tables:
- Wood (11)3 Table V
- Pearson (8) Table II
- Student (9) Table for "z"

1Contribution from the Department of Plant Breeding, Cornell University, Ithaca, N. Y. Paper No. 204. Received for publication January 24, 1934.
2Research Assistant Professor of Plant Breeding.
3Figures in parenthesis refer to "Literature Cited," p. 672.