REVIEWS

MAMMALIAN HYBRIDS. A. P. Gray. The Commonwealth Agricultural Bureaux, January 1972. Pp. 262. £4.00.

This is a comprehensive catalogue and bibliography of interspecific mammalian hybrids. There are brief descriptions of fertility and viability and some other characteristics of hybrids and reciprocal crosses. It should be a useful reference book for those who wish to check what crosses are known to produce hybrids, to examine the extent to which reciprocal crosses differ and to determine the validity of common myths. Those more deeply concerned will find it an excellent lead into the relevant literature.

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PROBABILITY MODELS AND STATISTICAL METHODS IN GENETICS. R. C. Elandt-Johnson. Wiley, New York, 1971. Pp. 591. £11.75.

Professor Elandt-Johnson's book is a welcome addition to the rather empty bookshelf of "statistical genetics". It is a most painstaking attempt to give a detailed and accurate account of the elementary mathematical and statistical manipulations of genetics.

An unfortunate characteristic of the subject is that much of it, that can be intuitively grasped without difficulty, appears almost intolerably complex when spelt out line by line and symbol by symbol. Thus the geneticist may draw out a complex pedigree involving 60 or 70 individuals, some of whom are "affected", and after some reflection put his finger on the animal that appears to have introduced a recessive mutation. But the quantification of this activity has, so far, completely defeated mathematicians. The probability calculations are simply too complex in general; indeed, we do not even have computer programs that will draw such pedigrees for us. This elementary complexity is reflected in the length of many of the treatments in the book, and the omission of several important developments.

The work is in two parts—"Population Genetics. Probability Models" and "Experimental Genetics. Estimation of Genetic Parameters and Testing Genetic Hypotheses". Part 1 is a mixture of probability theory and population genetics. Probability, random variables and distribution theory are treated in the modern fashion, axiomatically and logically without much concession to biologists, for whom the book "has been mainly written". It is an approach of dubious value in a textbook, however satisfying to the author. Geneticists will be surprised at some of the biological asides ("The skin color of several races is due to the additive effects of genes at different loci", or the suggestion, in an example, "that left-handedness is a single recessive trait"). On the purely statistical side one may take exception to the diagrams of the normal distribution, which are markedly non-normal, and to the definition of the sample variance using the divisor $(n-1)$ rather than n .