

REVIEWS

THE MATTER OF MENDELIAN HEREDITY. K. R. Lewis and B. John. Second Edition, Longman, London. Pp. 273+56 text figures, 15 plate figs. £2.95.

The second edition of *The Matter of Mendelian Heredity* is modestly priced and excellent value for money. As a textbook of genetics, with the emphasis mainly on higher organisms, it has two particularly attractive assets. First, the principles are enunciated with enviable clarity and, second, the genetics and cytology are presented in the broader context of genetic systems, related that is to the reproductive systems of different organisms and to their capacity for generating and conserving heritable variation within populations. For this reason there is a sense of unity about the book so that the reader quickly appreciates the manifold consequences that may follow from change in one of the many components of the genetic system; how, for example, a switch from outbreeding to inbreeding affects not only the distribution of genes within and between individuals but, as well, creates change in the development of the phenotype generally, even in the pattern of chromosome behaviour during cell division.

The first chapter deals with Mendelism, linkage and the chromosome basis for segregation and recombination. The second chapter, a digression in one sense, presents elementary statistical methods commonly used in genetic analyses. It is very well done. We move on to gene action and interaction, to reproductive and genetic systems and, in chapter five, the nature and sources of heritable variation, selection and divergence in evolution. Chapter six is a guide to the preparation and interpretation of cytological specimens, accompanied by extremely helpful photographs and diagrams. There is a new chapter on the structure and replication of nucleic acids and the nature of the genetic code, fields inordinately well cultivated since the book was first published in 1964.

At the beginning of the book is a comprehensive and useful summary of contents. It would, I think, have been helpful to the reader if page headings within chapters, some of which are quite long, gave the same clear indication of the subject matter under discussion. This small point aside it is difficult to fault the book, in terms either of presentation or scope. For teachers and students of genetics alike, this is a first rate textbook.

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IONIZING RADIATION: LEVELS AND EFFECTS. Two volumes: I. Levels (197 pp., numerous graphs and tables); II. Effects (250 pp., numerous graphs and tables). United Nations Publications E. 72. IX. 17/18. \$U.S.12.50 for the two volumes.

These volumes comprise the sixth report of the U.N. Scientific Committee on the effects of atomic radiation, to the General Assembly. The report proper consists of four short summary chapters (I, Sources and doses of radiation; II, Genetic effects of radiation; III, Effects of radiation on the immune response; IV, Radiation carcinogenesis) and appendices listing scientists involved in drawing up the reports, and a list of reports received

by the committee. The detailed scientific evidence upon which the summaries are based is packed into eight technical annexes, four of which are found in volume I (A, Environmental radiation; B, Doses from medical irradiation; C, Doses from occupational exposure; D, Miscellaneous sources of ionising radiation), and the remainder from volume II (E, Genetic effects of ionising radiation; F, Effects of radiation on the immune response; G, Experimental induction of neoplasms by radiation; H, Radiation carcinogenesis in man). The general format of the report follows that of previous ones, the subject matter being divided into numbered paragraphs for easy cross-reference. In spite of this, continuity is maintained and the text is very readable.

It is necessary that one bears in mind the purpose for which the report is written, and that it is not intended to be a textbook of pure and applied radiobiology. However, these reports do form an excellent general introduction to the fields covered, and give a good lead into the more recent developments and literature. Experienced scientists may not always agree with some of the conclusions reached in their own speciality, nor on the weight given to some pieces of evidence, but, in the main, I found the basic problems which surrounded many controversial issues were discussed very fairly and thoroughly. In this respect, a thoughtful reading of the Annexes provides one with a rather clear picture of areas where more information is needed.

Together these volumes form a veritable mine of information and, in the light of today's rising prices, I consider that the ratio of benefit from reading to price of book is high.

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BOOKS RECEIVED

HEREDITY IN HUMANS. Amram Scheinfeld. Chatto and Windus Ltd., London, 1973. Pp. 303. £2.50.

EVOLUTIONARY BIOLOGY, Vol. 6. Ed. by Th. Dobzhansky, M. K. Hecht and Wm. C. Steere. Appleton-Century-Crofts, New York, 1972. Pp. 445.

ION EXCHANGE AND MEMBRANES, Vol. 1, Number 1. Ed. by J. A. Milkes. Gordon and Breach Science Publishers, New York, London, Paris. 1972. Pp. 71.