migratory grasshoppers (locusts), and the importance of this fundamental work to the agriculture of numerous developing countries. In 1956 the Centre published H. B. Johnston's *Annotated Catalogue of African Grasshoppers*, a tremendously valuable compilation of the literature through 1953. Now it has followed with this guide to the identification of the genera, and it is stated that the first of several supplements to the *Catalogue* is in preparation. Thus, during a period of about 10 years, the tools to aid in the identification of African grasshoppers and in locating the literature on each kind have been dramatically improved.

The author of this new book, V. M. Dirsh, chief systematist of the Centre, has produced identification keys to the 472 genera. For each genus, there is a concise modern description and a list of the species considered valid for Africa; for each species, the African countries from which it is recorded are listed. There is a total of 1882 species. As the title implies, the emphasis is on genera—there are no keys to species. However, numerous genera require revision before anyone could offer practical species keys. The illustrations, made by four different artists, are an outstanding feature, representing all but 11 of the genera. Contributing to the clarity of the book is the well-illustrated introductory section on terminology. This book is a landmark in acridology, and its author and sponsoring organization deserve great credit.

Potential American buyers may be startled to learn that the listed price ($37.50) is considerably higher in dollars than in English currency; the equivalent of £10 pounds is $28.

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Low-Temperature Geochemistry

Geochemistry of Sediments: A Brief Survey. Egon T. Degens. Prentice-Hall, Englewood Cliffs, N.J., 1965. x + 342 pp. Illus. $13.25.

Geochemistry of Sediments: A Brief Survey is, according to its author, "an introduction for students of geology into the fundamentals of low-temperature geochemistry. Its principal objective is to demonstrate how geochemical data can supplement geological field work or assist in petrographic and paleontologic research." With these stated purposes Degens has set out to fill a gap in the spectrum of existing geological textbooks. By and large he achieves these purposes very well. The range of content of the book is general, and it is written in such a way that one studying in a relatively unrelated scientific field can read and comprehend it with little difficulty. The topics covered are of basic interest and are not overly specific. This is not to say that the contents are superficial. It is to say that Degens has written successfully for his intended reader.

The systematically organized contents proceed from an introductory chapter to a discussion in chapter 2 of the weathering residues of igneous and metamorphic minerals. Chapter 3 deals with minerals of low temperature and aqueous formation, with sections on silicates, oxides and hydroxides, carbonates, phosphates, sulfides and sulfates, and halides. Chapter 4 relates to mobile phases and contains an adequate discussion of the role of water and a somewhat abbreviated discussion of the role of gases and petroleum. Chapter 5, "Organic chemistry," treats of concepts of biogeochemical studies, classification of organic substances, distribution of carbonate isotopes and organic minerals, and geochemical data and concepts on the origin of organic matter, the latter including primordial "organic" matter, petroleum, and coal. Chapters 6 and 7 consist of a brief coverage of miscellaneous topics and a summary and outlook.

The format of the book is pleasing, the text well written, and the illustrations clear and in sufficient quantity to elucidate the various topics covered. Each chapter is followed by an ample list of selected references that appear to contain reasonably current citations where they are pertinent.

For the nonspecialist who wishes an entree into the field, this book will provide good background. For the researcher who has a somewhat more sophisticated knowledge of the literature and current research in this area, it will be less useful. However, the latter should remember that Degens did not set out to write an advanced treatise, but to introduce the nongeochemist to certain aspects of the field. To this end the book fulfills a need, and *Geochemistry of Sediments* is recommended as an addition to the library of the nonspecialist.

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Paleobiogeography

The Geography of Evolution: Collected Essays. George Gaylord Simpson. Chilton, Philadelphia, 1965. xiv + 249 pp. Illus. $5.50.

It is well known that geography was midwife to evolution, for the facts that led Darwin to reject special creation of species were all geographical: representative species in different areas of a continent; related fossil and surviving species in the same continent; the South American character of Galápagos finches; and the geographical apartness of those islands. Less well known to those who are not specialists in paleontology and biogeography is the astonishingly high degree of precision which these fields of study have now reached, largely owing to George Gaylord Simpson's work. In this admirable collection of essays, Simpson shows how use can be made of actual measurements of taxonomic diversity between continental faunas, time-records of major groups of mammals, measurements of amounts of faunal interchange between continents at different periods, and indexes of faunal resemblance, also at different periods.

An illuminating analysis of possible paths of migration into corridors (which allow balanced faunas to pass in either direction), filter-bridges (which allow filtered and therefore unbalanced portions of faunas to pass), and "sweepstake-routes" by "island hopping" (on the probability of which the odds of passage can be calculated), not only explains the differences between basic continental faunal types, but also makes paleobiogeography an objective science which is no longer a field for speculative subjective preferences. It also enables biology to repay its debt to geography because it provides the best evidence available on the permanence of ocean barriers represented by their impassability. This is in accordance with the