longed and careful field studies of a very rich avifauna previously known largely from the casual notes of collectors of specimens. Unlike so many pioneering efforts, Skutch's work has all the academic finish of the best modern studies of well-known species and has the advantage of presenting the author's interesting and penetrating thoughts and judgments, based on wide reading, together with his new factual material. No one entering upon a serious study of any of the North American species of the families covered in this book can afford to neglect this opportunity to become familiar with the knowledge of their tropical relatives, so ably recorded here on the basis of Skutch's prolonged residence and devoted work in Central America.

The third volume *Bird Portraits in Color* is illustrated with 92 colored plates, first issued in Roberts's two-volume work *The Birds of Minnesota*; it is a revised edition of an earlier presentation of the plates with a much abridged version of the text that Roberts had prepared for his larger work. W. J. Breckenridge, D. W. Warner, and R. W. Dickerman revised the text. The present book is primarily a picture book of some 295 North American bird species, but it gives enough carefully condensed information to be a reliable, easy reference work for the amateur bird student.

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Basic Values of Western Civilization. Shepard B. Clough. Columbia University Press, New York, 1960. x + 132 pp. $3.

This eloquently written small book, by a historian at Columbia University, represents a pioneering attempt to describe systematically the basic values of Western culture. The enterprise grew out of a Columbia University faculty seminar devoted to the content and methods of the social sciences. When the seminar turned to the question of the basic values of a culture, Clough collaborated especially with the anthropologist John P. Gillin in the application of the concepts of "culture" and "values" to a problem with which he had long been concerned: the role of ideologies and ideals in shaping human behavior through time.

After a brief discussion of concepts and methods, Clough moves immediately and boldly to a very large canvas —the whole of Western culture—and describes our basic values in five chapters: "The end of man is man"; "Societal institutions as basic values"; "Material values"; "Knowledge, religion, and aesthetics"; and "The glorification of progress." The book then closes with a chapter on variations in values and a chapter on the future of Western values.

Clough's discussion of methods is clear and succinct, and most anthropologists would, I think, also go along with his definitions of concepts and theories, except for one major point. He states that "in every culture the way of life of people is determined most basically by a set of values concerning goals to be attained" (page 2). While most anthropologists think that values are one of the determinants of culture, few would agree that the value system is always the most basic determinant. Indeed, there is much evidence to the contrary, especially in cultures with a hunting and gathering economy where the patterns are clearly determined most basically by ecological and economic conditions.

I find his chapters on the basic values to be somewhat uneven in approach, interest, and quality. His treatments in "The end of man is man" and the "Glorification of progress," are masterful summaries of these two key values. I am less impressed with the other chapters, and his description of societal institutions (that is, family, school, church, and nation-state) does not appear to me to advance the subject matter much beyond what one can read in an introductory textbook on sociology. I am also skeptical when he states "the social scientist can hardly resist the temptation to point the way our society seems to be moving and to suggest action which would turn it in the direction in which he would like to see it move" (page 118). Many of us feel we are several decades short of having the kind of social-science knowledge we need to make such predictions and suggest such action.

On the other hand, I agree with Clough's basic point that we in the West have been far too inarticulate about our basic values and that it is high time we studied them and made them more explicit. I hope he will persist in his efforts to find time and financial support "to write a long and heavily documented work based on extensive field work and intensive personal interviewing" (page viii), for in so doing he will undoubtedly answer the critical points I have raised. In the meantime, the present book is an interesting addition to our accumulating literature on the value systems of cultures.

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Advances in Fluorine Chemistry. vol. 1. M. Stacey, J. C. Tatlow, and A. G. Sharpe, Eds. Academic Press, New York; Butterworths, London, 1960. vii + 203 pp. $8.

In this era of accelerating increase in scientific research and its associated increase in the number of publications and the mediums of publication, it is extremely helpful to have well-written, comprehensive, and critical surveys or reviews, bringing together scattered information under logical canopies. The chemistry of fluorine and fluoro compounds, because of the extreme properties of the element itself or those of its compounds, requires a niche of its own in the chemical literature. That it has achieved this niche is evident, for the first international conference on fluorine chemistry was held a year ago at the University of Birmingham in England. The editors of this series were the organizers of that conference, and they have by their own research, contributed greatly to this field in which they have an enthusiastic interest. A good portion of this first volume was written by them.

The volume reviewed here is the first of a proposed new series which will, if continued in the excellent style of this initial volume, greatly advance the development of the field, and delineate the position of fluorine chemistry. This first volume covers much of the inorganic chemistry of fluorine and of the methods of fluorinating organic compounds. The subjects covered are: "The halogen fluorides—their preparation and uses in organic chemistry," by W. N. R. Musgrave; "Transition metal fluorides and their complexes," by A. G. Sharpe; "Fluoroboric acids and their derivatives," by D. W. A. Sharp; "The electrochemical process for the synthesis of fluoro-organic compounds," by J. Burdon and J. C. Tatlow; and "Exhaustive fluorinations of organic compounds with high valency metallic fluorides," by M. Stacey

and J. C. Tatlow. All the articles digest a relatively voluminous literature into well-written, readable, and concise discussions.

However, there is a vast area for future volumes in this series, and fluorine chemists will be looking forward to the appearance of each succeeding volume. The series is certainly to be recommended to workers in the field and to chemists in general.

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Readings in the History of American Agriculture. Wayne D. Rasmussen, Ed. University of Illinois Press, Urbana, 1960. xi + 340 pp. Illus. $6.50.

God Speed the Plow. The coming of steam cultivation to Great Britian. Clark C. Spence. University of Illinois Press, Urbana, 1960. 183 pp. Illus. $4.75.

Power to Produce. Yearbook of Agriculture, 1960. U.S. Government Printing Office, Washington, D.C., 1960. 480 pp. Illus. $2.25.

Harvests and Harvesting through the Ages. Norman E. Lee, Cambridge University Press, New York, 1960. viii + 208 pp. Illus. $2.95.

Readings in the History of American Agriculture contains some of the sources and documents of American agricultural history. The 52 selections include such items as a 16th-century account of Indian farming, a description of Jethro Wood's patent application for his plow, and analyses of how World War I affected agriculture and how artificial breeding altered dairying. Nearly every important aspect of American agricultural history is covered. Short, informative essays introduce the selections and give the background to, and the results of, the events covered by the documents. Unfortunately, and perhaps unavoidably, the essays do not always provide a continuous narrative link between the documents. Furthermore, many odd or archaic technical terms might have been defined in footnotes. Except for the 16th- and 17th-century documents, however, the illustrations help make things clearer. A fairly comprehensive chronology of American agriculture is at the back of the book. This generally useful outline also provides some continuity for the whole collection. The book emphasizes the scientific and technological development of American agriculture.

In *God Speed the Plow*, Clark Spence traces the efforts of Britons to plow and cultivate with steam-powered machines. The book covers the years from 1618 to 1918, but most of the story takes place in the 19th century. Methods of using steam power centered on (i) stationary engines, (ii) traction engines, and (iii) tractors with powered earth-cutters. Of these, the stationary engines proved to be the most practical. In Britain, at least, stationary engines always outnumbered tractors about 10 to 1. Spence's account of success and failure is told in adequate detail. He does, however, slight the general technical and economic conditions of the times. Thus, the reader may wonder why a 10 horsepower engine had to weight several tons, and why, even so, it might be profitable to own one. Otherwise, this is a thorough, interesting, and abundantly illustrated monograph.

Power to Produce, a yearbook of the U.S. Department of Agriculture, concentrates on present ways of using power, particularly power derived from internal combustion engines and electric motors. The book also covers some of the history of these devices. Although it is a collaborative effort, the book is still remarkably even in style. It appears to have been written primarily, but not exclusively, for an urban audience. Farm methods and machines are explained in detail. The authors intentionally make little effort to cover any other scientific practices or discoveries. The essays tend to repeat information given in other chapters, but this is probably unavoidable. Although the book can be read straight, it was apparently designed as a reference, to be read piecemeal. How does a potato digger work? How did the tractor evolve? Without using jargon, the authors answer these and a host of other questions. Altogether excellent.

The brief *Harvests and Harvesting through the Ages* was written primarily for children (12 to 16 years of age), and I recommend it for them. It is not a childish book, however, and might be read by adults who want a review of world agricultural history. The book covers far more than just harvesting, although it deals mostly with grain production and processing.

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Paléontologie Stratigraphique. Henri and Geneviève Termier. Masson, Paris, 1960. 515 pp. Illus. NF. 148.

Atlas de Paléogéographie. Henri and Geneviève Termier. Masson, Paris, 1960. 99 pp. Illus. NF. 16.

The indefatigable team of Henri and Geneviève Termier continues to turn out an almost incredible amount of synthesis and compilation in the field of historical geology, taken very broadly. Three volumes of their *Traité de Géologie* have appeared, and others are in preparation. In the meantime they have presented some of the same material in other forms, or for different audiences, and are making related but distinct compilations in several fields. Their *Paléontologie Stratigraphique* is a major work in itself. The purpose, translated from their own words, is "to give the reader an exact picture of the vegetable and animal population of our planet in each of the geological periods that have elapsed since about 500 million years ago."

For each geological period or (in the Cenozoic) epoch a table of its subdivisions is given, usually at the level of stages in European terminology, and its life is summarized in words. The floras and faunas, first marine and then terrestrial as appropriate for the given period, are then reviewed succinctly, telegraphically as the authors say, but with much detail, usually to families and often to genera. Each chapter ends with tables of paleontological zones, presented in terms of different groups of organisms and for various parts of the world. As each major group appears in geological sequence, it is taxonomically characterized and summary classifications are sometimes, but not consistently, given. The illustration is extremely rich, with more than 3425 different figures, mostly line cuts of individual fossils redrawn from innumerable primary and secondary sources. Little attention is given to detailed anatomy, and comparatively few figures have anatomical labels.

A book should be judged, first of all, in the light of its authors' intentions. Some errors of fact and many disputable points of opinion are quite unavoidable in an undertaking so very complex, but it can be said that the authors have carried out their own intention well. The extent to which the result corresponds with a felt need depends on each prospective reader. For some the book may seem to fall between two stools: neither a fully ade-