biology of wild animals in captivity.

Like the earlier volumes in the series, this one contains an opening section on one specific topic. The subject here is a Symposium on Canids and Felids in Captivity. It presents 24 informative and provocative articles by 29 authors in 15 countries, and deals with over 25 different kinds of dogs and cats. Section 2 treats of New Developments in the Zoo World, with consideration of such matters as architecture and construction, breeding, conservation, education, husbandry, and research. Section 3, the Reference Section, contains a useful list of 846 zoos and aquaria of the world, with addresses, names of officials, numbers of specimens, and attendance figures; lists of wild vertebrates bred in captivity in 1966 (some 1250 species); and a census of captive animals regarded in 1967 as rare or endangered in the wild (375 species). A special feature is a group of 15 papers on a Survey of Marking Techniques employed on wild animals in captivity. Several appendixes and an index complete the book.

These volumes, a mine of helpful information on most vertebrate types except fishes, are indispensable to professional zoo employees and offer a wealth of fundamental material to behaviorists, conservationists, veterinarians, and biologists generally. They effectively point up the scientific and educational value of the zoological garden in the world today, and indicate the vital role that zoos can play in modern society by contributing to the perpetuation of our vanishing fauna.

RICHARD H. MANVILLE
Bird and Mammal Laboratories,
U.S. Fish and Wildlife Service,
Washington, D.C.

Genetic Vocabulary

A Dictionary of Genetics. ROBERT C. KING. Oxford University Press, New York, 1968. 292 pp., illus. Paper, $3.95.

This is a good dictionary which should make geneticists appreciate the efforts the author must have put into the project. One of the useful features is the inclusion of the structural formulas for numerous antibiotics, mutagens, analogues, and normal components of macromolecules. There is a clear diagrammatic illustration of protein synthesis (under *translation*, however), but the diagram for the regulatory control of the operon is not as helpful. In addition to genetic terms from various specialties, there are useful terms from evolution, ecology, and related biological fields. The common names and genera of organisms used by geneticists are also included and defined.

As a test of the usefulness of the dictionary, I checked the technical terms in a recent article ("Unstable redundancy of genes for ribosomal RNA" by F. M. Ritossa in *Proc. Natl. Acad. Sci. U.S.* **60**, 509–16). Only 3 of some 50 terms were not listed (*integration, dechorionate, marker gene*). Undoubtedly each specialist will find some terms lacking. Among those I noted were *paracentric, aneucentric, germinal choice, transmissibility, cryptic mosaic*, and *quinacrine mustard*. King uses the most recent definitions of evolving conceptual terms. Thus *cistron* is "the section of the DNA molecule that specifies the formation of a particular polypeptide chain" rather than Benzer's original "smallest unit of genetic function." A few terms involve page-chasing by the user (*acaricide* is defined as "miticide," *beta ray* as "a stream of beta particles," *homograft* as "homeoplastic graft," *pedogenesis* as "neoteny," *proband* as "propositus"). Pronunciations are not included, which makes the dictionary somewhat less useful to students. I hope that a second edition will incorporate this important feature. King gives to his definitions genetically useful interpretations. The intracellular functions of antibiotics, for example, are usually stated (*chloramphenicol* ". . . attaches to the 70 s ribosome and prevents the addition of an amino acid to the growing polypeptide chain"). Older terms found in the literature before 1950 have not been included. Thus, definitions of *factor, unit character, genomere*, and *step allele* would have to be sought in the original papers or in older textbook glossaries.

King concludes his dictionary with a chronology of events. While these chronologies are useful, they also perpetuate errors and oversimplifications (despite the disclaimer to the user to read some histories of genetics for details). Tschermak is dropped as a rediscoverer of Mendelism (following Stern's interpretation), Bateson's early defense and clarification of genetic terms is omitted, Lock's significant *Heredity, Variation and Evolution* (1906) is not cited, Wilson's *The Cell in Development and Inheritance* (1896) is listed under 1925 (King probably used the date of the third edition), *nondisjunction* is not included in the events of 1914–1916, but the less important *deficiency* is listed for 1917. Despite the inadequacies of the dictionary mentioned in this review, its wealth of information in every field of genetics makes it a useful tool for the geneticist and an essential reference book for the nongeneticist wishing to read genetic literature.

ELOF AXEL CARLSON
Department of Biological Sciences,
State University of New York,
Stony Brook

Tropical Tree

The Coconut Palm. YAN FRÉMOND, ROBERT ZILLER, and M. DE NUCÉ DE LAMOTHE. Translated from the French edition (Paris, 1966). International Potash Institute, Berne, 1968. 225 pp., illus. Sw.F. 13.

The coconut palm is the most widespread of cultivated trees. This book provides the nonspecialist with an outline of its botany, the management of plantations, the technology of the oil-extraction industry, and the importance of oil and other coconut products in world trade, demonstrating the influence of recent research on coconut growing. The emphasis is inevitably on the work of the organization (Institut de Recherches pour les Huiles et Oléagineux) with which the authors are associated. Nevertheless the book succeeds well in giving a general impression of the coconut industry in a space rather more modest than the number of its pages suggests because of a lavish layout. Major sources of information are indicated, and reference is made to 71 recent research articles (up to 1965). There is no index, and the book is clearly not intended as a work of reference. Some unevenness of style inevitable in a work by three authors is obvious, and it is unfortunate that most of the obscure expression which the translator has not eliminated occurs in the earlier chapters. The section on the botany of the palm is least successful and suggests how well the industry would be served by a modern and detailed account of the development and physiology of the coconut. The later chapters, particularly those on coconut-oil technology, are lucid and informative to the nonexpert. To anyone wishing for a good introduction to this major tropical crop this book can be recommended.

P. B. TOMLINSON
Fairchild Tropical Garden,
Miami, Florida