April 8, 1937

Dear Cochran,

I am afraid I don't follow your first paragraph. In what I said to you, if I mistake not, using

$$s'^2 = \frac{ns^2+(x-m)^2}{n+1}$$

I ignore any correlation between t and s, such as would arise if were fixed, so that the anomoly does not arise from the cause you propose, but quite simply from using an inefficient estimate, s, instead of the sufficient estimate s' - sufficient, that is, for the large sample case which you are discussing. Sukhatme has sent me some values calculated for Behren's solution, from which it appears that when $n_1 = n_2$ one has n = 20, d 5%, 2.086 at 0°, and 2.078 at 45°, while at n = 12 the values are: 2.179 at 0° and 2.167 at 45°. I am, therefore, a little surprised at Yates finding a reversed relationship at the n = 6. I hope, however, to have a full tables fairly soon.

Yours sincerely,