past, but they should be at least mentioned in a book of this kind. Another weak point is the lack of discussion on ecoclimates of the actual animal habitats, which very often enable an animal to survive in a region the general climate of which is wholly unsuitable for it.

On the whole, however, the book represents an outstanding contribution to the development of biogeographical science, and it is a matter of regret that its language will make it inaccessible to most workers and students outside Russia. Biogeography is now entering a period of intensive development and there is no text-book in any language that could be recommended more thoroughly than the present one.

B. P. UVAROV.

Latin Clarity and the Sciences of Life

Encyclopédie française

Tome 4 : La vie. Dirigé par André Mayer. Pp. 582. (Paris : Société de gestion de L'Encyclopédie française ; Libr. Larousse, 1937.) n.p.

THE great difficulty confronting all those who wish to give a connected account of the sciences of life is that of steering between the Scylla of excessive popularity and the Charybdis of technicality. Where certain special but fundamental sciences are concerned, such as biochemistry and genetics, the relative unfamiliarity of their concepts to the general reader leads to a failure to do them justice and hence to an unfair emphasis. The present volume of the French Encyclopædia, in which some fifty French scientists have collaborated to describe the main outlines of the sciences of life, seems to overcome these difficulties better than any English book. The excellent "Animal Biology" of Haldane and Huxley is very short, while the two-volume "Life" of Thomson and Geddes suffers particularly from the failure just referred to.

The book now under review gives a good initial impression, for its several fascicules are bound in loose-leaf style, suggesting that new ones may be issued as important advances occur, to take the place of some of the present ones. After a quite striking frontispiece, which represents a binocular microscope against the background of a monster Purkinje cell, the book opens with a section on the cosmic setting of life, its chemical actions on the outer world, and such subjects as the cycles of carbon, nitrogen and other elements. The second section deals with the constitution of living organisms. Concise accounts of the collcidal state, of the main groups of chemical substances from which living matter is built up, and of the actions of enzymes, are given. Section 3 is entitled "The Structure of Living Beings", and is devoted to experimental cytology, the equilibrium of the cell with its environment, etc. ; Section 4, "The Actions of Living Beings", deals with movement, adhesion, phagocytosis, luminescence, muscular contraction, ciliary movement and similar topics. In Section 5, "The Forms of Life", a wide survey of comparative physiology shows how morphology and function are intertwined in many groups of animals, and Section 6, "The Maintenance of Life", discusses metabolism, reflexes, the fixity of the internal medium, cicatrization, regeneration, etc. Latent life, radiation effects, chemical agents and immunity have a section to themselves under the head of "Repairs and Alterations in Living Organisms", while the book ends with a section on the transmission of life in which the whole of embryology and genetics are passed under review.

The outstanding impression left by the work is one of clarity and logic. The arrangement of the sections is unusually clearly thought out, and although the comparative anatomy of animals and plants is throughout in the background, this would follow from the predominantly physiological outlook with which the book is written. Where such a broad canvas has so successfully been painted, it would be almost pettifogging to complain of the confusingly wrong formula for vitamin B_1 on p. 4.12–5 or of the persistent absence of magnification data in the illustrations, so that a guileless reader might obtain almost any fantastic idea of the sizes of the biological objects shown. But it must be admitted that some of the sections, perhaps especially those on oxidation-reductions and fermentation, give the impression of having been written about ten years ago. One might also suggest that the formulæ of substances should be given where their physiological functions are discussed, or at least a cross-reference inserted; for example, adrenaline and acetylcholine on p. 4.36–15, auxin on p. 4.60–9. In general, however, the book will be of immense value to all Frenchmen of reasonable intelligence who wish to gain an accurate view of modern biology, and it is a pity that Englishmen will not be able to share it with them unless someone should attempt the heavy task of a translation. JOSEPH NEEDHAM.