scopic detail. H. Reeves discusses the cosmological significance of the abundances of elements and isotopes in an interstellar medium composed partially of primordial material.

The price of the book deserves comment, particularly in light of the informality of the printing (photoreproduced typescript replete with extraneous black marks) and the apparent lack of editorial attention (there are numerous misspellings and occasional grammatical errors). The benefits of summer schools like Les Houches could surely be spread more widely if sponsoring agencies were to underwrite more of the cost of publishing their proceedings.

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Mycology

The Fungal Spore. Form and Function. Papers from a symposium, Provo, Utah, 1974. DARRELL J. WEBER and WILFORD M. HESS, Eds. Wiley-Interscience, New York, 1976. xvi, 896 pp., illus. $30.

The last 15 years have seen an increasing interest in the study of cryptobiotic systems as models for studying developmental changes in microorganisms. Although the formation, maintenance, and breaking of the cryptobiotic state in dormant spore systems have been among the most intriguing of biological processes, the basic control mechanisms are not yet clearly understood.

Intensive conferences on the technology, biochemistry, and molecular biology of bacterial endospores have contributed to significant progress in understanding these endospores in the past 20 years, but fungal spores have until recently received insufficient attention. This book is an important contribution that highlights the nature of fungal spores, their unique structures, and the mechanisms that may be involved in breaking the dormant state. In addition, the book gives accounts of a variety of fungal spores. Detailed cytological descriptions of organelle changes and structures are included, as are interesting discussions of self-inhibitors, activation mechanisms, and problems related to the physiology of the dormant state and germination.

Although knowledge of the molecular basis of cryptobiosis in these eukaryotic spore systems is no more advanced than it is in bacteria, some important differences have been observed. Among matters deserving of further study are the stable messenger RNA that is carried to the spore state, the level of regulation, and the importance of structural elements (for example, polarity on mitochondria) as determinants in morphogenesis. The combination of detailed studies of structure and consideration of physiological and biochemical functions holds promise for future research on fungal spores. Of particular interest is the record in the book of the session in which the various participants discussed their perspective on future developments in work with this system.

Fungal spores are of interest to scientists concerned with developmental systems. This book includes relatively little information concerning the initiation of and the developmental changes involved in spore formation. One hopes that future conferences on fungal spores will deal with sporulation and will also compare fungi with other spore-forming organisms. Detailed analyses of fungal spore formation, maintenance of the dormant state, and germination are appropriate bases for comparative studies of sporology. This book, therefore, serves as an excellent introduction to the field.

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Growth Inhibitors

Chalones. JOHN C. HOUCK, Ed. North-Holland, Amsterdam, and Elsevier, New York, 1976. xiv, 510 pp., illus. $63.50.

Chalones are naturally occurring inhibitors of cell proliferation whose function is supposedly to control the growth of tissues. Chalones that act in the G_1 and G_2 phases of the cell cycle have been isolated. The purpose of this book is to present an up-to-date review of chalone research, which has been trying to get off the ground for some time but has had difficulties. The book reviews current knowledge of the principal chalones, such as those isolated from epidermis, fibroblasts, melanocytes, granulocytes, lymphocytes, bronchial epithelium, liver, smooth muscle, colon, and tumors. The purity that has been achieved in the isolation of chalones varies greatly, the preparations ranging from crude extracts, such as those obtained from smooth muscle, to very pure ones, such as the G_1 chalone of the epidermis isolated by Mark and his co-workers. This book also clearly attests that it is relatively easy to obtain an extract that is capable of inhibiting cell proliferation of the tissue or organ from which it was obtained, but that it is much more difficult to present convincing evidence that the control of cell proliferation is indeed the physiological role (or one of the physiological roles) of the substances isolated. Certainly this is one of the important areas for future investigation in the field, as most workers are well aware.

In the past, the chalone field has suffered from being somewhat insular. The book indicates that the situation is changing. Perhaps one of the best indications of this is the willingness of many of the authors to admit that stimulators (interestingly, usually referred to as antichalones) exist and that they may have a role in growth control. Discussions of the problems of isolating chalones and characterizing their role also seem more open-minded. The book does a special service by including several chapters on the technical problems that arise in the isolation and assay of chalones.

The "chalonists" still have some odd quirks. Many of them refer to M. Abercrombie as the chief proponent of the theory that growth control is effected by stimulators, and cite his paper on the wound hormone hypothesis (*Symp. Soc. Exp. Biol.* **11**, 235 [1957]) as the chief source of the theory. Even a not very careful reading of that paper will reveal that Abercrombie did not propose that growth was universally controlled by stimulators. He kept an open mind, suggesting inhibitors where the available data indicated them. Only in wound repair did he suggest that an endogenous stimulator, a wound hormone, might be operating, and in that situation it probably does.

In spite of some unevenness in the quality of writing, the book gives a good account of the status of the field.

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Books Received

The Aerospace Environment. Tom Beer. Wykeham, London, and Springer-Verlag, New York, 1976. xiv, 146 pp., illus. Paper, $8.60. The Wykeham Science Series.

Ancient Maya Pottery. Two Folios of Maya Pottery from the Site of Barton Ramie in British Honduras (Belize). Folio 1 by James C. Gifford. Folio 2 by James C. Gifford and Muriel Kirkpatrick. Color illustrations by Muriel Kirkpatrick. Available from Muriel Kirkpatrick, Laboratory of Anthropology, Temple University, Philadelphia. Folio 1, $6; folio 2, $6.50.

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