

best part of an otherwise sketchy bibliography. Further, he has supplied both a general introduction and specific topical ones which, though containing some small errors of omission and commission, are rather good.

But all is not positive. Bugge's account itself has some failings. As Crosland points out, one of them is that the breadth of coverage is frequently achieved by the sacrifice of depth. Crosland finds this particularly upsetting in the case of the metric system materials; I find it so in the case of educational institutions, and particularly the treatment of the School of Geographers where Bugge's special competence led one to hope for useful details on a little-known establishment, but where he did not even provide its address. More important than this kind of thing, however, is the pronounced anti-Jacobin bias which runs throughout and occasionally distorts Bugge's account and is probably based to a considerable extent upon his reading of Grégoire's famous report on vandalism, the source of so many myths about the infamous period of the Terror.

Unfortunately, Crosland seems to share that bias, for, while correcting Bugge on numerous small points, he never enters a caveat against this, and, in fact, does not even rectify the error of one year in Bugge's dating of Grégoire's report (p. 183). A greater failure to correct occurs in the case of Bugge's conversion of the name of a French artisan from Caroches to Laroche (pp. 169-70). Indeed, not only did Crosland not catch this error, he credits Bugge with "rescuing from obscurity" (p. 155) an instrument maker of significant stature; Bugge, that is, created a ghost that Crosland did not lay to rest. But even more serious than slips and not-provided supplements is the matter of Crosland's deletions from Bugge's account. He has removed some materials of considerable consequence. For example, Bugge several times visited the Observatory of Paris, and his observations thereon are, by Crosland's own admission, among the most important in the entire work. Why, then, did Crosland choose to delete such items as Bugge's critical comments on the mounting of instruments? Is not this, after all, precisely the kind of thing we should want more of?

Despite these flaws, this is a valuable contribution which will place historians of the science of the Revolution in the same kind of debt to Crosland

that historians of the science of the Napoleonic period already owe him by virtue of his interpretative study of the Société d'Arcueil and his editing of that body's *Mémoires*.

SEYMOUR L. CHAPIN

*Department of History,
California State College, Los Angeles*

Practical Biology

The Biological Basis of Medicine. E. EDWARD BITTAR and NEVILLE BITTAR, Eds. Academic Press, New York, 1968-1969. Six volumes, illus. Vol. 1, xvi + 590 pp., \$19.50; vol. 2, xvi + 578 pp., \$21; vol. 3, xvi + 494 pp., \$17.50; vol. 4, xii + 396 pp., \$14; vol. 5, xvi + 548 pp., \$19.50; vol. 6, xvi + 618 pp., \$19.50.

This six-volume compendium is clearly superior—in purpose, scope, readability, and pertinence—to most of the recent massive biomedical publications. Much of the credit for this excellence must go to the editors, the brothers Bittar. The topics covered are timely, and the various chapters are cogent and well written and all have the same format. Each chapter is preceded by an outline, most end with a summary, many contain a clinical section, and the reference system is uniform. (Unfortunately, the titles of the articles cited were omitted to save space.) Whether the choice of topics seems acceptable, poor, or excellent will depend on the individual interests of the reader. It is unfortunate that there is no master index to all six volumes.

In the space available I cannot list the titles of the 85 chapters, but must indicate the headings of the 21 major sections: The Dynamic State of the Cell; Growth; Cell Injury; Ageing (vol. 1); Hormones; Control of Metabolic Processes; Mechanism of Action of Biological and Physical Agents (vol. 2); Blood; Connective Tissue; Synovial Membranes and Skeletal Muscle; Bone (vol. 3); Molecular Genetics; Immunology and Transplantation (vol. 4); The Nervous System; The Liver and Gall Bladder; The Alimentary Tract; The Cancer Cell (vol. 5); Hair and Skin; The Cardiovascular System; The Lung; The Kidney (vol. 6).

Many of the chapters deal with subjects far from my field of interest and could not be reviewed by me with any authority. However, many other chapters were of compelling interest, often because they discuss ma-

terial I wanted to explore, either because I was unfamiliar with the subject and had never come across a review that could be read conveniently ("The nature of the ageing process"; "The thymus in immunity"; "The biochemistry of mental illness"; "Transplantation of the kidney: the present position"), or because they discuss reasonably familiar topics which I wanted to review ("The control of respiration in health and disease"; "The effects of raised intrapulmonary pressure"; "Selected aspects of lung metabolism"; "The basis of uremic toxicity"; "The metabolism of heart muscle in health and disease"; "Effect of low temperature on tissues of the body"; "Host defense and the reticulo-endothelial system"; "Autoimmunity and disease").

Each chapter just listed goes far toward achieving the editors' stated aim for the volumes—that is, "providing a balanced treatment between contemporary medical science and the applications of cellular biology in medicine." Because of this virtue I think these volumes belong in all but the smallest, or most specialized, biomedical libraries. Many biomedical investigators will also want them for their personal, or departmental, libraries.

BRUCE W. ARMSTRONG

*University of Southern California
Medical School, Los Angeles*

Groups in the Animal Kingdom

Principles of Comparative Anatomy of Invertebrates. W. N. BEKLEMISHEV. Translated from the third Russian edition (Moscow, 1964) by J. M. MacLennan. Z. Kabata, Ed. Vol. 1, Promorphology. xxx + 490 pp., illus. Vol. 2, Organology. viii + 532 pp., illus. Oliver and Boyd, Edinburgh, 1970, £10. University of Chicago Press, Chicago, 1970, \$35.

The two volumes that make up Beklemishev's treatise on comparative anatomy will be welcome to all non-Russian-reading invertebrate and general zoologists. They represent a unique approach and have no parallel in modern zoology.

The volumes cannot be read lightly and, since much of Beklemishev's terminology will not be familiar to most English-speaking zoologists, a major learning effort is called for in order to follow the text. New terms are consistently and carefully defined as they are introduced, and, fortunately, the introduction presents a synoptic outline of