

An incidental but not inconsequential attribute of the book is its description of many techniques used in studying nesting behavior. For instance, anyone interested in working with cavity-nesting birds or with birds that build covered nests will be interested in the use of fiberoptic scopes reported in work with hornbills and bee-eaters (Ch. 7 cites this work, reported by White et al. 1978). The use of thermocouple thermometers to monitor nest temperatures inside the enclosed cavity nests of the hornbills and of sophisticated gas-sampling techniques to monitor oxygen intake and carbon dioxide output are good examples of the sophisticated techniques described in this volume.

The volume also deals with more difficult conceptual issues like speciation, the evolution of nest differences and major evolutionary trends in nest building. Indeed, because it takes an evolutionary approach, this book is larded with good examples of remarkable adaptation.

For example, we learn that penduline tits construct a zip-lock entrance on a nest with a conspicuous false entrance, that Scissor-tailed Swifts fasten their nests to the undersides of overhanging rocks and that the Hornero or Rufous Ovenbird of the Argentine Pampas builds what the authors justly describe as "essentially a little adobe hut (p. 118)." This is the kind of goodness-of-fit between organism and environment that sent pre-Darwinian Natural Theologians groping for their quills.

In an age when many biologists have been reduced to cowering beneath the Spandrels of San Marcos (Lewontin and Gould, 1979), and talking about adaptation in whispers, an encyclopedia of the indisputably adaptive architecture of birds' nests comes as a welcome relief. Unfortunately, these phenomena can also be productive of rank adaptationism in the extreme or, in the case of *Nest Building and Bird Behavior*, occasional fuzzy evolutionary reasoning.

Although the Colliases report several instances in which the introduction of predators to islands resulted in a shift from ground to tree nesting; phenotypic plasticity and acclimation are nowhere mentioned. Again, their discussion of the Mauritius Kestrel, whose history would make primatologists babble the praises of cultural evolution, makes no mention of the nongenetic transmission of information in birds.

Sometimes it is not simply the case that the authors' adaptationist view obscures more interesting ideas, but rather that their language obscures meaning. A glaring example can be found in their discussion of the evolution of bower-building after males were freed of nesting duties. The authors write of the male that:

as he further evolved, he would perhaps gradually include materials which did not necessarily closely resemble the actual materials used in nest-building (p. 76).

It is not clear here whether the authors mean to refer to an individual or to a lineage. This is not an isolated example. Throughout the book the term "evolution" is used in idiosyncratic, sometimes infuriating ways. This does not seem to be because the Colliases are confused or credulous—they're not—but rather may be due to their belonging to a generation that used an evolutionary shorthand foreign to most younger workers. Nonetheless, the broad and imprecise evolutionary language mars the volume.

Despite their frustrating use of evolutionary language and occasional lapses into an adaptationist fog, the Colliases present numerous original evolutionary ideas, raise thought-provoking questions, and provide an unusually broad perspective. The information content in this book

is almost overwhelming. *Nest Building and Bird Behavior* is a book to savor. Read it, put it on your shelf and pull it down whenever you've got a minute. It will reward you with something new to think about.—MARCY F. LAWTON, Dept. of Biological Sciences, University of Alabama in Huntsville, Huntsville, AL 35899.

## BOOKS RECEIVED

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