

## The checklist of Dryinidae (Hymenoptera: Chrysidoidea) of French Guiana, with descriptions of two new species of *Dryinus* Latreille

MASSIMO OLMI<sup>1</sup> & ADALGISA GUGLIELMINO<sup>2</sup>

<sup>1</sup>Tropical Entomology Research Center, Via De Gasperi 10, 01100 Viterbo, Italy; [olmi@unitus.it](mailto:olmi@unitus.it)

<sup>2</sup>Department of Agriculture and Forestry Sciences (DAFNE), University of Tuscia, Viterbo, Italy; [guglielm@unitus.it](mailto:guglielm@unitus.it)

### ABSTRACT

Two new species, *Dryinus chevauxanus* n. sp. and *D. rourensis* n. sp. are described from French Guiana. Changes to the key to the Neotropical species of *Dryinus* group 3 are provided. A checklist of Dryinidae of French Guiana summarizing species distribution and hosts is presented. The following species are recorded from the country for the first time: *Deinodryinus incaicus* Olmi, 1984; *Dryinus caraibicus* Olmi, 1984; *Dryinus panamensis* (Olmi, 1984); *Dryinus plaumanni* Olmi, 2003; and *Dryinus porteri* (Olmi, 1991).

KEYWORDS: Dryininae, *Dryinus*, Auchenorrhyncha, parasites, wasps, Neotropical, identification key, new species, new records, checklist.

### RÉSUMÉ

Deux nouvelles espèces, *Dryinus chevauxanus* n. sp. et *D. rourensis* n. sp., sont décrites de Guyane française. La clé des espèces Neotropicales du group 3 de *Dryinus* est changée. Une liste des Dryinidae présents en Guyane française, avec l'indication de la distribution géographique et des hôtes, est présentée. Les suivantes espèces sont signalées pour la première fois de Guyane française: *Deinodryinus incaicus* Olmi, 1984; *Dryinus caraibicus* Olmi, 1984; *Dryinus panamensis* (Olmi, 1984); *Dryinus plaumanni* Olmi, 2003; et *Dryinus porteri* (Olmi, 1991).

MOTS-CLÉS: Dryininae, *Dryinus*, Auchenorrhyncha, parasites, guêpes, région Neotropicale, clé d'identification, nouvelles espèces, nouveaux records.

### INTRODUCTION

Dryinidae (Hymenoptera: Chrysidoidea) are parasitoids of Hemiptera Auchenorrhyncha (Carcupino *et al.* 1998; Guglielmino & Bückle 2003, 2010; Guglielmino *et al.* 2006, 2008, 2013, 2015). Neotropical Dryinidae have been studied in recent years mainly by Coelho *et al.* (2011), Martins (2015), Martins *et al.* (2015a, b), Olmi (2011a, b, 2012), Olmi & Guglielmino (2011), Olmi *et al.* (2011) and Olmi & Virla (2014). With 294 world species (110 in the Neotropical Region), the genus *Dryinus* Latreille, 1804, is the largest in the subfamily Dryininae. Species of *Dryinus* are known to parasitize various planthoppers, many of which are important pests of cultivated plants (Guglielmino *et al.* 2013, 2015). *Dryinus* females were divided for the sake of convenience by Olmi (1993a) and Olmi & Virla (2014) into four groups on the basis of the following characters:

Group 1: enlarged claw not reduced, much longer than arolium, with one subapical tooth, never with one broad apical lamella; notauli partly present.

Group 2: enlarged claw not reduced, much longer than arolium, with one subapical tooth, never with one broad apical lamella; notauli absent.

Group 3: enlarged claw not reduced, much longer than arolium, without subapical tooth or with at least two subapical teeth; rarely with only one subapical tooth, then with one very broad apical lamella.

Group 4: enlarged claw greatly reduced, approximately as long as or slightly longer than arolium.

In 2015, the authors examined dryinids collected in French Guiana and sent for identification by Yves Braet. This study resulted in the discovery of two new species described herein and provided an opportunity to compile a checklist of all dryinid species recorded in French Guiana.

#### MATERIAL AND METHODS

The descriptions follow the terminology used by Olmi (1984) and Olmi & Virla (2014). The measurements reported are relative, except for the total length (head to abdominal tip, excluding antennae), which is expressed in millimetres. The following abbreviations are used in the descriptions: POL – the distance between the inner edges of the two lateral ocelli, OL – the distance between the inner edges of a lateral ocellus and the median ocellus, OOL – the distance from the outer edge of a lateral ocellus to the compound eye, OPL – the distance from the posterior edge of a lateral ocellus to the occipital carina, TL – the distance from the posterior edge of an eye to the occipital carina.

The types of all Neotropical species of *Dryinus* Latreille, 1804 have been previously examined by the authors (Olmi & Virla 2014).

The specimens studied in this paper are deposited in the following collections:

- AMNH – American Museum of Natural History, New York (USA);
- BMNH – The Natural History Museum, London (UK);
- CNC – Canadian National Collection of Insects, Ottawa (Canada);
- DETAM – Department of Entomology, Texas A&M University, College Station (USA);
- DEUK – Department of Entomology, College of Agriculture, University of Kentucky, Lexington (USA);
- FSAE – Faculté des Sciences Agronomiques de l'État, Gembloux (Belgium);
- MHNG – Muséum d'Histoire Naturelle, Genève (Switzerland);
- MNHN – Muséum National d'Histoire Naturelle, Paris (France);
- MOLC – Department of Agriculture and Forestry Sciences (DAFNE), University of Tuscia, Viterbo (Italy);
- NHMLA – Natural History Museum of Los Angeles County, Los Angeles (USA);
- OLL – Oberösterreichisches Landesmuseum, Linz (Austria).

Descriptions of new species are based on single specimens. The authors are aware that descriptions of new taxa should normally be based on more individuals. However, the Dryinidae are so scarce that rarely more than one specimen of each species can be procured. In addition, on the basis of our experience and knowledge, species are sufficiently delimited by unique characters to justify their description.

#### TAXONOMY

Genus *Dryinus* Latreille, 1804

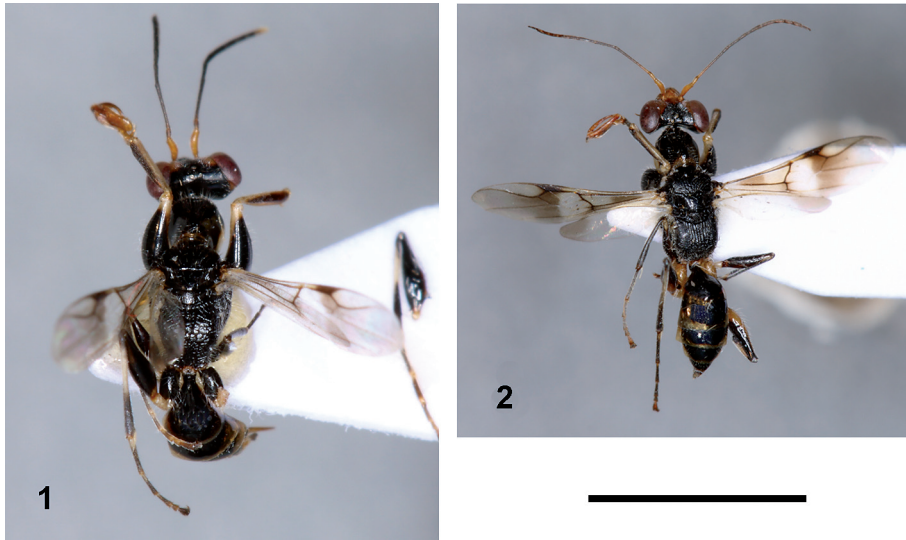
*Dryinus chevauxanus* Olmi, n. sp.

(Figs 1, 3)

**LSID:** urn:lsid:zoobank.org:act:275E11F2-4F23-485B-8679-C9839372B116.

**Diagnosis:** Female with head and scutum mostly black; posterior ocelli touching occipital carina; pronotal disc humped; notauli incomplete, reaching about 0.4 length of scutum; scutellum punctate, unsculptured among punctae; dorsal surface of propodeum sculptured medially by numerous longitudinal and parallel keels and laterally by evanescent curvilinear keels; forewing with distal third darkened and two small proximal dark spots; marginal cell open; segment 1 of protarsus slightly longer than segment 4; enlarged claw (Fig. 3) without subapical teeth, with one row of lamellae located in proximal half and distal apex provided with one lamella longer and narrower than other lamellae, without distal lamella being broader than others.

**Description: Female.** Fully winged (Fig. 1), length 5.2 mm. Head black, except mandible, part of gena, area of face between antennal toruli and two lateral stripes of face near orbits testaceous; clypeus brown; antenna brown, except segments 1 and 10 testaceous; mesosoma black; metasoma brown; fore leg brown, except trochanter, stalk of femur, outer face of tibia and tarsus testaceous; mid leg brown, except trochanter testaceous; hind leg brown, except trochanter, part of tibia and proximal third of tarsal segment 1 testaceous. Antenna clavate; antennal segments in following proportions: 14:5:28:14:10:9:8:7:7:9. Head flat, hairy, reticulate rugose, with vertex on sides of posterior ocelli granulated; frontal line complete; occipital carina incomplete, only present behind and on sides of posterior ocelli, laterally not reaching eyes; POL=3, OL=2, OOL=9; posterior ocelli touching occipital carina; temple absent; greatest breadth of posterior ocelli about as long as OL. Pronotum hairy, shiny, punctate, unsculptured among punctae; pronotum crossed by two transverse impressions, anterior one superficial and posterior one deep; disc humped; posterior collar absent; pronotal tubercle not reaching tegula. Scutum granulated and sculptured by numerous irregular keels. Notauli incomplete, hardly visible, reaching about 0.4 length of scutum. Scutellum and metanotum punctate, unsculptured among punctae. Propodeum with dorsal surface sculptured medially by numerous longitudinal and parallel keels and laterally by evanescent curvilinear keels; posterior surface reticulate rugose, with two longitudinal keels. Forewing with distal third darkened and two small proximal dark spots; distal part



Figs 1, 2. Female holotypes of *Dryinus chevauxanus* n. sp. (1) and *D. rourensis* n. sp. (2) in dorsal view. Scale bar = 3.78 mm for Fig. 1, 5.55 mm for Fig. 2.

of stigmal vein longer than proximal part (24:9); marginal cell open. Protarsal segments in following proportions: 19:4:7:15:31. Enlarged claw (Fig. 3) without teeth, with one row of seven lamellae and with three bristles located in proximal half; distal apex with one lamella longer and narrower than others. Segment 5 of protarsus (Fig. 3) with four rows of about 100 lamellae extending continuously to distal apex. Tibial spurs 1/1/2.

**Male.** Unknown.

**Material examined:** Holotype ♀, **French Guiana:** Cayenne, Roura, Montagne des Chevaux, v.2014, S.E.A.G. leg. (FSAE).

**Distribution:** French Guiana.

**Hosts:** Unknown.

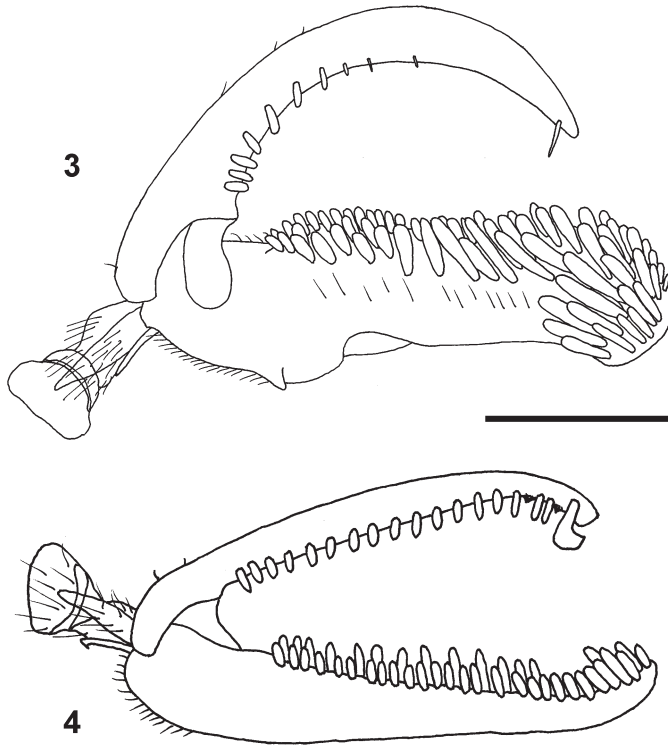
**Etymology:** The species is named after Chevaux Mountain, where the holotype was collected.

*Dryinus rourensis* Olmi, n. sp.

(Figs 2, 4)

**LSID:** urn:lsid:zoobank.org:act:FEBF35DE-C769-4060-A4DC-B87E3BCB267B.

**Diagnosis:** Female with head granulated and rugose; vertex with OL shorter than POL; pronotal disc humped; pronotum, scutellum and metanotum punctate, unsculptured among punctae; scutum rugose; notauli incomplete, reaching *ca* 0.3 length of scutum; marginal cell of forewing open; propodeum with dorsal surface



Figs 3, 4. Chelae of holotypes of *Dryinus chevauxanus* n. sp. (3) and *D. rourensis* n. sp. (4). Scale bar = 0.23 mm for Fig. 3, 0.34 mm for Fig. 4.

sculptured medially by numerous longitudinal and parallel keels; mesosoma predominantly black; enlarged claw (Fig. 4) with two subapical teeth and one row of lamellae, without one unusual very long lamella; with one distal lamella being broader than others.

**Description: Female.** Fully winged (Fig. 2), length 7.4 mm. Head testaceous, except ventral side and vertex black; antenna brown, except segments 1, 2 and proximal half of 3 testaceous; mesosoma black, except posterior collar of pronotum testaceous; metasoma brown; foreleg testaceous, except club of femur, tibia and segment 1 of tarsus brown; mid leg brown, except trochanter testaceous; hind leg brown, except coxa (excluding black distal extremity), trochanter, part of club of femur and proximal half of tibia testaceous. Antenna clavate; antennal segments in following proportions: 18:7:43:22:18:12:11:8:7:11. Head flat, dull, granulated and rugose; frontal line absent; occipital carina incomplete, only present behind and on sides of posterior ocelli, laterally almost reaching eyes; temple absent; posterior ocelli touching occipital carina; POL=5, OL=3, OOL=11; greatest

breadth of posterior ocelli about as long as POL. Pronotum shiny, hairy, punctate, unsculptured among punctae, crossed by two strong transverse impressions; disc humped; posterior collar very short; pronotal tubercle not reaching tegula. Scutum shiny, irregularly rugose. Notauli hardly visible, reaching *ca* 0.3 length of scutum. Scutellum and metanotum punctate, unsculptured among punctae. Propodeum with dorsal surface sculptured medially by numerous longitudinal and parallel keels and laterally by numerous curvilinear keels; posterior surface reticulate rugose, without longitudinal keels. Forewing crossed by three dark transverse bands; distal part of stigmal vein longer than proximal part (32:11); marginal cell open. Protarsal segments in following proportions: 25:4:10:23:38. Enlarged claw (Fig. 4) with distal apex broad, two subapical teeth and one row of 18 lamellae, among which one large apical lamella. Segment 5 of protarsus (Fig. 4) with three rows of about 80 lamellae extending continuously to distal apex. Tibial spurs 1/1/2.

**Male.** Unknown.

**Material examined:** Holotype ♀, **French Guiana:** Cayenne, Roura District, Montagne des Chevaux, iv.2014, S.E.A.G. leg. (FSAE).

**Distribution:** French Guiana.

**Hosts:** Unknown.

**Etymology:** The species is named after the Roura District, where the holotype was collected.

The two new species belong to *Dryinus* group 3 (see Introduction) on the basis of the notauli and chela characteristics. Following the descriptions of the above-mentioned new species, the first 21 couplets of the key to the females of the Neotropical members of the *Dryinus* group 3, published by Olmi & Virla (2014), are modified below.

### Key to females of the Neotropical species of *Dryinus* group 3

- |   |                          |
|---|--------------------------|
| 1 Notauli present, complete or incomplete (notauli considered present, in case of scutum sculptured by many parallel longitudinal keels) (Figs 1, 2)..... | 2                        |
| – Notauli absent .....  | 28                       |
| 2 Enlarged claw with one unusual very long lamella (Olmi & Virla 2014, pl. 116E); pronotum excavated, not humped.....                                     | <i>lamellatus</i> (Olmi) |
| – Enlarged claw with usual lamellae (Figs 3, 4; Olmi & Virla 2014, pls 113A, B, 118F) pronotum with disc more or less humped or flat.....                 | 3                        |
| 3 Marginal cell open (marginal cell considered open in case of distal part of stigmal vein less thick than proximal part) .....                           | 4                        |
| – Marginal cell closed .....  | 27                       |
| 4 Enlarged claw with one distal lamella broader than other lamellae or bristles (Fig. 4; Olmi & Virla 2014, pls 113A, B, 118F).....                       | 5                        |
| – Enlarged claw without one distal lamella broader than other lamellae (Fig. 3; Olmi & Virla 2014, pls 114B, 120F) .....                                  | 15                       |

- 5 Head with OL longer than POL ..... **6**  
 – Head with OL as long as, or shorter than POL ..... **7**
- 6 Scutum granulated ..... *parvus* (Olm) **6**  
 – Scutum irregularly rugose ..... *atrox* (Olm) **6**
- 7 Notauli reaching at most 0.3 length of scutum ..... **8**  
 – Notauli reaching at least 0.5 length of scutum ..... **9**
- 8 Enlarged claw without subapical teeth (Olm & Virla 2014, pl. 115A); dorsal surface of propodeum completely reticulate rugose ..... *fiorii* (Olm) **8**  
 – Enlarged claw with two subapical teeth (Fig. 4; Olm & Virla 2014, pl. 114A); dorsal surface of propodeum with numerous longitudinal keels ..... **8'**
- 8' Head, pronotum, scutum, scutellum and metanotum granulated; mesosoma mostly ferruginous; distal apex of enlarged claw sharp (Olm & Virla 2014, pl. 114A) ..... *crenulatus* Olm **8'**  
 – Head granulated and rugose; pronotum, scutellum and metanotum punctate, unsculptured among punctae; scutum rugose; mesosoma mostly black; distal apex of enlarged claw broad (Fig. 4) ..... *rourensis* n. sp. **8'**
- 9 Scutum rugose, not granulated; dorsal surface of propodeum reticulate rugose, not sculptured by many longitudinal keels ..... *atrox* (Olm) **9**  
 – Scutum granulated, occasionally completely or partly rugose; dorsal surface of propodeum reticulate rugose, or sculptured by many longitudinal keels, or reticulate rugose in addition to few median longitudinal keels ..... **10**
- 10 Scutum black ..... **11**  
 – Scutum completely or partly reddish or testaceous ..... **12**
- 11 Dorsal surface of propodeum reticulate rugose, not sculptured by many longitudinal keels; head with POL more than twice as long as OL; pronotum granulated ..... *pegnai* (Olm) **11**  
 – Dorsal surface of propodeum sculptured by many longitudinal keels; head with POL slightly longer than OL; pronotum without sculpture ..... *braeti* Olm **11**
- 12 Occipital carina laterally not reaching eyes ..... *bocainanus* (Olm) **12**  
 – Occipital carina laterally reaching eyes ..... **13**
- 13 Scutellum, metanotum and propodeum black; dorsal surface of propodeum reticulate rugose ..... *rufus* (Olm) **13**  
 – Scutellum, metanotum and propodeum testaceous ..... **14**
- 14 Enlarged claw with one row of lamellae, in addition to a very large distal lamella (Olm & Virla 2014, pl. 118E); dorsal surface of propodeum sculptured by two median longitudinal keels and with numerous lateral curvilinear keels, not reticulate rugose ..... *parkerianus* Olm **14**  
 – Enlarged claw with one row of bristles, in addition to a very large distal lamella (Olm & Virla 2014, pl. 115E); dorsal surface of propodeum sculptured by four median longitudinal keels, laterally reticulate rugose ..... *hamulus* Coelho, Aguiar & Engel **14**

- 15 Enlarged claw with one distal lamella much longer than other lamellae (Fig. 2; Olmi & Virla 2014, pls 114B, 120F) ..... **16**  
 – Enlarged claw without a distal lamella much longer than other lamellae (Olmi & Virla 2014, pls 118D, 119E) ..... **20**
- 16 Posterior ocelli not touching occipital carina ..... **17**  
 – Posterior ocelli touching occipital carina ..... **18**
- 17 Head with OOL much shorter than POL; notauli very short, only present near anterior margin of scutum; enlarged claw with a long series of small teeth (Olmi & Virla 2014, pl. 114B) .....  *davidsoni*  (Olmi)  
 – Head with OOL much longer than POL; notauli complete, posteriorly separated; enlarged claw with two large subapical teeth (Olmi & Virla 2014, pl. 120F) .....  *valens*  Olmi & Virla
- 18 Protarsal segment 1 about 2× as long as segment 4 .....  *semiruber*  Olmi & Virla  
 – Segment 1 of protarsus shorter or slightly longer than segment 4 ..... **19**
- 19 Head and scutum testaceous-reddish; scutellum rugose .....  *brasilianus*  (Olmi)  
 – Head and scutum mostly black or brown; scutellum granulated or punctate, unsculptured among punctae ..... **19'**
- 19' Enlarged claw with lamellae extending to distal apex (Olmi & Virla 2014, pl. 119E); scutellum granulated; dorsal surface of propodeum reticulate rugose; forewing almost completely hyaline, slightly darkened only beneath pterostigma .....  *porteri*  (Olmi)  
 – Enlarged claw with lamellae present only on proximal half, excluding a lamella longer and narrower than other lamellae located at distal apex (Fig. 3); scutellum punctate, unsculptured among punctae; dorsal surface of propodeum sculptured medially by numerous longitudinal and parallel keels and laterally by numerous curvilinear keels; forewing with distal third darkened, in addition to two proximal small dark spots .....  *chevauxanus*  n. sp.
- 20 Scutum reticulate rugose or sculptured by irregular keels, not sculptured by longitudinal keels ..... **21**  
 – Scutum completely sculptured by longitudinal keels ..... **22**
- 21 Head with OL approximately 3× as long as POL .....  *panamensis*  (Olmi)  
 – Head with OL shorter than POL .....  *porteri*  (Olmi)

#### CHECKLIST OF DRYINIDAE OF FRENCH GUIANA

(New species records for French Guiana are marked with asterisk)

Subfamily ANTEONINAE Perkins, 1912

**Genus *Anteon* Jurine, 1807: 302**

**1. *Anteon beierli* Olmi, 1996: 69**

**Material examined: French Guiana:** Cayenne District, Régina, Montagne de Kaw, near km 41 SE Cayenne, 04°58'N 54°10'W, 174 m, 9.ii.1994, J. Beierl leg., ♂ holotype (NHMLA).

**Distribution:** Ecuador, French Guiana.



**Hosts:** Unknown.

**2. *Anteon chiriquense* (Cameron)**

*Dryinus chiriquensis* Cameron, 1888: 447.

*Anteon chiriquense* (Cameron): Olmi 1984: 508.

*Anteon* von Olmi, 1987: 400 (synonymized by Olmi 1991) (Type locality: Yacambú (Venezuela)).

**Material examined: French Guiana:** Cayenne District, Régina, Montagne de Kaw, near km 41 SE Cayenne, 04°58'N 54°10'W, 174 m, [no date], 1♀ (NHMLA).

**Distribution:** Bolivia, Brazil, Colombia, Costa Rica, Ecuador, French Guiana, Panama, Venezuela, USA.

**Hosts:** Unknown.

**3. *Anteon guadeloupense* Olmi, 1991: 204**

**Material examined: French Guiana:** Cayenne District, Roura, Montagne des Chevaux, 04°43'N 52°25'W, 90 m, ix.2009, S.E.A.G. Project, 1♂ (BMNH).

**Distribution:** French Guiana, Guadeloupe, Venezuela.

**Hosts:** Unknown.

**4. *Anteon noyesi* Olmi, 1984: 503**

*Anteon lobatum* Olmi, 1984: 506 (synonymized by Olmi 1996) (Type locality: Gamboa (Panama)).

*Anteon bifrons* Olmi, 1987: 398 (synonymized by Olmi 1991) (Type locality: S. Rosa Park (Costa Rica)).

*Anteon grisselli* Olmi, 1993b: 29 (synonymized with *A. lobatum* by Olmi 1995; synonymized with *A. noyesi* by Olmi 1996) (Type locality: Doyle Conner Bldg. (Gainesville, Florida, USA)).

**Material examined: French Guiana:** Cayenne District, Nouragues Scientific Station, Pararé, vii.2009, 1♂ (MOLC).

**Distribution:** Brazil, Colombia, Costa Rica, Ecuador, French Guiana, Honduras, Mexico, Panama, Trinidad and Tobago, Venezuela; USA.

**Hosts:** Unknown.

**Genus *Deinodryinus* Perkins, 1907: 45**

**5. *Deinodryinus bicolor* (Olmi & Currado)**

*Lonchodryinus bicolor* Olmi & Currado, 1979: 340.

*Deinodryinus bicolor* (Olmi & Currado): Olmi 1984: 163.

**Material examined: French Guiana:** Cayenne District, Régina, Kaw Mountain, Relais Patawa, viii–ix.1999, A.E.I. Guyane-J. Cerda leg., 1♀ (FSAE); same locality label, x.1999, 1♀ (FSAE); same locality label, ii.2000, 1♀ (MOLC); Cayenne District, Roura, Montagne des Chevaux, iii.2012, SLAM trap, S.E.A.G. leg., 3♀ (2 in FSAE, 1 in MOLC).

**Distribution:** Brazil, Colombia, Ecuador, French Guiana, Peru.

**Hosts:** Unknown.

**6. *Deinodryinus bilobus* Fenton, 1927: 11**

**Material examined: French Guiana:** Saint-Laurent-du-Maroni District, Saül, Crique Popote, 03°36'N 53°10'W, 1–13.xii.2000, Malaise trap, sous-bois, Y. Braet & J. Tarin leg., 1♀ (FSAE).

**Distribution:** Brazil, French Guiana.

**Hosts:** Unknown.

**7. *Deinodryinus dariensis* Olmi, 2003: 27**

**Material examined: French Guiana:** Cayenne District, Nouragues, Saut Pararé, x.2009, S.E.A.G. leg., 1♀ (MOLC).

**Distribution:** Ecuador, French Guiana, Panama, Paraguay.

**Hosts:** Unknown.

**8. *Deinodryinus erwini* Olmi, 2008: 217**

**Material examined: French Guiana:** Saint-Laurent-du-Maroni District, Saül, 17.i.2011, FIT 03/05, S.E.A.G. leg., 1♀ (FSAE).

**Distribution:** Ecuador, French Guiana.

**Hosts:** Unknown.

**9. *Deinodryinus hubertianus* Olmi, 2011b: 45**

**Material examined: French Guiana:** Cayenne District, Roura, Montagne des Chevaux, 04°43'N 52°19'W, 50 m, 16.xi.2008, interception trap by S.E.A.G., Hubert and Marc Tussac leg., ♀ holotype (MHNG).

**Distribution:** French Guiana.

**Hosts:** Unknown.

**10. *Deinodryinus incaicus* Olmi, 1984: 214\***

**Material examined: French Guiana:** Cayenne District, Régina, vi.2012, S.E.A.G. leg., 1♀ (FSAE).

**Distribution:** Argentina, Bolivia, Brazil, Colombia, Costa Rica, Dominica, Ecuador, French Guiana, Mexico, Panama, Paraguay, Venezuela.

**Hosts:** Unknown.

**11. *Deinodryinus kawensis* Olmi, 2011b (April): 47**

*Deinodryinus caxiuana* Coelho, Aguiar & Engel, 2011 (June 7): 4 (synonymized by Olmi & Virla 2014) (Type locality: Caxiuana (Pará, Brazil)).

**Material examined: French Guiana:** Cayenne District, Régina, Montagne de Kaw, Relais Patawa, vii.1999, Malaise trap, A.E.I. Guyane-J. Cerda leg., ♀ holotype (FSAE); same locality label as holotype, 1♀ paratype (FSAE); same locality label as holotype, vi.1999, 1♀ (MOLC).

**Distribution:** Brazil, French Guiana.

**Hosts:** Unknown.

**12. *Deinodryinus maximus* Olmi, 1984: 165**

**Material examined: French Guiana:** Cayenne District, Gourdonville, ♀ holotype (MNHN).

**Distribution:** French Guiana, Peru.

**Hosts:** Unknown.

**13. *Deinodryinus peruvianus* Olmi, 1984: 174**

**Material examined: French Guiana:** Cayenne District, Régina, Kaw Mountain, Relais Patawa, x.1999, Malaise trap, 1♀ (FSAE).

**Distribution:** Argentina, Bolivia, Brazil, Colombia, Costa Rica, Ecuador, French Guiana, Panama, Paraguay, Peru, Trinidad and Tobago, Venezuela.

**Hosts:** Unknown.

Subfamily DRYININAE Haliday, 1833

**Genus *Dryinus* Latreille, 1804: 176**

*Dryinus* Group 1

**14. *Dryinus acuminatus* Olmi, 2008: 222**

**Material examined: French Guiana:** Cayenne District, environs of Régina, 25–30.i.2006, Houska leg., ♀ holotype (OLL).

**Distribution:** French Guiana.

**Hosts:** Unknown.

**15. *Dryinus antilleanus* (Evans)**

*Mesodryinus antilleanus* Evans, 1969: 11.

*Dryinus antilleanus* (Evans): Olmi 1984: 860.

**Material examined: French Guiana:** Cayenne District, Roura, Montagne des Chevaux, 21.x.2012, S.E.A.G. leg., 1♀ (FSAE); same but 25.ii.2012, 1♀ (MOLC).

**Distribution:** Argentina, Colombia, Costa Rica, Dominican Republic, French Guiana, Honduras, Panama.

**Hosts:** Unknown.

**16. *Dryinus caraibicus* Olmi, 1984: 849\***

**Material examined: French Guiana:** Cayenne District, Régina, xi.2012, SLAM trap, S.E.A.G. leg., 1♀ (FSAE).

**Distribution:** Bolivia, Brazil, Colombia, Costa Rica, French Guiana, Panama, Trinidad and Tobago.

**Hosts:** Unknown.

**17. *Dryinus cerdani* Olmi, 2003: 34**

**Material examined: French Guiana:** Cayenne District, Near Kourou, Savane des Pères, 23.i.2001, light trap, Philippe Cerdan leg., ♀ holotype (MOLC).

**Distribution:** French Guiana.

**Hosts:** Unknown.

**18. *Dryinus flavoniger* Olmi, 1984: 838**

**Material examined: French Guiana:** Cayenne District, Régina, Montagne de Kaw, Relais Patawa, vi–vii.1999, Malaise trap, A.E.I. Guyane-J. Cerda leg., 1♀ (FSAE); same locality label, iv.2000, 1♀ (FSAE); Cayenne District, Régina,

Montagne de Kaw, Km 37.5 on road Roura-Kaw, x.2004, J.A. Cerda leg., 1♀ (DEUK).

**Distribution:** Brazil, French Guiana, Mexico, Panama, Puerto Rico.

**Hosts:** Unknown.

### 19. *Dryinus guyanensis* Olmi, 1999: 12

**Material examined: French Guiana:** Cayenne District, Régina, Montagne de Kaw, Relais Patawa, iii.1999, Malaise trap, A.E.I. Guyane-J. Cerda leg., ♀ holotype (FSAE); Cayenne District, Régina, Montagne de Kaw, Relais Patawa, 04°32.4220'N 52°09.0919'W, xi.2000. Malaise trap, A.E.I. Guyane-J. Cerda leg., 1♀ (MOLC).

**Distribution:** French Guiana.

**Hosts:** Unknown.

### 20. *Dryinus striatus* (Fenton)

*Lestodryinus striatus* Fenton, 1927: 2.

*Dryinus striatus* (Fenton): Olmi 1984: 845.

*Dryinus sinopensis* Olmi, 1984: 858 (synonymized by Olmi & Virla 2014) (Type locality: 12°31'S 55°37'W (Brazil)).

*Dryinus cerrensis* Olmi, 2004: 152 (synonymized by Olmi & Virla 2014) (Type locality: 5°21'N 67°51'W (Colombia)).

**Material examined: French Guiana:** Cayenne District, Matoury, 41.5 km SSW on Hwy. N2, 04°37.22'N 52°22.35'W, 50 m, 29.v.9.vi.1997, flight interception trap, J. Ashe & R. Brooks leg., 1♀ (DETAM); Cayenne District, Roura, Montagne des Chevaux, vi.2009, S.E.A.G. leg., 1♀ (MOLC); 33.5 km Cayenne on Hwy. 05, 30 m, 29.v–9.vi.1997, FIT, J. Ashe & R. Brooks leg., 2♀ (AMNH, CNC); Saint-Laurent-du-Maroni District, Saül, 17.i.2011, FIT 4+5, S.E.A.G. leg., 1♀ (FSAE); Saint-Laurent-du-Maroni District, Saül, Montagne Belvédère, 03°36'N 53°10'W, ii.2001, Malaise trap, J. Tarin leg., 1♀ (FSAE); Saint-Laurent-du-Maroni District, Saül, Crique popote, 03°36'N 53°10'W, 24–28.vi.2000, yellow trap, Y. Braet leg., 1♀ (MOLC).

**Distribution:** Brazil, Colombia, Ecuador, French Guiana, Panama, Paraguay, Venezuela.

**Hosts:** Unknown.

### 21. *Dryinus surinamensis* Olmi, 1984: 839

**Material examined: French Guiana:** Cayenne District, Roura, Montagne des Chevaux, v.2014, S.E.A.G. leg., 1♀ (FSAE); Saint-Laurent-du-Maroni District, Saül, Crique popote, 03°36'N 53°10'W, 24–28.vi.2000, yellow trap, Y. Braet leg., 1♀ (FSAE).

**Distribution:** Bolivia, Brazil, Colombia, Costa Rica, Ecuador, French Guiana, Honduras, Mexico, Panama, Paraguay, Peru, Suriname.

**Hosts:** Unknown.

**22. *Dryinus wellingensis* Olmi, 1984: 839**

**Material examined: French Guiana:** Cayenne District, Roura, Montagne des Chevaux, v.2009, S.E.A.G. leg., 1♀ (MOLC); Saint-Laurent-du-Maroni District, Saül, Crique popote, Mt. Belvédère, 03°36'N 53°10'W, xii.2000, Malaise trap, sur chablis, J. Tarin leg., 1♀ (FSAE).

**Distribution:** Belize, Bolivia, Costa Rica, French Guiana, Panama.

**Hosts:** Unknown.

*Dryinus* Group 2

**23. *Dryinus maxiexophthalmicus* (Olmi)**

*Tridryinus maxiexophthalmicus* Olmi, 1984: 948.

*Dyinus maxiexophthalmicus* (Olmi): Olmi *et al.* 2000: 151.

**Material examined: French Guiana:** Cayenne District, Kourou, Dégrad Sarakama Km 5, 05°08.593'N 52°42.411'W, 13 m, ix.2005, Denis Faure leg., 1♀ (DEUK); Cayenne District, Régina, Montagne de Kaw, Relais Patawa, 04°32.42'N 52°09.09'W, iv.2001, Malaise trap, A.E.I. Guyane-J. Cerda leg., 1♀ (FSAE); Cayenne District, Roura, Montagne des Chevaux, 18.iii.2012, SLAM trap, S.E.A.G. leg., 1♀ (MOLC).

**Distribution:** French Guiana, Paraguay, Suriname.

**Hosts:** Unknown.

**24. *Dryinus pictus* Virla, 1998: 7**

**Material examined: French Guiana:** Cayenne District, Régina, Montagne de Kaw, Km 37.5 on road Roura-Kaw, 04°33.20'N 52°08.19'W, 217 m, xi.2004, J.A. Cerda leg., 1♀ (DEUK); Cayenne District, Roura, Montagne des Chevaux, iii.2012, SLAM trap, S.E.A.G. leg., 1♀ (FSAE).

**Distribution:** Argentina, French Guiana, Panama, Peru.

**Hosts:** Unknown.

**25. *Dryinus plaumanni* Olmi, 2003: 36\***

**Material examined: French Guiana:** Cayenne District, Roura, Montagne des Chevaux, 4°44.56'N 52°26.28'W, 75 m, window trap, S.E.A.G. leg., 1♀ (FSAE).

**Distribution:** Brazil, French Guiana.

**Hosts:** Unknown.

**26. *Dryinus ruficeps* Cameron, 1888: 445**

*Lestodryinus dichrous* Fenton, 1927: 1 (synonymized by Olmi 1984) (Type locality: Chapada (Rio Grande do Sul, Brazil)).

**Material examined: French Guiana:** Cayenne District, Régina, Montagne de Kaw, Relais Patawa, 04°32.42'N 52°09.09'W, ix.1999, Malaise trap, A.E.I. Guyane-J. Cerda leg., 1♀ (FSAE); same locality label, iv.2001, 1♀ (FSAE); Cayenne District, Sinnamary, Barrage de Petit Saut, 04°04'N 53°03'W, 28.vii.2000, Malaise trap, P. Cerdan-lab. Hydrobiologie leg., 1♀ (FSAE, MOLC); same locality

label, 5.x.2000, 1♀ (FSAE); Cayenne District, Sinnamary, Pointe Combi, 05°18'N 52°57'W, 21–28.ix.2000, Malaise trap, P. Cerdan-lab. Hydrobiologie leg., 1♀ (FSAE); same locality label, 17–24.xi.2000, 1♀ (FSAE).

**Distribution:** Argentina, Bolivia, Brazil, Colombia, Costa Rica, Ecuador, French Guiana, Honduras, Mexico, Panama, Paraguay, Peru, Suriname, Trinidad and Tobago, Venezuela.

**Hosts:** Unknown.

### 27. *Dryinus striaticeps* (Kieffer)

*Prodryinus striaticeps* Kieffer, 1909: 334.

*Dryinus striaticeps* (Kieffer): Olmi *et al.* 2000: 151.

**Material examined: French Guiana:** Cayenne District, Sinnamary, Pointe Combi, 05°18'N 52°57'W, Malaise trap, 27.vii–3.viii.2000, P. Cerda-lab. Hydrobiologie leg., 1♀ (FSAE); same locality label, 3–24.viii.2000, 1♀ (FSAE); same locality label, 17–24.xi.2000, 1♀ (FSAE); Cayenne District, Kourou, Savane MATITI, 22.xii.2012, window pan trap, J.L. Giuglaris leg., 1♀ (MOLC); Cayenne District, Régina, xi.2012, SLAM trap, S.E.A.G. leg., 2♀ (FSAE, MOLC); Saint-Laurent-du-Maroni District, 4.ix–21.x.1997, Malaise trap, Y. Braet leg., 2♀ (FSAE, MOLC).

**Distribution:** Argentina, Bolivia, Brazil, French Guiana, Paraguay, Suriname.

**Hosts:** Unknown.

*Dryinus* Group 3

### 28. *Dryinus braeti* Olmi, 2012: 29

**Material examined: French Guiana:** Cayenne District, Régina, Montagne de Kaw, Relais Patawa, 04°32.42'N 52°09.09'W, v.2001, Malaise trap, A.E.I. Guyane-J. Cerda leg., ♀ holotype (FSAE).

**Distribution:** French Guiana.

**Hosts:** Unknown.

### 29. *Dryinus chevauxanus* Olmi, n. sp.

**Material examined: French Guiana:** Cayenne District, Roura, Montagne des Chevaux, v.2014, S.E.A.G. leg., ♀ holotype (FSAE).

**Distribution:** French Guiana.

**Hosts:** Unknown.

### 30. *Dryinus forestalis* (Olmi)

*Mesodryinus forestalis* Olmi, 1984: 1027.

*Dryinus forestalis* (Olmi): Olmi *et al.* 2000: 152.

**Material examined: French Guiana:** Cayenne District, Régina, Montagne de Kaw, Relais Patawa, ix.1999, Malaise trap, 1♀ (FSAE).

**Distribution:** Bolivia, Costa Rica, French Guiana, Suriname.

**Hosts:** Unknown.

**31. *Dryinus opacus* Olmi, 1995: 30**

**Material examined: French Guiana:** Cayenne District, Régina, Montagne de Kaw, km 37.5 of road Roura-Kaw, 04°33.20'N 52°08.19'W, 217 m, xi.2004, J.A. Cerda leg., 1♀ (MOLC); Cayenne District, Régina, Montagne de Kaw, km 37.5 + 1.7 of road Roura-Kaw, 2–8.i.2005, J.A. Cerda leg., 1♀ (DEUK); Cayenne District, Régina, Montagne de Kaw, Relais Patawa, 04°32.42'N 52°09.09'W, i.2001, Malaise trap, A.E.I. Guyane-J. Cerda leg., 1♀ (FSAE); Saint-Laurent-du-Maroni District, Mount close to Mounts Baruol, 04°18.58'N 53°17.10'W, 2.ii.2013, SLAM trap, SEAH leg., 1♀ (FSAE).

**Distribution:** Brazil, Costa Rica, French Guiana.

**Hosts:** Unknown.

**32. *Dryinus panamensis* (Olmi)\***

*Alphadryinus panamensis* Olmi, 1984: 989.

*Dryinus panamensis* (Olmi): Olmi *et al.* 2000: 152.

**Material examined: French Guiana:** Cayenne District, Tonate (Macouria), Matiti, iii.2013, S.E.A.G. leg., 1♀ (FSAE).

**Distribution:** French Guiana, Panama, Peru.

**Hosts:** Unknown.

**33. *Dryinus porteri* (Olmi)\***

*Alphadryinus porteri* Olmi, 1991: 288.

*Dryinus porteri* (Olmi): Olmi *et al.* 2000: 152.

**Material examined: French Guiana:** Cayenne District, Roura, Montagne des Chevaux, 16.ii.2013, S.E.A.G. leg., 1♀ (FSAE).

**Distribution:** Bolivia, Brazil, French Guiana.

**Hosts:** Unknown.

**34. *Dryinus rourensis* Olmi, n. sp.**

**Material examined: French Guiana:** Cayenne District, Roura, Montagne des Chevaux, iv.2014, S.E.A.G. leg., ♀ holotype (FSAE).

**Distribution:** French Guiana.

**Hosts:** Unknown.

**Genus *Gonadryinus* Olmi, 1991: 297****35. *Gonadryinus hansonii* Olmi, 1991: 297**

**Material examined: French Guiana:** Cayenne District, Régina, Montagne de Kaw, Relais Patawa, iii.1999, Malaise trap, A.E.I. Guyane-J. Cerda leg., 1♀ (FSAE); same locality label, ix.1999, 1♀ (FSAE).

**Distribution:** Colombia, Costa Rica, Ecuador, French Guiana, Panama.

**Hosts:** Unknown.

**Genus *Thaumatomyia* Perkins, 1905: 58****36. *Thaumatomyia clarus* Olmi, 1984: 715**

**Material examined: French Guiana:** Cayenne District, Régina, Montagne de Kaw, Km 37.5 on road Roura-Kaw, 04°33.20'N 52°08.19'W, 217 m, xii.2005, J.A. Cerda leg., 1♀ (DEUK).

**Distribution:** Belize, Bahamas, Brazil, Colombia, Costa Rica, French Guiana, Guatemala, Mexico, Nicaragua, Panama, Peru, Venezuela.

**Hosts:** Unknown.

**37. *Thaumatomyia macilentus* De Santis & Vidal Sarmiento, 1974: 24**

**Material examined: French Guiana:** Cayenne District, Régina, Montagne de Kaw, Relais Patawa, iv.2000, Malaise trap, 1♀ (FSAE).

**Distribution:** Argentina, Brazil, Colombia, Costa Rica, Ecuador, French Guiana, Honduras, Mexico, Panama, Peru, Suriname, Trinidad and Tobago.

**Hosts:** Unknown.

Subfamily GONATOPODINAE Kieffer in Kieffer & Marshall, 1906

**Genus *Gonatopus* Ljungh, 1810: 161****38. *Gonatopus apicalis* Cameron, 1888: 443**

**Material examined: French Guiana:** Saint-Laurent-du-Maroni District, Saül, 17.i.2011, FIT 03/04, S.E.A.G. leg., 1♀ (FSAE).

**Distribution:** Colombia, Costa Rica, Ecuador, French Guiana, Panama, Venezuela.

**Hosts:** Unknown.

**39. *Gonatopus breviforceps* Kieffer, 1904: 356**

*Metagonatopus brasiliensis* Ogloblin, 1932: 264 (synonymized by Olmi 1984) (Type locality: Guayrá (Paraná, Brazil)).

**Material examined: French Guiana:** Cayenne District, Sinnamary, Barrage de Petit Saut, 04°04'N 53°03'W, 5.x.2000, Malaise trap, P. Cerdan-lab. Hydrobiologie leg., 1♀ (FSAE).

**Distribution:** Antigua, Argentina, Bahamas, Brazil, Cuba, Dominican Republic, Ecuador, French Guiana, Guatemala, Haiti, Mexico, Peru, Puerto Rico, Venezuela.

**Hosts:** Cicadellidae (Guglielmino *et al.* 2013): in Ecuador *Balclutha* sp.; in Mexico (Jalisco) *Balclutha incisa* (Matsumura).

**Genus *Neodryinus* Perkins, 1905: 50****40. *Neodryinus trinitatis* Richards, 1951: 816**

**Material examined: French Guiana:** Cayenne District, Régina, Montagne de Kaw, Relais Patawa, iii.1999, 1♀ (FSAE); Cayenne District, Sinnamary, Pointe Combi, 05°18'N 52°57'W, 4–11.vii.2000, Malaise trap, P. Cerdan-lab. Hydrobiologie leg., 1♀ (FSAE).



**Distribution:** Argentina, Brazil, Costa Rica, Ecuador, French Guiana, Paraguay, Trinidad and Tobago, Venezuela.

**Hosts:** Flatidae (Guglielmino *et al.* 2013): in Trinidad: *Ormenis* sp.

**Genus *Pareucamptonyx* Olmi, 1991: 375**

**41. *Pareucamptonyx zulianus* (Olmi)**

*Gonatopus zulianus* Olmi, 1986: 96.

*Pareucamptonyx costaricanus* Olmi, 1991: 376 (synonymized by Olmi 1998)

(Type locality: 24 km W of Piedras Blancas (Puntarenas Prov., Costa Rica)).

*Pareucamptonyx zulianus* (Olmi): Olmi 1998: 113.

**Material examined: French Guiana:** Saint-Laurent-du-Maroni Distric, Saül, 17.i.2011, FIT 01, S.E.A.G. leg., 1♀ (FSAE).

**Distribution:** Bolivia, Brazil, Costa Rica, French Guiana, Venezuela.

**Hosts:** Unknown.

#### DISCUSSION

According to the checklist, 41 species of Dryinidae are recorded from French Guiana. This result represents a good improvement of the knowledge on dryinid fauna of that country from previously recorded 36 species (Olmi & Virla 2014). However, the knowledge of Dryinidae of French Guiana should still be considered insufficient, mainly if compared with other Neotropical countries such as Costa Rica. With an area of only 51,100 km<sup>2</sup>, Costa Rica hosts 148 species of Dryinidae (Olmi & Virla 2014), whereas there are only 41 species of them in French Guiana, with its 83,534 km<sup>2</sup>. French Guiana can also be compared with and is similar to Costa Rica in terms of the habitat diversity (e.g. tropical wet forests, tropical montane and littoral forests, semideciduous forests *etc.*). We conclude that the dryinid fauna of French Guiana is under-sampled and further collecting efforts are needed to improve the situation. In addition, the biology of dryinids (including their hosts) is almost unknown in both countries, which makes comparison of the two faunas on the basis of ecological criteria extremely difficult. This bias stems out of the collection methods used so far. Instead of rearing dryinids directly from their hosts, they were sampled mainly by Malaise and yellow pan traps.

#### ACKNOWLEDGEMENTS

Many thanks are due to Yves Braet, Philippe Cerdan and Alain Pauly for sending at different times materials studied in the present paper. We are very grateful to all colleagues sending on loan type specimens from various collections and to S.E.A.G. (Société Entomologique Antilles-Guyane), whose members collected the bulk of the material studied in this paper.

#### REFERENCES

- CAMERON, P. 1888. Dryinae. In: Godman, F.D.C. & Salvin, O. (eds.), *Biologia Centrali-Americana. Insecta, Hymenoptera (Families Tenthredinidae-Chrysididae)*, Vol. I. R.H. Porter, London, pp. 440–448.

- CARCUPINO, M., GUGLIELMINO, A., MAZZINI, M. & OLMI, M. 1998. Morphology and ultrastructure of the cephalic vesicles in two species of the *Gonatopus* genus: *Gonatopus camelinus* Kieffer and *Gonatopus clavipes* (Thunberg) (Hymenoptera, Dryinidae, Gonatopodinae). *Invertebrate Reproduction and Development* **34**: 177–186.
- COELHO, B.W., AGUIAR, A.P. & ENGEL, M.S. 2011. A survey of Dryinidae (Hymenoptera, Chrysoidea) from Caxiuana, Amazon Basin, with three new taxa and keys to genera and species. *Zootaxa* **2907**: 1–21.
- DE SANTIS, L. & VIDAL SARMIENTO, J.A. 1974. Las especies Argentinas del genero *Thaumatomydus* (Hymenoptera, Dryinidae). *Neotropica* **20**: 21–26.
- EVANS, H.E. 1969. Bredin-Archbold-Smithsonian Biological Survey of Dominica: Bethyloidea (Hymenoptera). *Smithsonian Contributions to Zoology* **3**: 1–14.
- FENTON, F.A. 1927. New parasitic Hymenoptera of the subfamily Anteoniinae from the Americas. *Proceedings of the United States National Museum* **72**: 1–16.
- GUGLIELMINO, A. & BÜCKLE, C. 2003. Description of larval instars of *Neodryinus typhlocybae* (Ashmead, 1893) (Hymenoptera Dryinidae), with remarks on its biology. *Mitteilungen aus dem Museum fuer Naturkunde in Berlin - Deutsche Entomologische Zeitschrift* **50** (1): 143–150.
- 2010. Description of larval instars of *Mystrophorus formicaeformis* Ruthe (Hymenoptera: Dryinidae). *Zootaxa* **2602**: 57–66.
- GUGLIELMINO, A., BÜCKLE, C. & MOYA-RAYGOZA, G. 2006. Description of the larval instars of *Gonatopus bartletti* Olmi, 1984 (Hymenoptera: Dryinidae). *Zootaxa* **1226**: 51–60.
- GUGLIELMINO, A., OLMI, M. & BÜCKLE, C. 2013. An updated host-parasite catalogue of world Dryinidae (Hymenoptera: Chrysoidea). *Zootaxa* **3740**: 1–113.
- GUGLIELMINO, A., PARISE, G. & BÜCKLE, C. 2015. Description of larval instars of *Dryinus tarraconensis* Marshall, 1868 and *Gonatopus baeticus* (Ceballos, 1927) (Hymenoptera: Chrysoidea: Dryinidae), parasitoids of the genus *Dictyophara* Germar (Hemiptera: Auchenorrhyncha: Dictyopharidae). *Zootaxa* **4032** (1): 42–54.
- GUGLIELMINO, A., VIRLA, E.G., OLMI, M., MOYA-RAYGOZA, G. & VOLLARO, M. 2008. Parasitization behaviour and postembryonic development in the subfamily Gonatopodinae. *Bulletin of Insectology* **61** (1): 211.
- HALIDAY, A.H. 1833. An essay on the classification of the parasitic Hymenoptera of Britain, which correspond with the *Ichneumon* *minuti* of Linnaeus. *The Entomological Magazine* **1**: 259–273.
- JURINE, L. 1807. *Nouvelle méthode de classer les Hyménoptères et les Diptères*, 1. Hyménoptères. Paschoud, Genève, pp. 1–319.
- KIEFFER, J.-J. 1904. Description de nouveaux Dryininae et Bethylinae du Musée Civique de Gènes. *Annali del Museo civico di Storia naturale di Genova* **41**: 351–412.
- 1909. Description de nouveaux Dryinides et Belytides d'Amérique. *Annales de la Société scientifique de Bruxelles* **33**: 334–380.
- KIEFFER, J.-J. & MARSHALL, T.A. 1906. Proctotrypidae. In: André, E. (ed.), *Species des Hyménoptères d'Europe et d'Algerie*, Vol. 9. Hermann, Paris, pp. 289–552.
- LATREILLE, P.A. 1804. Tableau méthodique des insectes. In: Société de Naturalistes et d'Agriculteurs (ed.), *Nouveau dictionnaire d'Histoire naturelle*, Vol. 24. Déterville, Paris, pp. 129–200.
- LJUNGH, S.J. 1810. *Gonatopus*, novum insectorum genus. *Beiträge zur Naturkunde* **2**: 161–163.
- MARTINS, A.L. 2015. A new species of *Deinodryinus* Perkins, 1907 (Hymenoptera, Dryinidae) from Minas Gerais, Brazil. *Zootaxa* **4032** (2): 236–240.
- MARTINS, A.L., LARA, R.I.R. & PERIOTO, N.W. 2015a. New records of Dryinidae (Hymenoptera: Chrysoidea) from the Atlantic Rainforest of São Paulo, Brazil. *Pan-Pacific Entomologist* **91** (2): 196–199.
- MARTINS, A.L., LARA, R.I.R., PERIOTO, N.W. & OLMI, M. 2015b. Two new species of Dryinidae (Hymenoptera: Chrysoidea) from areas of Atlantic Rainforest at São Paulo State, Brazil. *Brazilian Journal of Biology* **75** (2): 455–459.
- OGLOBLIN, A.A. 1932. Himenopteros nuevos o poco conocidos de Guayra (Dryinidae). *Revista de Entomologia* **2**: 264–269.
- OLMI, M. 1984. A revision of the Dryinidae (Hymenoptera). *Memoirs of the American Entomological Institute* **37**: 1–1913.
- 1986. New species and genera of Dryinidae (Hymenoptera Chrysoidea). *Frustula entomologica* (1986) (N.S.) **7–8**: 63–105.

- 1987. New species of Dryinidae (Hymenoptera, Chrysidoidea). *Fragmenta entomologica* **19**: 371–456.
- 1991. Supplement to the revision of the world Dryinidae (Hymenoptera Chrysidoidea). *Frustula entomologica* (1989) (N.S.) **12**: 109–395.
- 1993a. A new generic classification for Thaumatrodryininae, Dryininae and Gonatopodinae, with descriptions of new species (Hymenoptera Dryinidae). *Bollettino di Zoologia agraria e di Bachicoltura (Ser. II)* **25**: 57–89.
- 1993b. Descriptions of new taxa of Dryinidae (Hymenoptera Chrysidoidea). *Frustula entomologica* (1992) (N.S.) **15**: 19–62.
- 1995. Contribution to the knowledge of the world Dryinidae (Hymenoptera Chrysidoidea). *Phytophaga* **6**: 3–54.
- 1996. Taxonomic remarks on American Dryinidae, with descriptions of new species (Hymenoptera Chrysidoidea). *Redia* **79**: 57–81.
- 1998. New Embolemyidae and Dryinidae (Hymenoptera Chrysidoidea). *Frustula entomologica* (1997) (N.S.) **20**: 30–118.
- 1999. Remarks on new Neotropical and Australian Dryinidae, with a new synonymy (Hymenoptera Chrysidoidea). *Redia* **82**: 1–15.
- 2003. A contribution to the knowledge of Dryinidae (Hymenoptera Chrysidoidea). *Frustula entomologica* (2001) (N.S.) **24**: 21–49.
- 2004. New species of Dryinidae from Colombia (Insecta, Hymenoptera, Chrysidoidea). *Spi-xiana* **27**: 147–154.
- 2008. New species of Dryinidae (Hym.) from the Neotropical region. *Entomologist's Monthly Magazine* **144**: 217–227.
- 2011a. Catalogue of Dryinidae of Brazil (Hymenoptera Chrysidoidea). *Frustula entomologica* (2009) (N.S.) **32**: 1–29.
- 2011b. A contribution to the knowledge of world Dryinidae (Hymenoptera Chrysidoidea). *Frustula entomologica* (2009) (N.S.) **32**: 43–76.
- 2012. Descriptions of new species of Dryinidae from the Neotropical region (Hymenoptera: Chrysidoidea). *Frustula entomologica* (2010–2011) (N.S.) **33**: 28–50.
- OLMI, M. & CURRADO, I. 1979. Anteoninae conservati nel Museo Civico di Storia Naturale di Genova (Hymenoptera Dryinidae). *Annali del Museo Civico di Storia Naturale di Genova* **82**: 340–349.
- OLMI, M. & GUGLIELMINO, A. 2011. Revision of fossil species of *Dryinus* belonging to *lamellatus* group, with description of a new species (Hymenoptera, Dryinidae). *ZooKeys* **130**: 505–514.
- OLMI, M., GUGLIELMINO, A. & VOLLARO, M. 2011. Revision of fossil species of *Dryinus* belonging to *constans* group, with description of a new species (Hymenoptera: Dryinidae). *Zootaxa* **2981**: 43–55.
- OLMI, M. & VIRLA, E.G. 2014. Dryinidae of the Neotropical Region (Hymenoptera: Chrysidoidea). *Zootaxa* **3792** (1): 1–534.
- OLMI, M., VIRLA, E.G. & FERNANDEZ, F. 2000. Las Avispas Dryinidae de la Región Neotropical (Hymenoptera: Chrysidoidea). *Biota Colombiana* **1** (2): 141–163.
- PERKINS, R.C.L. 1905. Leafhoppers and their natural enemies (Pt. I. Dryinidae). *Report of Work of the Experiment Station of the Hawaiian Sugar Planters' Association, Division of Entomology, Bulletin* **1** (1): 1–69.
- 1907. Parasites of leaf-hoppers. *Report of Work of the Experiment Station of the Hawaiian Sugar Planters' Association, Division of Entomology, Bulletin* **4**: 5–59.
- 1912. Parasites of the Family Dryinidae. *Report of Work of the Experiment Station of the Hawaiian Sugar Planters' Association, Division of Entomology, Bulletin* **11**: 5–20.
- RICHARDS, O.W. 1951. New species of Bethyloidea (Hymenoptera). *Annals and Magazine of Natural History (Ser. 12)* **4**: 813–820.
- VIRLA, E.G. 1998. New Neotropical species of Dryinidae (Hymenoptera: Chrysidoidea). *Frustula entomologica* (1997) (N.S.) **20**: 1–17.

