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Book reviews

Systematics and Taxonomy of Australian Birds

By Les Christidis and Walter E. Boles
2008. CSIRO Publishing, Melbourne. 288 pp., numerous tables. Hardback, $A69.95, ISBN 978-0-643065-11-6; paperback, $A49.95, ISBN 978-0-643096-02-8.

'You'd have to be crook on yourself to write a book like this', to paraphrase my late father. Often, before works such as this new list of Australian birds by Les Christidis and Walter Boles (hereafter C&B) even appear, new papers make parts of them out of date. Nonetheless, whatever one's gripes about this book or its shortcomings, C&B is a milestone in the literature of Australian avian systematics. It is an entrée to the ever-increasing literature on ever more diverse topics in avian systematics.

C&B is the second edition of the authors' 1994 list of the birds of Australia and its territories (Christidis and Boles 1994). Its first 42 pages cover *Aims*, *Taxonomic Decisions*, *Species Concepts*, *Taxonomic Methods*, *English Names*, and include the *Main Species List* and *Supplementary List* (vagrants and unsuccessful introductions) with lists of orders, families, genera and species. Here the authors lay out their *modus operandi* and its results. Arguably, the section on species concepts is the most fundamental part of the book. The book's heart follows: an excellently structured 214-page compendium of the now vast systematic literature on birds at all taxonomic levels down to species. Here the reasons for taxonomic decisions are given. Buy the book for these 214 pages alone. CSIRO Publishing's now familiar shades of blue help one navigate through the text.

C&B's scope spans the classification and sequence of taxonomic categories from subclass down to, but not so much below, the species level, and includes a complete listing of resident and vagrant birds, to species, for Australia and its territories. C&B is complementary to and not necessarily in conflict with the *Directory of Australian Passerines* (Schodde and Mason 1999) and its forthcoming non-passerine volume, or the *Zoological Catalogue of Australian Birds* (Schodde and Mason 1997) and the *HANZAB* series (e.g. Higgins 1999) where the prime taxonomic foci are at and below the species level. Australia is now unusually well served with these checklist-style publications. Perhaps it's time to consider on-line updates to them (see for example, http://www.museum.lsu.edu/~Remsen/SACCBC&Baseline.html).

C&B follow the now conventional treatment of dividing living birds (subclass Neornithes) into three groups, each of which includes all species that are understood to have evolved from early nodes or branching points in the avian evolutionary tree. First is the Palaeognathae, which in Australia covers emus and cassowaries. Phylogenetically, the palaeognaths are the sister-group, i.e. closest living relatives, to all other birds (Neognathae), which in turn comprise the Galloanseres and Neoaves or all species descended from another node. The Galloanseres are the waterfowl, megapodes, true quail and some other elements not native to Australia (New World quail, pheasants and turkeys).

New things start to appear in how C&B treat the remaining neognaths, the Neoaves. With caveats, C&B boldly follow Fain and Houde (2004), who concluded first on the basis of one fragment of nuclear DNA and then, apparently, up to 11 others (Fain and Houde 2006; see also Ericson *et al*. 2006) that Neoaves comprise two groups, the Metaves and Coronaves. Fain and Houde (2004) saw these as essentially parallel ecological radiations of birds (but see Livesey and Zusi 2007). Australian members of the Metaves would be tropicbirds, grebes, flamingos (extinct), pigeons and doves, nightjars, frogmouths, and swifts and owlet-nightjars. The close relationship of the last two to each other is now well established on molecular and morphological grounds (Mayr 2002; Chubb 2004*a*; Barrowclough *et al*. 2006; Ericson *et al*. 2006). All remaining Australian birds would be members of the Coronaves.

Recent literature on morphology and molecules does not unanimously accept the Metaves/Coronaves split (e.g. Chubb 2004*b*; Livesey and Zusi 2007; Morgan-Richards *et al*. 2008) but two of the most exhaustive DNA sequence-based studies of avian phylogeny to date, including one published since C&B appeared, do not reject it (Ericson *et al*. 2006; Hackett *et al*. 2008); perhaps C&B breathed a sigh of relief!

That seemingly unfamiliar and odd groupings, like swifts with owlet-nightjars, appear in the literature occasionally is because classifications are two-dimensional, linear sequences of names that try to summarise our best understanding, or hypothesis, of what the major groups of birds are and how they are related to each other. If the hypothesis and names never changed, either we would understand everything and have nothing left to falsify, or nobody would be working on it. Though still debated, recent findings suggest that the early history of bird evolution happened with many divergences in a relatively short space of time (e.g. Chubb 2004*b*; Ericson *et al*. 2006; Hackett *et al*. 2008; but see also Brown *et al*. 2007). Two corollaries of this are that *any* kind of data, molecular, morphological or otherwise, will have difficulty teasing apart exact branching patterns at the base of the avian evolutionary tree, and that different kinds of data may not converge on one answer. This impacts how we perceive and name major groups of birds. All ornithologists can share in the fascination of this challenge, especially when watching birds. That an Osprey may be more closely related to owls than falcons, which in turn may be more closely related to parrots, means we are in exciting times. Moreover, we are on the verge of a major gear-change as the study of entire genomes impacts ornithology (Stapley *et al*. 2008).

A few specific criticisms and comments. C&B should have placed the Budgerigar (*Melopsittacus undulatus*) with fig-parrots and lorikeets: DNA sequences (sources cited by C&B) and osteology (see Mayr 2008 published after C&B) reject the alternative that Budgerigars are allied to the rosellas and their allies. With hindsight, the result has been clear since the study of Christidis *et al*. (1991), but different datasets and methods of analysis were necessary to believe the result and to better interpret morphology (e.g. the Budgerigar's wing-stripe is clearly lorikeet-like not rosella-like). Following Sorenson and Payne (2005), C&B place the Pallid Cuckoo in an expanded *Cacomantis*. They similarly expand the butcherbirds (*Cracticus*) to include the Australian Magpie (see Storr 1952). Although these actions are phylogenetically and taxonomically valid, is it helpful *not*

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to divide these groups? In contrast, C&B break *Puffinus* into *Ardenna, Puffinus* and *Calonectris*. Subgenera might usefully convey details of underlying phylogenetic hypotheses especially where availability or otherwise of published molecular data reasonably dictated them.

I would now like to focus not on taxonomic minutiae, but on a potentially useful debate for *all* Australian ornithologists that C&B catalyse. It concerns how taxonomy describes avian diversity at and around the species level. Potentially, this debate will have longer reaching and more interesting consequences than whether two taxa should be species or subspecies or whether some genus or other should be split.

The debate centres on how DNA sequence data differentially impact higher and lower levels of systematics. At higher levels, DNA data can show that the Australo-Papuan treecreepers are more closely related to bowerbirds than to northern hemisphere creepers, or that Budgerigars have closer affinity to fig-parrots and lorikeets than rosellas. Understandably, the same conceptual approach has been applied by C&B either explicitly or, I submit in some cases, implicitly to species-level issues, as in the diverse cases listed in Table 1. Thus, they remark or imply that DNA sequence data might resolve difficult species-level taxonomic issues, such as whether Naretha Parrots and Blue Bonnets should be subspecies of one species (*Northiella haematogaster*) or separate species, *N. narethae* and *N. haematogaster* respectively.

The key point here is that as two species or populations diverge from their common ancestor, unique gene pools or genetic 'barcodes' that show one-to-one correspondence with what we can see in today's birds can never be a default expectation: they simply may or may not be recoverable (Avise 2000; Joseph and Omland in press). When not recovered, it is often because insufficient time has elapsed since the two birds in question diverged from their common ancestor, or that their population sizes have been too big for too long for the variation of the common ancestor to be sorted into distinct gene pools that match what we can see in the birds themselves. Evolutionary forces acting on genes we can readily study are different to those that determine characters we see in living birds such as colour, voice, presence or absence of superciliar stripes and wing bars, or bill shape and form.

In studies of many Australian birds to date (reviewed by Joseph and Omland in press) unique DNA sequence identifiers that match external phenotypes have not been recovered. While there are also examples of such matching (see Joseph and Omland in press), the instances of non-correspondence alone challenge the premise that taxonomic names can easily accommodate the different facets of evolution that morphological and molecular data themselves each describe. Further, this reminds us that evolution is ongoing. Speciation and completion of the process of sorting ancestral genetic variation into the daughter species produced by speciation may not occur simultaneously. This is despite morphological differences being apparent between the daughter species.

C&B openly acknowledge this in several places but the implications for modern taxonomy are what warrant debate. What do we want taxonomic names to do? Describe the diversity that we can see in the phenotype or the diversity and population history in molecular data? Hope that they converge? What if they don't converge? Why, in 2008, should there not be room for both in our taxonomy and nomenclature? Should publications like C&B or others like that by Schodde and Mason (1999), all of which are essentially modern checklists, feel any need to reconcile what are often two different and equally valid ways of slicing evolutionary diversity?

In short, DNA sequence data have taken our concepts of what names can mean at the species level, shredded them, thrown the pieces in the air, and challenged us to come up with a meaningful way of reassembling them. Debates that C&B keep alive over species *v.* subspecies should be taking a back seat to DNA data's exploration of evolutionary history of the populations involved. Perhaps population history should be of greater interest to taxonomy than reproductive isolation, which, whether a cause or consequence

Table 1. Examples from C&B showing correlation between availability or otherwise of DNA data and whether species-level taxonomic splits are made
NA, not applicable. See text of C&B for detailed arguments of each case

Taxa	DNA data available	DNA concordant with morphology, biology	Species split made
Grey Teal (*Anas gracilis*), Chestnut Teal (*A. castanea*)	Yes	No	Yes
Emerald Dove (*Chalcophaps indica/chrysochlora*)	No	NA	No
Macaroni Penguin (*Eudyptes c. chrysolophus*), Royal Penguin (*E. c. schelgeli*)	Yes	No. Shared plumage polymorphism, 4% mtDNA control region genetic divergence	No
Eastern Great Egret (*Ardea modesta*)	Yes	Yes	Yes
Painted snipe (*Rostratula*)	Yes	Yes	Yes
Christmas Island Goshawk (*Accipiter hiogaster natalis*)	No	NA	No
Peregrine Falcon (*Falco peregrinus*)	No	NA	No
Blue bonnets (*Northiella*)	No	NA	No
Eastern Barn Owl (*Tyto javanica*)	Yes	Yes	Yes
Sooty Owl (*Tyto tenebricosa*)	Yes	No	No
Spectacled Monarch (*Monarcha trivirgata*)	Yes	No	No
Restless Flycatcher (*Myiagra inquieta*), Paperbark Flycatcher (*M. nana*)	No	NA	No
White-browed Woodswallow (*Artamus superciliosus*), Masked Woodswallow (*A. personatus*)	Yes	No	Yes

of speciation, is an almost separate topic. That brings us to the inter-relatedness of these issues with species concepts: whether subspecies should be abandoned as advocated long ago by Wilson and Brown (1953); why the biological species concept (BSC), dependent as it is on reproductive isolation, is so often considered inadequate; and why the phylogenetic species concept (PSC), which unfortunately also uses the same term 'species', might be preferable. The debate between the two concepts (see Wheeler and Meier 2000) is at a stalemate and maybe what is needed is an altogether different approach.

Here, then, is the crunch and C&B either missed it or chose to let it brew. The PSC and BSC or, at lower taxonomic levels, morphology and molecules are often two different, equally valid ways of describing evolutionary diversity or of assessing reproductive isolation, but their application can often be at cross-purposes. Case-by-case decisions are warranted as C&B have unapologetically and rightly done. The evolution and biology accompanying each case mean that one can describe evolution by morphology and name it that way if so desired. C&B imply in the cases listed in Table 1 that molecules and morphology will somehow converge in a way that one taxonomic approach will be able to accommodate all results. I predict that the reality is already more complicated and will only become more so.

Finally, I note a few old chestnuts. First, how much genetic divergence is typical of a species? From the preceding, the premise that there is an answer to this question is flawed: there are no rules from one group to the next. C&B lengthily discuss issues surrounding albatross taxonomy but, oddly in light of pages 6 to 9, opt for a distance-based, traditional treatment of albatross taxonomy. This ignores the biology that recent classifications of albatrosses reflect (review in Brooke 2004). Again, the question is what we want names to do, but I suggest that following raw genetic distances is not helpful.

Another old chestnut is that it is a bad thing if a species concept generates a large number of species. Tell an entomologist! If good science dictates a large number of species or whatever we call the units of diversity through the best way of recognising diversity, then so be it.

Les Christidis and Walter Boles have done a great job in this much-needed book. Of course they will not satisfy all but they have usefully thrown the cat among the columbids. In return, I hope I have fairly touched on deeper issues C&B raised even if unintentionally. If I have missed points or challenged C&B unnecessarily or unfairly (or am just plain confused) I do apologise. My aim has been to stimulate debate because no debate would be unhealthy (although I don't think I ever heard my father say that).

I thank J. Gardner and P. Olsen and the editors for wading through the first, long draft but in no way are they responsible for the views I have tried to articulate.

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Note

Birds Australia has officially accepted the new 'Systematics and Taxonomy of Australian Birds' by Christidis and Boles (2008) (English and scientific names). *Emu* accepts alternative published taxonomies if they are cited and their use is explained in the text (see *Emu* Notice to Authors). BirdLife International has accepted most changes in the new C&B list but has rejected some which it believes are inadequately substantiated or based solely on genetic evidence (http://www.birdlife.org/datazone/species/taxonomy.html).

Handbook of the Birds of the World. Volume 12: Picathartes to Tits and Chickadees

Edited by Josep del Hoyo, Andrew Elliott and David A. Christie 2007. Published by Lynx Edicions, Barcelona. 816 pp., 56 colour plates, 436 photographs, 638 maps, ~4000 references, black and white illustrations. Hardback, £150, $AU310, ISBN 84-96553-42-6.

A good few years ago I began a review of three earlier volumes in this series with the comment that these books are superb. It is a sentiment I emphatically endorse for this latest volume. This volume of the *Handbook of the Birds of the World* (*HBW*) is the fifth covering the passerines and is of considerable interest to Australasian and Pacific ornithologists: 11 of the 15 families included are Australasian and the texts have been prepared by several of Australasia's leading ornithologists. These are: Australasian babblers (Pomatostomidae, 5 spp.) and Australian chats (Epthianuridae, 5 spp.) by Jamie Matthew; logrunners (Orthonychidae, 3 spp.), jewel-babblers and their allies, including quail-thrushes, whipbirds and wedgebills (Eupetidae, 18 spp.), whistlers, shrike-thrushes and allies (Pachycephalidae, 56 spp.) and Australasian robins (Petroicidae, 46 spp.) by Walter Boles; fairy-wrens, emu-wrens and grasswrens (Maluridae, 27 spp.) by Ian Rowley and Eleanor Russell; bristlebirds (Dasyornithidae, 3 spp.), and thornbills and gerygones (Acanthizidae, 63 spp.) by Phil Gregory; and sittellas (Neosittidae, 2 spp.) and Australasian treecreepers (Climacteridae, 7 spp.) by Richard Noske. The remaining four families do not occur in Australia: Picathartidae (two species of *Picathartes* of West Africa); Timaliidae, the Old World babblers predominantly found in Africa and Asia (309 spp.); Paradoxornithidae, the parrotbills of Eurasia (21 spp.); and the Paridae, tits and chickadees (56 spp.).

The lengths of family and species accounts vary with species numbers, knowledge of the birds, and their geographical distribution. As some comparison of the extent of our knowledge of these various groups, the 11 families with Australasian representatives, with a total of 235 spp., occupy some 339 pp. The four wholly extralimital families, with 389 spp., occupy a total of 348 pp. There is thus considerably more information per family for the four extralimital families. The species accounts are often about a third to a half page in length but range from just under a quarter page up to 2.5 pages for better known species, especially those with many subspecies (e.g. the well-studied Great Tit (*Parus major*) with its 34 subspecies).

For readers unfamiliar with the series, it is worth describing the approach taken in *HBW*. The emphasis is on the families of birds, with only brief but informative summary accounts for each species. Family accounts discuss *Systematics*, *Morphological Aspects*, *Habitat*, *General Habits*, *Voice*, *Food and Feeding*, *Breeding*, *Movements*, *Relationship with Man*, and *Status and Conservation*. The family accounts are lavishly illustrated with often breathtaking photographs showing aspects of behaviour, morphology, habitat, or birds in the field, and conclude with a select bibliography. Following each family account are brief but detailed species accounts for all extant birds. Each species is illustrated in colour artwork, showing subspecies or sexes or both where there is significant variation. For example, for the Golden Whistler some 19 (of 59) subspecies are illustrated, with both males and females shown for six of them.

As someone with an intimate knowledge of the *Handbook of Australian, New Zealand and Antarctic Birds* (*HANZAB* hereafter) and the advantages and shortcomings of the approach adopted therein, I find much to admire in the *HBW* approach. The concentration on species in *HANZAB* can lead to much repetition of aspects of behaviour or ecology common to species within families or genera. The species-focussed approach of handbooks in the *HANZAB* style often results in a lack of overview of groups of birds and their common features. It remains a disappointment that *HANZAB* was not in a position to prepare fuller family accounts (though some, such as Peter Fullagar's summaries for the Anseriformes, attain the required comprehensiveness). Nevertheless, *HANZAB* was never in a position to emulate *HBW*.

One of the more interesting aspects of the *HBW* series is the *Foreword* to each volume. These are significant essays on various aspects of ornithology. For Volume 12, Kevin Caley discusses fossil birds. This review is a thorough and thought-provoking summary of the history of fossil birds. It was good to be reacquainted with *Archaeopteryx lithographica*, and to know that it remains a basal component of the avian fossil record and, for now at least, the oldest known bird. One can also only marvel at the giant seabird *Osteodontornis orri* (of some 23.5–5.2 million years ago), with a wingspan of 5.5 to 6 metres and 'the bony tooth-like projections along the cutting edges of its immense mandibles'!

Like other contributions to these *Forewords*, the authors and editors have managed to, for me at least, pitch the writing at

a level neither too technical nor insufficiently detailed. The essay on fossil birds provides an accurate understanding of the state of current knowledge and the history and developments of the topic, especially the significant finds and development of techniques over the last 20 years. Nevertheless, there is no question that the story of the early origins of birds has, through no fault of the author, many gaps, some of which may never be filled.

While I have not read this book cover to cover, all the texts that I have read seem well researched and written and carefully edited. The Paridae (the tits and chickadees) include, as stated at the start of that family account, 'some of the most intensively studied birds in the world'. The summary of studies of this group provide an excellent overview of this family, and brought to mind lectures that focussed on the well-studied parids that formed the basis of so much of what we understand of bird behaviour and ecology, as well as the excitement of my seeing these birds on trips to Europe. The accounts for the Australasian families are all excellent complements to the detailed *HANZAB* species accounts.

To highlight minor errors in a work with such high production values is in many ways carping. There were precious few annoyances – a comma misplaced here, a slightly awkward sentence there – remarkable in a work of this length and complexity involving multiple authors. I would, however, argue the placement of the Australian chats, both as a separate family (Epthianuridae) and their placement within the Australasian groups mentioned above. Obviously, the *HBW* editors needed to develop and maintain some semblance of order in their production of texts – an absolute necessity with the exacting timetable they have set themselves. However, the inclusion of the Australian chats within the Meliphagidae has been known for many years, and was a change adopted in the first (1994) edition of *The Taxonomy and Species of Birds of Australia and its Territories* (Christidis, L., and Boles, W. E., RAOU Monograph 2; C&B94 hereafter), and which was followed in *HANZAB* Volume 5 (2001, Higgins, P. J., Peter, J. M., and Steele, W. K. (Eds), Oxford University Press, Melbourne). While the exact placement of the chats within the Meliphagidae was not certain at that time, I feel there was ample time for shifting these five species into the Meliphagidae for *HBW*. That the Australian chats have since been found to be deeply embedded within the Meliphagidae (see Christidis, L. and Boles, W.E., 2008, *Systematics and Taxonomy of Australian Birds,* CSIRO Publishing, Melbourne; C&B08 hereafter) is even more reason for having adopted the change. Even if the chats were retained as a separate family, they could have been placed close to the Meliphagidae. Having said all that, however, readers probably end up with a better account of the Australian chats than they would have had they been merged with the honeyeaters!

Despite the lack of flexibility in adjusting sequences of families, the *Systematics* section of each family account provides up-to-date analyses of relationships within and between families and indicates where other groups should be placed within families as recognised by *HBW*. For example, the authors of the Timaliidae indicate that the white-eyes (Zosteropidae) and the parrotbills (Paradoxornithidae) belong within the Timaliidae, though *HBW* continues to treats them separately and also acknowledge that some species treated as Timaliidae in *HBW* more properly belong elsewhere (e.g. *Pteruthius* shrike-babblers and *Erpornis*).

For Australian readers, the sequence of families with Australasian representatives in *HBW* 12 is (uninterrupted): Pomatostomidae–Orthonychidae–Eupetidae–Pachycephalidae–Petroicidae–Maluridae–Dasyornithidae–Acanthizidae–Epthianuridae–Neosittidae–Climacteridae. This is fairly different from the sequence of C&B08 and its preceding edition (C&B94). In C&B08, the overall sequence of these families (intervening ones shown in brackets) is: Climacteridae–[Ptilinorhynchidae]–Maluridae–Dasyornithidae–Acanthizidae–[Pardalotidae–Meliphagidae, which includes the Epthianuridae]–Pomatostomidae–Orthonychidae–[Psophodidae (part of *HBW*'s Eupetidae)]–Neosittidae–[Campephagidae]–Pachycephalidae–[Oriolidae–Artamidae–Dicruridae–Rhipiduridae–Laniidae–Corvidae–Monarchidae–Corcoracidae–Paradisaeidae]–Petroicidae.

In both editions of C&B, the Climacteridae is placed before the Maluridae and early in the passerines. In contrast to their first edition, C&B08 return the thornbills and gerygones to their own family, Acanthizidae, and separate the pardalotes as the Pardalotidae. The separate treatment of these two families is also followed by *HBW* 12, albeit with many families in between rather than them being closely aligned. In both editions of C&B, the Acanthizidae is preceded by the Maluridae and Dasyornithidae, as it is in *HBW* 12.

Somewhat surprisingly, the arrangement of Australian species within families often departs from the arrangement of both editions of C&B (albeit with the insertion of extra-Australian species in *HBW*). Some arrangements, by Walter Boles and other authors, follow C&B94 rather than C&B08, understandably given the latter hadn't been published when these texts were being prepared. For example, within the Acanthizidae, the sequence of the thornbills (*Acanthiza*) follows that of C&B94, which is very different from that of C&B08, and the other species in this family largely follows C&B94 rather than C&B08, though the differences are slight. The sequence of the Pomatostomidae and the placement of Crested Bellbird (*Oreoica gutturalis*) immediately after the Crested Shrike-tit (*Falcunculus frontatus*) within the Pachycephalidae follow C&B94.

Other sequences, however, bear little relationship to either C&B edition. The arrangements within the Petroicidae and Maluridae are very different from both. There are also a few departures from C&B within the Pachycephalidae: Grey Whistler precedes Golden and Mangrove Golden Whistlers, an arrangement in neither version of C&B, and the order of the shrike-thrushes also differs from both editions of C&B. The sequence within the Climacteridae also differs from both. Why these sequences depart from both editions of C&B is not immediately obvious from the accounts.

In contrast, other changes seen in C&B08 are to be found in *HBW* 12: Buff-sided Robin (*Poecilodryas cerviniventris*) split from White-browed Robin (*P. superciliosa*); Mangrove Robin placed in *Peneoenanthe* (*P. pulverulenta*); and Scarlet Robin (*Petroica boodang*) split from Pacific Robin (*P. multicolour*). Within the Maluridae, the Short-tailed and Kalkadoon Grasswrens are recognised as separate species, as adopted by *HANZAB* 5 (Higgins *et al.* 2001). *HBW* separates

Western Fieldwren (*Calamanthus montanellus*) from Rufous Fieldwren (*C. campestris*), a change not adopted by C&B94 or C&B08.

There are also some nomenclatural matters bound to irk some Australasian ornithologists. There are a number of departures from Australian and New Zealand recommended English names. *HBW* uses the name Shrike-tit, unqualified, for *Falcunculus frontatus*, dropping the 'Crested' (and retains the three taxa of Shrike-tit within a single species, as in C&B94 and C&B08). *HBW* also uses Black-tailed Whistler rather than Mangrove Golden Whistler for *Pachycephala melanura*. *Mohoua novaeseelandiae* is called New Zealand Brown Creeper rather than the more commonly used Brown Creeper. Lastly, the group-name 'Flyrobin' (unhyphenated) is used for five of the six species of *Microeca* and the monotypic *Monachella*, but mercifully Jacky Winter is kept for *Microeca fascinans*. The recommended group-name for the other two species of *Microeca* that occur in Australia has been 'Flycatcher' (Yellow-legged *M. griseoceps*, Lemon-bellied *M. flavigaster* Flycatchers). The Norfolk Island Gerygone (*Gerygone modesta*) is shortened to Norfolk Gerygone.

These departures from Australian usage are in some instances in line with the World Bird Names (WBN) project (see *Birds of the World Recommended English Names*, Gill, F., and Wright, M., 2006, Princeton University Press, Princeton; and the *IOC English Names of Birds Project (Version 1.5)* of Gill, F., Wright, M., and Donsker, D., 2008, available at http://www.worldbirdnames.org/, accessed 25 June 2008) such as the adoption of Flyrobin for the *Microeca* species other than the Jacky Winter, and Norfolk Gerygone. Others, however, are not. While Black-tailed Whistler is a name used by several sources, WBN retains Mangrove Golden Whistler. WBN, while removing the hyphen from Shrike-tit (and splitting the three taxa), retains Crested for the nominate taxon (and Northern and Western for the other two). WBN uses Pipipi for the Brown Creeper. As flawed as the WBN project is in many decisions (especially the disregard for some established names and including the apparent invention of names in some instances) to depart from both that and established Australian usage seems shortsighted.

When I first heard of this project – a handbook to all the birds of the world – the concept seemed ridiculous, especially with what Birds Australia was going through as its team struggled with the production, especially the financing, of *HANZAB*. That the editors and Lynx Edicions have not only succeeded in publishing 12 volumes of such a handbook, but have done so to what I consider the highest standards of writing, editing, and illustration (both the spectacular photos and the paintings) and to a rigorous timetable, is nothing short of astounding.

I have nothing but praise for these volumes. The production values are, quite simply, of the highest standard throughout: the books are beautiful to hold (though heavy), to look at and to read; they are well laid out, well printed and well bound. Their contents are a tribute to the hard work and dedication of the editors and authors. I cannot recommend this volume and series highly enough.

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Feathered Dinosaurs: the Origin of Birds

By John Long and Peter Schouten
2008. Published by CSIRO Publishing, Melbourne. 208 pp., 80 double-page colour illustrations. Hardback, $A49.95, ISBN 978-0-195372-66-3.

The last few decades have seen an explosion of fossil finds of new primitive birds and related small carnivorous theropod dinosaurs, the coelurosaurs. One of the most striking features of these new discoveries is the presence of feathers, as shown by direct evidence in the fossil, or the inference of their existence from the position of the animals within their family tree. Some, such as the birds *Archaeopteryx* and *Confuciusornis* and coelurosaurs *Microraptor* and *Caudipteryx*, have well preserved feather impressions associated with the bones. In other cases, the presumed occurrence of feathers without such fossil evidence is based on 'phylogenetic bracketing'; that is, feathers are known for both more primitive and more advanced forms than the animal in question.

The increase in known feathered non-avian dinosaurs has been rapid, and easily accessible books for non-specialists have only been available recently. The current book, from palaeontologist John Long of Museum Victoria and well known Australian palaeo-artist Peter Schouten, is a new entry in to this field. Because of its subject matter, it invites comparison with another recent book with which it has considerable overlap, *Glorified Dinosaurs. The Origin and Early Evolution of Birds* by Luis Chiappe (reviewed in *Emu* **107**: 338–340).

Chiappe has far more detail on many topics and a considerably wider scope, ranging from avian ancestors to the start of the modern radiation of birds. Long and Schouten, however, concentrate on a well delimited subsection of this assemblage: those coelurosaurian dinosaurs known or thought to have had feathers and a selection of the most primitive birds. (This selection is based on acceptance of the prevailing idea that birds as we know them are evolved from within dinosaurs, and are specifically most closely related to groups of coelurosaurs, a point not debated by the authors.)

There are nine chapters presenting short overviews of the bird–dinosaur connection, the major groups of coelurosaurs and the most primitive birds. Although brief, these address the major aspects of the topic in an accessible manner. The bulk of the book comprises 155 short species accounts by Long and accompanying reconstructions of the animals by Schouten. The selection of species is quite up to date. It includes such groups as the well-known raptors and the iconic *Tyrannosaurus*, but also some of the most recent discoveries, a few yet to be formally named. A number of these species are not mentioned by Chiappe and some of the latest will not appear in any other books.

For each species, Long gives a brief history of its discovery, together with any unusual features and current thoughts on its relationships. Schouten has produced a series of full colour portraits that are attractive and scientifically accurate to the extent possible from the known remains. Reconstructing extinct animals that have never been seen is fraught with risk and always requires an often considerable degree of

artistic licence. Schouten has kept his extrapolations within the limits of what is known or can be reasonably inferred – for example, if only the skull is known, just the head is illustrated – and what is scientifically realistic. He provides remarks on his reasons for selecting colour patterns, poses and other features of the reconstructions. For many species, these are the first portrayals to be published. Their inclusion is a major difference from *Glorified Dinosaurs*, in which there are very few images of fossil animals. Conversely, there are no illustrations of the actual fossils on which these are based, a valuable component of Chiappe's book.

With their differing approaches and coverage, this book and that of Chiappe are not strictly alternatives of the same subject. For readers seeking a more in-depth treatment of early bird origins and evolution, Chiappe's book will prove more rewarding. However, for someone wanting an initiation into this field but without such a level of scientific detail, Long and Schouten provide a useful, albeit more superficial, introduction, well supported by attractive illustrations. The two books together are quite complementary and make useful companion volumes.

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The Birds of Timor-Leste

By Colin Trainor, Brian Coates and David Bishop

2007. Published by BirdLife International, Cambridge, UK and Dove Publications. 211 pp., 43 colour plates, 36 colour photographs. Paperback, $A20, ISBN 978-0-946888-58-2.

and

Important Bird Areas in Timor-Leste: Key Sites for Conservation

By Colin R. Trainor, Fernando Santana, Rudyanto, Almeida F. Xavier, Pedro Pinto and Gil Fernandes de Oliveira

2007. Published by BirdLife International, Cambridge, UK. 86 pp., 66 colour photographs, including satellite images. Paperback, £14.99, $A45, ISBN 978-0-946888-59-7.

Only about 450 km from Australia's northwest coast, the mountainous island of Timor marks the southern edge of a region of extraordinary avian endemism. Named in honour of the man who put this remarkable region on the global biodiversity map, Wallacea is home to about 250 endemic bird species distributed across some 4000 islands. Until the publication of *A Guide to the Birds of Wallacea* (Coates *et al*., Dove Publications, 1997), the vast majority of these endemic birds had never been illustrated. The few birdwatchers that visited Timor in the decade prior to that publication were required to wrestle with descriptions in *The Birds of Wallacea* (White and Bruce, BOU, 1986), the seminal monograph on the subject, to identify these birds.

Owing to the difficulty of accessing former Portugese (East) Timor during two decades of Indonesian occupation, and the ensuing civil unrest that eventually led to the formation of the independent Democratic Republic of Timor-Leste in 2002, our understanding of Timor's birds was until very recently overwhelmingly biased towards Indonesian West Timor, comprising most of the western half of the island. East Timor held much mystery and lure to many ornithologists – especially since it retains far more of its original tropical forest cover than western Timor (15% *v.* 4%, respectively) according to *Saving Asia's Threatened Birds* (BirdLife International 2003).

With the arrival of these two new publications, thanks to a band of dedicated conservationists and scientists supported largely by BirdLife International, the situation has arguably been reversed. An astonishing 21 bird species have been added to the island bird list since 2002 (mostly by the first author of both books) and almost all of these species, of which the vast majority are waterbirds and seabirds, have only been recorded in Timor-Leste to date.

The first book is a field guide to the 261 bird species recorded in Timor-Leste, a nation with an area roughly one quarter that of Tasmania. It is fortunate that birds do not recognise political boundaries, so for the birdwatcher the book might just as well have been called *The Birds of Timor*. Aside from three species that have distinct eastern and western races, plus two species known only from the west and two known only from the east, the avifaunas of Timor-Leste and West Timor are identical.

The 43 colour plates are composites of illustrations extracted from *A Guide to the Birds of Wallacea*, with permission of artist Dana Gardner. Written in Portugese, Indonesian, and English, the introductory section, devoted to descriptions of the birds' habitats, basic ecology and threats, including useful notes on the island's geography, fills the first half of the book. In his foreword, the President of Timor-Leste, His Excellency Dr Jose Ramos-Horta, expressed the hope that a Tetum (Tetun) language version would be produced; given that Tetum is the lingua franca and along with Portugese, is an official national language, its absence from this book is lamentable.

Notes on each species are limited to two or three lines opposite the plates depicting them, including codes for distribution, status and habitats. Arrows indicate the occurrence of species to the west (pointing left) or east (pointing right) of Wallacea, but unfortunately, in the introductory section explaining these codes, the arrows point in the wrong directions (right and left respectively). In the text section concerning montane birds, the scientific name of the Sunda Bush-warbler is incorrectly given as *Bradypterus seebohmi* instead of *Cettia vulcania.* As the authors point out elsewhere, the Timor Bush-warbler *B. s. timorensis* is a montane specialist, known only from two specimens collected in 1932 in Indonesian West Timor, and treated as a separate species by one authority (*B. timoriensis*).

It is unfortunate that the plate (41) depicting the Blood-breasted Flowerpecker (*Dicaeum snaguinolentum*) shows the race *wilhelminae* from the island of Sumba rather than the more distinctive Timor race *hanieli* (illustrated in the frontispiece of Hellmayr's 1914 monograph *Die Avifauna von Timor*) in which the throat and side-neck is off-white, and there is no black border to the red breast patch. Curiously no mention is made of introduced species, other than the White-vented Myna (*Acridotheres cinereus*). Yet the Eurasian Tree Sparrow (*Passer montanus*), Sooty-headed Bulbul (*Pycnonotus aurigaster*) and

Pale-headed Munia (*Lonchura pallida*), all illustrated, have been recorded in Timor since 1997, and escaped captive birds seem a likely source for the last two species (albeit the last may have spread naturally).

The second book represents the latest in the series produced by BirdLife International's Important Bird Area (IBA) Programme, which aims to identify, document and conserve a network of globally important areas for the conservation of birds and their habitats, using standard, internationally agreed criteria. Timor, along with the much smaller island of Wetar to its north, forms one of the world's 218 Endemic Bird Areas (EBAs; Stattersfield, A. J. *et al.* (1998) *Endemic Bird Areas of the World: Priorities for Biodiversity Conservation*, BirdLife International, Cambridge, UK), each with at least two restricted-range (<50 000 km^2) species. A staggering 31 restricted-range species occur on Timor island, including 20 that are confined to the Timor and Wetar EBA, ignoring two additional taxa that may prove to be full species – the Timor Bush-warbler (see above), and the distinctive albinistic Timor form of the Pheasant Coucal (*Centropus (phasianinus) mui*) known only from the eastern tip of Timor-Leste.

Given that neighbouring Indonesia has more threatened species of birds than almost anywhere else in the world, it is not surprising that Timor-Leste has four globally threatened landbird species, comprising three endangered pigeons (Wetar Ground-dove, Timor Green-pigeon and Timor Imperial-pigeon) and the critically endangered Yellow-crested Cockatoo, as well as 15 near-threatened bird species. This makes the identification and protection of IBAs of the region of paramount importance. Sixteen IBAs have been identified in Timor-Leste, including 14 on the mainland and two on offshore islands, with a total area of 1852 km^2 or 12.5% of the nation's land area. Of the 16 IBAs, eight are known to support populations of the Yellow-crested Cockatoo, while up to six support populations of each of the endangered pigeons. The IBAs cover all major terrestrial habitats found in Timor-Leste, including lowland deciduous monsoon forest, tall evergreen forest and montane forest (including Tata Mailau (TL02) in the west, with the nearly 3000 m-high Ramelau Mountains, the highest on the island), as well as smaller areas of mangroves, freshwater lakes and other wetlands, savannas and grasslands.

In 2000, the interim United Nations administration declared 15 'Protected Wild Areas' under Regulation No. 2000/19 (UNTAET 2000), which became law on the transfer of administration to the government of Timor-Leste in May 2002. The nation's first national park, Nino Konis Santana National Park (1236 km^2), was formally declared in 2007, and was inaugurated on 1 August 2008. The park links three IBAs at the eastern extremity of the island, including Mount Paitchau and Lake Iralalaro IBA (TL07) featuring the largest lake (1500 ha) in southern Wallacea, considered the most significant freshwater wetland in this region.

These publications signify important milestones in ornithological knowledge and conservation planning in the region. It can only be hoped that the first achieves its stated goal of advancing bird research and conservation by promoting awareness of the natural environment and improving the technical capacity of the many conservation agencies. Similarly the second book will hopefully inform the process of establishing additional protected areas. Both books should inspire more birdwatchers to visit Timor-Leste, and thereby contribute towards the developing ecotourism industry of this young nation.

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