meiosis, the functioning of the nucleolus organizer, and the genetic activity of B chromosomes. The recent literature is emphasized in both reviews, with 260 and 181 references, out of 376 and 277 respectively, coming from the last 20 years.

As the editor notes, the prime justification for the preparation of any new edition is to provide an updating of information, and this volume certainly fulfills that objective. The reading is at times dependent on a solid background, but certainly this work will be a valuable reference work for students of corn.

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Pathways of Lipid Metabolism

Lipid Metabolism in Mammals. Fred Snyder, Ed. Plenum, New York, 1977. In two volumes. Vol. 1. xviii, 402 pp., illus. $42.50. Vol. 2. xviii, 390 pp., illus. $42.50. Monographs in Lipid Research.

The organization of these two volumes on the basis of organs and tissues effectively recognizes that knowledge of lipid metabolism in one tissue is no assurance of understanding the process in other tissues. The more common practice of discussing the events in liver and adipose tissue (which are excellently covered in volume 1 by Van Golde and Van den Bergh and by Shapiro, respectively) is not adequate to delineate the differences that will be encountered in many specialized tissues. For example, Grigor notes the marked anatomical differences in skin tissues and refers the reader to specialized sebaceous structures: the preputial gland, the harderian gland (reviewed in detail by Rock in a separate chapter), the meiobium gland, and, for further comparisons, the uropygial gland of birds.

Coverage of the metabolism of isoprenoids appears to be less extensive than that of the glycerolipids and sphingolipids, although some important features of isoprenoids are covered in the chapters on kidney (Tou and Huggins), eye (Broekhuyse and Daemen), and skin.

Although each of the 22 chapters contains sufficient detail and references to give a useful orientation to graduate students, postdoctoral trainees, and experienced investigators, many chapters might have been expanded twofold or more to cover the known material more fully. In many of these chapters, however, references to reviews of some special aspects of the subject are provided. For example, the brief discussion of mammary gland lipids by Dils notes three recent major reviews that effectively cover the literature up to 1974. Dils then comments on the newer developments, particularly with regard to hormonal control of milk fat synthesis, including references to publications in 1976. Most of the chapters have relatively few references to publications in 1975 and many have none for 1976. The brevity of the index is another indication that the work is designed not as a handbook on detailed differences among tissues, but as an organ-oriented source of references. For those whose indoctrination has stressed the commonalities in metabolism, these volumes give convincing evidence of the value of the organ-oriented approach. The editor has proved that the viewpoint can be productive, and this reviewer is convinced that it deserves further application.

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Calcium Ion Interactions

Calcium-Binding Proteins and Calcium Function. Proceedings of a symposium, Ithaca, N.Y., June 1977. R. H. WASSERMAN, R. A. CORRADINO, E. CARAFOLI, R. H. KRETSINGER, D. H. MACLENNAN, and F. L. SIEGEL, Eds. Elsevier/North-Holland, New York, 1977. xiv, 514 pp., illus. $45.

Since the recognition of the universal role of the calcium ion in biological systems, several books have appeared that deal with its interactions. The organization of the present book is novel, focusing on the tissues from which the calcium-binding proteins were isolated rather than on the topics of calcium function, as is usual. In each of the seven parts of the book there are longer introductory papers followed by shorter reports. There are 80 papers altogether. Rapid publication has been facilitated by offset printing from typescript.

The Ca^{2+}-dependent regulator or modulator protein of the nervous tissue is discussed in three papers (Wolff *et al.*, Vanaman *et al.*, and Childers *et al.*). This protein, which is found in all regions of the brain, activates brain cyclic nucleotide phosphodiesterase and adenylate cyclase, providing a Ca^{2+}-dependent regulation of cyclic nucleotide levels in response to stimulus. The bovine brain modulator protein possesses a remarkable similarity in its primary structure to the Ca^{2+}-binding subunit of rabbit skeletal muscle troponin (TNC). Moreover, the brain protein can substitute for TNC in a rabbit skeletal actomyosin system. This and other observations suggest that the "modulator protein may be a central regulator for the complete cycle of stimulus, response, and relaxation in animal cells" (Vanaman *et al.*, p. 115).

The sarcoplasmic reticulum (SR), the classical organelle for Ca^{2+} binding and function, is the subject of many papers. Racker proposes new mechanisms for Ca^{2+} transport driven by adenosine triphosphate (ATP) and for ATP formation during reversal of Ca^{2+} transport in SR. A model for the Ca^{2+} plus Mg^{2+} adenosine triphosphatase in the SR membrane is suggested by Shamoo and Abramson. According to the interesting work of Gillis and Gerday, the parvalbumins, which are soluble in the muscle water, can play the role of a shuttle mechanism for calcium between myofibrils and the SR.

The Ca^{2+}-binding proteins of muscle contain high- and low-affinity sites; these are characterized by Potter and collaborators in a review paper. From sequence studies, it has been possible to classify the Ca^{2+}-binding sites as being either Ca^{2+}-Mg^{2+} or Ca^{2+}-specific. The kinetics of fluorescent studies indicate that the conformational change induced by the Ca^{2+} binding to the Ca^{2+}-specific sites of TNC occurs very rapidly. These results are consistent with the idea that the Ca^{2+}-specific sites are the sites that regulate muscle contraction.

The relevance of vitamin D–dependent and vitamin K–dependent Ca^{2+}-binding proteins to health is apparent. The former are discussed by Wasserman and Feher and the latter by Suttie *et al.* and by Nelsestuen. The γ-carboxyglutamic-acid-containing proteins from bone are reported on by Price *et al.* and by Hauschka and Gallop; they may function as calcium buffers or may regulate the steady-state distribution of insoluble phases of calcium phosphate in bone.

Among the extracellular Ca^{2+}-binding proteins, proline-rich phosphoproteins from salivary acid are of special interest (Bennick *et al.*). It seems likely that these proteins inhibit precipitation of calcium phosphate in the oral cavity. Their high proline content may ensure a conformational stability "in an environment where there can be relatively large variations in *p*H and ionic strength."

The book includes two additional parts, one dealing with intracellular Ca^{2+}-binding proteins of various origins and the other with the underlying physical chemistry of calcium.

Experts in calcium biology will recog-

nize in this book data they have seen in previous literature. Students who enter the field will be discouraged by the high price of the book.

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Settlement Anthropology

Archeological Approaches to the Present. Models for Reconstructing the Past. JOHN E. YELLEN. Academic Press, New York, 1977. xvi, 260 pp., illus., + site plans. $24. Studies in Archeology.

This book consists of two parts, which will interest largely different audiences. The first half comprises a consideration of the logic and use of ethnographic analogy and ethnoarcheology, a presentation of the environment, subsistence economy, and seasonal round of the Bushmen in the Dobe area of southern Africa, an outline and discussion of models of hunter-gatherer band social and economic organization, and a discussion and selective analysis of the author's data on settlements, population, and activities among these Bushmen, both on an intra- and an intersite basis. All this is contained in some 136 heavily illustrated pages. Given the brevity of the treatment of these several topics, Yellen has done a remarkable job of giving us a readable, clear, and coherent text.

The specialist will want more information at many points in the first half of the book. Much of this is available in its second half, which comprises three appendixes giving an extensive and detailed presentation of the settlement data collected and used by the author and is augmented by a separate packet of large-scale site maps. To my knowledge, this is the first book to appear out of the recent concern with ethnoarcheology in which a substantial body of original data is presented, and it is likely that the presentation of raw data in such detail will ultimately prove to be its major contribution. Much of the discussion and many of the ideas and models presented in the first half of the book exist elsewhere in the archeological and ethnographic literature. In fact, as Yellen points out, some substantial parts of this book are taken directly from or are heavily based on earlier articles of which he is an author.

What is new in the first part of the book is the analysis of intra- and intersite spatial organization and variability. Some of this analysis is straightforwardly based on the data presented in the second half of the book. Much more analysis can be done, and Yellen explicitly intends the data he provides to be used for this purpose by others.

Some of the analysis strongly depends on the insights and expertise Yellen brings to the task from his experience and observations in the field. This part of the analysis is not easily replicated or extended by other workers. An example of basic importance is the definition and recognition of the kinds and significance of spatial clusters at different scales within settlements. Not only the significance but even the definition of these clusters might well have escaped someone without direct experience among the Bushmen, and, clearly as Yellen presents them, the decisions involved remain subjective. Yellen gives no explicit, objective procedures for defining the clusters even though he states several times that such boundaries as the LMS (limit of most scatter) can be determined by "fairly objective means." His insight is valuable, but a significant amount of subjective interpretation remains.

Nowhere is this problem more evident or more critical than in the case of the proposition that the probability of any particular maintenance activity's taking place at any particular site is purely a function of length of occupation, an idea that runs prominently through Yellen's analysis and discussion. If true this would fundamentally affect the interpretation not only of Yellen's Bushman data but of all archeological analyses of settlement systems. Yet Yellen, though he claims to have demonstrated this proposition, in fact has merely stated it repeatedly and emphatically. There are several reasons for not accepting Yellen's insistence on this point as a demonstration. One is that such a finding would be contrary to numerous ethnographic descriptions of seasonal and location-dependent activities. Another is that the sample available from Yellen's work with the Bushmen to test this and, unfortunately, all other propositions is very small, is heavily biased in that it is limited to the camps established by two brothers and their immediate families, and represents only seven months of the year covering only three of the five seasons recognized by the Bushmen. However, the most interesting hints at a different conclusion come from the very data Yellen presents. Only 45 percent of the variance in the number of "special activity areas" is explained by length of occupation. And there are suggestions of differential association of activities and site environment: of skin preparation and pegging activities six took place at camps in nut groves, one at a camp near salt pans, and none at camps in the "molapos," and two out of three quiver-making activities took place in molapo camps, one in a camp near salt pans, and none at any nut grove camp. None of this is the "proof" Yellen finds consistently lacking in archeological research, but it is ample to cast doubt on whether he has shown that the activities are "time-dependent only." This is an important point both methodologically and substantively for all workers in this field.

Finally, the book is marred by a number of typographical errors. Many are trivial, but some may be damaging to its value, particularly since its main contribution may well be the data it presents. It is easy to correct for the misspellings and reversals of illustrations (as in the case of maps 5 and 7), but how are we to handle such discrepancies as different numbers of days of occupation given for a site in different tables (as in the case of camp 37, mapped camp 14, in tables 3 and 4) or the fact that a point off the map for site 3 was used to define the ALS (absolute limit of scatter) for the site? Such inaccuracies can be significant, especially with the very small samples one has here. Probably no strong patterning will be obscured by small errors such as these, but it is a pity that they are there at all, suggesting that some caution is needed in the use of these unique and valuable data.

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Books Received

Abortion. Malcolm Potts, Peter Diggory, and John Peel. Cambridge University Press, New York, 1977. x, 576 pp., illus. Cloth, $37.50; paper, $10.50.

Architecture and Social Behavior. Psychological Studies of Social Density. Andrew Baum and Stuart Valins. Erlbaum, Hillsdale, N.J., 1977 (distributor, Halsted [Wiley], New York). xii, 112 pp., illus. $11.95. Complex Human Behavior.

The Audubon Society Book of Wild Animals. Les Line and Edward Ricciuti. Abrams, New York, 1977. 296 pp., illus. $37.50.

Behavioral Primatology. Advances in Research and Theory. Vol. 1. Allan M. Schrier, Ed. Erlbaum, Hillsdale, N.J., 1977 (distributor, Halsted [Wiley], New York). xiv, 194 pp., illus. $14.95.

Cannibals and Kings. The Origins of Cultures. Marvin Harris. Random, New York, 1977. xii, 242 pp. $10.

The Castrated Family. Harold M. Voth. Sheed Andrews and McMeel, Kansas City, 1977. xviii, 242 pp. $9.95.

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