itself speaks well for the coordination between national projects. I expect that a similar effort at the completion of the International Biological Programme could result in a valuable document for ecology as a whole.

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Meteoritics

Meteorites and Their Origins. G. J. H. McCALL. Halsted (Wiley), New York, 1973. 352 pp., illus. $12.98.

McCall is an English geologist of wide experience who migrated to a position in the University of Western Australia around 1962. Shortly after his arrival he investigated the spectacular Wolf Creek crater, and he has authored a steady flow of publications on meteorites and tektites in general and on Western Australian occurrences in particular. His work has included both field and laboratory investigations of considerable scope and magnitude. In this book he has set out "to condense the vast spectrum of meteoritics into a single readable volume beyond the mere elementary statement, but still suitable for use as a general text for amateur scientists, university students and professional scientists." This is an admirable undertaking and one for which McCall is well qualified. It is disappointing to report that he has been only partially successful.

The book is certainly comprehensive, covering all aspects of meteoritics and including two chapters on those enigmatic objects the tektites and one on the significance of the recent explorations of the Moon and Mars. It has an excellent index and an extensive bibliography, including references as late as 1971. The book is well illustrated, with many good photographs of individual meteorites and of characteristic microstructures. The value of these illustrations is diminished, however, by the general absence of any indication of scale; for example, is the Mundrabilla meteorite (p. 60) as big as a barn or as big as a dog kennel? The text in many parts has a strong imprint of the author's own concepts and speculations, which are interesting and stimulating for research workers but could be misleading for students and lay persons. In the chapter "Carbonaceous chondrites—primitive or degraded?" McCall argues well for their nonprimitive nature, but omits any reference to the extensive researches of Anders and his co-workers which support the opposite conclusion. His skepticism regarding the origin of many possible meteorite impact structures is refreshing but iconoclastic, and the subject deserves a more balanced presentation. His enthusiasm for a cryptovolcanic origin for such structures extends also to tektites; he states (p. 298) that cryptovolcanism "remains the best of the terrestrial theories," a statement that will surely raise hackles among his scientific peers.

The book is marred by an excessive number of minor errors and misstatements, evidence of hasty and careless preparation. A few examples will suffice. The weight of the Agpalik meteorite is given as 15 tons on p. 57 and 20.1 tons on p. 58. Figure 5, ascribed to Mason, is not of my making. The Ensisheim meteorite (p. 19) fell in 1492, not 1462. The Henbury craters (p. 52) were first described by Alderman, not Spencer. Xenon (p. 232) is formed by the fission, not the fusion, of heavy radionuclides. The nonterrestrial water content of carbonaceous chondrites (p. 206) cannot be driven off completely at 180°C. Should there be a second edition, I hope the book will be given the critical review and editing expected of a responsible publisher such as John Wiley and Sons.

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Mammalogy

Functional Anatomy of Marine Mammals. Vol. 1. R. J. HARRISON, Ed. Academic Press, New York, 1972. xviii, 452 pp., illus. $21.

The study of marine mammals has become increasingly popular during the past few years, and as a result several volumes have been produced on various aspects of their biology. In the preface to the one under review, Harrison presents a necessarily cursory, but interesting, history of the study of the anatomy of marine mammals, particularly cetaceans, and places the book in perspective relative to the other existing volumes on marine mammals. He states that "the chapters will consist of reviews as well as contributions containing original work," and this indeed proves to be the case.

The chapters cover growth and development, phocid skulls, cetacean neuroanatomy, the pinniped ear and hearing, the pinniped eye, hind limb anatomy of otters and seals, and reproduction in some odontocetes. I was particularly pleased with the chapter on growth and development by M. M. Bryden, who is one of the leading authorities on this topic as it relates to marine mammals. Bryden reviews the literature by species and discusses not only overall growth patterns so far as they are known but also the growth of the various tissues and organs. Most important, however, is that Bryden has attempted to standardize the existing growth data so that growth curves can be compared interspecifically. P. J. Morgane and M. S. Jacobs present a considerable amount of new information on the neuroanatomy of *Tursiops truncatus.* I found their section on the blood supply to the brain most interesting, and I was impressed by their photographs of corrosion casts of the circulation to the brain and vertebral column of *Tursiops.* The chapter on the functional morphology of underwater hearing in seals by C. A. Repenning is also interesting, partly because it brings together the scattered literature on this subject, but more so because it attempts to correlate structure with function. Such attempts are made to varying degrees in most of the chapters and are a feature that I consider very important in a book such as this.

I found two aspects of this volume somewhat distressing. First, there appears to be a lack of consistency between chapters with regard to cetacean taxonomy. Cetacean systematics is constantly being revised, but I wish that, at least for large publications, everyone would agree on the same name for the same animal. Second, the lists of references omit the titles of most of the papers cited. I realize that this method saves space and therefore money, but I find it convenient to have titles available to speed up literature searches.

In summary, I found this book to be generally well done and I am looking forward to seeing future volumes in the series. I wish this one had been available when I was writing a series of lectures on marine mammals.

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