tastic reconstructions of what went on in these caves, emphasizing particularly sexual orgies and the initiation of frightened youths. Fat women and pregnant or copulating animals are read as fertility symbols, but primitive hunters know little of fertility, even today. Their job is to catch, not to breed, animals, and as every hunter knows an animal is most easily killed when preoccupied with sex or heavy with young. Fat women are no more fertile than skinny ones, just softer, warmer, and more conspicuously well-fed.

Another cliché of cave-art interpretation is that the masked or disguised men are all potent shamans or sorcerers. In primitive societies masks and disguises are almost universal and serve several purposes. Many of them, particularly among hunters, represent animals. They may symbolize an animal who once entered into a close relationship with an ancestor through some kind deed. Wholly without abstract symbolism they may represent a hunter disguised as an animal and mingling with an unsuspecting herd until close enough to strike.

Such disguises can be used in ceremonies, even little plays, which welcome the ancestral spirits home for the winter and bid them good-bye in the spring, or as disguises to conceal the identities of individuals in initiations or secret executions. If these figures represented deities such as the "owners" of animal species, one might expect them to be executed with as much care as the animal figures themselves, which is rarely the case.

In the Addaura cave etchings an actual scene is shown. Two men, apparently trussed up Commando-style, with heels held behind buttocks and tied by a cord running up their backs to their necks, flounder around with either erections or penis-sheaths in the midst of a circle of spectators whose arms are raised. What this window on the past means many have fancied but no one knows.

May I conclude by saying that looking at the plates of this book is an experience which cannot be conveyed by a subesthetic scientist in a review. Those interested will have to look at it themselves, or better yet visit the caves, with their hands behind their backs.

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Special Relativity. W. Rindler. Oliver and Boyd, Edinburgh; Interscience, New York, 1960. 196 pp. Illus. $2.25.

This textbook of the special theory of relativity covers all the essentials of the subject at a level that can be managed by a better-than-average undergraduate. Most of the results are presented in both four-dimensional and three-dimensional notation. Many of the exercises present real challenges and cannot be answered without some conceptual effort. Though the book appears to be conceived primarily for the type of instruction common in British universities, it might well be used in the United States, either as a basic text in a regular course on special relativity, or in an undergraduate honors course or seminar.

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The Bacteria. vol. 1, *Structure*. Irwin Clyde Gunsalus and R. Y. Stanier, Eds. Academic Press, New York, 1960. 513 pp. Illus. $13.

Not since Duclaux's *Traité de Microbiologie*, published more than half a century ago, has so comprehensive a treatise on a bacteriological subject been published as this series will represent. That five volumes are taken to do justice to the bacteria and that, even then, they deal almost exclusively with the true bacteria testifies to the amazing expansion of bacteriology, especially in the last 20 years.

Whereas the undertaking was heroic, the fulfillment, judging from the initial volume of the series, has to be regarded as short of outstanding. True, most of the important, recent, factual information on eubacterial anatomy is there; one can find no major fault with the adequacy of the volume in this regard. Yet, in spite of this and in spite of the major-league caliber of the contributors, this particular book is unlikely to become the microbiological classic to which it obviously aspires.

To those familiar with Topley and Wilson's masterly *Principles of Bacteriology and Immunology*, a treatise which in the coverage of its particular areas is comparable to *The Bacteria*, the contrast between the two major works is immediately evident. If I were allowed but one observation to distinguish the two, I would say that Topley and Wilson synthesize their field whereas Gunsalus and Stanier dissect theirs. Both stylistic approaches have their devotees, but the influences and longevity of the former are greater and infinitely more stimulating and gratifying.

This first volume of the proposed set is a tremendously uneven collection of reviews, divided according to the various anatomical parts of the bacterial cell. To be sure, the editors apologize in the preface for the disparities, but even they must have—or should have—grimaced painfully when sandwiching these chapters between the covers of one book. The conspicuous, avoidable defects of the last comparable multi-authored treatise on bacteriology—namely, Werkman and Wilson's *Bacterial Physiology*—should have forearmed Gunsalus and Stanier. This raises the question of the function of the editors in an enterprise of this nature, on the assumption that they are not mere figureheads.

In short, this volume, while doing a competent journeyman job, is singularly imperceptive of the larger and more meaningful opportunity which still cries for materialization. The void is all the more conspicuous now, but we shall be sustained by the belief that some microbiological scholar, who is also facile of expression, will, with perspective and insight, fuse the diverse elements of bacteriology into a profluent magnum opus that will be a focal landmark, as well as a milestone, in the field.

The individual chapters are as authoritative as one could wish; they were written by investigators most of whom are regarded by some others, and by themselves, as high priests of bacteriology. The articles are virtual ringers for the several reviews on the same topics which have appeared in various journals and symposium volumes during the past few years under the names of many of the very same authors. As mentioned above, this is essentially a collection of updated reviews. Beginning students and other novices will be greatly serviced by this convenient source of salient facts and by the extensive up-to-date bibliographies. The book, and its succeeding companion volumes, will be a godsend to every Ph.D. candidate in all branches of microbiology.

Disregarding the heterogeneity and disproportion of the treatments, most of

the chapters are, it seems to me, overly drawn out for a work of this nature. The reading is frequently tedious, minor items are belabored, the messages diffuse. It is a pity that the editors didn't impart more muscle to the book by insisting on a substantial condensation of several of the chapters. Lest the argument be raised that the breadth and scope of certain chapters are justification for prolixity and trivia, I refer to T. F. Anderson's superb exposition on bacterial viruses. This is a model of incisiveness and of the presentation of basic facts and general principles on a subject which is broader in scope and diversity than any of the other subjects in the book. I also thought that Lennox on immunological analysis and Weibull on locomotion have the elements of a suitable pedagogical complexion.

The individual author system, as employed here, reveals the need for wise editing to curtail repetitious and overlapping treatments and to insure inclusion of material borderline to the assigned topics; it would also mean exercising firm control over space apportionment and style, and ruthless pruning. I imagine this situation to be little different from a conductor's responsibility for forcing a balance among the musicians in his orchestra, even the virtuosos. Reiteration and overlapping are particularly noticeable and irksome in connection with information on the chemical composition and on the properties and functions of the bacterial cell wall. Also, since the protoplast and the cell wall are intimately bound up with each other in the living cell, the artificial separation of the treatments of the two is not only conducive to redundancy, but is unrealistic and unnatural.

On the other side of the ledger, if one is willing to condone the exclusion of the remarkable body of knowledge which exists on yeast cytology and of a consideration of actinomycetes, myxobacteria, and perhaps other investigations on less studied bacteria, one will find in the book practically all of the significant, basic information available at the deadline for receipt of manuscripts. There can be no doubt about the timeliness and the value of this volume for anyone seeking intimacy with bacteria.

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Bionomics, Systematics, and Phylogeny of Lytta, a Genus of Blister Beetles (Coleoptera, Meloidae). Richard B. Selander. University of Illinois Press, Urbana, 1960. vi + 295 pp. Illus. $5.50.

The main portion of this paper is a monograph of the North American species of *Lytta*. The 69 species recognized are classified in four subgenera, 13 species groups, and 11 subgroups; each category is defined and characterized, often partly on the basis of bionomic information. There is an artificial key to species; there is also another set (more difficult for the beginner to use) designed to show relationships, with separate keys for each subgenus, species group, and subgroup.

The introductory portion contains a summary of the bionomics of the genus on a world basis, a redefinition of the genus, and a reclassification which places *Poreospasta* and *Pomphopoea*, previously recognized as separate Nearctic genera, as subgenera, and which adds five new subgenera, two of which are North American. The classification that results is certainly more satisfactory than its predecessors and is the first that really interrelates the world fauna.

For the treatment of the North American species, Richard Selander has examined a large portion of the specimens in collections and has carried out extensive field work himself, particularly in Mexico. Some of the species of *Lytta* are not easy to obtain for study. They may be very abundant in a limited area at one time and then not be seen again for many years. Some species have been collected only once, even large and strikingly marked species that would attract the attention of any entomologist. The extreme fluctuations in population are puzzling, but no more so than the sources of the enormous numbers of individuals of large species sometimes produced. The larvae of all species for which the life history is known live in the nests of solitary bees, feeding on stored pollen and probably on immature bees. At times a greater mass of *Lytta* protoplasm seems to have been produced than can be accounted for by the numbers of bees in the area.

At the species level the classification is a conservative one. Geographic variation, involving both anatomic and color pattern characteristics, has been analyzed in detail for polymorphic species. The author has chosen to use vernacular names for geographic races that are very distinct, as suggested by Wilson and Brown. Names that we might expect to be retained as Latinized subspecific names have all been synonymized, including two previously proposed by Selander himself. The classification benefits; it is simple and easily followed.

The diagnostic features of each species have been illustrated adequately, and the ranges have been indicated by small maps in the text. I am happy to see individual localities shown; this is a particularly valuable feature because one often encounters difficulty in identifying some of the older localities in a list of records. A considerable amount of geographic detective work must have been necessary to produce these maps, particularly those for Mexico and California, two regions where many collectors have used almost meaningless names for localities all too frequently. The text ends with a detailed index, a rare item in a systematic paper.

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The Luapula Peoples of Northern Rhodesia. Custom and history in tribal politics. Ian Cunnison. Manchester University Press, Manchester; Humanities Press, New York, 1960. xiv + 258 pp. Illus. $6.50.

The African peoples described in this book live on either side of the lower Luapula River, the boundary between northeastern Rhodesia and the Congo. They are principally fishermen, for the environs of the river are fertile swamps. The peoples are of particular interest, because, although on the Rhodesian side, they comprise a single society under a paramount chief, they are culturally heterogeneous and are of several tribal origins. This book is a study of political and social integration occurring in a situation of persistent cultural diversity. Cunnison found himself compelled to begin his analysis from the point of view of Luapula histories. These people have a marked interest in their oral traditions; although Cunnison recognizes that the oral traditions are not necessarily correct accounts of the past, he admits their validity for the