

# Phylogenetic Analysis Reveals Additional Diversity within the *Dendrolagus dorianus* (Marsupialia: Macropodidae) Group from New Guinea

MARK D. B. ELDRIDGE<sup>1</sup> , RENAE C. PRATT<sup>1</sup> , REBECCA N. JOHNSON<sup>1,2</sup> ,  
ROBERTO PORTELA MIGUEZ<sup>3</sup> , TIM F. FLANNERY<sup>1,4</sup> ,  
KRISTOFER M. HELGEN<sup>1,5</sup> , AND SALLY POTTER<sup>1,6</sup> 

<sup>1</sup> Australian Museum Research Institute,  
Australian Museum, 1 William Street, Sydney NSW 2010, Australia

<sup>2</sup> Current address: National Museum of Natural History, District of Columbia,  
Washington, 20560 United States of America

<sup>3</sup> The Natural History Museum, Cromwell Road, London SW7 5BD, United Kingdom

<sup>4</sup> Melbourne Sustainable Society Institute, Melbourne University, Parkville Vic. 3010, Australia

<sup>5</sup> Current address: Bernice Pauahi Bishop Museum,  
1525 Bernice Street, Honolulu, Hawai'i 96817, United States of America

<sup>6</sup> School of Natural Sciences, Macquarie University NSW 2109, Australia

**ABSTRACT.** The tree-kangaroos (genus *Dendrolagus*) are specialized arboreal macropodids now confined to the rainforests of New Guinea and northeastern Queensland, Australia. Within New Guinean *Dendrolagus*, a distinct Doria's group has been recognized since 1936. However, establishing the species limits and inter-relationships within the group has long been hampered by limited sampling. In this study we supplement published genetic data from high quality tissue samples with molecular data generated from museum specimens to improve taxon sampling and geographic coverage within the Doria's group to enhance our understanding of their evolutionary history. This included the addition of the previously unsampled *D. mayri* (holotype and only known specimen) and additional specimens of *D. dorianus* and *D. notatus*. DNA sequence data were generated from three mitochondrial loci and six distinct Doria's group lineages were identified: *D. dorianus*, *D. notatus*, *D. stellarum*, *D. scottae*, *D. cf. stellarum* and *D. mayri*. Phylogenetic analysis improved the resolution of relationships within the Doria's group, with *D. dorianus* being recovered as the sister to all other taxa. Surprisingly, *D. mayri* and *D. cf. stellarum* were monophyletic and formed a sister group to the three other species (*D. notatus*, *D. stellarum* and *D. scottae*). This indicates that the molecular affinities of *D. cf. stellarum*, from the Sudirman Range, Central Cordillera, lie with *D. mayri* (isolated on the Wondiwoi Peninsula to the west) rather than true *D. stellarum* from the Star Mountains further east along the Central Cordillera. The molecular divergence

**Keywords:** phylogeography, marsupial, mitochondrial DNA, pelage

**ZooBank registration:** urn:lsid:zoobank.org:pub:0C70B9F7-4E62-4222-AFCC-ACB1A6A3CBCD

**ORCID ID:** Eldridge, 0000-0002-7109-0600; Pratt, 0009-0004-1248-7351; Johnson, 0000-0003-3035-2827; Portela Miguez, 0000-0003-3094-9949; Flannery, 0000-0002-3005-8305; Helgen, 0000-0002-8776-4040; Potter, 0000-0002-5150-7501

**Corresponding author:** Mark Eldridge mark.eldridge@australian.museum

**Submitted:** 8 August 2025 **Accepted:** 16 September 2025 **Published:** 6 March 2026 (in print and online simultaneously)

**Publisher:** The Australian Museum, Sydney, Australia (a statutory authority of, and principally funded by, the NSW State Government)

**Citation:** Eldridge, Mark D. B., Renae C. Pratt, Rebecca N. Johnson, Roberto Portela Miguez, Tim F. Flannery, Kristofer M. Helgen, and Sally Potter. 2026. Phylogenetic analysis reveals additional diversity within the *Dendrolagus dorianus* (Marsupialia: Macropodidae) group from New Guinea. In *Contributions to the Mammalogy of New Guinea*, ed. Tim F. Flannery and Kristofer M. Helgen. *Records of the Australian Museum* 78(1): 53–67. <https://doi.org/10.3853/j.2201-4349.78.2026.3005>

**Copyright:** © 2026 Eldridge, Pratt, Johnson, Portela Miguez, Flannery, Helgen, Potter. This is an open access article licensed under a Creative Commons Attribution 4.0 International License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original authors and source are credited.

