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crisis. A clear and present danger is elucidated, if and when the SST is flown over our land areas. The author renders valuable service by assuming the role of the "Rachel Carson" of the sonic boom in advance of actual overland flights. Watchdog environmentalists will find useful the accurate and clear description of the physics of sonic booms and their influence on life. This costly and perhaps unnecessary projectile will produce a sonic boom about 50 miles wide over the entire length of its flight path. Perhaps no form of environmental ruination is more obvious than the sonic boom, which the author vividly illustrates with examples ranging from ophthalmologic surgery to wilderness vacationing. This enlightening book is highly recommended to all biology teachers.

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## EVOLUTION

POPULATIONS, SPECIES, AND EVOLUTION, by Ernst Mayr. 1970. Harvard University Press, Cambridge, Mass. 468 pp. \$10.00.

This is an abridgment of Mayr's *Animal Species and Evolution* (1963). The chapter headings are the same as in the earlier work but the text is shortened from 812 to 468 pages and some of the chapters have been completely rewritten. New material and references have been added, to bring the abridgment up to date. Condensation has resulted from the omission of some of the documented evidence and peripheral details. Careful editing and rewriting preserves the unity, logic, and readability of the text. There are frequent page references to more extensive discussions in the 1963 work. As in the earlier work there is an excellent glossary. I regret that the word "animal" was not retained in the title of the abridgment: plants are only mentioned in passing a few times.

Mayr's argument is that natural selection occurs at the species level; and, since species are populations of individuals and the phenotype of the individual is the result of the synergic action of its entire complement of genes, it is the expression of this total genotype that is the target of selection, not the individual genes. He believes that geographic isolation must be present for evolution to occur. He develops these concepts through the first 18 chapters of the book. In the 19th chapter he considers the role of the species in transspecific evolution, and the final chapter is "Man as a Biological Species."

Reviewing *Animal Species and Evolution* in *American Biology Teacher* (January 1964), Clarence J. Goodnight said, "It is certainly one of the most nearly complete and best documented studies

on animal species and evolution ever published. Dr. Mayr has spent a lifetime studying the process of animal speciation and brings to this book all his accumulated wisdom. It will certainly stand as a biological landmark for years to come." I would like to suggest that it is Mayr who must be considered to be the "biological landmark." His clear thinking and lucid writing in all of his works have established him as one of the most important contributors to evolutionary thought at the beginning of the second century of Darwinism. This abridgment, intended for possible class use and for the general reader, will broaden the impact of one of his major works. I believe that the specialist will want to own both volumes.

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## GENERAL BIOLOGY

INVESTIGATIONS IN GENERAL BIOLOGY, by Kenneth B. Armitage. 1970. Academic Press, New York. 204 pp. \$4.95.

This manual brings to the college laboratory the inquiry approach of some recently developed courses in elementary and high school science. The author's intention is to have the student participate in open-ended investigations rather than verification in the laboratory of generalizations of a text. In the first laboratory session, the student observes paradise fish and fly larvae. He arranges his information in a qualitative description of behavioral events. Reports of the investigations are to be arranged in the form followed in scientific writing. Some students may be reminded of the first laboratory exercise in CHEM Study, where they were surprised to find how many observations can be made on a simple system, such as the candle.

Immediately after a very brief description of the use of the microscope, the exercises become more sophisticated. The student is introduced to the use and testing of models, the use of controls, and *in vitro* experimental analysis. Attention to functional organization of plants and animals is followed by very interesting exercises on plant and animal "unknowns." There is a strong emphasis on genetics and genetic problems. A good inorganic and biochemical background seems to be assumed.

After starting out to emphasize the processes of science—formulating and testing hypotheses, analyzing and interpreting data, accepting and rejecting hypotheses—the manual lapses into more orthodox laboratory procedures. Perhaps the title *Exercises* should have been reserved for the latter and *Investigations* for those that are open-ended. Literature surveys in the form