

Animal Species and Evolution, by **Ernst Mayr**. Oxford University Press (for Harvard University Press), 70s.

Ecological Genetics, by **E. B. Ford**. Methuen, 42s.

Ecology and genetics are the two biological time bombs of our age. Already the percipient can foresee the upheaval in our way of life which their discoveries will cause when the current fixation on nuclear physics and that other bomb gives way to a greater understanding of advances in biology. Both books are important aids in achieving this understanding; indeed both are among the books of the century in the field of evolution and genetics.

Dr. Mayr has produced the logical modern successor to Julian Huxley's *Evolution: the Modern Synthesis*, a complete survey of where Darwinism stands today in the Animal Kingdom. While not all that he says is non-controversial—how could it be when his subject is one of the growth points of modern science?—the consensus of informed opinion would undoubtedly agree with the great bulk of it. When a consideration of animals alone has carried him to the length of 662 pages, it would be churlish to complain that he has not included plants, but one would still like to see the recent advances in this sphere integrated into the whole, as Dr. Ford does with his more limited field.

When a scientist as able as Edmund Brisco Ford puts his life work into a book it is well worth taking a little trouble to master it, even if the technicalities of genetics at first seem a little forbidding to the layman. Though he writes lucidly, Dr. Ford makes few concessions to those who do not know what a switch mechanism or a super-gene are, let alone a homozygote or an allele. But this book is so important that I strongly urge all naturalists to take the short course in elementary genetics which the author has provided in his two excellent New Naturalist volumes, *Butterflies* and *Moths*, and plunge into the fray.

Ecological genetics, in the author's own words, deals with the adjustments and adaptations of wild populations to their environment. It is thus of key importance to conservationists, who are seeking to achieve just this for the animals they wish to preserve, in an often vastly changed environment. The author is a real pioneer in taking genetics into the field instead of sitting in a laboratory counting fruit-flies, and much of the book consists of the interpretation of his own field work on butterflies and moths, especially the meadow brown in the Isles of Scilly and the scarlet tiger moth in Berkshire. Fundamental research of this sort in the field provides another lesson for conservationists: the urgent need to preserve intact the habitats of these key insect populations. Fortunately the wildlife of the Isles of Scilly is now being looked after by the Nature Conservancy, by a special arrangement, and a large part of the main Berkshire locality, Parsonage Moor at Cothill, has recently been leased for a nature reserve by the Berks, Bucks and Oxon Naturalists' Trust, and fenced with the aid of a grant from the World Wildlife Fund.

R. S. R. FITTER

The Living World, by **Rutherford Platt**. Souvenir Press, 25s.

It would be easy to be put off by the somewhat extravagant style of writing of this book. In the first few pages we are told that bees boil down nectar to make honey; that pollen is "a miracle drug which bees use to reproduce themselves"; and that pollination of plants by insects is "a reliable way to spark ovaries." But it is worth having patience. After

threading our way through this verbiage we find a fascinating survey of earth's living things and the strange and often bizarre devices by which they survive and reproduce.

The subjects range in scale from *Amoeba* and diatoms to whales. There are interesting accounts of the almost incredible reproduction of bees, the development of vision in insects and vertebrates, electric animals, the elephant's trunk and the mating of this animal. A mere catalogue of the chapter headings would give the impression of a random selection of themes, and yet, skilfully, the author manages to demonstrate that underlying all these diverse topics there is a unity: of the amazing potential inherent in protoplasm. It is, perhaps, refreshing also to find a trained biologist who can feel wonder and even awe in the filigree cell-wall of a diatom or the splendid manoeuvrability of a golden eagle in flight.

JOHN CLEGG

The World of Birds. A Comprehensive Guide to Ornithology,
by James Fisher and Roger Tory Peterson. Macdonald, £5 5s.

Two well known and widely travelled ornithologists, British and American, the latter also a noted bird artist, have here combined their knowledge and skills to produce a spectacular book. The keynote is pictorial presentation of facts and principles, with a highly condensed text. A large format has been used (ca. $12\frac{1}{2} \times 9\frac{1}{2}$ "), and a heavy paper taking text and illustrations side by side; in nearly two-thirds of the book there is colour on every page.

The first main section is a profusely illustrated summary of various aspects of avian biology, with emphasis on evolution and geography. The specific examples in the text and in the brilliant paintings are taken from a wide range of families and from all over the world; figures of 668 species are reproduced by eight-colour lithography. There follows a shorter black-and-white section on methods of observation, including photographic and sound recording. The other colour section consists of a series of maps, on a variety of projections, showing the range of every family (sometimes subfamily). Each map is headed by a few data on the group, such as known geological age, probable geographical origin, and number of included genera and species; and also by a silhouette of a representative form (but lacking any indication of scale). One knows the limitations of such maps, necessarily based on information not everywhere complete and inevitably suggesting a more sharply defined and uniform distribution than commonly exists. But taken broadly as diagrams these are wonderfully effective, and as a collection unique. The final section discusses the relations between birds and man, ending with a passage on conservation. To this is appended a "red list" of species with populations at a dangerously low level, and a "black list" of those believed to have become extinct since A.D. 1600

LANDSBOROUGH THOMSON

Cats of the World, by Armand Denis. Constable, 30s.

It is curious that the cat family, many of whose members are admired by all who visit zoos or, better still, see them in the wild, should have so little of their natural history recorded. As far as it is possible to remedy this, for there are still many aspects of the lives of cats to be explored, Armand Denis has done so. The author can scarcely need any introduction—at least to viewers of television—and this long needed book will, I feel sure, add to his reputation. It is magnificently illustrated, factual, well documented, and readable—no mean quality in a book of this kind. Though the