FORUM: REVIEWS AND COMMENTS

THIBAULT, JEAN-CLAUDE and CIBOIS, ALICE: Birds of Eastern Polynesia: A biogeography Atlas. 440 pp., 142 distribution maps, c.200 color illustrations and c.70 figures. Lynxs Ediciones. Barcelona 2017. ISBN 978-84-16728-05-3. € 29.95

For bird watchers, biogeographers and ecologists alike, Eastern Polynesia remains a holy grail; it's not so easy to get to, and biological information is either lacking, still not open access, or not conclusive. This unique habitat of the world is part of mystic Oceania and it consists of the following island groups: Marquesas, Line, Northern Cook, Southern Cook, Austral, Tuamotu, Gambier, the Pitcairn Group and the Eastern Island Group. As it is typical for globalization these days, access to formerly remote islands has improved (with urbanization of the global village on the rise) making this book quite relevant.

For that fascinating part of the world consisting of over 150 islands, this dense and well-layout'ed book done by the authors - helped by the Genève Muséum, the city of Genève Switzerland as well as the Délégation a la Recherche de la Polynesie française - features 241 bird species – curiously a relatively low diversity for such a vast tropical region. However, some species are endemic and many species are of global conservation concern. The reader will appreciate the crisp book introduction to eastern Polynesian islands (but the readings of DIAMOND 1997, MAYR and DIAMOND 2001, and RAUZON 2016 are still recommended for a better and more complete overview). The described human history – very important for this region shaping entire island ecosystems during the last 1,500 years, during the time after 'contact' with J. Cook, and specifically after WW2 – is rather short, with the indigenous role widely left uncovered (clearly a *faux pas* but as typically found in colonial-style top-down ornithology).

Unfortunately, the infamous nuclear weapon tests (e.g. on Kiritimati, Moruroa and Fangataufa during the Cold War with millions of birds killed) just cover a mere 16 lines in this comprehensive book of otherwise 428 pages. Even worse, the topic of biological warfare and the U.S. attempt with the 'Smithsonian' trying to explore sea- and landbirds was widely omitted in full (for widely known historic facts and citations see for instance MACLEOD 2001, RAUZON 2016). Whereas the chapter on the ornithological history of Eastern Polynesia covers four pages though, mostly centered on western world exploits and collection expeditions typically described in a somewhat heroic prose but with no reference to data-whereabouts, e.g. the Bishop Museum in Hawaii; https://www.bishopmuseum.org/! Other topics of western ornithology like biogeography, sympatry, genetics and the Taxon Cycle Hypothesis are also mentioned.

On the good side indeed, this book presents the audience with "*a new synthesis of all the available literature on Eastern Polynesia*". And consequently the bibliography of 42 pages makes for a great resource for any ecologist. A four page index of english and scientific names of birds is provided (but any French, or Pidgin English references – even covered with readily online translators for years) are not mentioned nor do authors follow itis.org or similar taxonomic global standards as 'best professional practice'. The concept of 'citizen science' dominates with the authors in its wide absence; see here for bird records for the Polynesian Islands to be added: https://ebird.org/home.

As the prime focus of this book, the individual species accounts are usually half a page in length; many of them cover nice drawings! Even better, I find that the real strength of this book consists of the displayed presence and absence map data for species on the islands of Eastern Polynesia (none of them are shared online in a digital format; islets are widely not covered); also the population trend estimates are of good value (many of them do not agree with IUCN and BirdLife International references though). Still, species absence data are essential but rarely reported in the Ornithology literature elsewhere. Further, orrnithologists will find rare bird details presented like the Tuamoto sandpiper, Polynesian Ground Dove, Tahiti Monarch, loris,

parakeets and polar shorebird and albatross reports fascinating , so are the sections on extinctions (e.g. rails) and 'indeterminate parakeets'. Whereas many introduced species are reported for even this remote part of the world, e.g. mallard, white eyes, common myna, chilean tinamou and house sparrow.

Some of the species accounts present unique breeding success data, and some feature maps of colony sizes (which are great to know and to have, but then it mixes 'apples and oranges' of the prime data types presented for species (occurrence vs. abundance vs. colonies vs. trends); and those colony data are not really reported in the World Seabird Colony database: http://axiom.seabirds.net/global_ portal.php). Another somewhat 'hidden jewel' in the book text might be some of the bird banding/recovery data presented (otherwise not found anywhere because data sources are very diverse and not well coordinated, not compiled or not made accessible; but see MacLeod 2001, Rauzon 2016 for thousands of birds banded in the region). Some of the 'Remarks on Life History' in the species sections provide fascinating insights for the armchair birder.

This set of oceanic islands – often with volcanic activity and steep elevations as well as heavily modified and rat/cat infested - are facing also severe climate change impacts with sea level rise wiping out entire beaches, communities and most of the atolls, as well as coral reefs bleaching (Together with microplastics, all of those are topics that this book leaves virtually unaddressed)!

I find that the place names used throughout the text and reported in a specific list at the end of the book is pretty arbitrary though. It is not following a good reference standard for geography-minded people (e.g. the National Geographic Atlas or a digital database https://www.loc.gov/catdir/cpso/geogname.html). Same applies to the taxonomy employed (compare with Mayr and Diamond 2001; it's a major topic of dispute in evolution and ornithology for over 100 years). The DNA aspects of this book are pretty one-sided and weak: the shiny phylogenetic trees presented lack any uncertainty estimates and can easily get challenged; same applies to the colorful haplotype network graphs presented. Authors further attempted Principal Component Analysis (PCAs) and presented with ellipses (nature is not following ellipses or confidences nor are Principal Components powerful for inference). There are also some relevant sampling, detection and analysis problems with the field data and inference, including spatially autocorrelated sightings due to island size, terrain ruggedness, access and location (=geological features). This book leaves us with huge potential currently unachieved when looking for modern spatio-temporal data analysis and done with machine learning or AI. Seamount evolution and seafloor topography is not covered as a relevant feature to explain step-wise dispersal and migration between islands (a base scheme in modern island biogeography).

To me, the atlas concept of this book falls somewhat short because the book format is rather small and so are certainly the half-paged maps within. Also, data points are many but often difficult to see. The clustering approach chosen by the authors allows to find major hotspots (usually just driven by (large) island locations, with is determined by geology), while 'marginal' bird record ranges and individual detections still matter for avian ecology and biogeography.

Helpful is the Checklist of Polynesian birds (but not provided in a digital format and as a mobile or online app eg. Google Earth). The list of abbreviations, glossary of terms, island names and maps of archipelagos (provided coordinates cover only 3 digits instead of the required 6 digits; geo-projection unknown) as well as the complete list of drawings conclude the book content.

While authors and the publisher claim progress by summarizing here inaccessible data, primarily though from the American Museum of Natural History (AMNH, New York; "*holding the largest collection of Pacific island birds*"! Other data contributors are found in the long list of the two page acknowledgements) but reality is, this book does not really share or promote data online (as the Rio Convention, GBIF, ICSU and the EU and 'best professional practices' require). It's all based on either none or secretive data management and done in hardcopy. Neither the mapping work with Geographic Information Systems (GIS), nor the statistical software or data base details are described. But in times of GBIF.org and global digitization this easily raises the question for this book concept chosen We can easily do better in 2017 (Graham et al. 2004) - and we should (Huettmann 2015) - in times of the internet while a global conservation crisis is now reaching even the most remote and complex seascapes and their species. Ethics do matter. Living now in the Anthropocene, the 'terror' initiated by J. Cooke 300 years ago still goes on in many forms -ecologically, socially and economically (Pelt 1996) - but unfortunately with no relevant change in sight. "*It's for the birds then.*"

Falk Huettmann

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