Seabird Bycatch: Trends, Roadblocks, and Solutions

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Reviews

Edited by R. Todd Engstrom

The following critiques express the opinions of the individual evaluators regarding the strengths, weaknesses, and value of the books they review. As such, the appraisals are subjective assessments and do not necessarily reflect the opinions of the editors or any official policy of the American Ornithologists' Union.

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Threatened Birds of Asia: The BirdLife International Red Data Book.—Nigel J. Collar, Editor-in-Chief. 2001. BirdLife International, Cambridge, United Kingdom. xxx + 3,038 pp., 1 appendix, many unnumbered figures, and maps. ISBN 0-946888-44-2. Cloth, $102.00.—In two massive volumes, *Threatened Birds of Asia* is full of well-organized and well-referenced data on the rarest birds of Asia, including Pakistan through eastern Indonesia (except Irian Jaya) to northernmost Russia. Such a work has long been needed for Asia, with its extravagantly diverse but imperiled avifauna. The book's plan and presentation should maximize its use for many purposes, because every effort has been made to ensure traceability of records, completeness of coverage, and transparency of conclusions, while an evident lack of restrictions on space has allowed for an explicitness and thoroughness rarely seen.

The outcome of several years of planning and implementation, the book has involved the collective efforts of hundreds of people from many countries, primarily in the United Kingdom and in Asia (more than 1,000 people are thanked in the Acknowledgments). To glance randomly among the main species accounts gives an inkling of the scope of coordination, compilation, and analysis necessary for this huge undertaking. The result—a monolithic work full of comprehensive accounts targeted specifically toward conservation but relevant in many other ways—is even more than one might have hoped for, because it incorporates several major advances over its predecessors for Africa and the Americas. Those advances include a more comprehensive survey of the specimen evidence, incorporation of unpublished specimen label data, and maps with each point linked to data presented in the text. This is despite the fact that the avifauna of Asia is in many ways more "difficult" than that of Africa and the Americas, given the biogeographic complexity of the region (in particular, the archipelagoes of Indonesia and the Philippines), the lack of modern ornithological coverage of many areas, and the vastly greater linguistic demands of working with ornithological literature in (for example) Chinese, Japanese, and Russian.

An informative introduction explains the data-gathering process, sources of data used (literature, museum specimens, and personal testimony), modes of referencing, organization of the text, and so on. Regional problems of inconsistent taxonomic treatment at the species level are discussed—a particularly relevant issue, given that BirdLife International has chosen the species as the basic unit for conservation. Even strongly marked taxa long deemed subspecies by standard global lists do not receive treatment in this book; that is a lost opportunity to publicize the need for their conservation, but in a book like this, it is not feasible to evaluate the status and levels of differentiation of such taxa and attempt their conservation. The introduction continues with a section covering IUCN (International Union for Conservation of Nature and Natural Resources) Red List categories and criteria, and closes with a simplified analysis and overview section that will be especially useful for the nonspecialist, and a list of Asian species falling in the Critical and Endangered categories.

The maps are among the most useful features of the book. Their production clearly involved an immense amount of work, for each mapped locality is numbered and referenced in the text in

a way that allows the reader to easily determine the source of the record. To accomplish that for a single species is difficult and tedious enough; its achievement here, for nearly all the species covered, is monumental. The book's mode of mapping is probably the best possible at this scale, but a few caveats for using the maps may be in order. As is pointed out in the introduction, the maps can give a false impression of how widespread—and therefore secure—some species are. That is especially true in the case of migratory birds, and in cases where the evidence behind mapped reports may be doubted—such as historical records of the Oriental Stork (*Ciconia boyciana*), Hooded Crane (*Grus monacha*), and Green Peafowl (*Pavo muticus*) in India. The mapped points are distinguished by shading as "historical" (pre-1950), "fairly recent" (1950–1979), and "recent" (1980 on) records, but there is no indication of the seasonality or type of record. For migratory species, perhaps a color map or one broken down by month or season could have shown the important facet of seasonality, and thus better represented the species' conservation requirements. Also, the reader cannot determine from the maps whether a given point represents a single (perhaps uncertain) record or many well-documented records year-round; nor do the maps discriminate between specimen records and sight records, though the text does.

The period categories differ in the potential problems inherent to them. The vast majority of specimen records fall into the "historical" category. Unfortunately, those records mix published reports, often of the specimens themselves, and unsupported claims in the literature. Most of the identifications in the specimen records have not been verified, which could be a problem where museum database printouts were used, especially if taxonomic shifts have occurred or the species is one of a pair or group of similar species. In the "fairly recent" period, few specimens were collected for most regions covered and few field guides were available; thus, sight records might be expected to be of lower quality than very recent ones. In the "recent" category, which might reasonably be assumed to represent a species' current range more closely than the previous categories, few vouchers have been collected, and observer effort has likely been concentrated in easily accessible, safe areas, such as national parks and sites featured in bird-finding guides. Fortunately, future researchers can perform analyses on a case-by-case basis (e.g. map only unassailable records), because every point locality is easily traceable.

Each species account begins with a statement about the species' threat status and a summary of contributing factors. For the better-known species, the accounts consist largely of a country-by-country (and for the larger countries, province-by-province) listing of records, providing date, source, and associated comments as needed for every record. Although this requires an immense amount of space and is not riveting reading, it is exactly the type of presentation that will allow future workers to reinterpret each record as needed, and to evaluate the importance of new records. Such detailed presentation of records places a far greater burden on the compilers, but it is only because of this that one can note and correct shortcomings. A few that I noticed include 12 fairly recent overlooked specimens of Gray-sided Thrush (*Turdus feae*; 11 in the University of Michigan Museum of Zoology; 1 in the Academy of Natural Sciences of Philadelphia; of these 11 are from from Mawphlang, Khasi Hills, Meghalaya; whereas 1 is from Karong, Manipur, India; all collected from October to December, 1951–1953). Also, for the same species, a Field Museum of Natural History (FMNH) specimen, said in the book to have come from Mawiyngkhung, is actually (according to the FMNH database) from Mawphlang—giving this unmapped locality the most specimens in all of India! Although this is probably unimportant on a global scale, and the symbol for Mawphlang would probably overlap on the map with that of Mawiyngkhung to the east, the inaccuracy might be significant to local conservation planning.

In Remarks (1) on the White-browed Bushchat (*Saxicola macrorhyncha*), it is noted that Paludan (1959) did not mention the species. True, Paludan did not himself encounter the species in Afghanistan and so did not discuss it in his main text, but he did include it in his "tentative list of Afghan birds" (Paludan 1959: 315), with a comment about its uncertain status in the country. The sifting of large numbers of records and the considerable effort required in cross-checking and updating every place where a given piece of information may have appeared can explain some inconsistencies, such as a pervasive mix-up on the identity of an odd chat wintering in Goa and seen by many birders. On

pages 2045 (Distribution) and 2048 (Migration), it is tentatively assigned to *S. macrorhyncha*, but it is emphatically (and correctly) stated not to be that species on page 2046 (last paragraph of Distribution section). Under Remarks (5) on the same species, the reader might wonder why differences between female White-throated Bushchat (*S. insignis*, whose species account begins on the following page) and White-tailed Bushchat (*S. leucura*) are even mentioned, but the authors clearly intended "White-browed" here, not "White-throated" (perhaps an inadvertent advertisement for more memorable and less confusing common names in this genus).

In this era of field guides for every region of the world, some assume that misidentifications are largely a thing of the past, but parts of this book emphatically, if unintentionally, bring home the point that such is not the case. Consider the accounts for two species of adjutant storks *Leptoptilos*: the confusion in the literature both past and present is so overarching that one is left with the sense that few of the records are unassailable, which has consequences for assessment of the species' relative distributions and threat status. The confusion persists even though the birds are quite distinct morphologically; they have not been well served by field guides, which have engendered both false confidence and unnecessary uncertainty among observers. Similar confusion occurs with other large birds, such as vultures and pelicans, that are easily seen but difficult to identify, and for which the specimen record is far too sparse to provide a reliable framework. *Aquila* eagles (though represented by many more specimens) collectively form another special case of pervasive, long-term confusion in the literature, specimens, and sight records. It is unclear what can be done in a book like this but to cautiously accept most or all records, with resultant obscuring of trends.

The introduction rightly points out that the records of Richard Meinertzhagen are now known to be untrustworthy, because of his large-scale theft of specimens and replacement of original labels with new ones with fraudulent data. Meinertzhagen's records were thus largely eliminated from consideration, making this book the first to exclude them wholesale. However, an even more pervasive historical problem—that of the records from the Indian subcontinent of E. C. Stuart Baker, perhaps the most prolific author in the history of Indian ornithology—is not mentioned in the introduction. Seemingly authoritative and often cited, Baker's many works remain influential, and references to them fill the pages of the Indian subcontinent species in this book. Baker very often provided the only information available on nesting habits and seasonality, diet, vocalizations, and other aspects of the natural history of the region's birds; yet many of his records and observations are strikingly anomalous and have never been corroborated by others. The voucher specimens of rare taxa or of birds taken on the nest to which Baker so often refers have never turned up in any collection, nor have they been independently verified, and many of Baker's records have been seriously questioned (with good reason) by a succession of careful ornithologists. The problem is briefly discussed in Remarks (2) for the Gray-crowned Prinia (*Prinia cinereocapilla*) and in relevant species accounts referred to there, but realization of the scale of the problem evidently occurred too late in the project to be dealt with effectively. Given that numerous references to Baker's work are incorporated without query or special notice, users of the book who require factual information should be prepared in all such cases to suspend belief and seek independent corroboration.

Another problem that came into sharper focus during preparation of the book was that of the source of listings of many species from Bangladesh. Most synthetic sources have long included Bangladesh in the ranges of many species, though no one seems to know on what authority. Broad statements about species ranges through Bangladesh have been repeated from source to source, and tone range maps have attempted to replicate those statements, with resultant incongruities of occurrence and seasonality. Recent efforts to relocate many species said to have occurred historically in Bangladesh have often been unsuccessful, resulting in speculative statements about possible extinctions within the country. But the fact is that very little collecting has ever been done in Bangladesh, and primary information on the distribution of its birds is extremely incomplete; in the later stages of the project, it became clear that several threatened species had long ago simply been inferred to occur in the country. *Threatened Birds of Asia* is the first reference work to fully recognize and begin to deal with this matter; a discussion is found on page 830.

Many of the species covered in this book have not previously been reviewed in any detail, and certainly nothing has appeared on the vast majority of threatened species that matches the quantity of information presented in such a convenient and transparent manner. These accounts provide the most up-to-date information available on distribution, status, ecology, feeding, and nesting—for certain species, taking up many pages, whereas for others it was evidently a struggle to find any information. The coverage is comprehensive enough that anyone requiring information on any Asian threatened species should look here first.

The book incorporates all the information contained in Collar et al.'s (1999) *Threatened Birds of the Philippines*, which was published in Manila in a small print run that rendered it generally unavailable. That source is reproduced *verbatim*, but accounts for only a small percentage of the contents of *Threatened Birds of Asia*. Thus, owners of the Philippines volume will certainly need to acquire the Asian volumes, but owners of the latter will not need to find a copy of the former.

Above and beyond the compilation of species accounts and the analysis of distributions and biology, *Threatened Birds of Asia* provides several valuable services to ornithology that will enable conservation planning. Among those services is a 267-page partial bibliography of Asian birds, comprehensive in regard to threatened species; a list of the museums checked for significant holdings of threatened Asian birds, which should account for the vast majority of specimens of those species (though many smaller museums may not be listed); and gazetteers for each country including all traced localities of threatened species, which provides the capability of evaluating and redressing errors in point localization and which should eliminate much duplication of effort.

Threatened Birds of Asia is well produced and attractive, though its size makes it cumbersome. The copy sent to this reviewer is missing pages 1061–1092, but I do not know how many such deficient copies were produced. Species accounts can be downloaded for free on the Internet (www.rdb.or.id), but the book (which is also available with a CD) is an excellent value for the price, and those who will use it very often will need to buy it. This is certainly an essential reference for all ornithologists and conservationists working on Asian birds, and it will no doubt prove useful to many others as well; the gazetteers alone will make it invaluable to biologists and policy-makers working on a wide variety of organisms in Asia. All major libraries should definitely acquire this book.—Pamela C. Rasmussen, *Michigan State University Museum and Department of Zoology, West Circle Drive, East Lansing, Michigan 48824-1045, USA. E-mail: rasmus39@msu.edu*

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Nightjars and Their Allies: The Caprimulgiformes.—David T. Holyoak, illustrated by Martin Woodcock. 2001. Oxford University Press, New York. x + 773 pp., 23 color plates, 221 text figures. ISBN 0-19-854987-3. Cloth, $89.50.—Nightjars, goatsuckers, potoos, frogmouths, oilbirds—my spellchecker underlined every one of these words. I love these very unusual birds, and I have never met an ornithologist who did not think them fascinating. To no small degree, they are the reason I got into ornithological research. But despite their power to fascinate, the Caprimulgiformes remain among the most understudied of bird orders. Recently, Cleere (1998) and the various contributors to volume five of the *Handbook of the Birds of the World* (del Hoyo et al. 1999) provided the first treatments of the order from a worldwide perspective. However, Holyoak's new book—the seventh in Oxford's *Bird Families of the World* series—is the first comprehensive, scientifically rigorous volume devoted entirely to the world's species, their evolution, ecology, and behavior.

There are two parts to the book. The first provides 90 pages of general information on the Caprimulgiformes: evolution, speciation, biogeography, habitats, feeding ecology, communication, molt, and breeding biology. Figures from important publications in the peer-reviewed literature are scattered throughout this section. Occasionally, the captions do not provide enough explanation about the data contained in the figures (e.g. fig. 5.1), but most of the figures are very effective. The chapter on Evolution and Classification is particularly well done. The controversy involving differences between biochemical and morphological classification schemes is dealt with head-on, including a brief explanation of DNA–DNA hybridization and other molecular techniques. A summary of data from analyses done on the Caprimulgiformes by Sibley and Ahlquist (1990) is provided, along with a summary of the important taxonomic implications of their results. Also, the worldwide perspective in this section is invaluable for anyone contemplating research on this order. For example, although many aspects of the life histories of North American *Caprimulgis* species have not been studied, those of close relatives on other continents have been; Holyoak summarizes that work, including the techniques used in collecting data.

The book's second part offers thorough accounts of 118 species; for the North American species, these come very close to the detail of the new *Birds of North America* accounts. The many tables and figures of data presented throughout this section maintain the feel of an ornithology textbook. Morphological data summaries are provided in tabular form for every species. Martin Woodcock's line drawings, especially those depicting morphological characteristics or a sequence of behaviors, are excellent. There are no photographs, which is a fundamental difference between this volume and the one by del Hoyo et al. (1999). While the latter's photographs are excellent and at times spectacular, this volume focuses much more on data instead. Range maps are nice and big and provide more detail than usual about specific sighting locations, subspecies ranges, and the like. But they are also a little more complicated than typical range maps and can be a little busy; you will have to consult the legend. Woodcock's color plates are excellent but usually only show the bird in resting position. Birds in flight are depicted only by line drawings in the species accounts, again always in the same position to facilitate species comparisons. Various color morphs exhibited by some species are not presented.

Although it is an attractive volume, this book is first and foremost a scientific work, the definitive one on the goatsuckers of the world. It should prove an extremely valuable resource for anyone contemplating goatsucker research, but will also be of interest to birders who wish to know more about this order. The expansive, 64-page bibliography (including voice recordings) is a gold mine of information in itself. The book belongs in all university libraries and on the shelf of any professional or amateur ornithologist who is contemplating serious investigation of this wonderful group of birds. —Robert J. Cooper, *Daniel B. Warnell School of Forest Resources, University of Georgia, Athens, Georgia 30602, USA. E-mail: rcooper@smokey.forestry.uga.edu*

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Cenozoic Birds of the World, Part 1: Europe.—Jirí Mlíkovsky. 2002. Ninox Press, Prague, 406 pp., ISBN 80-901105-3-8.—This book is a catalogue of the Tertiary birds of Europe; according to the title, it will be followed by other volumes to cover the avifauna of the world. Thus, Jirí Mlíkovsky has undertaken a gigantic task. Previous catalogues included a list of the extinct or recent species

recorded as fossils, with their age and type-locality, but Mlíkovsky includes all the localities where a given species has been reported, with references, catalogue numbers, specimen repositories, and so on.

In previous catalogues, few systematic determinations were modified by the authors; Mlíkovsky, however, completely overturns many previous identifications. Attribution of a fossil to a given systematic entity is partly a matter of personal interpretation and subjectivity (and anybody can commit errors), but one has the impression that the guiding principle of Mlíkovsky's work is that everybody before him has been wrong. The result is that this book contradicts practically all that has been written on the Tertiary birds of Europe, which will have serious repercussions for avian paleontology.

The systematics used in the book is a modified version of the one Mlíkovsky presented at the 18th International Ornithological Congress in Moscow in 1982. The system was founded on "a large amount of data...evaluated by means of new methods of biological systematics [developed by Mlíkovsky], which have been based especially on new achievements in mathematical logics" (Mlíkovsky 1985). This classification included four subclasses, the Archaeopterygidae (for the Jurassic radiation), the Hesperornithidae (for the Cretaceous radiation), the Passerida (for the first branch of the Cenozoic radiation), and the Ciconiida (for the second branch of the Cenozoic radiation). To give just one example of this strange classification, the Apterygiformes include, distributed among four suborders, the Procellariidae, Diomedeidae, Hydrobatidae, Pelecanoididae, Spheniscidae, Dinornithidae, Anomalopterygidae, Apterygidae, Tinamidae, Podicipedidae, Dromadidae, and Chionididae. Sibley and Ahlquist (1990: 240), in their chronological survey of classification, dismissed Mlíkovsky's scheme with a simple, "No comment."

Although based on previous ones, the new systematics used here includes numerous modifications, without explanations. In the Charadriiformes, for example, are found the Jacanidae and Rostratulidae (previously Anseriformes), the Scolopacidae (previously Plataleiformes), the Glareolidae, Pterocletidae, Charadriidae, Laridae (previously Ciconiiformes), and the Alcidae (previously Alciformes).

The classification within superorders is also very anomalous. For example, the Piciformes are in the superorder Ciconii, whereas the Passeriformes are in the superorder Passeri; likewise, the Anseriformes are in the Ciconii, whereas the Galliformes are in the Passeri. The Bucerotiformes, which include three recent families and one extinct family, are placed in the Gavii. This new classification is said to be founded on many different kinds of data—morphological and molecular on the one hand, behavioral and ecological on the other. "This arrangement is supported by an enormous amount of further data, which will be presented elsewhere" (J. Mlíkovsky unpubl. data). But nothing is given here to explain or justify the author's patently bizarre classification.

I have noticed in the past that Mlíkovsky has difficulty in recognizing similarities between the different shapes of bird bones, and consequently, when identifying fossil birds, he often makes errors. For example, in 1999 he described what he believed to be a Miocene jacana, from Czechia, as *Nupharanassa bohemica*, but this turned out to be a roller-like bird, belonging to the extinct genus *Geranopterus* (Mlíkovsky 1999, Mourer-Chauviré 1999, Mayr and Mourer-Chauviré 2000). The tarsometatarsus in the Jacanidae is very characteristic in the very wide distal foramen. In addition, the internal and external trochleae are much shorter than the middle trochlea, and the three trochleae are arranged on a strongly curved line. The supposed Czech jacana was different from the recent Jacanidae in all three of the characters. Mlíkovsky is in complete disagreement with the attribution of this fossil to the rollers. He writes: "No points were presented for its exclusion from the Jacanidae" (p. 126), though the three points mentioned above were indeed presented. I have the impression that, when Mlíkovsky looks at a bone, his perception of it is totally different from that of anyone else.

Early Tertiary birds show an extraordinary diversity and sometimes present mosaics of characters that can be extremely different from the combinations found in recent families. In some instances, it is possible to show that fossils that retain certain primitive characters are on a phylogenetic line leading to a recent family. Previous researchers have sometimes created extinct orders, or more often extinct families, for those forms; but Mlíkovsky does

not admit the validity of those taxa and places the extinct orders and the near totality of the extinct families either in synonymy with recent ones, or in the *Aves incertae sedis*, which has the effect of obscuring a large amount of information on the diversity and early evolution of Paleogene birds. In other cases, those families are wrongly placed in orders to which they are unrelated. For example, the Lithornithiformes (p. 58) are placed in the Tinamiformes, although they are morphologically very different; the Messelornithidae (p. 87) are placed in the Ciconiiformes, and come between the Pelecanidae and the Gruidae, although they are related to the Eurypygidae; the Gastornithidae (p. 94) are placed within the Ciconiiformes, after the Threskiornithidae, although their affinities are with the Anseriformes.

All the small zygodactyl or semizygodactyl forms, generally from Eocene deposits, are jumbled together in the family Zygodactylidae (p. 141). Those forms had been assigned to the families Primoscenidae, Sandcoleidae, Quercypsittidae, Miopiconidae, and Pseudasturidae. Some of the fossils were described from complete skeletons (e.g. Middle Eocene of Messel, Germany) or from associated elements (e.g. Early Eocene of Walton-on-the-Naze, England). The affinities of the forms had been carefully studied by their describers, taking into account not only the tarsometatarsus but also the other elements of the skeleton, and it was clear that all the forms could not belong to a single family. Mlíkovsky also includes, in this grab-bag family, genera that had been described as Coliiformes (*Primocolius*, *Masillacolius*, *Selmes*), Psittaciformes (*Psittacopes*), and Falconiformes (*Messelastur*).

Arbitrary attributions or synonymizations also occur at the generic level. Here is just one example. The genus *Elaphrocnemus* (Cariamae, Idiornithidae), very abundant in the Phosphorites du Quercy, is synonymized (p. 179) with the genus *Talantatos* Reichenbach, 1852, from the Late Eocene of the Paris Basin. This generic name has never been used in any scientific work until Mlíkovsky (1995) rescued it from the oblivion into which it had sunk after 1852. The holotype of *Talantatos fossilis* is a femur, partially embedded in stone, with the head missing, and the distal part made up of a large number of small pieces stuck back together. However, the morphological characteristics that are still observable are quite different from those of *Elaphrocnemus*; consequently, this destabilizing synonymization is unjustified.

Another remarkable case is Mlíkovsky's placement of the genus *Diatropornis* (Eocene or Oligocene of Quercy) in *Aves incertae sedis* (p. 270), which would negate the presence of Cathartidae in the Early Tertiary of the Old World. Although the systematic position of *Diatropornis* was at first considered uncertain, Brodkorb (1964) recognized that it was a cathartid, and this assignment has been supported by all subsequent avian palaeontologists, including Mlíkovsky himself (1996:804). His arguments against *Diatropornis* being a cathartid are either weak or totally unfounded, and do not address the shape of the hypotarsus, which is absolutely characteristic of the Cathartidae. The occurrence of Cathartidae in Europe is further confirmed by the presence of another genus, *Parasarcoramphus* (Mourer-Chauviré 2002).

A large number of Late Paleogene and Early Neogene birds are assigned by Mlíkovsky to modern genera. For example in his Eocene, Oligocene, and Miocene "Phasianidae," Mlíkovsky retains only the genera *Paraortyx*, *Pirortyx*, and *Miogallus*; all other fossil genera are synonymized with the recent genera *Coturnix*, *Alectoris*, and *Pavo* (pp. 152–155). Concerning the genera *Palaeortyx*, *Palaeoperdix*, *Schaubortyx*, and *Taoperdix*, he says that it is not possible to distinguish them morphologically from the recent genus *Coturnix*. Therefore, he places all the small forms in the species *Coturnix gallica*, all the medium-sized forms in the species *Coturnix longipes*, and all the Plio-Pleistocene forms in the recent species *Coturnix coturnix*. However, U. Göhlich has revised all these forms and shown that the genera *Palaeortyx* and *Palaeoperdix* are very distinct from each other and from *Coturnix*. In the recent genus *Alectoris*, Mlíkovsky places (pp. 157) two recent genera, *Tetraogallus* and *Ammoperdix*, the extinct genera *Palaeocryptonyx*, *Pliogallus*, *Plioperdix*, and *Chauvireria*, some of the species described in the genus *Palaeoperdix*, and many fossil species of the recent genus *Francolinus*. I have before me the type-material of *Palaeocryptonyx* and a sample of *Chauvireria* and can assert that these two genera are different from each other, and different from *Alectoris*.

Then, Mlíkovsky assigns a great number of Late Neogene birds to modern species. For example, among the grouse, he puts all the

species (*Tetrao praeurogallus, T. conjugens*, *T. macropus*, *T. rhodopensis*, *T. partium*, *Bonasa praebonasia*, *Lagopus balcanicus*, *L. atavus*) described from the Early Pliocene (MN 14) to the Early Middle Pleistocene (MNQ 22) in the recent species *Tetrao urogallus*, *T. tetrix*, *B. bonasia*, and *L. lagopus* (pp. 166). Yet it has previously been demonstrated that each of those taxa is characterized by dimensions or proportions that are different from those of recent forms. By synonymizing all of the fossil taxa, Mlíkovsky suppresses all the information about the phylogenetic lineages that have led to the existing taxa.

From page 227 on, Passeriformes attributed by previous authors to recent species, or to recent genera but with indeterminate species, such as *Erithacus* spp., *Luscinia* spp., *Oenanthe* spp., *Turdus* spp., are considered by Mlíkovsky to be validly identified, and all the extinct species of Passeriformes are either synonymized with recent species or placed in a Family *incertae sedis*. In the family Corvidae, only one extinct species is retained—*Miocorvus larteti*, from the Middle Miocene—but even then Mlíkovsky says that "the taxonomic position of this species requires re-examination" (pp. 231). For all the large Plio-Pleistocene corvids, Mlíkovsky has tried to force the complex and multitudinous reality of the fossil into three mental categories corresponding to three recent species. Thus, he synonymizes *Corvus fossilis*, *C. pliocaenus janossyi*, and *C. antecorax* with *C. corax*; *C. pliocaenus*, *C. praecorax*, *C. betfianus*, and *C. simionescui* with *C. corone*; and *Pica pica major* (in part) and *C. moravicus* (described by Mlíkovsky himself) with *C. monedula*, while *C. hungaricus* is placed in the *Aves incertae sedis*. However, it is impossible to place in synonymy all those species, which have different sizes and display different proportions. By doing this, Mlíkovsky obfuscates the evolutionary sequences in the fossil record. Among the noncorvids there is a single exception, *Loxia patevi* Boev 1999, that is considered to be a valid extinct species of small passerine rather than Family *incertae sedis* (pp. 246). The other species described by Boev—*Coccothraustes balcanicus*, *C. simeonovi*, and *Regulus balcanicus*—have not benefited from the same leniency.

When several species, contemporaneous or spread out in time, are distinguished only by size, Mlíkovsky synonymizes them, even though one species may replace another biostratigraphically. When two species have a size difference on the order of 10%, he puts them into the same size class (pp. 90), but sometimes the size differences are much larger. For example, among the different species of the genus *Idiornis*, Mlíkovsky synonymizes *I. gallicus*, *I. cursor*, and *I. gaillardi* (pp. 180). Yet *I. gallicus* is on average 15% larger than *I. cursor*, and 80% larger than *I. gaillardi*. In *I. gallicus*, the total length of the tarsometatarsus is 108 mm, whereas in *I. gaillardi* the total length is 51 mm (Mourer-Chauviré 1983). On the other hand, in the genus *Laricola*, which Mlíkovsky created for the species *Larus elegans* Milne-Edwards and *Larus totanoides* Milne-Edwards, the two species are conserved (pp. 136), though *Larus totanoides* is only 5.6% larger than *Larus elegans*.

Although Mlíkovsky's action in this work was directed toward greatly reducing the number of taxa, at the same time he has created taxa that are unfounded. For example, the genus *Anatalavis* was created for a humerus from the Cretaceous or Paleocene of New Jersey, with the type-species *Anatalavis rex*. Olson (1999) described another species, *A. oxfordi*, from the Early Eocene of England, and indicated that the humerus of *A. oxfordi* "is similar in proportions and has the same distinctive curvature and robustness as that of *A. rex*…which it matches in all details except size." Olson further specified, in a figure caption, that the slight differences between the photographs of the two humeri of *A. oxfordi* and *A. rex* "are mainly due to slightly different rotations of the specimens." In spite of these indications, Mlíkovsky (pp. 107) uses those differences to establish a new genus, *Nettapterornis*.

In conclusion, this book is very dangerous. It has the appearance of a scholarly work, because of all the information given. Young avian palaeontologists taking their first steps in the discipline and neo-ornithologists interested in the evolution of birds will be tempted to consult it, but they will not be able to tell whether attribution of a fossil taxon to a given family or order comes from a general consensus, admitted by the international community, or from a purely arbitrary decision of the author.

This review gives a certain number of examples of disputable systematic positions and erroneous or arbitrary synonymizations, but it is by no means exhaustive, and I did not attempt to check everything written in this book. I hope,

however, that my critique will convince readers to be very cautious when using it.—Cécile Mourer-Chauviré, *Unité Mixte de Recherche Paléoenvironnements et Paléobiosphère, Université Claude Bernard, Lyon 1, 27–43 Boulevard du 11 Novembre, 69622 Villeurbanne Cedex, France. E-mail: cecile.mourer@univ-lyon1.fr*

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Seabird Bycatch: Trends, Roadblocks, and Solutions.—Edwin F. Melvin and Julia Parrish, Eds. 2001. University of Alaska Sea Grant AK-SG-01-01, Fairbanks, Alaska. vii + 206 pp., ISBN 1-56612-066-7. Cloth, $20.00.—Mortality of seabirds resulting from bycatch in various types of fishing gear is an important global concern of ornithologists, fishers, oceanographers, conservationists, and managers. From presentations at a Pacific Seabird Group Symposium and an additional paper, the editors have drawn together important information about the issue in nine peer-reviewed articles, seven abstracts, and an opening symposium synthesis. The editors and many of the contributors have previously made comprehensive contributions to bycatch research and problem resolution.

In their synthesis, the editors emphasize the importance of educating fishers and fishery managers about effects of bycatch that are neither obvious nor intuitive. For instance, observations of seemingly few caught birds must be reconciled with the potential population consequences of those mortalities for seabird populations. The editors emphasize the importance of working partnerships with fishery interest groups and of incorporation fishers' knowledge in problem-solving exercises. Solutions need to be aimed at significantly reducing bycatch without significantly reducing target catch. In this regard, fishers prefer modification of equipment and operational procedures to spatial and temporal restrictions that are more likely to reduce profits. However, it is clear that strong seasonal and area effects are pervasive aspects of seabird × fishery interactions and need to be considered in comprehensive solutions. From a larger ecosystem perspective, attention must also be focused on the bycatch of marine turtles, mammals, sharks, and other fishes.

Many problems exist, and legislation is often weak, ineffective, and unenforceable. Cooper, Croxall, and Rivera point out that many albatrosses and petrels are killed in illegal fisheries for Patagonian toothfish (*Dissostichus eleginoides*; marketed as Chilean sea bass). Other problems occur in international waters beyond the bounds of national legislation. With the help of experts, the Food and Agricultural Organization of the United Nations (FAO) produced an International Plan of Action to reduce seabird bycatch in the world's oceans (IPOA-Seabirds). Recommended tactics include increasing the sinking rates of baited hooks on longlines with weights and thawed baits, dispensing hooks at night and from chutes below the water surface, installing bird-scaring lines and poles at vessel sterns, and minimizing fish and garbage discards that attract scavengers.

Long-term data collection by trained, independent and dedicated observers is essential, and may be effective in changing the behavior of skippers and crews. Scientists have certainly demonstrated successful methods for reducing bycatch. In this volume, Løkkeborg discusses the use of bird-scaring lines, which have reduced bycatch while also increasing catch-rates of the fishery's target species. Robertson, discussing experimental weighting of longlines, contends that sinking rates of >0.3 m s^{-1} used in conjunction with streamer lines could greatly reduce the bycatch of albatrosses in the fishery for Patagonian toothfish. Boggs demonstrates that camouflaging baits by dying them blue increased the effectiveness of streamer lines and weighted pelagic longlines for swordfish in Hawaii (the idea of camouflaging bait to reduce longline scavenging and bycatch was first suggested by fishers). Cousins, reporting on a workshop on the population dynamics of Black-footed Albatrosses (*Diomedea nigripes*), addresses the issue of assessing longlining bycatch and indicates that juveniles were killed more often than adults. Doubling observer coverage from 5% to 10% of fishing trips is a crucial, immediate need.

Edwards, Silva, Burg, Friesen, and Warheit provide an informative tutorial on molecular genetic markers and their potential uses in population analyses of seabird bycatch. Marker analyses can be used to identify otherwise unidentifiable bycatch specimens, to assess population origins of birds killed in fishing gear, and to evaluate the significance of bycatch on the genetic variation of source populations. Examples with Black-footed Albatrosses and Common Murres (*Uria Aalga*) are given.

Because circumstances change and ecosystem interactions are dynamic, strategies to reduce bycatch mortality must be flexible and adaptive. Forney, Benson, and Cameron report that area and depth closures of gillnet fisheries in central California during the 1980s successfully reduced avian bycatch, but that increased gillnet efforts in the late 1990s may have reversed the situation. They demonstrated a striking temporal and spatial correspondence between dead seabirds picked up on beach surveys and adjacent gillnet fishing effort for halibut. Using creative, novel approaches, Melvin, Parrish, and Conquest incorporated highly visible netting in the upper meshes of sockeye salmon (*Oncorhynchus nerka*) gillnets and pingers to reduce the bycatch of Common Murre and Rhinoceros Auklets (*Cerorhinca monocerata*) in Puget Sound. Fishers had pointed out that most birds and few salmon were caught in the upper portions of gillnets. Three complimentary approaches (gear modifications, abundance-based fishery openings, time-of-day restrictions) are considered to have the potential to reduce bycatch by ~75% without affecting fishing efficiency. The Washington Fish and Wildlife Commission adopted regulations based on these findings, but the regulations did not apply to the U.S. treaty tribes or to the Canadian gillnet fleet (i.e. ~90% of the fishery). Further, owing to those circumstances, the small nontreaty U.S. fleets sought injunctions against the regulations. As is clarified in Harrison's afterword on those gillnet fisheries, good science is inadequate for solving environmental problems (Ludwig et al. 1993). To prevent the unnecessary deaths of seabirds and other marine animals, it is clearly necessary to move beyond conservation biology into the sphere of conservation politics.—W. A. Montevecchi, *Cognitive and Behavioral Ecology Program, Memorial University of Newfoundland, St. John's, Newfoundland A1B 3X9, Canada. E-mail: mont@mun.ca*

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