

happens to be species-specific in boobies (van Tets, *Ornithol. Monogr.*, 2: 1-88, 1965).

Despite the blemishes in the presentation of the data, Kepler has significantly increased our knowledge of the breeding biology of *S. dactylatra*, and we should be grateful to the Nuttall Ornithological Club for having published his paper.—GERARD F. VAN TETS.

**The encyclopedia of the biological sciences.**—Peter Gray (Ed.). 1970. Second Ed. New, Van Nostrand Reinhold Co. Pp. xxviii + 1,027, numerous text figs., photos, graphs, tables. \$24.95.—Reviewing an encyclopedia in an objective and comprehensive sense is a formidable, perhaps impossible task for most people. Faced with a collection of information about a compartment of knowledge as broad as biology, even the most widely versed scientist is a specialist, and can only superficially evaluate facets of the subject based upon critical appraisal of the tiny spheres within which he has special acquaintance. Since a good encyclopedia is always multi-authored and can hardly claim that all of its inclusions are written with equal accuracy, scope, and attention to detail, the critic can only hope that the editor has chosen his authors with about the same acumen in all areas of the field and that a critical sampling of a few subjects will suggest the approximate validity of the whole work.

Below, keep in mind that I am an ornithologist, with special interests in ecology, behavior, voices of birds, systematics, and evolution. I went through the volume, took notes on about 25 topics and offer the following:

Harrison Tordoff wrote on the topic *Aves* (pp. 66-69) and his summary is a model of conciseness and terseness, properly neglecting subjects such as *feathers*, which get space on their own. He treats *molt* only in part of one short paragraph and thus one expects to find more information on this complex phenomenon somewhere else. It is not under *feather*, or *hormones*, however, and the valuable subject index terminating this book indicates it has been neglected.

Since molt is treated so briefly, I was surprised to find *beak* (almost totally in reference to birds) given more than a page (pp. 91-93) to itself under the authorship of Malcolm Jollie.

In ornithological circles the term *bioacoustics* has become rather well-established. It is not to be found in this book; rather the term *biocommunication* includes it. The author, W. John Smith, is one of our foremost workers on the subject, and his summary is a good one, giving birds their due space. In view of the revolution in the study of bird voices in the past 20 years, I find it puzzlingly anachronistic that the topic *bird songs* is given almost two pages (pp. 114-115), written by the late Aretas A. Saunders of the classical era of bird song study. Quite understandably Saunders is somewhat old-fashioned and writes little of pertinence to contemporary biologists, except for the last four paragraphs. He gives references only to Eliot Howard (1920), Wallace Craig (1943), F. Schulyer Mathews (1921), and himself (1951).

Under *cave biology* birds are not mentioned and, following up this lead, I found no mention of echolocation as a heading or in the subject index. It is mentioned briefly under Chiroptera.

George Wallace wrote summaries on the Cuculiformes, and though he briefly discusses social parasitism in cuckoos (Tordoff does so very briefly for all families that practice this unusual habit) no mention is made of the work of Friedmann by anybody.

Under electronic instrumentation by, ironically, R. H. Kay, there is no mention of the sound spectrograph, audiospectrograph, sonograph, or sound analysis.

Avian community ecology is well-covered, as Robert MacArthur wrote the entry under *community*.

Occasional writeups have not been brought up-to-date as perhaps they should have. E. O. Dodson writes on *evolution* and cites no references beyond 1960 (Dodson, "Evolution: process and product," New York, Reinhold). And surely the subject *forestry* deserves better than two pedestrian columns by Aretas A. Saunders in which Sargent (1905) and Gordon (1940) are the only references cited.

A. Wolfson is responsible for the summary of photoperiodism in animals, and on a subject largely composed of information from short isolated source papers in journals, he cites no references. G. Lowery and R. Newman summarize *migration* nicely.

*Pesticides* (or insecticides) do not appear as headings or in the subject index.

*Speciation*, the subject summarized by Lincoln P. Brower (pp. 881-882) could doubtless have undergone an updating, for it cites only Dobzhansky (1951) and Simpson and Roe (1958).

In summary, a survey of some of the subjects of interest to ornithologists indicates that this encyclopedia is an uneven work in many ways. Its faults range from failure to cover recent works and to cite pertinent literature to omission or inadequate treatment of deserving topics. I am most content with the work on topics about which I know little or nothing and realize the erratic nature (and possibly the impossibility of the task in the limited space) only in subject areas with which I am familiar.—JOHN WILLIAM HARDY.

**Australian parrots.**—Joseph M. Forshaw. 1969. Melbourne, Australia, Lansdowne Press, and Wynnewood, Pennsylvania, Livingston Publ. Co. Pp. xiv + 306, 3 figs., numerous text photos and drawings, 5 col. pls., 68 col. photos. \$29.50.—This large and lavishly illustrated volume is another in the recent trend toward spectacular as well as informative treatises on special bird groups. The present work deals with the Australian parrots, covering all species and races occurring on that continent (as well as Tasmania and Norfolk Island). The text is well-written and contains bountiful information; of special interest are the sections in the species accounts treating various aspects of behavior and captivity. Although the volume seems to be slanted toward the aviculturist, I have found it an excellent source of information on this group of birds.

The plan of the text is basically a series of species accounts. Following brief introductory notes on each higher taxonomic category (families and genera), sections in each species account are devoted to other names, description, distribution, subspecies, general notes, habitat, habits, movements, flight, call, feeding, breeding, and aviary notes; an excellent distribution map accompanies each account. All species and most distinctive races are depicted by a color photograph (occasionally more than one per species) or a color plate. John C. Yrizarry painted the five color plates, which illustrate the various races of the Double-eyed Fig Parrot (*Opopsitta diophthalma*), the Red-cheeked Parrot (*Geoffroyus geoffroyi*), and the three extinct or vanishing species, the Norfolk Island Kaka (*Nestor productus*), the Paradise Parrot (*Psephotus pulcherrimus*), and the Night Parrot (*Geopsittacus occidentalis*); the remaining species are all pictured by color photographs. I would judge Mr. Yrizarry's paintings to be above average and the color photographs as excellent. Clearly most of the latter were taken in aviaries (e.g., each photo depicting the three species of *Glossopsitta* shows the individual birds perched on the same limb),