

one or two copies of it available for consultation in the library. In his 404 pages of text Datta has brought together a large amount of information from many sources, most of it accurate, but much of the book would have to be revised before I could wholeheartedly recommend it.

In the first place, it is apparent in too many places that English is not the author's native tongue. Many sentences are not idiomatic and a good many state what the author does not mean. When he states that a certain number of species are "confined" to India, he means that they grow in India, not that they are endemic there. When he says that the *Cactaceae* has fallen under the *Cactales*, he means that this is the group in which they have been placed. On page 168 he says that the fruits of a certain plant "form" a refreshing beverage. The author is not at home with the little words *a* and *the*, and he also has trouble with verbs.

The proof reading on the whole has been good, but some words have been misspelled. I noted some strange slips that are more serious. On page 119 it is stated that *Ammania baccifera*

is a roadside tree. On page 110 the name of the apricot is given as *Prunus bokhariensis* and that of the pear as *Prunus communis*. On page 115 *Barringtonia* is left in the Myrtaceae.

No less than 44 pages are devoted to a list of some 500 plants with their vernacular names given in 16 local languages. My experience is that such names are so often imprecise that, except in the case of well-known plants, such lists are not very valuable. A glossary giving the meanings of the highly technical vocabulary used in the book would have been much more useful to students.

Nearly 200 pages are devoted to the study of 70 families of flowering plants. A representative of each family is figured, giving cross and longitudinal sections of the flower and diagrams of salient features. This is the best part of the book. The figures are clear and very useful. It is not stated whether the diagrams are original or were borrowed from other books. The 17 photographs are very uneven in quality; some are distinctly poor.

R. R. STEWART

*Department of Botany,
University of Michigan*

Underwater Archeological Techniques

Marine Archaeology: Developments During Sixty Years in the Mediterranean (Crowell, New York, 1965. 208 pp., \$9.50), edited by Joan du Plat Taylor, has evolved from the collection of studies, *Le Plongeur et l'Archéologue*, published by the Technical Committee of the Confédération Mondiale des Activités Subaquatiques (World Underwater Federation). The present work, published under the same auspices, is a fascinating and useful study of ancient ships and their routes and cargoes, maritime trade, ports, harbors, and roadsteads in the Mediterranean as well as the underwater techniques used for the recovery of the archeological data.

The content and organization of this book are excellent and a credit to the editor, Joan du Plat Taylor. A foreword by Jacques-Yves Cousteau is followed by a chapter on underwater work and archeological problems by Frédéric Dumas and one on Mediterranean trade by Fernand Benoit. Next there is a long and interesting section entitled "Some Notable Wreck Excavations" which contains accounts of the under-

water investigations and finds of eight wrecks: one at Antikythera by George Karo; another at Mahdia by Guy de Frondeville; that at Albenga by Nino Lamboglia and others; a wreck at Grand Congloué by Yves Girault; one at Titan by Philippe Tailliez; the Dramont "A" wreck by C. Santamaria and others; a wreck at Spargi by Gianni Roghi; and one at Cape Gelidonya by George F. Bass. The Cape Gelidonya wreck is dated around 1200 B.C. whereas the others range from the third into the first century B.C. The section on wrecks is followed by one on underwater surveys written by Alessandro Pederzini and others. A chapter on ports, harbors, and other submerged sites, by several authors, contains a significant section on the geology of underwater shorelines by Nicholas Flemming. The final chapter, "The future," by Joan du Plat Taylor and others, is followed by a short appendix and a usable index. The book is well illustrated with 76 text figures and 32 good halftone plates.

A reading of this work gives one not only the sense of adventure and

romance of underwater archeology, but also a history of the development of underwater technical equipment and its uses. However, what is most important is the progressive improvement of underwater archeological techniques from those not far removed from looting and pot hunting to some as exacting as any used on land.

GEORGE I. QUIMBY

*Burke Museum,
University of Washington, Seattle*

Alaskan Indians

Just above the Arctic Circle, along tributaries of the Yukon River that drain from the Brooks Range, lies the territory of the Chandalar Kutchin. When the author of this monograph, Robert A. McKennan, visited these Athapaskan-speaking Indians of Alaska in the summer of 1933, the total society numbered less than 200 persons. Two small bands exploited the traditional mountain-and-valley domain; another small band had settled within the Yukon Flats area along the lower Chandalar River. The remaining 70 members of the tribe were in Fort Yukon or its environs. In 1933, although they were committed to the fur trade and the white man's tools and staples, the Chandalar bands still followed a nomadic life that was focused on caribou hunting.

The results of McKennan's field work, **The Chandalar Kutchin** (Arctic Institute of North America, Montreal, Canada, 1965. 156 pp., \$4), long delayed in publication, represent an approach once dominant in ethnology—anthropology as natural history—wherein a culture is seen as a congeries of traits to be severally collected, classified, and compared. As a result, this study is not designed for those anthropologists who seek insight into cultures as systems. But McKennan's carefully executed effort "to obtain as complete an account as possible of [Chandalar] aboriginal culture, as well as to note any significant changes resulting from contact with the white man" provides new and useful building blocks for Northern Amerind studies, whether directed toward historical reconstruction or toward assessing the heritage of the past in present Northern Indian life-ways.

Happily, McKennan does not deny us a delightful sketch of the non-aboriginal activities of the founder of

a native Christian movement. Albert Tritt, a former shaman, experienced conversion to Christianity in a blinding flash of light and a swoon. Tritt set himself to master the language and the message of the Bible. He took both literally. In his King James' English, young women were "damsels" and "virgins." And, among other monuments to his Deity, Tritt persuaded his followers to prepare a straight-line, 20-foot-wide cut through the timber toward Fort Yukon. For, as the Bible commands, "Prepare ye the way of the Lord, make straight in the desert a highway for our God" (Isaiah 40:3).

JUNE HELM

*Department of Sociology and
Anthropology, University of Iowa*

Biochemical Pharmacology

Volume 1 of **Progress in Biochemical Pharmacology: First International Symposium on Radiosensitizers and Radioprotective Drugs** (Butterworth, Washington, D.C., 1965. 760 pp., \$28.50), edited by R. Paoletti and R. Vertua, is a well-edited volume, with name and subject indexes. The volume, which shows the importance progressively acquired, since 1949, of the problem of chemical radioprotection or sensitization, is based on a symposium organized by the European Society for Biochemical Pharmacology and held in Milan, Italy, in May 1964.

This field interests both fundamental science, because it provides facts for interpretation of radiation effects at the molecular and cellular levels, and applied science, because there are possible applications in radiotherapy, astronautics, and the protection of civilian or military populations.

The 90 contributed papers are organized in the following sections:

(i) Introductions by E. B. Chain and Belloni; (ii) Effects on lower organisms (bacteria, isolated cells, and seeds); (iii) Irradiation of chemical systems; (iv) Effects on mammalian organisms *in vitro* and *in vivo*; (v) Effects on experimental tumors; (vi) Chemical sensitization; (vii) Chemical protection (mainly on mammals *in toto*); the most important section, with 27 contributions; (viii) Biological means of protection; and (ix) Clinical investigations.

The level of the contributions is generally good, sometimes high. I was par-

ticularly impressed by the following papers: The review, by J. S. Mitchell (Cambridge, England) of clinical and laboratory studies of radiosensitizers in radiotherapy; the clever contributions, by P. Alexander, C. J. Dean, and J. T. Lett, on the repair processes during and after irradiation, on the sensitization of bacteria and lymphoma cells by an -SH blocking agent and 5-bromo-deoxyuridine; the observations from three European laboratories confirming in very different technical conditions the favorable effect of the administration, *after irradiation*, of highly polymerized nucleic acids or nucleoproteins; and the contributions of the Norwegian physical chemists (Eldjarn, Pihl, Sanner) on the chemistry and effects of thiols and disulfides. The variety of substances and biological material used in the studies on chemical radioprotection and the feasibility of combining, for treatment of cancers, the so-called radiomimetic substances with the ionizing radiations should be emphasized.

I do not hesitate to recommend this book to those students or research people who already have a certain knowledge of the problem. They will find a good survey of the general spirit and the basic hypotheses prevailing in eastern as well as western Europe; only nine authors from the United States contributed to the volume.

Z. M. BACQ

*Laboratoire de Pathologie et
Thérapeutique Générales,
Université de Liège, Belgium*

Biochemistry

In **Biochemical Energetics and Kinetics** (Saunders, Philadelphia, 1965. 122 pp., \$3.75), A. R. Patton proposes to supplement biochemistry textbooks, especially their "rather large gaps in the mathematical derivations."

The author alludes first to "much that cannot be explained, in equations or in words . . . that thread of silent knowledge which always runs through the tapestry of science." What eludes me is an explanation of how the editors of a reputable publisher passed this concoction of mathematical nonsense, logical lacunae, missed opportunities, non sequiturs, inept metaphors, and outright solecisms, amid which the equations struggle vainly.

Patton begins with "Velocity includes

direction in space and is known as a vector quantity," and on the next page "subdivides" the motions of particles into vectors with "coordinates" on the x-, y-, and z-axes; this is his treatment of vectors. A definite integral is evaluated, after which the author tells us that the integration constant must be zero on physical grounds. He refers to "the kinetic energy of acceleration of a particle."

The same level is maintained throughout; and the book is concluded with an appendix on calculus, in which "rate" is identified with "differential," integration is explained by analogy with experts piecing together the debris of a plane after it has exploded in midair, and partial differentiation is illuminated by reference to a student with two jobs: "On job *x* he is paid at an hourly rate du/dx , etc." It seems unlikely that this appendix will teach calculus to students whom the author does not trust to cancel terms of opposite sign in an algebraic sum.

It is frustrating, with so little space, to choose among the examples that illustrate my points. For instance, there is the explanation of "half-life" with a sexy version of the Zeno paradox of Achilles—boy approaches girl—which concludes tragically: "According to the half-life theory (!), they would never touch." And there is the triumphant demonstration, after steady-state concentrations in a kinetic system have been found by setting the time derivatives equal to zero, that the steady-state values really are constant!

The level of comprehension exhibited in this book is deplorable. For the level of the pedagogy, words fail me.

JOHN M. REINER

*Department of Microbiology,
Emory University*

Prehistory

Prehistoric Societies (Knopf, New York, 1965. 356 pp., \$6.95), by Graham Clark and Stuart Piggott, is an excellent and up-to-date introduction to the study of human prehistory on a worldwide basis. Any reader, whether student or layman, will find the survey of the problems met and overcome by prehistoric man informative and exciting reading. He will be impressed by the contemporary quality of relationships between ancient man and his problems as seen in his attempts to adjust to