



Review: [untitled]

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Source: *The Quarterly Review of Biology*, Vol. 52, No. 4 (Dec., 1977), p. 423

Published by: The University of Chicago Press

Stable URL: <http://www.jstor.org/stable/2823327>

Accessed: 13/08/2010 09:35

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little criticism that one can justifiably direct at this important contribution to knowledge. The only significant typographical error worthy of correction appears on page 14, line 7, under the discussion of "Morphology." The characteristic chromosome number of *Epilobium* stated to be "n=8" was clearly meant to read "n=18".

This volume is destined to take a place in the botanical literature among such classics as E. B. Babcock's *The Genus Crepis* and T. H. Goodspeed's *The Genus Nicotiana*. The Ravens are to be congratulated for providing the botanical community with a standard of excellence that others will hopefully strive to emulate.

FRANK ALMEDA, JR., *Biology, University of California, Los Angeles*

AN INTRODUCTION TO THE BOTANY OF TROPICAL CROPS. *Second Edition.*

By Leslie S. Cogley, revised by W. M. Steele. Longman, London and New York. \$12.75 (paper). xvi + 371 p.; ill.; scientific names and general indexes. 1976.

The first edition, published in 1956, was successful as a textbook and as a work for consultation. It appeared in two hard-back volumes. This second edition, incorporating changes and advances during the intervening 20 years, is destined to be as useful — if not more so — mainly because of growing interest in the tropics around the world.

Worry about food supplies and cash products for the world's growing population, much of which has taken place in tropical countries, has led to an increase in courses in agriculture and economic botany for these developing areas.

The whole first chapter of this second edition is new, treating of peculiarities of the tropical environment in relation to plant industry. It is supported by a helpful list of books and papers for further reading. There has been rearrangement of some of the chapters, designed primarily to place foods together in an early part of the book. In all of the chapters, a successful attempt has been made to summarize and include research done in the past 20 years.

The format of the book is much more manageable than the two volumes of the earlier edition and the price of this revised, paperback edition is reasonable for the great amount of information packed into the pages.

In such a generally useful book, it is unfortunate that the numerous minor errors have not been eradicated. Two examples should suffice to indicate how annoyingly trivial they are but how easy they would have been to correct: *Hevea brasiliensis* is consistently misspelled as "*Hevea braziliensis*"; and tetrahydrocannabinol in *Cannabis* is described as an "alkaloid." Such occasional errors, however, do not detract materially from the overall value of the book.

RICHARD EVANS SCHULTES, *Natural Sciences, Harvard University*

AN INTRODUCTION TO PTERIDOPHYTA (DIVERSITY AND DIFFERENTIATION).

By A. Rashid. Vikas Publishing House, New Delhi. 36 Rs. (hardcover); 20 Rs. (softcover). xi + 283 p.; ill.; subject index. 1976.

Chapters 2 through 7 and chapter 12 of this book could well have been omitted. They are replete with factual and taxonomic errors, glaring errors of omission in comparative discussions, much superseded information, and inconsistencies in descriptive terminology. They obviously represent condensations of other secondary sources (wordage often recognizable), some of which are up to date and some not, and the condensing was done with insufficient regard for which characteristics are important in comparative contexts. One of the many misleading statements (p. 256) is ". . . the exoscopic pattern of embryology in *Pistilotum* has more in common with *Anthoceros* than the rest of Pteridophyta."

Chapters 8 through 11 are of a very different character, more obviously written to a large extent from primary sources. These chapters deal with various experimental aspects of pteridology and seem to be concise, accurate treatments, although the author could well read the recent literature on sexuality in *Ceratopteris* gametophytes.

DAVID W. BIERHORST, *Botany, University of Massachusetts, Amherst*

ORIGIN AND EARLY EVOLUTION OF ANGIOSPERMS.

Edited by Charles B. Beck. Columbia University Press, New York. \$17.50. ix + 341 p.; ill.; index. 1976.

Since 1960 a spectacular amount of new information has become available on angiosperm origins, and it is quite appropriate that this authoritative summary of developments during this active and critical period be issued. A notable aspect of the book is that authors of all nine of the principal papers, representing a broad spectrum of approaches and methodologies, have themselves contributed significantly to the subject; they present up-to-date and knowledgeable reviews.

James Doyle demonstrates that early angiosperm pollen floras were marked by low levels of diversity and, with Leo J. Hickey, he shows a comparable situation to exist in leaf megafossils. This reduces the need to postulate a long pre-Cretaceous history — a source of controversy and errors of interpretation for decades. Evidence presently available suggests that the angiosperms began their evolutionary development during the lower Cretaceous.

Gilbert Brenner reports on tricolpate pollen from Cretaceous deposits in the northern Negev region of Israel, which are slightly older (Barremian-Aptian) than those along the Atlantic coastal plain (Aptian). Rudolph Schuster reviews continental configurations at and subsequent to the time of early angiosperm appearance, which are becoming known with some precision. It seems increasingly likely that an early site