though Arabic numerals are used for other species, including nowadays the human.

The description of the later stages contains much useful information and many illustrations of organogenesis, although, as in the rest of the book, the reproduction of photographs is not of high quality. The least satisfactory portion of the book is that pertaining to the early stages, which admittedly have not yet been fully depicted in the human. Furthermore, quite a number of the criteria used for the early stages are far from clear, and it would scarcely be practicable for a reader to assign a new embryo to its appropriate stage. A clearer indication is needed throughout the book that a number of the topics mentioned are still imperfectly understood and that several of the designated stages are quite provisional.

Chapters on reproduction and laboratory procedures and a succinct account (by Houston) of the placenta are included. The treatment of the fetal period is limited to a series of tables and graphs relating to measurements.

This book summarizes much information that is of interest not only to primatologists per se but also to embryologists and teratologists in general. It is an interesting book despite its deficiencies, and a need exists for further monographs based on the staging of other vertebrate embryos.

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Eyes and the Like

Invertebrate Photoreceptors. A Comparative Analysis. JEROME J. WOLKEN. Academic Press, New York, 1971. xii, 180 pp., illus. $9.50.

Jerome Wolken has been studying photoreceptors for over ten years in an attempt to understand photobehavior through investigation of photoreceptor structure and pigment molecules. This book is a summary of his group's research and his current ideas, similar in content to his earlier book *Vision* (Thomas, 1966) but reorganized, updated, and improved. Wolken describes and illustrates photoreceptors of twice as many animals as were shown in the earlier book; more than half the figures are new. In this book he compares photoreceptor structure and pigment of animals from Protozoa to frogs in an effort to determine evolutionary trends.

He explores photoreceptor evolution by considering the protozoan eyespot-flagellum system as a primitive "retinal" cell. This interesting idea is developed in a chapter devoted to a detailed discussion of the "photomotion," morphology, and pigments of *Euglena gracilis*. The following chapters contain well-illustrated descriptions of the compound eyes of ten species of insects and Crustacea and of the refracting eyes of squid and cuttlefish. Wolken has expanded his discussion of the remarkable scanning eye of the copepod *Copilia* to include a second species and to show that a posterior lens attached to the open rhabdom functions to increase the light-collecting efficiency by a factor of five.

He reviews knowledge of structure and pigment of the vertebrate rod, to which he compares the invertebrate systems. This includes a detailed chapter on the visual pigments that contains many graphs of absorption spectra.

Wolken finds no smooth phylogenetic development from eyespot to ocellus to compound eye to refracting eye because of wide variation among species of the same phylum. To him, the two most important observations from these studies are that all photoreceptors employ closely packed membranes and that they all contain a common photopigment molecule—a carotenoid or its degraded derivative.

Some of the common features of photoreceptors suggested by Wolken are natural and interesting, but a few of his generalizations are forced and possibly misleading. He states that in all compound eyes adjacent rhabdomeres have perpendicular microtubules. This untenable conclusion is based on inconsistent use of the term "rhabdomere," which is defined as the photoreceptor of a retinular cell. He states that the fly ommatidium has seven rhabdomeres when it actually has eight, as has been shown by Trujillo-Cenóz, and that the bee and wasp have four, whereas they are known to have eight, one for each retinular cell. Also, he compares the amphibian rod outer segment to the fused rhabdom, and although there is a superficial resemblance there is an important functional difference: several retinular cells contribute photoreceptors to a fused rhabdom, whereas the rod outer segment is the photoreceptor of only a single retinular cell.

"Don't bite my finger, look where I am pointing" is a quotation from the late W. S. McCulloch found on the dedication page. Having looked, one may perhaps be permitted a nibble or two.

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Books Received

Adaptation and Learning in Automatic Systems. Ya. Z. Tsypkin. Translated from the Russian edition (Moscow, 1968) by Z. J. Nikolic. Academic Press, New York, 1971. xxii, 294 pp., illus. $16.50.

Advanced Experimental Techiques in Powder Metallurgy. Based on a symposium, Pittsburgh, May 1969. Joel S. Hirschhorn and Kempton H. Roll, Eds. Plenum, New York, 1970. viii, 254 pp. + plates. $15. Perspectives in Powder Metallurgy, vol. 5.

Akmak. An Early Archeological Assemblage from Onion Portage, Northwest Alaska. Douglas D. Anderson. Munksgaard, Copenhagen, 1970. 80 pp. + plates. Paper. Acta Arctica, fasc. 16.

Biochemical Evolution and the Origin of Life. Proceedings of a conference. E. Schoffeniels, Ed. North-Holland, Amsterdam, and Elsevier, New York, 1971. xiv, 398 pp., illus. + foldout tables. $23. Molecular Evolution, vol. 2.

Bioinorganic Chemistry. A symposium, Blacksburg, Va., June 1970. Raymond Dessy, John Dillard, and Larry Taylor. American Chemical Society, Washington, D.C., 1971. x, 436 pp., illus. $14. Advances in Chemistry Series, vol. 100.

Conservation. Now or Never. Nicholas Roosevelt. Dodd, Mead, New York, 1971. xii, 238 pp. Paper, $1.95. Apollo Editions reprint of the 1970 edition.

Development Anthropology. Glynn Cochrane. Oxford Univesity Press, New York, 1971. xii, 126 pp. $5.

Diseases of Fishes. Stanislas F. Sniezko and Herbert R. Axelrod, Eds. T.F.H., Jersey City, N.J., 1971. 202 pp., illus. Paper, $7.95.

Electromagnetic Fields and Life. A. S. Presman. Tanslated from the Russian edition (Moscow, 1968) by F. L. Sinclair. Frank A. Brown, Jr., Transl. Ed. Plenum, New York, 1970. xx, 336 pp., illus. $25.

Elements of Econometrics. Jan Kmenta. Macmillan, New York, 1971. xiv, 656 pp., illus. $14.95.

Federal Funding and National Priorities. An Analysis of Programs, Expenditures, and Research and Development. Leonard Lederman and Margaret Windus, with the assistance of Battelle Memorial Institute, Columbus Laboratories. Praeger, New York, 1971. xxiv, 216 pp., illus. $15.

Fluorocarbons and Their Derivatives.

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