

New records of *Albardia furcata* van der Weele, 1903 (Neuroptera, Ascalaphidae, Albardiinae) from Paraíba, with notes on a predator species

Alessandre Pereira-Colavite¹, Izabela Souza Braga¹ & Wellington Emanuel dos Santos²

- (1) Universidade Federal da Paraíba, Centro de Ciências Exatas e da Natureza, Departamento de Sistemática e Ecologia, Cidade Universitária 58051-900, João Pessoa, Paraíba, Brasil. E-mail: alepercol@gmail.com
- (2) Universidade Estadual da Paraíba, Centro de Ciências Humanas e Agrárias, Departamento de Agrárias e Exatas, Catolé do Rocha 58884-000, Paraíba, Brasil. E-mail: well-bio@hotmail.com

Pereira-Colavite A., Braga I.S. & Santos W.E. (2018) New records of *Albardia furcata* van der Weele, 1903 (Neuroptera, Ascalaphidae, Albardiinae) from Paraíba, with notes on a predator species. *Pesquisa e Ensino em Ciências Exatas e da Natureza*, 2(1): 23–27. <http://dx.doi.org/10.29215/pecen.v2i1.577>

Novos registros de *Albardia furcata* van der Weele, 1903 (Neuroptera, Ascalaphidae, Albardiinae) para a Paraíba, com notas sobre uma espécie predadora

Resumo: Novos registros do raro ascalafídeo *Albardia furcata* van der Weele, 1903 são fornecidos para o estado da Paraíba, na Caatinga e Mata Atlântica, incluindo quatro novas localidades. Um mapa referencial está incluído para os espécimes registrados. O primeiro relato da mosca predadora *Peckia* (*Sarcodexia*) *lambens* (Wiedemann, 1830) em indivíduos mortos de *A. furcata* é registrado.

Palavras chave: Ascalafídeo, Caatinga, Mata Atlântica, Sarcophagidae.

Abstract: New records of the rare owlfly *Albardia furcata* van der Weele, 1903 are provided from the state of Paraíba, in the Caatinga and Atlantic Forest, including four new localities. A referential map is included to the recorded specimens. The first report of the predator fly *Peckia* (*Sarcodexia*) *lambens* (Wiedemann, 1830) on dead body of *A. furcata* is registered.

Key words: Atlantic Forest, Caatinga, owlfly, Sarcophagidae.

The Ascalaphidae, or owlflies, comprise 722 valid species (excluding variations and subspecies) belonging to 117 genera of dragonfly-like insects with worldwide distribution. The family is divided into three subfamilies: the “entire-eyed” Haplogleniinae with 172 species and 35 genera, the ‘split-eyed’ Ascalaphinae with 549 species and 81 genera and the enigmatic Albardiinae with a single species (Oswald 2015). In Brazil, 38 described species are recorded, comprising all subfamilies (Machado & Martins 2017).

Albardia furcata van der Weele, 1903 (**Figure 1**) is a rare and large-sized ascalaphid, and the sole representative of the subfamily Albardiinae. This species has its known distribution restricted to Brazil, ranging from Southeast to Northeast and North regions (van der Weele 1903; Navás 1912a,b; Penny 1983; Machado & Martins 2017). Penny (1983) and Machado & Martins (2017) record it in different biome, as Amazon Forest, Atlantic Forest, Cerrado and Caatinga, and probably *A. furcata* can be widespread in Brazil. According to Penny (1983), less than 12 specimens are known in Brazilian collections, but certainly the difficulty in classifying and recognizing them as neuropterids masks the real number — often the Myrmeleontoidea-like neuropterids are confused with Odonata!



Figure 1. *Albardia furcata* van der Weele, 1903, habitus, dorsal view: **A.** Male; **B.** Female. Scale: 1 cm.

Field work was carried out in the state of Paraíba (Figure 2) by the first author and collaborators between the years 2016 and 2018 on the rainy and dry seasons. In addition, material housed in the “Coleção Entomológica do Departamento de Sistemática e Ecologia (DSEC)” of the Universidade Federal da Paraíba was also analyzed. The municipalities of Catolé do Rocha, Santa Terezinha and São José dos Cordeiros are located within the limits of the Caatinga, and Mamanguape is located in the Atlantic Forest. Collection method used was light trap. All the material is deposited and vouchered at the DSEC collection.

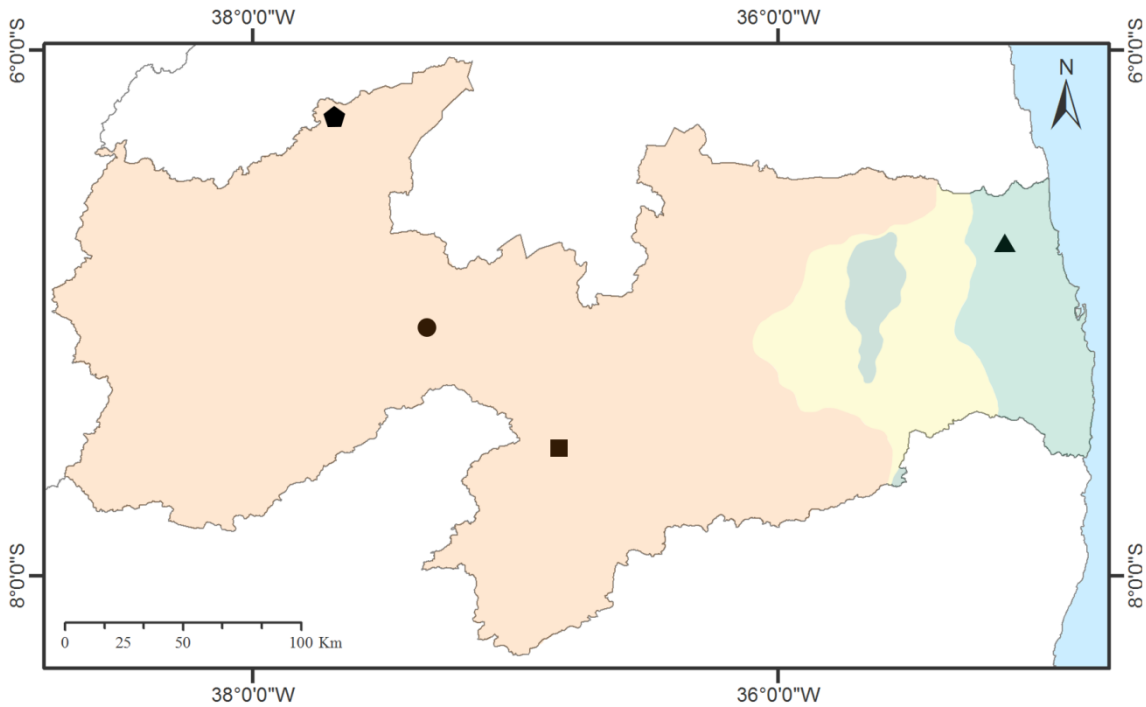


Figure 2. New records of *Albardia furcata* van der Weele, 1903 from Paraíba, Brazil: Catolé do Rocha (pentagon); Mamanguape (triangle); Santa Terezinha (circle); São José dos Cordeiros (square). Coloration: Atlantic Forest (green), ‘Brejo de Altitude’ Forest (dark green), Agreste region (yellow) and Sertão region (orange).

Neuroptera Linnaeus, 1758
Myrmeleontiformia Henry, 1978
Ascalaphidae Rambur, 1842
Albardiinae van der Weele, 1908
***Albardia* van der Weele, 1903**
***Albardia furcata* van der Weele, 1903**
(Figure 1)

Diagnosis: *Albardia furcata* can be characterized by its short antennae contrasting with all other owlflies (no longer than head and thorax together), the reddish body and woolly abdomen (van der Weele 1903, 1908; Navás 1912b; Penny 1983).

Material examined: BRASIL. PARAÍBA. Catolé do Rocha: 1♂ 1♀ “Sítio Bom Nome, 7.III.2018, coleta ativa, Ana Campos col.”; Mamanguape: 1♂ 1♀ “Reserva Guaribas, 22.XI.1992, Luminosa, A.J. Creão-Duarte & C. Martins col.”; Santa Terezinha: 1♂ “Fazenda Tamanduá, 20–21.I.2006, [collector not specified]”; São José dos Cordeiros: 5♂♂ 1♀ “RPPN Fazenda Almas, Luminosa, 05–08.III.2016, A.P. Colavite & R. Rothéa et al.”; idem, except 1♂ “I.S. Braga & A. Lourenço col.”; idem, except 1♂ 2♀♀ “I.S. Braga & A.P. Colavite”; idem, except 1♀ “25.III–03.IV.2017, R. Rothéa”. All specimens in DSEC.

Remarks: All specimens from the Caatinga (Catolé do Rocha, Santa Terezinha and São José dos Cordeiros) were collected in the rainy season and the sole specimen from the Atlantic Forest (Mamanguape) was collected in the dry season. A non-collected adult from São José dos Cordeiros was observed resting on the same tree branch for at least 5 hours (from 9:00 AM to 2:00 PM). At night adults were easily attracted to the light trap. Larvae of *Albardia furcata* act as active predators (Ferreira & Yanega 1999; Ferreira & Silva 2001) and were not observed.

A dead specimen was collected on the porch of the RPPN Fazenda Almas' shelter house, possibly due to exhaustion by light attractiveness. This specimen was conditioned in a vial and brought to the laboratory, where the presence of dipterous larvae feeding on the carcass was verified. After the total consumption of the insect body three larvae became pupae and were sheltered in a container until the adult emergence. The adult flies were then killed and pinned, being identified as the flesh fly *Peckia (Sarcodexia) lambens* (Wiedemann, 1830) (Diptera: Sarcophagidae), a decomposer species widespread in the Neotropical region. Most flesh flies have narrow diets, but *P. (S.) lambens* is biologically versatile in food choice (Pape & Dahlem 2010) and has been recorded as a scavenger of vertebrate and invertebrate carrion (Dodge 1968; Alves *et al.* 2014), and acting as well as a predator of wounded insects (Pape & Dahlem 2010). Although it is inaccurate to state whether the predation by *P. (S.) lambens* has occurred on the wounded insect or on the dead insect, this is the first record, as far we know, of predation of this flesh fly on *A. furcata*, as well as in Ascalaphidae and Neuroptera. Moreover, this is the first work that presents information about owlflies in the state of Paraíba.

Acknowledgements

The authors would like to thank Aline Lourenço (UFPB) for the map and Ana Claudia Firmino Alves (UFPB) for the identification of the flesh fly. APC is grateful to Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) for research grant (proc. #350052/2014-0) and Fundação de Apoio à Pesquisa do Estado da Paraíba (FAPESQ) for research support. ISB is grateful to Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES) for the research scholarship. We are grateful to the anonymous reviewers for critically reviewing the manuscript.

References

- Alves A.C.F., Santos W.E. & Creão-Duarte A.J. (2014) Diptera (Insecta) de importância forense da região Neotropical. *Entomotropica*, 29: 77–94.
- Dodge H.R. (1968) The Sarcophagidae of Barro Colorado Island, Panama (Diptera). *Annals of the Entomological Society of America*, 61(2): 421–450. doi: 10.1093/aesa/61.2.421
- Ferreira R.L. & Silva M.S. (2001) Biodiversity under rocks: the role of microhabitats in structuring invertebrate communities in Brazilian outcrops. *Biodiversity and Conservation*, 10: 1171–1183. doi: 10.1023/A:1016616207111
- Ferreira R.L. & Yanega D.A. (1999) Ecology and behaviour of *Albardia furcata* larvae (Neuroptera: Ascalaphidae), with associated natural history notes. *Journal of Neuropterology*, 2: 5–33.
- Machado R.J.P. & Martins C.C. (2017) Ascalaphidae in Catálogo Taxonômico da Fauna do Brasil. PNUD. Available in: <http://fauna.jbrj.gov.br/fauna/faunadobrasil/91605> (Accessed in 18/10/2017).
- Navás L. (1912a) Ascaláfidos (Ins. Neur.) sudamericanos. *Brotéria*, 10: 203–233.
- Navás L. (1912b) Sinopsis de los Ascaláfidos (Ins. Neur.). *Arxius de l'Institut de Ciències, Institut d'Estudis Catalans, Secció de Ciències*, 1: 45–143.
- Oswald J.D. (2015) Neuropterida Species of the World. Version 4.0. Available in: <http://lacewing.tamu.edu/SpeciesCatalog/Main> (Accessed in 10/10/2017).

New records of *Albardia furcata*

- Pape T. & Dahlem G.A. (2010) Sarcophagidae (flesh flies) (p. 1313–1335). *In*: Brown B.V., Borkent A., Cumming J.M., Wood D.M., Woodley N.E. & Zumbado M.A. (Eds). *Manual of Central American Diptera*. Volume 2. Ottawa: NRC Research Press. 727 p.
- Penny N.D. (1983) Neuroptera of the Amazon Basin. Part. 9. Albardiinae. *Acta Amazonica*, 13(3–4): 697–699. doi: 10.1590/1809-439219831334697
- van der Weele H.W. (1903) Description of a new genus and species of Holophthalmous Ascalaphidae. *Notes from the Leyden Museum*, 23: 234–236.
- van der Weele H.W. (1908) Ascalaphiden. *In*: Collections Zoologiques du Baron Michel-Edmond de Séllys-Longchamps. Volume 8. Brussels: Hayez. 326 p.