

# The Last Land. A History of Mammalogy in New Guinea

TIM F. FLANNERY  AND STEPHEN M. JACKSON 

Australian Museum Research Institute  
1 William Street, Sydney NSW 2010, Australia

After Greenland, New Guinea is the second largest island on Earth. It is a region of exceptional biodiversity, as its eastern part alone—the independent nation of Papua New Guinea, ranks twelfth among nations for biodiversity (Williams, 2001). New Guinea’s indigenous mammalian fauna consists of four major clades: monotremes (Tachyglossidae), marsupials (Australidelphia), murids (Muridae), and bats (Microchiroptera), each of which has a differing zoogeographic history in the New Guinean region (Flannery, 1995a). New Guinea lies east of Wallace’s Line, and its northwestern and southern parts form the northern margin of the Australian Plate, while the rest of the island is largely made up of rocks of oceanic crust and island arc origin (Baldwin *et al.*, 2012). Unlike Australia, which is dry and flat, New Guinea is rain-soaked and mountainous, creating a perfect natural laboratory to investigate how faunas with a common ancestry evolve under different conditions.

To the west of New Guinea lies the geographic region known as Wallacea, which has its own distinctive fauna (Flannery, 1995b). Composed of many islands, Wallacea is varied, with some island groups, such as the Spice Islands, sharing mammal lineages with New Guinea, while others are dominated by mammalian lineages originating in Asia (see Helgen & Jones, 2023). The mammalian fauna of the Spice Islands (modern Maluku Utara, Indonesia) was first documented by Europeans as early as the mid-sixteenth century (Calaby, 1984), yet it was not until the end of the nineteenth century that a sense of the composition of the mammalian fauna of New Guinea itself was established. Indeed, the island was such a terra incognita that as late as 1875 a fictitious account of a purported expedition to New Guinea could be published and read by a credulous public, which reported encounters with man-like apes, tigers, and enormous herds of buffalo (Lawson, 1875).

The earliest account of a mammal that was clearly collected on the island of New Guinea appears to be René-Primevère Lesson’s and Prosper Garnot’s observations of *Dorcopsis veterum* Lesson & Garnot, 1826 (synonym of *Dorcopsis mülleri* (Schlegel, 1866)) made at Dorei (present day Manokwari) on Vogelkop. The two were surgeons who also worked as zoologists aboard the French vessel *Coquille*, under the command of Louis Isodore Duperrey, during its circumnavigation of the globe from 1822 to 1825. The *Coquille* reached ‘*le harvre du Dorery*’ on 26 July 1824, and the encounter with the wallaby must have occurred shortly thereafter (Duperrey, 1826).

Opportunistic and sporadic records of mammal specimens from the lowlands of New Guinea continued to be made throughout the nineteenth century. Among the most significant were those of Salomon Müller, a zoologist and botanist at the short-lived settlement of Fort Du Bus (in Triton Bay, now in Kaimana Regency, Indonesia), where in 1828 he collected specimens of *Dendrolagus inustus* and *D. ursinus*. In 1840, Müller published accounts of both species, making them the first tree-kangaroos known to western science (Müller, 1840). Other important collections, principally from the lowlands, made during the nineteenth century were those of the Russian Nicholas Mikluho Maclay in southeastern New Guinea between 1871–1880 (e.g., Miklouho-Maclay, 1884), various German collectors working in German New Guinea (e.g., Matschie, 1912), and Sir William Macleay’s 1875 Chevert Expedition to the Gulf of Papua (Macleay, 1875; Fulton, 2018).

The New Guinea highlands (areas above 1000 m) with their rich endemic mammal fauna, were not visited by a European zoologist until the Italian naturalist Luigi Maria D’Albertis reached the Arfak Mountains on Vogelkop. Singing arias from popular Italian operas to fortify himself as

ORCID ID: Flannery 0000-0002-3005-8305, Jackson 0000-0002-7252-0799

Corresponding author: Tim Flannery [tim.fridtjof.flannery@gmail.com](mailto:tim.fridtjof.flannery@gmail.com)

Submitted: 4 September 2025 Accepted: 8 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: Flannery, Tim F., and Stephen M. Jackson. 2026. The last land. A history of mammalogy in 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): 1–4. <https://doi.org/10.3853/j.2201-4349.78.2026.3001>

Copyright: © 2026 Flannery, Jackson. 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.



he scaled the steep lower slopes and reached an elevation of around 1000 m on 7 September 1872. There he based himself in the village of Hatam, where he raised the Italian flag and began collecting. Birds of paradise were his principal focus, but he did collect a few mammals, most if not all of which were purchased from villagers. With a tribal war threatening, D'Albertis departed the Arfaks on 29 September (D'Albertis, 1881), but in his three short weeks there he collected a diversity of montane endemic mammals, including *Phascosorex dorsalis*, *Microperoryctes longicauda* (to this day the only record from Vogelkop) and *Pseudocheirops albertisii*, which were entirely unknown to the outside world.

Other collectors, principally Dutch and French (e.g., Milne-Edwards, 1880; Raffray, 1879), followed D'Albertis into the mountains of Vogelkop, but soon other more distant regions of New Guinea began to open up to collectors, and organized collecting activity on Vogelkop tapered off. From the 1880s onwards, the establishment of mission and colonial government outposts in British New Guinea facilitated the exploration of the mammals of the eastern end of the island. By the mid-1890s the Italian anthropologist Dr Lamberto Loria was collecting mammals at 1300 m elevation in the Astrolabe Range near Port Moresby (Thomas, 1898; Dimpflemeier *et al.*, 2018). By the early years of the 20th century, other collectors, including Antwerp Edgar Pratt and sons (e.g., Pratt, 1906), Walter Goodeflow (e.g., Thomas, 1908) and Albert Meek, a collector for Lord Walter Rothschild who reached an elevation of 1220 m asl on the Aroa River area in 1903 (see Tennent, 2021), all primarily interested in birds and insects, were making incidental collections of mammals at high elevations in southeastern New Guinea. The highest mountains in New Guinea lie in the Maokop Range where, until the early twenty-first century, two glaciers occurred. Mammals were first collected at high elevation there during the 1909–1910 Lorentz Expedition (Lorentz, 1913), and the 1910–1911 British Ornithologists Union expedition led by Alexander Frederick Richmond Wollaston (e.g., Thomas, 1914), but the remoteness of the region prevented large-scale collecting until the advent of aviation.

The motive forces behind much early twentieth century collecting were Lord Walter Rothschild (whose primary interest was ornithology, but whose collectors also brought back mammals) and Oldfield Thomas. Thomas worked on mammalian systematics at the British Museum, as a paid employee or in retirement, between 1876 and 1929. He named around 2,000 new mammalian species and subspecies, and his most productive period coincided with the opening up of much of New Guinea to biological collectors. He hired his own fieldworkers, but many colonial-era adventurers and administrators with an interest in natural history also sent specimens to him (Hill, 1990). Collectors, working alone in New Guinea during the mid-twentieth century, included Evelyn Cheeseman (e.g., Cheeseman, 1948), Fred Shaw-Mayer (e.g., Laurie, 1952), Ernst Mayr (e.g., Stein, 1932), and Alan Jock Marshall (e.g., Marshall, 1938). Ellis LeGeyt Troughton, mammalogist at the Australian Museum Sydney (1908–1954) described several species (e.g., Troughton 1937), collected in New Guinea, and was active in encouraging donations.

From the 1930s onwards, a huge burst of mammalogical research, powered largely by the American Museum of Natural History's Archbold Expeditions, took place. Five

of the Archbold Expeditions, all focussed explicitly on mammalogy, explored New Guinea between 1934 and 1964. The expeditions were the first to use aircraft to reach remote areas, spent up to 18 months in the field amassing the enormous collections of mammals (Archbold & Rand, 1935, 1940; Archbold *et al.*, 1942; Brass, 1956; Van Deusen, 1978). The published mammalogical research, primarily by George H. H. Tate, covered every aspect of New Guinean mammalogy. By 1954 enough was known that a checklist of New Guinean mammals could be compiled (Laurie & Hill, 1954).

By the 1970s systematic mammalogy was finally being undertaken by researchers living in New Guinea, with James Menzies of the University of Papua New Guinea (e.g., Menzies, 1991) and Frank Bonaccorso of the PNG National Museum (e.g., Bonaccorso, 1998) playing leading roles. Collectors working for institutions outside New Guinea also continued. Abid Beg Mirza, for example, contributed substantial collections to the Bernice Pauahi Bishop Museum, Hawai'i (e.g., Ziegler, 1981). The number of species described was expedited by Australian Museum Scott Expeditions (1985–1992), led by TF who undertook surveys across New Guinea and surrounding islands (e.g., Flannery, 1995a, 1995b). In addition other survey work was completed by Ken Aplin (e.g., Helgen *et al.*, 2020) and others, who sampled hitherto poorly-known regions of the island. In December 2007 Kris Helgen surveyed the Foja Mountains, the last entirely unsurveyed mountain range in New Guinea, for mammals (*National Geographic*, 2009).

Importantly, by the 1980s frozen tissues of a diversity of New Guinean mammals were being collected, and the first genetic data on New Guinean mammals were being published (e.g., Aplin *et al.*, 1993 and references therein). By 1990 sufficient data had been accumulated to allow for the publication of the first account of the mammals of the island (Flannery, 1990).

As a result of the various expeditions by researchers the number of species described from New Guinea rapidly grew, with over 60 species having been described, or recognized, since 1980. These include some highly unusual species including Attenborough's Long-beaked Echidna (*Zaglossus attenboroughi*) and the alpine woolly rat (*Mallomys gunung*), which were described in 1989. The dingiso (*Dendrolagus mbaiso*), described in 1995, appears to be largely terrestrial, which is unlike other tree-kangaroos. It is astonishing that some of New Guinea's largest and most distinctive mammals, including *D. mbaiso*, *D. scottae* Flannery & Seri 1990 and *D. puicherrimus* Flannery, 1993 had escaped detection by European scientists until the 1990s. Earlier collectors may have been reluctant to trek into the remote regions where these species linger, and to spend weeks camping with local landowners in order to detect such elusive and rare species. Large areas of New Guinea are still poorly studied, so it is likely that many more mammals remain to be discovered and described.

Any review of New Guinean mammalogy must acknowledge indigenous expertise. Because traditional lifestyles continue in many areas, the average New Guinean is highly knowledgeable about their mammal fauna, partially depending upon it for sustenance. Moreover, many native mammals are deeply significant in traditional belief systems. The only comprehensive account of mammals written by an indigenous hunter is Iain Saem Majnep's *Animals*

*the ancestors hunted: an account of the wild mammals of the Kalam area, Papua New Guinea* (Majnep & Bulmer, 2006). It is a truly scholarly work, filled with ecological and reproductive detail, much observed at first hand.

Hopefully, the future of New Guinean mammalogy will increasingly lie with in-country researchers, both in Papua New Guinea and Indonesian Papua. But if this is to occur, in-country universities and museums must be provided with the resources required.

## References

- Aplin, K., P. R. Baverstock, and S. C. Donnellan. 1993. Albumin immunological evidence for the time and mode of origin of the New Guinean terrestrial mammal fauna. *Science in New Guinea* 19(3): 131–144.
- Archbold, R., and A. L. Rand. 1935. Results of the Archbold Expeditions. No 7. Summary of the 1933–1934 Papuan Expedition. *Bulletin of the American Museum of Natural History* 68(8): 527–579.
- Archbold, R., and A. L. Rand. 1940. Results of the Archbold Expeditions. No 29. Summary of the 1936–1937 New Guinea Expedition. *Bulletin of the American Museum of Natural History* 67(7): 341–380.
- Archbold, R., A. L. Rand, and L. J. Brass. 1942. Results of the Archbold Expeditions. No 41. Summary of the 1938–1939 New Guinea Expedition. *Bulletin of the American Museum of Natural History* 79(3): 197–288.
- Baldwin, S. L., P. Fitzgerald, and L. E. Webb. 2012. Tectonics of the New Guinea Region. *Annual Review of Earth and Planetary Sciences* 40: 495–520.  
<https://doi.org/10.1146/annurev-earth-040809-152540>
- Bonaccorso, F. J. 1998. *Bats of Papua New Guinea*. Washington, D.C.: Conservation International.
- Brass, L. J. 1956. Results of the Archbold Expeditions. No 75. Summary of the Fourth Archbold Expedition to New Guinea (1953). *Bulletin of the American Museum of Natural History* 3(2): 83–152.
- Calaby, J. 1984. Foreword. *Possums and Opossums*, ed. A. Smith and I. Hume, p. iii. Sydney: Surrey Beatty and Sons.
- Cheeseman, E. 1948. *Camping Adventures in New Guinea*. London: Harrap.
- D'Albentis, L. M. 1881. *New Guinea: What I Did and What I Saw*. London: Sampson Low, Marston, Searle and Rivington.
- Dimpflmeier, F., and S. Puccini. 2018. *Nelle mille patrie insulari. Etnografia di Lamberto Loria alla Nuova Guinea Britannica (1888–1897)*. Rome: CISU. 384 pp.
- Duperrey, L. I. 1826. *Voyage autour du monde, exécuté par ordre du Roi, sur la corvette de Sa Majesté, la Coquille, pendant les années 1822, 1823, 1824 et 1825, sous le Ministère de S. E. M. le Marquis de Clermont-Tonnerre, et publié sous les auspices de Son Excellence M. le Cte de Chabrol, Ministre de la Marine et des Colonies. Histoire du voyage. Atlas*. Paris: A. Bertrand.  
<https://doi.org/10.5962/bhl.title.59769>
- Flannery, T. F. 1990. *Mammals of New Guinea*. Sydney: Reed.
- Flannery, T. F. 1993. Taxonomy of *Dendrolagus goodfellowi* (Macropodidae: Marsupialia) with description of a new subspecies. *Records of the Australian Museum* 45(1): 33–42.  
<https://doi.org/10.3853/j.0067-1975.45.1993.128>
- Flannery, T. F. 1995a. *Mammals of New Guinea*. Revised edition. Sydney: Reed.
- Flannery, T. F. 1995b. *Mammals of the Moluccas and Southwest Pacific Islands*. Sydney: Reed.
- Flannery, T. F., and L. Seri. 1990. *Dendrolagus scottae* n.sp. (Marsupialia: Macropodidae): a new tree-kangaroo from Papua New Guinea. *Records of the Australian Museum* 42(2): 237–245.  
<https://doi.org/10.3853/j.0067-1975.42.1990.117>
- Fulton, G. R. 2018. Notes on the mammals collected on the Chevert Expedition, to New Guinea, in 1875. *Proceedings of the Linnean Society of New South Wales* 140: 1–6.
- Garnot, A. 1825–1830. *Voyage autour du monde: exécuté par ordre du Roi, sur la corvette de Sa Majesté, la Coquille, pendant les années 1822, 1823, 1824, et 1825*. Paris: Arthus Bertrand.
- Helgen, K. M., and R. K. Jones, eds. 2023. Contributions to mammalogy and zooarchaeology of Wallacea. *Records of the Australian Museum* 75(5): 623–786.  
<https://doi.org/10.3853/j.2201-4349.75.2023.1771>
- Helgen, K. M., J. Louys, and S. O'Connor. 2020. The lives of creatures obscure, misunderstood, and wonderful. A volume in honour of Ken Aplin 1958–2019. In *Papers in Honour of Ken Aplin*, ed. Julien Louys, Sue O'Connor, and Kristofer M. Helgen. *Records of the Australian Museum* 72(5): 149–160.  
<https://doi.org/10.3853/j.2201-4349.72.2020.1734>
- Hill, J. E. 1990. A memoir and biography of Michael Rogers Oldfield Thomas. British Museum (Natural History). *Historical Series* 18(1): 25–113.  
<https://doi.org/10.5962/p.34698>
- Laurie, E. M. O. 1952. Mammals collected by Mr Shaw Mayer in New Guinea 1932–1949. *Bulletin of the British Museum of Natural History* 1(10): 269–318.  
<https://doi.org/10.5962/bhl.part.21634>
- Laurie, E. M., and J. E. Hill. 1954. *List of Land Mammals of New Guinea, Celebes, and Adjacent Islands, 1758–1952*. London: British Museum (Natural History).  
<https://doi.org/10.5962/bhl.title.112425>
- Lawson, J. A. 1875. *Wanderings in the Interior of New Guinea*. Chapman and Hall, London.
- Lesson, R. P., and P. Garnot 1826. *Voyage autour du Monde, exécuté par ordre du Roi, sur la corvette de Sa Majesté, la Coquille pendant les années 1822, 1823, 1824, et 1825, Volume 1. Zoology*. Paris: Arthus Bertrand. 164pp.
- Lorentz, H. A. 1913 *Zwarte menschen—witte bergen: verhaal van den tocht naar het sneeuwgebergte van Nieuw-Guinea*. Leiden: E. J. Brill.  
<https://doi.org/10.1163/9789004599062>
- Macleay, W. 1875. Notes on the zoological collections made in Torres Straits and New Guinea during the cruise of the Chevert. *Proceedings of the Linnean Society of New South Wales* 1: 36–40.  
<https://doi.org/10.5962/bhl.part.12383>
- Majnep, I. S., and R. Bulmer. 2007. *Animals the Ancestors Hunted: An Account of the Wild Mammals of the Kalam Area, Papua-New Guinea*, ed. H. Robin and P. Andrew. Adelaide: Crawford House. xlix + 451 pp.
- Marshall, A. J. 1938. *Men and Birds of Paradise. Journeys Through Equatorial New Guinea*. London: William Heinemann.
- Matschie, P. 1912. Zwei neue Rassen des rotten Baumkänguruhs aus Deutsch-Neuguinea. *Sitzungsberichte der Gesellschaft Naturforschender Freunde zu Berlin* 10: 568–572
- Menzies, J. 1991. *A Handbook of New Guinea's Marsupials and Monotremes*. Madang: Kristen Press.
- Miklouho-Maclay, N. de 1884. On a new species of kangaroo (*Dorcopsis chalmersii*) from the southeast end of New Guinea. *Proceedings of the Linnean Society of New South Wales* 9: 569–577.
- Milne-Edwards, A. 1880. On a new species of *Dasyurus* from New Guinea. *Annals and Magazine of Natural History* 6: 171–172.  
<https://doi.org/10.1080/00222938009458917>

- Müller, S. 1840. Footnote. In *Verhandelingen over de natuurlijke geschiedenis der Nederlandsche overzeesche bezittingen, Land-en Volkenkunde*, ed. C. J. Temminck, p. 20. Leiden: S. en J. Luchtmans en C. C. van der Hoek.
- National Geographic. 2009. *Explorer Kristofer M. Helgen*. [Accessed 5 September 2025].  
<https://explorers.nationalgeographic.org/directory/kristofer-m-helgen>
- Pratt, A. E. 1906. *Two Years Among New Guinea Cannibals. A naturalists sojourn among the Aborigines of unexplored New Guinea*. London: Seeley & Co.  
<https://doi.org/10.5962/bhl.title.106644>
- Raffray, M. A. 1879. *Voyage en Nouvelle-Guinée, par M. Achille Raffray, chargé d'une mission scientifique par le Ministre d'Instruction Publique (1876–1877)*. Issue Nos 953, 954, 955 and 956. Tour Du Monde, Hachette.
- Schlegel, H. 1866. *Observations zoologique. III. In Nederlandsch Tijdschrift Voor de Dierkunde. Volume 3. Mammifères*, ed. P. Bleeker, H. Schlegel, and G. F. Westerman, pp. 325–358. Amsterdam: M. Westerman & Zoon.
- Stein, G. 1932. Eine neue Beuteltiere aus Neuguinea. *Zeitschrift für Säugetierkunde* 7(6): 254–257.
- Tennent, J. 2021. *The Man Who Shot Butterflies. Albert Meek (1871–1943)—Naturalist and Explorer*. Oxfordshire: Storm Entomological Publications.
- Thomas, M. O. 1898. Description of a new Phascogale from British New Guinea, obtained by Dr L. Loria. *Annali del Museo Civico di Storia Naturale di Genova* 20: 191–192.
- Thomas, M. O. 1908. A new tree-kangaroo from British New Guinea. *Annals and Magazine of Natural History* 2: 452–453.  
<https://doi.org/10.1080/00222930808692512>
- Thomas, M. O. 1914. Report on the mammals collected by the British Ornithologist's Union Expedition and the Wollaston Expedition in Dutch New Guinea. *Transactions of the Zoological Society of London* 20(9): 315–324.  
<https://doi.org/10.1111/j.1469-7998.1912.tb07837.x>
- Troughton, E. Le G. 1937. Descriptions of some New Guinea mammals. *Records of the Australian Museum* 20(2): 117–127.  
<https://doi.org/10.3853/j.0067-1975.20.1937.254>
- Van Deusen, H. M. 1978. Results of the Archbold Expeditions. No 101. Summary of the seventh Archbold Expedition to New Guinea (1964). *American Museum Novitates* 2660: 1–21.  
<https://doi.org/10.5962/bhl.title.144350>
- Williams, J. 2001. Biodiversity Theme Report. [Accessed 27 August 2025].  
<https://web.archive.org/web/20081208141905/http://www.environment.gov.au/soe/2001/publications/theme-reports/biodiversity/biodiversity01-3.html>
- Ziegler, A. C. 1981. *Petaurus abidi*, a new species of glider (Marsupialia: Petauridae) from Papua New Guinea. *Australian Mammalogy* 4: 81–88.  
<https://doi.org/10.1071/AM81002>