

COMMENTARIES

Priorities in Ornithology: The Urgent Need for Tropical Research and Researchers

LESTER L. SHORT¹

It is ironical that we are blessed with a plethora of ornithologists having tremendous resources available to them in areas of the world where the fewest avian species occur, whereas there are few ornithologists with meager resources in tropical regions where the most birds occur. While we pick and choose among research projects, and train our students in ever more sophisticated methods, we ought to consider carefully the fact that a major portion of the world's avifauna is severely threatened, and too little is being done about it. Surely technological advances will render many of the kinds of research being conducted today easier, faster, and perhaps "better" in the future. But our counterparts in the next century, however well backed technologically, are likely to face tremendously reduced opportunities to apply their methods, because of the elimination of tropical forests and their avifaunas.

The outlook is bleak for preservation of tropical forests in a sufficient number of diverse areas to be adequate for conserving their avian species. The threat is especially great in Africa (where the soaring population makes slash-and-burn practices very severe in their effects; Walton 1980), slightly less so in Asia, and only a bit less than that in the Neotropics. Myers (1982: 754) cites several areas as "having little prospect of retaining much undisturbed TMF" (tropical moist forest) by 1990: New Caledonia, Philippines, Thailand, Malaya, Sri Lanka, most of West Africa, Kenya, Tanzania, and most of Central America. Burma probably should be added. And by 2000, he lists Sabah, Sarawak, most of Indonesia, much of Papua New Guinea, and most of Cameroun. Large forest tracts are apt to remain longer in the Zaire Basin and northwestern Amazonia, excluding Colombia and Peru. Target areas for our attention thus seem clearly defined.

Many of us have opted for "pure science," shying away from conservation, which is so often regarded as tainted by "politics," and somehow "unclean"! I submit that ornithology now requires that each of us take an active role in the conservation of birds, for progress in ornithology inevitably will be altered and indeed limited by lack of knowledge of tropical birds that become extinct. We have failed by a large measure to conduct urgently needed studies, to make our voices heard where they count, and, most important

of all, to insure that a number of properly trained and equipped indigenous ornithologists are on the scene in tropical countries. I urge that we re-evaluate our priorities and responsibilities to ourselves and to our science.

Let me highlight a few of the problems from experiences I've had in just the past 5 years in East Africa. I have difficulty in finding study areas that remain sufficiently stable to work them in 2 consecutive years. Once vast Bwamba Forest of Uganda, whence were collected such number of honeyguides that Friedmann and Williams (1971) felt obligated to apologize for the 68 specimens taken (because it is difficult to identify sibling species), is today totally cutover. Uganda's Impenetrable and Kibale forests are deteriorating. In Kenya, Arabuko-Sokoke Forest, with its four endemic birds, the Kakamega, where Dale Zimmerman worked, and once enormous Mau Forest are being fragmented. Foreign and local scientists are salvage-collecting specimens in North Nandi Forest, which is doomed. One is confronted with the facts that Kenya's per annum population increase is 4.1%, the average number of children per woman is 8.5, and only some 18% of its land, including *all* remaining forests, is arable! Such countries have few exportable resources and must import, at fantastic cost, virtually all things technological. Even government agencies, such as museums, have to pay import duty—200 to 300% in some cases—on vehicles, typewriters, and other equipment. Currency restrictions are so great that in major universities students often cannot purchase textbooks for their courses (K. Howell, in litt.).

David Wells of Malaysia has (in litt.) documented similar problems in tropical Asia, where a number of Javan species have not been seen in decades, Thai forests suffer terribly, and such forested bastions as eastern Burma and Borneo are undergoing rapid clearing. The avifauna of the Isthmus of Kra, which may host more avian species than any other Old-World area, is virtually unstudied. I have seen a Malayan forest with placards dutifully proclaiming "No removing of plants or animals" that a month later is clearcut, its soil largely washed away by daily rains (Short 1973). Most readers of *The Auk* are likely to be more familiar with tropical America, where conditions are severe but perhaps less so than in Africa and Asia, if only because there are more extant forests and lower human populations. Noteworthy is the fact that the great bulk of tropical forests is being lost for the needs of developed countries.

¹ Ornithology Department, American Museum of Natural History, New York, New York 10024 USA.

Research in tropical forests ought to include: (1) identifying and characterizing threatened habitats and their avifaunas; (2) successful establishment and maintenance of sites where long-term studies (Tinkle 1969, Wiens 1984) can be carried out; (3) immediately identifying areas that are doomed, and facilitating salvage collecting (of specimens *and* of observations); (4) the mapping of species' ranges; (5) ascertaining breeding bird densities in diverse habitats; and (6) monitoring changes in bird populations.

We can individually conduct research along these lines in tropical forests, stress the importance of such research to our students, actively seek the cooperation of indigenous tropical biologists, and extend ourselves to recruit and use local students as assistants in tropical countries. Well-trained, environmentally aware local scientists will have the greatest impact upon the conservation policies of such countries. We also should work collectively through our societies, such as the A.O.U. The British Ornithologists' Union, for example, has performed valuable services regarding tropical avifaunas. It regularly sponsors expeditions, using students and local trainees (e.g. the Mascarene Island Expedition and the Southeastern Brazilian Forest Bird Project). It also supports International Council for Bird Preservation and International Union for the Conservation of Nature projects, and important long-term operations such as the Ngulia, Kenya, ringing (banding) program.

The A.O.U. ought to support Asian, African, and Latin American ornithologists, especially younger ones, in attending the International Ornithological Congresses. It should be officially represented at the Ibero-American and Pan-African congresses, and fund native ornithologists and students in attending them. Cooperative ventures could be undertaken with the I.C.B.P. *The Auk* ought to include French and Spanish summaries of its articles—Spanish, French, and English are understood by virtually all trained persons in Africa, the Neotropics, and much of Asia.

After World War II members of the A.O.U. rallied to prepare aid packages of clothing, binoculars, and books to go to colleagues in a Europe devastated by war. We should now be collecting used field glasses, ornithological and other conservation-related books and reprints, and even typewriters and other equipment for colleagues and students in tropical countries. This could be done by the A.O.U., or perhaps by institutions "adopting" sister institutions in critical countries.

Only effective actions now can minimize the loss to ornithology and mankind of great numbers of tropical forest birds.

LITERATURE CITED

- FRIEDMANN, H., & J. G. WILLIAMS. 1971. The birds of the lowlands of Bwamba, Toro Province, Uganda. Los Angeles County Mus. Contrib. Science, No. 211.
- MYERS, N. 1982. Depletion of tropical moist forests: a comparative review of rates and causes in the three main regions. *Acta Amazonica* 12: 745-758.
- SHORT, L. L. 1973. (Letter to Editor—Tropical rain forests). *Science* 101: 893-894.
- TINKLE, D. W. 1969. Evolutionary implications of comparative population studies in the lizard *Uta stansburiana*. Pp. 133-154 in *Int. Conf. Syst. Biol.*, Univ. Mich., 1967, Systematic Biology. No. 1692. Washington, D.C., National Acad. Sci.
- WALTON, S. 1980. Replacing trees with wasteland: the demise of tropical moist forests. *BioScience* 30: 377-380, 428.
- WEINS, J. A. 1984. Editorial. The place of long-term studies in ornithology. *Auk* 101: 202-203.

Received 14 March 1984, accepted 24 May 1984.

How Long is a Long-term Study?

WILLIAM A. CALDER, III

The case for long-term studies in ornithology was argued effectively by Wiens (1984): "a long-term approach that spans the periodicity of the normal dynamics of the system is essential," as it is "that granting and funding agencies recognize the need for long-term . . . support . . . and adjust their award structures accordingly . . ." A question for both proposer and funder is: What is a reasonable time scale for the study of a particular species? If exogenous factors are

the only ones involved, plans must be based on knowledge of periodicities in the environment of study. Body size, however, appears to dominate the temporal scaling of life histories (Western and Ssemakula 1982, Calder 1984, Peterson et al. 1984).

For example, the maximum lifespan of a hummingbird (3.5-g *Selasphorus platycercus* females in nature) is 8 yr, and their life expectancy is only 1.8 yr (Calder et al 1983). The scaling for birds in general is that an order of magnitude in size increase is associated with a 50% increase in maximum and the more than doubling of expected lifespan. Nine years of study of 11-g *Parus* are thus equivalent in terms of

¹ Department of Ecology and Evolutionary Biology, University of Arizona, Tucson, Arizona 85721 USA.