changes that occurred from the Early through the Middle Neolithic. It is apparent that there was an increase of warfare, the development of a more complex exchange system, and only a slight increase in social differentiation.

Tringham has made an especially important contribution for English-speaking archeologists, and the bibliography of her book will be very helpful to any professional archeologist or student trying to pursue further the study of these periods.

As Tringham indicates, much has been accomplished by archeologists in the area with which she deals. Their work forms a base for further research and will make it easier for other archeologists to pursue various studies. Some aspects of archeological research need to receive more emphasis than they have. Currently, most of the accepted hypotheses in European archeology are left untested, and, as in other parts of the world, more testing of models with archeological data is needed. We can observe changes in the archeological record of the European Neolithic, but we would also like to account for these changes in terms of culture process. So far attempts at understanding the operation of the cultural processes have not been very satisfactory. Some archeologists, both of the Old World and of the New World, are now concentrating more and more on these explanatory aspects. This common approach is bringing these archeologists closer together.

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Cetaceans

Mammals of the Sea. Biology and Medicine. SAM H. RIDGWAY, Ed. Thomas, Springfield, Ill., 1972. xiv, 812 pp., illus. $45.

It used to be that the cetologist who wanted to study live whales and dolphins had to spend many days at sea to obtain even brief glimpses of his subjects. With the proliferation of oceanaria in many parts of the world during the past two decades, the keeping of cetaceans in captivity has become commonplace. Members of 24 of the 34 genera of odontocetes have been kept in captivity, and two—the bottlenose dolphin (*Tursiops truncatus*) and the gray grampus (*Grampus griseus*)—have been bred and reared in captivity. Even among the generally larger baleen whales, members of two of the five genera have been kept in captivity, and a third has been successfully live-captured. The ready availability of captive cetaceans has resulted in a quantum jump in research on their physiology and behavior.

According to the introduction, the present volume was conceived as a much-needed text in the field of marine mammal medical care and husbandry. In execution, the editor considerably expanded its scope. Although all of the 12 contributors are recognized authorities, only 2 are veterinarians, and apparently only 2 others have done extensive research on live captive animals.

The first quarter of the book is devoted to mostly rather brief summaries of the "general biology" of each living species of cetacean, pinniped, and sirenian, and of the sea otter. This material should have been relegated to a separate volume, where it could have received more detailed, critical treatment with adequate literature citations. I think it was unwise to employ an innovative classification of the odontocetes that has not been generally accepted by taxonomists.

The remainder of the book is devoted to anatomy (three chapters), behavior and senses (two), evolution and cytogenetics (one), and parasites (one), ending with a 160-page chapter on physiology, medicine, and husbandry. In general these chapters are authoritative and well written, if not always quite up to date. Some topics receive only a terse general review of the literature, whereas others receive long, detailed treatment including many new data. The uneven coverage is somewhat remedied by an extensive list of references at the end of each chapter.

A more integrated, functional arrangement would have made this book more convenient as a reference. As it is, to obtain information on reproduction, for example, the reader must consult the separate chapters on anatomy, behavior, and physiology. This is facilitated by the exemplary 62-page index. The book has far too many misprints. Biologists, veterinarians, keepers, and trainers who work with marine mammals will find this book one of the most useful sources of information and references.

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Interactions in Solids

Magnetic Resonance in Metals. J. WINTER. Oxford University Press, New York, 1971. xvi, 206 pp., illus. $17.75. International Series of Monographs on Physics.

In 1946, experiments by Purcell and by Block showed that when samples of ordinary materials such as paraffin or water were placed in a steady magnetic field the resulting system could absorb power from the radio-frequency field by "flipping" the nuclear magnetic moments inside the sample from an orientation parallel to the magnetic field (low energy) to an antiparallel orientation (high energy). It was soon realized that the same phenomenon can be observed in a large variety of substances and that the electronic magnetic moments can be induced to do similar tricks. Moreover, it was recognized that nuclear and electronic magnetic moments also interact with each other and with their surroundings. When the surrounding is metallic, for example, the lattice periodicity and interaction between electrons and nuclei can leave a significant and characteristic signature on the shape and position of the resonance signal. A careful study of the resonance data can therefore provide information concerning the magnetic and structural properties of matter. However, because of the wide variety and complexity of interactions present in a solid, there usually exists a gap between the basic understanding of magnetic resonance principles and the actual extraction of useful information from the resonance data.

Magnetic Resonance in Metals attempts to fill such a gap. The book can be divided into two parts. The first part is devoted to the study of nuclear magnetic resonance in metals. After a short summary of basic principles, the author directly proceeds to describe the effects due to quadrupolar and hyperfine interactions between electrons and nuclei. Methods for calculating resonance lineshapes are outlined, and theoretical results are quoted and compared to experimental values. The effects of the same interactions under the condition where long-range order no longer exists, that is, in alloys and liquid metals, are then examined. This is followed by two descriptive and interesting chapters about nuclear resonance in alloys with transition elements and in superconductors. The second part of the book concerns itself with spin resonance of conduction electrons. Treating the problem