of some future success in this area are enormous. The bone marrow presents an ever evolving, differentiating, ecological system in the adult animal, and the mere ability to obtain a dividing population of hemic stem cells during prolonged periods of in vitro culture will constitute a worthy biomedical contribution. The author has done a remarkable job in putting together, in a most readable fashion, a selective review of the methodology and data available on blood and bone marrow culture. In addition to evaluating the current status of various aspects of the problem, he has integrated where pertinent his personal experiences.

Woodliff covers general methods of culture and specifically the culture of normal and abnormal hemic cells and in an appendix describes selective culture media that have been used in blood and bone marrow cultures. The author rightly leaves the reader with the impression that many pitfalls are involved in evaluating the success of hemic cell culture. All possible references are not listed in the bibliography, but the coverage is sufficiently good for the bibliography to serve as a guide for further literature search.

The author may have overstressed one point in his evaluation of efforts to obtain continuously propagating cells from blood and bone marrow culture, namely, the possibility of contamination by other cell lines carried in the laboratory. This book is a welcome review of the current status of hemic cell culture.

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Mammalian Reproductive Processes

Patterns of Mammalian Reproduction. S. A. Asdell. Cornell University Press, Ithaca, N.Y., ed. 2, 1964. xiv + 670 pp. $9.75.

The first edition of this book, published in 1946, has served admirably as a standard reference for student and research worker in the field of mammalian reproduction. This new edition (1964) has been considerably expanded, both in text and in number of references. The most notable change effected has been the reorganization of material so that data on each species is presented in a separate description with the related references placed immediately following the description. This method of presentation is a vast improvement over that used in the first edition where, with the exception of data on representative species, information was compiled in tabular form and references were not provided.

Asdell, who has made a most commendable effort to secure information on the lesser known species, has tapped any source likely to yield data, including reports from field expeditions and naturalists. Although such data may not always be reliable, it is hoped, as stated in the preface, that it may serve as a contribution toward the eventual determination of the reproductive pattern of these species.

The descriptions of representative species in major taxonomic groups do not include more recent work in many instances. Such unfortunate omissions are especially noticeable in the discussion of the hormonal aspects of reproduction. With the renewed interest in the effects of various morphogenetic agents on the mammalian fetus, references to developmental modifications induced by hormones could have been more complete. In addition to the work cited with respect to the opossum and rat, that on the rabbit and primates should have been discussed.

It is somewhat surprising that the section on the human has not been more thoroughly revised and enlarged. Here especially, many of the old references should have been ferreted out and replaced by more current ones. The poorly written paragraph on gonadotrophins is likely to mislead the unsophisticated reader.

As the study of mammalian reproduction encompasses so many specialities today, it is inconceivable that any single volume could satisfy the demands of all those working in the field. However, as a reference, containing reports on the reproductive processes of more than 1000 species, this book should be of interest to student and specialist alike. It is therefore warmly recommended.

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Pinnipeds

Seals of the World. Judith E. King. British Museum (Natural History), London, 1964. viii + 154 pp. Illus. Paper, 11s.

The educational level of the museum-going British public, if one may judge by the paperback handbooks prepared for sale to them, must be approximately that of American upper-division college students. This latest zoological publication by the British Museum (Natural History) covers seals, sea lions, and walruses; the handbook is a worthy addition to a noble lineage. Here is almost everything anyone might want to know about pinnipeds, but, with the exception of the section on fossils (which is somewhat too condensed) all is told easily, albeit succinctly, and without unnecessary technicality. Even so, professional terms are used where necessary, and the pace of the narrative is not slowed by definitions available in a good dictionary.

There is very little that is not touched on, and with a note of authority that carries the ring of validity (Judith King is a professional pinnipedologist); one of the most useful features is the frequent mention of the gaps in our knowledge. A short introduction includes a summary of the classification of the three families in this group; somewhat more than half the book is then devoted to accounts of each of the 32 species living today. Each summary is a skillful weaving of all the main essentials which also includes many fascinating tidbits of the life history of the species. There is a distribution map for each species, with the limits of the subspecies, as named, clearly indicated in the text. This can be accomplished because subspecific names seemingly have been assigned to separate, discontinuous populations, without biological differences necessarily having been determined.

Many mysteries about this group await solution by those who study whole animals in their natural environment and at the same time use the newer devices of the experimental laboratory. The pinnipeds seem to be particularly beset with a great variety of internal parasites (nematodes, cestodes, trematodes, and acanthocephalans), or is it that the author's thoroughness in mentioning them and devoting an appendix to this subject makes