

BOOK REVIEWS

Handbook of Avian Hybrids of the World, by Eugene M. McCarthy. Oxford University Press. 583 pages, 20 black-and-white figures (15 maps, 5 charts). Hardback \$94.00 (ISBN-13-978-0-19-518323-8).

The importance of hybridism to ornithology has been debated. Certain hybrid combinations have critical implications to species conservation, for example, the swamping of the American Black Duck (*Anas rubripes*) and Hawaiian Duck (*A. wyvilliana*) by introgression with the Mallard (*A. platyrhynchos*). Others add insight to taxonomy and evolutionary biology, for example, contact among several closely related pairs of passerine species that have recently bridged the Great Plains. Whereas these and other cases of widespread hybridism are well studied, most avian hybrids seemingly have been produced by chance encounters, best viewed as anomalies. For the field ornithologist, such chance hybrids are at least an enlightening source of entertainment and may provoke in-depth discussions on species identification, plumage, vocalizations, molt, breeding behavior, and other aspects of avian natural history.

Over the years there have been several compilations of all known captive and "natural" avian hybrids, the most recent of these being the exhaustive treatment of Gray (1958, Bird hybrids, Commonwealth Bureau of Animal Breeding and Genetics, Edinburgh Technical Commission 13:1–390). New reports of hybrid combinations have increased substantially since Gray's oft-cited reference, so it was certainly time for another thorough compilation. McCarthy (hereafter also the *Handbook*) has done an admirable job, devoting 33 pages of introduction to both general and highly scientific discussions on all aspects of hybridism, listing approximately 4000 entries on reported or potential hybrid combinations around the world, citing about 5200 references and 200 Internet sites, and including a thorough index of scientific and English names. Detailed species accounts are included for well-documented, controversial, or important cases, such as Thayer's × Iceland gulls (*Larus thayeri* × *glaucooides*), Barred × Spotted owls (*Strix varia* × *occidentalis*), and Blue-winged × Golden-winged warblers (*Vermivora pinus* × *chrysoptera*). Anyone interested in avian hybridism will need the *Handbook*, and, because hybridism relates in some ways to almost all fields of avian interest, this book also provides an excellent resource for serious birders and ornithologists.

The hybrid combinations are listed in a 306-page section called "Cross Accounts," which are sectioned off into taxonomic "divisions," typically bird families as defined by Sibley and Monroe (1990, *Distribution and Taxonomy of Birds of the World*, Yale Univ. Press). When I first opened the book, to the ever-popular (when it comes to hybridism) wood-warblers, I noticed that *Dendroica* preceded *Vermivora* and that *Parula* fell between *Oporornis* and *Seiurus*. Had the American Ornithologists' Union (AOU) come out with a new supplement to its checklist? No. Rather, within each taxonomic division species are listed alphabetically by scientific name, a strategy I came to appreciate after just a few minutes of using the book. To save space, an account and the citations for each hybrid are listed only once, under the first parental species alphabetically, and are then cross-referenced under the second species. With increasing instability and confusion regarding "official" taxonomic sequences (e.g., Sibley and Monroe vs. the AOU, the latter now recommending new sequences every year), the listing of species alphabetically is a straightforward approach that results in a lot less difficulty in the search for a cross-referenced taxon. While it would have been of value to mention groups from which no hybrid combinations have been reported (e.g., storm-petrels, frigatebirds), and I have a few quibbles regarding the taxonomic divisions (see below), I believe that McCarthy has come up with the most strategic layout for ease of use.

Per chance, Steve Howell and I have recently completed an independent compilation of reported hybrids, involving 310 parental species of North American waterbirds,

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raptors, and gallinaceous birds, to be published in *Identification Guide to North American Birds*, Part 2 (in press, Slate Creek Press, Bolinas, CA). While our aim was simply to furnish a list of peripheral interest, it also provided us a chance to cross-check the information we had gathered with that of the *Handbook* and to test the latter's accuracy and thoroughness. In both areas I give McCarthy high marks, although, as predicted in the *Handbook's* preface, errors and omissions in a work of this magnitude are inevitable.

Of approximately 326 reported natural hybrids involving these 310 species, McCarthy listed 24 not found by us, whereas we found only six missed by him, such as the Black-crowned \times Yellow-crowned night-heron (*Nycticorax nycticorax* \times *Nyctanassa violacea*; Monson and Phillips, 1981, *Annotated Checklist of the Birds of Arizona*, Univ. of Arizona Press) and Xantus's \times Craveri's murrelet (*Synthliboramphus hypoleucus* \times *craveri*; van Rossem, 1939, *Annals and Magazine of Natural History*, 11th ser. 4:439–443). We also had found an additional five combinations that were undoubtedly published since the *Handbook* went to press, such as the Brown \times Blue-footed booby (*Sula leucogaster* \times *nebouxii*; Castillo-Guerrero et al., 2005, *Western Birds* 36:325–328), underscoring how quickly such works may become out of date. Some of those 24 combinations not found by us were based on unpublished communications or bird-ringing databases, the latter including a Cory's \times Greater shearwater (*Calonectris diomedea* \times *Puffinus gravis*) and a Bar-tailed Godwit \times Red Knot (*Limosa lapponica* \times *Calidris canutus*), combinations about which, without better documentation, I would have been a lot more skeptical than McCarthy seems. We had located about 40 references that were overlooked by McCarthy, not surprising given the extensive literature on avian hybrids. Most of these were obscure and of little significance, but some important works were also missed, e.g., Hubbard (1977, *New Mexico Department of Game and Fish Bulletin* 16:1–56) on Mexican Duck \times Mallard introgression. More troubling were occasional lapses into misinformation; I found three cases among the 324 combinations checked. A full account on the Black-footed \times Short-tailed Albatross (*Phoebastria nigripes* \times *albatrus*) from Midway Atoll (no such hybrid is known there or anywhere) included eight references pertaining to the Black-footed \times Laysan Albatross (*P. immutabilis*), which also received a separate full account. Similar errors include an indication that Ross's (*Chen rossii*) and Barnacle (*Branta leucopsis*) geese hybridize extensively in western North America (citing references on hybrids between the Ross's and Snow geese [*C. caerulescens*]), and that contact between vagrant Little (*Sterna albifrons*) and Least (*S. antillarum*) terns has produced natural hybrids, with a reference to a paper restricted to the subspecific taxonomy of the Least Tern.

McCarthy uses several codes to categorize hybrid combinations, such as natural vs. captive, extensive vs. limited, “on-going” or not, fertility status by sex, fertility and viability of hybrids, breeding-contact status, and several other miscellaneous categories. This information is extremely useful and well presented. I would have also preferred information indicating whether or not a parental population is native, such as the Canada Goose (*Branta canadensis*) hybridizing with the White-fronted Goose (*Anser albifrons*) in North America, or naturalized, such as the Canada Goose with the Barnacle Goose in Europe, as this dichotomy often bears on a species' conservation. In species where both captive and natural hybridization has occurred, splitting the references by these categories would also have been helpful.

I could not help but notice some minor transgressions in the area of consistency. McCarthy uses a format in which he crosses out hybrid combinations he feels have been insufficiently documented or erroneously reported. While this format is sound, it seems difficult to apply consistently. For example, some unique 19th century reports are questioned, others not. Most of these are listed in the main cross-accounts sections, whereas others are buried in an appendix of “dubious reports,” when it would have been much easier for the user if all were in the main accounts. The taxonomic

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divisions could have been more tightly constructed; for example, gulls and terns are lumped into one section despite no cross-subfamily hybrids, whereas the New World quails (family Odontophoridae) are separated from other gallinaceous birds (family Phasianidae) despite some cross-family combinations, which are not cross-referenced by page number and thus difficult to locate. There are accounts for several hybrids between subspecies, which are useful in cases of potentially incipient species among such taxa as the Mallard, Mew Gull (*Larus canus*), and Iceland Gull but seem out of place concerning the Black Rail (*Laterallus jamaicensis*), Rock Sandpiper (*Calidris ptilocnemis*), and Whiskered Auklet (*Aethia pygmaea*, erroneously listed as the Least Auklet, one of the few typographical errors I noticed). Conversely, the subspecies of the Green-winged Teal (*Anas crecca*, considered full species in some quarters) are not differentiated in the same way. Finally, some combinations, such as the White-tailed \times Bald eagle (*Haliaeetus albicilla* \times *leucocephalus*) and Marbled \times Long-billed mur-relets (*Brachyramphus marmoratus* \times *perdix*) are listed with the information that no hybrids have yet been reported. Inclusion of subspecies and combinations for which no hybrids are known opens up large areas of potential inconsistency, and I suggest these cases be excised from the accounts.

These small criticisms do not detract from the overall quality and usefulness of this compilation and, best of all, would be easy to fix in what promises to be an on-going work. I encourage everyone noticing errors in the *Handbook* to contact the author at avian.hybrids@gmail.com, so that future editions of this important resource can be improved.

Peter Pyle