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 \( t \) were fixed, so that the anomaly 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\(^\circ\), and 2.078 at 45\(^\circ\), while at \( n = 12 \) the values are: 2.179 at 0\(^\circ\) and 2.167 at 45\(^\circ\). 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,