

REVIEW

GENETICS, MEDICINE, AND MAN. By H. J. Muller, C. C. Little and L. H. Snyder. New York : Cornell University Press. 1947. Pp. viii+158. 12s. 6d. net.

Dr Muller indicates the scope of this book when he apologises for speaking *ex cathedra* and "presenting only a digest of some of the important elementary results" of genetics, "while usually avoiding mention of the specific details, steps of proof, and personalities concerned." Nevertheless, this is a depreciatory summary of a book which surveys a wide field of human genetics, is well documented, and includes some interesting conjectures concerning the future.

Being the Messenger Lectures delivered at Cornell University in 1945 on the Evolution of Civilisation, the book consists of six chapters, two each by Dr H. J. Muller, Dr C. C. Little, and Dr L. H. Snyder, and covers the general topic of the Lectures from the most fundamental point of view—that of Human Genetics. Dr Muller begins by setting the cytological stage, enumerating the actors, and describing in simple language the action which takes place. After stating what is demanded of the physical particles of heredity he shows how the chemical properties of nucleoproteins fulfil most of these requirements, and proceeds to consider mitosis and the subsequent development of the fertilised ovum from the standpoint of physico-chemical relationships between the constituents of the cell. His second chapter is devoted to a detailed consideration of sexual reproduction, its advantages and some of its concomitants—mendelism, meiosis, linkage, the evolution of dominance—culminating in the genetic theory of speciation.

Dr Little contributes two interesting studies, the first on the nature of Parental Influence and the second on Growth and Individuality. After carefully classifying the varieties of parental influence, and emphasising the shift of genetic investigation from the easily recognisable examples of Mendelian heredity to the more obscure, he confines himself to three major groups of parental influences—"morphogenetic," "emotional-endocrine," and "psycho-social." Under these headings he discusses the results of genetic studies on laboratory mammals, though he treads the dangerous ground of anthropomorphism in suggesting that these results may be of much value when applied to man, particularly in his last category. He considers the phenomena of growth and the primitive reproductive power possessed by all cells as a balance which may be upset by age, amongst other factors, and raises many interesting speculations in the application of this concept to the problem of cancer. Much of this second chapter he devotes to an amplification of these speculations, while the remainder consists of an analysis of individuality, which he finds to be a relative term, subject to modification in terms of the physiological age of the mammal. Dr Little writes in a somewhat florid, repetitive style, but is nevertheless both provocative and stimulating.

It is in the last two chapters that the emphasis turns more specifically to man, where Dr Snyder summarises much of present-day knowledge of human inherited characteristics, together with notes on the methods of analysis and the interdependence of heredity and environment. He approaches the practical applications of human genetic knowledge from five aspects—those of prognosis or advice, diagnosis, preventive measures, medico-legal problems and eugenics, to the last of which he allows himself only a single paragraph. He classifies in much detail the spatial, physiological, ontogenetic and phylogenetic relations of mutant genes in man, and most of the last chapter in the book consists of carefully selected examples and lists of human inherited conditions to illustrate the argument. Dr Snyder concludes a very informative contribution with a brief discussion of gene frequencies and equilibrium.

Though not intended for the specialist, the book, in presenting a conspectus of the present state of genetics from the nature of the gene to the eventual phenotype, may well suggest to him new and fruitful lines of investigation, while to the general practitioner it will serve as a very useful handbook of modern human genetics.

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