

This article was downloaded by: [Mr Darren Naish]

On: 06 March 2014, At: 07:06

Publisher: Taylor & Francis

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



## Journal of Vertebrate Paleontology

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/ujvp20>

### A Review of 'The Dodo and the Solitaire: A Natural History'

Darren Naish<sup>a</sup>

<sup>a</sup> Ocean and Earth Science, National Oceanography Centre, Southampton University of Southampton, Southampton, SO14 3ZH, UK

Published online: 04 Mar 2014.

To cite this article: Darren Naish (2014) A Review of 'The Dodo and the Solitaire: A Natural History', Journal of Vertebrate Paleontology, 34:2, 489-490, DOI: [10.1080/02724634.2013.803977](https://doi.org/10.1080/02724634.2013.803977)

To link to this article: <http://dx.doi.org/10.1080/02724634.2013.803977>

PLEASE SCROLL DOWN FOR ARTICLE

Taylor & Francis makes every effort to ensure the accuracy of all the information (the "Content") contained in the publications on our platform. However, Taylor & Francis, our agents, and our licensors make no representations or warranties whatsoever as to the accuracy, completeness, or suitability for any purpose of the Content. Any opinions and views expressed in this publication are the opinions and views of the authors, and are not the views of or endorsed by Taylor & Francis. The accuracy of the Content should not be relied upon and should be independently verified with primary sources of information. Taylor and Francis shall not be liable for any losses, actions, claims, proceedings, demands, costs, expenses, damages, and other liabilities whatsoever or howsoever caused arising directly or indirectly in connection with, in relation to or arising out of the use of the Content.

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden. Terms & Conditions of access and use can be found at <http://www.tandfonline.com/page/terms-and-conditions>

THE DODO AND THE SOLITAIRE: A NATURAL HISTORY, by Jolyon C. Parish, 2012. Indiana University Press, Bloomington, Indiana, 406 pp. US\$75.00, hardcover, ISBN 978-0-253-00099-6.

About 1690 (give or take a decade or two) the last specimen of that remarkable giant flightless pigeon known today as the Dodo, *Raphus cucullatus*, expired, and the species, endemic to Mauritius, was no more. About a century later (again, allow some considerable margin of error), a related species, the less-familiar Solitaire *Pezophaps solitarius* of Rodriguez, also met its end thanks to the efforts of our own species. The bizarre appearance, large size, and copious apocrypha and lore attached to these birds eventually resulted in their place in textbooks and museum displays as well as in artwork and popular fiction, making one of them the most famous extinct animal, ever. Often overlooked is the fact that this only happened once Victorian naturalists were prepared to accept that the dodo was a real bird in the first place, for it both underwent a confusing early history in which it was not necessarily deemed any more remarkable or exotic than penguins, rheas, or cassowaries (all of which it was confused with at times), and was later regarded as a possible tall-tale resulting from muddled descriptions of albatrosses or even as a composite or outright fabrication.

The literature on dodos and solitaires is large and sprawling and concerns such things as nautical history and post-Renaissance art as much as ornithology and the accession records of natural history collections. It is of course easiest and quickest to rely on secondary sources, hence committing that sin of copying the mistakes of others and of repeating claims and facts without checking the primary data. Several dodo-themed books have appeared in recent decades; some are good (e.g., Fuller, 2002), others are execrable.

Even today, myths about the dodo persist. The famous Tradescant dodo of Oxford, currently represented by just the remains of the head and left (not right!) foot, never was thrown onto a bonfire as people and books say, but more likely simply fell to bits over the years. And the suggestion that dodos evolved in obligate mutualism with the Tambalacoque tree *Sideroxylon grandiflorum* (Temple, 1977, 1979) is not true and has been known not to be true ever since botanists went looking for live Tambalacoque trees and found them, at all growth stages, and with no anachronistic dodos around (Witmer and Cheke, 1991).

All of this and a substantial quantity more is covered in what looks like the dodo and solitaire book to end all dodo and solitaire books: Jolyon Parish's *The Dodo and the Solitaire: A Natural History*. This well-rounded, comprehensive tour-de-force demonstrates substantial investment by the author in the checking of original sources, specimens, and artwork. Large, weighty, packed with data and including original analysis as well as historical review, it is indeed the definitive work on these birds. It is fully referenced and contains numerous footnotes.

The book contains seven main sections that variously review written accounts of the dodo and solitaire, illustrations produced contemporaneously, illustrations produced secondarily, our anatomical knowledge of these birds, and inferences about the natural history and ecology of the two species. It is substantially illustrated throughout in black and white and includes reproductions of all the many pictures of these birds that have appeared over the years, in addition to photos and diagrams of the remaining evidence. A color plate section features excellent reproductions of relevant colored works. It's probably true to say

that virtually all the dodo and solitaire illustrations worth reproducing are included within the book.

Any examination of dodo literature demonstrates that dodoologists, to use Parish's term, have often devoted more time and effort to the interpretation of imagery and artwork than they have to the understanding of bones and other physical remains. Indeed, dodo specialists have wrapped themselves into knots while trying to trace the origins and histories of the many dodos included in paintings and drawings and even those shown on maps and (supposedly) portrayed as statues. At one extreme, there are workers who have interpreted differently hued, differently adorned dodo images as representing distinct specimens that must have had different origins and transportation histories. Those workers also made bold and remarkable claims about other birds that supposedly lived alongside the dodo and/or solitaire. Hachisuka (1953) not only promoted the existence of the white dodo *Victoriornis imperialis* and Réunion solitaire *Ornithoptera solitaria* (the latter now known to be an ibis), he also endorsed *Legautia gigantea*, the 2-m-tall giant white water hen, and *Testudophaga bicolor*, the turtle-eating, 'bi-colored chough' of Rodriguez.

Needless to say, Parish promotes rationality and scepticism: his clever 'genealogies' of artistic reconstructions (many clearly produced by artists who never saw a dodo alive or dead) show how artists copied others such that specific features became repeated and accentuated over time. An especially nice touch is his portrayal of posed skeletons within the silhouetted dodo figures drawn by artists. Some depictions of dodos, those in the famous *Gelderland* journal of 1601, for example, are good matches of dodo skeletal proportions and posture, but others are certainly not.

Today it's well known and near-universally accepted that dodos and solitaires are pigeons, deeply nested within Columbidae. Historically, however, these birds have been considered related to, or members of, ratites, gamebirds, swans, penguins, vultures, waders, and rails. Parish reviews all of these, often fanciful, suggestions (and others), using the assorted family trees and other diagrams produced by the respective authors. But where exactly do the dodo and solitaire belong within the pigeon clade? Janoo's (1996, 2000) pioneering phylogenetic analyses supported a close relationship between *Raphus* and *Pezophaps* and the crowned pigeons (*Goura*) and Nicobar pigeons (*Caloenas*), a suggestion that was always satisfying in view of the gestalt and ecology of these large, mostly terrestrial living species. Furthermore, the evolution of the superficially dodo-like *Natunaornis* on Fiji, apparently from a *Goura*-like ancestor (Worthy, 2001), lends support to the idea that dodos and solitaires are 'just' super-sized, flightless gourine pigeons. Molecular analyses recover a close relationship between the *Raphus* + *Pezophaps* clade and *Caloenas*, *Goura*, and the tooth-billed pigeons (*Didunculus*) (Shapiro et al., 2002; Pereira et al., 2007).

Parish is not merely a reviewer but an able working scientist (his Ph.D. on another branch of Dinosauria mostly involved testing and comparing competing phylogenetic hypotheses; see Thompson et al., 2012), so it's appropriate that a novel morphology- and behavior-based analysis was compiled for this book. The results are impressive, the topology agreeing with

molecular studies in nesting the *Raphus* + *Pezophaps* clade deep within Gourinae, and with *Goura*, *Caloenas*, and *Didunculus* as successively more distant outgroups. The recently extinct taxa *Natunaornis*, *Microgoura*, and *Bountyphaps* are also recovered as gourines. I'm left wondering why this study hasn't been submitted as a stand-alone paper, because this represents a good case in which morphology and molecules recover similar inferred relationships. Furthermore, the support statistics and robustness of the tree require report and discussion.

Topologies and such notwithstanding, the evolution and (dare I say it) evo-devo of these birds is fascinating and arguably under-studied, although it's under-studied for the obvious reason (it's hard to extract good ontogenetic, developmental and genetic data from birds that have been dead for a few centuries). As Parish describes, and as previously discussed at length by Livezey (1993), substantial evidence for heterochrony in dodo and solitaire anatomy (both pedomorphosis and peramorphosis) seemingly explains many of their peculiarities, although with males and females possessing different developmental trajectories.

Our knowledge of dodo and solitaire life appearance is confused, not necessarily elucidated, by color artwork, and dodos have variously been described or depicted as wholly or partially whitish, grayish, blue-gray, dark brown, blackish, with or without tufts of curled fluffy feathers in the tail region, with differently hued rhamphotheca, and so on. Parish's review of what we know is excellent, but this section in particular would have benefited from more illustrations. What we know about the microscopic anatomy of dodo head feathers will be new to most readers.

Overall, Parish has succeeded in producing a definitive and thorough tome on these remarkable birds; one that contains substantial information on just about everything that we know about them. Naturally, dodo specialists will continue to argue over some of the minutiae concerning the histories and origins of specific illustrated dodos; Parish rarely fails to take small sideswipes at the work of another contemporary dodologist, Julian Hume, although fair and appropriate citation of Hume's work appears throughout. The melancholy references to *Blade Runner* are appreciated.

Some of the modern black-and-white drawings, evidently penned by Parish himself, would have looked better with white (rather than gray) backgrounds, and the format of the book as a whole is somewhat frustrating given the publisher's use of 80-mm-wide white margins on every single page: what a waste of space and paper! As an up-to-date and comprehensive review

of everything we know about the dodo and solitaire, however, this book will be enjoyed, and sought after, by an enormous readership. It deserves high praise indeed.

DARREN NAISH

Ocean and Earth Science  
National Oceanography Centre, Southampton  
University of Southampton  
Southampton SO14 3ZH, UK

#### LITERATURE CITED

- Fuller, E. 2002. Dodo: From Extinction to Icon. Harper Collins Publishers, London, 180 pp.
- Hachisuka, M. 1953. The Dodo and Kindred Birds or the Extinct Birds of the Mascarene Islands. H. F. and G. Witherby, London, 250 pp.
- Janoo, A. 1996. On a hitherto undescribed dodo cranium, *Raphus cucullatus* L. (Aves, Columbiformes), with a brief taxonomical overview of this extinct flightless Mascarene Island bird. Bulletin du Muséum national d'Histoire naturelle, Paris 4e série, 18, Section C 1: 57–77.
- Janoo, A. 2000. Rooting the dodo *Raphus cucullatus* Linnaeus, 1758 and the solitaire *Pezophaps solitaria* Gmelin, 1789 within the Ornithurae: a cladistic reappraisal. Ostrich 71:323–329.
- Livezey, B. C. 1993. An ecomorphological review of the dodo (*Raphus cucullatus*) and solitaire (*Pezophaps solitaria*), flightless Columbiformes of the Mascarene Islands. Journal of Zoology 230:247–292.
- Pereira, S. L., K. P. Johnson, D. H. Clayton, and A. J. Baker. 2007. Mitochondrial and nuclear DNA sequences support a Cretaceous origin of Columbiformes and a dispersal-driven radiation in the Paleogene. Systematic Biology 56:656–672.
- Shapiro, B., D. Sibthorpe, A. Rambaut, J. Austin, G. M. Wragg, O. R. P. Bininda-Emonds, P. L. M. Lee, and A. Cooper. 2002. Flight of the dodo. Science 295:1683.
- Temple, S. A. 1977. Plant-animal mutualism: coevolution with dodo leads to near extinction of plant. Science 197:885–886.
- Temple, S. A. 1979. The dodo and the tambalacoque tree. Science 203:1364.
- Thompson, R. S., J. C. Parish, S. C. R. Maidment, and P. M. Barrett. 2012. Phylogeny of the ankylosaurian dinosaurs (Ornithischia: Thyreophora). Journal of Systematic Palaeontology 10:301–312.
- Witmer, M. C., and A. S. Cheke. 1991. The dodo and the tambalacoque tree: an obligate mutualism reconsidered. Oikos 61:133–137.
- Worthy, T. H. 2001. A giant flightless pigeon gen. et sp. nov. and a new species of *Ducula* (Aves: Columbidae), from Quaternary deposits in Fiji. Journal of the Royal Society of New Zealand 31:763–794.