



Catalogue of the Dryinidae and Sclerogibbidae (Hymenoptera: Chrysidoidea) of Belize, with description of two new species

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Abstract

Eighteen species of Dryinidae and one species of Sclerogibbidae are listed from Belize. Two new species of Dryinidae, *Anteon dykeae* Olmi, **sp. nov.** and *Dryinus schueppi* Olmi, **sp. nov.**, are described from Belize, Corozal District. Keys to Neotropical species of *Anteon* and *Dryinus* are modified and include new species. Nine species of Dryinidae and one species of Sclerogibbidae are newly recorded from Belize. New records of Dryinidae are: four species from Panama, two species from Paraguay, and one species from Colombia, Mexico, Honduras, Venezuela, Ecuador, Bolivia and French Guiana. The dryinid and sclerogibbid fauna of Belize is still under-sampled and insufficiently known.

Key words: Dryinidae, Sclerogibbidae, Belize, new species, new records, *Anteon dykeae*, *Dryinus schueppi*, catalogue

Introduction

Belize is a small country of Central America, located between Mexico, and Guatemala and the Caribbean Sea. Dryinidae and Sclerogibbidae are parasitoids respectively of Hemiptera Auchenorrhyncha (Guglielmino & Olmi 1997, 2006, 2007) and Embiidina (Olmi 2005). In the monograph of world Dryinidae (Olmi 1984) two species were reported from Belize: *Dryinus belizensis* Olmi, 1984 and *Dryinus wellingensis* Olmi, 1984, described from material collected in Stann Creek District. Afterwards, Olmi (1986, 1987b) described *Dryinus snellingi* and *Pseudogonatopus maidicolus* (now *Gonatopus maidicolus*), both new species from Belize. More recently, in a catalogue of Dryinidae from Costa Rica, Olmi (1993a) quoted in Belize the following further two species: *Aphelopus diffusus* Olmi, 1984 and *Anteon panamense* Olmi, 1984. At last, Olmi *et al.* (2000) recorded eight species from Belize: *Dryinus snellingi* Olmi, 1986, *Gonatopus bartletti* Olmi, 1984, and six species mentioned above. In the monograph of world Sclerogibbidae (Olmi 2005) no species were listed from Belize. In 2011 the study of new material collected by one of the authors (Schüepp) in Belize has resulted in the discovery of two new species described herein. These records provided the opportunity to compose a checklist of dryinids and sclerogibbids known from Belize.

Material and methods

Species descriptions follow the terminology used by Olmi (1984, 1994, 1999a). The measurements reported are relative, except for the total length (head to metasomal tip, without the antennae), which is expressed in mm. In the descriptions POL is the distance between the inner edges of the two lateral ocelli; OL—between the inner edges of a lateral ocellus and the median ocellus; OOL is the distance from the outer edge of a lateral ocellus to the compound eye; OPL—from the posterior edge of a lateral ocellus to the occipital carina; TL—from the posterior edge of the eye to the occipital carina.

The most part of the material studied in the present paper was collected in 2009 and 2010 with ground Malaise traps (B & S Entomological Services, UK) and yellow pan traps by one of the authors (Schüepf). The material studied in this paper is deposited in the following collections:

BER	Natural History Museum, Bern, Switzerland.
BMNH	The Natural History Museum, London, United Kingdom.
CNC	Canadian National Collection of Insects, Ottawa, Canada.
DER	Department of Entomology, University of California, Riverside, California, USA.
DETU	Department of Entomology, Texas A. & M. University, College Station, Texas, USA.
FAG	Faculté des Sciences Agronomiques de l'État, Gembloux, Belgium.
IAH	Instituto Alexander von Humboldt, Santafé de Bogota, Colombia.
MIFP	Museo de Invertebratos G.B. Fairchild, Facultad de Ciencias Naturales y Exactas, Departamento de Zoología, Universidad de Panamá, Panama.
MNHP	Museo Nacional de Historia Natural del Paraguay, San Lorenzo, Paraguay.
NHMK	Natural History Museum, University of Kansas, Lawrence, Kansas, USA.
NHML	Natural History Museum of Los Angeles County, Los Angeles, California, USA.
OLM	Department of Plant Protection, University of Tuscia, Viterbo, Italy (Massimo Olmi's collection).
PMA	Provincial Museum of Alberta, Edmonton, Alberta, Canada.
USNM	National Museum of Natural History, Washington, DC, USA.

Checklist of Dryinidae and Sclerogibbidae of Belize

Family Dryinidae

Subfamily Aphelopinae

Genus *Aphelopus* Dalman 1823

Type species *Dryinus atratus* Dalman 1823, by subsequent designation (Westwood 1840).

1. *Aphelopus diffusus* Olmi 1984

Material examined. Toledo: Blue Creek (PMA).

Hosts. In Belize unknown. In Argentina: *Empoasca kraemeri* Ross & Moore; *Empoasca manubriata* Young (Cicadellidae Typhlocybinae) (Virla & Olmi 1998).

Distribution. Neotropical Region from Mexico to Argentina including many Caribbean islands and Belize (Olmi *et al.* 2000).

2. *Aphelopus trinitatis* Olmi 1984

Material examined. Belize (USNM).

Hosts. In Belize unknown. In Argentina: *Empoasca kraemeri* Ross & Moore (Cicadellidae Typhlocybinae) (Virla & Olmi 1998).

Distribution. Neotropical Region from Mexico to Argentina including many Caribbean islands (Olmi *et al.* 2000), Belize (new record).

Subfamily Anteoninae

Genus *Deinodryinus* Perkins 1907

Type species *Deinodryinus paradoxus* R. Perkins 1907, designated by Muesebeck & Walkley (1951).

3. *Deinodryinus costaricanus* Olmi 1987a

Material examined. BELIZE: Corozal: Sarteneja, Milpa de Babo, Farmland, 18°18.074'N 88°14.388'W, 3 m, 5–11.ii.2010, Malaise trap 9, C. Schüepp, 1 ♂ (BER); Sarteneja, Shipstern Nature Reserve, Xo-pol, Yucatecan semi-evergreen forest, 18°15.569'N 88°16.283'W, 6 m, 11–17.xii.2009, Malaise trap 11, C. Schüepp, 1 ♂ (BER). COLOMBIA: Valle del Cauca: Farallones de Cali National Park, Alto Anchicaya, 3°26'N 76°48'W, 900 m, Malaise trap N. 1539, 19.xii.2000–2.i.2001, S. Sarria, 1 ♀ (IAH). MEXICO: Chiapas: Tuxtla Gutierrez, at turnoff to airport, 25.xii.1988, R. Jones, 1 ♂ (DETU). PANAMA: Darién: Darién Nat. Park, Pirre, Estación Rancho Frio, 80 m, Malaise trap, 16.xi.2000–17.i.2001, R. Cambra & A. Santos (MIFP).

Hosts. Unknown.

Distribution. Brazil, Costa Rica, Ecuador, Nicaragua, and Peru (Olmi *et al.* 2000), Belize (new record), Colombia (new record), Mexico (new record), Panama (new record).

4. *Deinodryinus gauldi* Olmi 1991

Material examined. BELIZE: Corozal: Sarteneja, Shipstern Nature Reserve Headquarters, Forest clearing, 18°19.068'N 88°10.968'W, 4 m, 22–28.xi.2009, Malaise Trap, C. Schüepp, 1 ♂ (BER); Sarteneja, Shipstern Nature Reserve, Mahogany Park, Low semi-deciduous forest, 18°20.507'N 88°9.688'W, 4 m, 11–17.xii.2009, Malaise trap 5, C. Schüepp, 1 ♂ (BER); Sarteneja, Shipstern Nature Reserve Boundary, Low semi-deciduous forest, 18°19.276'N 88°10.666'W, 4 m, 4–10.xii.2009, Malaise trap 6, C. Schüepp, 1 ♂ (BER); Sarteneja, Shipstern Nature Reserve, Xo-pol, Yucatecan semi-evergreen forest, 18°14.789'N 88°15.131'W, 6 m, 4–10.xii.2009, Malaise trap 12, C. Schüepp, 3 ♂ (BER); same locality label, 18°15.569'N 88°16.283'W, 6 m, 11–17.xii.2009, Malaise trap 11, 1 ♂ (BER). HONDURAS: Olancho: La Muralla Nat. Park, 15°05.49'N 86°44.17'W, 1480 m, 4–7.vii.2002, D. Yanega, 1 ♂ (DER). PARAGUAY: Presidente Hayes: Reserva Tinfunké, La Verde, 23°56'S 60°27'W, 30.xi–1.xii.2003, 150 m, Malaise trap, B. Garcete, 3 ♂ (MNHP, OLM).

Hosts. Unknown.

Distribution. Argentina, Costa Rica, and Mexico (Olmi *et al.* 2000), Belize (new record), Honduras (new record), Paraguay (new record).

5. *Deinodryinus sublatifrons* Olmi 1999b

Material examined. BELIZE: Corozal: Sarteneja, Fireburn, Farmland, 18°20.507'N 88°11.848'W, 2 m, 4–17.xii.2009, Malaise trap 14, C. Schüepp, 1 ♂ (BER).

Hosts. Unknown.

Distribution. Costa Rica (Olmi *et al.* 2000), Belize (new record).

6. *Deinodryinus trinidadii* Olmi 1984

Material examined. BELIZE: Corozal: Sarteneja, Fireburn, Farmland, 18°20.507'N 88°11.848'W, 2 m, 4–17.xii.2009, Malaise trap 14, C. Schüepp, 1 ♂ (BER); Sarteneja, La Isla Road, Farmland, 18°20.413'N 88°7.925'W, 3 m, 11–17.xii.2009, Malaise trap 2, C. Schüepp, 1 ♂ (BER); Sarteneja, La Isla Road Cenote, Low semi-deciduous forest, 18°20.115'N 88°7.713'W, 2 m, 4–10.xii.2009, Malaise trap 1, C. Schüepp, 1 ♂ (BER). PANAMA: Colón: Canal Zone, Barro Colorado Island, 11.iii.1955 (NHMK). PARAGUAY: Canindeyú: Reserva Natural del Bosque Mbaracayú, Jejui-mi, entrada del sendero Aguara'i, 31. VENEZUELA: vii–30.ix.1996, Malaise trap, A.C.F. Da Costa, 33 ♂ (MNHP, OLM).

Hosts. Unknown

Distribution. Argentina, Brazil, Colombia, Costa Rica, Honduras, Mexico, Peru, Trinidad, and Venezuela (Olmi *et al.* 2000), Belize (new record), Paraguay (new record).

Genus *Anteon* Jurine 1807

Anteon Jurine 1807: 302. Type species *Anteon jurineanum* Latreille 1809, by monotypy.

Chelogyne Haliday 1838: 518. Type species *Chelogyne infectus* (Haliday, in Walker 1837), designated by Muesebeck & Walkley 1951. Synonymized by Kieffer, in Kieffer & Marshall 1905.

Diagnosis. Female: fully winged; rarely brachypterous; palpal formula: 6/3; antenna without rhinaria; occipital carina complete; propodeum usually with transverse keel between dorsal and posterior surface; fore wing with three cells enclosed by pigmented veins (costal, median and submedian), with stigmal vein and pterostigma present; distal part of stigmal vein usually much shorter than proximal part, occasionally slightly shorter, as long as, or longer than proximal part; protarsus chelate; inner side of enlarged claw with a proximal prominence bearing one long bristle; tibial spurs 1/1/2. Male: fully winged; rarely brachypterous; palpal formula 6/3; occipital carina complete; vertex of head usually without two oblique keels connecting posterior ocelli to occipital carina; propodeum usually with transverse keel between dorsal and posterior surface; fore wing with three cells enclosed by pigmented veins (costal, median and submedian), with stigmal vein and pterostigma present; distal part of stigmal vein usually much shorter than proximal part, occasionally slightly shorter, as long as, or longer than proximal part; pterostigma less than four times as long as broad; paramere without an inner branch wrapping penis; tibial spurs 1, 1, 2.

Distribution. Worldwide.

Hosts. Cicadellidae (Guglielmino & Olmi 1997, 2006, 2007).

Species included. Four hundred and sixteen.

7. *Anteon albitarse* (Cameron 1888)

Material examined. BELIZE: Corozal: Sarteneja, Xcopen Milpa, Farmland, 18°13.203'N 88°13.852'W, 2 m, 4–10.xii.2009, Malaise trap 13, C. Schüepf, 1 ♀ (BER).

Hosts. Unknown.

Distribution. Neotropical Region from Mexico to Argentina, in addition to the USA (Olmi *et al.* 2000), Belize (new record),

8. *Anteon dykeae* Olmi, sp. nov.

(Fig. 1)

Etymology. This species is named after Miss Katie Dyke.

Types. *Holotype*, ♂, BELIZE: Corozal District, Sarteneja, La Isla Road Cenote, Low semi-deciduous forest, 18°20.115'N 88°7.713'W, 2 m a.s.l., 11–17.xii.2009, Malaise trap 1, C. Schüepf coll. (BER).

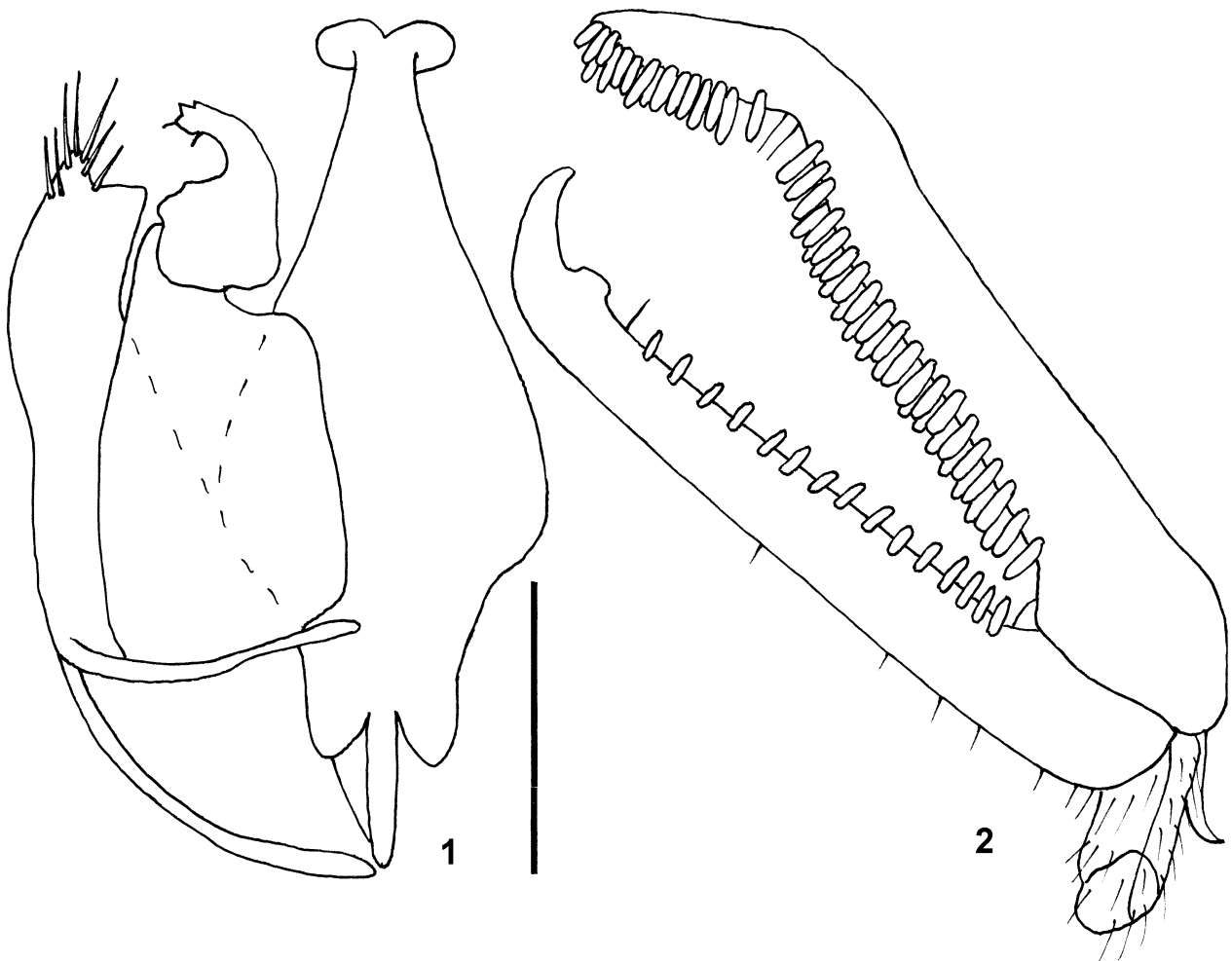
Diagnosis. Male with scutum mostly granulated; posterior surface of propodeum not sculptured by two longitudinal keels; distal apex of paramere broadly hollowed out (Fig. 1).

Description. *Male*: fully winged; length 2.7 mm. Head black, except mandible testaceous; antenna brown, except segment 1 testaceous; mesosoma black; metasoma brown; legs testaceous, except clubs of profemora partly brown, mesotibiae partly brown, metacoxae, clubs of metafemora and metatibiae partly black. Antenna hairy, filiform, with segment 3 triangular; antennal segments in following proportions: 10:6:6:5:5:5:5:6:8. Head dull, granulated and reticulate rugose; frontal line complete; face with two lateral keels around orbits directed towards antennal toruli; vertex with two hardly visible oblique keels connecting posterior ocelli to occipital carina; occipital carina complete; POL = 9; OL = 5; OOL = 6; OPL = 5; TL = 4; greatest breadth of posterior ocelli about as long as TL. Scutum dull, granulated, except anterior margin rugose. Notauli incomplete, reaching about 0.25 length of scutum. Scutellum and metanotum shiny, smooth, punctate, without sculpture among punctures. Propodeum reticu-

late rugose, with strong transverse keel between dorsal and posterior surface; posterior surface without longitudinal keels. Fore wing hyaline, without dark transverse bands; distal part of stigmal vein shorter than proximal part (2:8). Paramere with distal apex broadly hollowed out, without distal inner pointed process (Fig. 1). Tibial spurs 1/1/2.

Female: unknown.

Distribution. Only known in the type locality.



FIGURES 1, 2. 1. *Anteon dykeae* sp. nov., ♂, holotype, genitalia (right half removed), scale bar = 0.12 mm; 2. *Dryinus schueeppi* sp. nov., ♀, holotype, chela, scale bar = 0.31 mm.

Hosts. Unknown.

Comments. Because of the posterior surface of propodeum not sculptured by two longitudinal keels and the scutum mostly granulated, the male of *A. dykeae* is similar to those of *A. albitarse* (Cameron 1888), *A. mayanum* Olmi 1991, *A. desantisi* Virla 1998, *A. ferule* Olmi 1993, and *A. pilicorne* Ogloblin 1938. Following the description of *A. dykeae*, the key to the males of the Neotropical species of *Anteon* published by Olmi (1991) and modified by Olmi (1993c) and Virla (1998) may be modified by replacing couplet 22 as follows :

- | | | |
|-------|---|---------------------------------|
| 22 | Distal apex of paramere broadly hollowed out (Fig. 1) | <i>A. dykeae</i> Olmi, sp. nov. |
| - | Distal apex of paramere not broadly hollowed out (Fig. 318 in Olmi 1984; figs 21 E, 25 C in Olmi 1991; fig. 17 in Olmi 1993c; fig. 4 in Virla 1998) | 22' |
| 22' | Paramere much shorter than penis (Fig. 21 E in Olmi 1991) | <i>A. mayanum</i> Olmi |
| - | Paramere as long as, or slightly shorter than penis (Fig. 318 in Olmi 1984; fig. 25 C in Olmi 1991; fig. 17 in Olmi 1993c; fig. 4 in Virla 1998) | 22'' |
| 22'' | Vertex of head with two oblique keels from posterior ocelli to occipital carina | 22''' |
| - | Vertex of head without two oblique keels from posterior ocelli to occipital carina. | 22'''' |
| 22''' | Distal region of paramere with many papillae (Fig. 4 in Virla 1998) | <i>A. desantisi</i> Virla |

- Distal region of paramere without papillae (Fig. 17 in Olmi 1993c) *A. ferule* Olmi
- 22''' Paramere with apical margin of distal inner process not serrate (Fig. 318 in Olmi 1984) *A. pilicorne* Ogloblin
- Paramere with apical margin of distal inner process serrate (Fig. 25 C in Olmi 1991) *A. albitarse* (Cameron)

9. *Anteon panamense* Olmi 1984

Material examined. BELIZE: Toledo: Blue Creek (PMA). Corozal: Sarteneja, Shipstern Nature Reserve Boundary, Yucatecan semi-evergreen forest, 18°18.086'N 88°13.073'W, 17 ft., 17.xii.2009, Malaise trap 7, C. Schüepf, 1 ♀ (BER); Sarteneja, Shipstern Nature Reserve, Mahogany Park, Low semi-deciduous forest, 18°20.507'N 88°9.688'W, 4 m, 11–17.xii.2009, Malaise trap 5, C. Schüepf, 1 ♂ (BER).

Hosts. Unknown.

Distribution. Neotropical Region from Mexico to Argentina including Belize (Olmi *et al.* 2000).

10. *Anteon pilicorne* Ogloblin 1938

Material examined. BELIZE: Corozal: Sarteneja, Backpackers, Farmland, 18°20.721'N 88°9.266'W, 2 m, 11–17.xii.2009, Malaise trap 4, C. Schüepf, 1 ♂ (BER).

Hosts. In Belize unknown. In Argentina: *Balclutha rosea* (Scott) and *Dalbulus maidis* (DeLong & Wolcott) (Cicadellidae Deltocephalinae) (Virla *et al.* 2011).

Distribution. Neotropical Region from Mexico to Argentina (Olmi *et al.* 2000), Belize (new record).

Subfamily Dryininae

Genus *Dryinus* Latreille, 1804

Dryinus Latreille 1804: 176. Type species *Dryinus collaris* (Linnaeus 1767), by first included species (Latreille 1805).

Campylonyx Westwood 1835: 52 (synonymized by Olmi 1984); type species *Campylonyx ampuliciformis* Westwood 1835, by monotypy.

Chelothelium Reinhard 1863: 409 (synonymized by Olmi 1993b); type species *Chelothelium gryps* Reinhard 1863, by monotypy.

Paradryinus Perkins 1905: 53 (synonymized by Olmi 1984); type species *Paradryinus koebelei* Perkins 1905, by original designation.

Chlorodryinus Perkins 1905: 57 (synonymized by Olmi 1984); type species *Chlorodryinus pallidus* Perkins 1905, by original designation.

Plastodryinus Kieffer in Kieffer & Marshall 1906: 496 (synonymized by Móczár 1965); type species *Plastodryinus szepligetii* (Kieffer 1906), by original designation.

Mesodryinus Kieffer in Kieffer & Marshall 1906: 497 (synonymized by Olmi 1993b); type species *Mesodryinus niger* (Kieffer 1904), by original designation.

Hesperodryinus Perkins 1907: 40 (synonymized by Olmi 1984); type species *Hesperodryinus arizonicus* Perkins 1907, by original designation.

Perodryinus Perkins 1907: 43 (synonymized by Olmi 1993b); type species *Perodryinus amoenus* Perkins 1907, by monotypy.

Lestodryinus Kieffer 1911: 108 (new name for *Dryinus* Latreille; synonymized by Richards 1937); type species *Lestodryinus collaris* (Linnaeus 1767), by automatic designation (see *Dryinus* Latreille 1804).

Tridryinus Kieffer 1913a: 325 (synonymized by Olmi 1993b); type species *Tridryinus striaticeps* (Kieffer 1909), by original designation.

Bocchoides Benoit 1954: 424 (synonymized by Olmi 1993b); type species *Bocchoides bekilyensis* Benoit 1954, by monotypy.

Richardsidryinus Móczár 1965: 376 (synonymized by Olmi 1991); type species *Richardsidryinus corsicus* (Marshall 1874), by original designation.

Avodryinus Ponomarenko 1981: 143 (synonymized by Olmi 1984); type species *Avodryinus canadensis* Ponomarenko 1981, by monotypy and original designation.

Alphadryinus Olmi 1984: 973 (synonymized by Olmi 1993b); type species *Alphadryinus asiaticus* Olmi 1984, by original designation.

Diagnosis. Female: macropterous; palpal formula 6/3; mandible with 1–4 teeth; occipital carina complete, or incomplete, or absent; antenna without tufts of long hairs on segments 5–10, usually with rhinaria, occasionally

without; antennal segment 3 less than five times as long as segment 2; occasionally antennal segment 3 more than five times as long as segment 2 (in this case, notauli occasionally complete and scutum completely sculptured by numerous and parallel longitudinal keels); pronotal tubercle reaching or not tegula; fore wing with three cells enclosed by pigmented veins (costal, median and submedian); protarsus chelate; chela with rudimentary claw; segment 5 of protarsus less than twice as broad as enlarged claw; enlarged claw as long as, or shorter than protibia; tibial spurs 1/1/2, rarely 1/1/1. Male: macropterous; mandible with 1–3 teeth; palpal formula 6/3; occipital carina complete or incomplete; lateral regions of prothorax not continuous with mesopleura; epicnemium distinct; mesosternum fused with mesopleura and not distinct; fore wing with three cells enclosed by pigmented veins (costal, median and submedian); paramere without dorsal process; tibial spurs 1/1/2.

Distribution. Worldwide.

Hosts. Acanaloniidae, Cixiidae, Dictyopharidae, Flatidae, Fulgoridae, Issidae, Lophopidae, Ricaniidae, Tropiduchidae (Guglielmino & Olmi 1997, 2006, 2007).

Species included. Two hundred and eighty-seven.

Remarks. The Neotropical species of *Dryinus* are divided into four groups (Olmi 1993b).

11. *Dryinus argentinus* Olmi 1984

Material examined. BELIZE: Stann Creek: Middlesex (NHML). VENEZUELA: Amazonas: Cerro de la Neblina Basecamp, 00°50'N 66°44'W, 140 m, 1–10.iii.1984 (USNM).

Hosts. Unknown.

Distribution. Argentina, Bolivia, Brazil, and Ecuador (Olmi 1984), Belize (new record), Venezuela (new record).

12. *Dryinus belizensis* Olmi 1984

Material examined. BELIZE: Stann Creek: Middlesex, female holotype (CNC).

Hosts. Unknown.

Distribution. Mexico, Belize (Moya Raygoza & Olmi 2010).

13. *Dryinus gibbosus* (Olmi 1984)

Material examined. BELIZE: Corozal: Sarteneja, Backpackers, Farmland, 18°20.721'N 88°9.266'W, 2 m, 25–31.xii.2009, Malaise trap 4, C. Schüepf, 1 ♀ (BER); same locality label, 11–17.xii.2009, Yellow pan trap, 1 ♀ (BER); Sarteneja, Shipstern Nature Reserve, Mahogany Park, Low semi-deciduous forest, 18°20.507'N 88°9.688'W, 4 m, 4–10.xii.2009, Yellow pan trap, C. Schüepf, 1 ♀ (BER). PANAMA: Panamá: Parque Nat. Metropolitano, 24.viii–3.ix.1999, yellow trap, A. Santos (MIFP); La Chorrera District, Playa Leona, Rio Pereguete, trocha arcilla dura, 27.ii.1991, yellow trap, R. Cambra (MIFP); Chilibre, Chagres Nat. Park, Campo Chagres, yellow trap, 24–28.i.2000, A. Santos (MIFP).

Hosts. Unknown.

Distribution. Bolivia, Brazil, Costa Rica, Dutch Antilles, Ecuador, Peru, Suriname, Trinidad, and Venezuela (Olmi *et al.* 2000), Mexico (Moya Raygoza & Olmi 2010), Belize (new record), Panama (new record).

14. *Dryinus schueepi* Olmi, sp. nov.

(Figs 2, 3)

Etymology. This species is named after the collector, Christof Schüepf.

Types. *Holotype*, ♀, BELIZE: Corozal District, Sarteneja, Mesatonich Road, Farmland/Agroforestral, 18°19.847'N 88°8.776'W, 3 m a.s.l., 22–28.i.2010, Malaise trap 3, C. Schüepf coll. (BER).

Diagnosis. Head rugose, unusually excavated; eye very bulging; POL shorter than greatest breadth of each posterior ocellus; OL about eleven times as long as POL; prothorax black, except lateral and posterior margin of pronotum, including posterior tubercles, testaceous; fore wing with three dark transverse bands; propodeum without strong transverse keel between dorsal and posterior surface.



FIGURE 3. *Dryinus schueeppi* sp. nov., ♀, holotype. Length 7.6 mm.

Description. *Female* (Fig. 3): fully winged; length 7.6 mm. Head black, except mandible, clypeus, part of gena and anterior margin of face between and around antennal toruli testaceous; palpus brown; antenna testaceous, except segments 4–5 and distal extremity of 3 brown; rest of segment 3 whitish; mesosoma black, except lateral and posterior margin of pronotum testaceous; pronotal tubercle testaceous; metasoma brown-testaceous; proleg

brown, except tarsus, stalk of femur and part of tibia testaceous; mesoleg and metaleg brown, except metatrochanter testaceous. Antenna clavate; antennal segments in following proportions: 19:7:41:19:15:12:9:8:7:10; rhinaria present in antennal segments 5–10. Head hairy, dull, rugose, very excavated, with eye very bulging; frontal line complete; occipital carina absent; temple absent; POL = 1; OL = 11; OOL = 10; POL much shorter than greatest breadth of posterior ocelli (1:3.5). Pronotum dull, hairy, sculptured by fine striae situated around disc, crossed by weak anterior transverse impression; pronotal tubercle not reaching fore tegula. Scutum and scutellum dull, reticulate rugose. Notauli absent. Metanotum shiny, hairy, punctate, without sculpture among punctures. Propodeum completely reticulate rugose, without transverse keel between dorsal and posterior surface; dorsal surface with some longitudinal keels connected by short transverse keels or areolae; posterior surface with two longitudinal keels and median area dull, rugose. Mesopleuron and metapleuron densely hairy, reticulate rugose. Fore wing with three dark transverse bands; distal part of stigmal vein longer than proximal part (20:14). Fore tarsal segments in following proportions: 21:4:10:21:40. Enlarged claw not spatulate (Fig. 2), with large subdistal tooth and one row of 15 lamellae and 1 bristle. Segment 5 of fore tarsus (Fig. 2) with two rows of approximately 35 lamellae; distal apex with at least 30 lamellae. Tibial spurs 1, 1, 2.

Male: unknown.

Distribution. Only known in the type locality.

Hosts. Unknown.

Comments. According to the systematics of the Neotropical *Dryinus* proposed by Olmi (1993b), *D. schueepi* belongs to *ruficauda* group. Because of the head rugose and unusually excavated, the eye very bulging and POL shorter than greatest breadth of each posterior ocellus, the female of *D. schueepi* is similar to that of *D. putus* Olmi 1998. The main differences between these two species are the following:

- | | |
|---|---|
| 1 | Prothorax testaceous-reddish; fore wing with two dark transverse bands; propodeum with strong transverse keel between dorsal and posterior surface; head with OL about three times as long as POL. <i>D. putus</i> (Olmi) |
| - | Prothorax black, except lateral and posterior margin of pronotum, including posterior tubercles testaceous; fore wing with three dark transverse bands; propodeum without strong transverse keel between dorsal and posterior surface; head with OL about eleven times as long as POL <i>D. schueepi</i> Olmi sp. nov. |

15. *Dryinus snellingi* Olmi 1986

Material examined. BELIZE: Stann Creek: Middlesex, female holotype (NHML); Cockscombe Wildlife Reserve, 25.xi.2001, creeks, YPT, L. Masner, 1 ♀ (CNC). ECUADOR: Pichincha: near La Unión del Toachi, Otongachi, 10–30.v.2003, G. Onore, 1 ♀ (OLM).

Hosts. Unknown.

Distribution. Brazil, Belize, and Costa Rica (Olmi *et al.* 2000), Ecuador (new record).

16. *Dryinus wellingensis* Olmi 1984

Material examined. BELIZE: Stann Creek: Middlesex (CNC). BOLIVIA: Cochabamba: Cochabamba – Villa Tunari road, 17°06.530'S 65°41.203'W, 1040 m, 1–6.ii.1999, FIT, R.S. Hanley, 1 ♀ (CNC). FRENCH GUIANA: Cayenne: Roura, Montagne des Chevaux, v.2009, S.E.A.G., 1 ♀ (OLM); Saint-Laurent-du-Maroni: Saül, Crique popote, Mt. Belvédère, 03°36'N 53°10'W, xii.2000, Malaise trap, sur chablis, J. Tarin, 1 ♀ (FAG). PANAMA: Darién: Darién Nat. Park, Cana, yellow trap, 6–13.iv.1991, R. Cambra (MIFP); Darién Nat. Park, Pire, Estación Rancho Frio, 80 m, yellow trap, 7–16.xi.2000, R. Cambra & A. Santos (OLM).

Hosts. Unknown.

Distribution. Costa Rica and Belize (Olmi *et al.* 2000), Bolivia (new record), French Guiana (new record), Panama (new record).

Subfamily Gonatopodinae

Genus *Gonatopus* Ljungh 1810

Type species *Gonatopus formicarius* Ljungh 1810, by monotypy.

17. *Gonatopus bartletti* Olmi 1984

Material examined. BELIZE: Cayo: Central Farm, 14.xi.1975, on *Zea mays*, R. Akers, 2 ♀ (BMNH).

Hosts. In Belize unknown. In Mexico: *Dalbulus elimatus* (Ball) and *Dalbulus maidis* (DeLong & Wolcott). In Nicaragua, Puerto Rico, and Venezuela: *Dalbulus maidis* (DeLong & Wolcott) (Cicadellidae Deltocephalinae) (Guglielmino & Olmi 1997).

Distribution. Neotropical Region from Mexico to Argentina including Belize (Olmi *et al.* 2000).

18. *Gonatopus maidicolus* (Olmi 1987b)

Material examined. BELIZE: Cayo: Central Farm, 25.xi.1975, on *Zea mays*, R. Akers, female holotype (BMNH).

Hosts. Unknown.

Distribution. Belize.

Family Sclerogibbidae

Genus *Probethylus* Ashmead 1902

Type species *Probethylus schwarzi* Ashmead 1902, by original designation and monotypy.

1. *Probethylus callani* Richards, 1939

Material examined. BELIZE: Corozal: Sarteneja, La Isla Road Cenote, Low semi-deciduous forest, 18°20.115'N 88°7.713'W, 2 m, 18–24.xii.2009, Malaise trap 1, C. Schüepp, 1 ♀ (BER); same locality label, 11–17.xii.2009, 1 ♂ (BER); Sarteneja, La Isla Road, Farmland, 18°20.413'N 88°7.925'W, 3 m, 11–17.xii.2009, Malaise trap 2, C. Schüepp, 1 ♂ (BER); Sarteneja, Shipstern Nature Reserve, Mahogany Park, Low semi-deciduous forest, 18°20.507'N 88°9.688'W, 4 m, 5–11.ii.2010, Malaise trap 5, C. Schüepp, 2 ♂ (BER); same locality label, 4–17.xii.2009, 6 ♂ (BER); Sarteneja, Fireburn, Farmland, 18°12.653'N 88°11.848'W, 2 m, 11–17.xii.2009, Malaise trap 14, C. Schüepp, 2 ♂ (BER); Sarteneja, Fireburn, *Orbignyia cohune*-dominated forest, 18°12.633'N 88°11.556'W, 4 m, 1–7.i.2010, Malaise trap 15, C. Schüepp, 1 ♂ (BER); Sarteneja, Milpa de Lima, Farmland, 18°18.065'N 88°13.637'W, 5 m, 5–11.ii.2010, Malaise trap 8, C. Schüepp, 1 ♂ (BER); same locality label, 11–17.xii.2009, 1 ♂ (BER); same locality label, 4–10.xii.2009, 3 ♂ (BER); Sarteneja, Shipstern Nature Reserve Boundary, Yucatecan semi-evergreen forest, 18°18.086'N 88°13.073'W, 5 m, 5–11.ii.2010, Malaise trap 7, C. Schüepp, 1 ♂ (BER); same locality label, 11–17.xii.2009, 1 ♂ (BER); Sarteneja, Shipstern Nature Reserve Boundary, Low semi-deciduous forest, 18°19.276'N 88°10.666'W, 4 m, 4–17.xii.2009, Malaise trap 6, C. Schüepp, 5 ♂ (BER); Sarteneja, Shipstern Nature Reserve, Xo-pol, Yucatecan semi-evergreen forest, 18°14.789'N 88°15.131'W, 6 m, 4–17.xii.2009, Malaise trap 12, C. Schüepp, 2 ♂ (BER); Sarteneja, Shipstern Nature Reserve, Xo-pol, Yucatecan semi-evergreen forest, 18°15.569'N 88°16.283'W, 6 m, 4–17.xii.2009, Malaise trap 11, C. Schüepp, 8 ♂ (BER); Sarteneja, Milpa de Babo, Farmland, 18°18.074'N 88°14.388'W, 3 m, 4–10.xii.2009, Malaise trap 9, C. Schüepp, 1 ♂ (BER); Sarteneja, Ramonal Milpa, Farmland, 18°16.33'N 88°16.578'W, 2 m, 4–10.xii.2009, Malaise trap 10, C. Schüepp, 1 ♂ (BER); Sarteneja, Shipstern Nature Reserve Headquarters, Forest Clearing, 18°19.068'N 88°10.968'W, 4 m, 22–28.xi.2009, Malaise trap, C. Schüepp, 1 ♂ (BER); Sarteneja, Mesatonich Road, Farmland, 18°19.847'N 88°8.776'W, 3 m, 11–17.xii.2009, Malaise trap 3, C. Schüepp, 1 ♀ (BER).

Hosts. In Belize unknown. In other countries: many species of Embiidina (Olmi 2005).

Distribution. Neotropical Region from Mexico to Argentina, in addition to the USA, Yemen and some Afro-tropical countries (Olmi 2005), Belize (new record).

Nomina dubia

The following name has not been associated with species in the body of the text, because the type specimens seem to be lost and the original description is unreliable.

Anteon bifasciatum Kieffer 1908

= *Callianteon bifasciatus* (Kieffer): Kieffer 1913b: 300.

Type locality. Belize.

The type (only known specimen) was a female specimen originally in Baker's collection. It has not been found in the main world dryinid collections (Olmí 1984). Kieffer (1913b) proposed for this species the new genus *Callianteon*.

Discussion

The checklist of Dryinidae and Sclerogibbidae of Belize presented in this paper includes one species of sclerogibbids and 18 species of dryinids, of which two new species, *Anteon dykeae* **sp. nov.** and *Dryinus schueepi* **sp. nov.**, are described herein. The description of each new species is based on the study of one only specimen. Usually the descriptions of new taxa should be based on more individuals. However, Dryinidae are so rare that it is not common to find more than one specimen of each species. Based on the experience and knowledge of one of the authors (Olmí), the two species are sufficiently characterized to justify their descriptions.

Thirteen (72%) of the 18 Belizean species of Dryinidae have a large geographic distribution in the Neotropics, in one case (*Anteon albitarse* (Cameron)) with an extension to the USA. One species (*Deinodryinus sublatifrons* Olmí) is recorded outside of Belize only from Costa Rica; *Dryinus belizensis* Olmí is known only from Mexico. Apparently, three species (16%) are endemic in Belize. In two districts (Belize and Orange Walk) no species are known. In Corozal, thanks to the research of one of the authors (Schüëpp), ten species are known. In the other districts the number of known species is very low: Cayo: two species; Stann Creek: four species; Toledo: two species. A comparison with other Neotropical countries where the dryinid fauna is best known indicates the research status on Dryinidae in Belize. In Costa Rica 148 species are recorded (Olmí 1993a; Olmí *et al.* 2000); in Brazil 147 species (Olmí 2011; Coelho *et al.* 2011); Argentina 130 species (Virla & Olmí 2008); in Venezuela 73 species (Olmí *et al.* 2000); in Mexico 135 species (Moya Raygoza & Olmí 2010). Belize can probably be best compared with Costa Rica due to the geographical proximity, the comparable size (Costa Rica 51100 km², Belize 22966 km²), and the high diversity of habitat types in both countries (e.g. dry, semi-deciduous forest, tropical wet forest, tropical montane forest, mangrove and littoral forest). From this comparison (Costa Rica 148 species, Belize 18 species) we conclude that the dryinid fauna of Belize is under-sampled and therefore insufficiently known. However, in both countries, the biology of dryinids (including their hosts) is almost unknown, resulting in large difficulties to compare the two faunas on the basis of ecological criteria. These difficulties arise from the collection methods used so far: instead of rearing dryinids directly from hosts, they were sampled mainly by Malaise and yellow pan traps. Dryinidae are important natural enemies of leafhoppers pests on cultivated plants. Some of them are currently used in biological control programmes in several countries (Olmí 2000).

The Sclerogibbidae require more research in Belize. The second and common Neotropical species of *Probethylus*, *P. schwarzi* Ashmead 1902, is probably present in that country. This species is known from all nearest countries: Mexico, Guatemala and Costa Rica (Olmí 2005).

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