

ologic history, their ecological and distributional aspects, and principles of their classification, with an artificial generic key to the skulls of the included forms. Most of the book is concerned with accounts of the various species. Here are practical keys for the identification of forms, together with range maps and sketches to emphasize diagnostic characters. And, where appropriate, data on habits, physical traits, special adaptations, ways of life, habitats occupied, and the species' status in the ecosystem are included. Appendixes, which are quite repetitious, deal with the collection and preparation of study skins, a check list of the species treated, and a table of dental formulas; in addition to these, there are brief treatments of the principles of classification, a guide to the pronunciation of

selected generic names, and an illustrated section on scats, all of which might profitably be deleted.

Some students and instructors will miss any reference to subspecies, except in the case of the deer; this may be desirable, however, at this level. The book is profusely and adequately illustrated, with photographs, drawings, figures of skulls and anatomical features, and sketches of footprints; of all these, the photographs as a group are particularly good. A selected bibliography (168 references) and a good index complete the volume. It should have a wide appeal among naturalists and vertebrate biologists of our western states.

RICHARD H. MANVILLE

*Bird and Mammal Laboratories,
U.S. Fish and Wildlife Service*

Kinship and Social Organization

Choiseul Island Social Structure. Harold W. Scheffler. University of California Press, Berkeley, 1965. xiv + 322 pp. Illus. \$7.

The kinship aspects of social organization are an old but increasingly specialized interest of social anthropologists. It is common to begin the classification of kinship systems by recognizing that people everywhere reckon descent from their ancestors in one or another of three ways: unilineally, where there is an emphasis upon relationship through either the male or female line; bilineally, where emphasis is placed on connection through males in some and females in other situations; or bilaterally, where kinship ties with the families of both parents are recognized equally.

The matter becomes more complex as patterns within these basic classifications are examined. Probably unilineal systems have been studied most until recently. Now attention has turned to an examination of the variety of patterned relationships commonly classified as bilateral. This has resulted in new interpretations of the data, a proliferation of new concepts, redefinitions of older terminology, and considerable disagreement about the results.

Scheffler, in a technical report to fellow specialists, makes a sound contribution with this analysis of kinship data from Choiseul Island, British Solo-

mon Islands. His thesis is complex, owing to the highly technical problem and to a lip-smacking verbosity that seems to savor saying much the same thing in several ways. Nevertheless, careful reading and rereading are rewarding: much is learned about Choiseul Island social life and the data are used to illuminate theoretical problems of bilateral kinship.

The Choiseul Islanders recognize bilateral descent and, in Scheffler's scheme, these explicit verbalized kin ties are an ideology or dogma. He acknowledges that such data may be used to construct differing models of social structure depending on the analytical perspective, but a more meaningful model than others, he argues, will develop from an examination of the rhetorical use of the dogma of bilateral descent in day-to-day social transactions. [Could not this apply equally to unilineal systems?] This is a major theme that runs through this study of how the people of Choiseul seek personal ends by using the dogma of kinship, more or less skillfully, to persuade others in transactions involving land tenure, leadership, marriage, group affiliation, and religion.

In Choiseul, self-interest is paramount, its expression expected, but controlled by the need for group acceptance and support. The rules for behavior are neither unambiguous nor backed by legal or moral forces that

would require their observance. Changing conditions make social transactions ever unique, so that men must decide which rules have ascendancy in each situation. Prestige and its concomitants accrue to the most skillful rhetorician.

Scheffler has good data, his inferences are properly qualified, his speculations are labeled clearly. He concludes with a discussion of the theoretical implications of his study.

MALCOLM MCFEE

*Department of Anthropology,
University of Oregon, Eugene*

Undergraduate Textbook

Physical Principles of Chemistry. Robert H. Cole and James S. Coles. Freeman, San Francisco, 1965. x + 795 pp. Illus. \$12.

The Department of Chemistry at Brown University has for many years been a pioneer in studying and modifying the undergraduate curriculum for those students who plan to major in chemistry. The present text by Robert H. Cole, a professor at Brown University, and James S. Coles, formerly a professor at Brown University but now president of Bowdoin College, is an illustration of advanced thinking about undergraduate problems. The authors state quite frankly that this book is based on a syllabus used for sophomores at Brown, that it should be useful for juniors in many institutions, but that many freshman students would be well qualified to use it. These statements well illustrate the problems facing college teachers today.

The treatment of physical chemistry in this book is intermediate between that given in the larger books used by many departments at the junior and senior level and that given in books normally designed for sophomores. The first seven (out of 22) chapters are devoted to atomic and molecular theory. The treatment is essentially nonmathematical and in some respects does resemble that given in the best freshman textbooks. It is, however, more rigorous in most respects, and it is very clear and concise. Atomic and molecular weights, the nucleus, matter and radiation, quantum principles, molecular constitution, and the solid state are considered in successive chapters. This part of the

book would provide not only a very fine introduction to these phases of chemistry but also present a coordination of much information which proves to be very interesting reading.

Of necessity the treatment of gases and of kinetic theory cannot differ too much from that given for many years. The material is carefully presented and the student who masters these chapters will be well grounded in fundamentals. The same can be said for the chapters on liquids and on solutions.

Thermodynamics is given in so many books, and in so many ways, that methods of presenting this subject often depend on personal preference, and in some instances the treatment lacks rigor. A well-written chapter on the First Law precedes a down-to-earth chapter on thermochemistry, which should be very useful for those who intend to do practical work in the field. The Second Law is very well discussed, and these authors avoid the many pitfalls into which authors can so easily wander. The applications of thermodynamics to chemical problems are very well presented and cover the time-honored phases of gas equilibrium, heterogeneous and solution equilibria, electrochemical reactions, and galvanic cells, including the activity coefficients of electrolytes and the Debye-Hückel theory. Then comes a chapter on ionic conductance in solution and another on ionic reactions in solution. These are very good chapters, but the approach is not likely to be called particularly novel.

I have only one serious criticism to make of the chapters on thermodynamics. Various international bodies have spent years arguing, often bitterly, about some of the symbols and have agreed on the symbol G for $H-TS$, the Gibbs free energy. Nearly all of the modern texts now use this symbol, but the present book continues to use F . At the present stage this seems to be inexcusable. Science will become indeed more and more chaotic if scientists do not follow agreed-upon rules so that they can understand each other as readily as possible.

The remaining chapters of the book cover phase rule, surface chemistry, and kinetics. As in most American texts, the authors leave kinetics to the end and seem to have included it to avoid feeling guilty. The subject is treated in a classical way, which has real merits for students getting their

first introduction to the subject, but let us hope that at some time before these students receive Ph.D. degrees they will be exposed to a more modern treatment.

To summarize: This well-written and very teachable book will provide students with a sound foundation in physical chemistry. It has the great advantage of teaching the subject in such a way that the students will not have to "unlearn" much of it later.

W. ALBERT NOYES, JR.
*Chemistry Division,
Argonne National Laboratory*

Psychology: Conference Report

Stimulus Generalization. David J. Mostofsky, Ed. Stanford University Press, Stanford, Calif., 1965. viii + 389 pp. \$11.50.

This book constitutes the public record of the Conference on Stimulus Generalization, held at Boston University in June 1963. It contains 22 of the 25 papers presented at the Conference. Unfortunately, the papers by Margolius, Prokasy and Hall, and Razran were deleted.

All the papers were distributed prior to the meeting "in hope that it would give the participants ample time to digest the contents and enable them to devote the better part of the three-day meeting to frank discussion." A reading of the papers in their pre-conference form, however, gives little evidence that the "frank discussion" influenced their postconference publication in any significant way.

In order to contain the program within a reasonable scope and size, the focus, according to the editor, was restricted to the "traditional learning framework of stimulus generalization." On this criterion, verbal generalization and clinical applications were excluded. It will certainly come as a surprise to some that the recent exciting advances involving neurophysiological methods, some of which are reported here for the first time, have so rapidly become traditional, whereas the much older and still vigorous work in verbal generalization has so rapidly become atypical. As an authoritative reference in this and other respects (for example, reversal relearning, separate subjects for each test point, the very idea of a law of generalization), this book, with a few nota-

ble exceptions, is but minimally effective in coming to terms with the uses of the past.

As a collection, the papers emphasize some important activity as well as new approaches to an old and persistent problem. In addition to presentations of empirical data and their interpretations, there are papers on definition, measurement (both S and R), experimental design, neurophysiological methods, and even a little on theory.

To the extent that this volume can be recommended as a current reference on stimulus generalization, several trends are indicated: (i) the restriction of single stimulus presentation is no longer a prerequisite, (ii) classical conditioning has largely been replaced by instrumental conditioning, (iii) operant techniques are very popular, (iv) there is an overly and perhaps dangerously heavy reliance on resistance to extinction as the index of generalization, (v) neurophysiological techniques are becoming increasingly refined and sophisticated, (vi) graduate students in particular had better know the work of Guttman and Kalish, (vii) a depressingly small number of researchers care to be influenced by theory, logical analysis, or definitional clarification, and (viii) a metric accommodation for the stimulus continuum is imminent.

Many of the chapters are well written by competent researchers with indications of promise to enrich the literature in new and ingenious ways. Meanwhile, there is enough variety here to supply Ph.D. dissertations for some time.

DAVID EHRENFREUND
*Department of Psychology,
Southern Illinois University,
Carbondale*

Research Techniques

Methods of Animal Experimentation. vol. 1. William I. Gay, Ed. Academic Press, New York, 1965. xvi + 382 pp. Illus. \$13.50.

For some time we have needed a comprehensive text on experimental methods that involve the use of animals. This book, the first of two volumes, is an indexed collection of nine articles in which different authors describe topics concerned with the use of experimental animals—techniques