

DEAR SIR,—Dr. P. M. Lee, in his review of *Mathematical Theory of Probability and Statistics** makes various statements which need correcting.

“... the book commences with a full account, similar to that to be found in *Probability, Statistics and Truth*, of von Mises frequency theory of probability, ...”. PS&T is purposely unmathematical; while the present book’s Ch. I gives, for the first time with such completeness, a mathematical presentation of Mises’ frequency theory. Statements are proved and assumptions are clearly announced. This difference between the two books is quite apparent.

Indeed, Ch. II of the new book goes beyond Mises’ theory, in an attempt to base all probabilities on frequencies. It arrives at a (necessary and sufficient) characterization of the most general field of sets to which a probability in the frequency sense can be associated (for a space of countably many dimensions). This material is not in earlier works of von Mises and is quite difficult, both conceptually and mathematically. It alone refutes the repeated charge of “... lack of mathematical sophistication ...”.

“... knowledge of (the frequency theory) is rarely necessary later in the book.” All later results are interpreted in terms of frequencies—if not explicitly then in spirit. One need only mention as examples the problem of runs (pp. 184–192) and the extensive discussion of Bernoulli’s theorem (p. 175 ff.). The formulation of the strong law of large numbers and the Borel-Cantelli theorems are based on the distinctions made in Chapter II.

If Chs. III to VI are “eccentric”, then so are most of the standard treatments of the classical results of probability theory. The term might be better applied to Ch. X, with its extremely original approach to the problem of inference. However, other reviewers have spoken of its “excitement”. The “eccentric” Ch. VII, on Bayes’ theory, contains results due to Mises and his students, some for the first time.

“... no clear explanation is given of how a prior distribution is in practice determined. ...”. Here the reader may be referred to pp. 333–334 and pp. 498–504, the latter treating this question in terms of an important practical problem, with great care.

The book is long because it is two in one—a fact that was nowhere hidden.

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Yours sincerely,
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SOME POTENTIAL PROBLEMS INVOLVING SPHERES

An article with this title, by F. Chorlton, appeared in *The Gazette* for May, 1967, p. 120. A paper proving Cases I, II of this article by essentially identical methods was also received at the same time from Dr. A. J. Carr. Owing to a lapse, for which the Editor apologises, no reference was made to this fact by means of a covering note.

* By Richard von Mises; edited and complemented by Hilda Geiringer. Academic Press 1964.