
Book Reviews

Green, E.L.: *Genetics and Probability in Animal Breeding Experiments*. London: MacMillan Press 1981. 271 pp., 42 figs., 61 tabs. Hard bound £20.00.

This book, according to the Preface, is an expanded version of lectures given annually to new staff members and postdoctoral fellows at the Jackson Laboratory, Bar Harbor, by the former of the Laboratory, Dr. Earl L. Green. Those lectures were designed to instruct the new workers in those aspects of genetics and mouse breeding necessary to understand the construction and experimental use of genetically defined stocks, assuming little prior knowledge. The book brings to the attention of a much wider audience what Dr. Green considers important, and few can match the wealth of this experience. As such, it is a book to be welcomed.

The title may be misleading for those who earn their keep by breeding domestic livestock. It is a volume confined to laboratory animals, more specifically the mouse, and to the needs of the laboratory worker. The book deals extensively with the probability aspects of transmission genetics; indeed, at one level, the book could almost serve as an introductory course in probability. Oddly, perhaps, there is no explicit treatment of Bayes' Theorem in an area where it can be applied with less hesitation than usual, because the prior probabilities are known from the Mendelian rules, and where the extra information would be useful in testcrossing, for instance. However, it would be churlish to scan the text for omissions, for no treatment can be exhaustive. The next part of the book deals with recombination, linkage and mapping, but without recourse to some of the newer techniques like cell hybridization. The remainder of the regular text is an extended treatment of systems of mating for producing and maintaining inbred strains, with their many derivatives like recombinant strains, congenic, coisogenic, and segregating strains. And, of course, crosses among them. This is all in line with the philosophy of using genetically defined material, and those workers who from choice or need use outbred, or perhaps selected, strains for their experiments must seek elsewhere for guidance.

For some readers, the appendices may prove to be the most useful part of the book, and many may be glad of the introductions (or revisions, as the case may be) to topics like maximum likelihood and the applications of matrix algebra. In fact, the book provides a gentle introduction to some of the mathematics commonly used in genetical applications. The appendix on rules of nomenclature is invaluable, and not just to novices, for that morass is a deep one, as many have found out. Absolute beginners,

particularly those in isolation, may also profit from the appendices on recording systems and record keeping. With instructions even on how to lay out pencils on the recording table, nothing is left to chance, always assuming that they will have the gumption to feed and water their animals.

The book is well produced and seems to be remarkably free of typographical errors. It is a volume in which research workers using laboratory animals should find a great deal of interest, and they will enjoy the clear presentation of some quite complex material.

R.C. Roberts, Edinburgh

Cold Spring Harbor Symposia on Quantitative Biology. Vol. XLIV, part 1 and 2: *Viral Oncogenes*. New York: Cold Spring Harbor Laboratory 1980. 720/1322 pp., 469/388 figs. 134/197 tabs. Hard bound \$ 130.00.

Since the last Cold Spring Harbor Laboratory Symposium on the molecular biology of tumor viruses in 1974 so much information has been accumulated that a new comprehensive review of present day knowledge became necessary. Modern methods in recombinant DNA technology and new ways of DNA sequencing now allow a more detailed analysis of those genes which are directly involved in the transformation of normal cells into malignant ones. Those viral genes — the viral oncogenes — have been the object of intensive investigations in the last few years. The results of these investigations have been summarized in the present report. The 141 papers discussed by nearly 400 participants are collected into two main topics concerned with DNA and RNA tumor viruses respectively. Proceeding from the experimental observation that viruses can cause tumors in multicellular organisms, growth as well as the biochemical properties of such excised tumor cells was analyzed. The discussion was primarily orientated on the origin, structure, and protein products of virus-associated genes affecting cell proliferation. Relatively little discussion ensued to the mechanisms of transformation of mammalian cells by viral oncogenes. The papers demonstrated that a lot of excellent work on a high scientific level has been conducted. They provided an overview of the recent attainments on the structure and function of viral oncogenes. The papers are completed by instructive tables, figures, references, as well as a subject index closing the presentation of results of viral oncogene research.

This symposium report represents an important resource for scientists interested in the cancer problem. H. Stäber, Berlin