

Rediscovery of the Long-eared Bat Genus *Nyctophilus* (Chiroptera: Vespertilionidae) in Timor and a Reassessment of *Nyctophilus timoriensis*

HARRY E. PARNABY¹  AND KRISTOFER M. HELGEN^{1,2} 

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

² Australian Research Council Centre for Australian Biodiversity and Heritage,
University of New South Wales, Sydney NSW 2052, Australia

ABSTRACT. The only previous record of the Long-eared bat genus *Nyctophilus* from the island of Timor is a specimen collected by the Baudin expedition in 1803, used to describe *Nyctophilus timoriensis* by Geoffroy (1806). However, its geographic attribution to Timor is contentious because of uncertainty regarding the characteristics and the identity of the type material of *timoriensis*, and because no further specimens from Timor have been available until now. Here, we report on three specimens of *Nyctophilus* collected in 2003 at Maubisse, in the mountains of Timor-Leste (East Timor), which we tentatively assign to *N. timoriensis*. We present a revised concept of *N. timoriensis* based on a re-interpretation of the original description and illustration, as well as examination of the suspected holotype. Our assessment differs from the prevailing view of *timoriensis* as representing a large-bodied *Nyctophilus* with a rudimentary snout mound (similar to the Australian species *N. major* Gray, 1844, with which it has often incorrectly been synonymized). Instead, *N. timoriensis* is a medium-sized species with an enlarged snout mound, closely resembling *N. heran* Kitchener *et al.*, 1991, from Lembata Island, Indonesia, and *N. geoffroyi* Leach, 1821, of mainland Australia and Tasmania. Further revisionary work is needed to resolve the taxonomy and relationships of these similar species.

ABSTRAK [Bahasa Indonesia]. Catatan tentang kelelawar bertelinga panjang, genus *Nyctophilus* dari Pulau Timor, sebelumnya hanya diketahui dari spesimen yang dikoleksi dalam ekspedisi Baudin pada tahun 1803, yang selanjutnya digunakan untuk mendeskripsikan spesies *Nyctophilus timoriensis* oleh Geoffroy pada tahun 1806. Namun, pemahaman distribusi geografis spesies ini di Timor masih diragukan karena adanya ketidakpastian terkait dengan karakter dan identitas spesimen tipe dari spesies *N. timoriensis*, dan tidak tersedia spesimen yang lain dari Timor. Dalam makalah ini, kami melaporkan tentang tiga spesimen kelelawar *Nyctophilus* yang dikoleksi pada tahun 2003 dari Maubisse, pegunungan di Timor Leste, yang sementara ini kami masukkan ke dalam kelompok *N. timoriensis*. Kami mempresentasikan revisi dari pemahaman tentang spesies *N. timoriensis* berdasarkan pada penafsiran ulang terhadap deskripsi dan ilustrasi awal dalam penamaan spesies, serta eksaminasi spesimen yang diduga sebagai holotipe. Penilaian kami berbeda dengan pemahaman yang saat ini berlaku terhadap *timoriensis* sebagai representasi dari kelelawar *Nyctophilus* yang memiliki ukuran tubuh besar dengan tonjolan moncong yang mengalami rudimentasi (mirip dengan spesies dari Australia, *N. major* Gray, 1844, yang seringkali disalahartikan sebagai sinonim).

Keywords [English]: Baudin expedition; *Nyctophilus timoriensis*, Charles Alexandre Lesueur, Timorese bat inventory, Indonesian bat fauna
Keywords [Bahasa Indonesia]: ekspedisi Baudin, *Nyctophilus timoriensis*, Charles Alexandre Lesueur, inventarisasi kelelawar Timor, kelelawar Indonesia
ZooBank registration: urn:lsid:zoobank.org:pub:35C189F0-5B18-4638-8874-70DDA925FC20
ORCID iD: Harry E. Parnaby <https://orcid.org/0000-0003-2409-1632> | Kristofer M. Helgen <https://orcid.org/0000-0002-8776-4040>
Corresponding author: Harry E. Parnaby Harry.Parnaby@Australian.Museum
Submitted: 23 June 2023 **Accepted**: 18 September 2023 **Published**: 13 December 2023 (in print and online simultaneously)
Publisher: The Australian Museum, Sydney, Australia (a statutory authority of, and principally funded by, the NSW State Government)
Citation: Parnaby, Harry E., and Kristofer M. Helgen. 2023. Rediscovery of the long-eared bat genus *Nyctophilus* (Chiroptera: Vespertilionidae) in Timor and a reassessment of *Nyctophilus timoriensis*. In *Contributions to Mammalogy and Zooarchaeology of Wallacea*, ed. K. M. Helgen and R. K. Jones. *Records of the Australian Museum* 75(5): 629–652.
<https://doi.org/10.3853/j.2201-4349.75.2023.1782>

Copyright: © 2023 Parnaby, Helgen. 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.



Sebaliknya, *N. timoriensis* adalah spesies dengan ukuran tubuh sedang dengan tonjolan moncong yang membesar, sangat mirip dengan *N. heran* Kitchener *et al.*, 1991, dari Pulau Lembata, Indonesia, dan *N. geoffroyi* Leach, 1821, dari daratan Australia dan Tasmania. Upaya revisi lebih lanjut diperlukan untuk menyelesaikan taksonomi dan hubungan kekerabatan dari spesies-spesies yang mirip tersebut.

REZUMU [Tetum]: Rejistu úniku kona-ba niki ho tilun naruk, husi jéneru *Nyctophilus*, iha illa Timor, maka espésime (ezemplár) ida ne'ebé rekolle husi Baudin, iha ninia espedisaun iha tinan 1803, ne'ebé uza husi Geoffroy (1806) hodi halo deskrisaun kona-ba *Nyctophilus timoriensis*. Maske nune'e, ninia atribuisaun jeográfika ba Timor kontroversa (iha hanoin ne'ebé la hanesan) duni, tanba la iha serteza kona-ba karakteristik no identidade husi materiál tipu *timoriensis* nian, no tanba to'ogora la iha ezemplár tan Timor nian. Iha estudu ida ne'e ami apresenta ezemplár *Nyctophilus* tolu, ne'ebé rekolle iha tinan 2003, iha Maubisse, iha Timor-Leste ninia foho sira, ne'ebé ami atribui ho provizóriu (la definitivu) ba *Nyctophilus timoriensis*. Ami apresenta konseitu ne'ebé revee ona kona-ba *N. timoriensis*, bazeia ba interpretasaun foun kona-ba deskrisaun no ilustrasaun orijinál sira, no mos ba *holótipo* (ezemplár ne'ebé uluk uza hodi halo deskrisaun) suspeitu nian. Ami nia avaliasaun la hanesan ho ida seluk ne'ebé iha to'ogora, ne'ebé hatudu *N. timoriensis* hanesan *Nyctophilus* ho isin boot, ho ibun (nunun) rudimentár, (hanesan espésie australiana *N. major* Gray, 1844, ho ne'ebé kompara sala dala barak). Duké hanesan ne'e, *N. timoriensis* maka espésie ho tamañu médiu, ho nia ibun (nunun) luan, hanesan loos ho *N. heran* Kitchener *et al.*, 1991, husi illa Lembata, Indonézia, no ho *N. geoffroyi* Leach, 1821, husi Austrália kontinentál no Tazmânia. Presiza halo revizaun tan hodi rezolve taksonomia no relasaun entre espésie hanesan sira ne'e.

Introduction

The French naturalist Étienne Geoffroy Saint-Hilaire described a long-eared bat species, *Vespertilio timoriensis*, based on a specimen or specimens collected from Timor during the Baudin expedition (Geoffroy, 1806). The species was later transferred to the genus *Nyctophilus*, erected by Leach (1821a). The Baudin expedition was based at Kupang Bay (now the Indonesian city of Kupang) on the western end of the island of Timor during August–November 1801 and April–July 1803 (Péron & Freycinet, 1807–1816). Jackson *et al.* (2021) gave the collection date of *Vespertilio timoriensis* as between 6 May and 3 June 1803.

Subsequent authors for the ensuing half century (e.g., Desmarest, 1821; Temminck, 1840; Giebel, 1855), including his son, Isadore Geoffroy Saint-Hilaire (I. Geoffroy, 1832), credited Geoffroy's (1806) documentation of this species from Timor. However, in the two centuries following the Baudin expedition, the presence of *Nyctophilus* in Timor has at times been doubted, in large part because no further material had been reported since the original account by Geoffroy (1806). More recently, Kitchener *et al.* (1991) confirmed the occurrence of *Nyctophilus* in the Lesser Sunda Archipelago in the late twentieth century, designating a newly collected specimen from the neighbouring island of Lembata, Indonesia immediately north of Timor, as the holotype (and thus far only known specimen) of *Nyctophilus heran* Kitchener, How, & Maharadatunkamsi, 1991. Kitchener *et al.* (1991) considered it likely that the genus also occurred in Timor.

Here we confirm that the genus *Nyctophilus* occurs in Timor. Three specimens of long-eared bats (genus *Nyctophilus*) collected in 2003 from Maubisse, montane Timor-Leste (East Timor) were documented in a report by Polhemus & Helgen (2004) to the Government of Timor-Leste. Until now the identity of these specimens has remained uncertain. In this paper we describe the Maubisse material and provide a morphological evaluation of their taxonomic status relative to the taxa they most resemble: *N. heran* from Indonesia, and the Lesser Long-eared Bat *N. geoffroyi* Leach, 1821a, from Australia and Tasmania. Our

task is impeded by the unresolved taxonomy of the forms currently assigned to *N. geoffroyi*. The taxonomic status of *N. timoriensis* has long been confused, largely because it is a poorly defined entity in the literature and because the name has been applied to a variety of taxonomic concepts in the past (see below). Here, alongside review of the new material of *Nyctophilus* from Timor, we present a revised concept of the morphology of *N. timoriensis* *sensu stricto*, based on a re-interpretation of Geoffroy's original description and illustration.

Taxonomic history

As noted above, some doubt that Geoffroy's *timoriensis* came from Timor prevailed especially during the late nineteenth and twentieth centuries (e.g., Tate, 1941; Goodwin, 1979), though Thomas (1914) noted that the record might be valid and that further specimens might come from Timor. Scepticism seems to have originated from Tomes (1858a), who believed that É. Geoffroy's locality was an error, citing two reasons. First, many bat specimens from Timor were then held by museums in Europe yet no further *Nyctophilus* had been obtained from that island. Second, Tomes states that he had examined specimens from Western Australia, which he considered to be “identical” to “the original” specimen of *timoriensis* in the Muséum national d'Histoire naturelle, Paris. Consequently, Tomes (1858a) applied the name *timoriensis* to the Western Australian specimens. His specimens were later shown by Thomas (1914, 1915a) to belong to *N. major*, a species attributed to an illustration published by J. E. Gray but first diagnosed by Thomas. Tomes (1858a) did not use the name *N. major* in his revision, either because he was unaware of the name (see Peters, 1861) or else did not consider *N. major* to be an available name. The Baudin expedition collected specimens from south-western Western Australia, adding to Tomes' suspicion that the *Nyctophilus* material had been incorrectly attributed to Timor.

Throughout the past century the name *N. timoriensis* has often been used for the largest members of the genus from across mainland Australia and Tasmania, while *N. major*