measurement of association between species and the description of a fauna. The final chapter, of especial value to this reviewer, is on productivity estimation and construction of an energy budget. Each chapter is heavily documented, with its own bibliography. A single comprehensive bibliography would have been of more value, in my opinion.

Where feasible, Southwood has drawn data from insect population studies, but studies on other invertebrates of aquatic and terrestrial habitats are included. The emphasis is on field techniques, but of necessity some laboratory experiments are cited. Throughout the text the ecological methodology is based on the biotic aspects of insect populations and relatively little is said concerning mensuration of physical factors or the important interplay between physical and biotic phenomena. This is a perfectly legitimate point of departure, but it would have been helpful to have it indicated in the book's title.

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Text in Plasma Physics

Introduction to Electrical Discharges in Gases. SANBORN C. BROWN. Wiley, New York, 1966. 296 pp., illus. $9.95.

The dramatic growth of plasma research and of the physics of ionized gases in recent years has generated new interest in the study of electrical discharges. The need for modernized textbooks covering this subject is therefore apparent. In this volume Sanborn C. Brown of M.I.T. has managed at least partially to fill this need. Being a direct descendant of Brown's earlier *Basic Data of Plasma Physics*, this new version is still classical, in the sense that it emphasizes the fundamental ingredients such as elastic and inelastic collisions, mobility, diffusion, ionization, and recombination coefficients as well as surface effects and breakdown criteria. This material is treated well and systematically, and purposely on a fairly elementary level. The description of actual types of discharges is rather fragmentary, however, and at times disappointingly sketchy. The author's own interest in high-frequency phenomena is apparent throughout the volume, and in view of their general importance this may be an asset rather than a disadvantage. Contact with several modern developments is established by inclusion of the effects of magnetic fields in the treatment of diffusion, ionization, and breakdown, as well as by brief remarks about hollow-cathode arcs and electrically driven shocks. Unfortunately, these remarks are so sketchy that they may be misleading. In fact, the discriminating reader may find fault with several passages in this book which are not altogether satisfying (such as an improper derivation of the Debye length in the discussion of ambipolar diffusion). Some readers may also be disappointed not to find discussions of recent advances in our understanding of striations, fluctuations, and instabilities, or of new developments in discharge types, as for instance brush-cathode glows, reflex discharges in magnetic fields, or high-power pulsed discharges such as theta pinches. All such material is to be considered beyond the scope of this text and is left to the student for supplemental reading in the original. It should be noted that the literature cited barely extends into 1963. The author's intentions are best summarized by his own opening statement in the preface: "This book is written as a text for a one-semester introductory course in gas discharge physics at the advanced undergraduate or early graduate level. It makes no attempt to be complete but rather attempts to survey the areas of physics involved and to illustrate the types of problems and techniques used in this branch of physics." The author certainly succeeds in keeping the book short by restricting his material mostly to the essentials of discharge physics.

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Permian Palynology

The Systematics and Distribution of Permian Miospores. GEORGE F. HART. Witwatersrand University Press, Johannesburg, South Africa, 1965. 260 pp., illus. $12.05.

The purpose of this book is to bring order out of nomenclatural chaos by presenting a uniform classification for Permian miospores. The book contains an introduction, a discussion of fundamentals of Permian palynology, 129 pages devoted to systematics, 6 pages concerned with distribution of Permian miospores, a bibliography of 199 entries, an index, and more than 400 line drawings, charts, and tables. Whether or not the author has resolved many of the nomenclatural problems is open to question. One hundred thirty-five new combinations are proposed, two new genera and two new species are described, and two genera are emended.

The classification used by Hart utilizes supergeneric categories advocated by Potonié, such as ante-turma, turma, sub-turma, and infra-turma. The major subdivisions are ante-turma Pollenites for pollen grains and ante-turma Sporites for spores.

One hundred seven of the 199 publications listed in the bibliography are Russian. A number of genera and species are described in these publications, and, to my knowledge, the illustrations in the publications are chiefly drawings. Drawings may or may not convey the proper concept of a taxon, although when used in conjunction with photomicrographs, they can serve a useful purpose, that of conveying the author's interpretation. Hart, in his acknowledgments, writes, "I have studied and photographed holotype and paratype material of Soviet permian species and examined the bulk of Soviet permian palynological literature." Thus he presumably could have illustrated the taxa proposed by Russian palynologists by means of photomicrographs. Not a single photomicrograph appears in the entire book, however. There are 410 drawings and diagrams representing pollen grains and spores. More than 30 of these drawings are duplicates serving no useful purpose. For example, figure 274 represents *Laricoidites*, whereas figure 275 is the same drawing turned upside down and represents *L. levis*. A photomicrograph of the holotype, *L. levis*, would have been of much greater value, since the original description of the species by Luber and Waltz in 1941 was illustrated only by means of a drawing.

Although some papers appearing in 1963 are cited in the bibliography, the significant contribution by Klaus, published in May 1963, is missing. Obviously Klaus's 130-page paper was not available to Hart. This is most unfortunate, for some important differences between the two authors remain unresolved. These include, for example, the acceptance of *Platysaccus*, *Striatites*, and *Strotersporites* by Klaus, with the last two genera emended, and the re-