boundary conditions, the book summarizes the essentials of polarography with an emphasis on its analytical applications to organic chemistry.

In the first three chapters Zuman deals with the basic principles of polarography, polarographic instrumentation, and experimental techniques. A convenient tabular summary of reducible organic groups is included. Considerable stress is laid upon indirect methods. Thus, the author has distilled out of the extensive literature numerous methods in which a polarographically inactive organic compound is subjected to an appropriate chemical perturbation so that the analysis may be completed polarographically.

The final chapters, "Polarographic analysis in the study of reaction rates and equilibria" and "Effects of structure: Polarography as a tool in the analysis of structures of organic substances," will be of particular interest to physical organic chemists.

This book can be recommended as a mature, well-written introduction to organic polarography. The author's goal of stimulating further understanding of the subject should be achieved. Book reviewers seem to be licensed to saddle their own particular hobby horse, at least for a short trot. In this context, I was somewhat disappointed to find that polarography in aprotic organic solvents is accorded only minimal mention in this book.

DAVID H. GESKE
Department of Chemistry,
Cornell University

Arizona Faunistics

The Vertebrates of Arizona. Annotated check lists of the vertebrates of the state: the species and where they live. Charles H. Lowe, Ed. University of Arizona Press, Tucson, 1964. x + 259 pp. Illus. $5.

This book is the outgrowth of a symposium by the same title held at Tucson in 1960, and chaired by editor Lowe. Already in press at the time was a lengthy treatise on Arizona mammals, by E. Lendell Cockrum, and nearing completion was a similar treatment of Arizona birds, by Gale Monson and Allan R. Phillips. Lowe himself contrived to produce a chapter on amphibians and reptiles, to promote one on fishes by Robert Rush Miller, and to assemble ecological information for a long introductory chapter, profusely illustrated, on Arizona landscapes and habitats. Altogether, this combined material makes an impressive volume on the vertebrate fauna of the state.

Arizona is sometimes regarded as an arid desert region, but it is much else. Between the Kaibab Plateau and Grand Canyon at the north, and the Chihuahuan Desert and Huachuca Mountains at the south, there stretches a nearly continuous belt of elevated woodland, as on the Mogollon Plateau. The cover of this issue of *Science* portrays the eastern end of Lake Mead, set amidst nearly barren volcanic mountains. Elsewhere in the state are vast sandy deserts and alpine tundra, expanses of cactus and chaparral as well as forests of aspen and pine, ranging from the subtropical Lower Sonoran to the near-arctic Boreal Life Zone. In this variegated environment lives a diverse assemblage of vertebrates. Tabulated in the book are 64 species of fishes, 22 amphibians, 94 reptiles, 434 birds, and 139 mammals, plus other hypothetical or introduced alien inhabitants. Common and scientific names are given for each, together with notes on seasonal status, relative abundance, introductions of exotics, fluctuations in populations, and habitat utilization. Distribution is often given by habitat (*Plecotus phyllotis* "from the oak zone"), by life zone (*Contopus sordidulus* "resident almost throughout the Transition Zone, and . . . locally in cottonwoods of upper part of Lower Sonora Zone"), by elevations (*Sceloporus jarrovi* "as low as 4,800 feet and as high as 10,700"), or by precise localities of record.

Provision of an index and of a single terminal bibliography would have been helpful. Specialists will regret the omission of any consideration of subspecies; and amateurs will wish for pictures of the animals and keys for their identification. Within its limits, however, the book was intended merely as an annotated inventory of the Recent species known to occur in the state. As such, it succeeds very well and should prove a valuable reference for professional biologists, students, and others interested in the native fauna of Arizona and its distribution there.

RICHARD H. MANVILLE
Bird and Mammal Laboratories,
U.S. Fish and Wildlife Service

Oxford School of Genetics

Ecological Genetics. E. B. Ford. Methuen, London; Wiley, New York, 1964. xv + 335 pp. Illus. $7.75.

The biological, or "synthetic," theory of evolution, developed in the last 30 or so years, is the outcome of a confluence of several streams of thought originating in different biological disciplines. Ford's book, the most recent and a very important contribution, is based on findings of ecological genetics, which is defined as the field of study that "deals with the adjustments and adaptations of wild populations to their environments. It is thus . . . essentially evolutionary in outlook. Indeed it supplies the means, and the only direct means, of investigating the actual process of evolution taking place at the present time." The book is based primarily on the work of the very active group of investigators, sometimes referred to as "The Oxford School," of which the author is the leader. It is certainly a rare satisfaction for an author to be able to write a general book utilizing for evidence and illustration chiefly materials with which he is personally familiar. This does not mean that Ford ignores the findings of other ecologists and geneticists. The book is dedicated to the memory of Sir Ronald Fisher, whose inspiration is acknowledged. One of the 15 chapters composing the book is devoted entirely, and there are references elsewhere, to studies made with species of *Drosophila* flies (engagingly dubbed "Drosophilosophy") with which the Oxford School has until now done relatively little work. Six chapters are concerned mostly with work on butterflies and moths (*Maniola, Papilio, Panaxia,* and others), one with snails (Cepaea), one with plants (heterostylic and homostylic primroses), and the rest are general.

Ford is consistently and rigorously a Darwinist and selectionist. Much of the evidence available on the action of natural selection in wild populations of higher organisms, including some of the most direct and conclusive evidence, has been brought to light by the Oxford School. Perhaps the most spectacular is industrial melanism, the appearance and spread of darkly colored varieties recorded in over 80 species of British moths. The study of this phenomenon, pioneered by Ford and splendidly developed by Kettlewell, is succinctly summarized in chapter 14. Most inter-