December 30, 1936

My dear Sterne,

I am glad to have your letter, as, during my stay in Berkeley I was arguing a good deal with Birge at or around your very point. I should not, myself, object to calling your $s't_5$ the probable error, and I cannot conceive anyone finding a valid objection to calling it a fiducial probable error. So far as I can judge, you have stated Birge's point of view exactly, and I think he realizes that you have the mathematical facts right, and that any argument he raises is only about terms.

Now that the subject is being broached in Astronomy, I wonder if there is any prospect of higher levels of significance, e.g., 5% or 1%, coming in as more directly useful than the traditional 50%. Of course, on the crude theory this was quite a minor matter, since the 1% point was then regarded as a fixed multiple of the 50% deviation, but as this is no longer true when degrees of freedom are sufficiently few to be taken into account, there might be something to be said for using a higher level of significance, especially as one change often facilitates another. I, myself, often speak of "fiducial 5% limits", though I do not much like the term "limits" in this connection. After a time, I imagine, the word
"fiducial" will become unnecessary, and can be dropped once the method is widely understood.

I find it exceedingly interesting to notice the difficulties which are always felt at first, and even for a long while, in the fiducial type of argument. I am sending herewith a copy of a recent paper of mine in the Annals of Eugenics on this some points which interested me as showing what a very powerful tool it is in attacking questions which, by other methods, seem to be extremely difficult.

Yours sincerely,

Fiducial quantiles would seem a useful term for the values obtained by adding or subtracting the fiducial probable error.