ments, and the commercial instruments presently available. These chapters are well written and informative. In them, and also in the remainder of the book, the author is at pains to introduce numerical examples, presumably to be worked through by undergraduate students. Undue emphasis does, however, seem to be placed on certain aspects; for example there is a fairly detailed discussion of the ion optics of Aston's original mass spectroscope, a system of little current interest. Comparatively little is said, however, about such important geometries as the Mattauch-Herzog or the Nier-Johnson geometries.

In any book of this kind the author's particular interests are bound to show through clearly, and one is able to see Kiser's great interest in the fundamentals of the ionization process. This is apparent in chapter 6 which discusses the various types of ions in mass spectra, in chapter 8 which is entirely concerned with the energetics of electron-impact processes, in parts of chapter 10, and in the inclusion of two appendices that list atomic and molecular ionization potentials. I believe that it would have been better for the author to concentrate on particular parts of the subject and to treat them fully rather than to attempt complete coverage of a field that is now so highly diversified in its applications. Inevitably, when the latter course is adopted, certain subjects must be dealt with in an extremely brief manner. As an example, only half a page is devoted to rearrangement ions, surely among the most valuable of all ions in mass spectra for elucidating fragmentation mechanisms.

The chapter on analytical applications, too, has a great deal to say about the quantative analysis of mixtures, going deeply into the matrices involved, but has practically nothing to say on the much more widely practised use of the mass spectrometer for the qualitative identification of unknown compounds; the current field of data handling exemplified by the work of Biemann and others in "element mapping" is ignored. The book is not particularly up-to-date in its treatment of various subjects. To take one example, the section on ionization gives no details of the great advances made by Beckey in the last few years, neither does it discuss the great importance of this method as a means of producing ions without excess vibrational energy. It is hard to see the book competing with Djerassi's book in the field of organic chemistry and, on the physical side, small books such as Duckworth's would seem to be more concise and valuable summaries, while Field and Franklin's classic will still stand supreme in the detailed discussion of ionization phenomena.

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Chiroptera

The Bats of West Africa. D. R. Rosevear. British Museum (Natural History), London, 1965. xviii + 418 pp. Illus. £7 15s.

The Bats of West Africa is the first book to bring together available information on the 9 families, 31 genera, and 97 species of bats of this interesting area. The peculiar geographical region, which is from 20°N (approximately the southern edge of the Sahara) south to a line that runs east across Cameroon and the Central African Republic to the extreme western Sudan, is designed to encompass the four former British tropical West African colonies (Gambia, Sierra Leone, Ghana, and Nigeria); owing to its semipopular approach, the book seems written primarily for naturalists in this area. A general introduction precedes separate accounts (including keys and including much original taxonomic work) of the various families, genera, and species of the region. These are followed by an eight-page bibliography, a list of journals (with abbreviations), a glossary, notes on the preservation of specimens and on vegetation zones in west Africa, an extremely useful gazetteer, an index, and a fold-out map that shows both localities and vegetation zones. Readers should be warned that many statements in the general introduction do not apply to bats outside of Africa and that certain methods suggested for the preparation of specimens are somewhat at variance with current American practices. The book is illustrated with two colored plates and 103 line cuts, chiefly illustrating details of morphology of different kinds of bats. These figures are mostly of excellent quality, and they should be extremely useful to the novice and the professional.

My criticisms are relatively minor. The distributions of species are given mostly in very general terms, with few actual collecting localities listed. These would have been useful documentation of the distributions. Possibly because of the book's semipopular appeal, what seems to be an inordinate amount of space is devoted to color in spite of what Rosevear admits is its great individual variation and resultant low taxonomic utility. Local native common names for species are not given because of their limited utility, yet an almost completely artificial set of English "common" names for all taxonomic levels, including subspecies, has been constructed. The book is nevertheless highly recommended for all students of African bats. Its price, however, seems rather high.

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Physical Chemistry

Chemical Physics of Semiconductors. J. P. Suchet. Enlarged and revised translation of the French edition (Paris, 1962) by E. Heasell. Van Nostrand, Princeton, N.J., 1965. xii + 197 pp. Illus. $8.50.

The author points our clearly that the phenomena of semiconduction are not restricted to a few materials but are possessed by several hundred compounds. Moreover, the materials need not be crystalline to exhibit the required properties.

A surprising fact of the state-of-the-art of semiconductor electronics is that most of the economic importance centers on two elements, silicon and germanium. An exciting possibility is that other materials can be found with outstanding parameters which would be of value in the performance of electronic functions. The III-V compounds, especially GaAs, show promise.

The most outstanding chapter in the book is chapter 7 "The crystallochemical model." The reason is twofold. This chapter contains more of the author's original work than the others, and in it he tries to answer the question of how one tries to predict the electrical properties of semiconductors on the basis of structure and bonding. A good discussion of his concept of the "Ionocovalent bond" is given, and an "ionicity" parameter is defined. Some remarkable correla-