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THE BIRDS OF PARADISE

By C. B. Frith and B. M. Beehler

Illustrated by W. T. Cooper

1998. Oxford Bird Families of the World Series. Oxford University Press, Oxford. 613 pp., 15 colour plates, 6 black and white photographs, many line drawings and maps. Illustrated by William Cooper, Introduction by David Attenborough. \$146.90

Oxford University Press' *Bird Families of the World* series aims to produce *the* authoritative handbooks of major bird groups. They have managed to sign up a remarkable number of active, research-based ornithologists to write these books, and, in most cases, these are among the most qualified people working on the family. Having Alan Kemp produce *The Hornbills* and Ian Rowley and Eleanor Russell *The Fairy-wrens and Grasswrens*, for instance, conveys an

undeniable impression that the reader will be having the best guide to the particular group. To date, the titles produced (this is the sixth and many are reportedly in the pipeline) have largely been greeted enthusiastically by professional ornithologists and serious amateurs who value their reliability, contemporary scientific content, and obvious quality. They tend to be well illustrated and attractively produced, and while the standard of visual illustration is very high, relatively few of the plates in these books would seriously be regarded as major works of art.

With this latest volume, however, we have a splendid example of what both the best of science and art can produce. Again, Oxford could not have found better authors for *The Birds of Paradise*. Frith and Beehler, between them, have seen 22 and 31 of the species in the wild and have published more on this family than any living scientists. Both are also accomplished and well-known authors who maintain active interests in the birds of the New Guinea region. In addition to the scientific credentials of the books' authors, the artistic reputation of William Cooper guarantees that the illustrations will be superb. Cooper is unquestionably one of the world's most respected and accomplished bird artists. He had already painted or drawn all of the species of birds of paradise for *The Birds of Paradise and Bowerbirds* (1977, Collins) produced with Joseph Forshaw. This earlier work was primarily a vehicle for the magnificent large-scale paintings of birds of paradise; his innovative placement of his subjects in evocative yet entirely natural settings helped establish Cooper's reputation for detail and accuracy. The 11 new plates and many fine drawings produced for the present book add immeasurably to the impression of quality and excellence.

The birds of paradise are, of course, one of the truly spectacular groups of birds, and interest by ornithologists, naturalists and European travelers can be traced back several centuries. But this attention is only relatively recent when compared to the millennia of cultural importance the birds have had for the indigenous people of the greater New Guinea area. The interactions between birds of paradise and humans, on many levels, means that there is a complex and important history associated with the family that cannot be avoided. This history is carefully and sensitively described by Frith and Beehler and will be regarded as one of the most fascinating components of this book. The ancient and continuing practice of using bird of paradise plumes in ceremonial headdress, which has meant the hunting of many species simply for these gorgeous feathers, may strike us as a major conservation issue. Potential Western self-righteousness is, however, quickly tempered by facts such as the colossal trade in these same feathers and plumes for the European millinery market (for example, 155,000 skins passed through one London auctioneers during 1904–08). During their examination of skins for this book, the authors (especially Frith) examined 6000 of these skins themselves!

Perhaps even more remarkably, despite the extraordinary hunting and collecting pressure on these birds (the *Paradisaea* especially), no species has become extinct or even endangered. This appears to be primarily due to the targeting of adult, plumed males by hunters and collectors alike. As most species are polygynous, with males competing for matings among the females, the loss of even large proportions of adult males can have little apparent impact on the population as a whole. Frith and Beehler report that, of the 42 species they recognise, only three are regarded as vulnerable: Macgregor's, the Blue and the Black Sicklebill. Nonetheless, in the chapter on Conservation, the authors describe, in characteristic detail and care, the threats and concerns for each species, concluding that complacency is not an issue. Primary among concerns is the expansion of industrial-scale selective logging, though the greater efficiency of gun-based hunting, especially when de-coupled from cultural regulations, is a serious threat as well.

The volume itself is by far the largest in the series, comprising a total of 613 pages. Most of this is taken up with the species accounts. As expected, a large proportion of the species are very poorly known and published accounts of most are often fragmentary, anecdotal and ancient. Nonetheless, the reliability of the text is ensured by the scientific rigor of the accounts, which is based on the direct experience of the authors themselves. Further, being all too aware of the paucity of information available, the authors (Frith especially) undertook a massive world-wide examination of specimens. As a result, the plumage and morphological descriptions are by far the most detailed available.

This information was invaluable in Frith and Beehler's treatment of the systematics of the family. Despite numerous previous attempts to chart the phylogeny of the birds of paradise, the relationships among the 42 species have been confused and contradictory for a long time, mainly due to the effects of convergent evolution in some cases and what appears to have been a rapid evolutionary radiation within the main group. The situation is still far from resolved (the authors suggest that a better assessment must await molecular analyses) but their phylogenetic reconstruction, which used 52 characters, must be regarded as the most sound so far developed by this approach. They recognise 17 genera, with the family having two subfamilies: the Cnemophilines (containing only three species: Loria's, Crested and Yellow-breasted) and the Paradisaeinae (containing the remainder of the subfamily).

It should be noted that initial molecular studies of relevance have been completed very recently (Cracraft and Feinstein 2000); these indicate that the Cnemophilines may, in fact, be an independent lineage, much more basal than the birds of paradise, which are a branch on the crow family tree. These authors also show the huge and monogamous McGregor's to be a honeyeater rather than an aberrant member of the Paradisaeinae. Such findings are crucial to the

taxonomic treatment of the present book because both taxa are considered basal birds of paradise here and any rearrangements may have significant implications for the phylogeny of the 'main' species. However, these insights — while potentially unsettling — will be welcomed by the authors who accept the necessity for incorporation of molecular data into the discussion on relationships. Indeed, this family provides one of the most fascinating contemporary examples of the application of molecular techniques as an independent assessment of a phylogenetic study.

We would also point out that these phylogenetic debates are par for the course in modern ornithology and cannot be seen in any way as a failure of this volume. Indeed, it is the sheer scope and attention to detail that will ensure that this book enjoys a lasting contribution. Such detail is especially apparent in the assimilation of the vast amount of information on displays, breeding systems and ecology (the majority by the authors) that has been published since Cooper and Forshaw. This information is cast in a contemporary theoretical framework with respect to the evolution of breeding systems for which the birds of paradise have been focal examples.

As with each of the volumes in the series, the book opens with several 'general chapters', which provide the essential background and specific aspects of the family that deserve detailed discussion. There are eight such chapters (after a beautifully written Foreword by Sir David Attenborough): The incredible birds of paradise — an introduction; Discovery and

history of study; Evolution and biogeography; Ecology; Reproductive behaviour; Nesting biology and parental care; Birds of paradise in human tradition and culture. Each shows repeated evidence of the attention to detail and sense of history. For example, there is a table (page 44) that enumerates the number of species of the group that were known to the authors of major works at the time they were published. Table 5.1 contains a summary of what is known about the mating system, male displaying strategy, which parts are used in display and other details for every species! Such things ensure that the work is much more than simply a nice-looking book: it will be an invaluable scientific resource for a long time to come.

Finally, if you have the slightest interest in this family, in New Guinea or even simply the more exotic aspects of tropical biology, this is one of the most impressive books you will see. If you are a serious student of avian ecology or evolution, you cannot afford not to buy it.

Reference

- Cracraft, J., and Feinstein, J. (2000). What is not a bird of paradise? Molecular and morphological evidence places *Macgregoria* in the Meliphagidae and the Cnemophilinae near the base of the corvoid tree. *Proceedings of the Royal Society of London B* **267**, 233–241.

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