

is rather inelegant, but, since statistics is often thought of as a dull subject, this may not be a material defect.

A very large share of the subject matter is cast in terms of the business world. Intrafirm economics, consumer economics, the interpretation of industrial statistics, and the like, all occur much more commonly than examples and principles related to scientific applications of statistics in the laboratory or elsewhere.

Very little emphasis is placed on statistical inference as it is usually developed in standard elementary texts, such as the one by Dixon and Massey. On the other hand, much thought is given to the interpretive aspects of what is often called "descriptive statistics."

Following the main part of the text (304 pages), there are 23 pages, comprising nine appendices. Their titles pretty well show what is *not* in the book but appears almost "by title" only in the appendices. Their titles are "Coefficient of correlation"; "The standard deviation"; "Least squares method"; "Geometric indices and the time reversal test"; "Factorial designs"; "Latin squares"; "Standard error of the difference"; "Analysis of variance"; "Chi-square test".

Although the book is remarkably nontechnical, it is not unstatistical; indeed, it seems that the author knows a great deal more about statistics than he has written here, for misconceptions and implicit errors are rare.

LINCOLN E. MOSES

*Department of Statistics,
Stanford University*

Encyclopedic Treatment

Histoire Générale des Sciences. vol. 3, *La science contemporaine.* part 1, *Le XIX^e Siècle.* René Taton, Ed. Presses Universitaires de France, Paris, 1961. vii + 775 pp. Illus. Plates.

This skillfully and devotedly edited series is the first attempt on anything like an encyclopedic scale to bring the entire history of science into the compass of a reasonably comprehensive venture. Here, in the next-to-last volume of the series, the editor wisely allows his contributors to interpret the limits of its period, the 19th century, with a latitude suited to their subjects. The subtitle, *La science contemporaine*, sug-

gests that the reader can scarcely hope to find, either in chronology or in some other principle of organization, elements of unity like those that gave form to the science of antiquity or of the early modern period which stretches for a century or so on either side of Newton.

René Taton suggests that this office might be filled, not by themes within the sciences, but by the circumstances and consequences of scientific work—the patronage of governments, the new connection with educational institutions, the social and political role of science. So it may, though scholarship is not yet able to bring it off. We are given essays—excellent ones in the case of the editor himself and his colleague at the *Ecole des Hautes Etudes*, Charles Morazé—on the historical environment that the 19th century provided for science, not only in western Europe but also in the cultures of Russia and of certain Asian and African countries. Apart from these occasional chapters, however, it cannot be said that the accounts of the sciences themselves, which necessarily form the substance of the volume, profit from the principle that the editor has laid down. These chapters have been written, for the most part, by professional scientists whose avocation is the recent past of their respective subjects.

One is grateful for the interest and devotion of the authors, but on the whole they do tend to write summaries rather than histories of their subjects. The mode of history is narrative, a story of how one event led to another, not just a précis of what the event was followed by an identification of the next one. That mild objection stated—and the historians do not exist who could better carry out the task—one must hasten to welcome this volume for all its many merits. If any topics are to be singled out for special appreciation, they will be Madame Tonnelat's account of theories of light, Maurice Daumas and Jean Jacques's description of chemical developments from the time of Dalton to the foundations of structural chemistry, and Pierre Costabel's discussion of the crisis of classical mechanics. If undue weakness is felt anywhere, it will be in the chapters on biology. The illustrations maintain the high standard that the preceding volumes have led us to expect, and the bibliography will permit a student to search further on any conceivable topic of the immense pano-

rama of 19th-century science, which Taton and his colleagues have labored mightily, and with greater success than anyone heretofore, to spread generously before us.

CHARLES C. GILLISPIE

*Department of History,
Princeton University*

Natural Reservoir

Soil Animals. D. Keith McE. Kevan. Philosophical Library, New York, 1962. xv + 237 pp. Illus. Plates. \$10.

Kevan has filled a gap in the biological literature with this comprehensive survey of soil fauna. No book in English is comparable in scope, and no book with which I am familiar provides so readable and well-balanced an introduction to the field.

After a brief survey of the development of soil biology, the characteristics of soil, and some special terminology, two chapters are devoted to the groups of animals that inhabit soils. Representative types are illustrated, and the biology of the various groups and of some familiar species is described. In the next chapter, the discussion of adaptations to life in the soil leads to a classification of soil fauna on ecological grounds. An important section reviews the techniques that have been used for collecting soil animals and points up the need for adapting methods to the particular group or habitat under study. The remainder of the book deals with the effects of physical and biological factors and human activities on the soil fauna, and the influence of the latter on soil structure and fertility.

The book is well printed and illustrated. At appropriate points and with minimum disturbance to chapter continuity, the author has managed to incorporate much specific information from the papers listed in the 14-page bibliography. I noted only a few errors during my first reading, but the figure of a *Tomocerus* (on page 59), which is labeled "*Entomobrya*," suggests that there may be other errors in groups with which I am less familiar. The inclusion of references to several recent monographs on particular groups (for example, Paclt's *Biologie der primär flügellosen Insekten*) might have aided readers whose interests are primarily zoological.

The book is directed mainly to the