



Description of the male of *Mayriphlopterus nystalicus* Mey, 2004 (Phthiraptera, Ischnocera, Philopteridae)

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Abstract

The male of *Mayriphlopterus nystalicus* is described and illustrated from two species of Brazilian puffbirds. The White-eared Puffbird (*Nystalus chacuru*) is confirmed as a true host for this species of chewing lice. A key for identification and a list of hosts of the six species of the genus *Mayriphlopterus* is provided.

Key words: puffbirds, Bucconidae, Ischnocera, *Mayriphlopterus*, *Philopterus*-complex

Introduction

The genus *Mayriphlopterus* was recently described by Mey (2004) for species which belong to *Philopterus* s.l. found on Bucconidae and Galbulidae. This genus has six known species, four on puffbirds and two on jacamars; of these species two were described by Carriker (1963) (in *Clayiella*). Species of *Mayriphlopterus* are characterized by: (1) absence of functional conus; (2) well developed trabecula; (3) clypeal hyaline membrane without marginal sclerotization; (4) presence of 2–4 pairs of spatulate setae on the clypeal hyaline membrane. The latter character is the most distinctive among the genera of the family Philopteridae.

Mey (2004) revised the *Philopterus*-complexes, with a creation of seven new genera of lice which occupy the head feathers of birds (former docophorid morpho-type), showing that numerous early derivative genera of chewing lice can be found in the basal orders of birds (e.g. Passeriformes, Coraciiformes). However, that author left some gaps in the classification of 10 species of those genera, described only for male (two species) or female (eight species) specimens. Of the four *Mayriphlopterus* species described by Mey (2004), only one was described from both sexes.

We intend the male of one *M. nystalicus* Mey, 2004, provide morphometric characters and chaetotaxy in addition to the original description, and confirm *Nystalus chacuru* as a host. We also provide a key to separate known species of *Mayriphlopterus* and a list of species with their host and geographical distribution.

Material and methods

Lice were collected from live hosts and museum skins, and were mounted on slides in Canada balsam following the technique in Palma (1978). Host classification follows Dickinson (2003) and morphological terminology used for the lice follows that in Mey (2004). Abbreviations of measured characters are: HL – Head length; TW — Temporal width; FW — Frontal width; CI — Cephalic index (HL/TW); POL — Prothorax

length; POW — Prothorax width; PEL — Pterothorax length; PEW — Pterothorax width; AL — Abdomen length; AW — Abdomen width; GL — Genitalia length; TL — Total length.

Measurements (in millimetres) were taken with an ocular micrometer from slide-mounted specimens and were corrected to two decimal places. Ranges are followed by mean values in parentheses. In the material examined, the presented data are, where complete: typology, number of specimens, host species, country, locality, state or province, date of bird collection, collector, and date of chewing lice collection.

Abbreviations for the Phthiraptera collections where materials examined are deposited: PHTPHI — at Oswaldo Cruz Institute, Rio de Janeiro, Brazil; NHM — Museum of Natural History, Rudolstadt, Germany.

Philopteridae Burmeister, 1838

Mayriphilopterus nystalicus Mey, 2004

Type host. *Nystalus maculatus* (Gmelin, 1788), the Spot-backed Puffbird (Bucconidae)

Male and female. General aspect of body stout with front of head short and compact. Clypeal hyaline membrane with two spatulate setae on each side. Temporal setae 1 and 3, ocular and post-ocular setae long; temporal setae 2, 4 and 5 short. Trabeculae of spherical aspect. All legs of the same size. Pterothorax with less than 25 setae on posterior margin. Tergite II with a pair of long to medium-sized anterior setae reaching the anterior margin of tergite IV. All tergites medially separated, with post-spiracular setae present on segments III–VIII; tergite IX entire. No sternal plates on sternites II–VI.

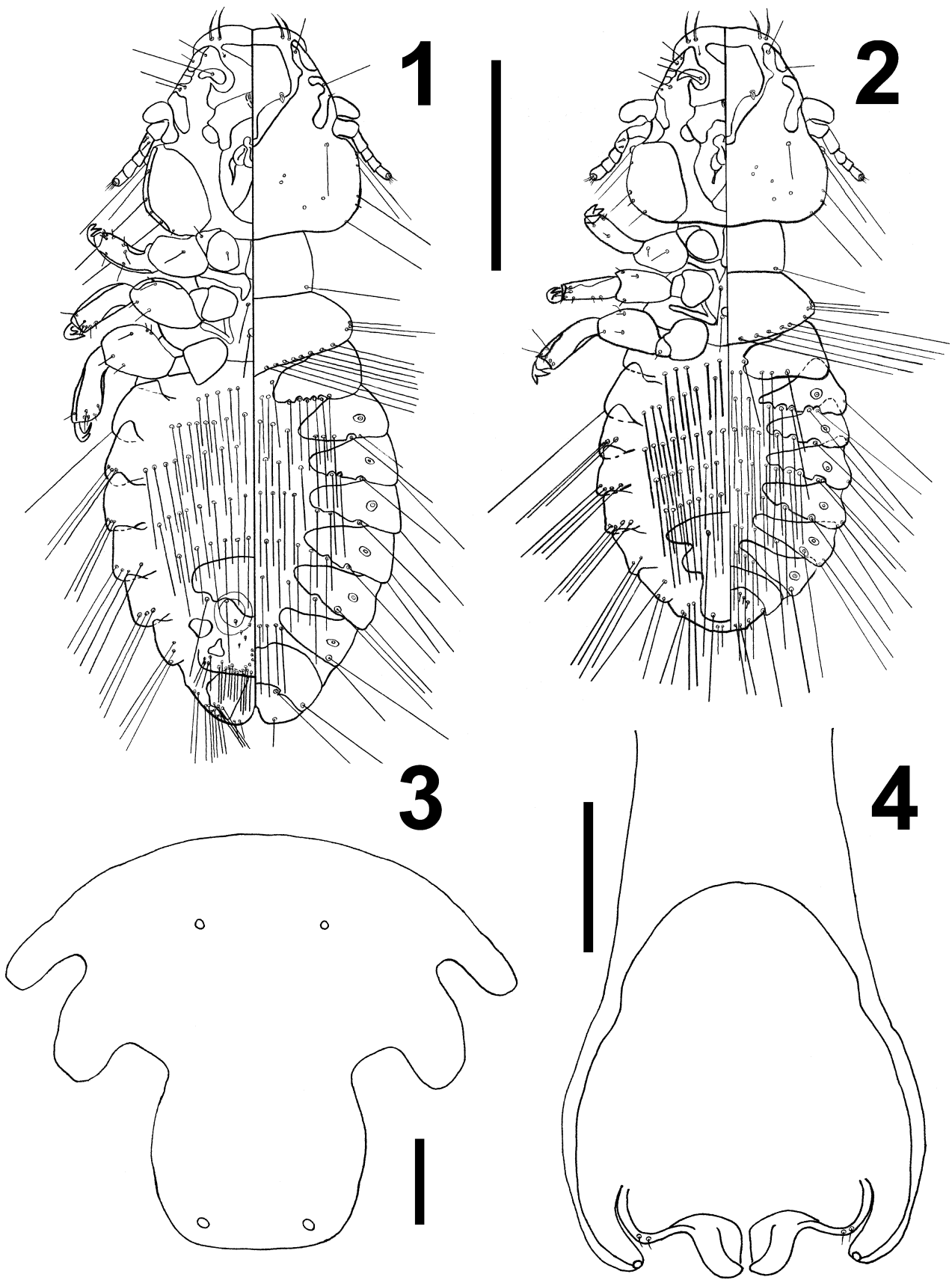
Female (Fig. 1) (n=14). Posterior margin of pterothorax pointed medially with 22 long setae. All tergal setae inserted on slender tegument, except for those on tergite III. Tergal central setae: II, 16–20; III, 12–17; IV, 13–17; V, 12–18; VI, 12–16; VII, 9–15 and VIII, 4–9. Pleural setae: II, 0; III, 1; IV–V, 4; VI, 6; VII, 5; VIII, 4. Sternal setae: II, 8–16; III, 10–19; IV, 12–19; V, 14–17; VI, 12–14. About 15 setae on each side of vulvar margin; 6–9 minute setae anterior to vulva. Two irregular plates between subgenital plate and vulvar opening. Subgenital plate as much figured by Mey (2004: 170, fig. 18b).

Dimensions: HL, 0.59–0.63 (0.60); TW, 0.55–0.59 (0.58); FW, 0.34–0.35 (0.34); CI, 1–1.09 (1.03); POL, 0.18–0.19 (0.18); POW, 0.32–0.34 (0.33); PEL, 0.20–0.24 (0.21); PEW, 0.48–0.55 (0.53); AL, 0.80–1.00 (0.92); AW, 0.73–0.84 (0.79); TL, 1.79–2.00 (1.89).

Male description (Figs. 2–4) (n=12). Except for terminalia, genital characters and its smaller size, the male closely agrees with the female in general chaetotaxy and morphology. Posterior margin of pterothorax slightly rounded with 18 long setae. All tergal setae inserted on slender tegument, except for those on posterior margin of tergite II. Tergal central setae: II, 11–16; III, 12–14; IV–V, 10–14; VI, 9–14; VII 9–13. Pleural setae: II, 0; III, 2; IV, 4; V, 5; VI, 6; VII, 6; VIII, 4. Sternal setae: II, 8–14; III, 12–15; IV, 10–18; V, 12–16; VI, 10–16. Subgenital plate as in Fig. 3; genitalia simple, with parameres very small and fused at basal plate, without other characters in the endomeral plate (Fig. 4).

Dimensions: HL 0.54–0.55 (0.55); TW, 0.52–0.54 (0.53); FW, 0.30–0.32 (0.31); CI, 1.02–1.06 (1.04); POL, 0.16–0.17 (0.16); POW, 0.29–0.30 (0.30); PEL, 0.18–0.20 (0.19); PEW, 0.47–0.49 (0.48); AL, 0.70–0.77 (0.74); AW, 0.66–0.71 (0.69); GL, 0.19–0.23 (0.21); TL, 1.59–1.67 (1.62).

Remarks. The male genitalia of *M. nystalicus* are similar to the genitalia of *M. orinocensis* and *M. ernsti*. Some variation in abdominal chaetotaxy was found compared with the holotype female of *M. nystalicus*, but considered within the range of intra-specific variation. The male of *M. nystalicus* can be easily distinguished from that of *M. orinocensis* by the absence of sternal plates (present in *M. orinocensis*); from that of *M. ernsti* by the number of blade-like setae on the clypeal hyaline membrane (four in *M. ernsti*) and by the form of the epifaringe (broad in *M. ernsti*).



FIGURES 1–4. *Mayriphlopterus nystalicus* Mey, 2004: 1 — Female; 2 — Male (scale bar = 0.6mm); 3 — subgenital plate of male, setae not included (0.01mm); 4 — male genitalia (0.05mm).

Mey (2004) was unable to separate the female *M. nystalicus* from *Nystalus chacuru* from the holotype which was collected on *N. maculatus*. We examined 11 males and 10 females of *M. nystalicus* from skins of *N. maculatus* housed in two different museums. Also, six males and eight females were collected in Brasília (Federal District, Brazil) from free living *N. chacuru*. Lice from both species of puffbirds appear to be conspecific, confirming the White-eared Puffbird as a true host for this species of louse.

Types examined: Holotype female (NHM 4321) of *Mayriphlopterus nystalicus*, ex *Nystalus maculatus striatipectus*, **PARAGUAY:** Orloff, 17 Nov. 1955, coll. E. Mey in 19 Dec. 1996; 2 females and 2 nymphs, ex *Nystalus chacuru*, **BRAZIL:** Cuiabá (NHM 3866) and Santa Catarina, Joinville (NHM 3867). Paratype female (NHM 4110.a) of *Mayriphlopterus galbulicus*, ex *Galbula cyanescens*, **PERU:** Prov. Victoria, Rio Pachitea, 22 Feb. 1961, coll. E. Mey in 16 Dec. 1995. Holotype male (NHM 4360.b) and paratype female (NHM 4360.a) of *Mayriphlopterus ernsti*, ex *Monasa morpheus peruana*, **PERU:** Prov. Victoria, Rio Pachitea, 01 Dec. 1961, coll. E. Mey in 01 Dec. 1996.

Additional material examined: 2 males, 6 females (PHTPHI 0091–0098), and 1 female (NHM 4805.b), ex *Nystalus chacuru*, **BRAZIL:** Brasília, Distrito Federal, Fazenda Água Limpa (15° 57'S, 47° 56'W), 02 Oct. 2002, H48014, coll. Mieko Kanegae; 1 male (NHM 4805.a) and 1 male (PHTPHI 0090), same data for host, locality and collect date, H48015; 2 males and 2 females (PHTPHI 0086–0089), same data for host and locality, 04 Oct. 2002, H48016. At the National Museum of Rio de Janeiro (Ornithology collection): 2 males and 1 female (NHM 4806.a and 4806.b), ex skin of *Nystalus maculatus*, **BRAZIL:** no data for the skin, coll. M.P. Valim in 28 Apr. 2005. At the Department of Zoology (Ornithology collection) of Federal University of Minas Gerais: 2 males (PHTPHI 0099 and 0101), ex skin of *Nystalus maculatus*, **BRAZIL:** Caatinga do Moura, Bahia state, Set. 1982, coll. M.P. Valim in 17 Jul. 2005; 2 males and 4 females (PHTPHI 0100–0102), ex skin of *Nystalus maculatus*, **BRAZIL:** Caatinga do Moura, Bahia state, 13 Sep. 1982, coll. M.P. Valim in 17 Jul. 2005.

Key for species of genus *Mayriphlopterus* Mey, 2004

- 1- Hyaline margin with two pairs of spatulate setae 2
 - Hyaline margin with four pairs of spatulate setae *M. ernsti* Mey, 2004
- 2- Pterothorax with more than 30 long setae on posterior margin 3
 - Pterothorax with fewer than 25 long setae on posterior margin 4
- 3 - Tergite VIII of females with four setae; vulvar region with 60 small setae and 12–13 medium to long setae *M. galbulicus* Mey, 2004
 - Tergite VIII of females with six setae; vulvar region with 80 small setae and 16 medium to long setae *M. brevicephalus* Mey, 2004
- 4- Sternites present and well pigmented on females 5
 - Sternites absent on males and females *M. nystalicus* Mey, 2004
- 5 - Posterior margin of pterothorax rounded (0.22 in males and 0.24 in females in length); cephalic index 1.12 in males and 1.04 in females; male genitalia as in Fig. 3 (Plate VII of Carriker, 1963: 29) *M. spinosus* (Carriker, 1963)
 - Posterior margin of pterothorax with a bluntly rounded projection on median line (0.24 in males and 0.26 in females in length); cephalic index 1.07 in males and 1.03 in females, male genitalia much as in Fig. 4 *M. orinocensis* (Carriker, 1963)

List of species of the genus *Mayriphlopterus* and their hosts

Species	Hosts	Family	Distribution	References
<i>M. ernsti</i>	<i>Monasa morphoeus peruviana</i>	Bucconidae	Peru	Mey (2004)
<i>M. nystalicus</i>	<i>Nystalus maculatus</i>	Bucconidae	Paraguay	Mey (2004)
			Brazil	Present study
<i>M. spinosus</i>	<i>Bucco capensis</i>	Bucconidae	Venezuela	Carriker (1963)
				Present study
<i>M. orinocensis</i>	<i>Hypnelus ruficollis bicinctus</i>	Bucconidae	Venezuela	Carriker (1963)
			Colombia	Carriker (1963)
<i>M. galbulicus</i>	<i>Galbula cyanescens</i>	Galbulidae	Peru	Mey (2004)
<i>M. brevicephalus</i>	<i>Jacamerops aureus</i>	Galbulidae	Peru	Mey (2004)

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