reading, the treatment is systematic and the approach often possesses a touch of novelty.

Chapter 3 gives a good account of the further theory involved in discussing collisions of electrons with hydrogen atoms, the basic problem. This account precedes a discussion of applications to elastic scattering and to excitation (chapters 4 and 5). Ionization is specifically excluded. Chapter 6 extends the analysis to collisions with helium ions.

After a further specialized chapter that deals with collisions with helium atoms, an important case because of the wide range of experimental tests available, the analysis is generalized in chapter 8 to apply to collisions with any atom or ion. This is exemplified in chapter 9 for sodium atoms, which are of special interest because of the very large contribution to the polarizability which comes from the 3p orbitals. Finally, in chapter 9 a short account is given of excitation of multiply charged ions, a subject of much interest in high temperature plasmas, whether in terrestrial laboratories or in the solar corona.

There is much of interest in this book for anyone who is concerned with theoretical atomic physics, but the fact that rather forbidding analysis is carried through in detail makes the volume of special use to workers in the specialized field covered. There is little attempt made to bring out the physics involved, but this is neither expected nor required of all review monographs. The translation reads well, and the format is pleasing.

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University Reviews in Biology

Reproduction in the Insects. K. G. Davey. Oliver and Boyd, London; Freeman, San Francisco, Calif., 1965. x + 96 pp. Illus. Paper, $2.50.

Recently man has shown concern about the population explosion and is beginning to make a concerted effort to control human reproduction. For a somewhat longer period he has tried to control insect populations, but only within the past few years has he attempted to do this in certain pest species by controlling their reproduction. A thorough knowledge of the fundamental aspects of reproduction is necessary before reproduction—insect or human—can be controlled. This book briefly summarizes various aspects of insect reproduction and by pointing out unsolved problems emphasizes the gaps in our knowledge of this important subject.

Despite its briefness, this volume covers the following subjects: the male reproductive system and spermatozoa; the female system and eggs; transfer of semen; ovulation; fertilization and oviposition; parthenogenesis; viviparity; polyembryony; alternation of generations; and hormones and reproduction. There are few errors. The ootheca of ovoviviparous cockroaches is first extruded and then retracted into a uterus or brood sac; it is not ". . . withdrawn into the ducts once more, . . ." (p. 60) or retained ". . . in the genital ducts" (p. 81).

Davey probably completed the book in 1963 (the preface is dated January 1964), yet approximately 34 percent of the 136 references were written in the 1960's and almost 40 percent in the 1950's. There is considerable interest in, and research being conducted on, hormones and reproduction—so much so that, despite the up-to-date nature of this review, some of the conclusions mentioned here have since had to be modified.

"This little book" is lucid and does what Davey hoped it would—acquaint the undergraduate and the graduate with the physiology of reproduction in insects.

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Rabbit Populations and Myxoma Virus

Myxomatosis. Frank Fenner and F. N. Ratcliffe. Cambridge University Press, New York, 1965. xliv + 348 pp. Illus. $15.

Evolution is the greatest unifying theory in biology, but in only a few situations has man been able to study the process taking place with sufficient speed, and with sufficiently large animals, to observe its course. From this point of view the interactions of rabbit populations and myxoma virus have provided a grand experiment "in nature." The stage for this experiment was beautifully set at its outset in 1950. On the one hand was an ancient population of cottontail rabbits (*Sylvilagus* sp.) in North and South America, in which host-parasite relations had reached a well-adapted equilibrium, a climax association, and on the other, populations of European rabbits (*Oryctolagus*) running into billions, without prior experience with myxoma, a virus not only new to them and to the continent of Australia, but also almost 100 percent lethal. The opportunity provided for study was fortunately recognized by Fenner and his associates from the start. Their book, therefore, gives a comprehensive and relatively complete picture of the way in which the rabbit has become genetically more resistant and the virus less virulent, with the mosquito vector acting as a principal agent of natural selection.

It is apparent from their book, *Myxomatosis*, that Fenner and Ratcliffe had a well-conceived strategy for studying their continental problem and ways of measuring the step-by-step changes that took place. If one is interested in details of virology as well as in field studies, the book may be read *in toto*. A general reader, however, may find that a few chapters, especially those dealing with the pox viruses, are not too germane to the central theme. But the book can be read selectively, for each chapter is followed by a clear, readable summary that is sufficient to maintain the thread of the account between the chapters of more general and often absorbing biological interest.

Myxomatosis should appeal to at least three classes of readers. It will certainly appeal to biologists who are interested in evolution, for they will discover that this is one of the few published accounts that shows how powerful a selective factor an infectious disease can be; another class is those who are interested in wildlife management, for they will find many lessons here exemplified.

The book's greatest appeal, however, should be to those who are interested