

ROTHAMSTED EXPERIMENTAL STATION

(LAWES AGRICULTURAL TRUST)

Director: F. C. BAWDEN, M.A., F.R.S.

DEPARTMENT OF STATISTICS
(Research Statistical Service)

Head of Department:
F. YATES, Sc.D., F.R.S.

BY AIR MAIL

HARPENDEN
HERTS.

12th July, 1962

My dear Ron,

Enclosed is the typescript for four additions to the Introduction, three of them yours. There are various points on these.

7.2.1

- Can I have the reference, please.

The total for the intercrosses does not agree with the separate entries.

Accepting your separate entries, I think there is a minor error in ad/bc. Your figures are given in pencil.

Cumulants of the binomial distribution[†]

I have changed your version "the series under 5" to "the series for $s = 5$ " and similarly for $s = 6$.

I have changed the wording of the last sentence; yours reads: "Textbooks such as that of M. Kendall seem not to know this method."

Example 3.1.

I have added a bit to come at the end of the previous example.

I have inserted a reference to Table 8 on the second page[†], as otherwise the relevance of the example in the Introduction may be questioned. I have also given the terms of the hypergeometric series as I think this will help the inquisitive reader. Following your suggestion, I have also determined the upper 2.5% limit. The adjustment does surprisingly well.

* [p. 33 in Statistical Tables, (6th edn., 1963)] - JAB
† [p. 7 in " " " " " "]

see further
added.

The wording has been modified slightly in one or two places, but nothing, I think, of consequence.

Michael Healy had already worked out the hypergeometric series from your first draft but had unfortunately not checked the calculation for χ^2 . However, I think everything is now checked and in order. We agree with your value from the series.

Examples 12 and 12.1

These replace the existing Example 12. The second complete paragraph on the next page and Example 12.1 are to be deleted. C.R. Rao's method is undoubtedly very much better than the one I had previously suggested.

Sorry I have been so long in getting down to this. Further material will follow, I hope speedily.

Healy tells me he has practically completed all the computations for the tables for the fiducial limits of the variance ratio. I was to have looked at these and discussed them with him this week but unfortunately he is sick.

I am snowed under, as the appetite for electronic computation continually grows, and we have the major job of organising our new computer which is expected next year.

Best wishes. Are you planning to visit England this year?

Regards also from Pauline,

Yours
Frank.

Professor Sir Ronald Fisher, F.R.S.,
Division of Mathematical Statistics,
C.S.I.R.O.,
Adelaide University,
South Australia.

*See further
letter*

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12th July, 1962

My dear Ron,

Posted 9th July.
? Since dictating the enclosed letter I have received yours of 14th July, giving a revised version of Example 7.3. I see you have picked up the minor error in ad/bc but I disagree with your new values on the recombination fraction and the corresponding multiplier. The values in your letter of 14th July are given in pencil.

I have incorporated some minor additions ^{you inserted in} ~~to~~ the wording of your revised version.

Fiducial limits of the variance ratio

Healy came in this morning and has handed me tables for the 5% and 95% points. These tables are not quite complete; he intends also to provide values for the 1% and 99% points. He has a programme for this for the IBM 7090. He reckons that five minutes of the precious time on a machine of this breed will provide the remaining values and hopes to persuade someone to provide this.

Assuming that the tables are completed without delay this would give two pages which can best, I think, come after Table 5. In the meantime could you give me your reactions to the project, and perhaps provide a section for the Introduction.

Healy's
I think ~~the~~ last point about the scale of F will be quite adequately met by telling the user to use linear interpolation on $1/F$. Healy agrees after discussion that a geometric scale would not be satisfactory.

I am most sorry to hear that you may have to go into hospital. Is it for your eyes?

Yours,

F. C. Bawden

Professor Sir Ronald Fisher