



## Muscidae (Insecta: Diptera) of Argentina: revision of Buenos Aires province fauna, with a pictorial key to species

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### Abstract

The knowledge of Muscidae of Argentina is fragmentary and incomplete. In this work, 43 species of Muscidae are recorded from Buenos Aires province, the largest and the most populated of Argentina. Redescriptions of *Dolichophaonia trigona* (Shannon & Del Ponte), *Helina nivaloides* Albuquerque, *Mydaea sexpunctata* (Wulp) are presented. Two new synonymies are proposed: *Mydaea latomensis* Snyder is established as a new junior synonym of *M. sexpunctata*, and *Neodexiopsis croceafrons* Snyder is established as a new junior synonym of *N. paulistensis* Albuquerque. We designated lectotypes for *Ophyra carbonaria* Shannon & Del Ponte, *Phyronota platensis* Shannon & Del Ponte, *Phyronota portensis* Shannon & Del Ponte, and *Spilogaster sexpunctata* Wulp. *Arthurella choelensis* Patitucci & Mariluis, *Limnophora aurifacies* Stein, *Lispe setuligera* (Stein), *Morellia (Trichomorellia) trichops* (Malloch), *Neomuscina zosteris* (Shannon & Del Ponte), and *Synthesiomia nudiseta* (Wulp) are recorded for the first time from Buenos Aires province, and *Graphomya maculata* (Scopoli) and *Helina nivaloides* are newly recorded from Argentina. New records of distribution for 21 of the 43 species herein studied are presented. A pictoric key to adults of the 43 species of Muscidae from Buenos Aires province is presented. Notes on biology, distribution in Argentina, and references in the literature for this family are also given.

**Key words:** Argentina, Buenos Aires, Muscidae, pictoric key

### Introduction

Muscidae is one of the most diverse families of calyprtrae Diptera, with more than 5200 species worldwide (Brown *et al.* 2009), and present in all biogeographic regions (Carvalho *et al.* 2005). Muscidae species display several ecological specializations and life history strategies. Their adults occur in numerous habitats (forest, grasslands, wetlands, around water courses, and urban environments), except for the most arid. Their larvae can be found in substrates that include dung, carrion, garbage, rotting fungi, fresh or decomposed vegetal matter; bird and mammal nests, sewage, mud and running water (Savage & Vockeroth 2010).

The habits of adults are highly diverse. Although a large number of species are saprophagous, most of Coenosiinae are predaceous (on small soft-bodied insects). Also, some species are considered anthophilous (*Graphomya*), and others are blood feeders (*Stomoxys*). In a similar way, the trophic habits of larvae can be coprophagous, necrophagous, predaceous, subcutaneous parasites (*Philornis*), or phytophagous (*Atherigona*) (Skidmore 1985).

The Neotropical fauna of Muscidae is represented by more than 850 species (Carvalho *et al.* 2005), and 181 species are recorded from Argentina. Early mentions of the argentinean muscid fauna can be found in literature in the late XIX (Wulp 1883; Bigot 1885), and early XX centuries (Stein 1907; 1918; 1919; Bezzi 1922). Subsequently, three main publications account for the taxonomic knowledge on argentinean fauna of Muscidae. The monograph on Calyprtrae made by Shannon & Del Ponte (1926; 1928) included several Muscidae species. These authors presented part of the fauna of Buenos Aires and Tucumán provinces, with descriptions of new species, and a key. The second study is the work of the Muscoidea of Patagonia and southern Chile (Malloch 1934), which includes the description of 96 new species and 7 new genera, many of them considered endemic. Finally, the

study of the specimens housed in the entomological collection of "Fundación e Instituto Miguel Lillo" by Snyder (1957) provided descriptions and keys for several taxa (mainly from Tucumán province) and presented 37 new species (28 endemic). Posteriorly to the mentioned contributions, only a few new taxonomic works provide new information on this family for this country (Couri *et al.* 2009; Patitucci & Oliva 2009; Patitucci *et al.* 2010a; 2011a; 2011b; 2011c).

Nihei & Domínguez (2008) published a compilation of bibliographic information on Muscidae of Argentina with a generic key adapted from a Neotropical key made by Carvalho (2002). Nihei & Domínguez (2008) suggested that the use of this key may lead to misidentifications, taking into account the state of knowledge on this family: lack of revisions of local faunas, exclusion of genera that might be present but not yet recorded, exclusion of several new endemic species, extensive regions of Argentina where muscid fauna is still unknown. Therefore, the use of inappropriate keys for non-specialist can lead to errors in the identification of species.

As a first stage of a long term ongoing study on Muscidae from Argentina, we compiled the information of Muscidae of Buenos Aires province, taking into consideration that this territory is the largest province of Argentina. Until now, only 35 species had been reported for Buenos Aires.

The aim of this work is the study of the Muscidae present in Buenos Aires province, based on new faunal surveys conducted from 2005 to 2010, especially focused on the saprophagous fauna; the examination of significant amounts of Argentinean material deposited in collections; and revision of previous literature records. This study provides redescriptions of three species, lectotype designations of four nominal species, proposes two new synonymies, and updates the distribution of the species in Argentina. Additionally we provide a pictorial key to adults, and include supplementary information on biology, life history, and bibliographic references for Argentinean muscid species.

## Material and methods

### Study area

Buenos Aires is the largest (307,571 km<sup>2</sup>) and most populated (15.6 million people) province of Argentina. The climate is temperate and is strongly influenced by the ocean. Humidity is high and precipitation is abundant and distributed throughout the year. Rainfall varies from 500 mm to 1,000 mm, with higher values in the eastern portion. Buenos Aires province is a part of the biogeographic region known as Pampeana Province (Morrone 2006). This region conforms a wide area of grassland on the central-eastern Argentina and forms with the grasslands present in Uruguay and southern Brazil the complex known as "Rio de la Plata Grasslands". Its geography comprises grassland with some mountain systems, with the highest elevations slightly exceeding the 1,000 m in the southeast of Buenos Aires. This region has a conspicuous biodiversity, with thousands species of vascular plants, including more than 550 different grasses as *Poa* L., *Stipa* L., *Briza* L., *Piptochaetium* Presl y *Paspalum* L. (Bilenca & Miñarro 2004).

### Taxonomic work

Material examined during this study was mainly collected with hand nets on attracting baits (rotting cow liver, chicken viscera, faeces) during ecological studies from 2005 to 2010. On the other hand, the study of species not associated with baits (*e.g.*, Coenosiinae or some flower visitors as *Graphomya* spp.) was mainly based on specimens deposited in collections. All the specimens studied belong to the following institutions (acronyms in parentheses): Administración Nacional de Laboratorios e Institutos de Salud "Dr. Carlos G. Malbrán", Buenos Aires, Argentina (ANLIS); Facultad de Agronomía, Universidad de Buenos Aires, Buenos Aires, Argentina (FAUBA); Instituto Argentino de Investigaciones de las Zonas Áridas, Mendoza, Argentina (IADIZA); Instituto y Fundación Miguel Lillo, Tucumán, Argentina (IFML); Instituto Nacional de Tecnología Agropecuaria, Castelar, Buenos Aires, Argentina (INTA); Museo Argentino de Ciencias Naturales "Bernardino Rivadavia", Buenos Aires, Argentina (MACN); Museo de La Plata, Buenos Aires, Argentina (MLP); Museu Nacional, Universidade Federal do Rio Janeiro, São Cristóvão, Rio de Janeiro, Brazil (MNRJ); National Museum of Natural History [formerly United States National Museum], Washington D.C., USA (USNM); Instituut voor Taxonomische Zoologie, Zoologisch Museum, Universiteit van Amsterdam, Amsterdam, Netherlands (ZMAN). The specimens collected by the authors were deposited at MACN.

The labels of the type specimens studied here are cited verbatim, lines separated by a slash, different labels by semicolon, and comments are given in brackets. In the case of the type series of nominal species described by Shannon & Del Ponte (1926) deposited at ANLIS and USNM, we recognized its type status based on the direct examination of specimen's labels and compared with the original publication. In order to preserve stability of nomenclature, lectotypes are designated for these cases, fixing their identity in accordance to the International Code of Zoological Nomenclature (ICZN 1999).

Identification of specimens was ensured by the use of original descriptions and redescrptions of the species (see remarks under each species). To study the terminalia morphology, abdomens of selected specimens were detached and transferred to 90 % lactic acid for two weeks. After clearing, the genital structures were removed and temporarily mounted on concave glass slides in glycerine. After the study, the dissected parts were placed in a plastic microvial with glycerine and pinned under the specimen. The terminology used for the external morphology follows Brown *et al.* (2009).

For the list of species included in this work we adopted the classification used in Carvalho *et al.* (2005). Within each subfamily, the genera and the species are listed alphabetically. For each species we provided the material examined, the distribution in Argentina, the bibliographic references for distributional records in Argentina, and brief taxonomic and biological notes.

### Key to species of Muscidae from Buenos Aires Province, Argentina

We recorded a total number of 27 genera and 43 species of Muscidae (Table 1). The key includes all the species listed for the Buenos Aires province. Species names in square brackets are included on the basis of morphological characters available in the literature only. The characters used are valid for both sexes, and they are arranged from the more conspicuous to the less.

1	Proboscis strongly sclerotized, not retractable, with labella reduced, not fleshy (haematophagous species) . . . . .	2
-	Proboscis weakly sclerotized, retractable, with labella well developed . . . . .	3
2	Palpus about one-third as long as labrum; meron setulose . . . . .	<i>Stomoxys calcitrans</i> (L.)
-	Palpus about two-third as long as labrum; meron bare . . . . .	<i>Haematobia irritans</i> (L.)
3	Presutural dorsocentrals 2 . . . . .	4
-	Presutural dorsocentral 1 . . . . .	24
4	Lower calypter narrow, rounded posteriorly (glossiform) (Fig. 1a) . . . . .	5
-	Lower calypter broad, subtruncate posteriorly and with its anteromedian corner extended below scutellum (Fig. 1b) . . . . .	11
5	Anepimeron setulose . . . . .	6
-	Anepimeron bare . . . . .	16

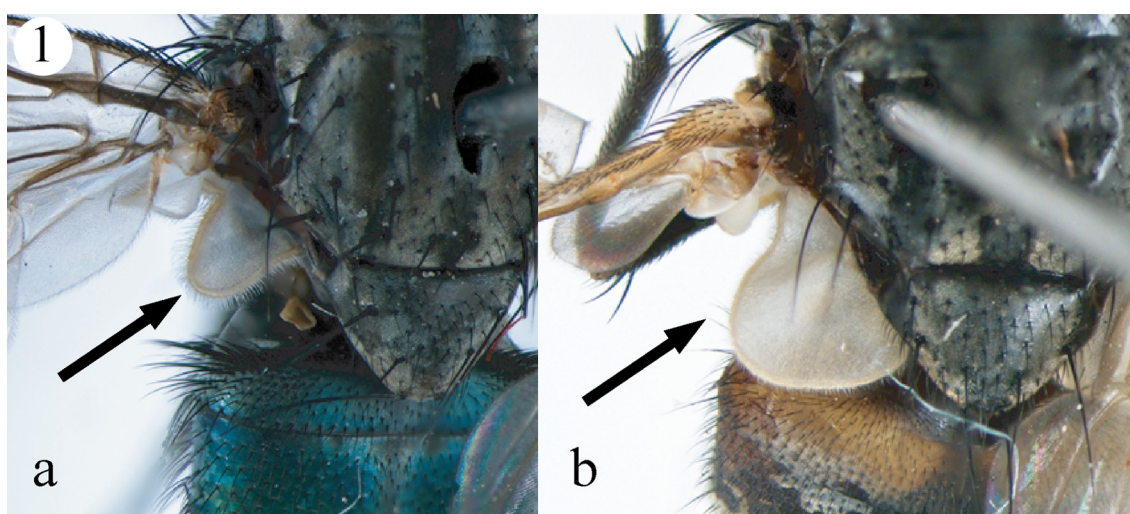


FIGURE 1. Lower calypter, dorsal view. **1a.** *Psilochaeta chlorogaster*, (calypter glossiform). **1b.** *Musca domestica*, (calypter subtruncate posteriorly).



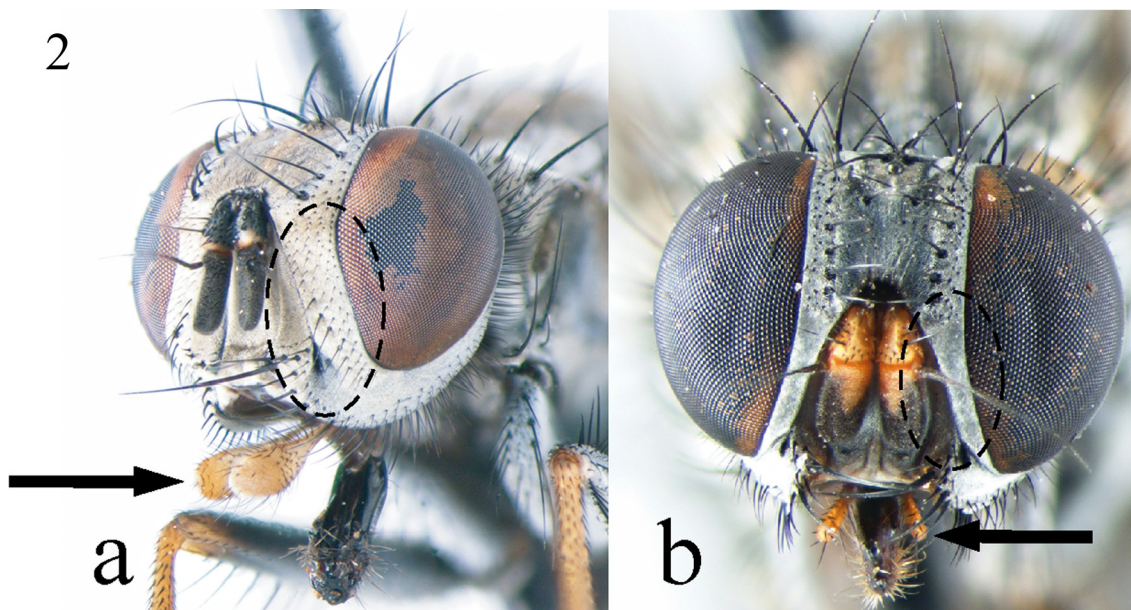


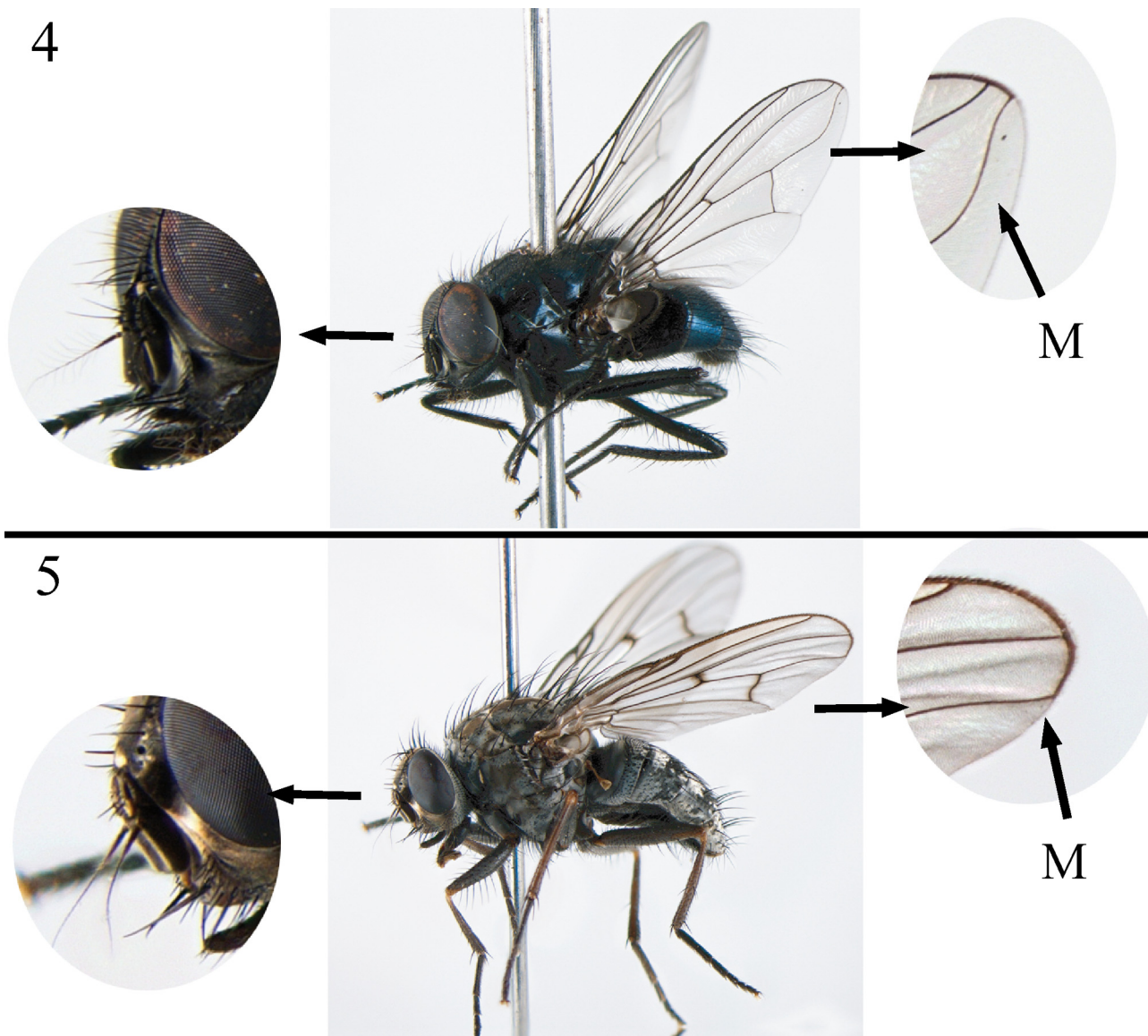
FIGURE 2. Head, anterior view. 2a. *Lispe setuligera*. 2b. *Arthurella choelensis*. The dotted line indicates the parafacial, the arrow indicates the palpus.

6	Parafacial setulose; palpus strongly broadened from base to apex (Fig. 2a); male dichoptic. . . . .	<i>Lispe setuligera</i> (Stein)
-	Parafacial bare (Fig. 2b) . . . . .	7
7	Postpedicel orange at base, with its distal part brown; palpus slender (Fig. 2b); postsutural dorsocentrals 3; male holoptic . . . . .	<i>Arthurella choelensis</i> Patitucci & Mariluis
-	Postpedicel with one color; postsutural dorsocentrals 4 . . . . .	8
8	Node of Rs bare on dorsal surface . . . . .	<i>Neomuscina zosteris</i> (Shannon & Del Ponte)
-	Node of Rs setulose on dorsal surface . . . . .	9
9	Postpedicel yellow (Fig. 3); prosternum setulose . . . . .	<i>Polietina orbitalis</i> (Stein)
-	Postpedicel dark brown to black (Fig. 4–5); prosternum bare . . . . .	10
10	Apical section of M strongly curved forward; general body coloration metallic blue (Fig. 4); katepisternal setae 1+2 . . . . .	<i>Morellia (Trichomorellia) trichops</i> (Malloch)
-	Apical section of M straight (Fig. 5); katepisternal setae 2+2 . . . . .	<i>Neurotrixa felsina</i> (Walker)
11	Antenna yellow to orange; postalar wall setulose. . . . .	12
-	Antenna dark brown to black; postalar wall bare . . . . .	13
12	Fronto-orbital plate and parafacial yellow (Fig. 6) . . . . .	<i>Philornis seguyi</i> Garcia
-	Fronto-orbital plate and parafacial silver (Fig. 7) . . . . .	<i>Philornis torquans</i> (Nielsen)



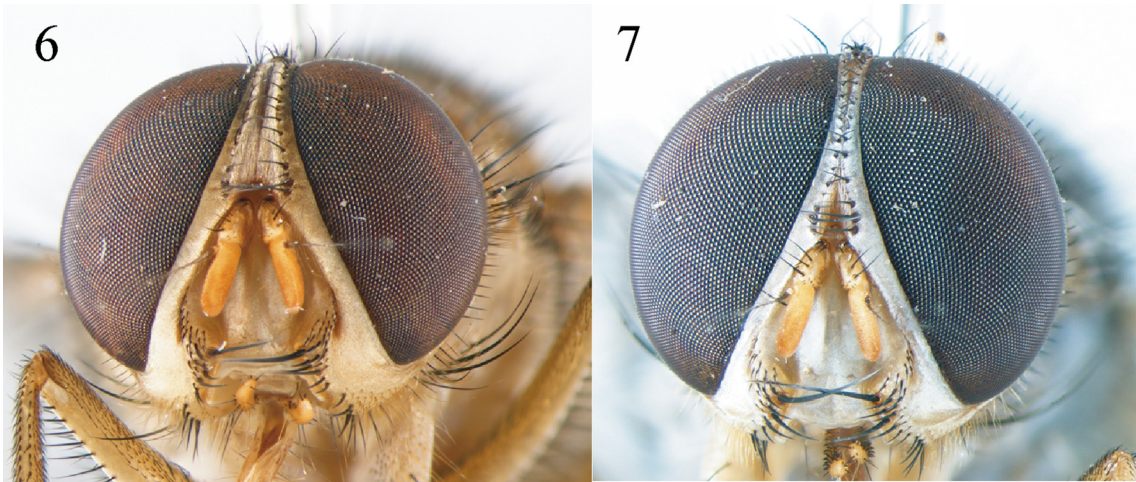
FIGURES 3. *Polietina orbitalis*. Fronto-lateral view, detail of postpedicel, on the left.



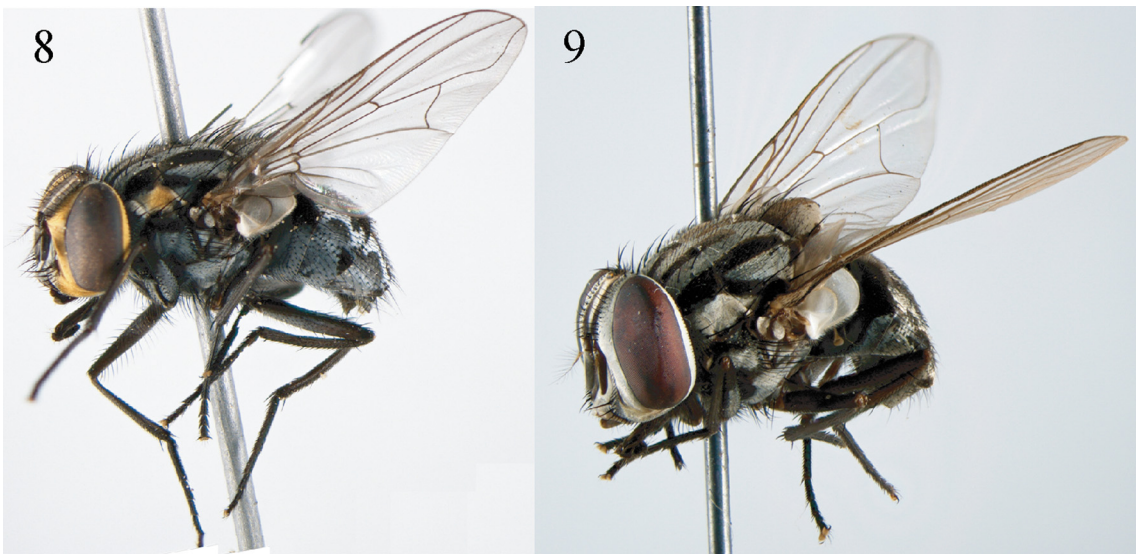


**FIGURES 4–5.** Fronto-lateral view. **4.** *Morellia (Trichomorellia) trichops*. **5.** *Neurotrixa felsina*. Detail of postpedicel, on the left, and detail of M vein, on the right.

13	Katepisternal setae 0+2 . . . . .	14
-	Katepisternal setae 1+2 . . . . .	15
14	Fronto-orbital plate, parafacial, and gena golden-yellow (Fig. 8) . . . . .	<i>Graphomya auriceps</i> Malloch
-	Fronto-orbital plate, parafacial, and gena silver (Fig. 9) . . . . .	<i>Graphomya maculata</i> (Scopoli)
15	Arista bare . . . . .	<i>Synthesimyia nudiseta</i> (Wulp)
-	Arista plumose . . . . .	<i>Musca domestica</i> (L.)
16	General body coloration metallic black, blue, green or violet . . . . .	17
-	General body coloration not metallic . . . . .	29
17	Apical section of M strongly curved forward; postpedicel brown with grey pollinosity; lower calypter with brown margin (Fig. 10) . . . . .	<i>Myospila obscura</i> (Shannon & Del Ponte)
-	Apical section of M straight . . . . .	18
18	General body coloration metallic black (Figs. 11b, 12b, 13b, 14b) . . . . .	19
-	General body coloration metallic blue, green or violet (Figs. 15b, 16b) . . . . .	22
19	Palpus orange-yellow (Fig. 11b). Female: ocellar triangle long and wide with a rounded apex reaching the lunule (Fig. 11a). Male: hind trochanter on ventral surface with a tuft of fine setae . . . . .	<i>Ophyra aenescens</i> (Wiedemann)
-	Palpus brown or black (Fig. 12b). Female: ocellar triangle shape not as above. Male: hind trochanter on ventral surface without a tuft of fine setae . . . . .	20
20	Lower calypter brown with dark brown margin (Fig. 12b). Female: ocellar triangle long and sharpened with a rounded apex reaching the lunule (Fig. 12a) . . . . .	<i>Ophyra albuquerquei</i> Lopes
-	Lower calypter yellowish or white with yellow or white margins (Fig. 13b). Female: ocellar triangle shape not as above . . . . .	21



FIGURES 6–7. Head, anterior view. 6. *Philornis seguyi*. 7. *Philornis torquans*.



FIGURES 8–9. Fronto-lateral view. 8. *Graphomya auriceps*. 9. *Graphomya maculata*.

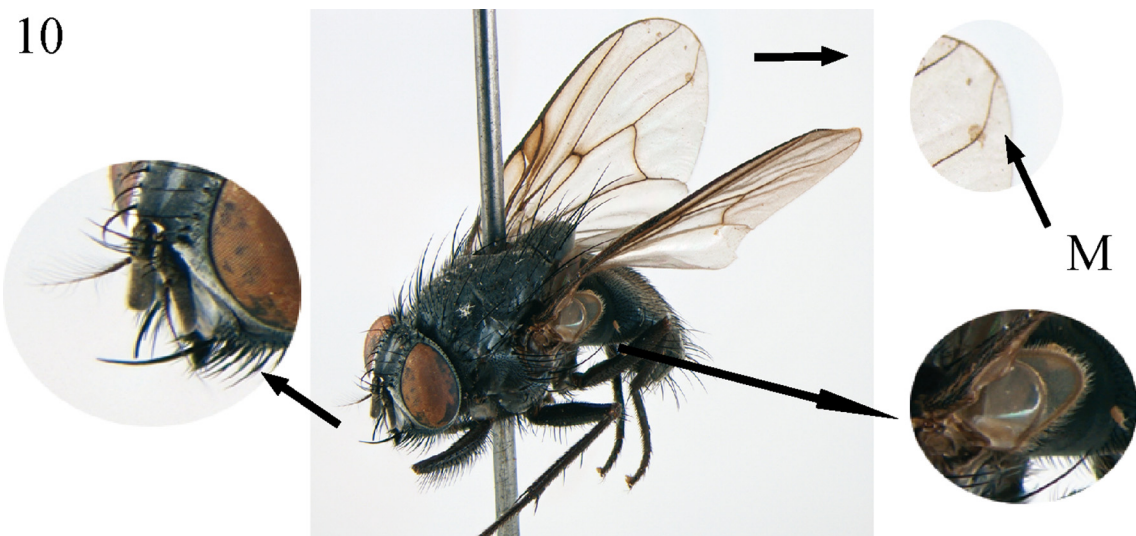
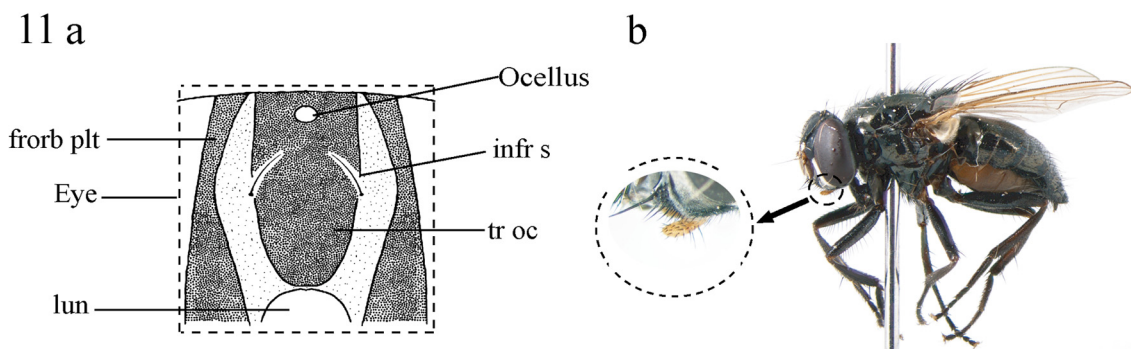
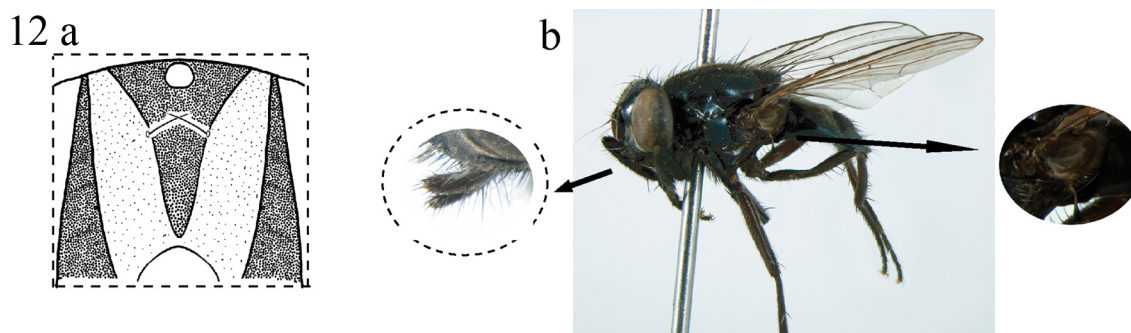


FIGURE 10. *Myospila obscura*, fronto-lateral view, with details of postpedicel, on the left, and details of M vein and calypters, on the right.

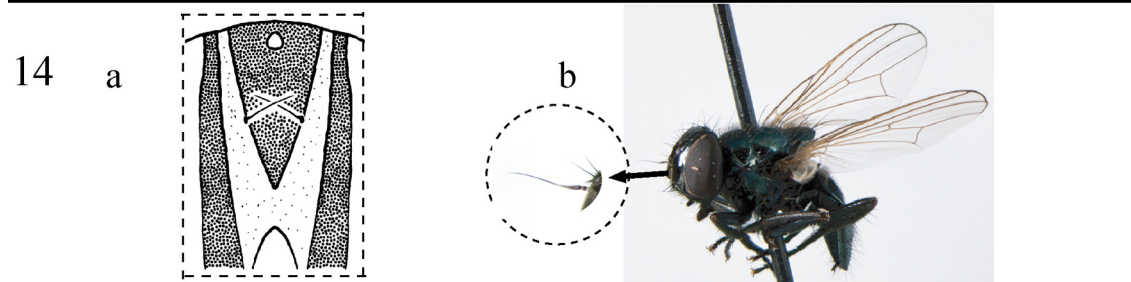
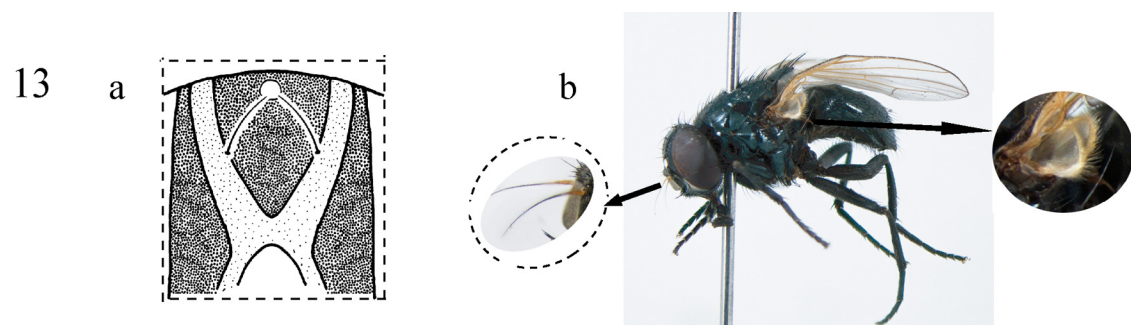




**FIGURE 11.** *Ophyra aenescens*, female. **11a.** Ocellar triangle, frontal view. **11b.** Lateral view with detail of palpi, on the left. Frorb plt: fronto-orbital plate; lun: lunule; infr s: interfrontal seta; tr oc: ocellar triangle.



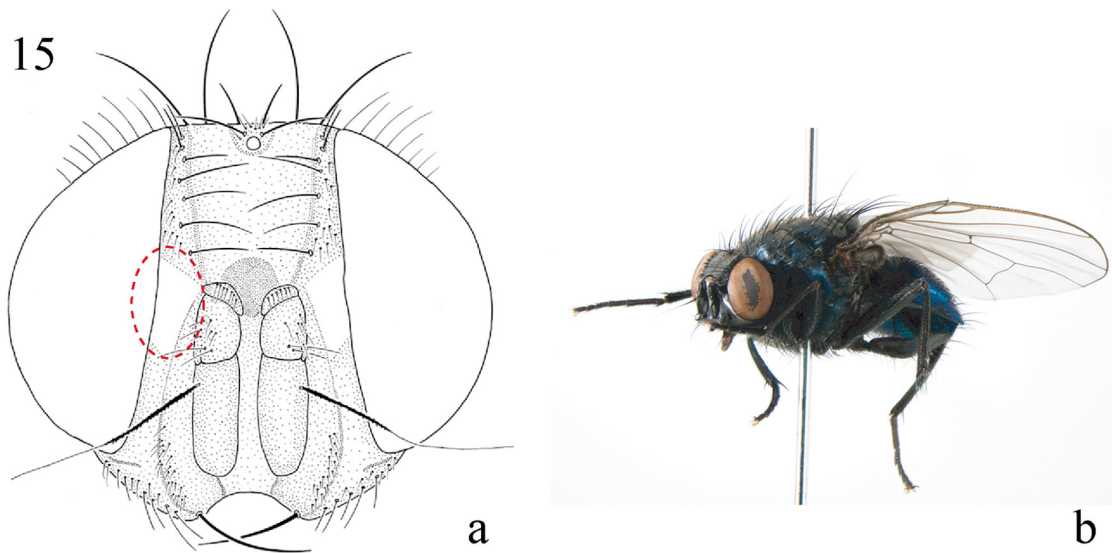
**FIGURE 12.** *Ophyra albuquerquei*, female. **12a.** Ocellar triangle, frontal view. **12b.** Lateral view with details of palpi, on the left, and details of calypters, on the right.



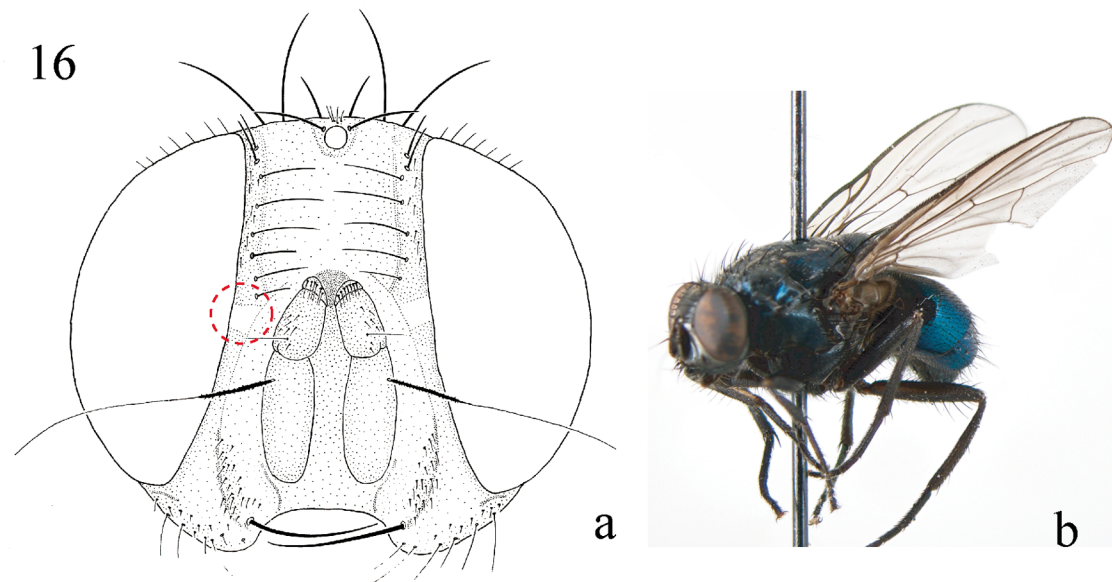
**FIGURES 13–14.** **13.** *Ophyra chalcogaster*, female. **13a.** Ocellar triangle, frontal view. **13b.** Lateral view with detail of arista, on the left, and details of calypters, on the right. **14.** *Ophyra capensis*, female. **14a.** Ocellar triangle, frontal view. **14b.** Lateral view with detail of arista, on the left.

- 21 Arista yellow at the basal half, and black distally (Fig. 13b). Female: ocellar triangle short, with a triangular shape not reaching lunule (Fig. 13a). Male: fore tarsi with tarsomeres yellow on ventral surface . . . . . *Ophyra chalcogaster* (Wiedemann)
- Arista brown (Fig. 14b). Female: ocellar triangle shape not as above (Fig. 14a). Male: fore tarsi with tarsomeres brown on ventral surface . . . . . *Ophyra capensis* (Wiedemann)
- 22 Thorax dark brown with grey pollinosity; abdomen metallic green. . . . . *Psilochaeta chlorogaster* (Wiedemann)
- Thorax metallic violet-blue with grey pollinosity; abdomen metallic violet-blue . . . . . 23

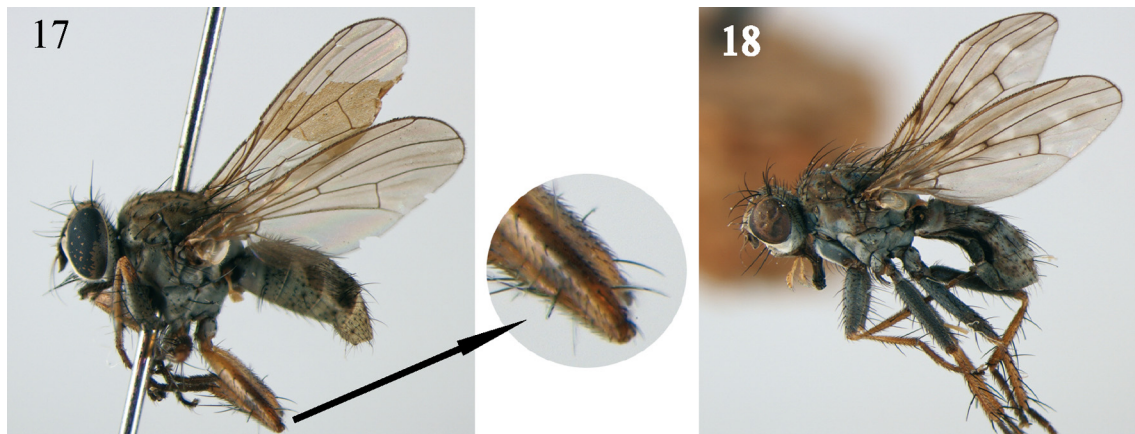




**FIGURE 15.** *Psilochaeta chalybea*, female. **15a.** Head, anterior view. **15b.** Lateral view. The dotted line indicates the area without pollinosity.



**FIGURE 16.** *Psilochaeta pampiana*, female. **16a.** Head, anterior view. **16b.** Lateral view. The dotted line indicates the area without pollinosity.



**FIGURES 17–18.** **17.** *Bithoracochaeta calopus*, lateral view with details of femur III, on the right. **18.** *Spathipheromyia guttipennis*, lateral view.

23	Distance between scapes similar to the diameter of the anterior (median) ocellus; notopleuron with setulae around the posterior seta. Females: parafacial in anterior view with well defined triangular area without pollinosity longer than pedicel (Fig. 15a) . . . . .	<i>Psilochaeta chalybea</i> (Wiedemann)
-	Distance between scapes shorter than the diameter of the anterior (median) ocellus; notopleuron with sparse setulae. Female: parafacial in anterior view with a narrower area without pollinosity shorter than pedicel (Fig. 16a) . . . . .	<i>Psilochaeta pampiana</i> (Shannon & Del Ponte)
24	Postsutural dorsocentrals 2 . . . . .	25
-	Postsutural dorsocentrals 3 . . . . .	26
25	Mid and hind femora yellow with a dark band (Fig. 17) . . . . .	<i>Bithoracochaeta calopus</i> (Bigot)
-	Mid and hind femora yellow without a dark band . . . . .	<i>Bithoracochaeta leucoprocta</i> (Wiedemann)
26	Calypters of similar length . . . . .	[ <i>Schoenomyza argyriceps</i> Malloch]
-	Lower calypter longer than upper calypter . . . . .	27
27	Wings with clouds (Fig. 18) . . . . .	<i>Spathipheromyia guttipennis</i> (Thomson)
-	Wings hyaline . . . . .	28
28	Fronto-orbital plate, parafacial, and gena grey (Fig. 19); legs yellow . . . . .	<i>Neodexiopsis geniculata</i> (Bigot)
-	Fronto-orbital plate, parafacial, and gena yellow (Fig. 20); legs grey . . . . .	<i>Neodexiopsis paulistensis</i> Albuquerque

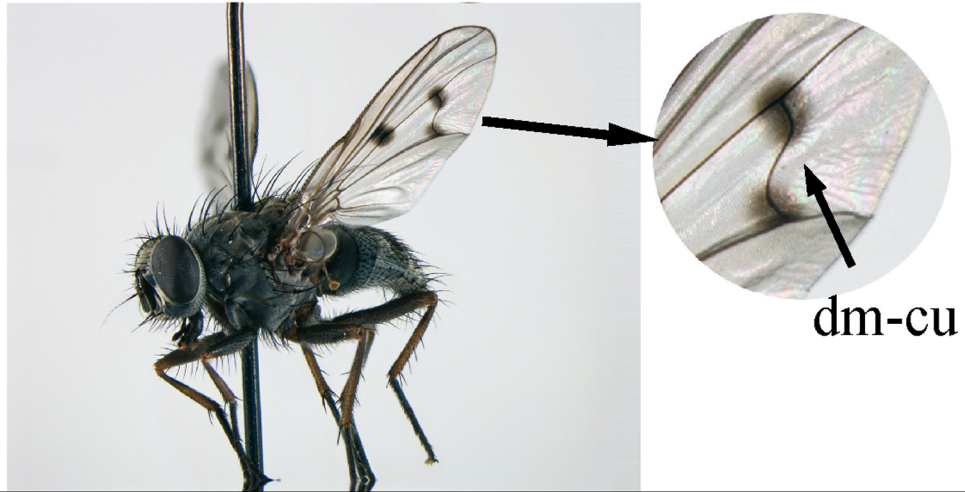


FIGURES 19–20. Head, female, anterior view. 19. *Neodexiopsis geniculata*. 20. *Neodexiopsis paulistensis*.

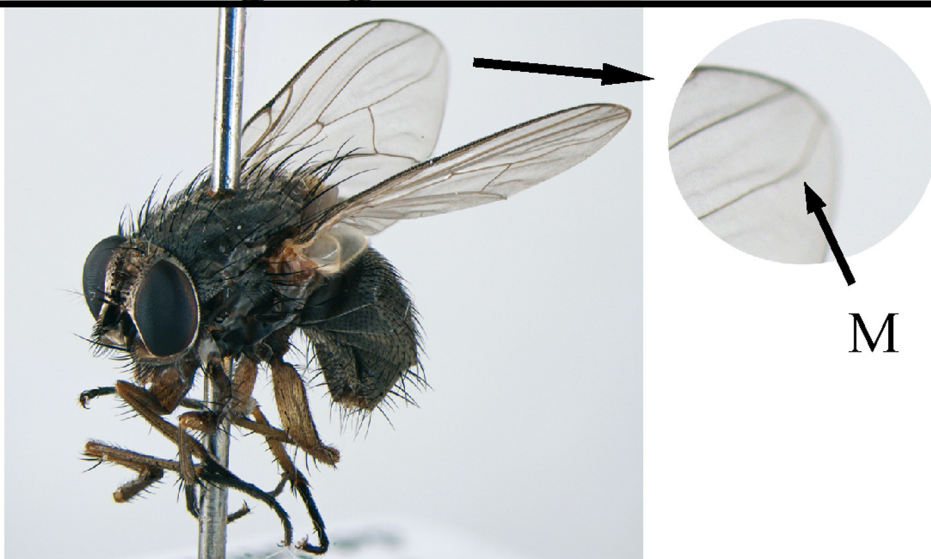
29	Node of Rs bare on dorsal surface . . . . .	30
-	Node of Rs setulose on dorsal surface, in some species only few and small setae . . . . .	35
30	Arista plumose with longest microtrichium longer than diameter of arista . . . . .	31
-	Arista pubescent with longest microtrichium no longer than diameter of arista . . . . .	33
31	Wings with clouds on dm-cu cross-vein (Fig. 21) . . . . .	<i>Dolichophaonia trigona</i> (Shannon & Del Ponte)
-	Wings without clouds on dm-cu cross-vein (Figs. 22–23) . . . . .	32
32	Apical section of M curved forward (Fig. 22) . . . . .	<i>Muscina stabulans</i> (Fallén)
-	Apical section of M straight (Fig. 23) . . . . .	<i>Helina nivaloides</i> Albuquerque
33	Palpus yellow with black tip . . . . .	<i>Gymnodia debilis</i> (Williston)
-	Palpus totally black . . . . .	34
34	Crossvein dm-cu strongly curved (Fig. 24) . . . . .	<i>Gymnodia delecta</i> (Wulp)
-	Crossvein dm-cu more or less straight (Fig. 25) . . . . .	<i>Gymnodia quadristigma</i> (Thomson)
35	Prosternum bare . . . . .	36
-	Prosternum setulose . . . . .	39
36	Postpedicel orange-yellow (Fig. 26) . . . . .	<i>Myospila fluminensis</i> Couri & Lopes
-	Postpedicel brown or black (Figs. 27–29) . . . . .	37
37	Postsutural dorsocentrals 4; postpedicel dark brown (Fig. 27) . . . . .	<i>Mydaea plaumanni</i> Snyder
-	Postsutural dorsocentrals 3 . . . . .	38
38	Legs orange-yellow; postpedicel brown; wings without a cloud on dm-cu (Fig. 28) . . . . .	<i>Mydaea sexpunctata</i> (Wulp)
-	Legs yellow with a basal dark band on femurs; wings with a cloud on dm-cu (Fig. 29) . . . . .	<i>Phaonia trispila</i> (Bigot)
39	Gena strongly projected anteriorly in lateral view (Fig. 30) . . . . .	<i>Syllimnophora variceps</i> Malloch



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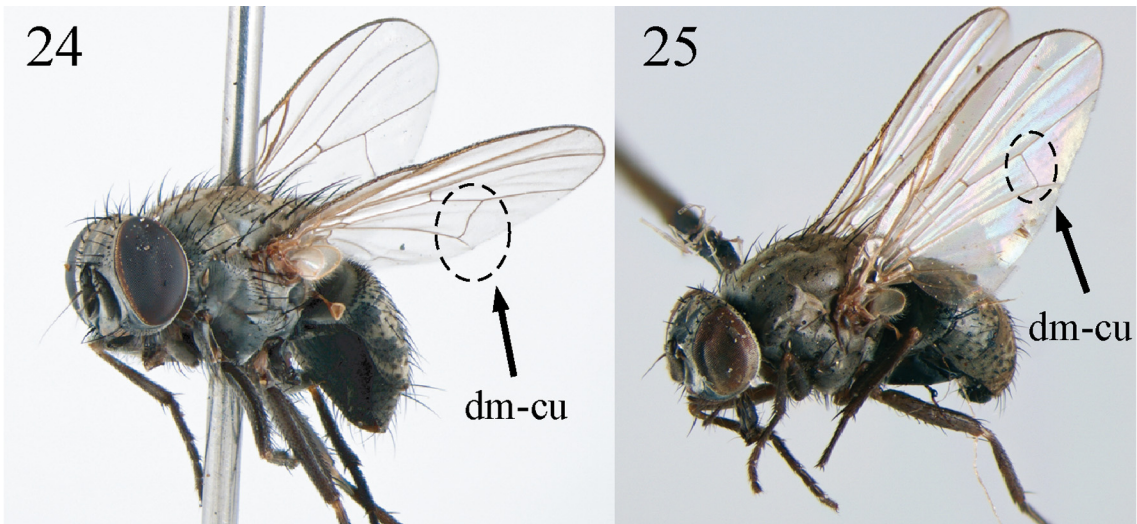


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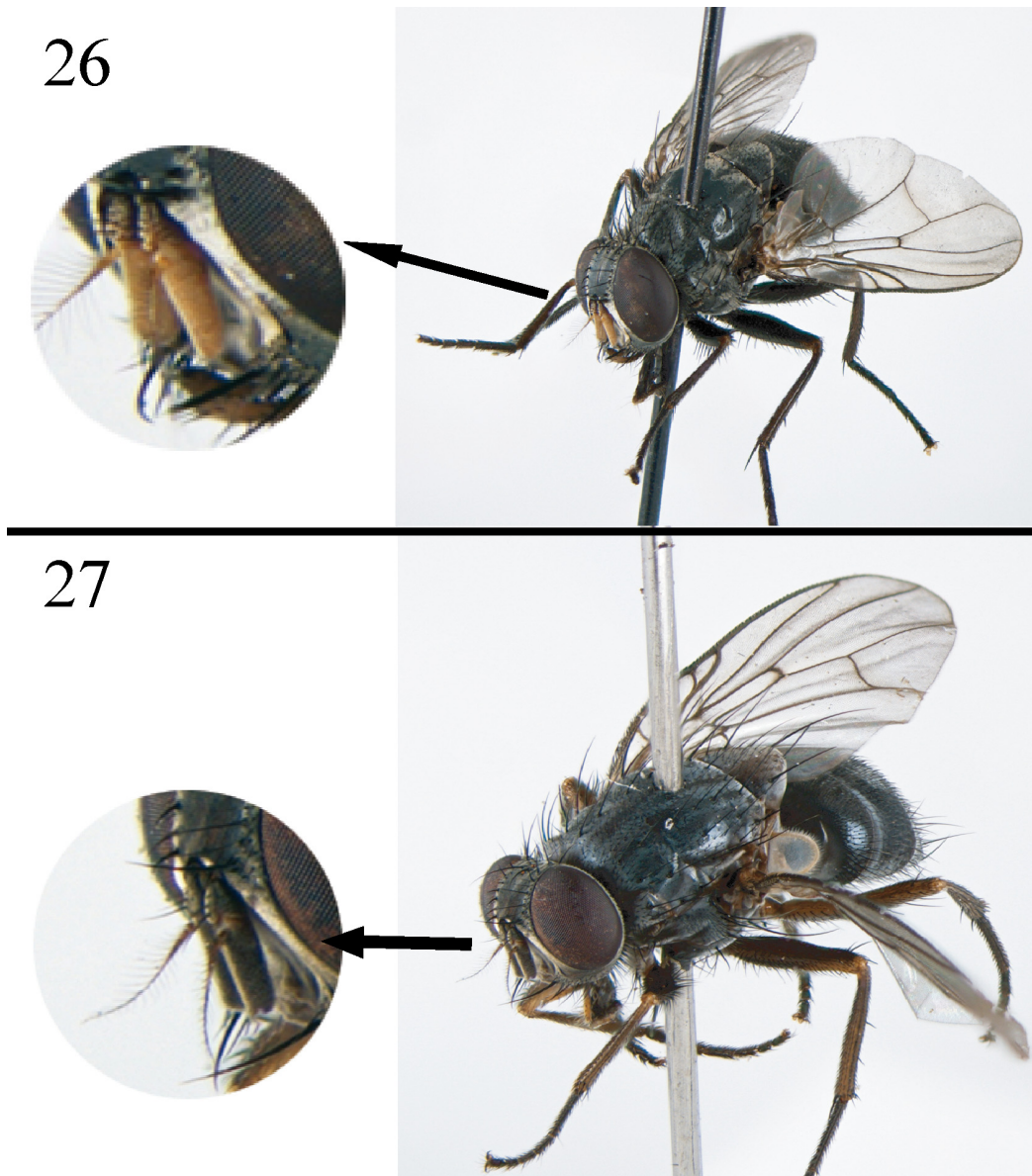


**FIGURES 21–23.** 21. *Dolichophaonia trigona*, lateral view, with detail of cross-vein dm-cu. 22. *Muscina stabulans*, lateral view, with detail of M vein. 23. *Helina nivaloides*, lateral view, with detail of M vein.





FIGURES 24–25. Frontal-lateral view. 24. *Gymnodia delecta*. 25. *Gymnodia quadristigma*. The dotted line indicates the crossvein dm-cu. Frontal-lateral view.



FIGURES 26–27. Frontal-lateral view, with detail of postpedicel, on the left. 26. *Myospila fluminensis*, 27. *Mydaea plaumanni*.

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**FIGURES 28–29.** Fronto-lateral view. **28.** *Mydaea sexpunctata*, with detail of postpedicel, on the left, and with details of legs on the right. **29.** *Phaonia trispila*, with detail of postpedicel, on the left, and with detail of legs and cross-vein dm-cu, on the right.

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**FIGURES 30–31.** Head, lateral view. **30.** *Syllimnophora variceps*. **31.** *Limnophora aurifacies*.



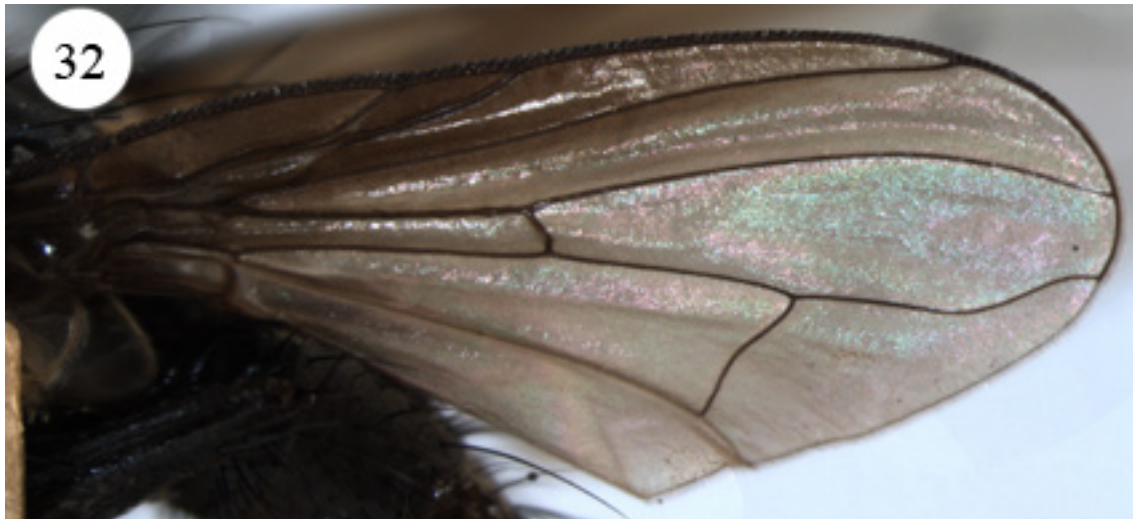


FIGURE 32. *Limmophora marginata*, left wing, ventral view.

-	Gena not projected anteriorly in lateral view (Fig. 31) . . . . .	40
40	Parafacial golden-yellow (Fig. 31) . . . . .	<i>Limmophora aurifacies</i> Stein
-	Parafacial silver-grey. . . . .	41
41	Postsutural dorsocentrals 4 . . . . .	<i>Limmophora narona</i> (Walker)
-	Postsutural dorsocentrals 3 . . . . .	42
42	Wing anteriorly infuscated (Fig. 32). . . . .	<i>Limmophora marginata</i> Stein
-	Wing hyaline . . . . .	[ <i>Limmophora brevihirta</i> Malloch]

## List of the Muscidae from Buenos Aires Province, Argentina

### Muscinae Latreille

#### Muscini Latreille

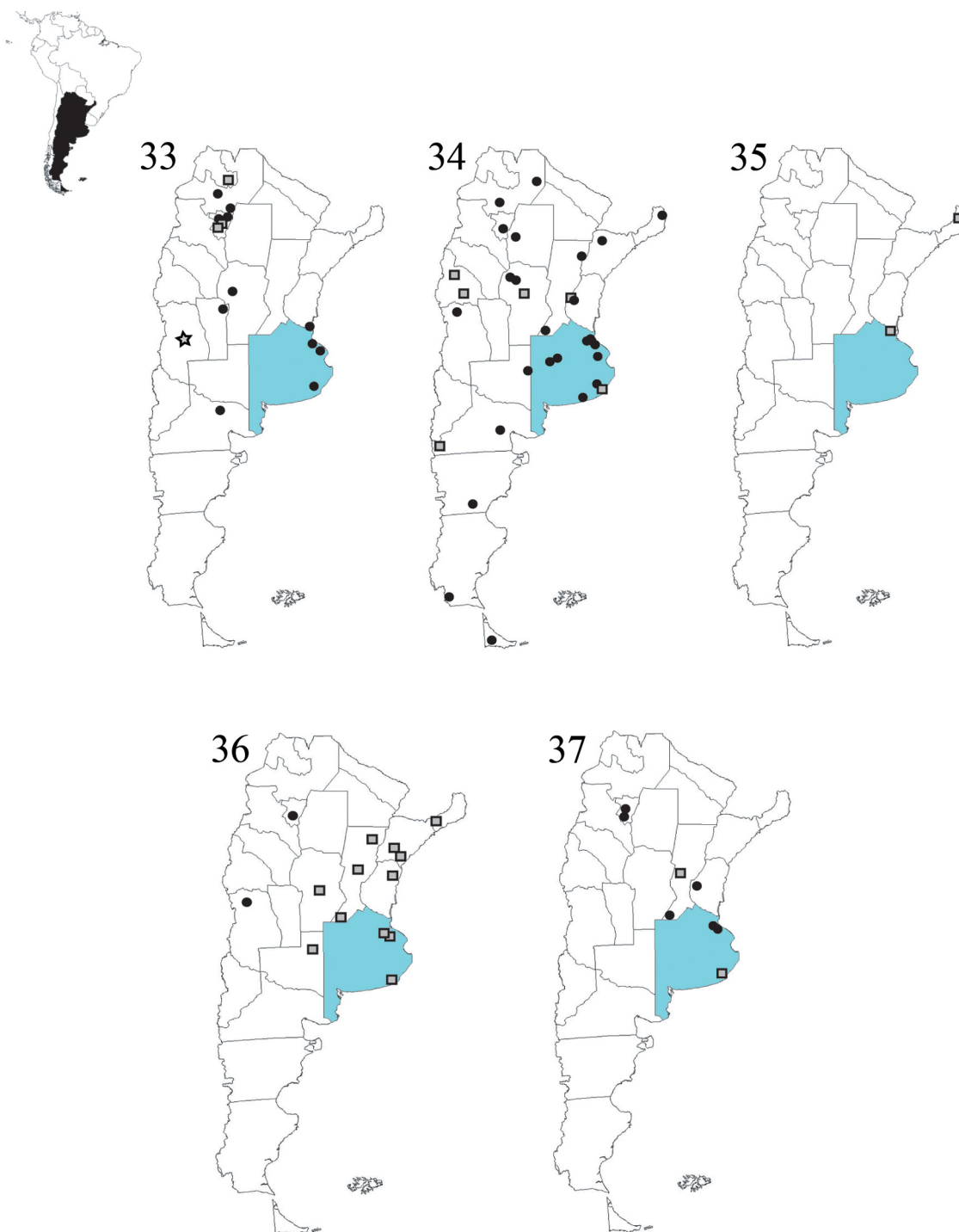
#### *Morellia* (*Trichomorellia*) *trichops* (Malloch, 1923)

(Figs. 4, 33)

*Type material examined.* Paratype, male, pinned, “Huaquinia [print.] / 20/7 [handwr.] Peru [print.]” on white paper; “Yale Peru / Exp. 1911” handwr. on white paper; “Paratype N° [print.] / 27031 [handwr.] / U.S.N.M. [print.]” on red paper; “♂” print. on white paper; “M.N.R.J [print.] / 1350 [handwr.]” on white paper, black frame (MNRJ).

*Other material examined.* ARGENTINA: BUENOS AIRES: 1 female, Buenos Aires, XI-1975, Mariluis leg. (MACN); 1 male, Burzaco, 23-IX-2005, Mulieri leg. (MACN); 1 male, Magdalena, Estancia Carretero, on *Schinus* sp., 20-IX-1998, Basilio leg. (FAUBA); 2 females, Magdalena, Estancia Carretero, XI-1999, Basilio leg. (FAUBA); 1 male, Magdalena, Estancia Carretero, on *Colletia spinosissima*, 20-VIII-1999, Medan leg. (FAUBA); 1 male, Magdalena, Estancia Carretero, on *Colletia spinosissima*, 20-VIII-1999, Basilio leg. (FAUBA); 3 females, 2 males, Magdalena, Estancia Carretero, on *Scutia buxifolia*, 30-XI-2000, Torretta leg. (FAUBA); 1 male, Ministro Rivadavia, IV-2006, Mulieri leg. (MACN); 1 male, Sierra de los Padres, Laguna La Brava, XI-2007, Patitucci leg. (MACN); 1 female, 2 males, Villa Laguna La Brava, 37° 51' 45.78" S, 57° 58' 22.26" W, 25-III-2011, Mulieri & Patitucci leg. (MACN). CÓRDOBA: 2 females, 1 male, Copina, II-1975, Mariluis leg. (MACN). ENTRE RÍOS: 2 females, 3 males, Delta, 23-XII-1951, Schults leg. (ANLIS). RÍO NEGRO: 1 female, Choele-Choel, 18-I-1977, Mariluis leg. (MACN). SAN LUIS: 2 males, Merlo, II-2007, Mulieri leg. (MACN). SALTA: 1 male, San Lorenzo, 20-I-1949, Aczél leg. (IFML); 1 female, 1 male, Cerrillos, 24°53'40'S–65°28'16"W, 1240 m.a.s.l., 12-VII-2003, 1 female, 01-V-2007, 1 female, 1 male, 02-V-2007, 1 male, 04-V-2007, 1 female, 20-V-2007, 1 female, 24-V-2007, 1 female, 1 male, 31-X-2007, Allon leg. (MACN). TUCUMÁN: 1 female, Siambon, 21-X-1945, Wittine leg. (IFML); 1 female, 1 male, V. Padre Monti-Burruyacu, 17-I-7-II-1948, Golbach leg. (IFML).





**FIGURES 33–37.** Geographic distribution in Argentina. **33.** *Morellia (Trichomorellia) trichops*. **34.** *Musca domestica*. **35.** *Polietina orbitalis*. **36.** *Haematobia irritans*. **37.** *Stomoxys calcitrans*. Black dots: new records; gray squares: previous distribution; gray stars: province record (inexact data). Buenos Aires province is denoted in blue.

*Distribution in Argentina* (Fig. 33): Buenos Aires (new record); Córdoba (new record); Entre Ríos (new record); Jujuy; Mendoza; Río Negro (new record); Salta (new record); San Luis (new record); Tucumán.

*References for Argentina.* Karl (1935); Pamplona (1983); Shannon & Del Ponte (1926).

*Remarks.* *Morellia (T.) trichops* was described by Malloch (1923), and later redescribed by Pamplona (1983).

*Biology.* Adult habits are unknown. In this work several adult specimens were collected on vegetation (*Schinus* L. sp., *Colletia spinosissima* Gmel., *Scutia* Brongn. sp.) and over decaying meat.

***Musca domestica* Linnaeus, 1758**

(Figs. 1b, 34)

*Material examined.* ARGENTINA: BUENOS AIRES: 1 female, Adrogué, 7-V-1930. (ANLIS); 1 male, Capital Federal, Instituto de Entomología Sanitaria, 30-IX-1940. (ANLIS); 3 females, Capital Federal, Instituto Malbrán, XII-2007, Patitucci leg. (ANLIS); 1 female, Carlos Casares, Estancia San Claudio, on *Conyza bonariensis* 07-III-2007, Fernandez & Montalvo leg. (FAUBA); 1 male, Chascomús, 28-I-1938, Biraben-Scott leg. (MLP); 1 male, Pehuajó, 26-III-1938. Biraben-Scott leg. (MLP); 1 female, Quequén, I-2010, Patitucci leg. (MACN); 1 female, San Isidro, 25-VIII-1926, Shannon & Del Ponte leg. (ANLIS); 3 females, San Miguel, XI-1976, Mariluis leg. (MACN); 1 female, Santa Clara del Mar, XI-2007, Mariluis leg. (MACN); 2 females, 4 males, Villa Elisa, La Plata, II-1982, Mariluis leg. (MACN). CHUBUT: 23 females, 11 males, Sarmiento, 28-I-1960, Bachmann leg. (ANLIS). CÓRDOBA: 1 female, Capilla del Monte, 1000 mts., I-2001, Mariluis leg. (MACN); 3 females, Guanaco Muerto, II-1975, Mariluis leg. (MACN); 1 male, Huerta Grande, X-2008, Patitucci leg. (MACN). CORRIENTES: 1 female, Parque Nacional Mburucuyá, 10-XII-1997, Oliva leg. (MACN). ENTRE RÍOS: 2 males, Paraná, on *Eryngium* sp., 20-XII-2004, Torretta leg. (FAUBA); 1 male, Paraná, on *Rapistrum rugosum*, 20-XII-2004, Torretta leg. (FAUBA); 1 male, San Benito, XII-2004, Torretta leg. (MACN). LA PAMPA: 5 females, 3 males, Catriló, 24-III-1938, Biraben-Scott leg. (MLP). MENDOZA: 3 females, Mendoza Capital, 24-V-2007, Aballay leg. (IADIZA). MISIONES: 1 female, San Antonio, 9-II-1937 (ANLIS). RÍO NEGRO: 1 male, Valcheta, 10-II-1938, Biraben-Scott leg. (MLP). SALTA: 6 females, 11 males, Rivadavia, La Merced, 4-VIII-1960 (ANLIS); 2 females, Talapampa, 9-III-1939, Biraben-Scott leg. (MLP). SAN JUAN: 8 females, Jáchal, La Legua, III-2005, Aballay leg. (IADIZA); 9 females, 2 males, Rivadavia, 10-I-2006, Aballay leg. (IADIZA). SANTA CRUZ: 5 females, 2 males, Río Turbio, 29-I-1960, Bachmann leg. (ANLIS). SANTA FE: 2 females, 1 male, Christophersen, 25-IV-2009, Patitucci leg. (MACN); 1 female, 1 male, Reconquista, 26-XI-1939, Biraben-Scott leg. (MLP). SANTIAGO DEL ESTERO: 1 female, Santiago del Estero, Wagner leg. (MLP). TIERRA DEL FUEGO: 1 male, Lago Fagnano, I-1982, Gondel leg. (ANLIS). TUCUMÁN: 3 females, M. Bello, 14-I-1945 (ANLIS).

*Distribution in Argentina* (Fig. 34): Buenos Aires; Chubut (new record); Córdoba; Corrientes (new record); Entre Ríos; La Pampa (new record); Mendoza (new record); Misiones (new record); Río Negro; Salta (new record); San Juan; Santa Cruz (new record); Santa Fe; Santiago del Estero (new record); Tierra del Fuego (new record); Tucumán (new record).

*References for Argentina.* Aballay *et al.* (2008); Battán-Horenstein *et al.* (2005); Berg (1899); Malloch (1934); Marchionatto (1945); Perotti & Brasco (1996).

*Remarks.* A redescription with good illustrations of male and female terminalia was provided by Pont (1973). The immature stages were studied by Skidmore (1985).

*Biology.* *Musca domestica* is closely associated with man and is commonly found in houses, being attracted to a wide variety of substances for feeding (Skidmore 1985). This fly occurs on all continents except Antarctica, but is native from the Afrotropical and Oriental regions and was probably introduced into the Americas by Europeans during colonial times (Moon 2002).

***Polieta orbitalis* (Stein, 1904)**

(Figs. 3, 35)

*Type material examined.* Neotype male, pinned, damaged, without abdomen, “Grajahú / Rio 1.XII.40 / Lopes & Oliveira” printed on white paper, black frame; “*Smythomyia / orbitalis* (Stein) [handwritten] / D. Albuquerque det. [printed]” on white paper, black frame; “♂” handwritten on white paper; “MNRJ [printed] 5864 [handwritten]” on white paper, black frame; “Neótipo (a lamina / de ♂ é deste)” handwritten on folded paper, with blue ink (MNRJ).

*Other material examined.* ARGENTINA: BUENOS AIRES: 1 female, Campana, Reserva Natural Estricta Otamendi (RNEO), 26-XI-2009, Patitucci leg. (MACN). MISIONES: 2 females, Iguazú, X-1988, Mariluis leg. (MACN). TUCUMAN: 1 female, 1 male, Yerba Buena, P.Sa. San Javier, 1103 m.a.s.l, 26° 47' 10.80"S, 65° 23' 23.40"W, XI-2010, Mulieri & Patitucci leg. (MACN).

*Distribution in Argentina* (Fig. 35): Buenos Aires; Misiones; Tucumán (new record).

*References for Argentina.* Albuquerque (1956a); Patitucci *et al.* (2011b).

*Remarks.* Couri & Carvalho (1997) presented a detailed redescription of the species with illustrations of male and female terminalia. Recently, a review of the Neotropical species of this genus was made by Nihei & Carvalho (2007).

*Biology.* Couri & Carvalho (1997) found a female specimen with the presence of hatched eggs and considered the species as larviparous. Later, Nihei & Carvalho (2002) presented a gynandromorphism report for this species.

## **Stomoxyini Meigen**

### ***Haematobia irritans* (Linnaeus, 1758)**

(Fig. 36)

*Material examined.* ARGENTINA: MENDOZA: 1 female, Mansilla, Salares Grandes, 1997, Roig & Debandi leg. (IADIZA). TUCUMÁN: 3 females, Leales, 7-XII-1994, Vera leg. (IFML).

*Distribution in Argentina* (Fig. 36): Buenos Aires; Córdoba; Corrientes; Entre Ríos; La Pampa; Mendoza (new record); Misiones; Santa Fe; Tucumán (new record).

*References for Argentina.* Anziani *et al.* (1993); Buseti *et al.* (1996); Fader *et al.* (2003); Luzuriaga *et al.* (1991); Perotti & Brascesco (1998); Sheppard & Torres (1998); Suarez *et al.* (1995).

*Remarks.* A brief redescription was provided by Hennig (1964). The immature stages were studied by Skidmore (1985).

*Biology.* The horn fly, *H. irritans*, is a blood sucking species associated with cattle, and is considered a major agricultural pest. *Haematobia irritans* is also a vector of *Stephanofilaria stilesi*, a skin parasite of cattle (Lehane 2005). The females of this species lay their eggs in the faeces of cattle (Tarelli 2004). This introduced species was recorded for the first time in Argentina in Misiones (Luzuriaga *et al.* 1991), and later in the central part of the country (Torres *et al.* 1992).

### ***Stomoxys calcitrans* (Linnaeus, 1758)**

(Fig. 37)

*Material examined.* ARGENTINA: BUENOS AIRES: 2 females, Burzaco, III-2002, Mulieri leg. (MACN); 1 female, 2 males, Campo de Mayo, 12-XII-2009, Di Iorio leg. (MACN); 1 female, Instituto Bacteriológico “Dr. Carlos G. Malbrán”, Capital Federal, 29-V-1944 (ANLIS); 1 female, Moreno, 20- I-1976 (ANLIS). ENTRE RÍOS: 1 female, 1 male, Crespo, 26-XII-2009, Di Iorio leg. (MACN). MENDOZA: 2 females, Mendoza capital, 17-30-VIII-1997, Roig & Debandi leg. (IADIZA). SANTA FE: 5 females, Christophersen, General López, 25-IV-2009, Patitucci leg. (MACN). TUCUMÁN: 2 males, Concepción, 7-IV-1926, Shannon leg. (ANLIS); 1 female, Horco Molle, 1-II-1976 (ANLIS); 2 females Estación Ex. Agricol., 18-IX-1943 (MLP); 2 females, Estación Ex. Agricol., 18-IX-1943, Rosenfield & Berber leg. (INTA).

*Distribution in Argentina* (Fig. 37): Buenos Aires; Entre Ríos (new record); Mendoza (new record); Santa Fe; Tucumán (new record).

*References for Argentina.* Berg (1899); Brèthes (1907); Lahille (1907); Perotti & Sardella (1998).

*Remarks.* A redescription with good illustrations of male and female terminalia was provided by Pont (1973). The immature stages were studied by Skidmore (1985).

*Biology.* The stable fly is a pest species of worldwide distribution and causes considerable losses to the agricultural industry (Lehane 2005). There are few records of this pest of cattle in Argentina considering the high livestock that develops in the country. The first country record was made by Berg (1899) in the province of Santa Fe and then Brèthes (1907) in the province of Buenos Aires.



## Azeliinae Robineau-Desvoidy

### Azeliini Robineau-Desvoidy

#### *Ophyra aenescens* (Wiedemann, 1830)

(Figs. 11, 38)

*Anthomyia aenescens* Wiedemann, 1830: 435

*Ophyra virescens* Macquart, 1843: 321

*Anthomyia setia* Walker, 1849: 956

*Ophyra argentina* Bigot, 1885: 302

*Ophyra carbonaria* Shannon & Del Ponte, 1926: 576

**Lectotype designation of *Ophyra carbonaria*.** Shannon & Del Ponte (1926) described *Ophyra carbonaria* from three females and eleven males (syntypes) from Buenos Aires and Tucumán, Argentina. We located five females and two males from Buenos Aires and one male from Tucumán in ANLIS, and there are not specimens in USNM (Raymond Gagne, pers. comm.). The male syntype from Tucumán is hereby designated lectotype of *Ophyra carbonaria* Shannon & Del Ponte, 1926. Lectotype male (ANLIS): in good condition, pinned, labels: “Tucumán / Tuc [printed] 6.21.26 [handwritten]” on white paper; “R.C. Shannon / Coll.” printed on white paper; “Ophyra / carbonaria / S.& DP.” handwritten on white paper; “Lectotype / Ophyra carbonaria / Shannon & Del Ponte, 1926 / L. D. Patitucci det. 2012” [red label, printed]. Paralectotypes in good condition (ANLIS): One female, pinned, label: “San Isidro (Bs. As.) [printed] / 8:25:26 [handwritten]” on white paper, black frame: “Shannon & / Shannon” printed on white paper; “Ophyra / carbonaria” handwritten on white paper; “Paralectotype / Ophyra carbonaria / Shannon & Del Ponte, 1926 / L. D. Patitucci det. 2012” [red label, printed]. Four females and two males, pinned, labels: “San Isidro (Bs. As.) [printed] / 8:25:26 [handwritten]” on white paper, black frame; “Shannon & / Shannon” printed on white paper; “Paralectotype / Ophyra carbonaria / Shannon & Del Ponte, 1926 / L. D. Patitucci det. 2012” [red label, printed].

*Other material examined.* BUENOS AIRES: 1 female, Balcarce, II-1947, Wappers leg. (ANLIS); 1 male, Buenos Aires, 20-IV-1915, Bruch leg. (ANLIS); 1 female, Buenos Aires, 7-X-2003, Oliva leg. (MACN); 6 females, Buenos Aires, Emerg. 111, 5-I-2000, Oliva leg. (MACN); 1 female, Buenos Aires, 3-VI-1907, Oliva leg. (MACN); 13 females, 3 males, Burzaco, 13-II-2007, Mulieri leg. (MACN); 1 male, Carlos Casares, 14-II-2006, Medan, Devoto & Fernández leg. (FAUBA); 8 females, Ciudad Universitaria, Capital Federal, 7-XIII-2007, Patitucci leg. (MACN); 1 female, Instituto Bacteriológico “Dr. Carlos G. Malbrán”, Capital Federal, 9-VII-1938 (ANLIS); 1 female, 2 males, Laguna La Tablilla, Chascomús, 01-XII-2007, Torretta leg. (FAUBA); 1 female, Magdalena, 30-XI-2000, Torretta leg. (FAUBA); 1 female, 1 male, Mar del Plata, XI-2007, Patitucci leg. (MACN); 53 females, 11 male, Ministro Rivadavia, 17-I-2007, Mulieri leg. (MACN); 2 females, Quequén, I-2010, Patitucci leg. (MACN); 1 female, 1 male, Tandil, 21-XI-2003, Oliva leg. (MACN); 1 female, 5 males, Villa del Mar, Bahía Blanca, 38°52'06.81"S–62°06'06.66"W, 06-XI-2011, Patitucci leg. (MACN); 2 females, 2 males, Villa Elisa, La Plata, II-1982, Mariluis leg. (MACN). CHACO: 1 female, Charata, 19-X-2010 (MACN). CÓRDOBA: 1 female, Capilla del Monte, I-2001, Mariluis leg. (MACN). CORRIENTES: 8 females, 2 males, Ituzaingó, XII-1976, Mariluis leg. (MACN). MENDOZA: 2 males, Mendoza capital, 31-VII-2007, Aballay leg. (IADIZA). MISIONES: 3 females, 5 males, Iguazú, 23-III-1987, Mariluis leg. (MACN); 3 females, 1 male, Puerto Esperanza, X-1978, Mariluis leg. (MACN). SANTA FE: 14 females, 3 males, Christophersen, General López, 25-IV-2009, Patitucci leg. (MACN). SALTA: 9 females, 5 males, La Caldera, XII-1986, Mariluis leg. (MACN); 1 female, El Maray, Depto. Chicoana, XII-1986, Mariluis leg. (MACN). SAN JUAN: 2 males, Jachal La Legua, 1164 m.a.s.l., 06-IV-2005, Aballay leg. (IADIZA); 1 female, 27-III-2005 (IADIZA); 1 female, 1 male, Rivadavia, 674 m.a.s.l., 11-I-2006, Aballay leg. (IADIZA); 2 females, same data, 10-I-2006 (IADIZA); 1 male, same data, 12-I-2006 (IADIZA); 3 females, Rivadavia, Barrio Aramburu, 08-X-2005, Aballay leg. (IADIZA); 1 female, same data, 666 m.a.s.l., 07-VI-2005 (IADIZA); 5 females, 2 males, Valle Fértil, 560 m.a.s.l., 30-VI-2006, Aballay leg. (IADIZA).

*Distribution in Argentina* (Fig. 38): Buenos Aires; Chaco (new record); Córdoba; Corrientes; Mendoza; Misiones; Santa Fe; Salta; San Juan; Tucumán.

*References for Argentina.* Bigot (1885); Patitucci *et al.* (2010a); Shannon & Del Ponte (1926).

*Remarks.* A redescription with good illustrations of male and female terminalia was given by Pamplona & Couri (1989). The immature stages were studied by Skidmore (1985).

*Biology.* *Ophyra aenescens* is a Neotropical synanthropic species, which expanded its range and became cosmopolitan (Hogsette & Washington 1995). Recently an update of its distribution and comments about the use of synonymic names in forensic works in Argentina was presented (Patitucci *et al.* 2010a).

### ***Ophyra albuquerquei* Lopes, 1985**

(Figs. 12, 39)

*Type material examined.* Holotype male, pinned, damaged, without abdomen, terminalia in plastic vial, “M. N. / N. [printed] 5332 [handwritten]” on white paper, black frame; “Petrópolis (EJ).—Le / Vallon, Alto Mosela / (1.100m) 1/I-8/ / III/57. Albq leg.” handwritten on white paper, black frame; “Holotipo” print on red paper, black frame; “*Ophyra albuquerquei* / Lopes, 1985” handwritten on white paper, black frame (MNRJ).

*Other material examined.* ARGENTINA: BUENOS AIRES: 1 male, Balcarce, III-47, Wappers leg. (ANLIS); 1 female, Burzaco, II-2006, Mulieri leg. (MACN); 1 male, Malbrán, Capital Federal, XII-2007, Patitucci leg. (MACN); 1 male, Reserva Ecológica Costanera Sur (RECS), Capital Federal, II-2008, Mulieri leg. (MACN); CÓRDOBA: 2 females, Capilla del Monte, I-2001, Mariluis leg. (MACN). MISIONES: 4 females, 2 males, Iguazú, 23-III-1987, Mariluis leg. (MACN); 7 females, 2 males, Puerto Esperanza, X-1978, Mariluis leg. (MACN). SALTA: 5 females, 1 male, El Maray 2000 mts, XII-1986, Mariluis leg. (MACN). TUCUMÁN: 2 males, Padre Monti, Burruyacu, 7-II-1948, Golbach leg. (IFML), 1 male, Quebrada La Toma, 21-XII-1950, Golbach leg. (IFML); 1 female, San Pedro de Colalao, 1190 m., III-1979, Mariluis leg. (MACN).

*Distribution in Argentina* (Fig. 39): Buenos Aires; Córdoba; Misiones; Salta; Tucumán.

*References for Argentina.* Patitucci *et al.* (2010a).

*Remarks.* A detailed description of the species was made by Lopes (1985a) and Pamplona & Couri (1989).

*Biology.* The necrophagous fly, *O. albuquerquei*, is a Neotropical species registered only in Brazil (Carvalho *et al.* 2005) and Argentina (Patitucci *et al.* 2010a).

### ***Ophyra capensis* (Wiedemann, 1818)**

(Figs. 14, 40)

*Material examined.* ARGENTINA: BUENOS AIRES: 2 males, Capital Federal, Cementerio de la Chacarita, 8-VIII-1998, Oliva leg. (MACN); 5 females, 2 males Capital Federal, 5-I-2000, Oliva leg. (MACN); 2 females, Burzaco, 03-X-2009, Mulieri leg. (MACN).

*Distribution in Argentina* (Fig. 40): Buenos Aires.

*References for Argentina.* Patitucci *et al.* (2010a).

*Remarks.* A redescription with good illustrations of male and female terminalia was given by Pamplona & Couri (1989). The immature stages were studied by Skidmore (1985).

*Biology.* *Ophyra capensis* is native to the Old World (Skidmore 1985). This species has been bred in human faeces, carcasses of mammals and birds, and was found in human corpses in forensic situations of confinement (Bourel *et al.* 2004).

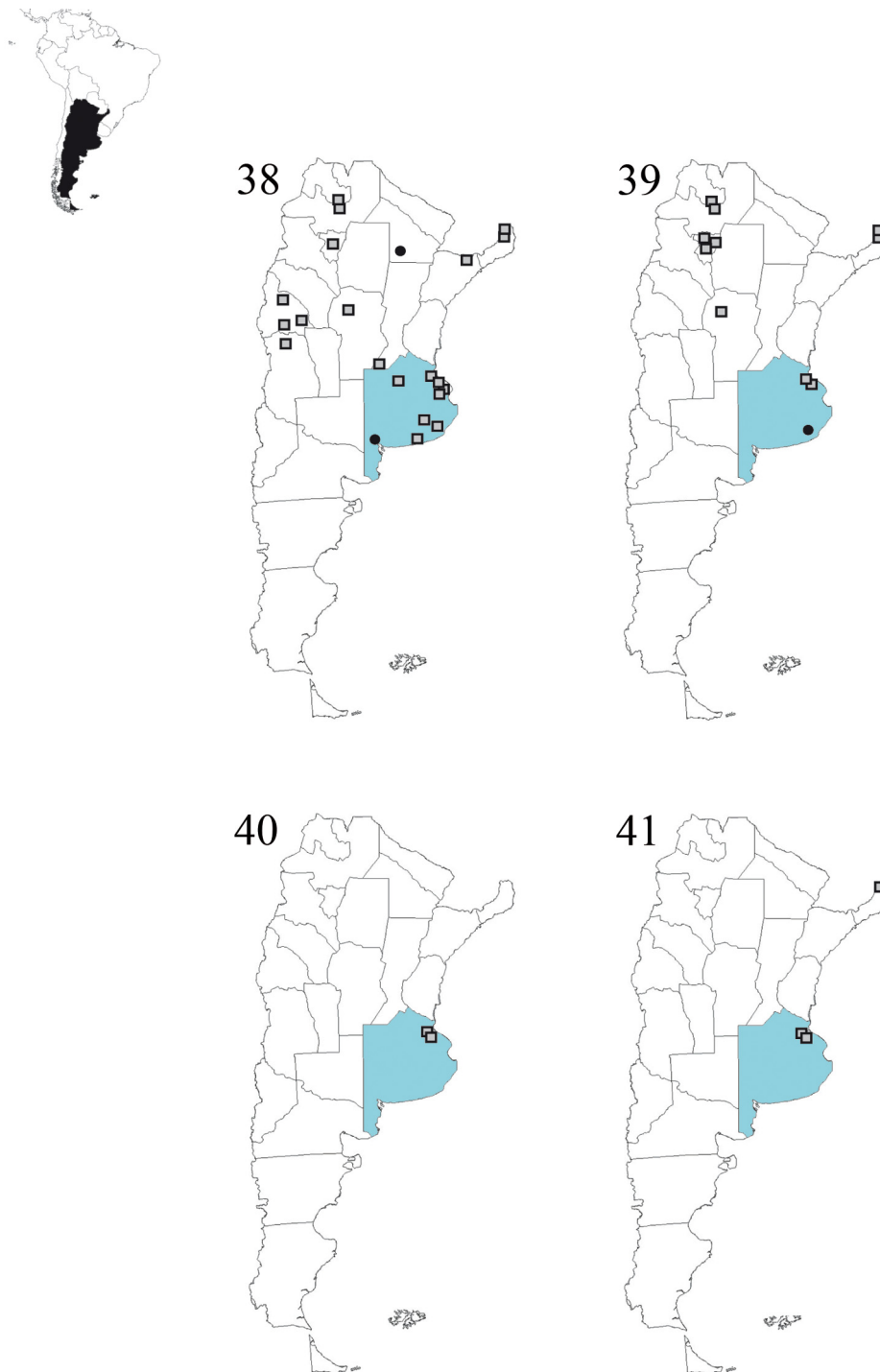
### ***Ophyra chalcogaster* (Wiedemann, 1824)**

(Figs. 13, 41)

*Material examined.* ARGENTINA: BUENOS AIRES: 3 females, Burzaco, 15-XII-2006, Mulieri leg. (MACN); 1 male, Buenos Aires, 20-X-1906, Zotta leg. (MACN); 1 female, Buenos Aires, 17-IV-2002, Oliva leg. (MACN); 3 females, 4 males, Capital Federal, X-2007, Patitucci leg. (MACN); MISIONES: 4 females, Iguazú, X-1988, Mariluis leg. (MACN).

*Distribution in Argentina* (Fig. 41): Buenos Aires; Misiones.





**FIGURES 38–41.** Geographic distribution in Argentina. **38.** *Ophyra aenescens*. **39.** *O. albuquerquei*. **40.** *O. capensis*. **41.** *O. chalcogaster*. Black dots: new records; gray squares: previous distribution. Buenos Aires province is denoted in blue.

*References for Argentina.* Patitucci *et al.* (2010a).

*Remarks.* A redescription with good illustrations of male and female terminalia was given by Pamplona & Couri (1989). The immature stages were studied by Skidmore (1985).

*Biology.* *Ophyra chalcogaster* is a cosmopolitan species associated with urban or suburban environments (Linhares 1981). Their larvae can breed in faeces and decaying meat (Mendes & Linhares 1993), and prey on larvae of other diptera.

## Reinwardtiini Brauer & Bergenstamm

### *Muscina stabulans* (Fallén, 1817)

(Figs. 22, 42)

*Material examined.* ARGENTINA: BUENOS AIRES: 1 female, Baradero, V-1947 (ANLIS); 1 female, 2 males, Buenos Aires. X-1997 (ANLIS); 2 females, 1 male, Capital Federal. IX-2006, Torretta leg. (MACN); 1 female, José C. Paz, Costa leg. Blanchard det. (MLP); 7 females, 5 males, La Plata, III-1946, Barengo leg. (MLP); 3 females, Villa Elisa, La Plata, II-1982, Mariluis leg. (MACN). ENTRE RÍOS: 1 male, Paraná (in *Eryngium* sp.), 20-XII-2004, Torretta leg. (FAUBA). MENDOZA: 1 female, 1 male, Mendoza Capital, 28-III-2008, Aballay leg. (IADIZA). NEUQUÉN: 1 female, Villa La Angostura, III-1947, Wappers leg. (ANLIS); 1 female, Villa La Angostura, III-1994, Mariluis leg. (MACN). RÍO NEGRO: 1 female, Choele-Choel, I-1977, Mariluis leg. (MACN). SALTA: 1 female, Salta capital, VIII-2008, Mulieri leg. (MACN). SAN JUAN: 1 female, Jáchal, La Legua, 31-III-2005, Aballay leg. (IADIZA). SANTA CRUZ: 3 females, 2 males, El Calafate, XI-XII-1994, Mariluis leg. (MACN); 1 female, Puerto Santa Cruz, XII-1977, Mariluis leg. (MACN); 2 males, Río Gallegos, I-1998, Mariluis leg. (MACN); 1 female, San Julián, 28-V-1924, Paggezo leg. (MLP). TUCUMÁN: 1 female, Tucumán, 14-V-1926, Shannon leg. (ANLIS).

*Distribution in Argentina* (Fig. 42): Buenos Aires; Córdoba; Entre Ríos (new record); Mendoza (new record); Neuquén (new record); Río Negro; Tucumán; Salta; San Juan; Santa Cruz (new record).

*References for Argentina.* Aballay *et al.* (2008); Battán-Horenstein *et al.* (2005); Blanchard (1933); James (1947); Labud (2001); Lahille (1907); Malloch (1934); Perotti & Brasesco (1996); Séguy (1932); Shannon & Del Ponte (1926).

*Remarks.* A brief redescription was provided by Hennig (1962). The immature stages were studied by Skidmore (1985).

*Biology.* *Muscina stabulans* is a cosmopolitan species, associated with urbanized environments (Patitucci *et al.* 2010b), recorded in latrines, domestic waste (Perotti & Brasesco 1996), and biosolids composting facility (Laos *et al.* 2004). It is considered of forensic importance (Centeno *et al.* 2002).

### *Philornis seguyi* Garcia, 1952

(Figs. 6, 43)

*Material examined.* ARGENTINA: BUENOS AIRES: 2 females, 1 male, Burzaco, 12-III-2007, Mulieri leg. (MACN); 2 males, Campana, Río Luján, nest of *Anumbius annumbi*, 14-I-2010, Di Iorio & Turienzo leg. (MACN), 2 females, 1 male, Campana, Río Lujan, emerg. *Phacellodomus striaticollis*, 27-XII-2008, Di Iorio & Turienzo leg. (MACN); 2 females, Campana, Río Luján, nest of *Pitangus sulphuratus*, 08-I-2009, Di Iorio & Turienzo leg. (MACN); 3 females, Chacomús, nest of *Sicalis flaveola pelzelni*, 23-III-10, Di Iorio & Turienzo leg. (MACN); 1 female, Villa Elisa, III-1982, Mariluis leg. (MACN).

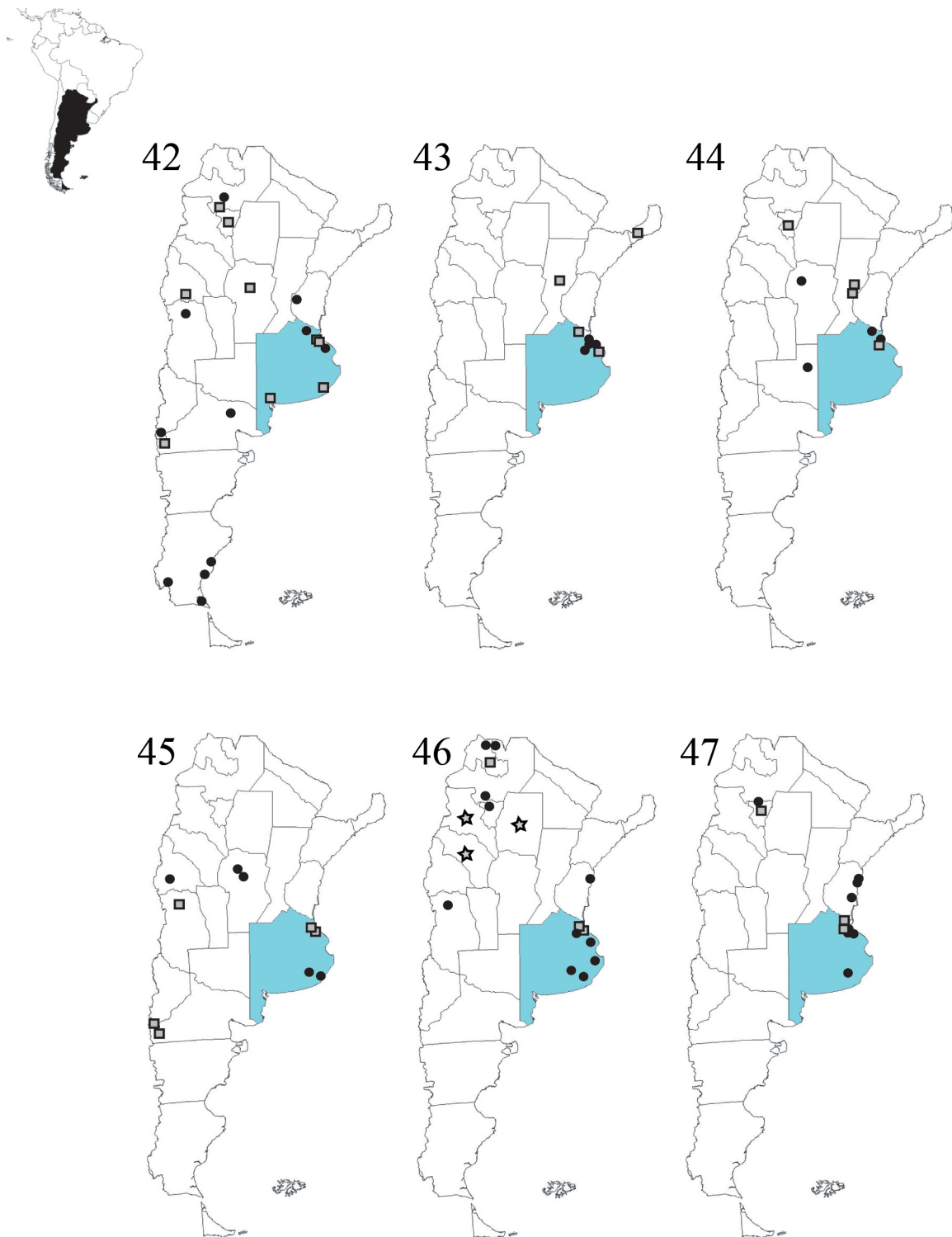
*Distribution in Argentina* (Fig. 43): Buenos Aires; Misiones; Santa Fe.

*References for Argentina.* Couri *et al.* (2005); Couri *et al.* (2009); García (1952); Nielsen (1911); Rabuffetti & Reboreda (2007).

*Remarks.* *Philornis seguyi* was shortly described by Garcia (1952) based on a single female specimen. Recently, Couri *et al.* (2005) described the immature stages and male from specimens collected in Buenos Aires province. The identification of *Philornis* species is difficult because the general morphological similarity exhibited by the species of this genus and the intra-specific variation of some characters (Couri *et al.* 2009).

*Biology.* The larvae of this species are subcutaneous parasite of several birds (*e.g.*, Furnariidae, Icteridae, Mimidae, Troglodytidae, and Tyrannidae) (Turienzo & Di Iorio 2007).





**FIGURES 42–47.** Geographic distribution in Argentina. 42. *Muscina stabulans*. 43. *Philornis seguyi*. 44. *P. torquans*. 45. *Psilochaeta chalybea*. 46. *P. chlorogaster*. 47. *P. pampiana*. Black dots: new records; gray squares: previous distribution; gray stars: province record (inexact data). Buenos Aires province is denoted in blue.

***Philornis torquans* (Nielsen, 1913)**

(Figs. 7, 44)

*Material examined.* ARGENTINA: BUENOS AIRES: 1 male, Campana, Río Luján, 27-XII-2008, Di Iorio & Turienzo leg. (MACN); 2 females, 1 male, Campo de Mayo, 12-XII-2009, Di Iorio & Turienzo leg. (MACN); 2

males, Campo de Mayo, 16-I-2010, Di Iorio & Turienzo leg. (MACN); 1 male, Capital Federal, Ciudad Universitaria, 05-IV-2008, Patitucci leg. (MACN); 3 males, Chascomús, on *Passer domesticus*, 28-I-10, Di Iorio & Turienzo leg. (MACN). CÓRDOBA: 2 males, La Falda, 25-I-2009, Di Iorio & Turienzo leg. (MACN). LA PAMPA: 1 female, Santa Rosa, on *A. annumbi*, 8-IV-08, Di Iorio & Turienzo leg. (MACN).

*Distribution in Argentina* (Fig. 44): Buenos Aires; Córdoba (new record); La Pampa (new record); Santa Fe, Tucumán.

*References for Argentina.* Couri *et al.* (2009); Garcia (1952); Nielsen (1913); Turienzo & Di Iorio (2010).

*Remarks.* Nielsen (1913) briefly described the species and later a detailed redescription was made by Dodge (1968). The immature stages were studied by Skidmore (1985).

*Biology.* Larvae of *P. torquans* are a subcutaneous parasite found in several families of birds in Argentina (Turienzo & Di Iorio 2007).

### ***Psilochaeta chalybea* (Wiedemann, 1830)**

(Figs. 15, 45)

*Anthomyia chalybea* Wiedemann, 1830: 428

*Ophyra coerulea* Macquart, 1843: 322

*Anthomyia cutilia* Walker, 1849: 954

*Ophyra hirtula* Bigot, 1885: 303

*Phyronota portensis* Shannon & Del Ponte, 1926: 577

**Lectotype designation of *Phyronota portensis*.** Shannon & Del Ponte (1926) described *Phyronota portensis* from four females and seven males (syntypes) from Buenos Aires province, Argentina. The authors referred to "Adrogué, BA [Buenos Aires]" as type locality and pointed out that some specimens were captured "in copula" on September 12, 1926 by Dr. Eduardo Del Ponte. We located one male in ANLIS and three males in USNM. One male syntype is hereby designated lectotype of *Phyronota portensis* Shannon & Del Ponte, 1926. Lectotype male (ANLIS): in good condition, pinned, labels: "E. Del Ponte Coll [printed] / ♂ En copula [handwritten]" on white paper, black frame; "Adrogué (B A) [printed] / 12.9.26 [handwritten]" on white paper, black frame; "Lectotype / *Phyronota portensis* / Shannon & Del Ponte, 1926 / L. D. Patitucci det. 2012" [red label, printed]. Paralectotypes in good condition (USNM): two males, pinned, labels: "E. Del Ponte Coll [printed]" on white paper, black frame; "Adrogué (B A) [printed] / 12.9.26 [handwritten]" on white paper, black frame; "Paralectotype / *Phyronota portensis* / Shannon & Del Ponte, 1926 / L. D. Patitucci det. 2012" [red label, printed]. One male, pinned, in good conditions, labels: "E. Del Ponte Coll [printed]" on white paper, black frame; "Adrogué (B A) [printed] / 12.9.26 [handwritten]" on white paper, black frame; "Phyronota / portensis / S & D P." handwritten on white paper, "Paralectotype / *Phyronota portensis* / Shannon & Del Ponte, 1926 / L. D. Patitucci det. 2012" [red label, printed].

*Other material examined.* ARGENTINA: BUENOS AIRES: 1 female, San Isidro, 25-VIII-1926, Shannon leg. (ANLIS); 1 male, Adrogué, 9-XII-1926, Del Ponte leg. (ANLIS); 1 female, Burzaco, IV-2002, Mulieri leg. (MACN); 1 female, Burzaco, VIII-2002, Mulieri leg. (MACN); 2 females, Buenos Aires, XI-1975, Mariluis leg. (MACN); 1 female, Capital Federal, VIII-2007, Patitucci leg. (MACN); 1 female, Morón, X-1983, Ibarra leg. (ANLIS); 42 females, 63 males, Santa Clara del Mar, XI-2007, Patitucci leg. (MACN); 3 females, Sierra de los Padres, Laguna "La Brava" XI-2007, Patitucci leg. (MACN). CÓRDOBA: 1 female, 3 males, Huerta Grande, X-2008, Patitucci leg. (MACN); 1 male, Villa Allende, Córdoba capital, VI-1982, Avalos leg. (ANLIS). MENDOZA: 1 male, Mendoza capital, II-1934, Blanchard leg. (MLP); 2 females, Mendoza capital, 24-V-2007, Aballay leg. (IADIZA). SAN JUAN: 1 male, Calingasta, 11-I-1939 (MLP).

*Distribution in Argentina* (Fig. 45): Buenos Aires; Córdoba (new record); Mendoza; Neuquén; Río Negro; San Juan (new record).

*References for Argentina.* Carvalho (1989); Karl (1935); Malloch (1934); Rondani (1866); Shannon & Del Ponte (1926); Wulp (1883).

*Remarks.* *Psilochaeta chalybea* was redescribed by Carvalho (1989), and presents a significant morphological similarity with *Psilochaeta violescens* (Dodge), endemic to Chile. This similarity is observed in their metallic coloration and terminalia morphology.

*Biology.* This species is associated with human environment (Figueroa-Roa & Linhares 2004). The specimens captured by authors were collected on decaying beef liver, chicken viscera, and dog faeces.



***Psilochaeta chlorogaster* (Wiedemann, 1830)**

(Figs. 1a, 46)

*Anthomyia chlorogaster* Wiedemann, 1830: 427

*Limnophora chlorogaster* Bigot, 1885: 271

*Phyronota platensis* Shannon & Del Ponte, 1926: 578

**Lectotype designation of *Phyronota platensis*.** Shannon & Del Ponte (1926) described *Phyronota platensis* from one female and one male (syntypes) from Buenos Aires Province, Argentina. The authors referred to "San Isidro, BA [Buenos Aires]" as the type locality and that male was captured on August 8, 1926 by Shannon & Shannon. Also mentioned that the female specimen was collected in "Capital Federal" on September 15, 1926 by Shannon & Shannon. We located the female specimen in ANLIS. The female syntype is hereby designated lectotype of *Phyronota platensis* Shannon & Del Ponte, 1926. Lectotype female (ANLIS): in good condition, labels: "Cap. Federal / Buenos Aires / 15.9.26 / R.C. Shannon" handwritten on white paper; "Phyronota / platensis / S & D P." handwritten on white paper, "Lectotype / Phyronota platensis / Shannon & Del Ponte, 1926 / L. D. Patitucci det. 2012" [red label, printed].

*Other material examined.* ARGENTINA: BUENOS AIRES: 1 female, Balcarce, II-1947, Wappers leg. (ANLIS); 1 female, Burzaco, VII-2006, Mulieri leg. (MACN); 1 female, Capital Federal, IX-1926, Shannon leg. (ANLIS); 1 female, Capital Federal, 29-IX-1926, Shannon leg. (USNM); 1 female, Ciudad Universitaria, Capital Federal, VIII-2007, Patitucci leg. (MACN); 1 male, Ciudad Universitaria, Capital Federal, I-2008, Patitucci leg. (MACN); 1 female, General Conesa, P. del Monte, 5-XII-1938, Biraben-Scott leg. (MLP); 1 female, 1 male, Magdalena, Estancia San Isidro, VIII-1998, Medan & Basilio leg. (FAUBA); 1 male, Magdalena, Estancia Carretero, over *Colletia spinosissima*, 20-VIII-1999, Medan leg. (FAUBA); 1 female, Moreno, XII-1972, Fritz leg. (ANLIS); 1 female, San Antonio Oeste, 20-II-1915, (INTA); 2 females, Villa Elisa, La Plata, II-1982, Mariluis leg. (MACN). ENTRE RÍOS: 2 females, Salto Grande, III-1976, Mariluis leg. (MACN); 2 females, Salto Grande, III-1977, Mariluis leg. (MACN). JUJUY: 5 females, Abra Pampa, 30-IV-1995, (ANLIS). MENDOZA: 1 male, Mendoza capital, 9-XI-2008, Aballay leg. (IADIZA). SALTA: 1 female, Cafayate, III-1954, Haymand leg. (FML); 1 female, Iruya, 2700 m. VIII-2008, Mulieri leg. (MACN). TUCUMÁN: 1 female, Hualinchay, 1700 m., III-1979, Mariluis leg. (MACN).

*Distribution in Argentina* (Fig. 46): Buenos Aires; Catamarca; Entre Ríos (new record); Jujuy; La Rioja; Mendoza; Salta (new record); Santiago del Estero; Tucumán (new record).

*References for Argentina.* Bigot (1885); Carvalho (1989); Karl (1935); Malloch (1934); Shannon & Del Ponte (1926); Wulp (1883).

*Remarks.* *Psilochaeta chlorogaster* was redescribed by Carvalho (1989), it is recognized by the metallic green coloration of the abdomen as opposed to non-metallic coloration of the thorax.

*Biology.* Unknown. The specimens captured by the authors were collected on decaying beef liver, chicken viscera, and dog faeces.

***Psilochaeta pampiana* (Shannon & Del Ponte, 1926)**

(Figs. 16, 47)

*Material examined.* ARGENTINA: BUENOS AIRES: 3 females, 1 male, Burzaco, III-2007, Mulieri leg. (MACN); 2 females, Buenos Aires, XI-1975, Mariluis leg. (MACN); 7 females, Campana, RNEO, 26-XI-2009, Patitucci leg. (MACN); 2 males, Campo de Mayo, 19-XI-09, Di Iori leg. (MACN); 1 female, 3 males, Capital Federal, RECS, VII-2007, Patitucci leg. (MACN); 4 females, 7 males, José C. Paz, X-1938, Blanchard leg. (INTA); 1 female, Ministro Rivadavia, III-2007, Mulieri leg. (MACN); 1 female, Necochea, Quequén, I-2010, Patitucci leg. (MACN); 1 female, 1 male, Sierra de los Padres, Laguna "La Brava" XI-2007, Patitucci leg. (MACN). ENTRE RÍOS: 2 females, 1 male, Concordia, IX-1976, Mariluis leg. (MACN); 3 males, El Palmar, VIII-1979, Mariluis leg. (MACN); 4 females, Salto Grande, III-1977, Mariluis leg. (MACN). TUCUMÁN: 1 female, San Pedro de Colalao, 1190 m., III-1979, Mariluis leg. (MACN); 1 female, Yerba Buena, P.Sa. San Javier, 1103 m.a.s.l., 26° 47' 10.80"S, 65° 23' 23.40"W, XI-2010, Mulieri & Patitucci leg. (MACN).

*Distribution in Argentina* (Fig. 47): Buenos Aires; Entre Ríos (new record); Tucumán.

*References for Argentina.* Patitucci *et al.* (2011b); Shannon & Del Ponte (1926).

*Remarks.* Carvalho (1989) presents a redescription of *P. pampiana*.

*Biology.* Some studies show the association of this species with the carcass decomposition of little rodents (Moura *et al.* 1997) or with nest of *Furnarius rufus* (Gmelin) (Aves: Furnariidae) (Turienzo & Di Iorio 2010). The specimens captured by the authors were collected on decaying beef liver, chicken viscera, and dog faeces.

### ***Synthesiomyia nudiseta* (Wulp, 1883)**

(Fig. 48)

*Material examined.* ARGENTINA: BUENOS AIRES: 2 females, Campana, III-2003, Mariluis leg. (MACN); 2 females, Ciudad Universitaria, XII-2001, Patitucci leg. (MACN); 3 females, R.E.C.S., III-2008, Patitucci leg. (MACN); 1 female, Ministro Rivadavia, XI-2006, Mulieri leg. (MACN). CÓRDOBA: 2 males, Capilla del Monte, 1000 m., I-2001, Mariluis leg. (MACN). CORRIENTES: 2 females, Corrientes, I-1939, Blanchard leg. (INTA); 5 females, 1 male, Ituzaingó, 10-X-1978. Mariluis leg. (MACN). ENTRE RÍOS: 1 female, Boca Río Mocoretá, 19-XII-1978, Mariluis leg. (MACN); 1 female, El Palmar, XII-1978, Mariluis leg. (MACN); 1 female, Federación, III-2009, Mulieri leg. (MACN); 1 female, Salto Grande, III-1977, Mariluis leg. (MACN). JUJUY: 2 females, 1 male, Calilegua, XI-1978, Mariluis leg. (MACN). MENDOZA: 2 females, Mendoza capital, 20-V-2007, Aballay leg. (IADIZA). MISIONES: 1 female, Iguazú, III-1987, Mariluis leg. (MACN). SALTA: 6 females, 2 males, Pocitos, 28-XI-1978, Mariluis leg. (MACN); 1 female, Tartagal, 30-VII-1932, (ANLIS). TUCUMÁN: 1 female, Tucumán, 14-V-1926, Shannon leg. (ANLIS).

*Distribution in Argentina* (Fig. 48): Buenos Aires (new record); Córdoba (new record); Corrientes (new record); Entre Ríos (new record); Jujuy (new record); Mendoza (new record); Misiones (new record); Salta; Tucumán.

*References for Argentina.* Brèthes (1907); James (1947); Lahille (1907); Shannon & Del Ponte (1926); Wulp (1883).

*Remarks.* A redescription was provided by Hennig (1963). The immature stages were studied by Skidmore (1985).

*Biology.* *Synthesiomyia* is a cosmopolitan genus with a single species that is widely distributed as a result of human transport (Carvalho 2002). Adults have medical importance, as species causing myiasis and as a phoretic species for *Dermatobia hominis* L. (Diptera: Oestridae) (Skidmore 1985). Larval habits associated to decomposition of corpses provides this species potential relevance in the field of forensic entomology (Barbosa *et al.* 2009).

## **Cyrtoneurinae Snyder**

### ***Arthurella choelensis* Patitucci & Mariluis, 2011**

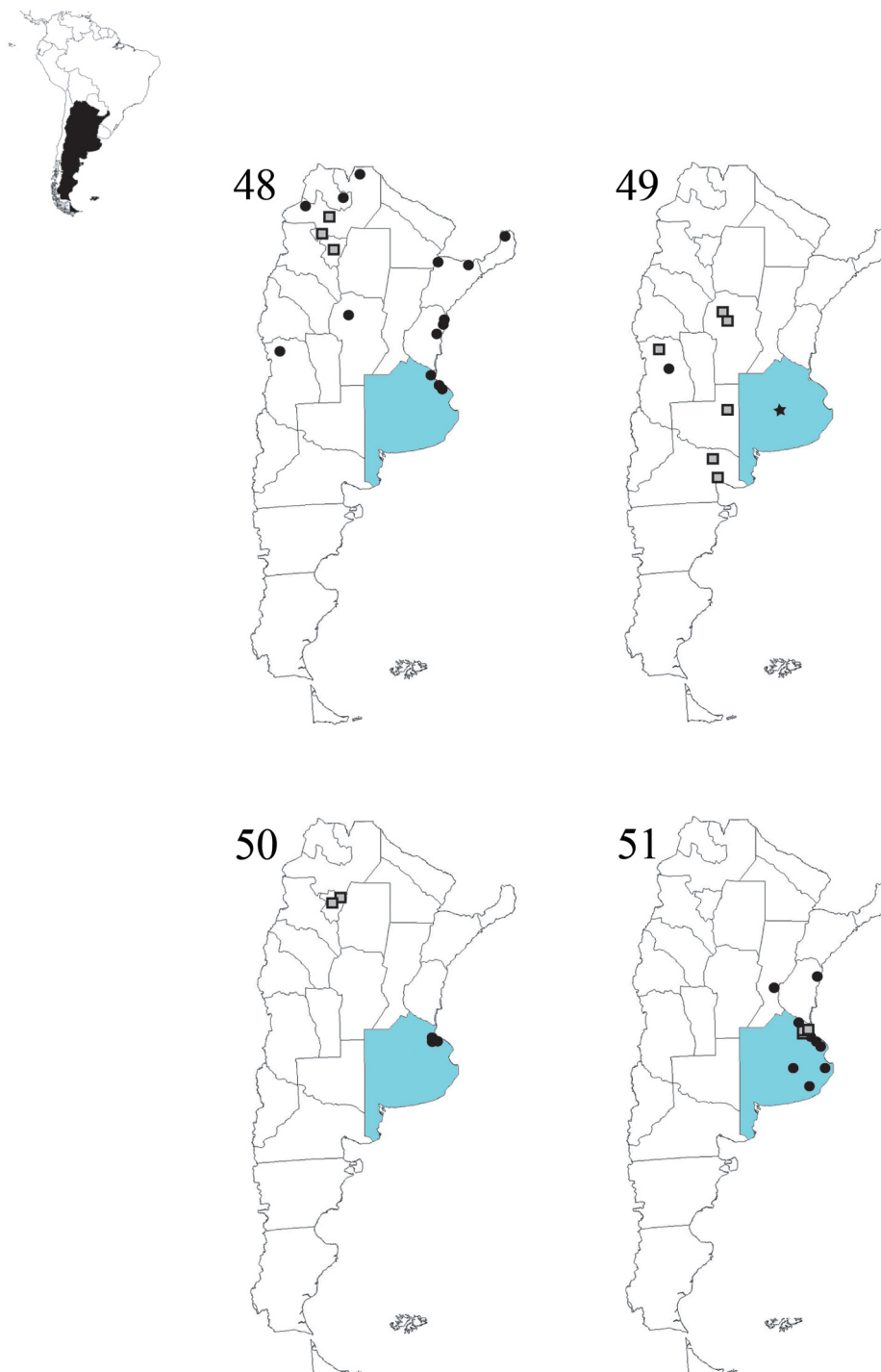
(Figs. 2b, 49)

*Type material examined.* Holotype male, pinned, "Argentina R. Negro / Choele-Choel / 18-I-1977 / Mariluis col." handwritten on white paper (MACN).

*Other material examined.* ARGENTINA: BUENOS AIRES: 2 females, 3 males, Buenos Aires, 7-V-1951, Blanchard leg. (MACN). CÓRDOBA: 1 male, Guanaco Muerto, II-1975, Mariluis leg. (MACN); 1 female, Capilla del Monte, 1000 m, 31-I-2002, Mariluis leg. (MACN). LA PAMPA: 1 female, Santa Rosa, 2-VIII-2008, Di Iorio leg. (MACN). MENDOZA: 1 female, 1 male, Mendoza Capital: 32°53'55.87"S, 68°52'23.17"W, 24-V-2007, Aballay leg. (IADIZA); 5 females, 1 male, 32°53'58.55"S, 68°52'23.82"W, 09-IV-2008, 1 male, 03-IV-2008, 1 male, 17-IV-2008, 1 female, 8 males, 06-IV-2008, 1 female 04-IV-2008, Aballay Leg. (IADIZA); 1 female, 32°53'53.41"S, 68°52'26.29"W, 10-IV-2008, Aballay leg. (IADIZA); 2 females, 32°53'52.13"S, 68°52'22.48"W, 31-X-2008, 1 female, 01-XI-2008, 1 female, 02-XI-2008, 1 male, 04-XI-2008, 1 female, 1 male, 05-XI-2008, 1 female, 1 male, 06-XI-2008, 1 female, 3 males, 07-XI-2008, 3 females, 1 male, 08-XI-2008, 2 females, 2 males, 09-XI-2008, 1 female, 11-XI-2008, 1 female 12-XI-2008, 1 female, 14-XI-2008, 1 female, 2 males, 18-XI-2008, 1



female, 1 male, 20-XI-2008, 1 male, 29-XI-2008, Aballay leg. (IADIZA); 1 female, 32°53'57.34"S–68°52'28.85"W, 01-XI-2008, 1 female, 01-XI-2008, 2 females, 05-XI-2008, 2 females, 06-XI-2008, 1 female, 07-XI-2008, 1 male, 08-XI-2008, 1 male, 13-XI-2008, 2 females, 1 male, 14-XI-2008, 1 female, 15-XI-2008, 1 male, 17-XI-2008, Aballay leg. (IADIZA); 1 male, Santa Rosa, Ñacuñan, 14-16-VIII-1997, Roig leg. (IADIZA). RÍO NEGRO: 7 females, 17 males Choele-choel, 19-I-1977, Mariluis leg. (MACN); 1 male, San Antonio Oeste, 14-I-1977, Mariluis leg. (MACN).



**FIGURES 48–51.** Geographic distribution in Argentina. **48.** *Synthesiomys nudiseta*. **49.** *Arthurella choelensis*. **50.** *Neomuscina zosteris*. **51.** *Neurotrixa felsina*. Black dots: new records; gray squares: previous distribution; black stars: province new record (inexact data). Buenos Aires province is denoted in blue.

*Distribution in Argentina* (Fig. 49): Buenos Aires (new record); Córdoba; Mendoza; La Pampa; Río Negro.

*References for Argentina.* Patitucci *et al.* (2011a).

*Remarks.* *Arthurella choelensis* is the second species described for this Neotropical genus (Patitucci *et al.* 2011a).

*Biology.* Some specimens were collected in experiments of cadaveric succession and on rotting meat.

### ***Neomuscina zosteris* (Shannon & Del Ponte, 1926)**

(Fig. 50)

*Material examined.* ARGENTINA: BUENOS AIRES: 1 female, Burzaco, 20-03-2006, Mulieri leg. (MACN); 1 female, Capital Federal, RECS, 29-01-2008, Patitucci leg. (MACN); 1 male, Ministro Rivadavia, 12-04-2007, Mulieri leg. (MACN). TUCUMÁN: 2 females, Queb. La Toma, 21- XII-1950, Golbach. leg. (FML); 1 female, Aconquija, 6-10.XII.1950, Golbach. leg. (FML); 1 female, Lacavera, 23/28-XI-1951. Aczél-Golbach leg. (FML).

*Distribution in Argentina* (Fig. 50): Buenos Aires (new record); Tucumán.

*References for Argentina.* Shannon & Del Ponte (1926); Snyder (1949, 1954).

*Remarks.* *Neomuscina zosteris* was described from two males collected in Tucumán province (Shannon & Del Ponte 1926). Recently a redescription with good illustrations of male and female terminalia was provided by Pereira-Colative & Carvalho (2012).

*Biology.* Unknown.

### ***Neurotrixa felsina* (Walker, 1849)**

(Figs. 5, 51)

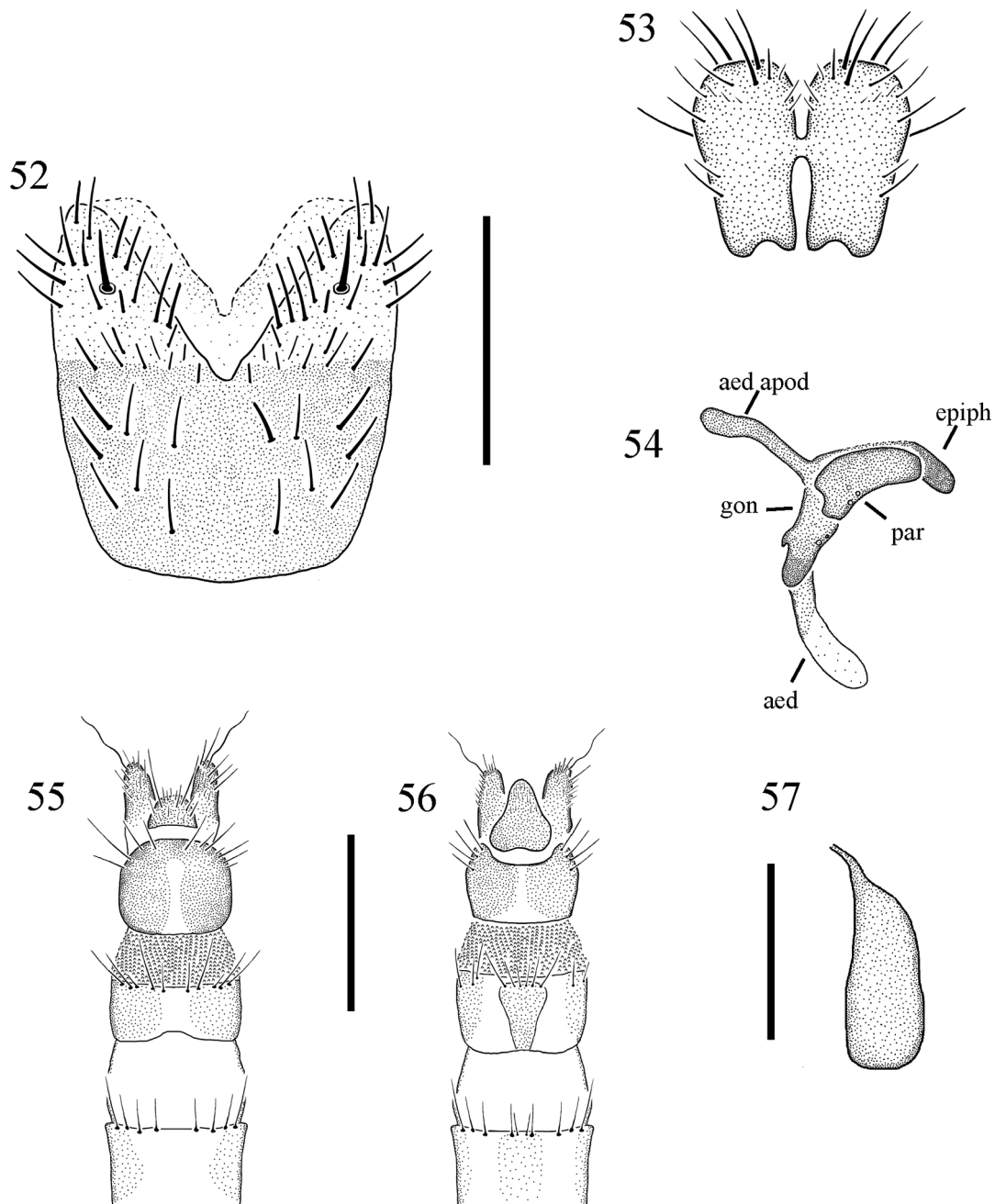
*Material examined.* ARGENTINA: BUENOS AIRES: 1 female, Adrogué, 12-X-1930, Shannon & Del Ponte leg. (ANLIS); 1 female, Adrogué, 28-IX-1930, Shannon & Del Ponte leg. (ANLIS); 5 females, Azul, Ruta 3, 36°32'10.56"S-59°37'26.34"W, 07-XII-2011, Patitucci leg. (MACN); 4 females, 3 males, Campana, RNEO, 26-XI-2009, Patitucci leg. (MACN); 2 females, 2 males, General Conesa, P. del Monte, 5-XII-1938, Biraben-Scott leg. (MLP); 1 male, General Madariaga, 5-XII-1938, Biraben-Scott leg. (MLP); 1 female, José C. Paz, X-1938, (MLP); 3 females, José C. Paz, X-1938, (INTA); 1 male, La Plata (MLP); 3 females, 3 males, Magdalena, Estancia San Isidro, VIII-1998, Medan & Basilio leg. (FAUBA); 5 females, 1 male, Magdalena, Estancia Carretero, IX-1999, Basilio leg. (FAUBA); 1 male, Magdalena, Estancia Carretero, 16-VIII-2000, Basilio leg. (FAUBA); 2 females, Ministro Rivadavia, V-2006, Mulieri leg. (MACN); 2 females, 1 male, San Miguel, XI-1940 (MLP); 1 male, Tigre, 2-XI-1918, (INTA); 5 females, San Isidro, 25-VIII-1926, Shannon & Del Ponte leg. (ANLIS); 2 females, 6 males, Sierra de los Padres, Laguna "La Brava" XI-2007, Patitucci leg. (MACN); 5 females, 4 males, Villa Elisa, La Plata, II-1982, Mariluis leg. (MACN). ENTRE RÍOS: 1 female, Salto Grande, IX-1976, Mariluis leg. (MACN). SANTA FE: 1 female, Coronda, 21-XI-1939, Biraben-Bezzi leg. (MLP).

*Distribution in Argentina* (Fig. 51): Buenos Aires; Entre Ríos (new record); Santa Fe (new record).

*References for Argentina.* Albuquerque (1954); Hernandez (1988); Lopes (1985b); Macquart (1851); Malloch (1934); Patitucci *et al.* (2011b); Shannon & Del Ponte (1926).

*Remarks.* *Neurotrixa felsina*, recently redescribed by Costacurta & Carvalho (2005), is the only species of the genus present in Argentina. Hernandez (1988) made the description of the immature stages studying flies that breed in cow dung.

*Biology.* Several specimens studied in this work were collected in environments close to farming areas.



**FIGURES 52–57.** *Dolichophaonia trigona*. Male. **52.** Sternite 5. **53.** Cercal plate, dorsal view. **54.** Aedeagus, lateral view. Scale bar = 0.5 mm. Female. **55.** Terminalia, dorsal view. **56.** Terminalia, ventral view. Scale Bar = 1 mm. **57.** Spermathecae. Scale bar = 0.1 mm. Abbreviations: aed: aedeagus; aed apod: aedeagal apodeme; epiph: epiphallus; gon: gonopod; pm: paramere.

## Phaoniinae Malloch

### *Dolichophaonia trigona* (Shannon & Del Ponte, 1926)

(Figs. 21, 52–57, 61)

#### Redescription.

*Male.* Length. Body: 5.94–7.29 mm, Wing: 5.40–7.41 mm.

*Head:* Black with gray pollinosity. Front at vertex one-fifth of head width, anterointernal ommatidia enlarged with short hairs. Frontal row with 8–10 pairs setae distributed evenly between the lunule and the base of the ocellar



triangle. Fronto-orbital seta absent. Frontal vitta black; lunule brown; fronto-orbital plate, parafacial, gena, postgena, and occiput black with gray pollinosity. Gena with black setae. Inner vertical setae convergent and outer vertical setae divergent. Antenna brown; in lateral view inserted at the mid-level of the eye; arista plumose. Palpus brown, filiform.

*Thorax.* Scutum black with three gray pollinose vittae; scutellum, anepisternum, anepimeron, katepimeron, katepisternum, proepisternum, proepimeron and meron black with gray pollinosity; anterior and posterior spiracles gray. Chaetotaxy: acrostichals 0+1; dorsocentrals 2+3; postpronotals 2; intra-alars 1+2; supra-alars 1+2; notopleurals 2, the posterior one shorter, notopleuron bare. Prealar seta short and strong. Scutellum with basal, apical, and discal pairs of setae. Anepisternum with a series of 6-8 strong setae; katepisternals 1+2; anepimeron, katepimeron and meron bare; proepisternals 1 strong and 3 thinner; proepimerals 2. Prosternum bare.

*Wing.* Hyaline, veins brown without setae, with a brown spot on r-m and two on dm-cu; the transverse cross-vein dm-cu strongly curved; vein R4+5 and vein M straight. Upper calypter hyaline with brown margin; lower calypter glossiform, hyaline with white margin; halter yellow.

*Legs.* Femora brown with gray pollinosity, distal part yellow-brown, tibia yellow-brown, tarsi dark brown; pulvilli yellow. Fore femur with rows of dorsal, posterodorsal, and posteroventral setae; fore tibia without setae, except for one preapical anterodorsal, dorsal, and posteroventral setae. Mid femur with 3 strong setae in the basal two-thirds on ventral surface; and 3 preapical setae on anterodorsal to posterior surface; mid tibia with 2 posterodorsal setae and 4 apical setae (anterodorsal, posteroventral, ventral, and anteroventral). Hind femur with anteroventral row of setae; hind tibia with 2 short setae on medial third of anterodorsal surface and 1 short setae on medial third of anteroventral surface; calcar strong.

*Abdomen.* Gray, with black spots. Sternite 1 bare. Sternite 5 dark brown, yellow-brown at the posterior part, setulose, with two strong setae, the posterior margin membranous with two projections, and anterior margin slightly curved (Fig. 52).

*Terminalia.* Cercal plate with a deep upper incision at the anterior and at the posterior margins, and with setae on dorsal surface (Fig. 53). Aedeagus with aedeagal apodeme slightly curved and strongly sclerotized; paramere and gonopod with short setulae; aedeagus sclerotized on posterior surface (Fig. 54).

*Female.* Length. Body: 6.50–7.87 mm, Wing: 5.50–6.98 mm.

Differs from male as follows: interocular space about one-third of head width at level of anterior ocellus; fronto-orbital plate setulose with 2 reclinate orbital seta. Fronto-orbital plate setulose.

*Terminalia.* Ovipositor short, intersegmental membrane with microtrichiae. Tergites 6 and 7 sclerotized without plates; tergite 8 laterally sclerotized; epiproct triangular with setulae on distal margin, cercus digitiform (Fig. 55). Sternites 6 slightly sclerotized with setulae on distal margin; sternite 7 sclerotized triangular plate; sternite 8 strongly sclerotized; hypoproct campanulate (Fig. 56). Three spermathecae (Fig. 57).

*Material examined.* ARGENTINA: BUENOS AIRES: 2 males, Arroyo Tuyuparé, 25-I-1908, Brèthes leg. (MACN); 1 female, Delta del Paraná, 15-VIII-1975, Oliva leg. (MACN); 1 female, Punta Lara, 11-VI-1951. Blanchard. leg. (MACN); 3 females, 4 males, RNEO, Campana, 26-XI-2009, Patitucci leg. (MACN).

*Distribution in Argentina* (Fig. 61): Buenos Aires; Entre Rios.

*References for Argentina.* Löwenberg-Neto *et al.* (2011); Patitucci *et al.* (2011b); Shannon & Del Ponte (1926).

*Remarks.* This species was briefly described by Shannon & Del Ponte (1926), therefore we provided in this work a redescription with the male and female terminalia.

*Biology.* Unknown. The specimens studied in this work were collected on vegetation with a hand net (LDP).

### ***Helina nivaloides* Albuquerque, 1956**

(Figs. 23, 58–60, 62)

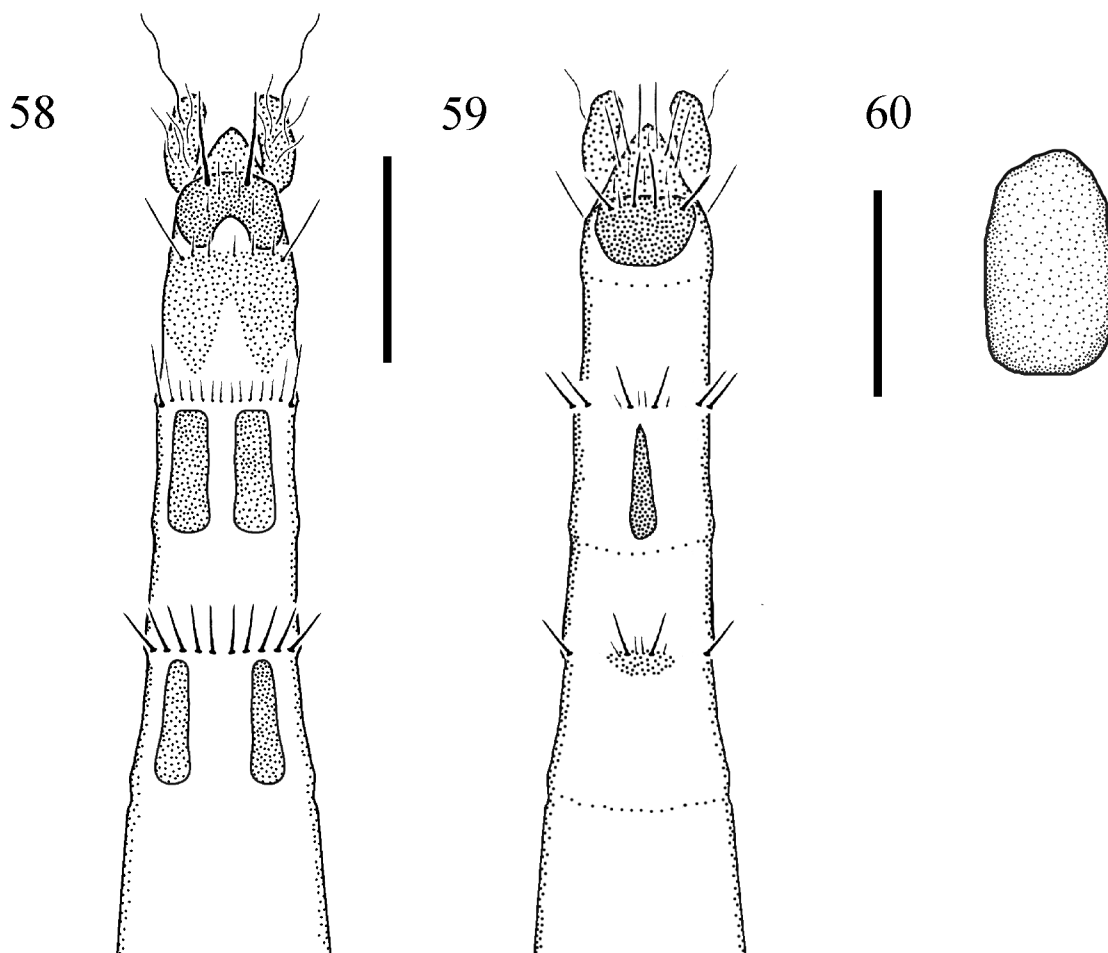
#### **Redescription.**

*Male.* Length. Body: 8.38–7.34 mm, Wing: 7.88–7.15 mm.

*Head:* Black with gray pollinosity. Dichoptic, front at vertex one-fifth of head width, ommatidia with short hairs. Frontal row with 6-8 pairs of setae distributed evenly between the lunule and the base of the ocellar triangle. Frontal vitta black; lunule dark brown; fronto-orbital plate, parafacial, gena, postgena, and occiput black with gray pollinosity. Gena with black setae. Postocular setae convergent, inner vertical setae convergent and outer vertical

setae divergent. Antenna black; in lateral view inserted at the mid-level of the eye; arista plumose. Palpus black, filiform.

*Thorax.* Scutum black with three gray pollinose vittae; scutellum; anepisternum, anepimeron, katepimeron, katepisternum, proepisternum, proepimeron and meron black with gray pollinose; anterior and posterior spiracles dark brown. Chaetotaxy: acrostichals 1+1; dorsocentrals 2+4; postpronotals 3; intra-alars 1+2; supra-alars 1+2; notopleurals 2, notopleuron bare. Prealar seta short and weak. Scutellum with basal, apical, and discal pairs of setae. Anepisternum with a series of strong setae; katepisternals 2+2; anepimeron, katepimeron and meron bare; proepisternals 1 strong and 1 thinner setae; proepimerals 2 strong and 1 thinner setae. Prosternum bare.



**FIGURES 58–60.** *Helina nivaloides*, female. **58.** Terminalia, dorsal view. **59.** Terminalia, ventral view. Scale bar = 1 mm. **60.** Spermathecae. Scale bar = 0.1 mm.

*Wing.* Hyaline, veins brown without setae; vein R4+5 and vein M straight. Both calypters yellow-white with yellow margin; lower calypter glossiform; halter yellow.

*Legs.* All femora black, apical part of hind femur yellow, fore and mid tibiae black, hind tibia yellow, tarsi dark brown; pulvilli yellow. Fore femur with rows of dorsal, posterodorsal, and posteroventral setae; fore tibia with 1 posterior setae on middle, and one preapical posterodorsal, dorsal, and posteroventral setae. Mid femur with 5-6 strong setae in the basal two-thirds on posteroventral surface; and 3 preapical setae on anterodorsal to posterior surface; mid tibia with 3 posterodorsal setae, 1 posterior in the apical middle, 1 posteroventral in the middle and 4 apical setae (anterodorsal, posteroventral, ventral, and anteroventral). Hind femur with anterodorsal row of setae; and a row on anteroventral surface in the apical middle; hind tibia with 3 setae on anterodorsal surface, 3 setae on posterior surface, and 3 setae on anteroventral surface; calcar absent.

*Abdomen.* Black, with gray pollinosity. Sternite 1 bare. Sternite 5 setulose, with some strong setae, the posterior margin is membranous with two projections, and anterior margin is straight. Detailed illustrations of male terminalia can be found in Albuquerque (1956c).

*Female.* Length. Body: 8.63–8.34 mm, Wing: 8.05–8.17 mm.

Differs from male as follows: interocular space about one-third of head width at level of anterior ocellus; fronto-orbital plate setulose with 2 reclinate orbital seta. Prealar seta short and strong.

*Terminalia.* Ovipositor long, intersegmental membrane without microtrichiae. Tergites 6 and 7 sclerotized with two plates; tergite 8 mildly sclerotized; epiproct campanulate with setulae, cercus digitiform (Fig. 58). Sternites 6 slightly sclerotized with setulae on distal margin; sternite 7 sclerotized plate; sternite 8 strongly rounded sclerotized; hypoproct triangular (Fig. 59). Three spermathecae (Fig. 60).

*Type material examined.* Holotype male, pinned, damaged, without abdomen, left wing and leg glued on card, “Itatiaia, Est. do Rio, Brasil / (Macieira-1930 m) / 0/10-3-951 / D. Albuquerque col.” print on white paper; “Holotipo” print on red paper, black frame; “M. N. / N. [printed] 4898 [handwritten]” on white paper, black frame; “Helina / nivaloides, n. sp. [handwritten] / D. Albuquerque det. [printed]” on white paper, black frame (MNRJ).

*Other material examined.* ARGENTINA: BUENOS AIRES: 1 male, Magdalena, Ea. Carretero, V-1999, Basilo leg. (MACN); 2 females, 1 male, Magdalena, Ea. Carretero, IX-1999, Basilo leg. (MACN).

*Distribution in Argentina* (Fig. 62): Buenos Aires (new record).

*Remarks.* *Helina nivaloides* was described by Albuquerque (1956c) based on two male specimens collected in Brazil, with illustrations of the terminalia. We described the female with specimens collected in the Buenos Aires province.

*Biology.* Unknown.

### ***Phaonia trispila* (Bigot, 1885)**

(Figs. 29, 63)

*Type material examined.* *Bigotomyia niger* Albuquerque & Medeiros, 1980. Synonymy with *Phaonia trispila* by Coelho 2000. Holotype male, pinned, abdomen in plastic vial, “Gramado / Rio Grande do Sul / Brasil” printed on white paper; “H.S.Lopes [printed] / 15.I.72 [handwritten]” on white paper; “Holotipo” print on red paper, black frame; “B. niger sp. nov. [handwritten] / K. Medeiros det. [printed]” on white paper; “Phaonia trispila / (Bigot, 1885) / S.M.P: Coelho det. 1994” printed on white paper (MNRJ).

*Other material examined.* ARGENTINA: BUENOS AIRES: 1 female, Burzaco, I-2006, Mulieri leg. (MACN); 1 female, Capital Federal, RECS, V-2007, Patitucci leg. (MACN); 1 female, 1 male, same data, VI-2007, Patitucci leg. (MACN); 1 female, same data, X-2007, Patitucci leg. (MACN); 1 female, same data, XI-2007, Patitucci leg. (MACN); 1 female, same data, I-2008, Patitucci leg. (MACN); 1 female, Carlos Casares, I-2010, Torretta leg. (FAUBA); 1 female, same data, I-2008, Fernández & Cilla leg. (FAUBA); 5 females, Ministro Rivadavia, XI-2005, Mulieri leg. (MACN); 2 males, same data, XII-2005, Mulieri leg. (MACN). TUCUMÁN: 1 female, Tucumán. (MLP); 1 female, Sierra San Javier, 6-IV-1929, Box leg. (MACN).

*Distribution in Argentina* (Fig. 63): Buenos Aires; Tucumán (new record)

*References for Argentina.* Bigot (1885); Coelho (2000); Malloch (1921); Snyder (1957); Stein (1907).

*Remarks.* The identification of *P. trispila* was established with the redescription made by Coelho (2000). Information on the immature stages remains unknown.

*Biology.* There is little information about this species. The adults are considered saprophagous (Rodríguez-Fernández *et al.* 2006), however, some specimens studied in this work were collected on flowers.

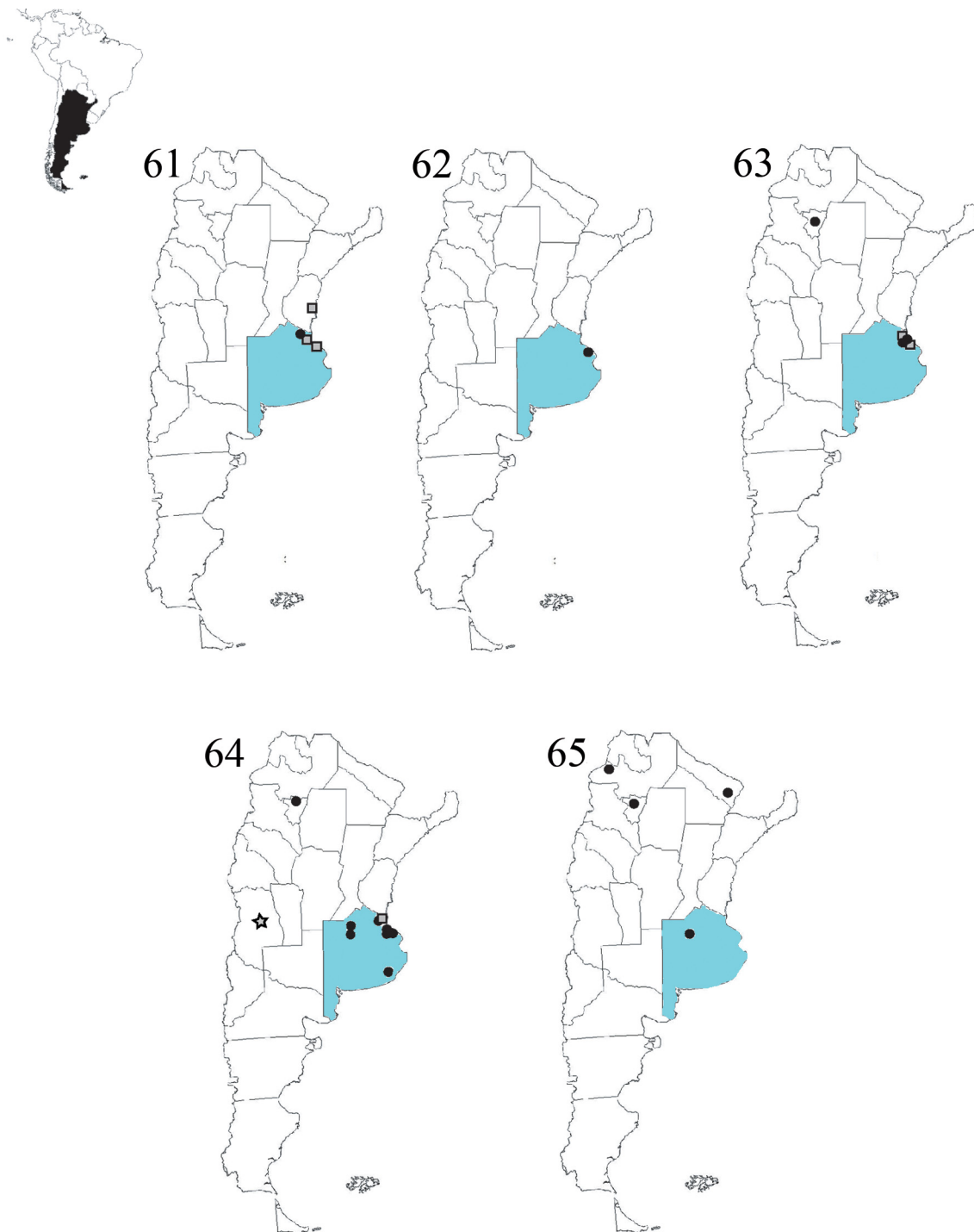
## **Mydaeinae Verrall**

### ***Graphomya auriceps* Malloch, 1934**

(Figs. 8, 64)

*Material examined.* ARGENTINA: BUENOS AIRES: 1 female, Balcarse, on *Eryngium horridum*, 09-I-2004, Medan, Devoto, Charmer & Torretta leg. (FAUBA); 1 male, Burzaco, VIII-2001, Mulieri leg. (MACN); 1 male, Burzaco, II-2002, Mulieri leg. (MACN); 1 male, Burzaco, II-2002, Mulieri leg. (MACN); 1 female, Capital Federal, Instituto Malbrán, XII-2002, Mulieri leg. (ANLIS); 1 male, Campana, RNEO, on *Sapium haematospermum*, 26-XI-2009, Patitucci leg. (MACN); 2 females, Capital Federal, RECS, 24-V-2007, Patitucci





**FIGURES 61–65.** Geographic distribution in Argentina. **61.** *Dolichophaonia trigona*. **62.** *Helina nivaloides*. **63.** *Phaonia trispila*. **64.** *Graphomya auriceps*. **65.** *G. maculata*. Black dots: new records; gray squares: previous distribution; grey stars: province record (inexact data). Buenos Aires province is denoted in blue.

leg. (MACN); 1 female, Capital Federal, RECS, 29-VIII-2007, Patitucci leg. (MACN); 1 female, Carlos Casares, Ea. San Claudio, on *Eryngium horridum*, 12-II-2008, Fernández & Medan leg. (FAUBA); 1 female, Carlos Casares, Ea. San Claudio on *Conium maculatum*, 18-X-2007, Fernández & Montalto leg. (FAUBA); 1 female, Carlos Casares, Ea. San Claudio on *Ammi majus*, 09-I-2008, Fernández & Cilla leg. (FAUBA); 1 male, Carlos Casares, Ea. San Claudio on *Hirschfeldia incana*, 09-I-2008, Fernández & Cilla leg. (FAUBA); 1 female, 3 males, Carlos Casares, Ea. San Claudio on *Conium maculatum*, XII-2010, Marrero leg. (MACN); 4 female, 2 males, Carlos Casares, Ea. San Claudio on *Eryngium che*, III-2011, Marrero leg. (MACN); 1 male, Lincoln, Martínez de

Hoz on *Baccharis pingraea*, 15-I-2008, Torretta leg. (FAUBA); 1 male, Lincoln, Martinez de Hoz on *Conium maculatum*, 15-I-2008, Torretta leg. (FAUBA); 1 male, Ministro Rivadavia, 21-IV-2006, Mulieri leg. (MACN); 2 males, San Antonio de Areco, on *Baccharis pingraea*, 31-I-2008, Torretta leg. (FAUBA); 1 female, San Isidro, 25-VIII-1926, Shannon & Del Ponte leg. [Det. Shannon as *Graphomya maculata*] (ANLIS); 1 female, 2 males, Villa Elisa, La Plata, II-1982, Mariluis leg. (MACN). MENDOZA: 1 female, Mendoza Capital, 29-I-2008, Aballay leg. (MACN); 1 female, same data, 23-I-2008, Aballay leg. (MACN); 1 female, same data, 30-III-2008, Aballay leg. (MACN). TUCUMÁN: 1 female, Huálinchay, 1700 mts., III-1979, Mariluis leg. (MACN).

*Distribution in Argentina* (Fig. 64): Buenos Aires; Mendoza; Tucumán (new record).

*References for Argentina*. Malloch (1934); Patitucci *et al.* (2011b).

*Remarks*. Malloch (1934) described this species with a female collected at the province of Mendoza, Argentina. More recently, Couri & Marques (2009) presented a review of *Graphomya* from Costa Rica, and described the male of *G. auriceps*.

*Biology*. There is little information about this species. Several specimens studied in this work were collected on *Ammi majus* L., *Eryngium horridum* Cav. & Dombey, *Conium maculatum* L., *Sapium haemospermum* Müll., *Hirschfeldia incana* L., and *Baccharis pingraea* DC.

### ***Graphomya maculata* (Scopoli, 1763)**

(Figs. 9, 65)

*Type material examined*. Neotype male, pinned, “Macedonia / Capt. J. Carnivach. / D.S.O.R.A.M.C. / Pres. by / Wellcome Bur. Sc. Res. / 1920-336” handwr. on white paper; “♂” handwr. on white paper; “M. N. / N. [print.] 2282 [handwr.]” on white paper, black frame; “Neotipo” handwr. on yellow paper (MNRJ).

*Other material examined*. ARGENTINA: BUENOS AIRES: 1 female, Carlos Casares, Ea. San Claudio on *Conium maculatum*, 15-XII-2008, Torretta leg. (FAUBA). FORMOSA: 2 females, 2 males, Gran Guardia, II-1953. Foerter leg. (FML). SALTA: 2 females, Pocitos, 23-XI-1978, Mariluis leg. (MACN). TUCUMAN: 1 male, El Siambon, 1123 m.a.s.l., XI-2010, Mulieri & Patitucci leg. (MACN).

*Distribution in Argentina* (Fig. 65): Buenos Aires (new record); Formosa (new record); Salta (new record); Tucumán (new record).

*Remarks*. The only previous reference of *G. maculata* in Argentina (Shannon & Del Ponte 1926) is a misidentification. We examined the specimens studied by these authors, and we identified them as *G. auriceps*. Marques & Couri (2007) presented a detailed redescription of this species. The immature stages are present in Skidmore (1985).

*Biology*. There is little information about this species. Several specimens studied in this work were collected on *Conium maculatum* L.

### ***Gymnodia debilis* (Williston, 1896)**

(Fig. 66)

*Material examined*. BRASIL: MATO GROSSO DO SUL: 1 male, Maracaju, II-1937, (MNRJ), 2 female, 1 male, Bodoquena, XI-1941 (MNRJ).

*Distribution in Argentina* (Fig. 66): Buenos Aires; Catamarca; Córdoba; Entre Ríos; Jujuy.

*References for Argentina*. Carvalho & Pont (1998).

*Remarks*. *Gymnodia debilis* was recently redescribed by Carvalho & Pont (1998). The *puparium* was studied by Skidmore (1985)

*Biology*. Mendes & Linhares (2002) observed predatory activity of larvae of *G. debilis* on *H. irritans*. The specimens studied by Skidmore (1985) were reared from cow dung. Some authors considered this species as synanthropic (Carvalho *et al.* 2002; Gregor 1975).

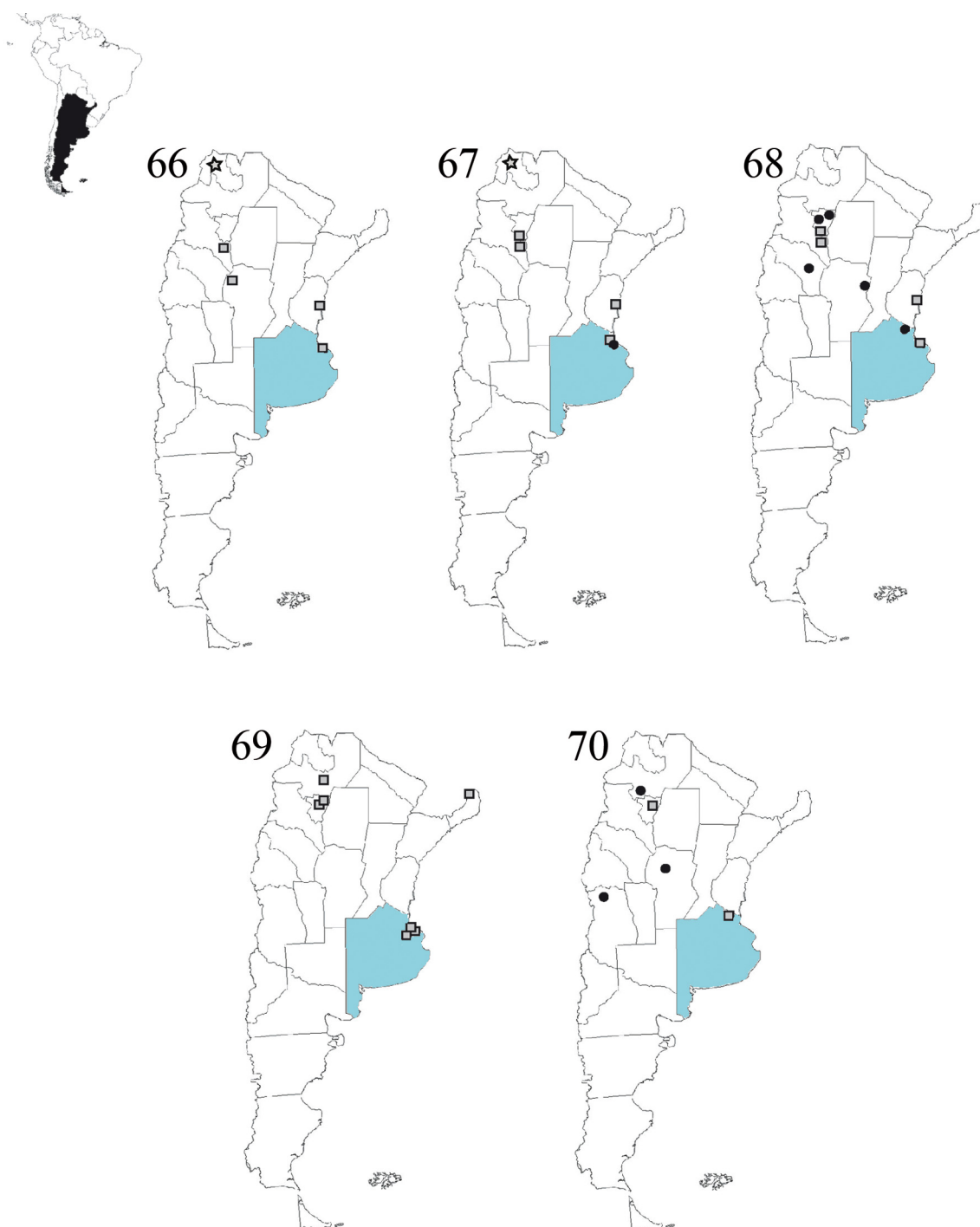
***Gymnodia delecta* (Wulp, 1896)**

(Figs. 24, 67)

*Material examined.* ARGENTINA: BUENOS AIRES: 1 female, Burzaco, II-2002, Mulieri leg. (MACN); 1 female, Burzaco, VIII-2005, Mulieri leg. (MACN); 1 female, Burzaco, XI-2005, Mulieri leg. (MACN); 2 females, Burzaco, 22-VIII-2008, Mulieri leg. (MACN); 2 females, Capital Federal, RECS, I-2008, Patitucci leg. (MACN); 1 female, Ministro Rivadavia, VIII-2005, Mulieri leg. (MACN); 6 females, Ministro Rivadavia, 6-XII-2006, Mulieri leg. (MACN); 1 female, Ministro Rivadavia, 22-IX-2006, Mulieri leg. (MACN).

*Distribution in Argentina* (Fig. 67): Buenos Aires; Catamarca; Entre Ríos; Jujuy; Tucumán.

*References for Argentina.* Carvalho & Pont (1998).



**FIGURES 66–70.** Geographic distribution in Argentina. **66.** *Gymnodia debilis*. **67.** *G. delecta*. **68.** *G. quadristigma*. **69.** *Mydaea plaumanni*. **70.** *M. sexpunctata*. Black dots: new records; gray squares: previous distribution; grey stars: province record (inexact data). Buenos Aires province is denoted in blue.



*Remarks.* *Gymnodia delecta* was recently redescribed by Carvalho & Pont (1998).

*Biology.* This species was associated with human environments and collected on faeces (Linhares 1981). Several specimens studied in this work were collected on dog faeces.

### ***Gymnodia quadristigma* (Thomson, 1869)**

(Figs. 25, 68)

*Material examined.* ARGENTINA: BUENOS AIRES: 1 female, Campana, RNEO, 21-01-2010, Patitucci leg. (MACN). CÓRDOBA: 1 male, San Francisco, 16-XI-1949, Aczel leg. (FML). LA RIOJA: 1 female, Patquia, 25-III-1947, Haymand leg. (FML). TUCUMÁN: 1 male, Rinconada-Tafí, 7-IV-1947, Ares leg. (FML); 1 female, Valle Padre Monti, Burruyacu, 17.I-7.II.1948, Golbach leg. (FML).

*Distribution in Argentina* (Fig. 64): Buenos Aires; Córdoba (new record); Catamarca; Entre Ríos; La Rioja (new record); Tucumán.

*References for Argentina.* Carvalho & Pont (1998); Patitucci *et al.* (2011b).

*Remarks.* *Gymnodia quadristigma* was recently redescribed by Carvalho & Pont (1998).

*Biology.* The immature stages were studied by Skidmore (1985).

### ***Mydaea plaumanni* Snyder, 1941**

(Figs. 27, 69)

*Material examined.* ARGENTINA: BUENOS AIRES: 1 female, Burzaco, II-2002, Mulieri leg. (MACN); 5 females, 2 males, Burzaco, 29-IV-2007, Mulieri leg. (MACN); 2 females, 1 male, Burzaco, 13-VI-2007, Mulieri leg. (MACN); 2 females, Capital Federal, RECS, 24-V-2007, Patitucci leg. (MACN); 2 females, 2 males, same data, 19-VII-2007, Patitucci leg. (MACN); 2 females, same data, 08-X-2007, Patitucci leg. (MACN); 4 females, same data, 29-I-2008, Mulieri leg. (MACN); 1 female, Villa Elisa, La Plata, II-1982, Mariluis leg. (MACN). MISIONES: 2 females, Iguazú, VII-1965, Hepper leg. (ANLIS). SALTA: 1 female, route 9, 1643-1800 m.a.s.l., XII-1986, Mariluis leg. (MACN). TUCUMÁN: 3 females, Quebrada La Toma, 21-XII-1950, Golbach leg. (FML); 1 female, Villa Padre Monti, Burruyacu, 17.I-7.I-1948, Golbach, leg. (FML); 3 females, Yerba buena, Psa. San Javier, 1103 m.a.s.l., 26°47'59.80"S– 65°23'59.40"W, XI-2010, Mulieri-Patitucci leg. (MACN).

*Distribution in Argentina* (Fig. 69): Buenos Aires; Misiones; Salta; Tucumán.

*References for Argentina.* Patitucci *et al.* (2011c).

*Remarks.* *Mydaea plaumanni* was redescribed by Carvalho & Lopes (1985).

*Biology.* This species showed a preference for rural or suburban environments. (Carvalho *et al.* 1984; Patitucci *et al.* 2011c). Several specimens studied in this work were collected on dog faeces.

### ***Mydaea sexpunctata* (Wulp, 1883)**

(Figs. 28, 70–76)

*Spilogaster sexpunctata* Wulp, 1883

*Mydaea latomensis* Snyder, 1957:479. **New synonymy.**

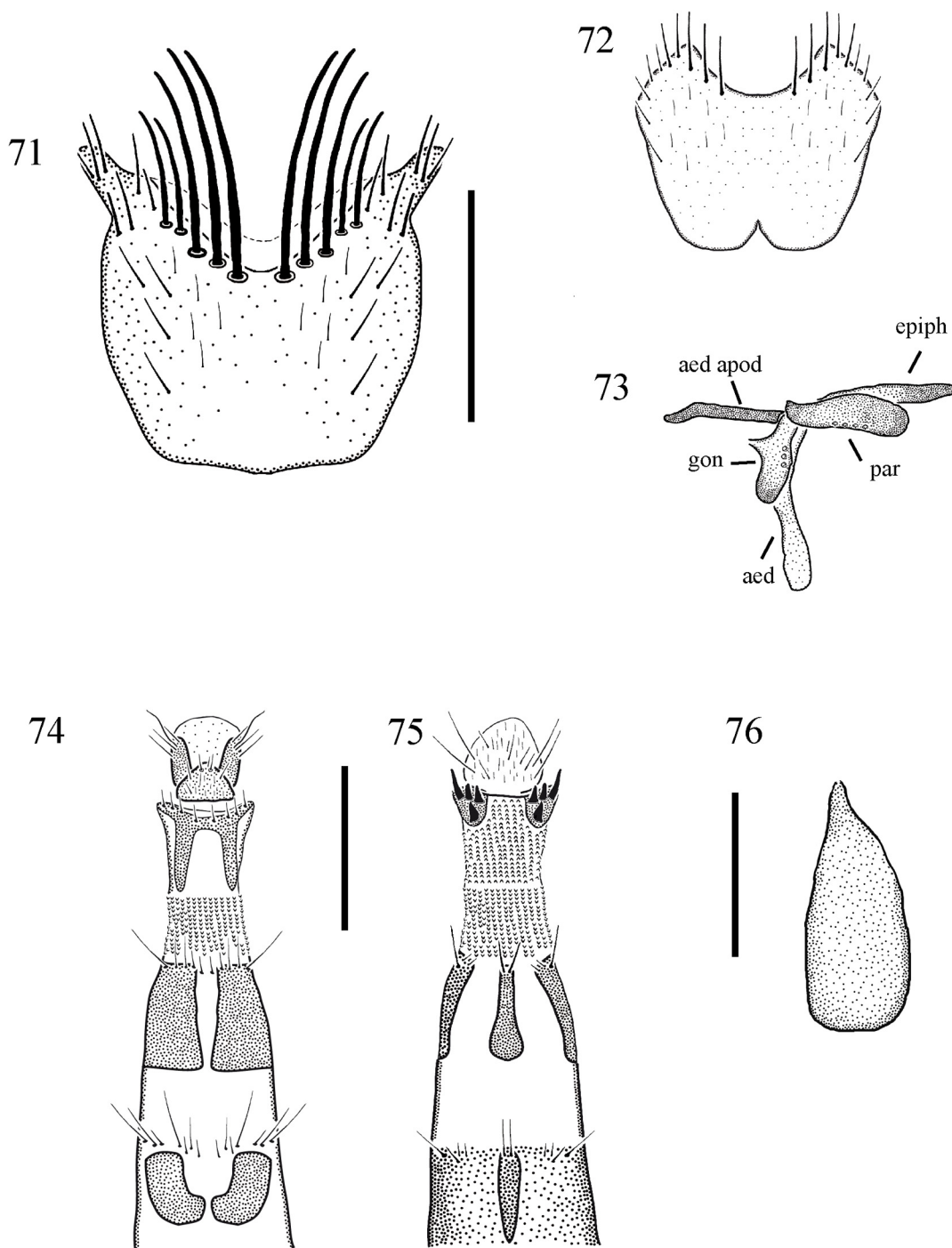
#### **Redescription.**

*Male.* Length. Body: 9.87–9.59 mm, Wing: 8.81–7.92 mm.

*Head:* Brown with silver pollinosity. Front at vertex one-fifth of head width, anterointernal ommatidia enlarged and with short hairs. Frontal row with 5–6 pairs of setae distributed evenly between the lunule and the base of the ocellar triangle, the upper three shorter. Frontal vitta brown; lunule pale brown; fronto-orbital plate, parafacial, gena, postgena, and occiput brown with silver pollinosity. Gena with black hairs. Postocular setae divergent; inner vertical setae convergent and outer vertical setae divergent. Antenna with scape, pedicel and base of the postpedicel yellow-orange, its distal part brown; in lateral view inserted at the mid-level of the eye; arista plumose. Palpus yellow, filiform.

*Thorax.* Scutum brown with three silver pollinose vittae; scutellum dark brown with gray pollinose; anepisternum, anepimeron, katepimeron, katepisternum, proepisternum, proepimeron and meron gray-brown; anterior and posterior spiracles orange-brown. Chaetotaxy: acrostichals 0+1; dorsocentrals 2+3; postpronotals 3; intra-alars 1+2; supra-alars 1+2; notopleural 2, of similar size, notopleuron bare. Prealar seta short and thin. Scutellum with basal, subapical, apical, and discal pairs of setae. Anepisternum with a series of 6 strong setae; katepisternals 1+2; anepimeron, katepimeron and meron bare; proepisternals 1; proepimerals 2. Prosternum bare.

*Wing.* Hyaline with a brown spot on r-m and on dm-cu; the transverse cross-vein dm-cu slightly curved; Rs node and base of vein R4+5 setulose dorsally and ventrally; vein R4+5 and vein M straight. Both calypters hyaline with white margins; lower calypter glossiform; halter yellow.



**FIGURES 71–76.** *Mydaea sexpunctata*. Male. 71. Sternite 5. 72. Cercal plate, dorsal view. 73. Aedeagus, lateral view. Scale bar = 0.5 mm. Female. 74. Terminalia, dorsal view. 75. Terminalia, ventral view. Scale bar = 1 mm. 76. Spermathecae. Scale bar = 0.1 mm. Abbreviations: aed, aedeagus; aed apod, aedeagal apodeme; epiph, epiphallus; gon, gonopod; pm, paramere.

*Legs.* Yellow. Fore femur with rows of dorsal, posterodorsal, and posteroventral setae; fore tibia without setae, except for one preapical dorsal seta, and one posteroventral apical seta. Mid femur with 3-4 setae in the basal two-thirds on posteroventral surface; and 3-4 preapical setae on anterodorsal to posterior surface; mid tibia with 2 posterodorsal setae and 4 apical setae (anterodorsal, posteroventral, ventral, and anteroventral). Hind femur with anterodorsal row of setae, with 3-4 short anteroventral setae in the basal one thirds and 3-4 long anteroventral setae on the apical half; hind tibia with 1-2 short setae on medial third of anterodorsal surface and 1 short setae on medial third of anteroventral surface; calcar absent.

*Abdomen.* Dark brown, syntergites 1+2 and tergite 3 and 4 with two black spots. Sternite 1 bare. Sternite 5 with a strong row of setae at the posterior margin (Fig. 71).

*Terminalia.* Cercal plate with an upper incision at the anterior margin and with setae on posterior half of dorsal surface (Fig. 72). Aedeagus with aedeagal apodeme curved and strongly sclerotized; paramere and gonopod with 3-4 short setulae; aedeagus elongated and slightly sclerotized (Fig. 73).

*Female.* Length. Body: 9.98–9.73 mm, Wing: 9.35–9.30 mm.

Differs from male as follows: interocular space about one-third of head width at level of anterior ocellus; fronto-orbital plate setulose with 2 reclinate orbital seta. Fronto-orbital plate setulose. Prealar seta strong and short.

*Terminalia.* Ovipositor short and wide. Intersegmental membrane between segment 7 and 8, and sternite 8 with microtrichiae. Tergites 6 and 7 divided into 2 strongly sclerotized plates; tergite 8 with one plate with setulae on distal margin; epiproct triangular with setulae on distal margin, cercus digitiform (Fig. 74). Sternites 6 and 7 undivided; sternite 8 with 2 sclerotized plates, each with 4 strong setae; hypoproct rounded, weakly sclerotized and setulose (Fig. 75). Three spermathecae (Fig. 76).

*Type material examined.* Lectotype (designated here) male: “Argent / Weyenb.”; “676”; “sexpunctata vdw”; “Spilogaster / sexpunctata / van der Wulp, 1883 / ZMAN type DIPT.2382.1” (ZMAN). Holotype male (Fig. 74): “R. A. Tucuman / Queb. La Toma / 21-XII-950 / coll. R. Golbach”; “Holotype♂ / Mydaea / latomensis / Snyder”; “TDIP157” (IFML).

*Other material examined.* ARGENTINA: BUENOS AIRES: 1 female, RNEO, Campana, XI-2009, Patitucci leg. (MACN); 1 male, Campana RNEO, 25-II-2010, Patitucci leg. (MACN). CÓRDOBA: 1 female, Córdoba, 24-III-1947, Blanchard leg. (MACN). MENDOZA: 1 male, Mendoza capital, XI-2008, Aballay leg. (IADIZA); 3 females, same data, 17-III-2008; 3 females, 1 male, same data, 28-III-2008; 1 female, same data, 29-III-2008; 1 female, same data, 30-III-2008; 1 female, same data, 14-IV-2008, Aballay leg. (IADIZA). SALTA: 1 male, Yacochuna, Cafayate, 1950 m.a.s.l., II-1969, Stange leg. (IFML).

*Distribution in Argentina* (Fig. 70): Buenos Aires; Córdoba (new record); Mendoza (new record); Salta (new record); Tucumán.

*References for Argentina.* Patitucci *et al.* (2011b); Snyder (1957).

*Remarks.* *Mydaea sexpunctata* was described by Wulp (1883) based on two males specimens (syntypes) from Argentina (location not specified). We located only one specimen in ZMAN hereby designated lectotype. We compared this specimen with the holotype of *M. latomensis* and we concluded is the same species. We herewith formally synonymized the two names.

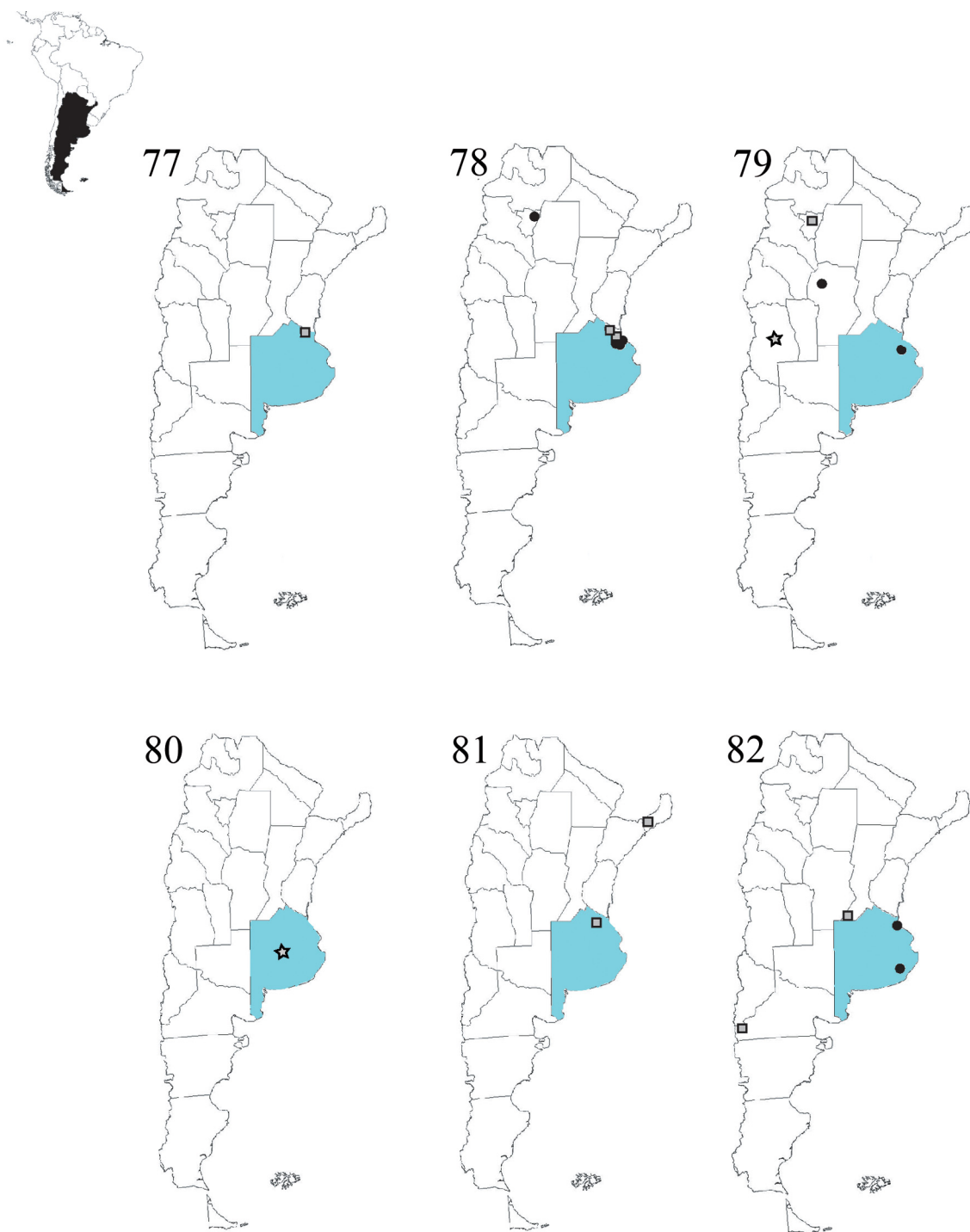
*Biology.* *Mydaea sexpunctata* has been recorded on dog faeces in Buenos Aires province (PRM-LDP). Also, *M. sexpunctata* was captured in the proximity of decomposing pig carcasses in the spring (November) and autumn (March-April) in Mendoza province.

### ***Myospila fluminensis* Couri & Lopes, 1988**

(Figs. 26, 77)

*Type material examined.* Holotype female, pinned, “Taquara / Petropolis / E. do Rio, Brasil” printed on white paper; “H.S.Lopes [printed] / 9.I.71 [handwritten]” on white paper; “Holotipo” print on red paper, black frame; “M. N. / N. [printed] 4276 [handwritten]” on white paper, black frame. Paratype female, pinned, “Taquara / Petropolis / E. do Rio, Brasil” printed on white paper; “H.S.Lopes [printed] / 10.I.71 [handwritten]” on white paper; “Paratipo” printed on green paper, black frame; “♀” handwritten on white paper; “M. N. / N. [printed] 4277 [handwritten]” on white paper, black frame. Paratype female, pinned, “Petropolis-E. do Rio / Le Vallon Alt. Mosélia / 24-1-23-2-58 / D’Albuquerque col.” Printed on white paper; “Paratipo” printed on green paper, black frame; “♀” handwritten on white paper; “M. N. / N. [printed] 4279 [handwritten]” on white paper, black frame. Paratype female, pinned,





**FIGURES 77–82.** Geographic distribution in Argentina. **77.** *Myospila fluminensis*. **78.** *M. obscura*. **79.** *Limnophora aurifacies*. **80.** *L. brevihirta*, *L. marginata*, and *Schoenomyza argyriceps*. **81.** *L. narona*. **82.** *Lispe setuligera*. Black dots: new records; gray squares: previous distribution; grey stars: province record (inexact data). Buenos Aires province is denoted in blue.

without head, “Trapicheiro / Rio de Janeiro / Brasil” printed on white paper; “H.S.Lopes [printed] / 2.XI.70 [handwritten]” on white paper; “Paratypo” printed on green paper, black frame; “♀” handwritten on white paper; “M. N. / N. [printed] 4274 [handwritten]” on white paper, black frame. Paratype female, pinned, without abdomen, “Novo Horizonte / Conceição da Barra / Esp. Santo, Brasil” printed on white paper; “Alvarenga & Roppa [printed] / X.72 [handwritten]” on white paper; “Paratypo” printed on green paper, black frame; “♀” handwritten on white paper; “M. N. / N. [printed] 4278 [handwritten]” on white paper, black frame. Paratype female, pinned, “Repr. Rio Grande / Rio de Janeiro / Brasil” printed on white paper; “M. Oliveira [printed] / VII.72 [handwritten]” on white paper; “Paratypo” printed on green paper, black frame; “♀” handwritten on white paper; “M. N. / N. [printed] 4275

[handwritten]" on white paper, black frame. Paratype female, pinned, damaged without abdomen, terminalia in plastic vial, "Angra dos Reis / E. do Rio, Brasil" printed on white paper; "H.S.Lopes [printed] / 25.V.72 [handwritten]" on white paper; "Paratypo" printed on green paper, black frame; "♀" handwritten on white paper (MNRJ).

*Other material examined.* ARGENTINA: BUENOS AIRES: 1 female, Campana, RNEO, 21-I-2010, Patitucci leg. (MACN).

*Distribution in Argentina* (Fig. 77): Buenos Aires.

*References for Argentina.* Patitucci *et al.* (2011b).

*Remarks.* The identification of *M. fluminensis* was made with the original description (Couri & Lopes 1988). This species is endemic of the Neotropical region, and was collected in Brazil (Carvalho *et al.* 2005) and Argentina (Patitucci *et al.* 2011b).

*Biology.* Unknown.

### ***Myospila obscura* (Shannon & Del Ponte, 1926)**

(Figs. 10, 78)

*Material examined.* ARGENTINA: BUENOS AIRES: 2 females, Burzaco, VI-2005, Mulieri leg. (MACN); 2 females, Burzaco, VI-2006, Mulieri leg. (MACN); 1 male, Burzaco, I-2006, Mulieri leg. (MACN); 3 females, 1 male, Campana, RNEO, 21-I-2010, Patitucci leg. (MACN); 1 female, Capital Federal, RECS, V-2007, Patitucci leg. (MACN); 1 female, Ministro Rivadavia, XI-2005, Mulieri leg. (MACN); 1 female, 1 male, Ministro Rivadavia, XI-2006, Mulieri leg. (MACN); 1 female, Moreno, XII-1972, Fritz leg. (ANLIS). TUCUMÁN: 1 female, Villa Padre Monti, Burruyacu, 17-I-7-I- 1948, Golbach. leg. (IFML).

*Distribution in Argentina* (Fig. 78): Buenos Aires; Tucumán (new record).

*References for Argentina.* Patitucci *et al.* (2011b); Shannon & Del Ponte (1926).

*Remarks.* The original description of *M. obscura* was based only on a female specimen (Shannon & Del Ponte 1926), collected in Buenos Aires province. Later Snyder (1940) described the male and extended the distribution of this species to Brazil and Peru.

*Biology.* Unknown.

## **Coenosiinae Verrall**

### **Limnophorini Villeneuve**

#### ***Limnophora aurifacies* Stein, 1911**

(Figs. 31, 79)

*Material examined.* ARGENTINA: BUENOS AIRES: 2 males, Burzaco, VIII-2001, Mulieri leg. (MACN). CÓRDOBA: 1 female, 1 male, Huerta Grande, X-2008, Patitucci leg. (MACN). TUCUMÁN: 3 females, Lacavera, 28-XI-1951, Golbach leg. (FML); 1 female, Tucumán capital, 3-X-1926 (FML).

*Distribution in Argentina* (Fig. 79): Buenos Aires (new record); Córdoba (new record); Mendoza; Tucumán.

*References for Argentina.* Karl (1935); Stein (1918).

*Remarks.* *Limnophora aurifacies*, endemic of the Neotropical region, was described by Stein (1911) with specimens collected in Mendoza and Tucumán province in Argentina. Couri & Lopes (1987) included illustrations of female and male terminalia.

*Biology.* Unknown.

#### ***Limnophora brevihirta* Malloch, 1934**

(Fig. 80)

*Distribution in Argentina* (Fig. 80): Buenos Aires.

*References for Argentina.* Malloch (1934).

*Remarks.* *Limnophora brevihirta* was described briefly by Malloch (1934). In this work we not observed specimens of this species.

*Biology.* Unknown.

***Limnophora marginata* Stein, 1904**

(Fig. 80)

*Material examined.* BRASIL: SÃO PAULO: 1 male, Baruei, 11-VI-1966, Lenko leg. (MNRJ). COLOMBIA: BOGOTA: 5 males, Bogotá, Guevara leg. (MNRJ). ECUADOR: IBARRA: 2 males, S. Otavalo, 3100-3300 m.a.s.l., 8-9-I-1971, Peña leg. (MNRJ).

*Distribution in Argentina* (Fig. 80): Buenos Aires.

*References for Argentina.* Stein (1907).

*Remarks.* Lopes & Couri (1987) redcribed the species and presented illustrations of female and male terminalia. In this work we did not collect specimens of this species.

*Biology.* Unknown.

***Limnophora narona* (Walker, 1849)**

(Fig. 81)

*Material examined.* ARGENTINA: BUENOS AIRES: 5 females, 7 males, Campana, RNEO, 21-I-2010, Patitucci leg. (MACN).

*Distribution in Argentina* (Fig. 81): Buenos Aires; Misiones.

*References for Argentina.* Engel (1931); Patitucci *et al.* (2011b); Thomson (1869).

*Remarks.* This species was briefly described by Walker (1849). Only few specimens were collected in this work.

*Biology.* Unknown.

***Lispe setuligera* (Stein, 1911)**

(Figs. 2a, 82)

*Material examined.* ARGENTINA: BUENOS AIRES: 1 female, Balcarce, Estancia La Blanquita on *Alternanthera philoxeroides* Griseb., 09-I-2004, Medan, Devoto, Charmer & Torretta leg. (FAUBA); 1 female, Capital Federal, II-2007, Patitucci leg. (MACN); 1 female, Capital Federal, RECS, 19-VII-2007, Patitucci leg. (MACN).

*Distribution in Argentina* (Fig. 82): Buenos Aires (new record); Río Negro; Santa Fe.

*References for Argentina.* Malloch (1934); Lopes (1992).

*Remarks.* *Lispe setuligera* was recently redcribed by Lopes (1992).

*Biology.* Adults of this genus are highly predaceous on other insects (Savage & Vockeroth 2010).

***Syllimnophora variceps* Malloch, 1934**

(Figs. 30, 83)

*Material examined.* ARGENTINA: BUENOS AIRES: 1 female, Camet Norte, XI-2007, Mulieri leg. (MACN); 2 females, Mar del Plata, XI-2007, Patitucci leg. (MACN); 1 female, Sierra de los Padres, XI- 2007, Mariluis leg. (MACN).

*Distribution in Argentina* (Fig. 83): Buenos Aires.

*References for Argentina.* Malloch (1934).

*Remarks.* Previously to this work, *Syllimnophora variceps* was only known by the original description and had been found in Buenos Aires province with unspecified location (Malloch 1934).

*Biology.* Unknown.

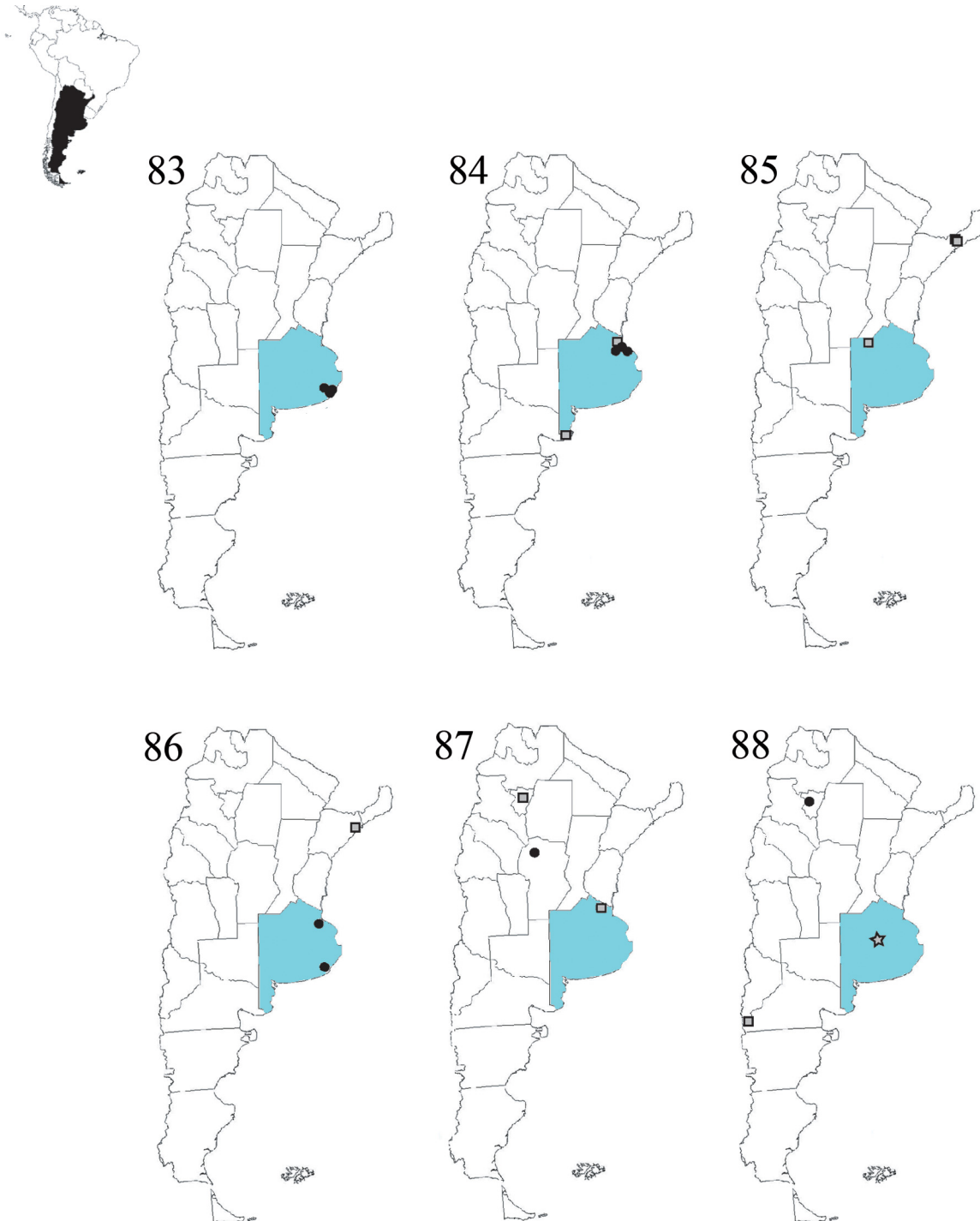


Coenosiini Verrall

*Bithoracochaeta calopus* (Bigot, 1885)

(Figs. 17, 84)

*Material examined.* ARGENTINA. BUENOS AIRES: 2 males, Burzaco, 13-IV-2007, Mulieri leg. (MACN); 2 males, José C. Paz, 25-VIII-1939, Ogloblin leg. (MNRJ); 2 females, 5 males, Magdalena, 25-VIII-1998, Basso leg. (MACN); 1 male, Villa Elisa, III-1982, Mariluis leg. (MACN).



**FIGURES 83–88.** Geographic distribution in Argentina. **83.** *Syllimnophora variceps*. **84.** *Bithoracochaeta calopus*. **85.** *B. leucoprocta*. **86.** *Neodexiopsis geniculata*. **87.** *N. paulistensis*. **88.** *Spathipheromyia guttipennis*. Black dots: new records; gray squares: previous distribution; grey stars: province record (inexact data). Buenos Aires province is denoted in blue.

*Distribution in Argentina* (Fig. 84): Buenos Aires; Río Negro.

*References for Argentina*. Albuquerque (1956b); Malloch (1934).

*Remarks*. Motta & Couri (1999) showed a detailed redescription of *B. calopus* and presented terminalia structures.

*Biology*. Unknown.

***Bithoracochaeta leucoprocta* (Wiedemann, 1830)**

(Fig. 85)

*Material examined*. BRASIL: RIO DE JANEIRO: 1 female, Alto Mosella, Petrópolis, 1100 m.o.s.l., 30-VI-1956, Albuquerque leg. (MNRJ).

*Distribution in Argentina* (Fig. 85): Buenos Aires; Misiones.

*References for Argentina*. Engel (1931); Löwenberg-Neto *et al* (2011); Malloch (1934).

*Remarks*. Motta & Couri (1999) showed a detailed redescription of this species and presented terminalia structures.

*Biology*. Unknown.

***Neodexiopsis geniculata* (Bigot, 1885)**

(Figs. 19, 86)

*Material examined*. ARGENTINA: BUENOS AIRES: 1 female, 2 males, Burzaco, XI-2006, Mulieri leg. (MACN); 1 female, Mar del Plata, XI-2007, Mariluis leg. (MACN). CORRIENTES: 1 female, Santo Tomé, 11-XI-1951, Aczél leg. (IFML).

*Distribution in Argentina* (Fig. 86): Buenos Aires; Corrientes.

*References for Argentina*. Bigot (1885); Snyder (1957).

*Remarks*. This species was redescribed by Snyder (1957) from specimens collected in Corrientes province.

*Biology*. Unknown.

***Neodexiopsis paulistensis* Albuquerque, 1956**

(Figs. 20, 87)

*Neodexiopsis paulistensis* Albuquerque, 1956d

*Neodexiopsis croceafrons* Snyder, 1957. **New synonymy.**

*Type material examined*. *N. paulistensis*: Holotype male, pinned, damaged, without abdomen, leg glued, "S. Bocaína 1700m / Fazend. Lageado / S.P. malo de 1951 / Dalcy, Machado" printed on white paper; "Holotipo" print on red paper, black frame; "4753" handwritten on white paper, black frame; "Neodexiopsis / paulistensis sp. n. [handwritten] / D Albuquerque det. [printed]" on white paper, black frame (MNRJ). Paratype female, pinned, without abdomen "S. Bocaína 1700m / Fazend. Lageado / S.P. malo de 1951 / Dalcy, Machado" printed on white paper; "Alotipo" print on red paper, black frame; "Neodexiopsis / paulistensis sp. n. [handwritten] / D Albuquerque det. [printed]" on white paper, black frame; "♀" handwritten on white paper. "M.N.R.J [printed] / 4408 [handwritten]" on white paper, black frame (MNRJ). Paratype female, pinned, without abdomen, "S. Bocaína 1700m / Fazend. Lageado / S.P. malo de 1951 / Dalcy, Machado" printed on white paper; "Paratipo" print on red paper, black frame; "♀" handwritten on white paper. "M.N.R.J [printed] / 4407 [handwritten]" on white paper, black frame (MNRJ). Paratype female, pinned, without abdomen, "S. Bocaína 1700m / Fazend. Lageado / S.P. malo de 1951 / Dalcy, Machado" printed on white paper; "Paratipo" print on red paper, black frame; "Neodexiopsis / paulistensis sp. n. [handwritten] / D Albuquerque det. [printed]" on white paper, black frame; "♀" handwritten on white paper. "M.N.R.J [printed] / 4408 [handwritten]" on white paper, black frame (MNRJ). Paratype female, pinned, without abdomen, "Parque Nacional / Da Serra dos Órgãos / theresopolis 1500-1700 m / 16-22.4.1947 Wigod, Col." Printed on white paper, black frame; "Paratipo" print on red paper, black frame;

“*Neodexiopsis / paulistensis* sp. n. [handwritten] / D Albuquerque det. [printed]” on white paper, black frame; “♀” handwritten on white paper. “M.N.R.J [printed] / 4411 [handwritten]” on white paper, black frame (MNRJ). *N. croceafrons*: Paratype, female, pinned, “R. A. Tucuman / Tañ del Valle / 6-12-XII-947 / coll: Golbach” handwritten on white paper, black frame; “*Neodexiopsis / croceafrons / Snyder* [handwritten] / Paratype [printed]” on white paper (IFML).

*Other material examined.* ARGENTINA: BUENOS AIRES: 1 female, Campana, RNEO, 26-II-2010, Patitucci leg. (MACN). 1 female, Mar del Plata, XI-2007, Mariluis leg. (MACN). CÓRDOBA: 2 females, Huerta Grande, X-2008, Mulieri leg. (MACN).

*Distribution in Argentina* (Fig. 87): Buenos Aires; Córdoba (new record); Tucumán.

*References for Argentina.* Patitucci *et al.* (2011b), Snyder (1957).

*Remarks.* *Neodexiopsis paulistensis* was described by Albuquerque (1956d) from several male and female specimens from Brazil. We compared these specimens with the paratype of *N. croceafrons* from IFML (collected in Argentina and Brazil) and we concluded they are conspecific. We herewith formally synonymized these two names.

*Biology.* Unknown.

### ***Schoenomyza argyriceps* Malloch, 1934**

(Fig. 80)

*Distribution in Argentina* (Fig. 80): Buenos Aires.

*References for Argentina.* Malloch (1934).

*Remarks.* We did not examine specimens of this species. In Argentina it was only registered from Buenos Aires province with no mention to a specified location (Malloch 1934).

*Biology.* Unknown.

### ***Spathipheromyia guttipennis* (Thomson, 1869)**

(Figs. 18, 88)

*Material examined.* ARGENTINA: SANTA CRUZ: 1 female, 1 male, Lago Argentino, La Cristina, 21-I-1953, Willintks leg. (IFML). TUCUMÁN: 1 male, Tañ del Valle, 6-12-XII-1947, Golbach leg. (IFML).

*Distribution in Argentina* (Fig. 88): Buenos Aires; Río Negro; Santa Cruz (new record); Tucumán (new record).

*References for Argentina.* Malloch (1934); Thomson (1869).

*Remarks.* Couri (1982) redescribed this species and presented terminalia structures. In Buenos Aires province it was registered with unspecified location (Malloch 1934).

*Biology.* Unknown.

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**TABLE 1.** List of species of Muscidae from Buenos Aires province, Argentina.  
 (\*Buenos Aires province new record. \*\*Argentina new record.)

Subfamily	Tribu	Species	
Muscinae	Muscini	<i>Morellia (Trichomorellia) trichops</i> (Malloch, 1923)*	
		<i>Musca domestica</i> Linnaeus, 1758	
		<i>Polietina orbitalis</i> (Stein, 1904)	
	Stomoxyini	<i>Haematobia irritans</i> (Linnaeus, 1758)	
		<i>Stomoxys calcitrans</i> (Linnaeus, 1758)	
Azeliinae	Azeliini	<i>Ophyra aenescens</i> (Wiedemann, 1830)	
		<i>Ophyra albuquerquei</i> Lopes, 1985	
		<i>Ophyra capensis</i> (Wiedemann, 1818)	
		<i>Ophyra chalcogaster</i> (Wiedemann, 1824)	
	Reinwardtiini	<i>Muscina stabulans</i> (Fallén, 1817)	
		<i>Philornis seguyi</i> Garcia, 1952	
		<i>Philornis torquans</i> (Nielsen, 1913)	
		<i>Psilochaeta chalybea</i> (Wiedemann, 1830)	
		<i>Psilochaeta chlorogaster</i> (Wiedemann, 1830)	
		<i>Psilochaeta pampiana</i> (Shannon & Del Ponte, 1926)	
		<i>Synthesiomyia nudiseta</i> (Wulp, 1883)*	
		Cyrtonneurininae	<i>Arthurella choelensis</i> Patitucci & Mariluis, 2011*
			<i>Neomuscina zosteris</i> (Shannon & Del Ponte, 1926)*
Phaoniinae	<i>Neurotrixa felsina</i> (Walker, 1849)		
	<i>Dolichophaonia trigona</i> (Shannon & Del Ponte, 1926)		
	<i>Helina nivaloides</i> Albuquerque, 1956**		
Mydaeinae	<i>Phaonia trispila</i> (Bigot, 1885)		
	<i>Graphomya auriceps</i> Malloch, 1934		
	<i>Graphomya maculata</i> (Scopoli, 1763)**		
	<i>Gymnodia debilis</i> (Williston, 1896)		
	<i>Gymnodia delecta</i> (Wulp, 1896)		
	<i>Gymnodia quadristigma</i> (Thomson, 1869)		
	<i>Mydaea plaumanni</i> Snyder, 1941		
	<i>Mydaea sexpunctata</i> (Wulp, 1883)		
	<i>Myospila fluminensis</i> Couri & Lopes, 1988		
	<i>Myospila obscura</i> (Shannon & Del Ponte, 1926)		
Coenosiinae	Limnophorini	<i>Limnophora aurifacies</i> Stein, 1911*	
		<i>Limnophora brevihirta</i> Malloch, 1934	
		<i>Limnophora marginata</i> Stein, 1904	
		<i>Limnophora narona</i> (Walker, 1849)	
		<i>Lispe setuligera</i> (Stein, 1911)*	
		<i>Syllimnophora variceps</i> Malloch, 1934	
		<i>Syllimnophora variceps</i> Malloch, 1934	
	Coenosiini	<i>Bithoracochaeta calopus</i> (Bigot, 1885)	
		<i>Bithoracochaeta leucoprocta</i> (Wiedemann, 1830)	
		<i>Neodexiopsis geniculata</i> (Bigot, 1885)	
		<i>Neodexiopsis paulistensis</i> Albuquerque, 1956	
		<i>Schoenomyza argyriceps</i> Malloch, 1934	
		<i>Spathipheromyia guttipennis</i> (Thomson, 1869)	
		<i>Spathipheromyia guttipennis</i> (Thomson, 1869)	

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