Historical Aspects of Organic Evolution

By Dr. Philip G. Fothergill. Pp. xvii+427. (London: Hollis and Carter, Ltd., 1952.) 35*s*. net.

THE subject-matter of this book is exactly indicated by its title: it gives a historical account of the initial and changing conceptions of organic evolution from ancient times down to the present period of manifold observation and experimental investigation. There can be no doubt that this book will prove of interest and value to all who maintain either a general or a particular interest in scholarship germane to this major biological theme. The book is concisely comprehensive and, not least important, it is lucid and readable. In the first part the author traces the historical development of the idea of evolution, beginning in the remote and obscure Chinese, Babylonian and Egyptian periods, and culminating in the post-Darwinian period when evolution had become generally accepted as an established principle.

The second part deals with cytogenetics and modern causal theories of evolution. In this part, the rediscovery of Mendelism, chromosome studies and gene theory are considered. Finally, in the concluding chapters, there is a survey of the various recent theories of evolution, including neo-Lamarckism, neo-Darwinism and the views of particular exponents such as Lotsy, Willis and Goldschmidt. Various special subjects are dealt with in some eight appendixes. This book may be generally recommended as being likely to retain for many years to come its usefulness both as a valuable and readable text and as a work of reference.

Heat Transfer Phenomena

The Flow of Heat in Physical Systems. By Dr. R. C. L. Bosworth. Pp. xii+211. (Sydney: Associated General Publications Pty., Ltd.; London: Pergamon Press, Ltd.; New York: John Wiley and Sons, Inc., 1952.) 42*s*. net.

MOST books on heat transfer are written from the point of view of the engineer and contain relatively little discussion either of the nature of the underlying physical processes (for example, the mechanism of conduction) or of the relation of the subject to other branches of physics. Dr. R. C. L. Bosworth's survey is therefore particularly welcome because he lays especial emphasis on these aspects of heat transfer. Throughout the book he brings out the similarities and differences, quantitative as well as qualitative, between the transfer of heat, momentum, electricity, matter, etc. Particularly illuminating is the comparison between thermal radiation and conduction in gases with a long mean-free-path. The well-known 'electrical analogy' is considerably developed, and the existence of 'inductance' as well as 'capacitance' in thermal processes is pointed out.

In addition to tracing the main outlines of the subject in a concise manner, the book contains a good review of the most recent work on conduction, convection and radiation, including the technique of measurement, and gives extensive lists of references. Although some casual statements may be criticized—for example, that forced convection only outweighs natural convection when the flow is turbulent (p. 113)—and although misprints are rather unusually numerous, the book will be of lasting value to students and research workers. Only the purists among them will hesitate to accord full agreement to the publishers' prefatory claim that the book "satisfies a much needed want".

The Sky and Its Mysteries

By Ernest Agar Beet. Pp. 238+15 plates+56 figs. (London: G. Bell and Sons, Ltd., 1952.) 15*s*. net.

IN writing this book for the non-specialist, the author has preserved a sense of balance by devoting by far the greater portion to the solar system, a description of some of the more important instruments used by the astronomer, and a short historical sketch up to about the end of the past century. Mathematical treatment of the subject has been almost entirely eliminated, which will enhance its interest and value for many beginners; while there is little new in the text, the manner of presentation is very lucid, and it is certain that the book will make a strong appeal to many amateur astronomers. The map at the end may seem a weak point in the work; but, as the author points out in the preface, "it is to supplement, not to replace, the normal kind of star map for outdoor use". A list of periodicals supplying information on the night sky, month by month, is given on p. 229, one an American publication and three British; but it might be suggested that some additional British publications should be referred to in a future edition—especially those which describe the times of the rising and setting of the planets. A few points require slight amendments in the revision as, for example, the statement on p. 121 that Mars is at its nearest when fully illuminated, and that on p. 138 regarding the sporadic meteors with hyperbolic velocities, and some others; but these are very minor points which do not detract from the value of this excellent book. M. D.

Puffins

By R. M. Lockley. Pp. xi+186+17 plates. (London: J. M. Dent and Sons, Ltd., 1953.) 18*s*. net.

MR. R. M. LOCKLEY has added an interesting volume to the fast growing list of bird monographs. His long residence on the island of Skokholm and his intimate acquaintance with the large puffin population of the Pembrokeshire islands qualifies him for the task of writing on *Fratercula arctica*. He does so both informatively and entertainingly, most of what he tells us being the result of long periods of puffin-watching on the islands of Skokholm and Skomer, particularly the latter, where he estimates at least 50,000 pairs bred in 1952. His book deals with the puffin from the time it returns to its breeding haunts in early spring until the last deserted young one goes off to sea. In addition, the author has chapters on the "Mind of a Bird", the "Winter Ocean" and "Man and Puffin", with appendixes on "Numbers", "Distribution", "Recoveries of Ringed Puffins", etc. Under the heading of "Numbers" he tries to estimate the total population of *Fratercula arctica* and thinks it may be (including the sub-species *F. a. naumanni* of Spitsbergen, *A. a. arctica* of north Norway, Iceland and North America, plus *A. a. grabæ* of Britain, the Faroes and France) between fifteen and sixteen millions of birds. But he adds a word of warning, saying it is "clear that the present figure is a reduction, probably a considerable one, on the population of one hundred years ago". However, he concludes by saying that, "still the puffin remains one of, if not the, most numerous of seabirds in the whole Atlantic".

FRANCES PITT