in a very clear and succinct summary, "Susceptibility of primates to viruses in relation to taxonomic classification," present the available data on this topic. Bender and Chu give their latest review of the chromosomes of primates, revealing how complex is the task of relating karyotype of taxonomy, not to mention phylogeny.

The most puzzling sections to evaluate are the editor's two prefaces and his chapter "An introduction to the primates" (the first chapter). These are almost exclusively concerned with naming and classifying the living members of the order. In the first half of his chapter, the editor gives his views on the relationships of the major groups and discusses, often with refreshing candor, the roles that data from the more modern techniques are and are not playing in the elucidation of problems in primate taxonomy and evolution. The latter half of the chapter presents two outline classification schemes: a longer, "comprehensive" scheme and a shorter, "synoptic" one. It is unclear what purpose these two lists of names, which extend for 25 pages, are intended to serve: they are not used as a taxonomic or nomenclatorial standard by the other authors—in fact, their use would present a problem because the two schemes are so contradictory, one being an extreme "splitter's" view and the other, a "lumper's." Furthermore, in the face of the current tangle of multiple synonyms and half-synonyms in certain families, these bare lists would need copious annotations to be of real use. The most original parts of this chapter are those dealing with animals from Madagascar and East Africa. Buettner-Janusch has had field experience in both regions, and the animals that he has imported have provided part of the basis for his own studies and for those of other contributors to these volumes. Unfortunately some of his clear photographs of rarely seen lemurs are so badly reproduced that they are of little scientific value. As the result of poor cropping, uneconomic spacing, and the muddy quality of the reproduction, the illustrations in this chapter contrast with the generally high technical standards maintained elsewhere in the book.

Intrinsically, then, these 13 chapters are valuable contributions to primatology. Surely their authors should have been better served by editor and publisher. Although the routine procedures of book manufacture have been carried out creditably (the volumes are sturdily bound and well printed on glossy paper), nevertheless, in many of those processes whereby the publishing of a book is distinguished from its physical producton, these volumes are seriously deficient. Certainly the editor deserves commendation for initiating and contributing to this project, but it is abundantly clear that he was not at hand during crucial stages in the production of the first volume—the careful reader can discover, printed inconspicuously at the very end of the second volume, two full pages of the editor's corrections, "Errata for volume 1." Furthermore, there are few signs of any editorial attempt to correlate disparate elements in these papers—evolutionary concepts, nomenclature both taxonomic and anatomical, or even simple spelling. The editor is uneasily aware of this deficiency and frankly admits it in the preface to volume 2. It would also seem that had both editor and publisher been less intent on rushing their book into print, the two volumes might have been issued as a single, carefully edited and integrated unit, with one comprehensive index, and the reader might have been spared both expense and inconvenience.

Cultural Change

When Caste Barriers Fall: A Study of Social and Economic Change in a South Indian Village. Dagfinn Sivertsen. Universitetsflorlaget, Oslo; Humanities Press, New York, 1963. 141 pp. Illus. $4.

Caste in India and its neighboring countries is a social phenomenon about which Indologists and social scientists, as well as social and economic planners, share a strong and abiding interest. And with good reason, for in its many regional variations, caste permeates many spheres of life among the peoples who share the Indian cultural tradition. But it is not the granitic system of social division that some have portrayed it as being. In contemporary India it is changing rapidly in response to deliberate political, economic, and social action. What happens when alien political ideologies and organizations collide with traditional authority as it is embedded in the caste system? This is the question that Dagfinn Sivertsen asks in *When Caste Barriers Fall*, a case study of just such a confrontation in a single village of Madras State where Sivertsen worked during 1957 and 1958.

The small community of this study is a multicaste agrarian village; the central social and economic issues are over land; and the alien influences are the national political parties, the unions, and state intervention. The results of the social action triggered by this tense situation were changes in feudal, contractual, and ritual interrelations among castes. In short, significant alterations in the system of authority and power relationships were observed. However, the caste system does not collapse as the title of the book might suggest.

This book, unlike so many on the subject of caste, is not written with only the specialist in Indian sociology in mind. Throughout there are brief explanatory passages that give the background essential for understanding the many facets of caste in this South Indian village. Fortunately, too, more of the book is devoted to the technology and economics of agriculture than to other topics, so the basis for the unrest that precipitates political action is clearly presented to the reader. This is a modest study that is topical and has significant relevance to the now voluminous literature on caste in India and to broader aspects of social and culture change. Moreover, it is well done and equally well presented.

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Polarography

Organic Polarographic Analysis. Petr Zuman. Pergamon, London; Macmillan, New York, 1964. x + 313 pp. Illus. $6.50.

This volume by Petr Zuman extends the list of distinguished books on polarography which have come out of the Polarographic Institute at Prague. The author comments in the preface that "even though organic chemists interested in physical methods . . . have contributed much to our knowledge and understanding of this branch of applied electrochemistry, organic chemists are still little informed about the potentialities of polarography." Within these

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.

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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.

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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-