THE BIRDS OF PAKISTAN (in 2 volumes). By T. J. Roberts. Oxford University Press, Karachi. Volume 1, Regional studies and non-passeriformes, 1991, xli + 598pp, figures, color and black-and-white plates, references. US \$85.00, PK-Rs 800. ISBN 0-19-577404-3. Volume 2, Passeriformes: Pittas to Buntings, 1992. xxxv + 617pp, figures, color plates, references. US \$85.00, PK-Rs 800. ISBN 0-19-577405-1.

Review by Daniel T. Blumstein, Animal Behavior Group, Department of Zoology, University of California, Davis, California 95616-8755, U.S.A.

This summer there was a new bird at my Khunjerab National Park study site in northeastern Pakistan. The bird was small, brown, and acted a bit like a pipit. I was unable to satisfactorily identify it using the two field guides I had with me (Fleming et al., 1984; Flint et al., 1984). In Islamabad, I opened the second volume of Roberts's The Birds of Pakistan, paged through the plates, and immediately identified the bird as an immature Citrine Wagtail (Motacilla citreola). While I found the bird in an alpine zone, I learned that they winter on the plains, and that "...they will hunt over open water climbing over dead and matted reeds or stepping delicately over half-submerged carpets of Ruppia and Potamogeton water weeds, often hundreds of metres from the nearest shore" (Vol. 2: 64). And, that their nests are "...always well lined with animal hairs and wool..." (Vol. 2: 65).

Tom Roberts's two volume magnum opus, *The Birds of Pakistan*, is finally available. Over five years was spent writing and producing these magnificent volumes, while much of a lifetime was spent observing and noting birds and other wildlife throughout Pakistan. Mr. Roberts is not a stranger to monumental taxonomic guides. His book *The Mammals of Pakistan* (Roberts, 1977) is the best reference available for the mammals of the Indian subcontinent.

Approximately 660 bird species are reported to live in Pakistan. The Birds of Pakistan is the first comprehensive bird guide to this diverse and beautiful country and its equally diverse avifauna. His goals in writing the book were to describe the birds of Pakistan as a geographical entity as well as having a book available and affordable in Pakistan to foster interest in ornithological study. In the somewhat eclectic introduction to the volumes, Roberts discusses: the organization of the volumes; habitat types found in Pakistan; aspects which influence bird distribution; a bit about the biology and pattern of migration; the problems of species and speciation as they influence Pakistani birds. The introductory chapters are completed with a very interesting account of the history of ornithology (and naturalists) in Pakistan, followed by a section on birds as beneficial agents and as pests.

Species accounts for the 660+ birds follow and are divided into six sections: Taxonomy; Description; Habitat, Distribution, and Status; Habits; Breeding Biology; and Vocalizations. In some cases, Roberts diverges from traditional nomenclature, using more recent, or different names for birds. Whenever he does this, he lists synony-

mies (synonymies can also be found in the index). Species accounts first describe the appearance of a species, including observations of if, how, and when there is seasonal or sexual variation. The "Habitat, Distribution and Status" section follows and concludes with Roberts's assessment of the present status of a given species. Status may be changing and this has been noted. Roberts includes those species that have become extinct in recent time from Pakistan, as well as those that probably should appear in Pakistan (species included in the book but not included in the checklist of Pakistani birds appear in the checklist without a species number). A distribution map based on museum records, personal observations, and the published and unpublished observations of others, follows. Readers must be sensitive to the fact that the quality and quantity of biological surveys is not evenly distributed throughout Pakistan, and species range maps, while better than anything available, are necessarily imperfect. Mountainous regions in particular have not been properly surveyed; in part because of political restrictions on travel and in part because of the difficulties of travel. Sections on breeding biology and vocalizations follow.

Throughout the species accounts, Roberts' poetic descriptions ("in the 'breathtaking' altitudes where the human intruder is forced to pause [for breath] every few paces, the Himalayan Snowcock characteristically avoids encounter by running uphill" Vol. 1: 225), interesting notes ("it is customary for both orchard owners and maize growers to hire people as full time bird scarers to protect these crops [oranges and red peppers] during the critical ripening season from this [Rose-ringed] parakeet" Vol. 1: 437), personal experiences ("the author despite many attempts over the years, only succeeded in tape recording it successfully [a White-capped Redstart] in a year when the Haro stream was reduced to a trickle" Vol. 2: 156), and records ("one or two pairs [of Pale Crag Martins] nest each year on an overhanging sandstone cliff at Khadeji falls, 56 kms (35 miles) north of Karachi. Here the author has found nests with eggs in mid-April and the third week of May," Vol. 2: 34) pepper the text, increasing its readability, and quality.

Roberts has travelled, observed, and collected extensively throughout Pakistan and is the only person, I know of, who is qualified to write this sort of a book. Tom Roberts is a truly renaissance naturalist.

Despite the immense pleasure I have had reading through these volumes, I do find a few omissions. First, there is no overall index to both volumes at the end of the second volume. This would have been a nice touch. Second, while species are numbered on the species checklists (partial lists are found in the beginning of each volume), these numbers do not accompany the detailed species accounts. Third, a particular pet-peeve of mine is having plates scattered throughout a volume, as they are in *The Birds of Pakistan*. I personally like to have all the pictures of birds together for easy comparison.

However, I find this more important in a guide designed for field use (see below). Fourth, I was puzzled by the absence of plates portraying ducks, geese, herons, and egrets, while the plates for the raptors were black-and-white. I assume this is a function of the book's long ontogeny and self-admitted inconsistencies. The majority of the plates in both volumes are in color and, while illustrating a definite painting style, are quite useful—more so because they often illustrate intraspecific variability.

The Birds of Pakistan is not a field guide: I find it too bulky and cumbersome to bring along. As it weights approximately 3.9 kg (8.5 lbs), I prefer to take a spotting scope and a tripod on an off-road outing. A Pictorial Guide to the Birds of the Indian Subcontinent (Ali and Ripley, 1983), The Birds of Nepal (Fleming et al., 1984), The Birds of the USSR (Flint et al., 1984) or The Birds of China (De-Schauensee, 1984) would be much better choices for a field guide. However, each of those books has its weaknesses, and none is as complete as The Birds of Pakistan is for Pakistani birds.

The Birds of Pakistan was printed and bound in Pakistan. I was impressed with the very high quality printing and color plates on the imported paper. Unfortunately, the binding quality, while satisfactory, is not of the highest standard. One of the plates (30/31) in my volume was inserted incorrectly and had me confused for a while until I looked at the plate number and matched it to the proper plate caption.

These volumes should be a welcome addition to the library of anyone with even a passing interest in Himalayan or Indian birds. The prose is informative while being a pleasure to read. For the conservationist or ornithologist working in Pakistan, the book is an unparalleled source of information about the status and distribution of Pakistani birds. Field ornithologists might consider photocopying the plates, or bringing along additional smaller references for field work.

## REFERENCES

Ali, S. and Ripley, S. D., 1983: A Pictorial Guide to the Birds of the Indian Subcontinent. Oxford University Press, Delhi.

\_\_\_\_\_\_, 1987: Compact Handbook of the Birds of India and Pakistan Together With Those of Bangladesh, Nepal, Bhutan and Sri Lanka, 2nd Ed. Oxford University Press, Delhi.

DeSchauensee, R. M., 1984: *The Birds of China*. Smithsonian Institution Press, Washington, DC.

Fleming, R. L., Sr., Fleming R. L., Jr., and Bangdel, L. S., 1984: Birds of Nepal With Reference to Kashmir and Sikkim, 3rd Ed. Nature Himalayas, Kathmandu.

Flint, V. E., Boehme, R. L., Kostin, Y. V., and Kuznetsov, A. A., 1984: A Field Guide to the Birds of the USSR Including Eastern Europe and Central Asia. Princeton University Press, Princeton, NJ.

Roberts, T. J., 1977: The Mammals of Pakistan. Ernst Benn, London.