particularly important in confirming the validity of the conclusions from *in vitro* studies and provide striking evidence for the universality of the genetic code.

A great merit of this Symposium volume is that the subjects are by no means restricted to the elucidation of the genetic code in its strict sense, i.e. the meaning of the 64-word language of the DNA or RNA base sequence. Detailed accounts are given of recently acquired knowledge of the biochemical mechanisms involved in the various steps in translation of RNA messages into protein, and of the structure of transfer RNA molecules and their interactions with messenger RNA. In addition, there are many excellent contributions devoted to the regulatory processes that control which segments of the totality of "information" stored in DNA are transcribed into messenger molecules under different environmental conditions and are thus expressed in the cell in the form of active proteins. These studies are particularly relevant to models of the mechanism of cellular differentiation in higher organisms.

This volume is not light reading but it should prove invaluable for anyone interested in the wide and rapidly progressing field which it covers.

JULIAN D. GROSS

**Asimov, Isaac.** *The Genetic Code.* New York and London, 1962 (original edition). Signet Science Library: New American Library. Pp. xiv + 187. Price 5s. Paperback.

THIS PAPERBACK BOOK sets out to explain to the general reader who has little or no background of biology or chemistry the "astonishing breakthrough" represented by the progress of molecular biology in recent years and to look at the possibilities of "genetic engineering" for the future.

Professor Asimov describes only those chemical features of molecules necessary to put together a coherent story of elementary organic chemistry and then describes the relationships between molecules by analogy with everyday relationships such as words in sentences. Building on this foundation he describes organic molecules, proteins, enzymes and the like. He puts the question as to how information about the organization and functioning of animal or plant body is passed from generation to generation. He locates the information in the chromosomes and continues the detective story by describing the structure of the nucleic acids by the same methods as before. This part ends with the structure and significance of the double helical constitution of the DNA in the chromosomes.

In the course of the story of protein synthesis he shows the relationship between DNA, messenger RNA and transfer RNA. He elegantly describes the idea that certain triplets of mononucleotides and their position in the DNA chain control the sequence of amino acids in a protein chain. He describes what is known about the correspondence between specific triplets and specific amino acids. Having thus outlined the "genetic code", Professor Asimov speculates as to the future and upon the possibility of repairing genetic deficiencies and even synthesising new proteins to control chemical reactions *in vitro*.

It may be objected that the book is superficial, containing little of real biochemistry and relying on a number of simplifications. But that would be to miss the point of the work which is to convey to the ordinary reader what has been going on in molecular biology. It is successful not only in this respect but also in conveying the great intellectual satisfaction and excitement generated by these discoveries.

K. W. WILKES

**McKusick, Victor A.** *Mendelian Inheritance in Man; Catalogs of Autosomal Dominant, Autosomal Recessive, and X-linked Phenotypes.* Baltimore, 1966. Johns Hopkins. (London, Heinemann). Pp. xvii + 344. Price 60s.