are included. The subject index is relatively poor. A weakness of the book is that the subject matter of many chapters is rather ill-defined, so that there are numerous scattered discussions, varying in scope, of the same material. The book thus leaves an impression of diffuseness. Because it does represent a modern treatment of much of what is known of echinoderm biology, it is too bad that its prime purpose, that is, providing quick reference to specific information, has been weakened by the redundancy in coverage and the inadequate indexing.

The price of the book will seriously limit its use. The main value of a specialized volume on the biology of a group of organisms is in its use by graduate and postdoctoral students working with such organisms and by teachers of comparative physiology and zoology. At $45 a copy, it is likely that many will feel the book is not worth the price.

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Concepts of Geometry

A New Look at Geometry. IRVING ADLER. John Day, New York, 1966. 414 pp., illus. $7.95.

In recent years there has been a considerable increase in the number of books on geometry for the high school mathematics teacher. They differ from those of a generation ago in seeking to emphasize the evolution of geometric thought and to portray the concept of geometric structure rather than to present a mass of geometrical detail. Adler is more conscious of the overall objective than are some other writers. The first half of his book presents Euclidean geometry from four points of view. Two of these are traditional: the axiomatic point of view as initiated by Euclid and made rigorous by Hilbert, and the coordinate point of view based on the work of Descartes. It is less common to present the Euclidean plane as a vector space over the reals, and it is distinctly uncommon in elementary literature to include Adler's fourth look at the plane, as an algebraic structure whose points and lines are defined as involutory subsets of an abstract group. The second half of the book is largely concerned with the development of the newer geometric structures. The chapters on non-Euclidean and on projective geometry are the longest in the book, each taking about 65 pages. In both of these chapters, as indeed throughout the book, there is considerable historical material. Moreover, one finds in this book more on Riemannian geometry, on topological spaces, and on measure spaces than in comparable books. There is greater concern with interrelations between the evolution of geometric thought and the growth of physics and philosophy. It is a good book for the bright high school student and his teacher to read and to ponder over, but its usefulness as a textbook in college classes is impaired by the lack of a sufficient number of nontrivial exercises.

The book is not altogether free of errors. A cardinal number is defined as a symbol (p. 48) and the Playfair axiom is stated incorrectly (p. 76). The proof on page 82 disregards the author's warnings against adding lengths of segments without considering order relations. The figure on page 272 exhibits an exceptional situation rather than the normal one called for by the text material. The present reviewer cannot accept the author's conclusion (p. 369) that "while the problem of identifying which of the three [classical] geometries is true of physical space has not yet been solved, it is in principle solvable." Geometry, as Poincaré wrote, is not true, it is advantageous.

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Island Biology

The Galápagos. Proceedings of the symposia of the Galápagos International Scientific Project, 1964. ROBERT I. BOWMAN, Ed. University of California Press, Berkeley, 1966. 336 pp., illus. $10.

Research on geographic areas of biological interest is often hindered by the dispersion of background information through a great variety of often lesser-known or older publications. The main purpose of the Galápagos International Scientific Project was, as the editor of its symposium proceedings writes, to "assess our scientific knowledge" of one such area. *The Galápagos* is therefore not a series of papers presenting new detailed information about the archipelago, nor is it a series of reviews of well-known biological groups. But it is a useful source book, and one which shows how unevenly previous research on the area has been carried out.

The volume contains 40 papers. The first seven are grouped under the heading General Scientific Studies. As is true throughout the volume, some of the papers in this section deal with topics pertaining directly to the Galápagos (for example, "Variation and adaptation in Galápagos plants," by G. L. Stebbins), while others deal with broader topics pertaining to problems of insular biology ("Insular adaptive radiation among birds," by D. Amadon) and a few with topics only incidentally related to the Islands ("Behavior studies of animals in their natural environment," by N. Tinbergen). This broad coverage will make *The Galápagos* useful not only to students of these particular islands but to anyone interested in insular biology.

The section entitled Specialized Scientific Studies has four subdivisions. The first subunit, The Physical Environment, will be useful to biologists generally. The next two subunits, Marine Biology and Terrestrial Biology, deal with the taxonomy, origin, distribution, physiology, and ecology of the flora and fauna. That many of these studies are at the level of alpha taxonomy indicates how limited previous work has been. Biogeographic relationships, not only between the Galápagos and the South American mainland but also between the Islands and Mexico, the West Indies, and other areas, are discussed. One interesting point brought out by several authors was that the degree of endemism on the Islands is less than was previously believed. For example, more detailed investigations of plant distribution on the opposite mainland have shown that a number of supposed endemic species are also to be found in the arid parts of Ecuador and Peru. In the chapter by D. Abbott, "Factors influencing the zoo-geographic affinities of Galápagos inshore marine fauna," there is a great deal of useful information concerning ocean currents that influence the Galápagos. Two chapters discuss Cocos Island, Costa Rica. The final subunit, Applied Science, is composed of three papers dealing with conservation and economic resources.

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