reason his work is not as well known as it should be; but it is not difficult to obtain Pitman's results by purely frequentist arguments [3].

Consider the example quoted by Mr. Bailey, the estimation of the variance σ^2 of a normal distribution with zero mean. If S^2 is the sum of the squares of n observations, he rightly states that $S^2/(n + 2)$ has uniformly smaller MSE than the unbiased estimator S^2/n, and points out that other estimators exist which, at least for some ranges of values of σ^2, have still smaller MSE. This is true if one places no restriction on the types of estimators to be used. But the observations in a problem such as this are usually physical quantities such as distances or speeds, and changes in the units of measurement in the observations should produce corresponding changes of units in the estimate. If we submit the observations to the transformation $x_i \rightarrow ax_i (a > 0)$, the parameter σ^2 undergoes the transformation $\sigma^2 \rightarrow a^2\sigma^2$. It is natural, therefore, to require that the estimator T should also undergo this transformation, $T \rightarrow a^2 T$, when the observations are transformed by $x_i \rightarrow ax_i$. If we so restrict T, then $S^2/(n + 2)$ certainly has uniformly minimal MSE.

Formulae are given in [2] and [3] for minimum-MSE estimators for any scale parameter, and the ideas can be extended (less convincingly) to location parameters and to the simultaneous estimation of several parameters.

Yours sincerely,

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References

1. B. J. R. Bailey, Estimation from first principles, *Mathl Gaz.* LVII, 169–174 (No. 401, October 1973).
2. E. J. G. Pitman, The estimation of the location and scale parameters of a continuous population of any given form, *Biometrika* 30, 391 (1939).
3. R. E. Scraton, Formulae for minimum mean-square error estimators, *New Jnl. Stat. Oper. Res.* II, Part II, 3 (1966).

'T.A.A.B.'

DEAR SIR,

I wonder if I might take up some space over a small matter in which Dr. Maxwell may unwittingly have misled readers in his delightful obituary of Professor Broadbent. While it is true that Alan Broadbent succeeded Milne Thomson in the Chair at the Naval College and succeeded him as Gresham Professor of Geometry (and possibly these two events were simultaneous) the Gresham Chair was of course, as it still is, one of those delightful survivals from the past which can be held in plurality. Alan Broadbent filled this Chair, requiring as it does an exposition of mathematics to the layman, with rare distinction, and I know for a fact that members of the audience for the present Gresham Professor's lectures still remember him with affection and enthusiasm.

The casual observer might have associated the Gresham Chair with the Naval College because of the long period during which it was held by Milne Thomson and then Broadbent, but in the same way a casual observer now looking at the eight Gresham Professorships might assume they were in some way linked to another institution.

Yours sincerely,

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