THE DIRECTORY OF AUSTRALIAN BIRDS. PASSERINES by Richard Schodde and Ian J. Mason. CSIRO Publishing, Melbourne, 1999. 851 pages, $180.00 rrp.

This monumental volume is the first in a series of three that will list and describe the entire Australian bird fauna. All passerine or songbird species are detailed in this volume. The second volume will cover the non-passerines, and the third will be devoted to the biogeography and evolution of Australian birds and will address conservation issues. One might wonder if the first two volumes overlap with the Handbook of Australian, New Zealand and Antarctic Birds series produced by Birds Australia. There is inevitably some duplication but it is not substantial; the aims of the two series of books are different, and the content of the Directory provides very different information, as may be gathered from the following outline.

The introductory chapter of the Directory discusses the rationale for producing this inventory of birds, and for the authors' concept of 'ultrataxa' (their name for distinguishable populations within species, of which more later in this review). Taxonomic concepts and arrangements are defined, materials used are detailed, the format of the text explained, and a helpful list given of references to bird taxonomies, species concepts, and so forth.

Chapter Two discusses the families of Australian passerines, their sequence in the book and their relationships. The authors place considerable weight on various features of the skeleton in determining probable relationships between families. It is refreshing to see such morphological characteristics once again playing a prominent part in a field dominated in recent years by molecular studies. The sequence of families determined by Schodde and Mason follows closely that of Christidis and Boles (1994), except that pardalotes are separated as a family instead of being a subfamily of Acanthizidae, and grass finches (Estrildidae) are separated from the Old World sparrows (Passeridae). In addition, they have sensibly restored the sequence of muscicapoid (flycatcher) –sylvioid (warbler)–passeroid (finch) families to follow the Sibley and Monroe (1990) arrangement and traditional northern hemisphere sequences.

The third chapter is a list of all the families, species and ultataxa, including official reference numbers as used in the Census of Australian Vertebrate Species list (ABRS 1998); these are based on the numbers in the RAOU Checklist of 1926. Also included is a provisional conservation status for each ultrataxon. The fourth chapter lists newly described subfamilies (1), subgenera (2), and ultrataxa (46), and recombined species (seven pairs of species becoming seven single species), re- or newly-split species (18) and species recently added to the Australian fauna (3).

The bulk of the text is taken up by Chapter Five (for which the editors forgot to add a numeral 5 on the title page). Here each family is introduced by a detailed and useful resumé of its characteristics and worldwide membership, cleverly printed on blue paper so that individual families are easier to find. Within each family, one to seven pages are devoted to each species, depending on the number of ultrataxa and the complexity of their relationships. Altogether the authors admit 342 species. Each species entry consists of: 1) reference number, English name and Latin name with author and date; 2) reference numbers, Latin names and authorities, and conservation status categories, for all ultrataxa within that species, together with brief diagnostic descriptions of each ultrataxon and coded lists of their core ranges and typical habitats (note: no English names are given for ultrataxa, such as Yellow-rumped Pardalote, White-backed Magpie or Spotted Scrubwren, an aspect that regional lists could address); 3) a distribution map with colour coded key to ultrataxa; 4) taxonomic circumscriptions, in which explanations are given for the authors' taxonomic decisions for that species and its ultrataxa, with explanations of generic circumscriptions placed under the first species in each genus; details of type specimens for new taxa are also given here, as are references to relevant literature.

The diagnoses of taxa are based largely on characteristics of plumage and external morphology, but the authors have also made excellent use of osteological characters, some newly described, and wherever available they have included data from molecular studies.

The distribution maps show Australia in equal area projection and are to the same scale as in Blakers, Davies and Reilly (1984) for ease of comparison. In species with multiple ultrataxa

these are distinguished by varying shades of blue and grey, and mostly this system works well. Occasionally clarity is lessened if there are many ultrataxa or their ranges are small. The editorial team allowed a few mistakes to slip through (e.g. wrong colours used in key for Purple-gaped Honeyeater and Crimson Finch, colours transposed in key for Western Yellow Robin, and part of distribution uncoloured for Western Gerygone), but the authors are already collating errors in the maps and text and these will be corrected in the next impression.

Chapter Six, the final one, is a supplementary list of vagrant species, 11 in all (the only one recorded from South Australia being the Citrine Wagtail). There follows a glossary of: 1) geographical, ecological and geological time scale terms; 2) taxonomic, phylogenetic, genetic, methodological and conceptual terms; and 3) general biological, morphological and avian terms. An extensive reference list, an index of Latin names and an index of English names conclude the work.

In this book Schodde and Mason have taken the bold step of defining a new taxonomic category, the ultrataxon. The ultrataxon is a regional interbreeding population of birds that differs from neighbouring relatives in at least one morphological character that is presumed to be genetically based. In effect, ultrataxa are equivalent to subspecies, except that in the case of species with little or no definable variation, such as the Mistletoebird, the species is itself an ultrataxon.

Why define yet another category in an already mind-stretching taxonomic theory? Some background explanation is needed. The unit of biodiversity most commonly used for birds is the biological species, that is a population or group of populations that is or are reproductively isolated from others. Within a biological species, individual populations that differ noticeably from others (but presumably or demonstrably can interbreed) are called subspecies. But some ornithologists are increasingly applying the phylogenetic species concept, with species defined as phylogenetically terminal populations that differ quantitatively from their neighbours in one or more characters, however minor. This results in every discernible population (even those separable only by molecular techniques) being considered as a species, and taken to extremes could treble our bird fauna. Robertson and Nunn (1998), for example, have raised every albatross subspecies to species status, thus increasing 13 or 14 species to 24, which to my mind is largely unjustifiable and unworkable. In defining ultrataxa, Schodde and Mason avert a re-description of our bird fauna under a different species definition, and thereby avoid a lot of confusion and an explosion in species numbers. Secondly, they attempt to overcome the stigma of the subspecies in conservation biology, i.e. a potential exists for conservation efforts to bypass threatened subspecies. Whether the concept of ultrataxa works or not remains to be seen. Meanwhile, the subspecies remains a valid category and can still be used as required.

Among ornithologists the lengthiest debate will arise from some of the taxonomic conclusions reached by the authors, and this is only to be expected as there will never be complete consensus of opinion in such matters. In general a great many subspecies are admitted, and numerous new subspecies described (46, involving more than 11% of species). The distinctions between some seem minimal and I suspect that future work on some species (such as the Southern Emu-wren with yet another subspecies described) may conclude that fewer subspecies are recognisable. In some species intraspecific variation is complex and the authors have interpreted these convincingly. Their tentative interpretation of variation in the Australian Magpie though is one that I find unsatisfactory, particularly with the bulk of South Australia being populated by magpies that intergrade between two or three of four subspecies; with such huge hybridisation zones there must be a good case for combining some subspecies and regarding variation as clinal. (Their proposals for magpie subspeciation are not helped by colour-coding mistakes in the distribution map.)

A number of decisions or changes made by the authors are particularly noteworthy. They have recognised numerous Kangaroo Island subspecies, such as in both wattlebirds, reflecting the distinctiveness of this island fauna. They have justifiably combined the similar heathwrens (*Hylacola*) and fieldwrens (*Calamanthus*), so they are now all in the latter genus. A number of South Australian ornithologists have for many years regarded the Flinders Ranges form of the Striated Grasswren as sufficiently distinctive to warrant species status. Christidis (1999) demon-

strated that there is a large genetic distance separating it from the Striated and recommended that it be recognised as a separate species, and Schodde and Mason reached the same conclusion on the grounds of morphology, plumage and biogeography, and have given it the name Short-tailed Grasswren [see Note on taxonomy below]. The authors have made a potentially controversial but to my mind justifiable decision to combine the Black-eared with the Yellow throated Miner, with the former, being a junior name, now a subspecies (or ultrataxon) of the latter. Such a move is not meant to downgrade the Black-eared Miner's need for conservation; it remains an endangered taxon.

Various other species are split by the authors and these are mostly borderline cases for which opinion is equivocal. I found their arguments convincing for separating the Grey Fantail of Australia (*Rhipidura albiscapa*) from the New Zealand Fantail (*R. fuliginosa*), and for separating the White-winged Triller (*Lalage tricolor*) from the rest of the *L. sueurii* complex, and for the separation of the Australian Reed-Warbler (*Acrocephalus australis*) from the Asian *A. stentoreus*. Less convincing to my mind are their arguments for separating the Scarlet Robin of Australia (as *Petroica boodang*) from the Pacific Robin (*P. multicolor*), or for the separation of the Australian Pipit (*Anthus australis*) from others in the *A. novaeseelandiae* complex, or for the division of the three regional forms of the Crested Shrike-tit into separate species. I also hesitate to accept their decision to split the Mallee Whipbird (*Psophodes leucogaster*) of South Australia and mallee regions of Western Australia from the heathland Western Whipbird (*P. nigrogularis*); they might be right but there is too little material available for study to justify this split.

Retailing at $180 this is volume is not likely to find a place on every ornithologist's bookshelf, and its weight of nearly three kilograms precludes its use as a handy field reference. Indeed it may hold little interest for casual birdwatchers, but I urge them and everyone else concerned with Australia's avifauna at least to be aware of its content and the information it has to offer. It should be held in every university, museum, bird club and public library. It is a landmark reference book, the first to cover all variation in Australian songbirds since Gregory Mathews' pioneer work (Mathews 1910-1927) which has long been out of date and which also suffered from Mathews' over-splitting of taxa and opinions based on little evidence. It is therefore an essential research tool for ornithologists, regardless of whether or not the reader agrees with all decisions made by the authors—who themselves explain that their aim is to provide '(1) an inventory of...ultrataxa that, however crude an approximation...gets information out to biologists...and the public *now*; and (2) a basis for testing and tuning for the future.' They have achieved this aim admirably and the work is indeed a solid foundation for further research, particularly in the molecular field. I congratulate the authors on the huge amount of research they have undertaken, and for addressing a desperate need for information on regional differentiation in Australian songbirds.

REFERENCES

ABRS. 1998. *Census of Australian vertebrate species (CAVS), version 8.* Australian Biological Resources Study, Environment Australia, Canberra.

Blakers, M., Davies, S.J.J.F. and Reilly, P.N. 1984. *The atlas of Australian birds.* RAOU and Melbourne University Press, Melbourne.

Christidis, L. 1999. Evolution and biogeography of the Australian grasswrens, Amytornis (Aves: Maluridae): biochemical perspectives. *Australian Journal of Zoology*, 47, 113-124.

Christidis, L. and Boles, W.E. 1994. *The taxonomy and species of birds of Australia and its territories.* RAOU Monograph 2, RAOU, Melbourne.

Mathews, G.M. 1910-1927. *The birds of Australia.* Witherby, London.

Robertson, C.J.R. and Nunn, G.B. 1998. Towards a new taxonomy for albatrosses. In *Albatross biology and conservation.* G. Robertson and R. Gales (eds). Surrey Beatty and Sons, Sydney, pp. 13-19.

Sibley, C.G. and Monroe, B.L. 1990. *Distribution and taxonomy of birds of the world.* Yale University Press, New Haven and London.

PHILIPPA HORTON

NOTE ON TAXONOMY: SHORT-TAILED GRASSWREN

For the purposes of the *South Australian Ornithologist*, the Flinders Ranges race of the Striated Grasswren *Amytornis striatus merrotsyi* is now adopted as the Short-tailed Grasswren *Amytornis merrotsyi*. Until further notice, all other taxonomy at the species level remains unchanged and follows Christidis and Boles (1994; referenced above).