St John's College
Cambridge.

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Dear Fisher,

Thanks for your papers. I am fogged by the one about estimation of recessives. I think I see what the introduction means ; but what happens in section 2 ? You have a provisional $r^2$, supposed sufficiently near, but what is it ? The "corrected" value will be

$$r^2 + \frac{\frac{a}{1-r^2} + \frac{b}{r^2}}{\frac{a+b}{r^2(1-r^2)}} = r^2 - \frac{ar^2 + b(1-r^2)}{a+b} = \frac{(a+b)r^2 - ar^2 + b(1-r^2)}{a+b}$$

$$= \frac{b}{a+b}$$

that is, exactly the usual value ; butwhat do all the "scores" mean - is this something that I ought to understand ? Also I should have thought that there must be another datum before you can make it anything but simple sampling with a rather severe risk of undistributed middle. I.e. the whole population might be unrelated, or merely the sample might happen to consist of unrelated persons from a population highly interrelated. Which case do you mean ? In the first it is simple sampling ; but in the second the correction should depend on the amount of interrelation in the population, which doesn't seem to be among the parameters that you consider.

Your problem about dead larvae makes me think of the negative binomial and the possibility of handling other departures from Poisson. The negative binomial is the only type of such departure that I have seen investigated , but on trial I have not found a case where the departure is large and the negative binomial helps much. Do you know anything else that can be fitted ? By putting most of the chance into 0 you get

the same increase of the second moment, but I am thinking of the kind of distribution you got for fertility of Australian women, where it wouldn't help much.

By the way I see that Stevens has had two papers on the problem of the bicycle wheel that I suggested to him ; could you ask him to let me have copies ? I have only seen them in the library and haven't been able to study them properly. He might also send them to B.W.Gilbert, C.B., The Treasury, Whitehall - he suggested the question to me in the first place.

Yours sincerely,

Harold Jeffreys.