



Revision of the species of the New World genus *Augochlora* (Hymenoptera, Halictidae) occurring in the southern temperate areas of its range

MILAGROS DALMAZZO & ARTURO ROIG-ALSINA

Museo Argentino de Ciencias Naturales “Bernardino Rivadavia”, Av. Angel Gallardo 470, 1405, Buenos Aires, Argentina.

E-mail: milidalmazzo@yahoo.com

Abstract

Augochlora is a genus of mainly tropical bees, with few representatives in both North and South American temperate areas. In this contribution we present a taxonomic review of the species with southernmost distribution. Only five species occur in central Argentina and Uruguay, between 30° and 40° south latitude: *A. iphigenia* Holmberg, *A. amphitrite* (Schrottky), *A. nausicaa* (Schrottky), *A. phoemonoe* (Schrottky) and *A. daphnis* Smith. The first four species are common elements in the bee assemblages of the area. The fifth species, from Montevideo, Uruguay, is known from the type specimen only. Re-descriptions of all species, as well as illustrations, distributional data, and taxonomic keys are presented. A lectotype is designated for *Augochlora iphigenia* Holmberg, 1886. *Oxystoglossa semiramis* Schrottky, 1911, and *Halictus brochidens* Vachal, 1911, are new synonyms of *A. iphigenia* Holmberg. *Odontochlora thebe* Schrottky, 1909, is a new synonym of *Odontochlora amphitrite* Schrottky, 1909.

Key words: Augochlorini, Pampean Region, Argentina, Uruguay, taxonomy

Introduction

The tribe Augochlorini is exclusive of the New World, with its highest diversity in the tropical areas, both at the generic and specific levels (Michener 2007). Most species of *Augochlora* Smith, which together with *Augochloropsis* Cockerell are the most species-rich genera in the tribe (Moure 2007), are indeed tropical. The genus has a broad distribution, from southern Canada, to the province of Buenos Aires in Argentina. According to Moure (2007), *Augochlora* includes 120 species classified in the nominal subgenus and the subgenus *Oxystoglossella* Eickwort, whereas a further six species has not been assigned to any of the two subgenera. There is no comprehensive revision of the species in the genus to date.

The diversity of *Augochlora* decreases drastically in temperate areas. A single species occurs in southern Canada and in eastern and central United States, while in southern United States five species have been recorded (Moure & Hurd 1987). In Argentina the greatest diversity occurs in two northern regions, the Yungas in the northwest, and the Paranaense forests in the northeast, but the subtropical xeromorphic Chaco region also has an important number of species. In the Pampean region *Augochlora* is represented by a reduced number of species. A similar trend occurs in Brazil, where in the state of Rio Grande do Sul the richest fauna is distributed in the northern parts of the state, whereas in the southern areas, namely the Pampa, Central Depression, Planalto Sul-Riograndense and southern parts of the Coastal Plain, only five or six species are present (Wittmann & Hoffman 1990). The genus is absent in xeric areas, such as the Monte and Patagonian regions in Argentina, in the western Andean areas in Argentina, as well as in Chile.

We have set our study area south of parallel 30° south latitude. Only five species occur in this vast region that includes all Uruguay and central Argentina, between 30° and 40° south latitude: *A. iphigenia* Holmberg, *A. amphitrite* (Schrottky), *A. nausicaa* (Schrottky), *A. phoemonoe* (Schrottky) and *A. daphnis* Smith. The first four species are common elements in the bee assemblages of the studied area, but the fifth species, described from Montevideo, Uruguay, is known in the area from the type specimen only. Additionally, some specimens from southern Brazil were examined.

The monophyly of *Augochlora* and its relationships to other genera of Augochlorini has been studied by Danforth and Eickwort (1997), Engel (2000), and Coelho (2004). According to Engel (2000), the genus belongs to the monophyletic *Augochlora*-group, comprising (*Augochlorella* (*Ceratalictus*, *Pereirapis*) (*Augochlora*)). These relationships are also supported by Coelho (2004), who indicated as autapomorphies of *Augochlora* the acute epistomal sulcus; the anterior angle of the hypostomal ridge angled; the dorsal ridge of the penis valve present along the dorsal region, and the dorsal process of the gonostylus in the form of a ridge.

The systematics of *Augochlora* is in poor state, partly due to the brief and inadequate original descriptions, and to the loss of types, as is the case for many of the species described by Schrottky (Rasmussen *et al.* 2009). The study of a large number of specimens, as well as the reduced number of species in the area, has allowed us to clarify the identity of several of Schrottky's species in spite of the lost types.

Few studies on the biology of the species occurring in the area are available. *Augochlora* (*Oxystoglossella*) *iphigenia* nests in the soil, and is primitively eusocial (Michener & Lange 1958; Eickwort & Eickwort 1972, as *A. semiramis*). For the other species there is information for *A. (Augochlora) amphitrite*, which has been reported nesting in rotten wood (Sakagami & Moure 1967), and for *A. (Augochlora) nausicaa*, which is a pollinator of the orchid *Cyclopogon elatus* in Central Argentina (Benitez-Vieyra *et al.* 2006; Wiemer *et al.* 2008).

Material and methods

A total of 1148 specimens were studied. Specimens were loaned by the following institutions and curators: **IFML**, Instituto y Fundación "Miguel Lillo", Tucumán, (M. V. Colomo de Correa); **MACN**, Museo Argentino de Ciencias Naturales "Bernardino Rivadavia," Buenos Aires; **MLP**, Museo de Ciencias Naturales de La Plata, La Plata (A. Abrahamovich); **MFA**, Museo Provincial de Ciencias Naturales "Florentino Ameghino," Santa Fe, (V. Faccioli); **MNHNM**, Museo de Historia Natural de Montevideo (F. Scarabino); **FCE-HY**, Facultad de Ciencias, Universidad de la República, Montevideo (E. Morelli); **FAUBA**, Facultad de Agronomía, Universidad de Buenos Aires, Buenos Aires (J. P. Torretta); **NHML**, The Natural History Museum, London (D. G. Notton). Acronyms are used to indicate depositories of the specimens.

Morphological terminology follows Michener (2007) in general lines, but for genitalic structures Eickwort (1969) is followed, and the term metapostnotum is used instead of propodeal triangle (Brothers 1976). Harris (1979) is followed for the description of the sculpture. The following abbreviations are used: T1–T6, metasomal terga one to six, respectively; S1–S6, metasomal sterna one to six respectively; MOD, maximum diameter of median ocellus. All measurements in the text are in millimeters. In the description of the sculpture, the measurements refer to the diameter of the punctures. Total length was measured adding to the length of the head plus mesosoma that of the metasoma, since the latter is frequently down-curved. The forewing length was measured from the wing base to the apex of the marginal cell. Additional data of geographical distribution for species studied were extracted from Silveira *et al.* (2002) and Moure (2007).

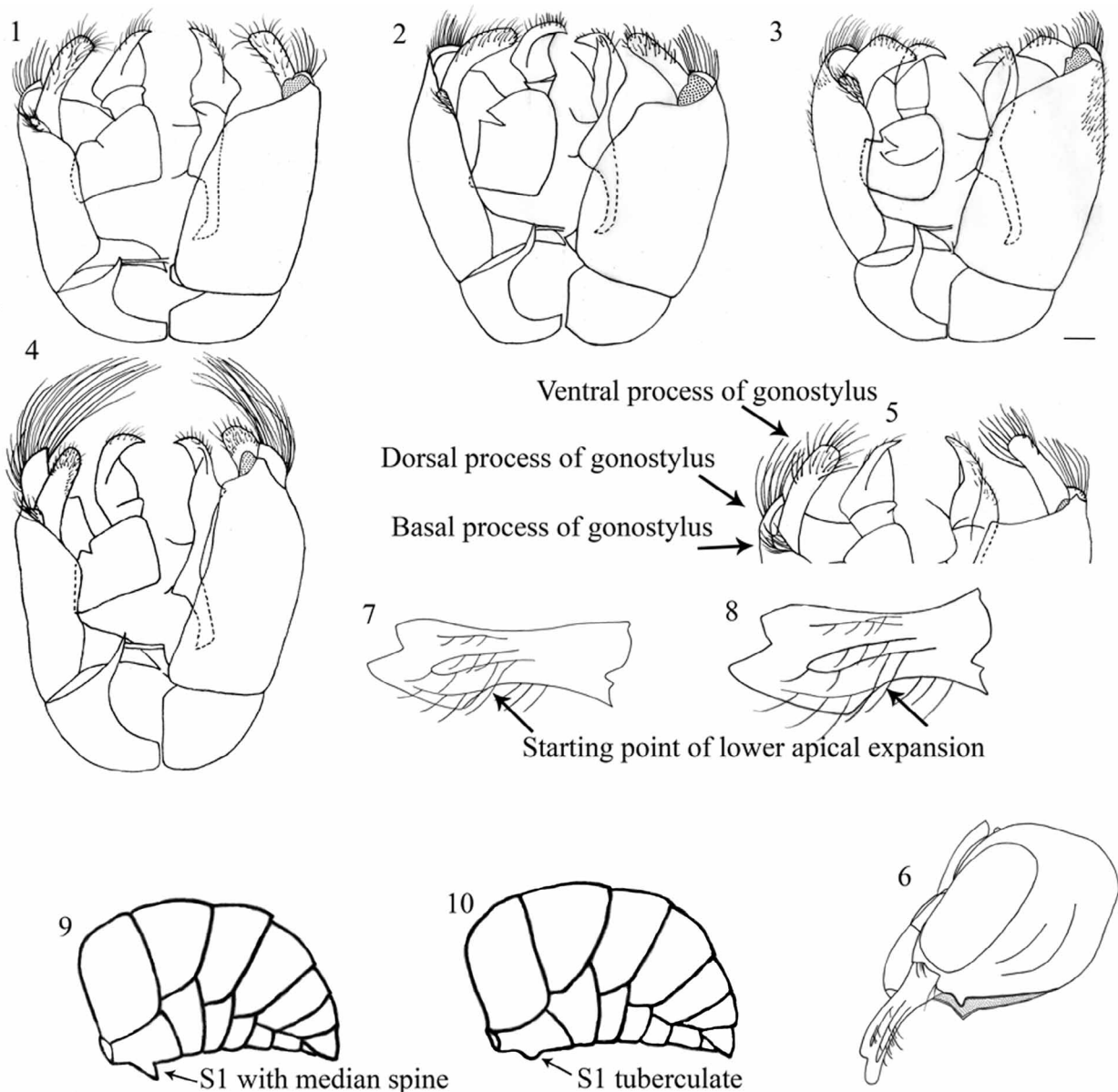
Key to the species of *Augochlora* occurring south of 30° latitude

Females (*A. daphnis* unknown)

- 1 Hypostomal carina elevated at angle, forming more or less developed tooth (Fig. 6); mandible without lower apical expansion (Fig. 6); body length 4–6 mm; median area of T5 with elongate, setae-like spicules pointing towards midline of area (Fig. 11) (subgenus *Oxystoglossella*) *A. iphigenia* Holmberg
- Hypostomal carina of uniform height, not elevated at angle; mandible with lower apical expansion (Figs. 7–8); body length 6.5–13.0 mm; median area of T5 with globose spicules (Fig. 12) (subgenus *Augochlora*) 2
- 2 Scutellum with median longitudinal furrow, sometimes reduced to median apical depression (Fig. 13); supraclypeal area rugulose between punctures (Fig. 14); frontal carina extending halfway between upper level of antennal socket and median ocellus; hind tibia with dark brown to black hairs *A. amphitrite* (Schrottky)
- Scutellum rather flat, without median longitudinal furrow; supraclypeal area smooth or weakly tessellate between punctures (Fig. 15); frontal carina reaching, or nearly reaching, median ocellus; hind tibia with whitish hairs 3
- 3 S1 with median spine (Fig. 9); mandible long, distance between base of mandible and starting point of lower apical expansion (outer view), longer than basal width of mandible (Fig. 7); middle trochanter broadened, with ventral margin arcuate in lateral view (Fig. 17); hind femur straight ventrally (Fig. 19) *A. phoemonoe* (Schrottky)
- S1 tuberculate (Fig. 10); mandible short, distance between base of mandible and starting point of lower apical expansion (outer view), equal or shorter than basal width of mandible (Fig. 8); mid trochanter with ventral margin straight in lateral view (Fig. 18); hind femur ventrally concave (Fig. 20) *A. nausicaa* (Schrottky)

Males

- 1 Metapostnotum in dorsal view as long as scutellum, and longer than metanotum; metasomal terga with apical bare bands poorly developed, with hairs nearly reaching apical margin (subgenus *Oxystoglossella*) *A. iphigenia* Holmberg
- Metapostnotum in dorsal view shorter than scutellum, as long as metanotum; metasomal terga with distinct apical bare bands (subgenus *Augochlora*) 2
- 2 Mesepisternum areolate-rugulose anterior to mesepisternal furrow and punctate posterior to furrow; scutellum with apical median depression 3
- Mesepisternum punctate anterior and posterior to mesepisternal furrow; scutellum rather flat, without apical median depression 4
- 3 Tegula entirely yellowish, without anterior green spot; dorsolateral angle of pronotum right angled, with rounded tip; longest hairs on median lateral area of mesepisternum 0.3 mm *A. daphnis* Smith
- Tegula brown to dark brown with anterior green spot, in some specimens yellowish on outer margin; dorsolateral angle of pronotum forming acute angle with pointed tip; longest hairs on median lateral area of mesepisternum 0.2 mm *A. amphitrite* (Schrottky)
- 4 Antenna with first flagellomere yellowish to light brown, contrasting with dark remainder of flagellum; basal area of labrum weakly striate, on lateral margin not reaching lateralmost setae (Fig. 22) *A. phoemonoe* (Schrottky)
- Antenna with first flagellomere dark, as remainder of flagellum; basal area of labrum strongly striate, on lateral margin reaching lateral most setae (Fig. 23) *A. nausicaa* (Schrottky)



FIGURES 1–10. 1–5, Genital capsule, ♂, ventral view (left), dorsal view (right), scale line: 0.1 mm. 1: *A. amphitrite* (Schrottky); 2: *A. nausicaa* (Schrottky); 3: *A. phoemonoe* (Schrottky); 4: *A. iphigenia* Holmberg; 5: *A. daphnis* Smith. 6: Head, lateral view of *A. iphigenia*, ♀. 7: Mandible of *A. phoemonoe*, ♀. 8: Mandible of *A. nausicaa*, ♀. 9: Metasoma, ♀, S1 with median spine. 10: Metasoma, ♀, S1 tuberculate.

***Augochlora (Oxystoglossella) iphigenia* Holmberg**

(Figs. 4, 6, 11, 16, 24)

Augochlora iphigenia Holmberg 1886: 179–181 (two females from Argentina, Buenos Aires, La Tinta and Tandil). Female lectotype (hereby designated) from province of Buenos Aires, south of La Tinta, II-7-1883, in MACN. Dalla Torre 1896: 95. Schrottky 1903: 180. Schrottky 1913: 242. Silveira *et al.* 2002: 178.

Oxystoglossa semiramis Schrottky 1911: 78 (females from Brazil, S. Paulo: Ypiranga and Jundiáhy; types in the Museu de Zoologia, Universidade de São Paulo, not examined). Moure 1940b: 58. Moure 1943: 151. **New synonym.**

Halictus brochidens Vachal 1911: 22 (females from Brazil and Argentina: Buenos Aires and Santa Fe) Lectotype from Buenos Aires designated by Moure & Hurd (1987: 274), in Muséum national d'Histoire naturelle, Paris, not examined. Cockerell 1914: 325. **New synonym.**

Augochlora semiramis: Michener & Lange 1958: 487–489. Jakobi 1964: 73, 74. Sakagami & Moure 1965: 308–309. Sakagami *et al.* 1967: 270, 273, 282. Sakagami & Moure 1967: 133–134.

Augochlorella iphigenia: Ordway 1966: 512. Moure & Hurd 1987: 250. Moure 2007: 773.

Augochlora (Oxystoglossella) semiramis: Eickwort & Eickwort 1972: 19, 26, 32, 41, 42. Laroca *et al.* 1982: 101. Moure & Hurd 1987: 274. Wittmann & Hoffman 1990: 30. Silveira *et al.* 2002: 178. Moure 2007: 771.

Holmberg's *A. iphigenia* has been interpreted in the past as belonging to the genus *Augochlorella*. Recently, B. Coelho, who examined the specimen presently designated as the lectotype, realized that it was not an *Augochlorella* (Coelho, in Silveira *et al.* 2002), but she did not indicate the proper assignment for the species. Our study indicates that *A. iphigenia* is the valid name of the common, widespread species of the subgenus *Oxystoglossella* of *Augochlora*, previously treated with the name of *A. semiramis* Schrottky.

The lectotype specimen hereby designated of *A. iphigenia* bears the following labels: a small green triangle with the date "II/7/83," a small white label "Tipo," and a large white label bordered with red "Iphigenia Holmb." in Holmberg's handwriting. The date indicates that this is one of the two females mentioned in the original description, the one from the margins of the Collon-gueyú creek, south of La Tinta in the province of Buenos Aires, collected on black thistle. The second specimen mentioned by Holmberg is lost.

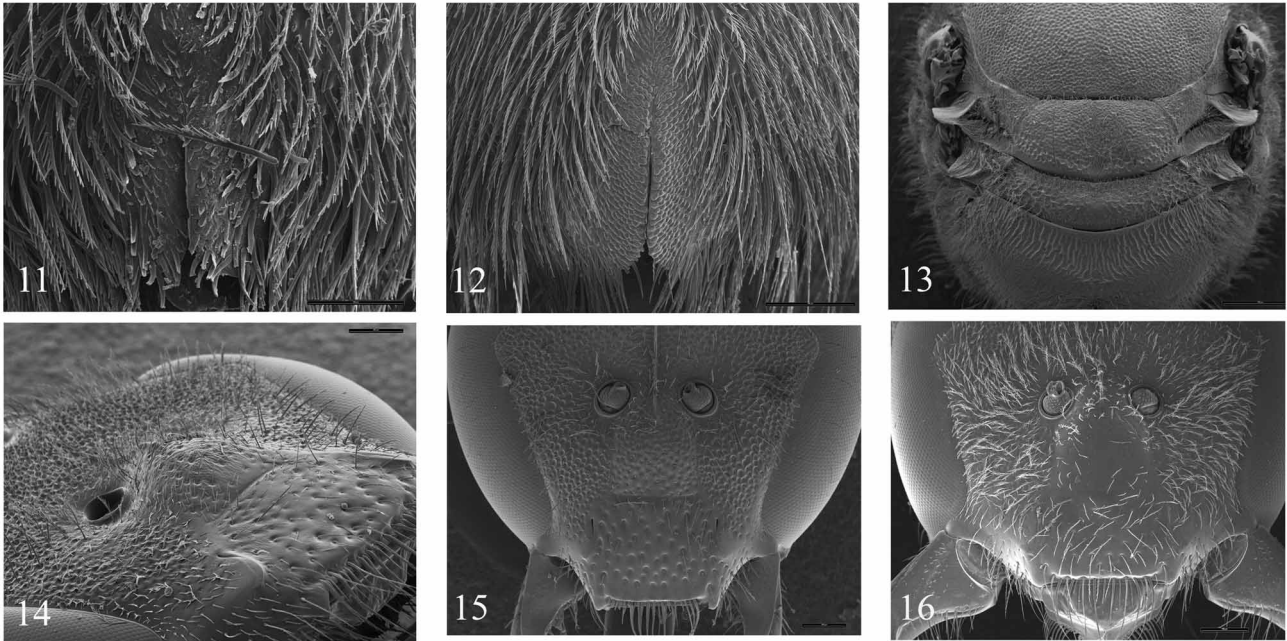
The lectotype specimen is in poor condition: it lacks the head, the left foreleg, the right foreleg beyond the femur, the left wings, and the distal tarsomeres of both hind legs. Nevertheless, the typical hind tibial spur, the size, and the sculpture and pubescence of the meso and metasoma, allow to identify the species with certainty. Holmberg (1886), in the detailed original description, mentions for the head the convex, shiny supraclypeal area with sparse punctures characteristic of this species, as well as the tooth on the hypostomal carina ("...*rima cibaria marginata, parallela, antice curvatim ampliata.*").

Diagnosis. This species is readily distinguished from other species in the study area by the small size, the poorly developed black bare apical bands on the metasomal terga of both sexes, the hypostomal carina of the female forming a tooth at the angle, and the basal area of the metapostnotum of the male nearly as long as the scutellum and longer than the metanotum. It is distinguished from other species of *Oxystoglossella* that occur north of the studied region, by the polished supraclypeal area, with small, scattered punctures.

Female. Length of body 4.00–6.00; length of forewing, 3.25–3.85; maximum width of head, 1.10–1.50; length of head 1.50–2.00; ocello-ocular distance 2.0–2.8 times MOD. **Color.** Bright metallic green with golden tints. Following parts black: base of mandible, apical band on clypeus (as long as 0.2–0.3 times length of clypeus), scape, pedicel, dorsal surface of flagellum, coxae, trochanters, femora except apex, hypostomal area, and metasomal sterna. Labrum, apex of mandible, ventral surface of flagellum, narrow apical bands on T1–T5 brown to dark brown (on T2 0.6 times MOD). Tegula, tibiae, and tarsi light brown to yellowish brown. Wings hyaline, with yellowish-brown veins and pterostigma.

Pubescence. White, plumose, except as noted. Hairs dense on paraocular area (0.03–0.18) and frons (0.06–0.32). Clypeus with sparse, short (0.04–0.05) and long (0.28–0.32) simple to short-branched hairs; supraclypeal area with sparse, short (0.03–0.04) and long hairs (0.16–0.18). Light brown setae on mandible (0.22) and on apex of labrum. Disc of scutum with short (0.04–0.07) and long hairs (0.20–0.24), longer hairs on scutellum (0.40); hairs long on metanotum (0.24) and on lateral area of mesepisternum (0.12–0.24). Hind femur with long scopal hairs (up to 0.52), hind tibia and basitarsus with shorter hairs on outer surface. Disc of T1–T4 with dense hairs, on disc of T2 (0.03–0.12); T1–T4 with narrow bare apical bands; T5 with erect brown hairs (up to 0.22) and median area with elongate, setae-like spicules pointing towards midline of area; sternal hairs long, on S2 up to 0.54.

Sculpture. Clypeus smooth and shiny between punctures; with large punctures (0.03–0.05) separated by 1–2 times their diameter; supraclypeal area smooth and shiny, with scattered small punctures (0.02–0.03). Disc of scutum with dense small punctures (0.02) and interspersed larger ones (0.04); interspaces smooth and shiny. Scutellum shiny, with very small punctures on disc, larger posteriorly (0.01–0.02). Metanotum finely rugulose. Mesepisternum with small (0.02–0.03), dense punctures and shiny interspaces on hypoeimeral area and below scrobal furrow; anterior to mesepisternal furrow finely rugulose. Basal area of metapostnotum finely striate; striae radiating, medially irregular, anastomosed, and laterally regular, parallel. Disc of T2 finely punctate (0.004–0.01), shiny between punctures.



FIGURES 11–16. 11: T5 of *A. iphigenia* Holmberg, ♀. 12: T5 of *A. amphitrite* (Schrottky), ♀. 13: Scutellum of *A. amphitrite*, ♀. 14–16: Head, frontal view, ♀—14: *A. amphitrite*; 15: *A. nausicaa* (Schrottky); 16: *A. iphigenia*. Scale lines: Fig. 11: 0.1 mm; Fig. 12: 0.2 mm; Fig. 13: 0.5 mm; Figs. 14–16: 0.2 mm.

Structure. Frontal carina extending halfway between upper level of antennal socket and median ocellus. Mandible without lower apical expansion, but trimmal expansion on upper margin sinuose, large, particularly in macrocephalic females. Hypostomal carina elevated at angle, forming more or less developed tooth (Fig. 6). Lateral angle of pronotum forming slightly obtuse angle. Scutellum flat. Middle trochanter in lateral view with ventral margin gently curved. Hind femur ventrally concave. S1 without median spine or tubercle.

Male. Length of body 4.75–6.00; length of forewing, 3.50–3.70; maximum width of head, 1.00–1.55; length of head 1.50–1.75; ocello-ocular distance 1.7–2.0 times MOD. **Color.** Bright metallic green with golden tints. Following parts black: scape, pedicel, dorsal surface of flagellum, hypostomal area, narrow apical bands on terga (on T2 0.35 times MOD), T6 entirely, and metasomal sterna. Clypeus with narrow (0.02) apical band yellowish to brown, labrum yellowish, mandible yellowish brown. Ventral surface of flagellum pale brown. Tegula yellowish brown to brown, with translucent anterior margin and without green marks. Trochanters and femora black with green reflections, tibiae and basitarsi yellowish to yellowish brown, but tibiae suffused with black dorsally; other tarsomeres yellowish brown to brown.

Pubescence. With white, abundant, plumose hairs. Hairs densely distributed on paraocular area (0.06–0.22) and frons (0.08–0.26). Clypeus and supraclypeal area with hairs slender, sparser than on other parts of head; on clypeus short (0.06–0.07) and long hairs (0.16–0.18), on supraclypeal area short (0.05–0.06) and long hairs (0.18–0.20). Setae on mandible white (0.16), yellowish on labrum. Hairs dense on lateral angle of pronotum; scutum with short (0.04–0.06), and long hairs (0.20–0.24). Length of hairs on scutellum (0.28); on metanotum (0.30), on lateral area of mesepisternum (0.06–0.14). T1–T5 with dense hairs (on disc of T2 0.04–0.12) and narrow bare apical bands; erect hairs on T6 (0.16), hairs on S1–S6 light brown, longer on S2 (0.24).

Sculpture. Clypeus smooth and shiny between punctures, with moderate punctures (0.03–0.04); supraclypeal area with scattered, small, shallow punctures (0.02–0.03); interspaces smooth and shiny. Disc of scutum with small

punctures (0.02–0.04), separated by 0.5–1.0 puncture diameter; interspaces smooth and shiny. Scutellum shiny, with small punctures on disc (0.02), larger posteriorly (0.04). Mesepisternum with small (0.02–0.05), dense punctures and shiny interspaces on hypopimeral area and below scrobal furrow; anterior to mesepisternal furrow finely rugulose. Basal area of metapostnotum finely striate; striae radiating, irregular, anastomosed medially, and regular, parallel, laterally. Disc of T1–T4 finely punctate (punctures on disc of T2 0.01–0.02).

Structure. Basal area of labrum striate, along midline approximately one fourth of labral length, on lateral margin not reaching lateralmost setae. Basal process of gonostylus small, with short setae. Ventral process of gonostylus with short setae restricted to apex; apex rounded. Dorsal process of gonostylus bearing very long setae that surpass ventral process.

Variation. Females of this species present cephalic polymorphism. Larger females have considerably swollen vertex and genae. The observed allometry agrees with the allometry described by Sakagami & Moure (1965).

Distribution. Argentina: Buenos Aires, Chaco, Córdoba, Entre Ríos, Misiones, Santa Fe, San Luis. Brazil: Distrito Federal, Minas Gerais, Paraná, Rio Grande do Sul, São Paulo (according to Silveira *et al.* 2002; Moure 2007). Uruguay: Canelones, Colonia, Montevideo, Maldonado.

Material studied. Argentina, Buenos Aires: MACN: 1♀: “12270”; 7♀: “12286”; 1♀: 9-XII-1902, J. Brèthes; 1♀: 24-II-1903, J. Brèthes; 3♀: 5-III-1903, J. Brèthes; 1♀: 12-X-1903, J. Brèthes; 1♀: 8-XII-1903, J. Brèthes; 2♀: 4-IV-1904, J. Brèthes; 1♀: 8-XII-1905, J. Brèthes; 1♀: 29-I-1906, J. Brèthes; 1♀: 16-II-1906, J. Brèthes; 2♀: 2-III-1907, J. Brèthes; 1♀: 29-III-1907, J. Brèthes; 2♀: 22-X-1907, J. Brèthes; 1♀: 25-XII-1907, J. Brèthes; 4♀: IV-1907, J. Brèthes; 2♀: 20-I-1908, J. Brèthes; 1♀: 22-XI-1908, J. Brèthes; 2♀: 8-XII-1908, J. Brèthes; 1♀: 21-XII-1908, J. Brèthes; 1♀: I-1909, J. Brèthes; 5♀: 3-I-1909, J. Brèthes; 1♀: 9-I-1909, J. Brèthes; 1♀: 12-I-1909, J. Brèthes; 1♀: 2-II-1909, J. Brèthes; 1♀: 25-II-1909, J. Brèthes; 2♀: 24-III-1909, J. Brèthes; 1♀: 8-IV-1910, J. Brèthes; 3♀: 13-XI-1911, J. Brèthes; 1♀: 5-XI-1914, J. Brèthes; 1♀: 6-XI-1915, J. Brèthes; 1♀: 26-XII-1919, J. Brèthes; 1♀: 15-I-1922, J. Brèthes; 1♀: 17-IV-1923, J. Brèthes; 1♀: Castelar INTA, Jardin Botánico, 22-XI-1998, Col. A. Roig A.; 4♀: Ciudad Autónoma, 30-X-2008, Col. M. Dalmazzo; 1♀: Escobar, Maquinista Savio, 5-I-1997, on *Baccharis pingrae*, Col. A. Roig A.; 5♀, 5♂: Escobar, Maquinista Savio, 5-I-1997, on *Vernonia rubricaulis*, Col. A. Roig A.; 1♀, 1♂: Escobar, Maquinista Savio, 6-I-1998, Col. A. Roig A.; 1♀: Escobar, Maquinista Savio, 6-I-1998, on *Grindelia sp.* Col. A. Roig A.; 3♀: Esteban Echeverría, 8km SW Guernica, 9-X-1999, Col. A. Roig A.; 2♀: Florencio Varela 5Km SE, Bosques, 13-XI-1996, Col. A. Roig A.; 1♀: Florencio Varela 5Km SE, Bosques, 29-XI-1998, Col. A. Roig A.; 2♀: Flores, 19-III-1915; 1♂: Laguna La Brava, 3-I-2009, on *Picris echioides*, Col. R. González V.; 1♀: Luján, H. H. Maristas; 1♀: Magdalena, 16-XI-1985, Col. Moffatt; 9♀: Magdalena 17Km E, 16-XI-1985, Col. Moffatt; 9♀: a 20 Km SE Magdalena, Ea. El Destino, 25-II-2000, A. Roig A.; 2♀: a 20 Km SE Magdalena, Ea. El Destino, 25-II-2000, on *Bacchais pingraea*, A. Roig A.; 1♀: a 20 Km SE Magdalena, Ea. El Destino, 25-II-2000, on *Sida rhombifolia*, A. Roig A.; 1♂: a 20 Km SE Magdalena, Ea. El Destino, 25-II-2000, on *Viguiera anchusaefolia*, A. Roig A.; 1♀: Moreno, “45268”; 8♀: Moreno, La Reja, 8-XI-1992, Col. A. Roig A.; 1♀, 2♂: Moreno, Parque Muñiz, 26-II-2003, Col. L. Compagnucci; 2♂: Moreno, Reja Grande, 13-II-2000, A. Roig A.; 1♀, 3♂: Otamendi, 21-XII-1994, Col. A. Roig A.; 2♀: Punta Indio, 11-X-2005, Col. L. Compagnucci; 2♀: Saavedra, Ao. Sauce Chico, Gran Chaco, 23-XII-1997, Col. A. Roig A.; 1♀: San Antonio de Areco, 5-XII-2004, Col. L. Compagnucci; 1♀: San Fernando, 30-I-1954; 1♀: San Isidro, 10-III-1916, Col. C. Amadeo; 1♀, 1♂: San Isidro, Martínez, 15-III-1993, Col. A. Roig A.; 1♀: San Isidro, Refugio Ribera Norte, 20-I-2009, Col. R. González V.; 1♀: San Isidro, Refugio Ribera Norte, 20-I-2009, on *Sida rhombifolia*, Col. R. González V.; 3♂: San Isidro, Refugio Ribera Norte, 20-I-2009, on *Cichorium intybus*, Col. R. González V.; 10♂: San Isidro, Refugio Ribera Norte, 20-I-2009, on *Baccharis salicifolia*, Col. R. González V.; 1♀: San Miguel, F-C-P, 21-IV-1938, Col. S.I.Nóvoa; 1♀: San Miguel, 11-IV-1955, Col. P. Riviere; 4♀: Arg., Bs. As., San Pedro, 3-I-2009, Col. A. Roig A.; 27♀: Sierra de los Difuntos, 12-I-2009, on *Picris echioides*, Col. R. González V.; 1♀: Sierra de los Difuntos, 16-I-2009, Col. R. González V.; 36♀: Sierra de los Difuntos, 16-I-2009, on *Picris echioides*, Col. R. González V.; 8♀: Sierra de los Difuntos, 16-I-2009, on *Carduus sp.*, Col. R. González V.; 5♀: Sierra de los Difuntos, 27-XII-2009, on *Picris echioides*, Col. R. González V.; 1♀: Tandil, sierras, 11-I-2008, Col. M. Sabatino; 1♀: Tigre 12Km NO, 15-I-1990, Col. A. Roig A. & L. Moffatt; 1♀: Tigre 12Km NO, 15-I-1990, on *Echinodorus sp.* Col. A. Roig A. & L. Moffatt; 1♀: Tigre 12Km NO, 15-I-1990, on *Grindelia sp.* Col. A. Roig A. & L. Moffatt; 2♀, 1♂: Tigre 12Km NO, 26-II-1993, on *Sphaeralcea sp.* Col. A. Roig A.; 1♂: Tigre 12Km NO, 26-I-2006, on *Eryngium sp.* Col. A. Roig A.; 1♀: Tigre, Delta, 15-XII-2002, Col. L. Compagnucci; 1♀: Tornquist, Villa Ventana, 22-XII-1997, A. Roig A.; 6♀: Tornquist, Villa Ventana, 18-II-1999, A. Roig A. **FAUBA:** 2♀: Magdalena Ea. Carretero, 9-IX-1999, Col.

A. Basilio; 2♀: Magdalena Ea. Carretero, 23-III-2000, Col. A. Basilio; 1♀: Magdalena Ea. Carretero, 22-V-2000, Col. A. Basilio; 6♀, 6♂: Magdalena Ea. San Isidro, 23-III-1999, Col. A. Basilio; 1♀: Magdalena Ea. San Isidro, 3-VII-1999, Col. A. Basilio; 2♀: Magdalena Ea. San Isidro, 23-VIII-1999, Col. A. Basilio. **Chaco: MACN:** 1♀: “213”, “6879”. **Córdoba: MACN:** 6♀: Agua de Oro, XII-1939, Col. J. De Carlo; 6♀, 3♂: Agua de Oro, II-1940, Col. J. De Carlo; 1♀, 1♂: Alta Gracia, I-1909, Col. L. Vigil; 1♂: Charbonier 2km N, 23-XII-2006, Col. A. Roig A.; 3♀: El Durazno, 17-X-1999, on *Echinopsis aurea*, Col. B. Schlumpberger; 1♀: El Durazno, 15-XI-1999, on *Echinopsis aurea*, Col. B. Schlumpberger; 1♀: Huerta Grande, 21-II-2006, Col. J.J. Martinez; 2♀: Los Cocos, III-1929; 5♀, 2♂: Salsacate, Cruz del Eje, San Marco Sierra, Carlos Molinas, I-1979, Col. M. Viana; 1♀: San Javier, La Paz, 31-XII-1928, “24153”, Col. C. Bruch; 3♀: San Marcos Sierra 12km SE, 23-XII-2006, Col. A. Roig A.; 1♀: San Marcos Sierra, 23-XII-2006, Col. A. Roig A. **IFML:** 1♀: Alta Gracia, 18-XI-1975, Col. A. Willink; 12♀: Bialet Massé, 11-I-1976, Col. A. Willink; 1♀: Punilla, Huerta Grande, II-1947, Col. Villafañe; 2♀: Villa Ciudad de América, Dique los Molinos, I-1981, Col. A. Willink. **Entre Ríos: MACN:** 1♀, 1♂: Gualaguaychú, Col. H. Rossi; 1♀: Gualaguaychú, 19-IV-1924, Col. M.D. Jurado; 2♀, 1♂: La Paz, Los Algarrobos, I-1952, Col. R.L. Orfila; 2♀: Palmar de Colón, Intendencia, I-2001, Col. G. Roitman; 1♀: Pronunciamento, III-1973, Col. G. J. Williner. **IFML:** 1♀: Villaguay, 3-II-1959, Col. Ajmar & Bennasar; **FAUBA:** 1♀: Paraná, 18-XII-2004, on *Rapistrum rugosum*, Col. J.P. Torretta & N. Montaldo; 1♀: Paraná, 18-XII-2004, on *Sphaeralcea bonariensis*, Col. J.P. Torretta & N. Montaldo. **Misiones: MACN:** 5♀: “7028”; 85♀: “7517”; 1♀: Posadas, “7517”; 4♀, 1♂: Puerto Aguirre, III-1934, Col. Kenet & Haiward; 4♀: Puerto Bemberg, 7-XII-1933, Col. Haiward. **San Luis: MACN:** 2♀, 5♂: Cortaderas, 20-II-2005, Col. A. Roig A.; 1♀: El Totoral, 3-I-2003, Col. L. Compagnucci; 8♀: Merlo, 30-XII-2002, Col. L. Compagnucci; 2♀: Pancanta, Las Verbenas, 26-II-2003, Col. A. Roig A.; 1♂: Paso de los Funes, II-1926, “28317”. **Santa Fe: MACN:** 1♀: Santo Tomé, X-1925, Col. J. Pellerano; 1♀: El Pozo, 1-X-2004, Col. M. Dalmazzo; 1♀: Santa Clara de Buena Vista, 8-X-2006, Col. M. Dalmazzo. **Uruguay: MACN:** 1♀, 1♂: Colonia; 1♀: I-1950; 1♀, 1♂: Montevideo, 25-II-1909, Col. J. Brèthes; 1♀: Piriápolis, Col. A. Stevenin. **FCE-HY:** 1♀: Arroyo Laureles, 12-II-1954, Col. F.H.C.; 1♀: Canelones, Suarez, 15-I-1963; 1♀: Montevideo, Malvin, 19-XII-1965, Col. F. Achaval; 1♀: Montevideo, P. Rivera, XII-1965, Col. F.M.Esc.; 1♀: Canelón Chico, 8-X-2006, Col. E. Santos & E. Martínez; 22♀, 10♂: Canelones, Sauce, I-2006, Col. E. Santos; 11♀, 1♂: Canelones, Sauce, 26-I-2006, Col. E. Santos; 2♀: Canelones, Sauce, 24-XI-2006, Col. E. Santos; 1♀, 1♂: Canelones, Sauce, I-2007, Col. E. Santos; 10♀: Canelones, Sauce, 28-I-2007, Col. E. Santos; 2♀, 1♂: Canelones, Sauce, 25-II-2007, Col. E. Santos. **MNHM:** 1♀: “0447”; 1♀: “0448”.

Floral records: *Baccharis pingraea*; *Baccharis salicifolia*; *Carduus* sp.; *Cichorium intybus*; *Echinodorus* sp.; *Echinopsis aurea*; *Eryngium* sp.; *Grindelia* sp.; *Picris echioides*; *Rapistrum rugosum*; *Sida rhombifolia*; *Sphaeralcea bonariensis*; *Vernonia rubricaulis*; *Viguiera anchusaefolia*.

Augochlora (Augochlora) amphitrite (Schrottky)

(Figs. 1, 12, 13, 14, 21)

Odontochlora amphitrite Schrottky 1909: 142 (females from Argentina, Buenos Aires and La Plata, types lost). Schrottky 1911: 74. Schrottky 1913: 241. Moure 1940a: 466. Moure 1940b: 58. Moure 1941: 45.

Odontochlora thebe Schrottky 1909: 143–144 (male from Argentina, Buenos Aires, type lost). Schrottky 1911: 74. **New synonym**

Augochlora amphitrite: Sakagami *et al.* 1967: 264, 270, 273. Sakagami & Moure 1967: 134–136, Figs. 11–12. Eickwort & Eickwort 1973: 17.

Augochlora (Augochlora) amphitrite: Moure & Hurd 1987: 256. Wittmann & Hoffman 1990: 29. Moure 2007: 760.

Augochlora (Augochlora) thebe: Moure & Hurd 1987: 270. Moure 2007: 768.

Schrottky's original description of *A. amphitrite* leaves no doubt about the identity of this species. He mentioned for the female two characters that are diagnostic: the scutellum medially with a longitudinal impression, and the frontal carina not reaching the median ocellus. He also mentioned the characteristic large size (10 mm long), and the sparsely punctate clypeus and later (Schrottky 1911), mentioned another characteristic feature of *A. amphitrite*, the rugulose sculpture of the supraclypeal area.

According to the original description of *O. thebe*, the lost type was a large male (10 mm long) with the first metasomal sternum tuberculate and the scutellum medially depressed. There is only one species of *Augochlora* in

Buenos Aires with this combination of characters, and corresponds to the male of *A. amphitrite*. All other characters mentioned by Schrottky in the original description of *O. thebe* also agree with the present species. Moreover, males of *A. amphitrite* run to *O. thebe* in the key to species of *Odontochlora* published by Schrottky two years later (Schrottky 1911).

In the same work, Schrottky (1911) keyed out males with a spiniform projection on the first metasomal sternum and black hairs on the mesonotum as *A. amphitrite*. Males of *A. amphitrite* studied by us have S1 tuberculate, not with a sharp spine, and the hairs on the scutum are at most yellowish brown. We suggest that the male(s) referred to *A. amphitrite* by Schrottky in that key may correspond to a different species. No species in the studied area has males with a sharp spine on the first metasomal sternum.

Diagnosis. This species is readily distinguished by the scutellum with a median longitudinal furrow in both sexes. The female has the supraclypeal area rugulose between punctures, the frontal carina extends halfway between the upper level of the antennal socket and the median ocellus, the hind tibia and basitarsus have dark brown to black hairs, and T2–T3 with rather broad apical black bands, as long as the diameter of the median ocellus. The male is distinguished by the clypeus with an apical yellowish band or apical lateral marks, the black base of the mandible with a green spot, the entirely dark first flagellomere, and the presence of a more or less developed tubercle on S1.

Female. Length of body 7.7–13.0; length of forewing, 4.7–6.0; maximum width of head, 2.00–3.25; length of head 1.90–2.75; ocello-ocular distance 1.5–2.0 times MOD. **Color.** Metallic green with some bluish tints, some specimens with golden reflections mainly on face and propodeum; some specimens metallic blue with violet tints. Mandible dark brown with small green spot at base; labrum dark brown to black. Hypostomal area blackish with green tints. Scape, pedicel and first flagellomere black, rest of flagellar dorsal surface dark brown to black and ventral surface paler. Clypeus with black apical band one fifth as long as clypeus. Tegula dark brown with green anterior spot. Legs black, anterior and hind coxae, anterior surface of trochanters, and under surface of forefemur, with green tints. T1–T4 with apical black bands (on T2 0.9–1.0 times MOD), T5 black, sterna black. Wings hyaline with light brown veins and pterostigma.

Pubescence. Head with plumose hairs, white on frons (0.06–0.30), dark brown around ocelli, and on paracocular area (0.02–0.20). Clypeus with light brown, sparse, simple, short (0.04–0.05) and long hairs (0.20–0.24); supraclypeal area with short (0.06–0.08) and long hairs (0.14–0.16). Setae on mandible white (0.40), labrum with apical brown setae. Disc of scutum with black, sparse hairs (0.05–0.20), and paler, light brown to brown, denser, shorter hairs; scutellum similarly with black long hairs (0.60), and paler, short hairs; hairs long on metanotum (0.54), and on lateral area of mesepisternum (up to 0.40). Hind femur with long, light brown scopal hairs (up to 0.70), hind tibia and basitarsus with dark brown to black hairs on outer surface. Disc of T2–T4 with short, white pubescence and sparse, erect black hairs, on disc of T2 (0.04–0.10) and (0.12) respectively; T5 with black hairs (0.14). Hairs on S1–S5 whitish, on S2 (up to 0.80), on S6 light brown.

Sculpture. Clypeus polished, with large punctures (0.01–0.04), sparser medially and closer laterally; supraclypeal area rugulose, with shallow, rather dense punctures (0.02–0.05). Disc of scutum with dense punctures (0.03–0.05), on center of disc separated by 0.2–0.5 puncture diameters. Scutellum with dense punctures, very small anteriorly (0.02–0.03). Median area of metanotum finely rugulose and laterally areolate-rugulose. Mesepisternum with small, dense punctures (0.02–0.05) and shiny interspaces on hypoepipimeral area and below scrobal furrow; anterior to mesepisternal furrow areolate-rugulose. Upper part of metapleuron striate. Basal area of metapostnotum entirely striate; striae irregular medially, and regular, parallel, laterally. Disc of T2 with fine shallow punctures (0.02–0.03).

Structure. Frontal carina extending halfway between upper level of antennal socket and median ocellus. Mandible long, distance between base of mandible and starting point of lower apical expansion (outer view), longer than basal width of mandible (1.25–1.45). Apex of clypeus medially depressed. Lateral angle of pronotum forming acute angle. Scutellum with median longitudinal furrow, sometimes reduced to median apical depression. Middle trochanter elongate, with ventral margin straight in lateral view. Hind femur ventrally concave. S1 always with median spine, usually high and sharply pointed, but sometimes low and less pointed.

Male. Length of body 8.5–9.3; length of forewing, 4.7–5.0; maximum width of head, 2.0–2.2; length of head 2.25–2.50; ocello-ocular distance 1.3–2.0 times MOD. **Color.** Similar to that of female, except as follows: mandible yellowish brown to brown but base black with green spot; labrum yellowish brown; hypostomal area black; clypeus with apical yellowish band, sometimes reduced to lateral marks; scape, pedicel, first flagellomere and base of second black, rest of flagellar dorsal surface dark brown to black and ventral surface paler; coxae, trochanters

and femora black with green tints, tibiae and tarsi dark brown; T1–T6 with black apical bands, (on T2 0.75–1.10 times MOD); S1 with blue tints, S2–S6 dark brown.

Pubescence. With white, abundant, plumose hairs. Hairs dense on paraocular area (0.05–0.24) and frons (0.08–0.30). Clypeus and supraclypeal area with light brown hairs simple, sparser than on other parts of head; on clypeus short (0.04–0.08) and long hairs (0.18–0.20), on supraclypeal area short (0.06–0.07) and long hairs (0.20–0.22). Setae on mandible white (0.16), on labrum light brown. Scutum with whitish hairs on antero-lateral angle; on disc with whitish short (0.03–0.06), and whitish to yellowish brown long hairs (0.14–0.15). Length of hairs on scutellum (up to 0.50); on lateral area of mesepisternum (0.18). Disc of T2–T5 with short, whitish to light brown hairs, on disc of T2 shorter (0.04–0.10) than on basal depression of tergum, immediately after gradulus, where hairs are longer (0.18); T3–T5 besides short hairs, also with long, sparse, erect brown hairs (0.16); T6 with erect black hairs (0.22). Hairs on S1–S6 brown, longer on S2 (0.30).

Sculpture. Clypeus polished, with even, large punctures (0.03–0.05), separated by less than their diameter; supraclypeal area with dense punctures, at sides and on upper part nearly coalescent, on lower part sparser, larger (0.01–0.04). Disc of scutum with close, deep punctures (0.02–0.05), and shiny interspaces. Scutellum with punctures (0.03–0.06) sparser medially, forming at each side of midline shiny area with few punctures. Mesepisternum with dense punctures (0.04–0.05) and shiny interspaces on hypoepimeral area and below scrobal furrow; anterior to mesepisternal furrow areolate-rugulose. Upper part of metapleuron striate. Basal area of metapostnotum entirely striate; striae irregular medially, parallel at sides. Disc of T1–T2 with small punctures (on T2 0.02–0.04), and shiny interspaces; punctation finer on other terga.

Structure. Basal area of labrum proximally smooth, and distally faintly striate; basal area along midline short, approximately one fourth of labral length, on lateral margin not reaching lateralmost setae. Lateral angle of pronotum forming acute angle with pointed tip. Scutellum with median longitudinal furrow, sometimes reduced to median apical depression. S1 with median more or less developed tubercle, variable in size. Basal process of gonostylus reduced, with short setae. Ventral process of gonostylus setose from base to apex, setae as long a diameter of gonostylus; apex of process rounded. Dorsal process of gonostylus with long setae in a row.

Variation. There is variation in color of some specimens from central Argentina, principally from the province of Córdoba, the integument of which is entirely blue, not green. Specimens from Misiones may have bronze or violet tints, mainly on the head. The punctures of the supraclypeal area of the female can be weak in some specimens, but the surface between punctures is always finely rugose. The longitudinal furrow of the scutellum is usually distinct, but in some specimens, particularly in some males, it is reduced to a median depression on the posterior margin of the scutellum. The ventral projection on S1 of the female is always spiniform, although variable in size, and more or less pointed; the projection of the males is usually tuberculiform, but in some specimens it is very low, nearly absent. The variation in size of the projection on S1 is not allometric.

Females of this species present a distinct cephalic polymorphism. Heads of large specimens (13 mm) are disproportionately larger than those of small specimens (7.75 mm). The vertex is swollen behind the eyes, and in frontal view it becomes rather flat, not convex as in smaller specimens. The genae are also enlarged, so the proportion of the maximum width of the gena in lateral view to the maximum width of the eye, increases in larger specimens. Values taken on ten females representative of the various sizes observed among studied specimens (maximum width of the eye-maximum width of gena: 0.48–0.45; 0.51–0.48; 0.51–0.66; 0.57–0.45; 0.57–0.69; 0.60–0.72; 0.63–0.90; 0.66–0.90; 0.66–0.96; 0.75–1.05) give a coefficient of allometry of 1.75. This coefficient is close to the coefficient for *A. iphigenia* (approximately 1.9), which can be calculated from the data presented by Sakagami & Moure (1965).

Distribution. Argentina: Buenos Aires, Corrientes, Entre Ríos, Formosa, Jujuy, Misiones, San Luis, Santa Fe. Uruguay: Artigas, Canelones, Cerro Largo, Colonia, Montevideo, San José. Brazil: Santa Catarina; Minas Gerais, Paraná, Río Grande do Sul, São Paulo (according to Silveira *et al.* 2002, Moure 2007). Paraguay (according to Moure 2007).

Material studied. Argentina, Buenos Aires MACN: 1♂; 1♀: Br. M. y Y.; 1♂: “12269”; 2♀: “12286”; 2♀: 10-XI-1902, Col. J. Brèthes; 1♂: 5-I-1903, Col. J. Brèthes; 1♀: 26-XII-1904; 1♂: 16-III-1906, Col. J. Brèthes; 2♀: 3-I-1909, Col. J. Brèthes; 1♀: 2-I-1915, Col. J. Brèthes; 1♀: 6-XI-1915, Col. J. Brèthes; 1♀: 10-XI-1920, Col. J. Brèthes; 1♀: 21-XI-1920, Col. Bruch; 2♀: 24-II-1981, Col. C. Monetti; 1♀: III-1938, Col. M.M. Senkate; 2♀: Adrogué, III-1921, Col. Pellerano; 1♀: Bella Vista; 1♀: Campo Mayo, “6966”; 1♀: Campo Mayo, “16966”; 1♀: Campo Mayo, 21-XII-1921; 1♀: Capital Federal, 17-XI-1927; 1♀, 2♂: Capital Federal, X-2000, A. Roig A.; 1♂:

Capital Federal, Agronomía, 15-IV-1997, Col. A. Roig A.; 1♀: Castelar INTA, Jardín Botánico, 22-XI-1998, A. Roig A.; 1♂: Reserva Ecológica Costanera Sur, 24-III-2004, Col. A. Roig A. & L. Compagnucci; 1♀: Reserva Ecológica Costanera Sur, 21-XI-2008, D. Carpintero; 1♂: Ciudad Autónoma, Reserva Ecológica Costanera Sur, IV-2004, Col. A. Roig A.; 1♂: Ciudad Autónoma, 11-XI-2008, Col. M. Dalmazzo; 6♂: Ciudad Autónoma, 7-II-2009, Col. M. Dalmazzo; 3♂: Ciudad Autónoma, 19-II-2009, Col. M. Dalmazzo; 1♀, 4♂: Ciudad Autónoma, Palermo, 19-IV-1995, Col. A. Roig A.; 4♂: Ciudad Autónoma, Palermo, 19-IV-1998, Col. A. Roig A.; 1♀: Ciudad Autónoma, Reserva Ecológica Costanera Sur, 21-XI-2008, Col. M. Dalmazzo; 1♀: Delta, Río Chana; 1♂: Delta, Río Chana, 19-I-1919; 1♀: Delta del Paraná – Río Sarmiento, I-1976, Col. A. Oliva; 1♀: Delta del Paraná – Río Sarmiento, II-1976, Col. A. Oliva; 1♀: Delta del Paraná – Río Sarmiento, 13-XI-1976, Col. A. Oliva; 1♀: Delta del Paraná – Río Sarmiento- on *Cucumis sp.* 28-I-1978, Col. A. Oliva; 1♀: Delta, Río Sarmiento, La Ursulina, 19-XI-2001, Col. L. Compagnucci; 3♀: Gómez, 8-II-2004, González V.; 3♀: Gómez, 26-I-2005, González V.; 2♀: Hudson FCS, 4-IV-1943; 1♀: Hudson FCS, 6-III-1940, L. Yivoff; 1♀: Hudson FCS, 5-IV-1940, L. Yivoff; 1♀: La Plata, 12-II-1925, Beaufils; 1♀: Luján; 5♀, 1♂: Luján, H. H. Maristas; 2♀: Luján, 1930; 1♀: Luján, 6-IX-1939, H. H. Maristas; 1♀: Magdalena, 16-XI-1985, Moffat; 6♀, 6♂: a 20 Km SE Magdalena Ea. El Destino, 25-II-2000, A. Roig A.; 1♀: Martínez, San Isidro, on *Ipomea sp.*, 8-III-1988, L. Moffat; 1♀, 1♂: Martínez, San Isidro, 15-III-1993, A. Roig A.; 3♀: Moreno, La Reja, 8-XI-1992, A. Roig A.; 1♀, 1♂: Moreno, Reja Grande, 13-II-2000, A. Roig A.; 1♀: Otamendi, 5-I-2000, A. Roig A.; 1♀: Otamendi, 24-I-2000, A. Roig A.; 2♀: Punta Lara, “13016”; 1♀: Punta Lara, V- 1999, D. Carpintero; 1♀: Rivadavia, 15-XIII-1914; 1♀, 1♂: San Antonio de Areco, 5-XII-2004, L. Compagnucci; 1♀: San Isidro, 10-III-1916, C. Amadeo; 1♂: San Isidro, IV-1916, Col. C. Amadeo; 3♂: San Isidro, 17-II- 2009, Col. M. Dalmazzo; 4♀, 5♂: San Isidro, Refugio Ribera Norte, 27-III-2003, L. Compagnucci; 2♀: San Isidro, Refugio Ribera Norte, 21-I-2005, A. Roig A.; 1♀: San Isidro, Refugio Ribera Norte, 13-III-2008, Col. M. Dalmazzo; 1♀, 1♂: San Isidro, Refugio Ribera Norte, 16-IV-2008, Col. M. Dalmazzo; 1♂: San Isidro, Refugio Ribera Norte, 25-XI-2008, Col. M. Dalmazzo; 2♂: San Isidro, Refugio Ribera Norte, 20-I-2009, on *Pavonia sp.*, Col. M. Dalmazzo; 1♂: San Isidro, Refugio Ribera Norte, 20-I-2009, on *Sida rhombifolia*, Col. R. González V.; 2♀: San Pedro, Vuelta de Obligado, 18-XII- 2003, A. Roig A.; 1♀: Pdo. Tres Arroyos, Claromecó, Vivero, 27-II-2006, A. Roig A.; 1♀: Tigre, 14-II-1985, A. Roig A., Moffat; 2♀: Tigre, 9-I-2005, Rodríguez, González V.; 2♀: Tigre, Delta Río Carapachay, 27-I-2005, A. Roig A.; 1♂: Tigre, Delta Río Carapachay, 27-I-2005, on *Ludwigia sp.* A. Roig A.; 1♀: Tigre, La Marina, 11-I-2001, A. Roig A.; 1♀: Tigre, Río Lujan, Club ACA, 18-I-2002, A. Roig A.; 2♂: Tigre, Río Lujan, Club ACA, 7-I-2002, on *Pontederia lanceolata* A. Roig A.; 2♀: Tornquist, Villa Ventana, 18-II-1999, A. Roig A.; 2♀: Verónica, 1938, “48861”, J.B. Daguerre; 2♂: Villa Adelina, 13-I-1993, Col. A. Roig A.; 1♀: Villa Devoto, 1-X-1937, H. Hepper; 1♀: Zárate, 24-II-2001, L. Compagnucci; 1♀, 1♂: Zelaya, II-1935, J. Pereyra; 9♂: Zelaya, 6-V-1936, J. Pereyra; 15♀: Zelaya, 6-V-1936, J. Pereyra; 1♀: Zelaya, 6-VI-1936, J. Pereyra; 1♀: Zelaya, J.B. Daguerre “42354”; 1♀: Zelaya, J.B. Daguerre “39233”. **FAUBA:** 2♀: Magdalena, 23-III-1999, Leg. A. Basilio; 1♀: Magdalena, 7-V-1999, Col. A. Basilio; 1♀: Magdalena, 23-III-2000, Col. A. Basilio. **MLP:** 5♀, 4♂: J.C. Paz, 1939; 2♀: Punta Lara, 11-XI-2005; 1♂: San Fernando, 20-III-1944, Col. Bruzzi; 5♀, 15♂: San Fernando, 3-XI-1945; 5♀, 4♂: Villa Devoto, 8-XI-1941. **Corrientes: MACN:** 1♀: 22-III-1911, A. Soto; 1♀: San Roque, II-1920, Bosq. **Entre Ríos: MACN:** 1♀: II-1931, G. del Río; 1♀: Federación, I-1997, Col. G. Zubarrán; 1♀: Parque Nacional El Palmar, 20-XII-1985, Col. Moffat. **Formosa: MACN:** 1♀: 21-I-1955, Col. L. Yivoff; 2♀: Gran Guardia, Col. J. Foerster. **IFML:** 1♀: Riacho Pilagá, 11-VIII-1977, Col. Porter, Stange & Fidalgo. **Jujuy: MACN:** 1♀: II-1915; 2♀: Tuyupará, 25-I-1908, Col. J. Brèthes. **Misiones: MACN:** 5♀: “7517”; 1♀: I-1934, Col. E. Hayward; 1♀: Concepción, Santa María, 23-X-1946, Col. M. Viana; 2♀: Iguazú, 10-X-1950, Col. M. Senkate; 1♀: Pindapoy, I-1942, Col. A. Bridarolli; 1♀: Piquete, 4-V-1939; 1♀: Posadas, “7517”; 1♀: Puerto Bemberg, 7-XII-1933, Col. E. Hayward; 1♀: Puerto Bemberg, 30-III-1945, Col. Hayward, Willink & Golbach; 1♀: Puerto Bemberg, XI- 1945, Col. F.H. Walz; 1♀: Santa María, I-1964, Col. M. Viana. **IFML:** 1♀: Apóstoles, San José, 19-XI-1980, Col. Willink, Fidalgo, Claps & Dominguez; 1♀: Apóstoles, San José, 4-II-1981, Col. B. Golbach; 1♀: Iguazú, 30-I-1945, Col. Hayward, Willink & Golbach; 1♀: Parque Nacional Iguazú, 10-XI-1973, Col. Willink & Tomsic. **MLP:** 1♀: Loreto, Col. A.A. Ogloblin. **San Luis: MACN:** 1♀: “28884”. **Santa Fe: MACN:** 1♀: “11942”; 1♀: La Capital, El Pozo, 16-IX-2004, Col. M. Dalmazzo; 1♀: La Capital, Esperanza, 29-IX-04, Col. M. Dalmazzo; 1♀: Las Colonias, Santa Clara de Buena Vista, 10-II-2007, Col. M. Dalmazzo; 1♀: Las Colonias, Santa Clara de Buena Vista, 5-II-2008, Col. M. Dalmazzo; 3♀: Rosario; 1♀: Rosario, Col. A. Stévenin; 1♀: Susana, 16-II-2005, Col. M. Dalmazzo. **FAUBA:** 1♀: Reconquista, 17-XI-2004, Col. J.P. Torreta & D. Medán. **MFA:** 30♀: La Capital, Colastiné Sur, 24-VII-1959, “8673”; 1♀: La Capital, Colastiné Sur, 24-VII-1959, “6264”;

4♀: La Capital, Colastiné Sur, 23-VI-1969, "8673". **MLP**: 1♂: Florencia, 17-IV-1941; 1♂: Lanteri. **Brazil**: **MACN**: 1♀: Nova Teutonia, 27° 11'S- 52° 23' L, 28-XI-1950, Col. Fritz Plaumann; 1♀: Nova Teutonia, 27° 11'S- 52° 23' L, 5-XII-1950, Col. Fritz Plaumann. **IFML**: 1♀: Encrucilhada, 11-II-1948, Col. Cuezzo. **Uruguay**: **MACN**: 1♀: I-1950; 1♀, 2♂: Colonia; 1♂: Colonia, Col. A. Stevenin; 1♀: Colonia, II-1920, M.J. Jurado. **FCEHY**: 1♀: Arroyo del Cordobés, 3-II-1953, Col. C.S.C.L.de Zolessi; 1♂: Arroyo del Cordobés, 22-I-1967, Col. F. Achaval; 1♀: Arroyo Laureles, 12-II-1954, Col. F.H.C.; 1♀: Arroyo Laureles, 20-I-1961, Col. C.S.C.L.de Zolessi; 1♀: Barra A. Solis, 28-XI-1965, Col. F. Achaval; 1♀: Casupa, Florida, 16-I-1955, Col. F.H.C.; 1♀: Canelones, Las Piedras, 27-II-1959; 1♀: Canelones, Las Piedras, 22-I-1963; 1♀: Canelones, Las Piedras, 5-IV-1963; 2♀: Canelones, Sauce, I-2006, Col. E. Santos; 3♂: Montevideo, II-2006, Col. E. Santos; 3♀: Canelones, Sauce, III-2006, Col. E. Santos; 1♀: La Estanzuela, 13-III-1959, Col. M.A. Monné; 2♂: Maldonado, Sierra Animas, 25-III-1967, Col. F. Esc.; 1♂: Montevideo, I-1966, Col. F.M. Esc.; 1♂: Montevideo, Pocitos, III-1966, Col. F.M.Esc.; 2♀: Montevideo, Pocitos, V-1967, Col. F.M.Esc.; 3♀: Montevideo, Pocitos, X-1967, Col. F.M.Esc.; 2♀, 3♂: Montevideo, Pocitos, II-1968, Col. F.M.Esc.; 1♀: Montevideo, III-2007, Col. E. Santos; 1♀: Paso Borracho, 15-I-1964, Col. Achaval & A. Colber; 5♀: Santa Rita, 23-IV-1951, Col. C. Carbonell; 1♂: Sierra del Quebracho, 12-III-1955, Col. C. Carbonell; 1♀: Tres Cruces, 20-VI-1955, Col. F.H.C.; 2♀: Tres Cruces Grandes, Artigas, 1-I-1956, Col. C. Foquet. **MNHNM**: 1♀: "0439"; 1♀: "0440".

Floral records: *Cucumis* sp.; *Ipomoea* sp.; *Ludwigia* sp.; *Pavonia* sp.; *Pontederia lanceolata*; *Sida rhombifolia*.

Augochlora (Augochlora) daphnis Smith

(Fig. 5)

Augochlora daphnis Smith 1853: 77 (holotype male from Montevideo [Uruguay], in NHML, examined, only mesosoma and metasoma preserved). Dalla Torre 1896: 94. Schrottky 1903: 180. Cockerell 1905: 357, 363. Schrottky 1913: 242. Cockerell 1927: 398.

Augochlora (Augochlora) daphnis: Moure & Hurd 1987: 259. Moure 2007: 762.

Besides the holotype, we have seen no other specimens of this species. As indicated by Moure & Hurd (1987), the type specimen has a glued head, which corresponds to a female of *Augochloropsis*. Specimens from Buenos Aires referred to *A. daphnis* by Holmberg (1903) correspond to *A. phoemonoe*, as can be seen from material preserved at MACN. Bingham (in Cockerell 1897) refers to "cotype" *A. daphnis* specimens in the British Museum with pectinate hind tibial spurs (a character not present in *Augochlora*). *Augochlora daphnis* may be a rare species in the studied area, or it may be just a mislabeled specimen of a species with a more northern distribution.

Diagnosis. This species can be distinguished by the entirely yellowish tegula, the dense, long pubescence, the lateral angle of the pronotum right angled and with rounded tip, and the areolate sculpture of the mesepisternum anterior to the mesepisternal furrow. According to Smith (1853), the anterior margin of the clypeus, the labrum, the mandibles and the ventral surface of the flagellum are yellow. Among the species studied in the area, *A. daphnis* is most similar to *A. amphitrite*, agreeing in general punctuation, areolate sculpture of the metanotum, mesepisternum differentially sculptured anterior and posterior to the mesepisternal furrow, tuberculate first sternum, and the longitudinal impression on the scutellum, although weaker.

Female. Unknown.

Male (Holotype). Length of forewing, 4.75.

Color. Mesosoma metallic green with some golden reflections. Tegula entirely yellowish, without anterior green spot. Coxae, trochanters, and femora reddish brown with green reflections, apex of femora and mid and hind tibiae light brown, foretibia and tarsus yellowish brown. Wings hyaline, with yellowish brown veins and pterostigma. Metasomal terga metallic green with violet tints. T1–T6 with black apical bands (on T2 approximately 0.15 times of tergal length). Sterna dark brown, S1 with blue tints.

Pubescence. With white, abundant, plumose hairs. Scutum and scutellum with distinctly plumose, short (0.10–0.12) and long hairs (0.20–0.30); posterior margin of scutellum and metanotum with long hairs (0.40); hairs on lateral area of mesepisternum long (0.30). Disc of T2 with short, dense pubescence (0.10), shorter than on basal depression of tergum, immediately after gradulus, where hairs are longer (0.16–0.20); disc of T3 with short (0.08) and intermixed, longer hairs (0.28); erect setae on T4–T7 brown to dark brown. Hairs on S1–S5 whitish, on S6 light brown.

Sculpture. Scutum evenly punctured with shiny interspaces, disc of scutum with dense punctures (0.02–0.03), on center of disc separated by 0.2–0.5 puncture diameters. Scutellum with punctures (0.03–0.04) sparser medially, with shiny interspaces. Mesepisternum with dense punctures (0.03–0.04) and shiny interspaces on hypoepimeral area and below scrobal furrow; anterior to mesepisternal furrow areolate-rugulose. Upper part of metapleuron striate. Basal area of metapostnotum entirely strongly striate; striae irregular medially, and regular, parallel, laterally. Disc of T2 with small punctures (0.01–0.02), and punctation finer on posterior terga.

Structure. Lateral angle of pronotum right angled, with rounded tip. Scutellum with weak median longitudinal impression. S1 with median low tubercle. Basal process of gonostylus reduced, with short setae. Ventral process of gonostylus dorsally glabrous, on outer margin with stout setae on apical half, longer than diameter of gonostylus, ventrally with shorter setae restricted to apical third; apex of process rounded. Dorsal process of gonostylus with long setae.

Distribution. Uruguay: Montevideo.

Material studied. 1 male (meso and metasoma only), with following labels: “Type H. T.” “B. M. Type HYM. 17.a. 1269” “Daphnis, MtVideo Sm.” “F. Sm. Coll. 79.22” “Montevideo” “it is not the Ttype! W. W. Saunders Coll. ♂ but head ♀ Det. J.S. Moure 1957”.

Floral records: Unknown.

A. (*Augochlora*) *nausicaa* (Schrottky)

(Figs. 2, 8, 15, 18, 20, 23)

Odontochlora nausicaa Schrottky 1909: 144 (female from Argentina, Buenos Aires, type lost). Schrottky 1911: 74. Schrottky 1913: 241.

Augochlora (*Augochlora*) *nausicaa*: Moure & Hurd 1987: 264. Benitez-Vieyra *et al.* 2006: 950. Moure 2007: 766. Wiemer *et al.* 2009: 509.

Although the type of *O. nausicaa* is lost, this species can be identified with certainty, because this is the only one in the area of Buenos Aires that agrees in detail with Schrottky's original description (1909) and with the key to the species of *Odontochlora* (Schrottky 1911). Although the species has a wide distribution, it is uncommon in collections.

Diagnosis. Female of this species can be recognized by the median tuberculiform elevation on the first metasomal sternum, and the short mandible. The male is distinguished by the dark mandible, labrum and flagellum, the entirely green clypeus without yellowish apical band or marks, the flat scutellum, and the lack of tubercle on S1.

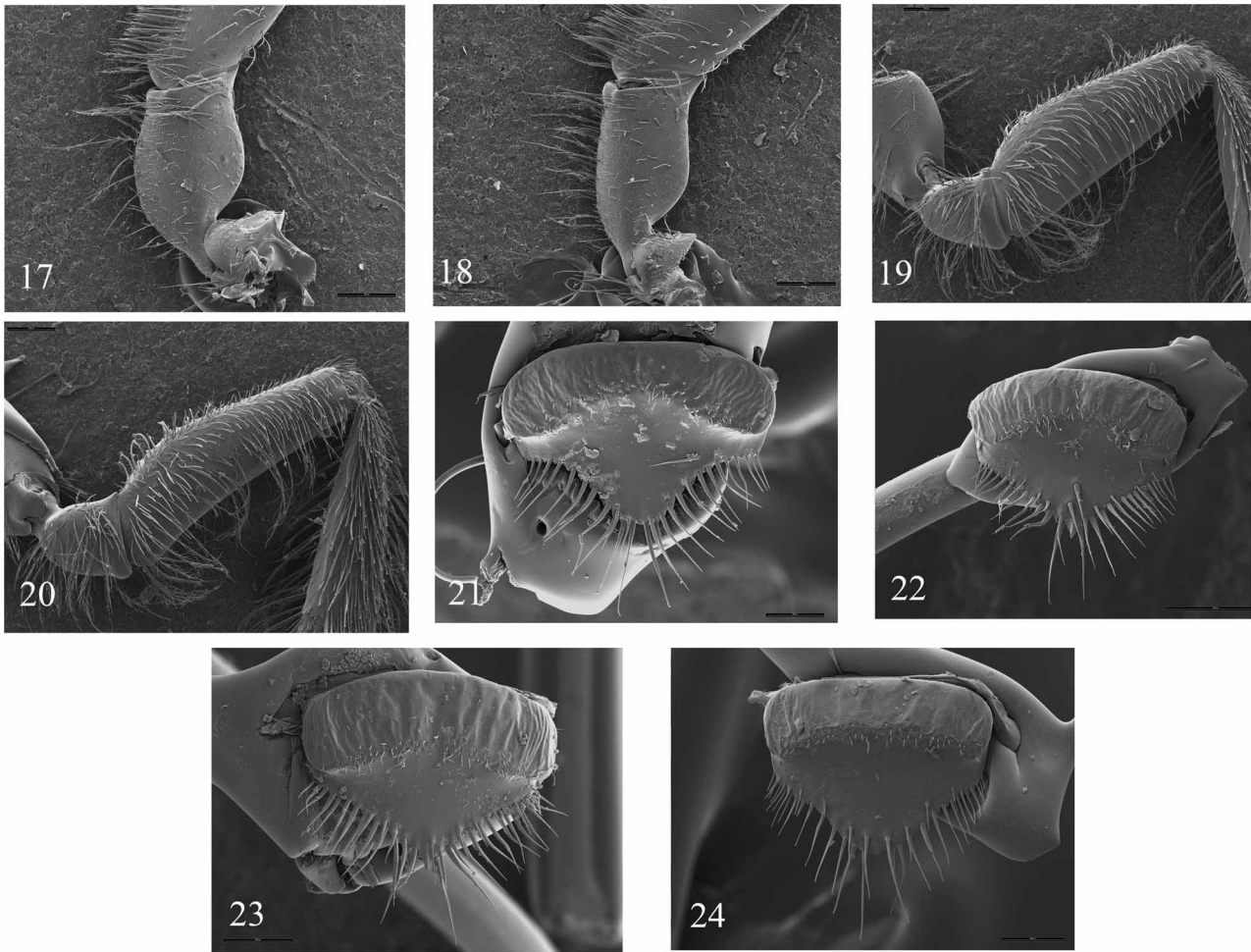
Female. Length of body 6.50–6.85; length of forewing, 5.20–5.50; maximum width of head, 2.00–2.25; length of head, 1.75–2.15; ocello-ocular distance 1.7–2.3 times MOD.

Color. Metallic green with bluish tints, which may turn to violet; some specimens with golden reflections mainly on clypeus. Mandible and labrum dark brown to black. Hypostomal area blackish with green tints. Scape, pedicel and flagellar dorsal surface black, ventral surface of flagellum dark brown. Clypeus with black apical band one fifth to one fourth as long as clypeus. Tegula dark brown with green anterior spot. Legs black, with green tints on anterior and hind coxa, but reduced elsewhere. T1–T4 with apical black bands (on T2 0.6 times MOD), T5 black, sterna black. Wings hyaline with light brown veins and pterostigma.

Pubescence. Whitish to light yellowish brown. Hairs dense on paraocular area (0.08–0.22) and frons (0.08–0.14). Clypeus with sparse, short (0.06–0.08) and long (0.20–0.28) simple to short-branched hairs; supraclypeal area with sparse, short (0.05–0.06) and long hairs (0.16–0.18). Light brown setae on mandible (0.26) and on apex of labrum. Disc of scutum with short (0.04–0.08) and long (0.16–0.20) brownish hairs, on scutellum longer (0.40); hairs long on metanotum (0.20) and on lateral area of mesepisternum (up to 0.24). Hind femur with long, white scopal hairs (up to 0.50), hind tibia and basitarsus with white hairs on outer surface. Disc of T1–T4 with short, white pubescence, and sparse, erect hairs (on disc of T2, 0.02 and 0.12 respectively), on T3–T4 erect hairs longer, brownish; T5–T6 with brown hairs, on T5 up to 0.16; hairs on S2–S5 white, long, on S2 up to 0.50, hairs on S6 brown.

Sculpture. Clypeus polished, with large punctures (0.03–0.06) separated by 0.5–1.0 times their diameter; supraclypeal area with dense punctures (0.03–0.04), separated by 0.2–0.5 times their diameter, interspaces smooth to weakly tessellate. Disc of scutum with dense punctures (0.02–0.03), on center of disc separated by 0.2–0.5 puncture

diameters. Scutellum with dense, small punctures (0.02), nearly coalescent anteriorly. Metanotum finely rugulose. Mesepisternum with dense punctures (0.02–0.03) and shiny interspaces on hypoepimeral area and below scrobal furrow; anterior to mesepisternal furrow punctate. Basal area of metapostnotum entirely striate; striae irregular medially, and regular, parallel, laterally. Disc of T2 with small punctures (0.01–0.02) separated by one puncture diameter or more, interspaces shiny, punctures denser preapically.



FIGURES 17–24. 17: Middle trochanter of *A. phoemonoe* (Schrottky), ♀; 18: Middle trochanter of *A. nausicaa* (Schrottky), ♀; 19: Hind femur of *A. phoemonoe*, ♀; 20: Hind femur *A. nausicaa*, ♀; 21–24: Labrum, ♂. 21: *A. amphitrite* (Schrottky); 22: *A. phoemonoe*; 23: *A. nausicaa*; 24: *A. iphigenia* Holmberg. Scale lines: Figs. 17–22: 0.2 mm; Figs. 23–24: 0.1 mm.

Structure. Frontal carina reaching median ocellus. Mandible short, distance between base of mandible and starting point of lower apical expansion (outer view), equal or shorter than basal width of mandible (0.9–1.0). Lateral angle of pronotum forming right angle. Scutellum rather flat, without median longitudinal furrow. Middle trochanter short, with ventral margin straight in lateral view. Hind femur ventrally concave. S1 with median tubercle, in some specimens reduced to low elevation.

Male. Length of body 6.50–7.20; length of forewing, 4.60–5.50; maximum width of head, 1.85–2.00; length of head, 1.75–1.95; ocello-ocular distance 1.5–1.7 times MOD. **Color.** Similar to that of female, except as follows: mandible and labrum dark brown; hypostomal area green; clypeus green, without apical pale band; scape, pedicel and dorsal surface of flagellum black, ventral surface of flagellum brown; coxae, trochanters and femora dark brown to black with green tints, tibiae and tarsi dark brown; T1–T4 green with deep violet tints, with black apical bands (on T2 0.6 times MOD), T5 mostly dark brown to black; S1 with blue tints, S2–S6 dark brown.

Pubescence. Whitish to yellowish brown, plumose, on most of body. Hairs dense on paraocular area (0.06–0.24) and frons (0.07–0.30). Clypeus and supraclypeal area with whitish hairs simple, sparser than on other parts of head; on clypeus short (0.06–0.07) and long hairs (0.18–0.20), on supraclypeal area short (0.05–0.06) and long hairs (0.18–0.20). Hairs light brown on mandible (0.20) and on apex of labrum. Disc of scutum with short (0.04–

0.06), and long (0.18–0.20) interspersed hairs. Length of hairs on scutellum (0.38), on metanotum (0.36), and on lateral area of mesepisternum (0.06–0.14). Disc of T1–T4 with short, white pubescence, and sparse, erect white to light brown hairs, shorter on T2 (0.10), and longer on T3–T4; T5–T6 with brown to black hairs (0.20). Disc of T2 with short, dense pubescence (0.02), shorter than on basal depression of tergum, immediately after gradulus, where hairs are longer (0.10–0.12). Hairs on S1–S5 whitish (on S2, 0.24), on S6 brown.

Sculpture. Clypeus with even, large punctures (0.03–0.06), separated by their diameter or less, interspaces smooth to weakly tessellate; supraclypeal area with dense punctures (0.03–0.05), nearly coalescent on entire surface. Disc of scutum with close, deep punctures (0.03–0.04), and shiny interspaces. Scutellum with punctures (0.02–0.06) sparser medially, with shiny interspaces. Mesepisternum with dense punctures (0.02–0.04) and shiny interspaces on hypoepimeral area and below scrobal furrow; anterior to mesepisternal furrow punctate. Basal area of metapostnotum entirely striate, with regular striae. Disc of T2 with moderate punctures (0.02–0.03), and shiny interspaces; punctation finer on other terga.

Structure. Basal area of labrum strongly striate, along midline long, approximately 0.4 times of labral length, on lateral margin reaching lateralmost setae. Scutellum rather flat, without median longitudinal furrow. S1 without spine or tubercle. Basal process of gonostylus reduced, with short setae. Ventral process of gonostylus setose from base to apex, setae shorter than diameter of gonostylus; apex of process rounded. Dorsal process of gonostylus reduced, with long setae in a row.

Variation. Females usually have the supraclypeal area smooth and shiny between punctures, but in some specimens the surface can be weakly tessellate.

Distribution. Argentina: Buenos Aires, Catamarca, Córdoba, Jujuy, Misiones, Salta, Tucumán; Brazil: Rio Grande do Sul.

Material studied. **Argentina, Buenos Aires:** MACN: 3♀: Delta, Río Chana; 1♀: Delta, Río Sarmiento, La Ursulina, 19-XI-2001, Col. L. Compagnucci; 1♀: Otamendi, 21-XII-1994, Col. A. Roig A.; 1♀: Otamendi, 22-X-2006, Col. J.J. Martinez; 2♀: Tigre, Río Lujan, Club ACA, 18-I-2002, Col. A. Roig A.; 1♂: Zelaya, 6-V-1936, Col. J. Pereyra. **Catamarca:** MACN: 1♀: Concepción, II-1928, Col. M. Gómez. **IFML:** 1♀: El Alto, 3-XII-1958, Col. Willink; 1♂: El Rodeo, 16-IV-1972, Col. C. Porter. **MLP:** 1♀: Los Angeles, 1943. **Jujuy:** **IFML:** 1♀: Ruta 9 limite con Salta, 18-III-1978, Col. Willink & Fidalgo. **Misiones:** **IFML:** 1♂: L.N. Alem, Instituto Alberdi, 17-XI-1969, Col. C. Porter; 1♀: San Pedro, 16-XI-1973, Col. Willink & Tomsic. **Salta:** **IFML:** 2♀: Orán, Angosto del Pescado, 26-X-1978, Col. P. Fidalgo. **Tucumán:** MACN: 4♂: Acheral 8Km W, 17-XI-1993, Col. A. Roig A. 2♀: Famailla, 30-X-2004, Col. L. Compagnucci & A. Ojanguren; 3♀, 1♂: Lules 12Km W, 17-XI-1993, Col. A. Roig A. **IFML:** 1♀: Acheral, Taffí, 18-XII-1973, Col. L. Stange; 1♂: Burruyacu, Villa Padre Monti, 7-II-1948, Col. R. Golbach; 1♀: El Cadillal, 4-I-1976, Col. L. Stange; 1♀: Horco Molle, Parque Sierra San Javier, 20-VI-1972, Col. L.A. Stange; 2♀: Horco Molle, 12-X-1973, Col. L. Stange; 1♀: Horco Molle, 5-I-1976, Col. L. Stange; 1♂: Quebrada Cainzo, 10-XII-1950, Col. R. Golbach; 1♂: Trancas, Tacanas, 3-III-1948, Col. Hayward & Willink; 1♂: Trancas, Tacanas, 3-III-1948, Col. Monrós & Golbach. **MLP:** Aconquija, 11-XI-1942, Col. A.A. Ogloblin. **Brazil:** MACN: 2♀, 1♂: Brazil, Pelotas, 9-V-1955, Col. C. Biezanko.

Floral records: *Cyclopogon elatus* (Benitez-Vieyra *et al.* 2006, Wiemer *et al.* 2009).

A. (*Augochlora*) *phoemonoe* (Schrottky)

(Figs. 3, 7, 17, 19, 22)

Augochlora daphnis: Holmberg 1903: 464. Holmberg 1921: 259 (specimens from Buenos Aires, misidentification). Schindwein 1995: 51, 52, 54; Schindwein & Wittmann 1997: 184 (specimens from Rio Grande do Sul, misidentification).

Odontochlora phoemonoe Schrottky 1909: 142. (females from Argentina: Buenos Aires and Corrientes, and Paraguay: Encarnación, types lost). Schrottky 1909: 254. Schrottky 1911: 74, 86. Schrottky 1913: 241.

Augochlora (Odontochlora) phoemonoe: Cockerell 1918a: 140. 1918b: 420. Moure 1943: 471.

Augochlora (Augochlora) phoemonoe: Moure & Hurd 1987: 266. Moure 2007: 767.

In spite of the loss of the types of *O. phoemonoe*, specimens studied by Schrottky from Buenos Aires can only agree with the present interpretation of the species, which is one of the three species of *Augochlora sensu stricto* that occur in this area. Schrottky (1909, 1911) included *A. phoemonoe* in his section "A" of *Odontochlora*, those species having a spiniform projection on S1. This feature easily separates *A. phoemonoe* from *A. nausicaa*. Among

the characters mentioned by Schrottky for *A. phoemonoe*, the carinate frons, the pale pilosity of the legs, and the densely punctate, not rugulose supraclypeal area, separate it from *A. amphitrite*.

Diagnosis. Females of *A. phoemonoe* are distinguished by the short middle trochanter (Fig. 17) with the ventral margin arcuate, keeled, and the hind femur ventrally straight (Fig. 19). The spine on S1 is variable, from high and pointed to low and blunt. The male is distinguished by the yellowish labrum and base of the mandible, the clypeus with an apical yellowish band or lateral marks, and the first flagellomere yellowish to light brown, contrasting with the dark remainder of the flagellum.

Female. Length of body 7.00–9.90; length of forewing, 4.00–5.10; maximum width of head, 1.90–3.00; length of head, 1.80–2.70; ocello-ocular distance 2.5–2.6 times MOD.

Color. Metallic green with bluish tints; some specimens with golden reflections mainly on face and mesosoma. Mandible brown to dark brown, frequently with small green spot at base; labrum dark brown to black. Hypostomal area blackish with green tints. Scape, pedicel and dorsal surface of flagellum black, ventral surface of flagellum brown. Clypeus with black apical band approximately one fifth as long as clypeus. Tegula brown to dark brown with green tint anteriorly. Legs dark brown to black, with reduced green tints on coxae and trochanters. T1–T4 with apical black bands (on T2 0.4 times MOD), T5 black, sterna black. Wings hyaline with light brown veins and pterostigma.

Pubescence. Whitish, plumose, on most of body. Hairs dense on paraocular area (0.06–0.20) and frons (0.04–0.18). Clypeus with sparse, short (0.10–0.12) and long (0.18–0.20) simple to short-branched hairs; supraclypeal area with sparse, short (0.12–0.14) and long hairs (0.20–0.22). Light brown setae on mandible (0.30) and on apex of labrum. Disc of scutum with short (0.06–0.08) and long (0.20–0.22) whitish to yellowish brown hairs, on scutellum longer (0.40); hairs long on metanotum (0.24) and on lateral area of mesepisternum (up to 0.20). Hind femur with long, white scopal hairs (up to 0.52), hind tibia and basitarsus with white hairs on outer surface. Disc of T1–T4 with short, white pubescence, and sparse, erect white to yellowish-brown hairs (on disc of T2 0.04 and 0.13 respectively), on T3–T4 erect hairs longer; T5–T6 with brown hairs, on T5 up to 0.22; hairs on S2–S5 whitish to yellowish brown, long, on S2 up to 0.30; hairs on S6 brown.

Sculpture. Clypeus polished, with large punctures (0.03–0.08) separated by 0.5–1.0 times their diameter; supraclypeal area with dense punctures (0.04–0.06), separated by 0.2–0.5 times their diameter, interspaces smooth and shiny. Disc of scutum with dense punctures (0.02–0.04), on center of disc separated by 0.2–0.5 puncture diameters. Scutellum with dense, small punctures (0.01–0.02). Metanotum finely rugulose. Mesepisternum with dense punctures (0.02–0.04) and shiny interspaces on hypoepimeral area and below scrobal furrow; anterior to mesepisternal furrow punctate. Basal area of metapostnotum entirely striate; striae irregular medially, and regular, parallel, laterally. Disc of T1 with small punctures (0.01–0.02) separated by one puncture diameter or more, interspaces shiny, punctures denser preapically; punctures on T2–T4 finer.

Structure. Frontal carina reaching median ocellus. Mandible long, distance between base of mandible and starting point of lower apical expansion (outer view), longer than basal width of mandible (1.25–1.45). Lateral angle of pronotum forming acute angle. Scutellum rather flat, without median longitudinal furrow. Middle trochanter short, broadened, in lateral view with ventral margin arcuate. Hind femur ventrally straight. S1 with median spine, usually high and pointed, but sometimes low and blunt.

Male. Length of body 6.00–8.40; length of forewing, 4.00–5.00; maximum width of head, 1.70–2.15; length of head, 1.65–2.00; ocello-ocular distance 1.6–1.75 times MOD. **Color.** Similar to that of female, except as follows: mandible and labrum yellowish brown; hypostomal area green; clypeus with narrow (0.02), yellowish apical band; scape, pedicel and dorsal surface of flagellum black, first flagellomere with ventral surface distinctly yellowish, rest of ventral surface of flagellum light brown; coxae, trochanters and femora dark brown with green tints, tibiae and tarsi dark brown; T1–T5 green with blue tints, with black apical bands (on T2 0.6 times MOD); S1 with blue tints, S2–S6 dark brown.

Pubescence. Hairs white, plumose, dense on paraocular area (0.06–0.16) and frons (0.12–0.24). Clypeus and supraclypeal area with yellowish brown, simple hairs, sparser than on other parts of head; on clypeus short (0.06–0.08) and long hairs (0.18–0.2), on supraclypeal area short (0.06–0.08) and long hairs (0.16–0.18). Hairs light brown on mandible (0.10–0.20), brown on apex of labrum. Disc of scutum with short (0.03–0.04), and long (0.16–0.18) interspersed hairs. Length of hairs on scutellum (0.24), on metanotum (0.32), and on lateral area of mesepisternum (0.10–0.22). Disc of T1–T5 with short, white pubescence, and sparse, erect white to light brown hairs (on disc of T2 0.06 and 0.10 respectively), shorter on T2–T3, and longer on T4–T5 (0.14); T6–T7 with brown to black hairs. Hairs on S1–S6 whitish to light brown (on S2, 0.18).

Sculpture. Clypeus with even, large punctures (0.04–0.05), separated by their diameter or less, interspaces smooth; supraclypeal area with punctures (0.03–0.04) denser at sides, interspaces shiny. Disc of scutum with close, deep punctures (0.02–0.04), and shiny interspaces. Scutellum with punctures (0.03–0.05) sparser medially, with shiny interspaces. Mesepisternum with dense punctures (0.04–0.05) and shiny interspaces on hypoepimeral area and below scrobal furrow; anterior to mesepisternal furrow punctate. Basal area of metapostnotum entirely striate, with regular striae. Disc of T1–T2 with moderate punctures and shiny interspaces; punctation finer on other terga, on disc of T2 0.02–0.04.

Structure. Basal area of labrum weakly striate, along midline short, approximately one third of labral length, on lateral margin not reaching lateralmost setae. Scutellum rather flat, without median longitudinal furrow. S1 with low tubercle. Basal process of gonostylus distinct, larger than in *A. amphitrite* and *A. nausicaa*, with short setae. Ventral process of gonostylus flattened, broadened apically, with short setae on apex only; apex cuadrangular. Dorsal process of gonostylus reduced, with setae in a row. Apical third of gonocoxite latero-dorsally setose.

Distribution. Argentina: Buenos Aires, Catamarca, Corrientes (according to Moure 2007), Córdoba, Entre Ríos, Formosa, La Pampa, La Rioja, Misiones, Salta, San Luis, Santa Fe, Tucumán. Bolivia. Uruguay: Artigas, Canelones, Colonia, Maldonado, Montevideo, San José. Brazil: Rio Grande do Sul, Santa Catarina; Paraná, Rio de Janeiro, (according to Silveira *et al.* 2002; Moure 2007). Paraguay: Itapúa, Encarnación (Moure 2007).

Material studied. **Argentina, Buenos Aires: MACN:** 1♂: “6642”; 1♂: “11943”; 2♀: C. Bruch; 1♀: 30-XII-1902, Col. J. Brèthes; 1♀, 1♂: 24-II-1903, Col. J. Brèthes; 1♀: 6-I-1904, Col. J. Brèthes; 1♀: 25-IV-1904, Col. J. Brèthes; 1♀, 1♂: 7-V-1904, Col. J. Brèthes; 1♀: 2-I-1914, Col. J. Brèthes; 1♀: 31-I-1914, Col. J. Brèthes; 1♀: 20-II-1914, Col. J. Brèthes; 1♀: 21-XII-1914, Col. J. Brèthes; 1♀: 2-I-1915, Col. J. Brèthes; 2♀: 15-X-1922, Col. J. Brèthes; 2♀: 20-X-1922, Col. J. Brèthes; 5♀: 10-XI-1922, Col. J. Brèthes; 1♂: Campo Mayo, 3-XI-1919; 1♀: Cañuelas, 4-II-1919; 2♀: Capital Federal, “36925”; 1♀: Capital Federal, 5-XII-1919; 1♀: Capital Federal, 18-X-1939, Col. H. Cavio; 1♀: Capital Federal, 18-I-1996, on *Asclepias curassavica*, Col. A. Oliva; 1♂: Capital Federal, Agronomía, 29-XII-1994, Col. A. Roig A.; 1♀: Carlos Casares Ea. San Claudio, 3-I-2007, on *Solanum sisymbriifolium*, Col. P. Torreta, G. Cilla & J. Ciarra; 1♀: Ciudad. Autónoma, 25-IX-2008, Col. M. Dalmazzo; 1♂: Ciudad Autónoma, 27-XI-2008, Col. M. Dalmazzo; 1♂: Ciudad. Autónoma, 10-XII-2008, Col. M. Dalmazzo; 1♂: Ciudad. Autónoma, 15-I-2009, Col. M. Dalmazzo; 2♂: Ciudad. Autónoma, 21-I-2009, Col. M. Dalmazzo; 1♂: Ciudad. Autónoma, 11-II-2009, Col. M. Dalmazzo; 1♂: Ciudad. Autónoma, 17-III-2009, Col. M. Dalmazzo; 2♀: Ciudad. Autónoma, 26-XI-2009, Col. M. Dalmazzo; 1♂: Ciudad. Autónoma, 11-XII-2009, Col. M. Dalmazzo; 1♂: Ciudad. Autónoma, 9-III-2010, Col. M. Dalmazzo; 1♀: Ciudad. Autónoma, 10-II-2010, Col. M. Dalmazzo; 1♂: Ciudad Autónoma, Reserva Ecológica Costanera Sur, IV-2004, Col. A. Roig A.; 2♀: Ciudad Autónoma, Reserva Ecológica Costanera Sur, 21-XI-2008, Col. M. Dalmazzo; 1♂: Tigre, Delta, Río Carapachay, 27-I-2005, on *Ludwigia sp.* Col. A. Roig A.; 1♀: Delta, Río Sarmiento, La Ursulina, 19-XI-2001, Col. L. Compagnucci; 2♀: Luján; 2♀: Luján, H. H. Maristas; 1♀: Magdalena Ea. Carretero, 10-VIII-1999, Col. A. Basilio; 1♀: Magdalena Ea. Carretero, 9-IX-1999, Col. A. Basilio; 2♀: Magdalena Ea. San Isidro, 23-VIII.1999, Col. A. Basilio; 2♀, 10♂: a 20 Km SE Magdalena Ea. El Destino, 25-II-2000, Col. A. Roig A.; 1♀: a 20 Km SE Magdalena Ea. El Destino, 25-II-2000, on *Baccharis pingraea*, Col. A. Roig A.; 1♀: Magdalena Ea. Carretero, 23-IV-2000, Col. A. Basilio; 1♀: Moreno, Reja Grande, 13-II-2000, A. Roig A.; 1♀: Punta Indio, 11-X-2005, Col. L. Compagnucci; 1♀: San Antonio de Padua, XII-2003, Col. Rodríguez; 1♂: San Isidro, Refugio Ribera Norte, 14-I-2009, on *Pavonia sp.* Col. M. Dalmazzo; 1♂: San Isidro, Refugio Ribera Norte, 20-I-2009, on *Sida rhombifolia*, Col. R. González V.; 1♂: San Isidro, Refugio Ribera Norte, 20-I-2009, on *Cichorium intybus*, Col. R. González V.; 2♂: San Isidro, Refugio Ribera Norte, 20-I-2009, on *Baccharis salicifolia*, Col. R. González V.; 2♀, 2♂: San Pedro, Vuelta de Obligado, 18-XII-2003, Col. A. Roig A.; 1♀: Tigre, 12Km NO, 10-XI-1990, Col. A. Roig A.; 1♀: Tigre, Delta, Río Carapachay, 27-I-2005, on *Eryngium sp.* Col. A. Roig A.; 1♂: Tigre, Río Lujan, Club ACA, 7-I-2002, on *Sagitaria sp.* Col. A. Roig A.; 1♀: Tornquist, Garganta Olvidada, 24-XII-1997, Col. A. Roig A.; 6♀, 1♂: Tornquist, Villa Ventana, 18-II-1999, Col. A. Roig A.; 2♀: Vicente Lopez, La Lucila, I-2008, Col. A. Roig A.; 8♂: Villa Adelina, 13-I-1993, Col. A. Roig A.; 1♀: Villa Devoto, 1-X-1937, Col. H. Hepper; 1♀: Zelaya, II-1935, Col. J. Pereyra; 2♀, 2♂: Zelaya, 6-V-1936, Col. J. Pereyra; 1♀: Zelaya, I-1939, Col. H.C. Hepper. **MLP:** 3♂: Devoto, 1941; 1♀: J.C. Paz, 1944; 1♂: Magdalena, 1942; 8♀, 5♂: San Fernando, 15-XII-1946; 1♀, 1♂: Tigre, 1934. **Catamarca: MACN:** 1♀: 1931, Col. M. Gómez. **Córdoba: MACN:** 2♀: Alta Gracia, La Granja, I-1922, “32853” Col. Bruch; 1♀: Calamuchita, El Sauce, XII-1938, “445807” Col. M. Viana; 1♀: Calamuchita, El Sauce, XII-1938, “44595” Col. M. Viana; 1♀: Calamuchita, El Sauce, II-1941, Col. M. Viana; 1♀: Huerta Grande, 21-II-2006, Col. J.J. Martinez; 1♂: La Falda, 20-

II-2006, Col. J.J. Martinez; 1♀: Leones, 10-II-1946, Col. W. Partridge; 1♀: Punilla, Los Cocos, II-1943, Col. M. Viana; 2♀, 1♂: Punilla, Valle Hermosos, I-1943, Col. M. Viana. **IFML**: 3♂: Villa Ciudad de América, Dique los Molinos, I-1981, Col. A. Willink. **MLP**: 1♀: La Granja, X-1951, Col. Fritz. **Entre Ríos**: **MACN**: 1♀: Federación, 21-I-2004, Col. G. Zubarrán. **Formosa**: **MACN**: 1♀: Reserva El Bagual, 5-III-2000, Col. D. Vázquez. **IFML**: 2♀: Riacho Pilagá, 11-VIII-1977, Col. Porter, Stange & Fidalgo. **La Pampa**: **MACN**: 1♀: Parque Luro, 1-II-2003, Col. J.J. Martinez. **La Rioja**: **MACN**: 1♀. **Misiones**: **MACN**: 3♀, 1♂: “7597”; 1♂: Oberá, 17-X-1950, M. Senkate; 1♂: Tuyuparé, 25-I-1908, Col. J. Brèthes. **IFML**: 1♀: Bernardo de Irigoyen, 12-XI-1973, Col. Escobar & Claps; 1♀: San Javier, 20-XI-1973, Col. Willink & Tomsic. **Salta**: **MACN**: 2♀: Orán, Agosto del Pescado, 26-X-1978, Col. P. Fidalgo; 1♀: Orán, Río Pescado, 20-VII-1970, Col. C. Porter; 1♀: Orán, Río Pescado, 19-VII-1971, Col. C. Porter & L. Stange; 1♂: Tartagal, 7-II-1950, Col. R. Golbach. **MLP**: 1♀: Capital, 1951. **San Luis**: **MACN**: 2♂: Merlo, 30-XII-2002, Col. L. Compagnucci. **Santa Fe**: **MACN**: 1♀: Santa Clara de Buena Vista, 8-X-2006, Col. M. Dalmazzo; 3♀: Santa Clara de Buena Vista, 10-II-2007, Col. M. Dalmazzo; 1♀: La Capital, El Pozo, 16-IX-2004, Col. M. Dalmazzo. **IFML**: 1♀: Tartagal, 21-I-1957, Col. A. Willink. **Tucuman**: **IFML**: 1♀: Burruyacu, Villa Padre Monti, 7-II-1948, Col. R. Golbach; 1♀: Eva Perón, General Pico, 6-II-1950, Col. Williamson. **Bolivia**: **MACN**: 1♀, no further data. **Brazil**: **Rio Grande do Sul**: **MACN**: 1♂: Pelotas, 14-IV-1955, Col. C. Biezanko; 1♀: Guaíba, Br. 116, km 307, 2-XI-1990, C. Schindwein; 1♀: Guaritas, 8-XII-1991, C. Schindwein. **Uruguay**: **MACN**: 1♀: Colonia, Riachuelo, Col. A. Stévenin; 1♀: Colonia, Riachuelo, 1931, Col. A. Stévenin. **FCE-HY**: 1♂: 30-III-2006, Col. E. Santos; 2♀: Arroyo Laureles, 26-XI-1959, Col. Esc.; 3♀: Canelón Chico, 8-X-2006, Col. E. Santos; 10♀, 2♂: Canelones, Sauce, I-2006, Col. E. Santos; 1♀: Canelones, Sauce, 28-I-2006, Col. E. Santos; 2♂: Canelones, Sauce, 25-II-2007, Col. E. Santos; 2♂: Montevideo, II-2006, Col. E. Santos; 1♀, 3♂: Los Arrayanes, 5-I-2007, Col. E. Santos; 1♂: Montevideo, III-2007, Col. E. Santos; 1♀: Maldonado, Sierra Animas, 25-III-1967, Col. F. Esc.; 1♀: Montevideo, I-1966, Col. F.M. Esc.; 1♀: Montevideo, Pocitos, 12-I-1966, Col. F.M. Esc.; 1♀: San José, P. de Valdes, III-1966, Col. F.M. Esc.; 2♀: Tres Cruces Grandes, Artigas, 1-I-1956, Col. C. Foquet.

Floral records: *Asclepias curassavica*; *Baccharis pingraea*; *Baccharis salicifolia*; *Cichorium intybus*; *Eryngium* sp.; *Ludwigia* sp.; *Pavonia* sp.; *Sagittaria* sp.; *Sida rhombifolia*; *Solanum sisymbriifolium*.

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