

A new host record for *Philornis* (Diptera, Muscidae)

Ismael Franz¹ & Márcia S. Couri²

¹Laboratório de Zoologia, Centro Universitário Feevale, RS-239, 2755, 93352-000 Novo Hamburgo-RS, Brazil. ismaelfranz@sinos.net

²Museu Nacional, Universidade Federal do Rio de Janeiro, Quinta da Boa Vista, 20940-040 Rio de Janeiro-RJ, Brazil. Research fellow of Conselho Nacional de Desenvolvimento Científico e Tecnológico, CNPq. mcouri@terra.com.br

ABSTRACT. A new host record for *Philornis* (Diptera, Muscidae). The crested becard, *Pachyramphus validus* (Lichtenstein, 1823), is recorded, for the first time, as host of *Philornis* (Diptera, Muscidae). Subcutaneous larvae were collected in one nestling at the Floresta Nacional de Canela (Rio Grande do Sul, Brazil).

KEYWORDS. Parasitism; *Pachyramphus validus*; first record.

RESUMO. Novo registro de hospedeiro para *Philornis* (Diptera, Muscidae). O caneleiro-de-chapéu-preto, *Pachyramphus validus* (Lichtenstein, 1823), é registrado, pela primeira vez, como hospedeiro de *Philornis* (Diptera, Muscidae). Larvas subcutâneas foram coletadas em um filhote na Floresta Nacional de Canela (Rio Grande do Sul, Brasil).

PALAVRAS-CHAVE. Parasitismo; *Pachyramphus validus*; primeiro registro.

Philornis Meinert (1890) (Muscidae, Azeliinae) is known from 50 valid species (Carvalho *et al.* 2005; Dodge 1955), which larvae parasite the nestlings of a wide range of bird species.

Although the adults are well known in literature, data on the biology of the larvae is known only for about 50% of the species. The larvae can be free living on the bird nests, with coprophagous or semi-hematophagous habits or intradermal in the nestlings, with hematophagous habits.

The females deposit their eggs in the nests or directly on the nestlings. The larvae, in the majority of the species with known larval biology, are subcutaneous parasites, with hematophagous habits, forming a tumor on their hosts, especially on the head, wings and dorsal region of the body (Couri 1985, 1999; Guimarães *et al.* 1983). Until now, 131 bird species were recorded as *Philornis* hosts (Couri 1999; Teixeira 1999; Spalding *et al.* 2002; Nihei & Bencke 2003; Higgins *et al.* 2005; Dudaniec & Kleindorfer 2006).

This communication records *Pachyramphus validus* Lichtenstein (The crested becard) as a new host for *Philornis*. This species is a passerine bird of the Tityridae family (recently transferred from Tyrannidae to this family) insectivore, migratory of summer, which inhabits open forests occupying the top of trees (Belton 1994).

An active nest of *P. validus* was found in December 2004 in the top of an araucaria tree (*Araucaria angustifolia*), at about 13 meters high, at the “Floresta Nacional de Canela” (29°19’S; 050°48’W, an area of mixed ombrophylous forest) at Rio Grande do Sul (south of Brazil). On 21th December, 2004, a nestling with about ten days old was observed on the floor, in the same direction of the nest, being fed by their parents, but

presenting low activity. The nestling was highly parasitized by *Philornis* sp. subcutaneous larvae, which were collected for posterior analysis. The larvae were distributed mainly in the naked body regions of the nestling. The 75 collected larvae were distributed in the body as follows: 29 (39 %) on the head (crown, chin, lores, forehead and base of the bill), 15 (20 %) on wings (base of the primaries), 12 (16 %) in the crissum, 7 (9 %) in the thighs and 12 (16 %) in other regions of the body (neck, back, rump, breast, belly and flanks) (Fig. 1). The collected larvae measured 11,08 mm ($\pm 2,61$).

The occurrence of 75 larvae in one only host (alive) represents an expressive number in relation to the intensity of parasitism *Philornis* already recorded in literature. The number of larvae varies in each host species and apparently there is no correlation between this number and the mortality of the nestlings (Dudaniec & Kleindorfer 2006).

Although it was not possible to identify the larvae until species level, we give some morphological characters of the third larval instar that can help further identification or future comparisons: cephalopharyngeal skeleton as in Fig. 2; thoracic and abdominal segments with 2 or 3 complete irregular spine bands (Fig. 3); caudal segment concave, with rugose margins (Fig. 4); posterior spiracles separated by the width of less than one; posterior spiracular slits “C” shaped, slightly sinuose as in Fig. 5.

Acknowledgements. To the administrators of the “Floresta Nacional de Canela” for the permit to develop the research in that conservation unit and to Paulo Henrique Ott for the photos. The “Centro Universitário Feevale” financed the project and supplied logistic support. MSC is grateful to the Conselho Nacional de Desenvolvimento Científico e

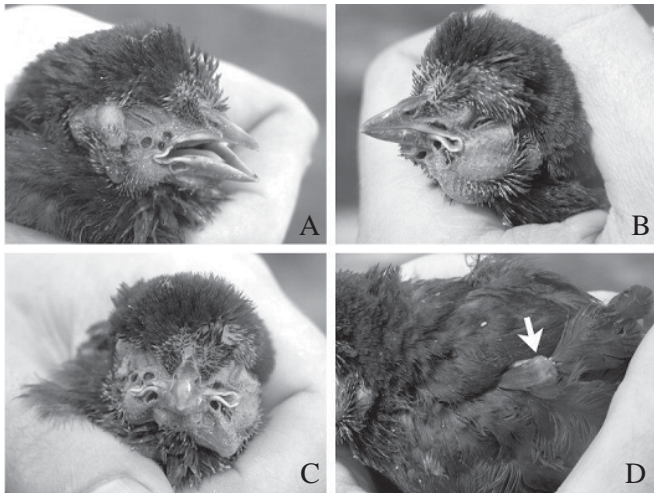


Fig. 1. Nestling of crested bcard (*Pachyrhamphus validus*) parasitized by *Philornis* sp. larvae. A, Head, right lateral view; B, head, left lateral view; C, head, frontal view; D, left wing showing one larva on base of 8th secondaries.

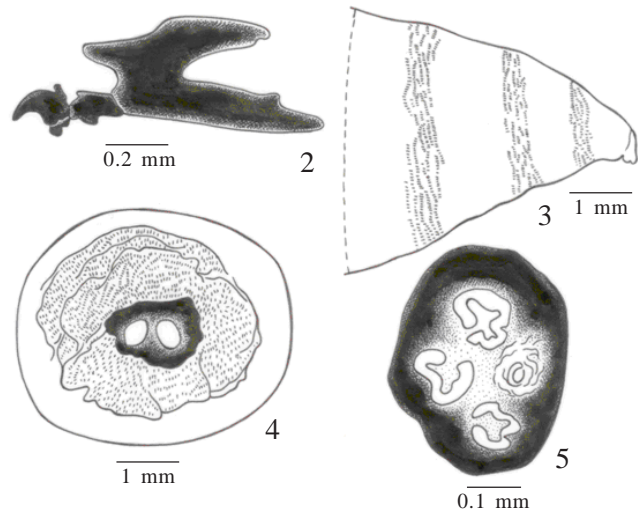


Fig. 2-5. *Philornis* sp., larva of third instar; 2, Cephalopharyngeal skeleton; 3, Thoracic bands of spines; 4, Caudal segment; 5, Posterior spiracular slits.

Tecnológico (CNPq), for the support provided to her project (process number 300370/2004-0). Luis Antonio Alves da Costa (Museu Nacional, Rio de Janeiro) made the final preparation of the drawings.

REFERENCES

- Belton, W. 1994. *Aves do Rio Grande do Sul: distribuição e biologia*. São Leopoldo. Unisinos. 584 p.
- Carvalho, C. J. B. de; M. S. Couri; A. C. Pont; D. Pamplona & S. M. Lopes. 2005. A Catalogue of the Muscidae (Diptera) of the Neotropical Region. *Zootaxa* **860**: 1–282.
- Couri, M. S. 1985. Considerações sobre as relações ecológicas das larvas de *Philornis* Meinert, 1890 (Diptera, Muscidae) com aves. *Revista Brasileira de Entomologia* **29**: 17–20.
- Couri, M. S. 1999. Myiasis caused by obligatory parasites. Ia. *Philornis* Meinert (Muscidae), p. 51–70. In: J. H. Guimarães & N. Papavero, *Myiasis in Man and animals in the Neotropical Region. Bibliographica database*. Pleaide, São Paulo.
- Dodge, H. R. 1955. New Muscid flies from Florida and the West Indies (Diptera, Muscidae). *Florida Entomological* **38**: 147–151.
- Dudaniec, R. Y. & S. Kleindorfer. 2006. Effects of the parasitic flies of the genus *Philornis* (Diptera: Muscidae) on birds. *Emu* **106**: 13–20.
- Guimarães, J. H.; N. Papavero, N. & A. Pires do Prado. 1983. As míases na região neotropical (identificação, biologia e bibliografia). *Revista Brasileira de Zoologia* **1**: 239–416.
- Higgins, B. F.; L. E. Lopes; F. H. A. Santana; M. S. Couri & J. R. Pujol-Luz. 2005. Sobre a ocorrência de *Philornis angustifrons* e *P. deceptiva* (Diptera, Muscidae) em ninhos de *Suiriri affinis* e *S. islerorum* (Aves, Tyrannidae), no Cerrado do Distrito Federal, Brasil. *Entomologia y Vectores* **12**: 127–131.
- Nihei, S. S. & G. A. Bencke. 2003. New geographic and host record for the bird parasitic fly *Philornis masoni* Couri, 1986 (Diptera, Muscidae). *Studia Dipterologica* **10**: 328–329.
- Spalding, M. G.; J. W. Mertins; P. B. Walsh; K. C. Morin; D. E. Dunmore & D. J. Forrester. 2002. Burrowing fly larvae (*Philornis porteri*) associated with mortality of eastern bluebirds in Florida. *Journal of Wildlife Diseases* **38**: 776–783.
- Teixeira, D. M. 1999. Myiasis caused by obligatory parasites. Ib. General observations on the biology of the species of the genus *Philornis* Meinert, 1890 (Diptera, Muscidae), p. 71–96. In: J. H. Guimarães & N. Papavero, *Myiasis in man and animals in the Neotropical Region. Bibliographica database*. Pleaide, São Paulo.