

Suggested DraftProposal to the British Association for the formation of a new section
of Biometry and Statistics

In the last thirty years there has been a very great expansion in the use of statistical methods in scientific research, particularly in the biological field. This has been based on, and has stimulated, the development of the mathematical foundations of the subject, and the logic of inductive inference.

The result, particularly in applied biology, as, for example, in agriculture, has been a great increase in the interest in quantitative problems. The complexity and range of the material that can be examined has also been greatly extended. Indeed, it would not be too much to say that the subject of experimental design has revolutionized biological experimental work, and its influence is now spreading rapidly to other fields, particularly those of engineering and industrial chemistry.

In spite of, the profound influence that the new developments in statistical method have had on many diverse fields of science the subject has received very inadequate treatment in British Association meetings. With the present sectional organisation this is almost inevitable, since the discussion of almost all the major developments is of interest to and requires the cooperation of several sections. Thus the subject of experimental design is the concern of the sections of mathematics, zoology, engineering, physiology, psychology, botany, forestry and agriculture. Multivariate analysis is the concern of mathematics, zoology, economics, anthropology, psychology, botany, agriculture and forestry (in the field of plant and animal improvement). Joint discussions between so many sections cannot easily be arranged, and a discussion organised by one or two sections tends to be limited in scope, and fails to attract workers in other fields who should be vitally concerned.

The number of discussions that have in fact been arranged in statistical and biometrical problems since the war ~~are~~^{is} almost negligible. According to the Preliminary Programmes the only discussions which touched on these problems were:-

1947. Section J. Discussion on surveys of public opinion.

1943. Section G. Applications of statistics in engineering.

1951. Section A* Probability.

In view of these facts ^{five} ~~the~~ scientific societies, the ^{Royal} Anthropological Society, the Biometric Society, ~~the Entomological Society~~, the Genetical Society, the Pharmacological Society, the Royal Statistical Society all of which are particularly concerned with statistical methodology and its applications, appointed representatives to consider the problem. The present memorandum has been drawn up and agreed by these representatives.

It appears to the representatives that the best way to overcome these difficulties and ensure adequate representation of the subject at British Association meetings ~~appears to be~~ to set up a new section to deal specifically with statistical methodology and its applications to the various fields of science.

The representatives are confident that a new section, which might be entitled "Biometry and Statistics", would have the support not only of the ^{at present} societies represented but of the biological and other scientists who require statistical methods in the development of their subject. It would also, they believe, meet with the approval of other scientists in these fields who would prefer that their own sectional programmes should not be burdened with statistical matters which can only be very inadequately treated in them.

The section should also be of very great value in educating the general public in modern developments in quantitative biology and the logic of inductive inference. The basic ideas of the modern developments of statistical method are not ^a of great difficulty, and the elements of the subject can reasonably be introduced into school curricula. At present the advanced study of mathematics is in most schools an alternative to biology, and the idea that mathematics has much to contribute to the development of biological science has not yet penetrated. As the close relation between the two is recognised more biologists will understand the mathematical approach and more mathematicians will find new fields in biology.

[Signed by the various representatives (with indication of their Societies)]