Jan. 22, 1936.

Dear Dr. Fisher,

Very many
thanks for the offprints, which are
safely to hand. I shall return
the ones you mention. I had of
course read your alternation of papers
with Dr H. Jeffreys in the Proc. R.S.,
at least as far as I had the patience
to read Jeffreys, which was very little.
As to the important paper in the Camb.
Phil. Soc., I think I can secure
another copy; I knew it, and had

read it before.

The trimming up of the mathematics of probability, to which you allude, is of secondary importance compared with a correct grasp of the basis, and a recognition of what the variables are when encountered in practice. Several interesting books in the last three years have appeared, founding probability very prettily on the theory of measure and integration of sets of points; but refraining from mentioning what these sets are in such cases as the tossing of an inhomogeneous, irregular and biassed die, etc. No subject is so perennially interesting, or so uselessly controversial.

Yours sincerely,

A. C. Aitken.

January 23rd, 1936

Dear Mr Aitkin,

I am very glad to have your letter, and agree with
you entirely as to the position in mathematical probability.
In some form or other the subject must sooner or later be
introduced, or re-introduced, into the teaching of
mathematics in Universities, and, in this respect, the
question of the nomenclature and affiliation of the
subject really deserves some consideration. In his
great book it was clearly Laplace's intention to enlarge
the meaning of the term "theory of probability", so as to
include a wide range of mathematical studies, equations
of finite differences, for example, which are cognate but
do not involve uncertain inference or its mathematical
specification in any form. The same tendency extended to
the present day would make the subject include all the
various topics vaguely associated with statistics. It is
not clear, however, and it was, I think, clear to Gauss,
that this was bound to happen, that the old theory of
probability would come to mean a group of rather academic
topics, studied as a preliminary to statistics. If it had

not any other association, therefore, the word "statistics"
might be used for the whole subject which is now opening
up , and I used to think that this would be the appropriate
modern position, but I now rather doubt it, and would be
glad to know your opinion on the way in which these studies
may best be furthered. To many "statistics" means
Government publications, and in Universities it is often
absurdly confused with economics. I was greatly attracted
by Whittaker's term, "the calculas of observations", which,
if it were shorter, would cover the ground admirably. I
suppose the term "theory of errors" could properly be
extended to cover the distributions of statistical
estimates, and might have been used for the whole theory
of statistics, had I not been concerned with the temporary
necessity of making my own approach quite explicitly clear,
and to avoid the assumption that I was accepting previous
formulations of analagous problems. Even here, though,
confusion has been introduced through Pearson and Neyman
using the term "theory of estimation" for the views they
have developed on tests of significance, without reference
to the results of the original theory.

From my point of view the important point is that
the original concept of probability is not adequate to
specify the nature of the uncertainty inherent in many
forms of inference from observations. From this point of

view it is almost unfortunate that a group of cases has been found in which inductive inference may properly be expressed in terms of probability, using the fiducial mode of argument; for this has tempted some mathematicians, and will, I fear, tempt more, to imagine that this type of argument is more widely applicable than is really the case, and to avoid enlarging their imaginations sufficiently to grasp the cases where no probability statement is adequate. This is, in my view, a decisive reason against enlarging the meaning of the theory of probability so as to cover all types of inductive inference, since the word "probability" must be tied closely to one quite defined mathematical concept.

Pray excuse this long dissertation.

Yours sincerely,