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Review Of "Introduction To Biometrical Genetics" By K. Mather And J. L. Jinks

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rather than directly on differences in genes and chromosomes.

Grant's discussions sometimes seem unnecessarily rambling. For example, much of his chapter on genetic drift builds a case for the possible combined role of genetic drift *and* selection in accounting for evolutionary change. In contrast, Stebbins effectively makes the same point in very few words: "The effects of CHANCE. . .may alter the way in which natural selection guides the course of evolution" (p. 6). Grant also presents numerous ideas, such as the notion that macroevolution is historical while microevolution is not, that strike me as peculiar; but his book should provoke discussion and analysis of the issues with which he deals.

Neither of these books, however, is the evolution textbook I keep looking for: the one that will treat evolutionary theory not just as an explanation of diversity but as a predictive theory to be used as a tool for identifying, dissecting, and solving all kinds of biological problems.

ANN E. PACE, *Museum of Natural History, University of Minnesota*

INHERITANCE OF CREATIVE INTELLIGENCE.

By Jon L. Karlsson. Nelson-Hall, Chicago. $14.95 (cloth); $7.95 (paper). xi + 206 p.; ill.; index. 1978.

This simply and clearly written book sets forth several provocative theses and summarizes the supporting evidence, part of it from the author's own research. The main argument is that a number of gene-based pathological conditions are maintained at relatively high frequencies in the population by favorable pleiotropic effects of the genes contributing to them. Specifically, Karlsson hypothesizes that the gene causing myopia favorably affects intelligence, the gene causing alcoholism favorably affects leadership, and the gene causing schizophrenia is a necessary condition for high levels of creativity. Far-sighted, sober readers with no schizophrenic first-degree relatives may find the evidence in support of these theses somewhat less compelling than Karlsson does; however, most should find the book's arguments thought-provoking. A less fortunate feature of the book is the author's dark hints at an establishment conspiracy against misunderstood geniuses daring to claim that human personality may have biological foundations.

JOHN C. LOEHLIN, *Psychology, University of Texas at Austin*

HETEROSIS. *Genetik: Grundlagen, Ergebnisse und Probleme in Einzeldarstellungen, Beitrag 9.*

By Hans Eberhard Fischer. Veb Gustav Fischer Verlag, Jena. 25, -- M (paper). 163 p.; ill.; author and subject indexes. 1978.

Although heterosis remains useful but mysterious, it is some years since its basis has been reviewed. As a consequence, this review is particularly welcome. It begins with an account of the early recognition of the phenomenon and a discussion of the classical theoretical explanations that had been developed by the mid-1940's. It proceeds to an evaluation of each of these early hypotheses and then breaks the topic down into different types and causes of heterosis. This classification is particularly valuable, coming as it does at a time when it is possible to relate different causes both to genotypic factors and, in some instances, to metabolic factors. The book deals at some length with the variable stability of heterosis — a matter of concern to many investigators in the field. Fischer implies that heterosis may arise because of genomic changes, as in one of the classical hypotheses; or because of more subtle genomic changes (the character of which has become clear); or even somewhat secondarily, because of induced metabolic changes. This last form of heterosis has been particularly hard to pin down, but its variability may explain some of this difficulty.

W. GORDON WHALEY, *Cell Research Institute, The University of Texas*

INTRODUCTION TO BIOMETRICAL GENETICS.

By Kenneth Mather and John L. Jinks. Cornell University Press, Ithaca. $16.50. viii + 231 p.; ill.; index. 1977.

Kenneth Mather and John Jinks are veritable giants in a field that is still unfortunately regarded as rather esoteric by many geneticists. In 1949, Mather and Jinks wrote the first edition of their classic text, *Biometrical Genetics,* a brilliant tour de force on the genetic analysis of continuous variation. That book experienced a much welcomed revision in 1971, but it was still felt that the book went beyond the needs of most undergraduates and postgraduates wanting to build up their understanding of this complex area of genetic research. *Introduction to Biometrical Genetics* was written to correct these problems, and it has done so admirably.

This book is not a distillation of their 1971 book, though it is considerably shorter. The order of topics has been completely changed so that the emphasis is on phenomena rather than types of data. The material has been updated and includes many examples that are absent from *Biometrical Genetics.* There are nine chapters dealing with genetical foundations, the biometrical approach, additive and dominance effects, diallels, genic interaction and linkage, interaction of genotype and environment, randomly breeding populations, genes and effective factors, and a concluding chapter. Some chapters are rather turgid (i.e., the chapter on diallels), but in general the topics

are clearly presented. The woeful deficiency in references may bother some readers (it did me).

In conclusion, Mather and Jinks have performed a valuable service to all students of genetics by writing an exceptionally lucid and valuable book on a subject that is of great importance in today's genetics.

JOHN B. JENKINS, *Biology, Swarthmore College*

MOLECULAR HUMAN CYTOGENETICS. *ICN-UCLA Symposia on Molecular and Cellular Biology, Volume VII, 1977. Academic Press Rapid Manuscript Reproduction. Edited by Robert S. Sparkes, David E. Comings, and C. Fred Fox. Academic Press, New York.* $19.00. xi + 479 p.; ill.; author and subject indexes. 1977.

This book is a product of a symposium which brought together cytogeneticists and geneticists working on both human and nonhuman materials. The 33 papers published here include five on chromatin, eight on chromosome structure, eight on chromosome mapping, two on the XY chromosomes, four on sister-chromatic exchange, three on cytogenetic evolution, and three on clinical cytogenetics. Most of the papers are short mini-reviews, sometimes supplemented by new data. The book's broad scope will interest cytogeneticists and human geneticists generally. However, most of the old material has been reviewed more substantially and extensively elsewhere, and the new experimental material will appear as full papers in the ordinary journals. The justification for publishing this type of symposium volume is perhaps doubtful.

HARRY HARRIS, *Human Genetics Center, University of Pennsylvania*

CHROMOSOMAL VARIATION IN MAN. *A Catalog of Chromosomal Variants and Anomalies. Second Edition. By Digamber S. Borgaonkar. Alan R. Liss, New York.* $36.00. xlvii + 403 p.; ill.; author and selected syndrome subject indexes. 1977.

The first edition of this book was published in 1976 and reviewed in *The Quarterly Review of Biology*, 52:460. This new edition has essentially the same style and organization but incorporates much new data. It will be particularly useful to clinical cytogeneticists who wish to find quickly the details of previous studies on particular chromosomal abnormalities they have identified.

HARRY HARRIS, *Human Genetics Center, University of Pennsylvania*

BASIC IMMUNOGENETICS. *Second Edition. By H. Hugh Fudenberg, J. R. L. Pink, An-Chuan Wang, and Steven D. Douglas. Oxford University Press, New York.* $11.95 (cloth); $7.95 (paper). ix + 262 p.; ill.; index. 1978.

Although the result of cross-fertilization between two originally distinct disciplines, immunogenetics should not be considered a bastard science. The union of immunology with genetics has surely been both legitimate and prolific. Nonetheless, the offspring science appears to be less a Mendelian hybrid, in which the characteristics of both parents blend to create a unified organism capable of independent existence, than a monstrous chimera, an awkward conglomeration of discordant bits and pieces having little or nothing in common.

It is an impressive testimony to the authors' skill that they have been able to provide in this small volume such a clear and comprehensive introduction to such a diverse and inhomogeneous subject. The first edition of this book established it as the textbook of choice for short courses in immunogenetics. The second edition improves and updates, but it does not compromise the distinctive virtues of its predecessor: clarity, conciseness, and correctness.

After a chapter on the structure and evolution of immunoglobulins, the authors summarily describe our present understanding of the structure and organization of the genes for these proteins. Next is a brief but fair-minded review of the origin of antibody diversity. The following discussion, on the major histocompatibility complex and its relation to the immune response, is brand new; essentially none of the papers referred to had been written when the first edition of this book appeared. The final chapter, on the immunogenetics of human blood group antigens, reviews that topic in only forty pages.

Since the book is limited to a description of generally accepted theoretical concepts, it offers little that is novel, original, or profound to those who are already well versed in this field. For the purposes originally set by the authors, however, it remains the single best brief textbook available on the subject.

J. A. GALLY, *Meharry Medical College, Nashville*

REPRODUCTION & DEVELOPMENT

SEX, EVOLUTION, AND BEHAVIOR. *Adaptations for Reproduction. By Martin Daly and Margo Wilson. Duxbury Press [a division of Wadsworth Publishing Company, Belmont, (California)], North Scituate (Massachusetts).* $8.95 (paper). xi + 387 p.; ill.; index. 1978.

For years investigators thought that the "how" of biological phenomena could be completely answered without recourse to the "why," and vice versa. Daly and Wilson correctly point out that such a view ignores the complementary nature of biological explanation at different levels of inquiry. Besides these proximate and ultimate levels, the authors discuss two