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Book reviews

Handbook of the Birds of the World. Volume 11. Old World Flycatchers to Old World Warblers

Edited by Josep del Hoyo, Andrew Elliott and David A. Christie

2006. Published by Lynx Edicions, Barcelona. 798 pp., 55 colour plates, 723 maps, >300 colour photographs. Hardback, €205, $A395, ISBN 84-96553-06-X.

Volume 11 in the stunning series *Handbook of the Birds of the World* (HBW) continues the superb quality that makes every volume a pleasure to review, peruse, read, and enjoy for just knowing that it exists.

Moving deeper into the oscine passerines, Volume 11 covers families predominantly of southern continents as well as more northern ones: Muscicapidae (Old World Flycatchers), Platysteiridae (Batises and Wattle-Eyes), Rhipiduridae (Fantails), Monarchidae (Monarch-Flycatchers), Regulidae (Kinglets and Firecrests), Polioptilidae (Gnatcatchers), Cisticolidae (Cisticolas and allies), and Sylviidae (Old World Warblers). Remarkably, the magpie-larks *Grallina* are not included, whether in or close to the monarch-flycatchers – more of this later.

Volume 11 retains HBW's now familiar, winning structure. The *Foreword* on a key aspect of avian biology this time covers *Ecological Significance of Bird Populations*. This wide-ranging essay by Çağan Hakki Şekercioğlu of Stanford University covers *Conceptual Issues* (Diversity and Ecosystem Function, Equivalence/Redundancy, Body Size), *Birds as Mobile Links, Seed Dispersal, Pollination* (with a paragraph specifically on Australia), *Predation and Pest Control* (Insectivores, Raptors, *Scavenging* including special reference to the tragic declines of Asian vultures), *Nutrient Deposition*, *Ecosystem Engineers and Other Ecological Actors* and, finally, *Beyond Ecosystems*. Remarks on some philosophical, moral and ethical issues conclude the essay. These will strike a note with all who see birds as enriching our world and who view their declines as cause for a 'profound sense of loss' to humans.

The book's core accounts of families then follow and these have two sections. First, a thorough introductory review to the family's systematics and biology is illustrated with stunning photographs that are one of HBW's great gems. These reviews will likely long stand as key references for each family. In Volume 11 they run to as much as 80 pages (Sylviidae). Each review has opening notes on systematics. These explain how HBW has circumscribed, i.e. defined or set, the limits to each family and thus why certain species and genera were included or excluded from a given family. Thorny problems of this kind surround many passerine families so these notes are all important. Next are sections on biology under headings *Morphology*, *Habitat*, *Habits*, *Voice*, *Food and Feeding*, *Breeding*, *Movements*, *Relationships with Man*, *Status and Conservation*. Page by page, photographs are perfectly matched with subject matter of the accompanying text. That so many appropriate, superb photographs exist never ceases to amaze me with each new volume of HBW. This is a credit to the army of wildlife photographers out there taking the photos. The thrill of opening a new volume of HBW to behold the beauty of these introductory reviews let alone their scientific value is something I hope many more people will experience.

Following each family's introductory review are its species' accounts. Here each species is illustrated, usually with more than one age, sex or subspecies. Accompanying texts concisely but thoroughly review what is known of each species. Literature citations conclude the volume. They begin with the original citations for where each species in the volume was described, a remarkably useful feature.

One might argue that HBW has had enough time to accommodate more of the recent advances in passerine systematics and so alter its planned, conservative sequence of oscine families. I refer to C. Sibley and J. Ahlquist's (1990, *Phylogeny and Classification of Birds*, New Haven Press) revolutionary understanding of the subject and clarifications to it that are found in later papers (e.g. Barker *et al*. 2004, *Proceedings of the National Academy of Sciences USA* **101**, 11040–11045; Ericson *et al*. 2002, *Proceedings of the Royal Society of London B* **269**, 235–241, and references therein). Use of an at times conservative sequence is understandable, however, both because of the work's timing and scope and because it is wise to let major new changes settle. Further, I suspect that preparation of species-accounts was already well advanced by the time more recent molecular work appeared.

Not so conservative, however, are the families themselves that are recognised. Here we do see reflections of the revolution that Sibley and Ahlquist started. Breaking up the Sylviidae and recognising Cisticolidae, the members of which were formerly treated in Sylviidae, is a case in point (see Alstrom *et al.* 2006, *Molecular Phylogenetics and Evolution* **38**, 381–397). Thus the families covered here and in the preceding two volumes are a phylogenetically heterogeneous mix. This can obscure the duality of oscine passerines into either the various 'corvoid', endemic Australo-Papuan and Pacific families or the passeridan families that occur mostly elsewhere. At worst, this makes it difficult to track down which volume of HBW covers which passerines. HBW's website has seen this coming and provides a useful index.

These issues may seem remote at best and irrelevant at worst to some. Recall, however, that a little more then twenty years ago, we still thought most Australo-Papuan passerines were closely related to their boreal ecological counterparts. Understanding the similarities to be a result of convergence on a massive scale, not close relationship, has allowed a far better understanding of the birds' biology, not to mention building better classifications. Understanding the evolution of co-operative breeding is a prime example. This is why it is important to establish which birds belong in which family and how the composition and sequence of families can best reflect their evolution.

Sparing this subject and the birds themselves a few moments' thought is therefore rewarding. Passerine birds are one of the world's great evolutionary radiations of vertebrates. DNA sequences are helping to clarify many of its details with some problems easier to crack than others. That DNA sequences

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don't always shed as much light on the details of some question of relationships as quickly as one would like shows how daunting some of these problems are. The task of unravelling how ecological and behavioural convergences have sidetracked and twisted our understanding of the birds' evolutionary history can read like a good detective story if given a chance. Seen that way, one's appreciation of the birds themselves only increases. HBW enlivens these problems. With HBW, one is quickly introduced to the problems and can see the sometimes staggering similarity between bird families that one is and isn't familiar with in the field. This is not to be confused with the sometimes harder-to-see evidence of true, close evolutionary relationship. All of this recalls Şekercioğlu's final point in his opening essay – birds bring value to us in many ways.

First and last families in Volume 11 are the Muscicapidae (Old World Flycatchers) and Sylviidae (Old World Warblers), respectively, and they comprise about half of the book. The tasks of pinning down which species and genera should be placed in these families to see them as natural evolutionary groupings are surely two of the most trenchant and typical trouble spots in passerine systematics. For example, the saxicoline chats are excluded from Volume 11's Muscicapidae having been treated within Volume 10's Turdidae (thrushes). Recent molecular studies (e.g. Voelker and Spellman 2004, *Molecular Phylogenetics and Evolution* **30**, 386–394) found them to have closer affinity with the muscicapids here in Volume 11. HBW itself hinted at this when treating them in Volume 10. A similar problem is placement of the two peculiar species of south-east Asian *Culicicapa*, here treated in Muscicapidae.

Second family in this book is the gorgeous Platysteiridae (Batises and Wattle-eyes) of Africa; the White-tailed Shrike *Lanioturdus torquatus*, sometimes included in this group, is to be treated in the Malaconotidae in a later volume. Next is the Rhipiduridae (fantails) reviewed here by W. Boles of the Australian Museum, Sydney. Boles notes fantails' affinities with drongos and monarch-flycatchers, cautioning that details are unclear. Conservatively, then, the fantails are here treated as a single, well-defined group with monarch-flycatchers following. Drongos await treatment later. Problematic south-east Asian *Culicicapa* crops up again. Earlier mention of its two species in the introductory review to Muscicapidae noted relevant work to 1993. Boles, however, mentions Pasquet *et al.*'s (2002, *Comptes Rendus Biologies* **325,** 107–118) work and stresses that their relationships are *still* obscure. Editing could have been a little tighter here to better cross-reference *Culicicapa* in the introductory accounts of Old World Flycatchers, where they are treated, and the fantails.

A similar issue of more direct interest to many readers of *Emu* is the only substantial negative comment I'd make of Volume 11. It is the exclusion of the magpie-larks from Monarchidae and indeed the whole volume. A robust combination of molecules and morphology has shown that the Australian Magpie-Lark (*Grallina cyanoleuca*) and New Guinean Torrent Lark (*G. bruijnii*) share a close common ancestor with monarch-flycatchers and that they have adapted to terrestrial life (e.g. Barker *et al*. 2004, *Proceedings of the National Academy of Sciences USA* **101**, 11040–11045). Despite acknowledgement of this in the introductory review of Monarchidae, a decision was made to exclude them. That's a shame as they are not due to appear for some while yet!

Of the remaining families, I am familiar with Australian genera *Cisticola* (cisticolas), *Megalurus* (grassbirds), *Cincloramphus* (songlarks), *Eremiornis* (spinifexbird), and *Acrocephalus* (reed-warblers), and I have had the good fortune to see some gnatcatchers and kinglets in my travels. The broader comments made earlier about the fascinating debates surrounding the limits of passerine families apply to all the remaining families in Volume 11 especially, I reiterate, the Sylviidae. Some of these debates are old and some are new, the latter owing to molecular data highlighting new questions. As more research into these questions surfaces, their resolution through integrating molecular and the all-important more traditional datasets that anatomy and morphology offer should make for interesting times ahead.

Inevitably in a work like HBW, authors and illustrators have to deal with species they don't know too well. In Volume 11, the painting of the Willy Wagtail looks like the artist had never seen one or a photo of one. Recent range extensions of the Spinifexbird (*Eremiornis carteri*) to far north-western South Australia were missed, though published for some time; more radical extensions to the Flinders Ranges were published too recently to be mentioned (see review in Carpenter *et al.* 2006, *South Australian Ornithologist* **34**, 280–283).

Handbook of the Birds of the World is a superbly stimulating work. I always find that on looking at an HBW plate of birds unfamiliar to me, plumage patterns with which I am familiar constantly appear in birds unrelated to those I know. In Volume 11, for example, the African apalises in Plate 36 have patterns resembling birds as diverse as Banded Honeyeaters (*Certhionyx pectoralis*), Fairy Gerygones (*Gerygone palpebrosa*) and Golden Whistlers (*Pachycephala pectoralis*). Presumably, few genetic systems of control on plumage pattern have been repeatedly turned on and off in evolution. Asking whether a Black-capped Apalis (*Apalis nigriceps*) is patterned like a Golden Whistler because the same or different genetic switches have been independently activated, or a combination of both, is a question to which we inch closer to answering daily. First glimmerings of this sort of work are evident in work on the *MC1R* gene controlling melanin deposition in feathers (Theron *et al.* 2001, *Current Biology* **11**, 50–557) and the role of calmodulin proteins in determining bill shape (Abzhanov *et al.* 2006, *Nature* **442**, 563–567).

Readers of *Emu*, especially those in Australia, should get themselves comfortable and be ready to enjoy the ride that is coming their way as HBW in its next volumes moves into the realm of what we all know are right up there among the best birds in the world: the endemic Australo-Papuan corvoid passerines (except parrots, of course). If you aren't subscribing to HBW then the Lynx Edicions website is ready to entice you in all manner of imaginative ways. Failing that, make sure a reference library near you has it!

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Birds of the World: Recommended English Names

By Frank Gill and Minturn Wright
2006. Published by Princeton University Press, Princeton. 260 pp. Paperback, $US19.95, $A55, ISBN 0-691-12827-8.

Fifteen years in the making, this is a list of recommended English names for all birds, prepared at the behest of the leadership of the International Ornithological Congress. The list is in taxonomic order and includes the breeding range of each species; it is preceded by an *Introduction* that outlines the process gone through to arrive at the finished list, and the naming rules that were developed; there is an *Index* containing English names and genera. There is also a CD, which supplies extra information on the distribution of each species. The project was run by a large committee co-chaired by the authors and operating through six regional subcommittees. The chairman of the sub-committee for Australasia, Richard Schodde, has been involved in the common names industry for many years: he wrote the *Interim List of Australian Songbirds* (RAOU 1975) and was active on the committee that produced the 'Recommended English Names for Australian Birds' published as a supplement to *The Emu* (Vol. 77, pp. 245–307) in 1978, two important steps along the way to our present recommended names.

It would be impossible in the space available to summarise the principles used to derive the recommended names. The authors state that their most difficult problem was the spelling and capitalisation of compound names, including the use, or not, of hyphens. They have come up with rules that are complex, hard to understand, and hedged about with exceptions and special cases. A single word is used for a compound name where possible and the use of hyphens is minimised. So we get 'Cuckooshrike' and 'Fairywren'. A hyphen is used if omitting it would result in a word that looked odd or was difficult to say: 'White-eye', 'Thick-knee', 'Bee-eater', and so on. This means that it becomes arbitrary whether or not particular cases deserve hyphenation: 'Bamboowren' and 'Crescentchest' must have been close to the front of the hyphen queue before they stopped handing them out. Where the second word of a two-word compound is the name of a bird it is capitalised if the species is a member of the taxon named, with or without a hyphen: 'Sea Eagle' and 'Parrot-Finch', the latter hyphenated and capitalised because it is a compound of two bird names and species so named are actually finches. There is more to it than this, and don't forget the exceptions.

There are a few departures from our current standard names, which I don't see the need for, such as Green (for Yellow) Oriole and Canary (for Yellow) White-eye; perhaps these were decreed by usage elsewhere. The authors have preferred the African name Swift Tern for *Sterna bergii*, which will probably irritate some people, but which sidesteps the need to turn it into Greater Crested Tern to avoid breaking the rule that the full name of one species should not be included in the longer name of another. There are also some resurrections that seem gratuitous. 'Maned Duck' always was an uneasy blend of 'Wood Duck' and 'Maned Goose' and apart from anything else is a bit of a tongue-twister. And why change 'Yellow-bellied Sunbird' back to 'Olive-backed', or 'Little Penguin' back to 'Fairy'? No doubt there is something here for everyone to grumble about. The burr under my saddle is the second attempt (after the 1978 supplement to *The Emu*) to rename the Night Heron 'Rufous' rather than 'Nankeen', a suggestion that was tossed out in 1994. In 1978 nankeen was 'an inaccurate and obsolescent epithet', but apparently that is not the case now since it is retained for the Kestrel.

The authors make a good case for standardisation of English names but even they can't help indulging themselves when they make an 'executive decision' to rename *Gygis alba* 'Angel Tern'. This is justified in part because 'White Tern' is a 'truly bland generic name'. If every established English bird name consisting of a noun and a single adjective being the name of a colour were dismissed as bland and requiring change then we would have chaos. And, anyway, what about the poor old Plain Bush-hen, or the Drab Hemispingus?

Australia's recommended English names are incorporated in the current checklist (Christidis, L. and Boles, W. (1994) *The Taxonomy and Species of Birds of Australia and its Territories*, RAOU) and have been widely followed, not only in Birds Australia's publications (including *The Handbook of Australian, New Zealand and Antarctic Birds*), but also in the journals published by other Australian birding organisations. These names are those in the 1978 supplement to *The Emu* as modified following much consultation and discussion with and between Birds Australia members and culminating in 1994 in a poll to seek opinions on the 24 most criticised species or species-group names. The process was run by Birds Australia but the voting papers for the poll were also widely distributed to the memberships of other birding organisations. The result of this elaborate and inclusive process has been valuable stability in the use of common names. Regrettably, there is the odd hold-out, e.g. one popular field guide (*The Slater Field Guide to Australian Birds*, revised edition, 2003), which, while claiming to be using the recommended names, has the pre-1978 'Warbler' for 'Gerygone' and designates *Microeca fascinans* as 'Brown Flycatcher (Jacky Winter)', thereby promoting a non-standard name and also departing from the widely accepted rule that no species should have alternative names.

At the time of writing, the Australian checklist is being revised by its original authors to take into account taxonomic changes since 1994. The Birds Australia Council has formed a Common Names Committee to consider any changes that may be required to English names and has specified that revisions of English names should be limited to those necessitated by changes in taxonomy. This policy precludes the revisions that would be required to conform fully with the Gill and Wright, Birds of the World Recommended English Names.

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Extinct Birds of New Zealand

By Alan Tennyson and Paul Martinson
2006. Te Papa Press, Wellington, New Zealand. 180 pp. Hardback, $NZ65, ISBN 0-909010-21-8.

This book is a systematic list of known bird extinctions in New Zealand and its offshore islands based on the recent and fossil record. It describes in detail the lives and causes of extinction of

58 species of birds since the arrival of humans in the thirteenth century, as well as providing painted portraits of each species based on either living relatives or reconstructions. The study encompasses the New Zealand biological archipelago: New Zealand mainland, Norfolk Island, New Zealand's sub-Antarctic islands and Macquarie Island.

A short *Introduction* (15 pp.) outlines a summary of knowledge of the evolution of New Zealand's birds based on the fossil record, the primary causes of extinction, extinction events, and ways of overcoming extinction. The bulk of the book, however, is the species' accounts. Each species is treated separately with a page description in essay format, and at the bottom of each species account is a small table with the headings: *Distribution*; *Last known record* or *time of extinction*; *Primary cause(s) of extinction*; *Weight*; *Meaning of scientific name*; *Number of specimens known*; and *Painting* (the latter providing contextual details of the painting content). The inclusion of this table is a very useful summary for quick and easy reference about the demise of each species.

Other items provided in the book are maps of localities, an *Appendix* listing the known specimens of extinct New Zealand birds (excluding fossils) in the world's museums (4 pp.), a *Glossary* (1 p.), *Notes and references* for each topic and species including a relevant bibliography (19 pp.); an extensive full *Bibliography* (15 pp.) and an *Index* (6 pp.).

The paintings of extinct birds are neat and tidy portraits within typical habitat with some extant species being illustrated alongside them. The description of the painting provides details of location, or species-specific habitat, giving the artwork scientific merit, but one obvious error is the absence of lobed-feet in the two illustrated species of the genus *Fulica* (pp. 87 and 89).

The introduction of alien predators, including humans, to the New Zealand landscape has resulted in most avian extinctions. This book, designed for a general readership, is more than a litany of the history of extinction of the birds of New Zealand and its offshore islands; it is also a timely warning that humans can prevent the decline and extinction of bird species anywhere in the world. The authors have done an excellent job in showing, by these New Zealand examples, that the often quoted message 'Extinction is forever', is as relevant today as it ever was. This is a quality book and has a stitched ribbon bookmark attached. Given its size and full-colour artwork, it represents good value for money.

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Extinction and Biogeography of Tropical Pacific Birds

By David W. Steadman.
2006. Published by University of Chicago Press, Chicago. 594 pp., numerous maps, figures, tables, black and white photographs. Hardback, $US110, £69.50, $A189, ISBN 0-226-77141-5; paperback, $US45, £28.50, $A75, ISBN 0-226-77142-3.

This work is the culmination of >25 years of research into the living and fossil avifaunas of the Pacific islands from Palau in the west to Easter Island in the east by the foremost authority on Pacific prehistoric avifaunas. It is about documenting what was before – as we observe 'the evolutionary history of native birds … winding down in much of Remote Oceania' (p. 417). The book is divided into four. Part 1 introduces the islands of the Pacific (Oceania) in four chapters. Part 2 is a detailed description of the modern and prehistoric avifaunas by island and archipelago. Part 3 discusses the present and former diversity and distributions of birds arranged taxonomically. Part 4 synthesises the data presented in the book. Beginning with extinction, it examines the applicability of various ecological principles to Oceania, and closes with conservation issues.

Part 1. The author divides the islands in this vast oceanic realm into two depending on longevity of human contact. Thus, Near Oceania includes those islands peopled by humans *c*. 35 000 to 30 000 years ago, and Remote Oceania includes those peopled <3500 years ago. Hawaii to the north and New Zealand (NZ) to the south, both biotically and geologically different to all other archipelagos in Oceania, are expressly excluded from detailed coverage. The first chapter introduces the geography, geology, and climate of each island or group. Land area and elevation data are included for all. There is inconsistency in presenting estimates for longevity of land, e.g. none is given for the main islands of Fiji, the oldest in Remote Oceania, though for Tonga an estimate of 10–8 Ma is given.

Chapter 2 introduces the terrestrial flora and fauna for all island groups, including the distributions of genera for amphibians, reptiles and bats. A small oversight is that mention is made (p. 58) of an undescribed fossil *Platymantis*, but one of the two cited references is in fact the description of this Fijian taxon, and similarly, the description of the crocodilian *Volia* (Molnar *et al*. 2002, *Journal of Vertebrate Paleontology* **22**, 612–628) from Fiji is not cited. Both omissions reveal a more general trend: the islands the author has personally worked on receive greater treatment than others that may be larger and biotically more complex, e.g. New Caledonia (NC) and Viti Levu.

Chapter 3 summarises the human history of each group, with exemplary data on bone data and radiocarbon dates. Such data are presented in great detail in later sections and are the substance of this book. In Chapter 4, the background to interpreting data presented in Chapters 5–15 is given, notably the methods of obtaining, and limitation of, prehistoric faunal data. The following syntheses are based on >25 000 bones from >60 sites, but samples of >500 bones were only available for 19 islands. Most faunas are derived from archaeological contexts. In Remote Oceania, only Viti Levu, 'Eua in Tonga, Niue, and Mangaia include faunas from prehuman contexts.

Part 2. This is arranged geographically, beginning with Melanesia in the west (Chapter 5) and successively covering West Polynesia, East Polynesia and lastly (Chapter 8) Micronesia and Remote Central Pacific islands. For each island group, the modern and prehistoric presence of genera, and for each island (where data are available) species, of resident land birds are tabulated, with references. For some groups, relative abundance data of modern birds are given, notably from islands in the Lau Group and Tonga. Beside these are presented the fossil avifaunas for every site that the author has identified bones (includes original data), or derived from the literature, e.g. Balouet and Olson (1989, *Smithsonian Contributions to Zoology* **469**, 1–38) for NC. Obviously the strength of these data

lie in the author's involvement, but it was disappointing to see relevant faunal literature ignored, such as for Niue (Worthy *et al*. 1998, *Notornis* **45**, 177–190; Walter and Anderson 2002, *Bishop Museum Bulletin in Anthropology* **10**).

I wondered about treating political Fiji as a single biogeographic realm, rather than two. The geological history and terrestrial faunas suggest that larger Viti Levu and Vanua Levu and their nearshore islets form a different assemblage to the outer islands of especially the Lau Group. This leads to statements later, e.g. '*Megapodius alimentum* of Fiji and Tonga' (p. 290), which obscure the fact that *M. alimentum* is only known from the Lau Group within Fiji and was in all probability replaced by *M. amissus* on Viti Levu.

Part 3. Whereas the previous part provided a geographic distribution of data, this section arranges data taxonomically. Beginning with megapodes (Chapter 9), successive chapters cover rails, pigeons and doves, parrots, other nonpasserine landbirds, passerines, and ends with seabirds (Chapter 15). In each, a systematic review is given by region then genera and species discussed. Distributions of all taxa (described and undescribed) are tabulated. No taxonomic novelties are presented. Treatment is exceedingly thorough with few oversights. One minor omission is the somewhat contentious historical occurrence of megapodes on Kermadec Islands (Holdaway *et al*. 2001, *New Zealand Journal of Zoology* **28**, 119–187; Worthy and Holdaway 2002, *The Lost World of the Moa*: *Prehistoric Life of New Zealand*, Indiana University Press, although both references are cited elsewhere).

Rails are the taxonomically most diverse group in Oceania, and 32 known but undescribed taxa are listed. Rallids are shown to have suffered the world's greatest number of extinctions in a family, with a 'highly conserved' estimate of 442 Holocene species for Oceania. Their diversity is due to repeated evolution of flightless taxa and their extinction to susceptibility to novel predators. A broader interpretation of *Gallirallus* is taken than by many authors, and *Pareudiastes* is used instead of *Gallinula* for the historically known *P. pacificus* (Savai'i) and *P. sylvestris* (Makira, San Cristobel, Solomon Islands). I take the opportunity to correct the statement (p. 300) that *Fulica chathamensis* and *F. prisca* of NZ were flightless. The comparisons and data in Worthy and Holdaway (2002:393–396) suggest otherwise. The statement (p. 305) 'The only prehistoric evidence of a flightless *Gallirallus* in Fiji is from the Lau Group...' overlooks the fact that *Gallirallus* fossils (as *Nesoclopeus*) are described and figured for Viti Levu (Worthy 2004, *Journal of the Royal Society of New Zealand* **34**, 295–314), but this probably relates to the recent publication date. In the complex table estimating rail diversity in Oceania there appears at least one small error: for NZ, *Gallinula* is not listed with any species when it does have one, yet is attributed a *Pareudiastes* species. Also, I question the inclusion of *Pleistorallus*, a mid-Pleistocene (1 Ma) NZ taxon, as having a place in this table of taxa otherwise living in the last 50 000 years or less.

Chapter 11, *Pigeons and Doves*, reveals three undescribed genera and several more undescribed species. The statement (p. 320) 'No island in Oceania known to be inhabited by columbids is more than 600 km from another columbid-bearing island' is interesting, but *Hemiphaga* can disperse much greater distances: e.g. *Hemiphaga* on Chatham Island (*chathamensis*) and Kermadec Islands (*novaeseelandiae*) are/were ~800 km from their source fauna in NZ.

In Chapter 13, I noted an issue of temporal averaging of faunas potentially resulting in enriched apparent diversity. Especially in Near Oceania, sufficient time has elapsed for taxa to replace extinct taxa in newly vacant niches. The author notes (p. 361) that two extinct species of *Accipiter* have been described from Grande Terre, NC. If the fossil taxa are indeed distinct from the modern *A. fasciatus* and *A. haplochrous*, there is no evidence that the latter are not recent immigrants, i.e. have replaced the extinct former endemics, just as *Circus approximans* replaced *C. eylesi* since human intervention in NZ (Worthy and Holdaway 2002). The evidence should be interpreted that only two *Accipiter* species have ever inhabited Grande Terre at once. The author does note *Tyto alba* as one taxon that has recently spread. Doubtless the wide distribution of, for example, *Ducula pacifica* relates to its ability to colonise in the absence of former endemic imperial pigeons. Also for *Falco peregrinus*, Steadman is apparently unaware of the dietary studies by Clunie (1972, *Notornis* **19**, 302–322; 1976, *Notornis* **23**, 8–28) and Worthy (2000, *Domodomo* **12** [1999], 44–48). This is an important oversight because these papers reveal that the peregrine hunts widely over the ocean with the diet in Fiji including no fewer than five species of petrel and a tern.

This brings us to the chapter on seabirds. While I accept that the occurrence of seabirds in pitfall deposits, e.g. as on Mangaia, is certain evidence of former resident populations, I query the fundamental assumption made by the author (p. 386) 'that each of the prehistoric records represents a resident, breeding population'. To support this, the author states 'there is no chance that a predator may have brought the bird to the site from far out at sea.' (p. 386), yet the Fiji data clearly demonstrate that this is possible and probable. Peregrines are extant in Fiji and Samoa, so former residency in Tonga is likely. I doubt that isolated and widespread rare occurrences of bones of seabirds, e.g. *Puffinus griseus*, should be considered evidence for a former breeding population. This species in particular exists in tens of millions and breeds in southern NZ and associated subantarctic islands and is a trans-Pacific migrant with the return leg over Remote Oceania. The few bones recorded could easily reflect the odd death or capture of migrating birds. I suggest similar is likely for *Pachyptila* bones from the Cook Islands or the Marquesas, after all a giant petrel, found in Niue (Kinsky and Yaldwyn 1981, *National Museum of New Zealand Miscellaneous Series* No. **2**) does not make it a breeding taxon there, but if it had come ashore in prehistory, Polynesians probably would have eaten it. Vagrants do occur. Large sample sizes reveal many vagrant taxa in the Holocene dunes of the Chathams Islands (Millener 1999, *Smithsonian Contributions to Paleobiology* **89**, 85–109).

The seabird chapter is somewhat weak in treatment, as acknowledged by the author, owing to the difficulties of identification, etc. However, I consider it poor that identifications are sometimes given with greater precision than warranted. For example, the only taxon of small *Pterodroma* listed from sites across the Pacific is *P. nigripennis*. This identification may be probable in eastern Oceania but west of the Cook Islands other similar sized taxa are present and more common. On Mangaia,

P. brevipes has an extant breeding population yet all small petrels there were identified as *P. nigripennis* (Table 15.3). Similarly, neither *P. leucoptera* nor *P. brevipes* are mentioned regarding faunas from NC and Fiji, where these taxa are known to breed, yet *P. nigripennis* is listed. I assume that in these tables the taxon listed as *P. nigripennis* might better be interpreted as *Pterodroma* species, magn. [size of] *P. nigripennis*, to merely indicate a size class in this genus. Similar issues arise with every size class of *Pterodroma* in the Pacific. On, e.g., Henderson Island, *P. neglecta*, *P. heraldica*, *P. atrata*, and *P. ultima* are breeders and have extensively overlapping size distributions of most post-cranial elements, which mostly would be inseparable in an assemblage.

A vexing issue for palaeontologists is the choice of whether lack of difference equates with equivalence in identity or insufficient data to make a taxonomic call. The author is willing to accept species diversity in e.g. *Megapodius*, that often differ little osteologically, such that isolated fragments would often not be separable, restricted to an island or group. Yet the single fossil species *M. molistructor* is accepted in both NC and Tonga. Given that *molistructor* was described from few bones from NC (Balouet and Olson 1989), comparisons of much of the skeleton with bones found elsewhere are not possible, thus one might question the robustness of the conclusion that bones in these widely separated islands are the same taxon, and not congeners in a species radiation as seen in the *M. freycinet* complex. A parallel is seen in the referral of specimens to *Caloenas canacorum*, described from only a few pectoral elements (Balouet and Olson 1989), and yet identified with confidence from a few specimens in Tonga. Similarly, the listing of fossil *Ducula galeata* from the Cook Islands and Society Islands is questionable, when a diversity of large imperial pigeons is now demonstrated across the Pacific with species in NC (*D. goliath*), Fiji (*D. lakeba*), Wallis and Fatuna (*D. david*), Tonga (undescribed), Henderson Island (*D. harrisoni*), and the Marquesas (*D. galeata*), each restricted to an island or island group. The conservatism in listing these disjunct populations as the same taxa in the three cases above seem to contrast with the ease with which rails, e.g. a *Gallirallus* from Lakeba, or parrots, e.g. a cacatuid, on one tibiotarsus from NC, are listed as new species. My money will be on the prediction that these columbids and megapodes, the larger members of their respective groups, will be shown with better assemblages, to be separate taxa.

Part 4. Chapter 16, *Extinction*, quantifies the avian losses for Oceania, and then discusses contributing factors. But the proximate causes are not discussed, e.g. how humans or rats drove a given species to extinction and the significance rats have in the current declines is barely acknowledged. Data presented demonstrate that extinction on islands in Remote Oceania was rapid. Thus I was disappointed not to see discussion on the significant difference between time of extinction and proposed human first contact for some islands. For example, no effort is made to rationalise the pollen data presented for Mangaia, Cook Islands (Figs 2–9), which suggest human impact commencing 2570 ± 90 years BP, with the faunal data that indicate impacts and extinction within and shortly after earliest cultural strata dated 700–600 cal BP (p. 408). It seems that at least in Mangaia, as in NZ, the evidence for early human impacts on the environment derive from dated sediment cores, particularly from lakes. Dates from such sediments are now known to be often older than deposition owing to inwash of old carbon and hardwater effects (McGlone and Wilmshurst 1999, *Quaternary International* **59**, 5–16).

Chapter 17 discusses dispersal, colonisation and faunal attenuation across Oceania, particularly showing that all faunas derive from the west and diversity is attenuated eastwards. Chapter 18 discusses, and dismisses as inapplicable to Oceania, the ecological principles of equilibrium and turnover. Instead, species composition stasis over many thousands of years prior to human arrival was the norm. Chapter 19 discusses species area relationships and equilibrium theory, and conclusively demonstrates that species area curves generated in the past are spurious because they never accounted for recent extinctions, which often reduced landbird diversity by 50–75%. The author advances the hypothesis that rather than there being a constant (z) related to area, that islands within an archipelago attain maximal diversity at and above a given size (usually small) and that as size increases above the critical minima diversity does not. Diversity is, however, related to age and geology of the islands and proximity of source populations.

Chapter 20, *Community Ecology*, is about testing the so-called assembly rules formulated by Jared Diamond. Again because of the lack of data concerning actual faunal composition prior to human impacts, let alone imperfect knowledge of modern distributions, these rules have little application to the original composition of islands in Remote Oceania. Sympatry of congeneric species was the rule not the exception in the natural system. Chapter 21 treats *Conservation Biology* and no book on avifaunas in Oceania would be complete without such a section. This deals with a few of the issues, e.g. the causes of the declines and the effects of frugivore loss. Translocations to safe islands are seen as the best method to save threatened taxa, and here I make a plug for rodent eradicators. The author gives 2.2 km^2 as an island size that can have rodents removed from it – in 2005, both Little Barrier, 28 km^2, and Campbell, 106 km^2, Islands were declared rodent-free after eradications by the NZ Department of Conservation. But the outlook is grim for many islands in Remote Oceania as the list of detrimental factors is large and increasing. The book ends with brief Chapter 22 *Conclusions, and Suggestions for Future Research*. A major plea emanating from the preceding chapters and reiterated in this one, is that we need more data, particularly basic distributional and taxonomic data, for extant and fossil taxa.

It would be hard to produce a book of this magnitude without a couple of small errors or typos. And that, pleasingly, is all I found: p. 288, '*Progoura'* for *Progura*; and on p. 314, 'fremora'. The structure to the caption of Table 14.5 is wanting: 'Names in brackets are of unresolved validity' presumably means that the taxa are doubtfully distinguished from other more widespread taxa, not that the names are invalid. A small confusion crept in regarding *Porphyrio* in NZ (p. 105), '*P. hochstetteri* on the North Island, *P. mantelli* on the South Island' – the names are associated with the wrong island. The species are again confused on p. 313, though are correct in the *Appendix*. However, the potential reader should not be put off by such minor criticisms. It is a great achievement and a valuable resource. It reads very easily and has two excellent

indices. All the data from the many contributions the author has made to Pacific prehistory (he is lead author on >55 papers in the bibliography alone) and more is made available in this volume. These points alone make it indispensable for any biologist, archaeologist, or palaeontologist with an interest in terrestrial Oceania.

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