With the index, the curious researcher can easily check all citations of his own work without having to read the whole book. If, however, he does read the book, as he should, he will find the second or systematic index even more useful. The editor has followed the practice of referring to a given species by one specific name, that considered currently most valid (presumably by Chace), regardless of the names originally used by authors of cited works. Thus we note that *Homarus gammarus* is used without explanation throughout the text in referring to the European lobster, which has hitherto been generally called *H. vulgaris* in the published literature. In addition to giving synonyms in such instances, the index gives the family or higher group of all genera cited, as well as the older names *not* used in the text; all of this is most helpful to the reader, physiologist or other, who is not versed in crustacean systematics. There is a good subject index.

Among the chapters, each a self-contained review, which make up this volume, some are outstandingly good, others are valuable contributions, and one or two approach the pedestrian level or represent compilations of facts rather than fresh analyses of the topics. But all are competently and conscientiously done. Although a full review should discuss each chapter separately, space permits comments on only a few representative chapters.

Chapter 1 ("General crustacean biology," by Waterman and Chace) impresses me as being too general to be especially helpful. It includes an up-to-date outline of classification which, however, lacks characterizations of the intermediate groups and, hence, is of little use to the physiologist who might want to know what manner of beast a given taxon represents. Neither in text nor illustrations is it clear, for instance, why the much-discussed Cephalocarida rate the status of a subclass, nor is the selection of *Anaspides*, a form most physiologists have neither seen nor heard of, as a basic type likely to convey much information to the group that needs it most. Both authors understand crustacean systematics, and they talk *about* it intelligently; but most of their potential readers do not understand systematics, and probably never will unless given more illustrated basic material than this chapter provides.

In chapter 2, we find a good discussion of respiration. As the authors note (page 91), "The Crustacea do not seem to have any striking idiosyncrasies or innovations in their respiratory functions." Certainly this chapter analyzes the *general* aspects of respiration very well; it does, however, suffer from a lack of illustrations of the peculiarly *crustacean* respiratory organs, especially details of gills, the tracheal bodies of isopods, and other morphological features which would make this chapter more interesting and valuable to the physiologist seeking an introduction to crustaceans as physiological material. Certain other chapters are similarly lacking in illustrations. By contrast, chapter 5 ("Circulation and heart function," by Maynard) does provide helpful illustrations of the heart and circulatory arrangements in Crustacea, so that the stranger may feel better acquainted with the organization of these animals. In addition to his excellent organizational job, Maynard holds the record in the volume for number of references cited (257). Certain chapters deserve mention because they bring together material not previously presented in comprehensive and analyzed form. Chapter 13 ("Sex determination," by Charniaux-Cotton) is a well-illustrated section bringing together much information not hitherto treated in an English language publication. However, exception must be taken to this author's view that a "reversion toward unisexuality" has occurred in certain Cirripedia; the genera cited as examples include some that are probably primitive, and their unisexuality would seem to be primitive rather than derived from a hermaphroditic condition. Chapter 15 ("Molting and its control," by Passano) tends to over-compilation of facts in places, but salvages the situation with a good attempt at unification of arthropod molt-control mechanisms. Some other chapters are of equal quality, but do not happen to deal with material so much in need of review. The topic of parasitism is not specifically dealt with in any one chapter, except where secondary sources are cited.

The general level of editing is high; there are numerous cross references between chapters. Although there is diversity of opinion between authors, there is little superfluous overlapping of material, and there are few noticeable gaps in coverage. One discrepancy is in the use of the terms exo- and endocuticle in chapters 14 and 15; the index-reference, "Exocuticle, see under Cuticle, endocuticle," does not alleviate the situation. Also, I hope to learn by return mail from the authors the sources of the following undocumented statements concerning maxillary and antennal glands: (pages 5–6) "In mystacocarids, lophogastrid mysids and Nebaliacea both pairs of glands are present in adults," and (page 342) "Rarely, both pairs may be retained in the adult (Ostracoda and *Nebalia*)." However, such lapses are rare. There are very few typographical errors; I noted no more than half a dozen; the only one in which the meaning is altered is the use of "hyposmotic" for "hyperosmotic" in the last line of page 361.

At the time this volume appeared, the price of $22 seemed formidable; but it should be noted that there was a prepublication price of $19, and the professional discount provided a further reduction for some readers at least. Considering the general quality of the reviews included, the obvious care in editing, and the really large amount of information assembled and documented, I feel that this volume, and undoubtedly the one which is scheduled to follow it, will be indispensable to any biological library. No worker on the comparative physiology of invertebrates can afford to be without access to it.

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In the Company of Man. Twenty portraits by anthropologists. Joseph B. Casagrande, Ed. Harper, New York, 1960. xvi + 540 pp. Illus. $6.50.

If social anthropology differs from the other behavioral sciences, and if (despite its affiliation with the National Academy of Sciences and other scientific associations) it retains a strong humanistic flavor, surely one of the bases for these characteristics is its *informant* tradition. The ethnological informant is neither a psychological *subject* nor a sociological *respondent* (although he may, of course, be used in either or both of these capacities as well). The informant, *qua* informant, is a knowledgeable member of his society who serves the anthropologist as a primary source of information concerning its cultural traditions and social structure. He is the guide, the anthropologist is his follower; he the teacher, the anthropologist his student; he the superior, the anthropologist his inferior.

But the informant-anthropologist relationship is unique in scientific research for yet another reason. Since theirs is a long, an intimate, and a widely ranging encounter, it almost necessarily becomes a deeply personal, and not merely a research, relationship. As such, it is characterized by all the ambiguity and ambivalence inherent in any personal relationship, multiplied by whatever factor must be introduced because of the wide cultural and intellectual differences between anthropologist and informant, which serve both to attract and to repel. I know of no better way of introducing students and laymen alike to both the rewards and the problems entailed by and encountered in this relationship than to recommend this volume.

Casagrande has obtained the cooperation of an important cross-section of American and British anthropologists who, on the basis of their extensive field work, have produced, with two or three exceptions, a series of skillfully and, in some cases, beautifully written sketches recounting their relationships with informants in 20 widely scattered parts of the globe. The candor with which most of these contributors have approached their assignments will enable the methodologically oriented reader to assess both the strengths and the weaknesses of informant-type research. Because of its limitations, this research technique has long been, and will continue to be, supplemented by techniques borrowed from the other behavioral sciences. Because of its strengths, it will never be replaced.

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A Conscience in Conflict. The life of St. George Jackson Mivart. Jacob W. Gruber. Published for Temple University Publications by Columbia University Press, New York, 1960. x + 266 pp. Illus. $6.50.

When a professional biologist remembers St. George Mivart (1827–1900)—if he remembers him at all—it is apt to be with some irritation and more than a little contempt. Irritation because Mivart used his considerable talents to obscure and confuse the developing theory of evolution, and contempt because he was too bigoted and intellectually dishonest to follow where the scientific discoveries of the late 19th century led. That this picture of Mivart is inadequate and in great part unfair is amply shown by this clear, interesting and skillfully written biography.

Mivart was a man of great courage and tactlessness. While he was personally pleasant, he spared no one when he wrote. He was exceptionally —even painfully—conscientious, and he always followed the directives of his conscience. But he could never conceive of the fact that he himself could ever be wrong in anything. Inevitably his life was tragic.

At the age of 16, and in spite of his family's opposition, he became a convert to Roman Catholicism. This was no light step for him to take because, at the time, his conversion excluded him from Oxford and Cambridge. Later on he became a student of Huxley's and for a decade—during the 1860's—he and Huxley were very close, even intimate friends. Mivart became an expert osteologist and comparative anatomist, specializing in the Primates. He joined the Darwinian circle and was considered an important ally in the controversy that arose over evolution. Mivart, however, became dedicated to the discovery of absolute truth, but he based his "truth" on a double foundation—on Revelation and on Science. For him true Revelation and true Science could never be in conflict, because all Truth was self-consistent. Revelation, he was convinced, was in the custody of the Catholic Church, but the understanding of this Revelation could be enhanced by Science, that is, when Science is interpreted by Reason. Having these clews as to where Truth was to be found, he could tell exactly when Revelation was misinterpreted and when Science presumed to wander out of its proper sphere. Mivart devoted his life to promoting the fortunes of a liberal, growing, and changing Catholicism guided in its progress by an advancing Science. His failure in what he considered to be his real reason for living had the inevitability of Greek tragedy.

Relations between Mivart and the Darwin group became strained when the theory of evolution was extended to include the human species. Mivart believed that the mind and the soul of man could never have been developed from a brute origin, and he sought to limit the effectiveness of Darwinian evolution. He even went so far as to denounce natural selection as a puerile doctrine. The real break, however, came when Mivart attacked violently, personally, and mistakenly a rather tentative contribution to eugenics made by George Darwin, Charles Darwin's son. Even in his apology Mivart repeated what Darwin, Hooker, and Huxley considered to be personal libels, and all personal connections between Mivart and the Darwinian group were severed.

Mivart continued to believe in and to teach evolution, but an evolution of limited scope—one compatible with his religion. He remained the leading Catholic scientist in England. Indeed, the liberal Pope, Pius IX, conferred on him the degree of doctor of philosophy in 1876, but during the reaction that followed in the reign of Leo XIII, the Church line hardened and infallible authority stepped in. Mivart refused to accompany his liberal Catholic friends, who were told of their errors and who changed their convictions accordingly. His relations with the Church became strained. The breaking point came when Mivart invaded the field of theology and sought to modify the dogma of eternal punishment. He claimed that eternal torment seemed a trifle excessive for sins committed during a single lifetime, and he held that the Inferno, though very rugged indeed, need not be final, and that even in Hell sinners would be given the opportunity to repent. This was going much too far, and Cardinal Vaughan, Archbishop of Westminster, tended him a confession of faith which he refused to sign. He was excommunicated and died the next year.

Mivart could not be buried in consecrated ground, but 4 years later his body was moved and was finally buried where he would have wanted to be. His family and friends secured this favor by reporting that Mivart had been very sick during the last year of his life and that his delusions about Hell thus were due to illness rather than to sin.

Jacob Gruber has written an exceptionally readable and objective, but sympathetic, life of Mivart, who is presented as a real, three-dimensional human being, opinionated, intellectually cantankerous but, in his personal contacts, kind and pleasant. He had, however, an unyielding conscience, and he always knew that he was right, down to the last detail.

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