Reared Opiinae (Hymenoptera: Braconidae) from Argentina

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The results of the identification of a small collection of Opiinae reared from Agromyzidae from Argentina are reported; six new species and one new genus (*Lorenzopius* gen. nov.; type species: *Lorenzopius calycomyzae* spec. nov.) are described. A checklist to the species of Opiinae known from Argentina is added. The following new combinations are proposed: *Doryctobracon turicai* (Turica & Mallo, 1961), *Lorenzopius sanlorenzensis* (Fischer, 1964), *L. tubulatus* (Fischer, 1979), *Phaedrotoma agromyzophaga* (Blanchard, 1940), *P. alternantherae* (Fischer, 1966), *P. atomica* (Fischer, 1962), *P. brethesi* (De Santis, 1967), *P. curtinotum* (Fischer, 1983) *P. ebriops* (Fischer, 1978), *P. eunomia* (Fischer, 1968), *P. euterpe* (Fischer, 1968), *P. fissilis* (Fischer, 1969) *P. golbachi* (Fischer, 1964), *P. horcomollensis* (Fischer, 1968), *P. insularis* (Ashmead, 1894), *P. lacarensis* (Fischer, 1979), *P. laplatana* (Fischer, 1968), *P. lasis* (Fischer, 1979), *P. latita* (Fischer, 1979), *P. magdalenae* (Fischer, 1968), *P. mallecoensis* (Fischer, 1968), *P. melpomene* (Fischer, 1968), *P. miniacea* (Brèthes, 1913), *P. noclya* (Fischer, 1983), *P. noguesensis* (Fischer, 1968), *P. oeconomica* (Fischer, 1962), *P. platensis* (Brèthes, 1913), *P. porterodedicata* (Fischer, 1983), *P. pylades* (Fischer, 1969) , *P. pyrosoma* (Fischer, 1966), *P. raphaeli* (Fischer, 1968), *P. renerrens* (Fischer, 1983), *P. ribeiroensis* (Fischer, 1966), *P. roveretoi* (Fischer, 1962), *P. sanensis* (Fischer, 1979), *P. scabriventris* (Nixon, 1955), *P. simplicornis* (Fischer, 1968), *P. sinecostulis* (Fischer, 1983), *P. testaceipes* (Brèthes, 1913), *P. trimaculata* (Spinola, 1851), *P. thoracotuberculatus* (Fischer, 1964), *P. trimaculata* (Spinola, 1851), *P. urania* (Fischer, 1968), *Psyttalia ovaliops* (Fischer, 1980), *Bracanastrepha bella* (Gahan, 1930), *B. marguinezi* (Blanchard, 1950), *B. obscuripennis* (Schrottky, 1902), *B. pseudobella* (Blanchard, 1950), *B. schultzi* (Blanchard, 1950), and *B. tafivallensis* (Fischer, 1968).

Introduction

The Opiinae from the Neotropical region are revised by Fischer (1977), but many species still remain undescribed. The biology of only few species is known; therefore, any addition to the knowledge of the biology of this group is most welcome. The subject of this paper is a small collection of Opiinae reared from mining Diptera (Agromyzidae) in Argentina by the second author.

Opiinae are koinobiont parasites (parasitoids) of Diptera, especially of mining larvae of Agromyzidae, Anthomyiidae, Drosophilidae, Psilidae, Ephydridae and Scatophagidae, and of larvae of Tephritidae in fruits. Surprisingly, most of the species reported in this paper are polyphagous on hosts of the family Agromyzidae.

The generic changes are based on papers by Wharton (1988) and van Achterberg & van Zuijlen (in prep.) on the NW European Opiinae. It restricts the use of the generic name *Opius* Wesmael, 1835 (sensu lato as used e.g. by Fischer, 1977) to the group with a derived shape of the mandible. The remainder of the *Opius*-group is divided among several small genera and one large cosmopolitan genus, *Phaedrotoma*

Foerster, 1862, **stat. nov.** The latter has the mandible normal (at most with a rather protruding ventro-basal carina, fig. 33), the occipital carina straight ventrally, and no dorsope.

For the identification of the subfamily Opiinae, see van Achterberg (1990, 1993), and for the terminology used in this paper, see van Achterberg (1988, 1993).

Key to the Opiinae reared from Agromyzidae and reported in this paper

1. Basal half of first metasomal tergite closed ventrally, tube-shaped, elongate and its length at least 2.7 times its apical width (figs 9, 13, 14); clypeus flattened and ventral margin somewhat upcurved (figs 2, 11); apical half of hind tibia dark brown; antennal segments 35-38; second tergite pale yellowish medially and blackish laterally; hind wing with weak vein m-cu (fig. 1); mesoscutum with deep and large depression medio-posteriorly (fig. 8); (genus ***Lorenzopius*** nov.) ..... ***L. calycomyzae*** spec. nov.
- Basal half of first tergite largely open ventrally, comparatively short and its length less than twice its apical width (figs 16, 24, 35); clypeus more or less convex and ventral margin not upcurved (figs 17, 20, 25, 33); apical half of hind tibia yellowish; antennal segments less than 33; second tergite unicoloured dorsally; hind wing without vein m-cu or obsolescent (figs 15, 22, 30, 35); mesoscutum usually without distinct depression medio-posteriorly; (genus ***Phaedrotoma*** Foerster, 1862) 2
2. Occipital carina absent laterally; mesoscutum with deep depression medio-posteriorly; scutellar sulcus narrow and largely smooth ..... ***P.*** spec. A.
- Occipital carina present laterally; mesoscutum without distinct depression medio-posteriorly; scutellar sulcus moderately wide and sculptured, except of *P. denticlypealis* 3
3. Clypeus comparatively long, its ventral margin convex and touching the closed mandibles or nearly so, at most with an indistinct hypoclypeal depression (figs 17, 20); vein m-cu of fore wing of ♀ distinctly antefurcal (figs 15, 18), of ♂ sometimes interstitial 4
- Clypeus comparatively short, its ventral margin convave or straight and remaining distinctly removed from the closed mandibles, and with a distinct hypoclypeal depression (figs 25, 26, 28, 32, 33); vein m-cu of fore wing distinctly postfurcal (figs 22, 30, 35) or interstitial 6
4. Precoxal sulcus widely crenulate and distinctly impressed; second metasomal tergite longitudinally aciculate; mesosoma frequently orange-brown ..... ***P.*** cf. ***ribeiroensis*** (Fischer)
- Precoxal sulcus smooth and hardly or not impressed; second metasomal tergite smooth; mesosoma black(ish) or mainly yellowish- or orange-brown 5
5. Propodeum finely and densely coriaceous, and with long median carina; antennal segments about 31; clypeus with 3 minute teeth ventrally (fig. 20); first metasomal tergite finely granulate and shiny; clypeus black, except ventrally; hind femur less slender (fig. 21); second submarginal cell of fore wing wider basally (fig. 18); scutellar sulcus smooth; metanotum and propodeum densely setose ..... ***P. denticlypealis*** spec. nov.

- Propodeum distinctly and densely rugulose medially, and without long median carina; antennal segments 22-25; clypeus without minute teeth ventrally (fig. 17); first tergite longitudinally aciculate and less shiny (fig. 16); clypeus yellowish-brown; hind femur more slender (fig. 19); second submarginal cell of fore wing narrower basally (fig. 15); scutellar sulcus crenulate; metanotum and propodeum sparsely setose ..... ***P. luteoclypealis*** spec. nov.

6. Vein 1-R1 (= metacarp) of fore wing shorter than pterostigma (fig. 22); vein 2-SR of fore wing about as long as vein 3-SR (fig. 22); clypeus depressed ventrally (fig. 25); mesoscutum with indistinct medio-posterior depression ..... ***P. brevimarginalis*** spec. nov.
- Vein 1-R1 of fore wing longer than pterostigma (figs 30, 35); vein 2-SR of fore wing distinctly shorter than vein 3-SR (figs 30, 35); clypeus evenly convex (figs 32, 33); mesoscutum without medio-posterior depression 7
7. At least basal half of third metasomal tergite largely granulate (less pronounced in ♂); first tergite more or less widened posteriad (fig. 24); propodeum largely smooth 8
- Third metasomal tergite smooth; first tergite usually (nearly) parallel-sided posteriorly (figs 31, 36); propodeum sculptured or smooth 9
8. Clypeus comparatively long (fig. 28); face yellowish; first tergite usually yellowish or brownish; hind femur slender (fig. 29) ..... *P.* cf. ***pyrosoma*** (Fischer)
- Clypeus comparatively short (fig. 26); first tergite and face black(ish); hind femur more robust (fig. 27) ..... ***P. scabriventris*** (Nixon)
9. Precoxal sulcus distinctly impressed medially, in ♀ nearly always crenulate; antennal segments [16-]18-26; basal half of dorsal carinae of first tergite (rather) strong (fig. 31); clypeus medium-sized medially (fig. 32), but sometimes narrower than figured; face brownish-yellow; vein CU1b of fore wing distinct (fig. 30); third antennal segment similarly coloured as fourth segment ..... ***P. mesoclypealis*** spec. nov.
- Precoxal sulcus absent, rarely with a superficially smooth depression; antennal segments 15-19; basal half of dorsal carinae of first tergite weak (fig. 36); clypeus narrow medially (fig. 33); face black; vein CU1b of fore wing usually indistinct (fig. 35); third antennal segment usually (partly) yellow, distinctly paler than dark brown fourth segment ..... ***P. angiclypealis*** spec. nov.

Descriptions

Lorenzopius gen. nov.
(figs 1-14)

Type species: *Lorenzopius calycomyzae* spec. nov.

Etymology: derived from the name of the first species known (*Opius sanlorenzensis*) and the generic name *Opius* Wesmael, 1835. Gender: masculine.

Diagnosis.— Antennal segments 30-38; hypoclypeal depression present, medium-sized, elliptical and medially ventral margin of clypeus far below upper level of condyli of mandibles (fig. 2); clypeus flattened, its ventral margin somewhat upcurved; epistomal suture complete, normal ventrally; malar suture present, nearly complete, wide (figs 2, 7); dorsally occipital carina widely interrupted, ventrally straight and

remaining distinctly removed from hypostomal carina (fig. 7); hypostomal flange large; mandible not widened basally, apically distinctly twisted, with a weak ventral carina (fig. 7); pronope indistinct (fig. 8); precoxal sulcus finely sculptured, posteriorly absent; sternaulus absent (fig. 11); medio-posterior depression of mesoscutum present (fig. 8); mesopleuron smooth (except for precoxal sulcus); prepectal and postpectal carinae absent; vein m-cu of fore wing parallel to vein 1-M (fig. 1); pterostigma long, subparallel-sided to elongate elliptical (figs 1, 12), and narrowed towards its apex (fig. 1); vein r about as long as width of pterostigma or somewhat longer (figs 1, 12); vein 3-SR of fore wing (somewhat) longer than vein 2-SR (figs 1, 12); vein r emitted in front of middle of pterostigma (fig. 1); vein r angled with vein 3-SR of fore wing (fig. 1); hind wing with weak vein m-cu (fig. 1); first tergite very slender, ventrally its basal half closed, tube-shaped, 2.5-3 times as long as wide apically (figs 9, 13, 14), its spiracle situated near apical 0.4 of tergite (figs 11, 13, 14), its dorsopeand laterope absent; second tergite smooth; epipleura enlarged and covering sternites (fig. 11); hypopygium of ♀ not incised apically; exserted part of ovipositor sheath shorter than apical height of metasoma (fig. 11).

Biology.— Parasites of Agromyzidae.

Distribution.— Neotropical (Argentina, Ecuador): three species.

Note.— *Lorenzopius* gen. nov. is easily to separate from other known genera of Opiinae by the elongate tube-shaped first tergite with its spiracles situated distinctly behind middle of tergite (figs 13, 14), and the medio-posterior depression of mesoscutum present. *"Opius" tubibasis* Fischer, 1978, from Ecuador lacks the medio-posterior depression of the mesoscutum and has no crenulate precoxal sulcus, but it may belong here because it has the first tergite tubular and about 2.5 times as long as wide apically.

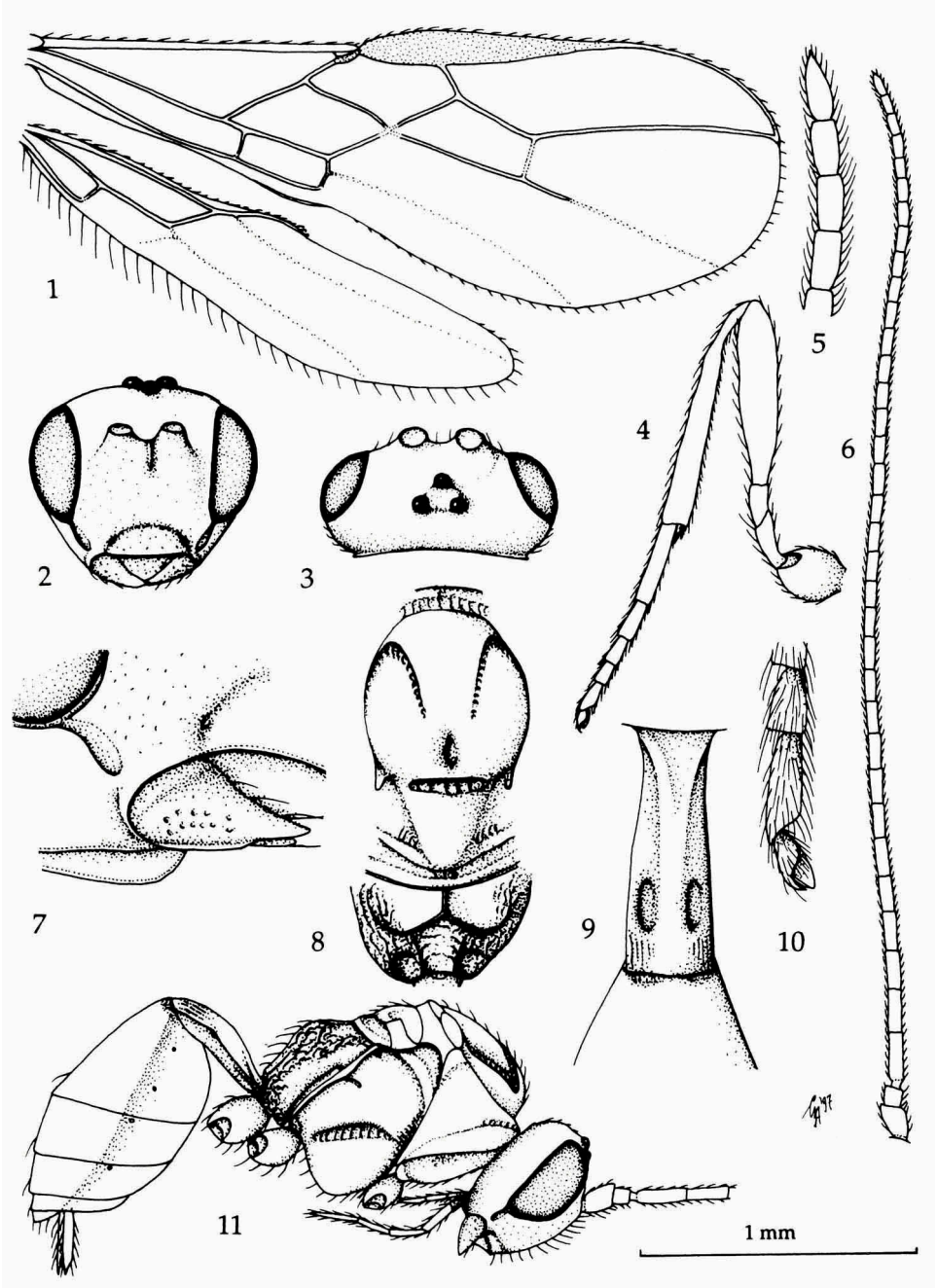
Key to species of the genus *Lorenzopius* nov.

1 Length of first tergite about 4.5 times its apical width; hind femur (except basally) dark brown; antennal segments about 30; basal half of hind tibia strongly narrowed (fig. 55 in Fischer, 1979); veins of fore wing yellowish; Ecuador..... ***L. tubulatus*** (Fischer)

\- Length of first tergite 2.5-3.1 times its apical width (figs 9, 12, 13); hind femur pale yellowish; antennal segments 35-38; only basal quarter of hind tibia strongly narrowed (fig. 4); veins of fore wing dark brown or brown; Argentina 2

2. First metasomal tergite with pair of depressions subapically (fig. 9); apical half of hind tibia dark brown; sublateral groove of mesoscutum distinctly crenulate (fig. 11); second and third tergites with large pale yellowish patch; metanotum and scutellum latero-posteriorly largely (yellowish)-brown; veins of fore wing mainly dark brown ..... ***L. calycomyzae*** spec. nov.

\- First tergite evenly convex, without pair of small depressions subapically (figs 13, 14); sublateral groove of mesoscutum smooth; apical third of hind tibia dark brown; second and third tergites, metanotum and scutellum completely black; veins of fore wing brown ..... ***L. sanlorenzensis*** (Fischer)



Figs 1-11, *Lorenzopius calycomyzae* gen. nov. & spec. nov., ♀, holotype. 1, wings; 2, head, frontal aspect; 3, head, dorsal aspect; 4, hind leg; 5, apex of antenna; 6, antenna; 7, detail of mandible; 8, mesosoma, dorsal aspect; 9, first metasomal tergite, dorsal aspect; 10, outer hind claw; 11, habitus, lateral aspect. 1, 4, 6, 11: 1.0 × scale-line; 2, 3, 8: 1.2 ×; 5: 2.5 ×; 7, 10: 2.8 ×; 9: 1.9 ×.

Lorenzopius calycomyzae spec. nov.
(figs 1-11)

Material.— Holotype ♀ (RMNH), "Argentina, Cordoba, ex *Calycomyza mikaniae* (Agromyz.) on *Mikania urticifolia* ([no.] 2407), A. Salvo, RMNH'92". Paratypes: 3 ♀♀, 4 ♂♂ + 1 damaged specimen (RMNH), with same label data.

Holotype, ♀, length of fore wing 2.7 mm, of body 2.6 mm.

Head.— Antennal segments 36, antenna 1.4 times length of fore wing, length of third segment 1.3 times fourth segment, and length of third, fourth and penultimate segments 3.7, 2.8 and 2.2 times their width, respectively (figs 5, 6); maxillary palp as long as height of head; frons flat medially, smooth, glabrous (fig. 3); OOL:diameter of ocellus:POL = 9:3:4; vertex weakly convex, smooth and with few setae; face punctulate, weakly convex; clypeus largely smooth, sparsely punctulate, nearly flat; ventral margin of clypeus straight, thin; hypoclypeal depression medium-sized (fig. 2); length of eye 1.7 times temple in dorsal view (fig. 3); length of malar space 1.1 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.2 times its height; sides of pronotum largely smooth, only antero-medially crenulate (fig. 11); mesosternal suture deep, strongly crenulate; mesosternum smooth and convex; epicnemial area crenulate anteriorly; precoxal sulcus distinctly impressed medially, crenulate, absent posteriorly and indistinct anteriorly (fig. 11); mesopleuron above precoxal area smooth; pleural sulcus smooth; metapleuron smooth, except some rugosity ventrally (fig. 11); notauli incomplete, absent posteriorly, distinctly crenulate (fig. 8); sublateral groove of mesoscutum distinctly crenulate (fig. 11); mesoscutal lobes smooth; scutellar sulcus deep, rather wide, with five strong carinae (fig. 8); scutellum slightly convex, smooth, laterally with long setae, and medially largely glabrous; side of scutellum only posteriorly crenulate (fig. 8); metanotum with short median carina medio-anteriorly (fig. 8); propodeum anteriorly largely smooth, its anterior part much shorter than its posterior part (fig. 11), posteriorly with incomplete areola, its median carina short, and posteriorly mainly rugose (fig. 8).

Wings.— Fore wing: 1-SR+M slightly sinuate (fig. 1); cu-a distinctly postfurcal (fig. 1), 1-CU1:2-CU1 = 3:16; r:3-SR:SR1 = 7:17:47; 2-SR:3-SR:r-m = 14:17:8; 1-M straight; m-cu parallel to 1-M posteriorly (fig. 1); vein CU1b present, longer than 3-CU1, and first subdiscal cell rather robust (fig. 1); basal quarter of 3-M sclerotized. Hind wing: m-cu strongly converging to cu-a, postfurcal (fig. 1); M+CU:1-M = 17: 15.

Legs.— Tarsal claws setose, simple (fig. 10); hind coxa smooth; length of femur, tibia and basitarsus of hind leg 4.6, 8.6 and 5.2 times their width, respectively; length of hind tibial spurs 0.2 and 0.3 times hind basitarsus; hind tibial comb absent; length of fore tibial spur 0.5 times fore basitarsus.

Metasoma.— Length of first tergite 2.8 times its apical width, ventrally basal two thirds of tergite closed, tube-shaped or nearly so, its surface smooth, except some striae posteriorly (fig. 9), with pair of subapical depressions (fig. 9), nearly flat basally, medially rather convex, its dorsal carina only basally present (fig. 9), dorso-lateral carina present; second and third tergites smooth, basal depressions of second tergite small (fig. 9); second metasomal suture absent; second-fifth tergites without sharp lat-

eral crease (fig. 11); length of ovipositor sheath 0.08 times fore wing.

Colour.— Black or brownish-black; mandible, clypeus, pronotum medio-posteriorly and narrowly ventrally, propleuron largely, scutellum laterally, metanotum, second and third tergites laterally, pterostigma and veins brown, but postero-basal veins yellowish; mesopleuron antero-dorsally, scapus, annellus, tegulae, palpi, legs (but telotarsi, apical half of hind tibia and hind tarsus dark brown), large patch on second and third tergites, and fourth tergite narrowly anteriorly pale yellowish; remainder of antenna dark brown; wing membrane subhyaline.

Variation.— Antennal segments of ♀ 36(1) or 38(1), of ♂ 35(1), 36(1), and 37(1); length of fore wing 2.7-3.2 mm, of body 2.6-3.0 mm; length of first tergite 2.6-3.1 times its apical width; length of ovipositor sheath 0.06-0.08 times fore wing; pronotum may be dorso-laterally brown; areola of posterior part of propodeum may be complete; clypeus may have a ventral row of punctures.

Biology.— Reared from *Calycomyza mikaniae* Spencer, 1973, on *Mikania urticifolia* Hook & Arn. (Asteraceae).

Lorenzopius sanlorenzensis (Fischer, 1964) comb. nov. (figs 12-14)

Opius sanlorenzensis Fischer, 1964: 49.
Opius (Utetes) sanlorenzensis; Fischer, 1977: 147-148.

Material.— Holotype, ♂ (TMA), "Argentina, Salta, San Lorenzo", "31.i.1950, leg. Willink", "Holotypus ♂, *Opius sanlorenzensis* sp. n., Fischer, 1964", "Holotype", "*Opius sanlorenzensis* n. sp., det. Fischer". Paratype: 1 ♀ (TMA), "allotype", topotypic and same date.

Description.— See Fischer (1964, 1977). The first metasomal tergite is 3.0 (♀) or 3.2 (♂) times its apical width in the type specimens, strongly and evenly convex, and largely sculptured (♀; fig. 13) to superficially sculptured and partly smooth (♂; fig. 14); the sublateral groove of the mesoscutum is shallow and smooth, and comparatively close to the lateral margin of the mesoscutum. The paratype has its large hypopygium partly visible.

Biology.— Unknown.

Lorenzopius tubulatus (Fischer, 1979) comb. nov.

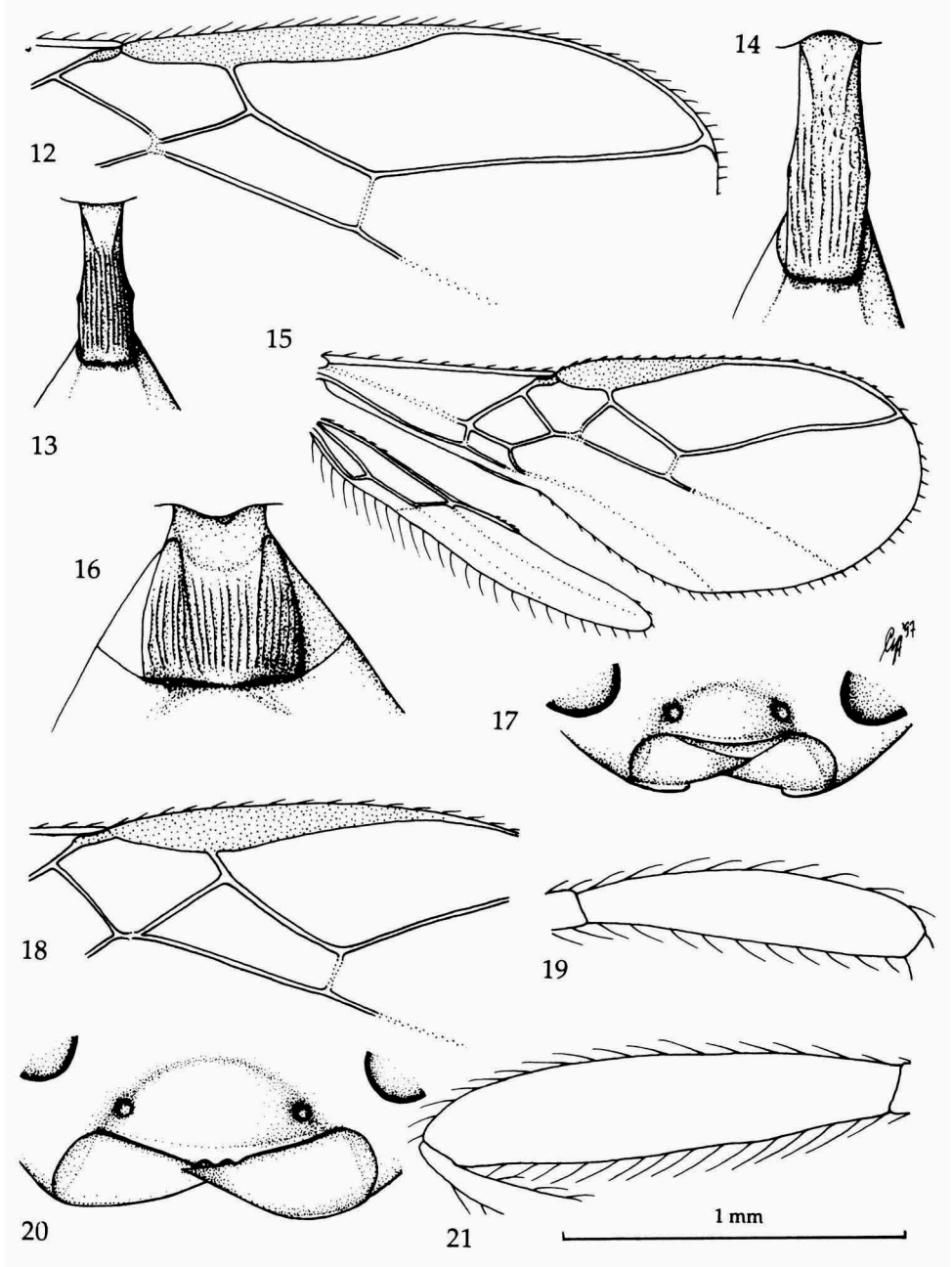
Opius (Utetes) tubulatus Fischer, 1979a: 294-296, fig. 55.

Material.— (Not examined; holotype from Ecuador, 2900-3200 m).

Biology.— Unknown.

Phaedrotoma spec. A

Material.— 1 ♂ (RMNH), "Argentina, Cordoba, ex *Liriomyza cesalpiniae* Valladares, 1982, on *Caesalpinia gilliesii* (106), A. Salvo, RMNH'96".



Figs 12-14, *Lorenzopius sanlorenzensis* (Fischer), ♂, holotype, but 14 of ♀, paratype; figs 15-17, 19, *Phaedrotoma luteoclypealis* spec. nov., ♀, holotype; figs 18, 20, 21, *P. denticlypealis* spec. nov, ♂, paratype, but 21 of ♀, holotype. 12, 18, detail of second submarginal cell of fore wing; 13, 14, 16, first metasomal tergite, dorsal aspect; 15, wings; 17, 20, clypeus, frontal aspect; 19, 21, hind femur. 12, 13, 15, 18: 1.0 × scale-line; 14, 20: 1.9 ×; 16, 17, 19, 21: 2.3 ×.

Biology.— Reared from *Liriomyza cesalpiniae* Valladares, 1982, on *Caesalpinia gilliesii* Wall. & Hook.

Note.— Runs to *Utetes tafivallensis* (Fischer, 1968) from Argentina, but this species is larger (length of body 3 mm instead of 1 mm of spec. A), the metasoma is ivory (largely black), 3-SR nearly twice 2-SR (about 1.5 times), clypeus with tooth medially (truncate). Only one male, which is in a too bad condition for becoming a type specimen.

Phaedrotoma angiclypealis spec. nov.
(figs 33, 35, 36)

Material.— Holotype, ♀ (RMNH), "Argentina, Cordoba, ex *Haplopeodes* sp. (Agromyz.) on *Salpichroa origanifolia* (31), A. Salvo, RMNH 1992", "2115". Paratypes (25 ♀♀+18 ♂♂; RMNH): 18 ♀♀+18 ♂♂, "Argentina, Cordoba, ex *Haplopeodes lycivora* (Agromyz.) on *Lycium cestroides* (3905), A. Salvo, RMNH 1992"; 2 ♀♀, id., but no 102+102*; 5 ♀♀, "Argentina, Cordoba, ex *Haplopeodes flavinotus* (Agromyz.) on *Capsicum* sp. (6), A. Salvo, RMNH 1992".

Holotype, ♀, length of fore wing 1.5 mm, of body 1.2 mm.

Head.— Antennal segments 17, antenna as long as fore wing, length of third segment 1.3 times fourth segment, and length of third, fourth and penultimate segments 3.5, 3.3 and 2.2 times their width, respectively; maxillary palp 0.6 times height of head; frons flat medially (except weak depressions behind antennal sockets), smooth, glabrous; OOL:diameter of ocellus:POL = 4:2:5; vertex rather flat, smooth and with few setae; face smooth, except some punctures, with some long whitish setae, medially weakly convex; clypeus about six times as wide as long (fig. 33), largely smooth, sparsely punctate, convex and depressed ventrally; ventral margin of clypeus concave medially, thick, far from mandible; hypoclypeal depression wide; length of eye 2.5 times temple in dorsal view; malar suture complete, deep; length of malar space 0.6 times basal width of mandible; mandible normal, strongly twisted apically and with rather wide, rather long and protruding carina ventro-basally.

Mesosoma.— Length of mesosoma 1.2 times its height; pronope absent; side of pronotum largely smooth, except some superficial rugae posteriorly and some indistinct crenulae anteriorly; mesosternal suture deep, smooth; mesosternum smooth and convex; epicnemial area mainly smooth, indistinctly crenulate dorsally; precoxal sulcus absent; mesopleuron above precoxal area smooth; pleural sulcus smooth; metapleuron smooth dorsally, somewhat rugose ventrally; notauli absent on disc, anteriorly crenulate; sublateral groove of mesoscutum absent; mesoscutum smooth, without medio-posterior depression and mainly glabrous; scutellar sulcus deep, narrow, with five short carinae; scutellum rather flat, smooth, rather wide posteriorly, glabrous, and antero-medially without small pit; side of scutellum with some rugae; metanotum with short median carina anteriorly; propodeum smooth, median carina and areola absent, only with some short crenulae posteriorly.

Wings.— Fore wing: pterostigma wide elliptical, strongly narrowed apically (fig. 35); r gradually merging into 3-SR; 1-R1 about as long as pterostigma (fig. 35); SR1 nearly straight; 1-SR+M straight; cu-a distinctly postfurcal (fig. 35); r:3-SR:SR1 = 1:18:42; 2-SR:3-SR:r-m = 11:18:5; 1-M nearly straight; m-cu distinctly postfurcal, converging to 1-M posteriorly, gradually merging into 2-CU1 (fig. 35); vein CU1b short,

indistinct (fig. 35); first subdiscal cell robust (fig. 35); basal 0.15 of 3-M sclerotized. Hind wing: m-cu absent; M+CU:1-M = 12: 11.

Legs.— Tarsal claws setose, simple; hind coxa smooth; length of femur, tibia and basitarsus of hind leg 3.6, 8.3 and 4.2 times their width, respectively; length of hind tibial spurs 0.2 and 0.4 times hind basitarsus; hind tibial comb absent; length of fore tibial spur 0.6 times fore basitarsus.

Metasoma.— Length of first tergite 1.5 times its apical width (fig. 36), ventrally open, hardly widened posteriorly, its spiracles at middle of tergite, its surface densely rugulose, concave basally, medially moderately convex, its dorsal carinae only distinct in basal half of tergite, dorso-lateral carinae strong; second tergite partly rather coarsely striate, but smooth medially (fig. 36), its basal depressions elliptical, rather small; third tergite smooth; second metasomal suture absent; second tergite with lateral crease, third-fifth tergites without sharp lateral crease; length of ovipositor sheath 0.07 times fore wing, sheath not protruding beyond apex of metasoma.

Colour.— Black; first tergite yellowish-brown; 3 basal segments of antenna (but pedicellus somewhat infuscate), palpi and legs pale yellowish; remainder of antenna and clypeus dark brown; tegulae, pterostigma and veins brown; wing membrane subhyaline.

Variation.— Length of fore wing 1.4-1.8 mm, and of body 1.0-1.4 mm; antennal segments of ♀ 15(14), 16(3), 17(2), 18(5), or 19(2); of ♂ 15(6), 16(6), 17(1), 18(2) or 19(1); length of first metasomal tergite 1.2-1.5 times its apical width; length of ovipositor sheath 0.07-0.10 times (if exserted 0.14 times); pedicellus and third antennal segment yellowish or infuscate; mesosoma usually completely black, but sometimes partly dark brown or yellowish; vein m-cu of fore wing distinctly postfurcal to nearly interstitial; vein cu-a of fore wing postfurcal or interstitial; precoxal sulcus absent or shallowy impressed; first tergite sometimes largely dark brown; second tergite (except laterally) usually pale yellowish or ivory, sometimes completely black; basal depressions of second tergite short or long and oblique; second tergite often smooth or only superficially densely strigose.

Biology.— Reared from *Haplopeodes lycivora* Valladares, 1982, on *Lycium cestroides* Schlecht; *Haplopeodes* spec. on *Salpichroa origanifolia* (Lam.) Tellung; and *Haplopeodes flavinotus* Valladares, 1982, on *Capsicum annuum* Linnaeus.

Note.— Runs in the key by Fischer (1977) to *Opius* (*Phaedrotoma*) *fissilis* Fischer, 1969, from Chile. However, this species has the antenna with 21-24 segments, the clypeus three times as wide as long, the second and third metasomal tergites microsculptured (coriaceous), the ovipositor sheath hardly protruding, the middle of the metasoma brown, the veins and pterostigma yellow.

Phaedrotoma brevimarginalis spec. nov.
(figs 22, 23, 25)

Material.— Holotype, ♂ (RMNH), "Argentina, Cordoba, ex *Haplopeodes lycivora* (Agromyz.) on *Lycium cestroides* (3905), A. Salvo, RMNH 1992".

Holotype, ♂, length of fore wing 1.7 mm, of body 1.5 mm.

Head.— Antennal segments 20, antenna 1.1 times length of fore wing, length of

third segment equal to fourth segment, and length of third, fourth and penultimate segments 3.0, 3.0 and 2.5 times their width, respectively; maxillary palp partly missing; frons flat, but with pair of distinct depressions behind antennal sockets, smooth, nearly completely glabrous; OOL:diameter of ocellus:POL = 4:2:5; vertex weakly convex, smooth and with few setae; face smooth, with some whitish setae, rather convex; clypeus about three times wideer than long, largely smooth, sparsely punctulate, convex and depressed ventrally (fig. 25); ventral margin of clypeus straight medially, thick, distinctly removed from mandible; hypoclypeal depression medium-sized; length of eye 2.9 times temple in dorsal view; malar suture absent, except an indistinct impression; length of malar space 0.4 times basal width of mandible; mandible normal, strongly narrowed apically and with rather wide, medium-sized, and protruding carina ventro-basally.

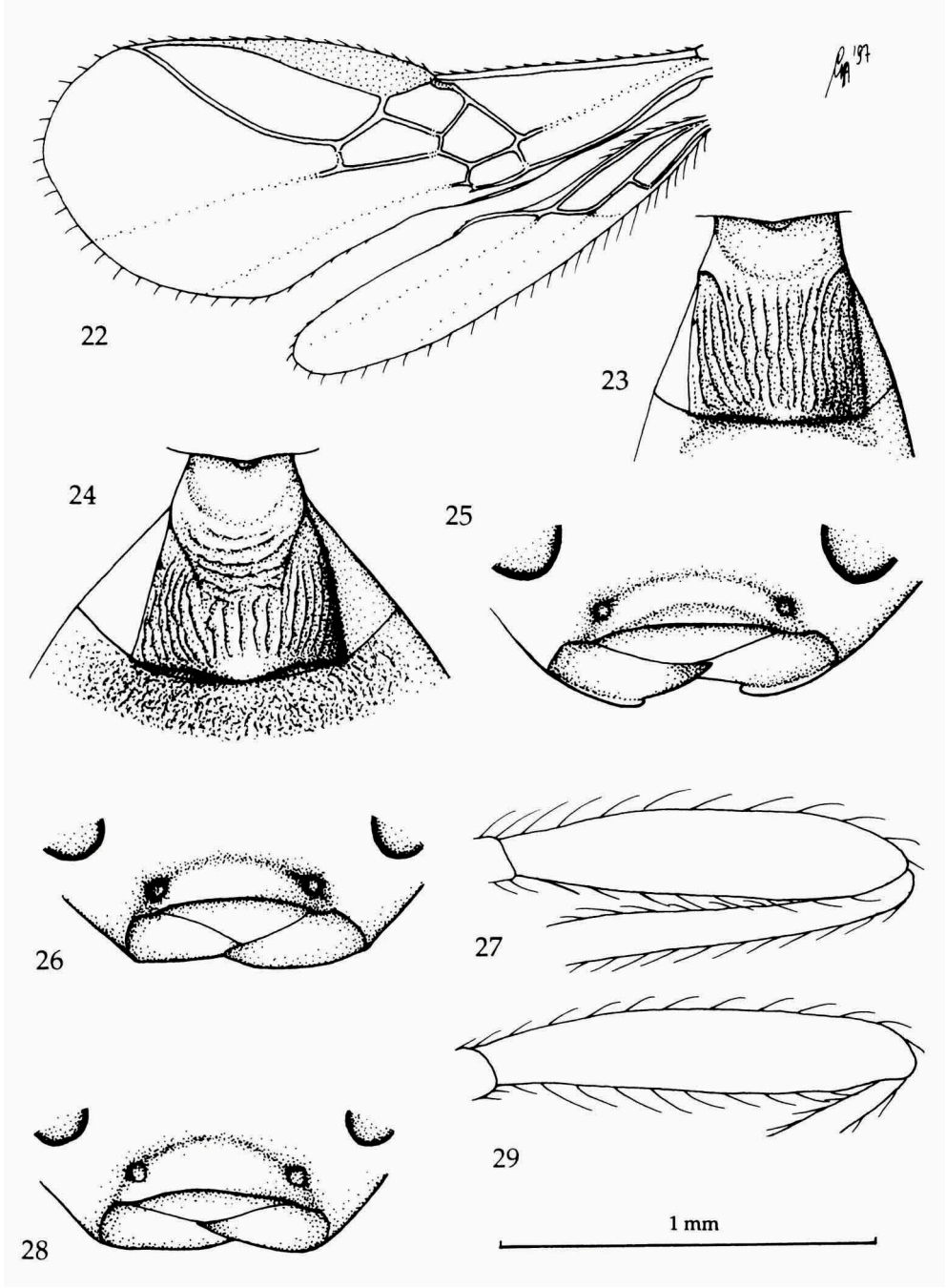
Mesosoma.— Length of mesosoma 1.2 times its height; pronope absent or nearly so; side of pronotum smooth dorsally, largely rugose ventrally; mesosternal suture deep, coarsely crenulate; mesosternum smooth and convex; epicnemial area largely smooth, indistinctly crenulate anteriorly; precoxal sulcus slightly impressed medially, smooth, its posterior half absent; mesopleuron above precoxal area smooth; pleural sulcus smooth, but its ventral half with some micro-sculpture; metapleuron smooth dorsally, rugulose ventrally; notauli absent on disc (except some indistinct traces anteriorly), anteriorly crenulate; sublateral groove of mesoscutum present, smooth, near lateral margin of mesoscutum; mesoscutum smooth, with obsolescent medio-posterior depression and largely glabrous; scutellar sulcus rather deep, medium-sized, finely crenulate, with one distinct carina; scutellum rather flat, smooth, wide posteriorly, glabrous, and antero-medially without pit; side of scutellum indistinctly rugose; metanotum with short median carina; propodeum smooth, without areola or median carina, latero-posteriorly rugulose and medio-posteriorly rugose.

Wings.— Fore wing: pterostigma elliptical, strongly narrowed apically (fig. 22); r gradually mergiong into 3-SR; 1-R1 distinctly shorter than pterostigma (fig. 22); SR1 distinctly curved posteriad (fig. 22); 1-SR+M slightly sinuate; cu-a postfurcal (fig. 22); 1-CU1:2-CU1 = 1:10; r:3-SR:SR1 = 3:10:40; 2-SR:3-SR:r-m = 11:10:4; 1-M straight; m-cu distinctly postfurcal, converging to 1-M posteriorly; vein CU1b present, shorter than 3-CU1; first subdiscal cell robust (fig. 22); basal 0.05 of 3-M sclerotized. Hind wing: m-cu absent (except for an indistinct fold, which is strongly converging to cu-a), postfurcal; M+CU:1-M = 14: 10.

Legs.— Tarsal claws setose, simple; hind coxa smooth; length of femur, tibia and basitarsus of hind leg 3.4, 8.0 and 4.0 times their width, respectively; length of both hind tibial spurs 0.4 times hind basitarsus; hind tibial comb absent; length of fore tibial spur 0.5 times fore basitarsus.

Metasoma.— Length of first tergite 1.1 times its apical width (fig. 23), ventrally open, subparallel-sided posteriorly, its spiracles near middle of tergite, its surface densely and finely rugose, slightly concave basally, medially convex, its dorsal carinae only up to middle of tergite, dorso-lateral carina strong; second and third tergites smooth, basal depressions of second tergite medium-sized, rather long, linear; second metasomal suture absent; second-fifth tergites without sharp lateral crease.

Colour.— Black; face, malar space, antenna, first tergite, apical half of hind tibia and hind tarsus largely, dark brown; clypeus, pterostigma, veins, tegulae and second



Figs 22, 23, 25, *Phaedrotoma brevimarginalis* spec. nov., ♂, holotype; figs 24, 26, 27, *P. scabriventris* (Nixon), ♀, Argentina, Cordoba; figs 28, 29, *P.* cf. *pyrosoma* (Fischer), ♀, Argentina, Cordoba. 22, wings; 23, 24, first metasomal tergite, dorsal aspect; 25, 26, 28, clypeus, frontal aspect; 27, 29, hind femur. 22: 1.0 × scale-line; 23-29: 2.3 ×.

tergite brown; remainder of legs and palpi (pale) brownish-yellow; wing membrane subhyaline.

Biology.— Reared from *Haplopeodes lycivora* Valladares, 1982, on *Lycium cestroides* Schlecht.

Note.— It runs in the keys by Fischer (1972, 1977) to the genus *Diachasma* Foerster, 1862, but it does not run in the species key to any similar species and it belongs not to this genus.

Phaedrotoma denticlypealis spec. nov.
(figs 18, 20, 21)

Material.— Holotype, ♀ (RMNH), "Argentina, Cordoba, ex *Amauromyza maculosa* on *Conyza* sp. (2002), A. Salvo, RMNH'92". Paratype: 1 ♂ (RMNH), with same label data, "♂ a[ntennal] s[egments] 31".

Holotype, ♀, length of fore wing 2.5 mm, of body 1.8 mm.

Head.— Remaining antennal segments 20, length of third segment 1.2 times fourth segment, and length of third, and fourth segments 3.3 and 2.8 times their width, respectively; maxillary palp 0.7 times height of head; frons flat medially, smooth, glabrous; OOL:diameter of ocellus:POL = 15:4:9; vertex convex, smooth and with few setae; face smooth, with many long whitish setae, weakly convex; clypeus about twice wider than long (fig. 20), smooth, weakly convex dorsally and flattened ventrally; ventral margin of clypeus convex and with three minute teeth medially (fig. 20), thin, reaching mandible; hypoclypeal depression absent; length of eye 2.2 times temple in dorsal view; malar suture absent; length of malar space 0.8 times basal width of mandible; mandible normal, rather narrowed apically and with narrow, short carina ventro-basally.

Mesosoma.— Length of mesosoma 1.3 times its height; pronope large, nearly round; side of pronotum largely smooth, except some micro-sculpture postero-ventrally; mesosternal suture deep, narrow, smooth; mesosternum smooth and strongly convex, with long setae; epicnemial area smooth; precoxal sulcus absent; mesopleuron smooth, posteroventrally patch with many long setae; pleural sulcus smooth; metapleuron smooth dorsally, rugulose ventrally, with many long whitish setae; notauli completely absent, also anteriorly; sublateral groove of mesoscutum absent; mesoscutum smooth, without medio-posterior depression and distinctly setose, with three large glabrous parts; scutellar sulcus linear, very narrow, shallow and smooth; scutellum rather convex, densely setose, smooth, wide posteriorly, and antero-medially without a pit; side of scutellum smooth; metanotum densely setose, with median carina; propodeum rugulose-coriaceous, with long median carina, posteriorly connected to a medium-sized and slender triangular areola, and no costulae.

Wings.— Fore wing: pterostigma wide elliptical, narrowed apically (fig. 18); r not angled with 3-SR; 1-R1 about as long as pterostigma; SR1 and 1-SR+M straight; cu-a just postfurcal; 1-CU1:2-CU1 = 1:13; r:3-SR:SR1 = 3:19:45; 2-SR:3-SR:r-m = 13:19:5; 1-M straight; m-cu distinctly antefurcal, parallel with 1-M posteriorly; vein CU1b absent; first subdiscal cell rather robust; 3-M not well sclerotized basally. Hind wing: m-cu absent,; M+CU:1-M = 13: 10.

Legs.— Tarsal claws setose, simple; hind coxa smooth, with long setae; length of femur, tibia and basitarsus of hind leg 4.2, 8.2 and 5.3 times their width, respectively; length of hind tibial spurs 0.25 and 0.30 times hind basitarsus; hind tibial comb absent; length of fore tibial spur 0.4 times fore basitarsus.

Metasoma.— Length of first tergite equal to its apical width, ventrally open, distinctly narrowed anteriorly, parallel-sided posteriorly, its spiracles distinctly behind middle of tergite, its surface superficially granulate, shiny, concave basally, medially weakly convex, its dorsal carinae weak, only distinct in basal quarter of tergite, dorsolateral carinae absent posteriorly; second and third tergites smooth, basal depressions of second tergite indistinct; second metasomal suture absent; second-fifth tergites without sharp lateral crease; length of ovipositor sheath 0.10 times fore wing, sheath hardly protruding beyond apex of metasoma.

Colour.— Black; clypeus (except narrowly dorsally), mesopleuron dorsally and ventrally partly, malar space partly, scutellum and metanotum posteriorly, propleuron posteriorly and first tergite apically, reddish-brown; scapus, legs (but apex of hind tibia and hind tarsus rather infuscate) and second tergite brownish-yellow; pterostigma and veins mainly pale brown; wing membrane subhyaline.

Variation.— Male paratype: length of fore wing 2.7 mm, and of body 2.2 mm; antennal segments 31; length of first metasomal tergite 1.1 times its apical width; second and third tergites largely brown.

Biology.— Reared from *Amauromyza maculosa* (Maloch, 1913) on *Conyza* spec.

Note.— *Opius gracielae* (De Santis, 1982) has been reared from the same host on *Helianthus* spec., but this species has the mandible distinctly widened basally (fig. 3 in Fischer, 1986), the clypeus without teeth, and the second submarginal cell of fore wing parallel-sided basally. *P. laplatana* (Fischer, 1968) **comb. nov.**, is closely related, but *P. laplatana* has 35-39 antennal segments, the first metasomal tergite parallel-sided posteriorly, and its length about 1.5 times its apical width, and vein 3-SR of fore wing at least 1.7 times vein 2-SR.

Phaedrotoma luteoclypealis spec. nov.
(figs 15-17, 19)

Material.— Holotype, ♀ (RMNH), "Argentina, Cordoba, ex *Haplopeodes* sp. (Agromyz.) on *Salpichroa origanifolia* (31), A. Salvo, RMNH 1992", "2116". Paratypes (17 ♀♀ + 11 ♂♂; RMNH): 9 ♀♀ + 4 ♂♂, same label data as holotype, some with no. 2115; 1 ♀, "Argentina, Cordoba, ex *Liriomyza huidobrensis* (Agromyz.) on *Calendula* sp. (35), A. Salvo, RMNH 1992"; 1 ♀, "Argentina, Cordoba, ex *Haplopeodes lycivora* (Agromyz.) on *Lycium cestroides* (102 + 102*), A. Salvo, RMNH'92"; 3 ♀♀ + 2 ♂♂ id., but no. 3905 or with "Lyc."; 1 ♀ + 1 ♂, "Argentina, Cordoba, ex *Liriomyza commelinae* (Agromyz.) on *Commelina erecta* (1307), A. Salvo, RMNH'92"; 1 ♀, id., but no. 1323; 1 ♀ + 4 ♂♂, "Argentina, Cordoba, ex *Phytomyza williamsoni* (Agromyz.) on *Clematis* spec. (100+101), A. Salvo, RMNH 1992".

Holotype, ♀, length of fore wing 1.7 mm, of body 1.2 mm.

Head.— Antennal segments 22, antenna 1.1 times length of fore wing, length of third segment 1.3 times fourth segment, and length of third, fourth and penultimate segments 3.3, 2.7 and 2.2 times their width, respectively; maxillary palp 0.8 times height of head; frons flat medially (except weak depressions behind antennal sockets), smooth, glabrous; OOL:diameter of ocellus:POL = 6:2:5; vertex weakly convex,

smooth and with few setae; face smooth, with many long whitish setae, weakly convex; clypeus 1.5 times wider than long (fig. 17), largely smooth, sparsely punctulate, convex and depressed ventrally; ventral margin of clypeus straight medially, thin, nearly reaching mandible (fig. 17); hypoclypeal depression absent; length of eye 2.7 times temple in dorsal view; malar suture absent; length of malar space 0.7 times basal width of mandible; mandible normal, strongly narrowed apically and with narrow, short carina ventro-basally.

Mesosoma.— Length of mesosoma 1.2 times its height; pronope absent or nearly so; side of pronotum largely smooth, except some superficial rugulae; mesosternal suture deep, narrowly crenulate; mesosternum smooth and convex; epicnemial area indistinctly crenulate anteriorly; precoxal sulcus distinctly impressed medially, smooth, its posterior half absent; mesopleuron above precoxal area smooth; pleural sulcus smooth; metapleuron smooth dorsally, rugose ventrally; notauli absent on disc, anteriorly crenulate; sublateral groove of mesoscutum absent; mesoscutum smooth, without medio-posterior depression and sparsely setose, but with some glabrous parts; scutellar sulcus deep, rather narrow, with six short carinae; scutellum convex, smooth, wide posteriorly, with some long setae, and antero-medially with a small pit; side of scutellum indistinctly crenulate; metanotum without median carina; propodeum rugulose, with irregular and incomplete areolation, no distinct costulae, its median carina absent.

Wings.— Fore wing: pterostigma elliptical, strongly narrowed apically (fig. 15); 1-R1 about as long as pterostigma (fig. 15); SR1 nearly straight; 1-SR+M straight (fig. 15); cu-a subinterstitial; r:3-SR:SR1 = 2:16:44; 2-SR:3-SR:r-m = 10:16:5; 1-M nearly straight; m-cu distinctly antefurcal, converging to 1-M posteriorly (fig. 15); vein CU1b absent; first subdiscal cell robust (fig. 15); basal 0.2 of 3-M sclerotized. Hind wing: m-cu absent (except for an indistinct fold, which is strongly converging to cu-a), postfurcal; M+CU:1-M = 10: 11.

Legs.— Tarsal claws setose, simple; hind coxa smooth; length of femur, tibia and basitarsus of hind leg 4.3, 8.4 and 6.2 times their width, respectively; length of both hind tibial spurs 0.4 times hind basitarsus; hind tibial comb absent; length of fore tibial spur 0.6 times fore basitarsus.

Metasoma.— Length of first tergite 1.1 times its apical width (fig. 16), ventrally open, hardly widened posteriorly, its spiracles just behind middle of tergite, its surface distinctly striate, nearly flat basally, medially convex, its dorsal carinae nearly complete, hardly different from surrounding striae, dorso-lateral carinae strong; second and third tergites smooth, basal depressions of second tergite indistinct, linear; second metasomal suture absent; second-fifth tergites without sharp lateral crease; length of ovipositor sheath 0.09 times fore wing, sheath hardly protruding beyond apex of metasoma.

Colour.— Yellowish-brown, but mesoscutum rather infuscate; head (except yellowish-brown clypeus, malar space (largely) and temples ventrally) and ovipositor sheath black; scapus, pedicellus, third antennal segment partly, palpi, legs, second tergite and base of third tergite pale yerllowish; tegulae brown; remainder of antenna, third (mainly) and following tergites dark brown; pterostigma and veins pale brown; wing membrane subhyaline.

Variation.— Length of fore wing 1.3-2.2 mm, and of body 1.0-1.9 mm; antennal

segments of ♀ 20(1), 21(4), 22(7), 23(1), or 24(2); of ♂ 21(1), 22(6), or 23(2); length of first metasomal tergite 1.0-1.2 times its apical width; length of ovipositor sheath 0.09-0.10 times fore wing; mesoscutum yellowish-brown, or infuscate; scutellum sometimes rather infuscate; 4-6 basal segments of antenna may be yellowish; clypeus may be partly brown. Males are similarly coloured as females, but some have mesosoma and first tergite brown or dark brown.

Biology.— Reared from *Haplopeodes lycivora* Valladares on *Lycium cestroides*; *H.* spec. on *Salpichroa origanifolia*; *Phytomyza williamsoni* Blanchard, 1938, on *Clematis denticulata* Vell.; *Liriomyza commelinae* (Frost, 1931) on *Commelina erecta* Linnaeus; and *L. huidobrensis* (Blanchard, 1926) on *Calendula officinalis* Linnaeus.

Note.— Runs in the key by Fischer (1977) to *Opius* (*O.*) *yahuarmayoanus* Fischer, 1966, from Peru, but it has the antenna with about 27 segments (♀), the head microsculptured, the clypeus twice wider than long, the ovipositor sheath more protruding, and the apex of the hind tibia and the hind tarsus infuscate.

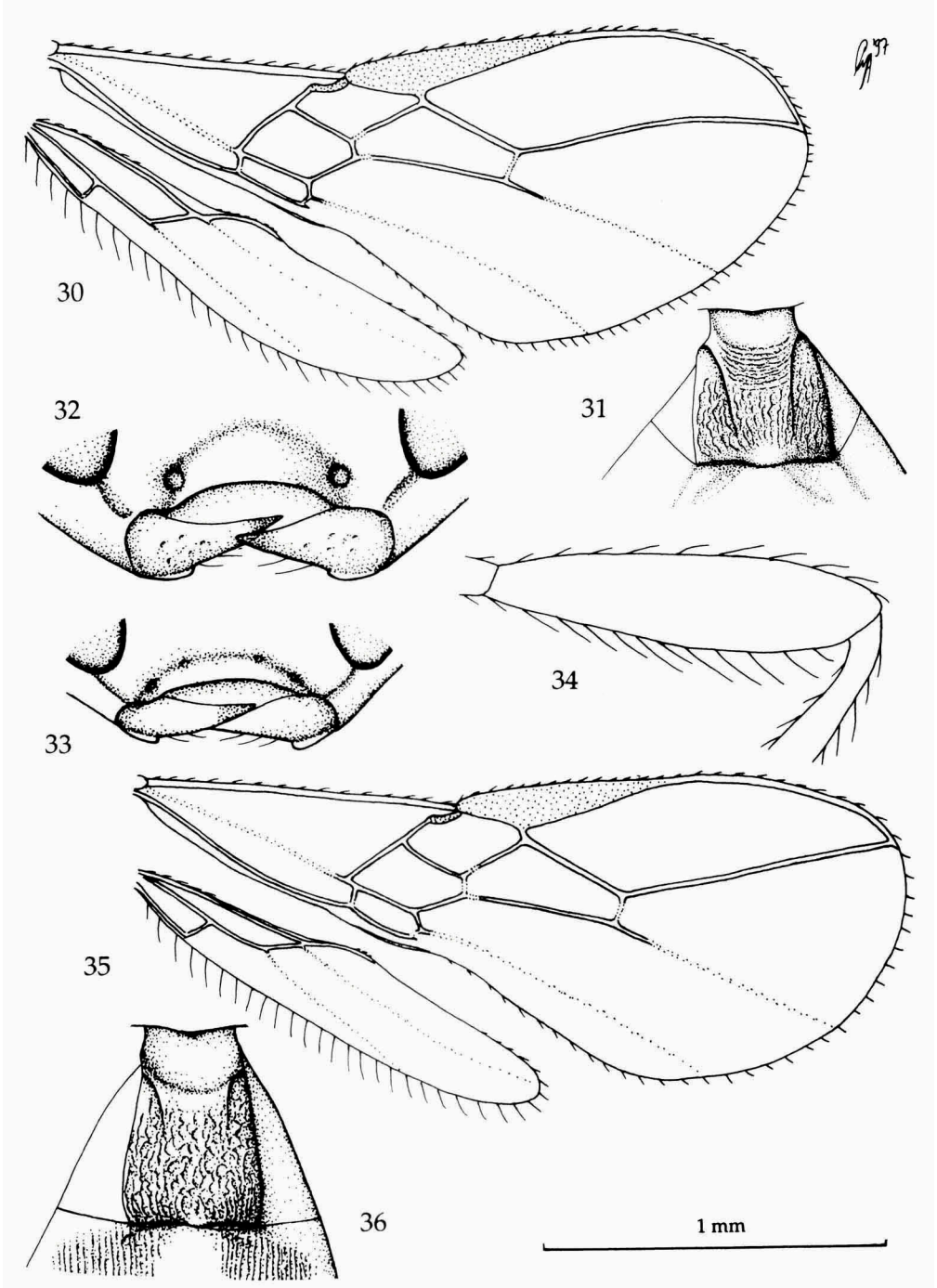
Phaedrotoma mesoclypealis spec. nov.
(figs 30-32, 34)

Material.— Holotype, ♀ (RMNH), "Argentina, Cordoba, ex *Haplopeodes lycivora* (Agromyz.) on *Lycium cestroides* (3905), A. Salvo, RMNH 1992". Paratypes (10 ♀♀ + 15 ♂♂; RMNH): 7 ♀♀ + 9 ♂♂, same label data as holotype, but some with nos 102+102* or 3911; 2 ♀♀+ 1 ♂ "Argentina, Cordoba, ex *Calycomyza verbenivora* (Agromyz.) on *Lippia turbinata* (4), A. Salvo, RMNH'92"; 1 ♂, "Argentina, Cordoba, ex *Liriomyza sativae* (Agromyz.) on *Hydrocotyle* sp. (105), A. Salvo, RMNH 1992"; 1 ♂, "Argentina, Cordoba, ex *Phytomyza williamsoni* (Agromyz.) on *Clematis* sp.(1906), A. Salvo, RMNH 1992"; 1 ♀+2 ♂♂, "Argentina, Cordoba, ex *Haplopeodes* sp. (Agromyz.) on *Salpichroa organifolia* (31), A. Salvo, RMNH 1992".

Holotype, ♀, length of fore wing 2.1 mm, of body 1.6 mm.

Head.— Antennal segments 22, antenna as long as fore wing, length of third segment 1.3 times fourth segment, and length of third, fourth and penultimate segments 4.0, 3.1 and 2.0 times their width, respectively; maxillary palp 0.7 times height of head; frons flat medially, smooth, glabrous, except a few setae laterally; OOL:diameter of ocellus:POL = 8:2:5; vertex weakly convex, smooth and with few setae; face smooth, with some long whitish setae, weakly convex; clypeus medium-sized, about three times as wide as long (fig. 32), largely smooth, sparsely coarsely punctate, convex; ventral margin of clypeus slightly concave medially, thick, distinctly removed from mandible; epistomal suture normal ventrally; hypoclypeal depression medium-sized (fig. 32); length of eye 2.9 times temple in dorsal view; malar suture distinct, nearly complete; length of malar space equal to basal width of mandible; mandible normal, moderately twisted apically and with rather wide, short, rather protruding carina ventro-basally.

Mesosoma.— Length of mesosoma 1.2 times its height; pronope absent; side of pronotum largely smooth, except some fine crenulation antero- and postero-medially; mesosternal suture deep, with few strong crenulae; mesosternum smooth and convex; epicnemial area smooth, except some indistinct crenulae ventrally; precoxal sulcus distinctly impressed medially, and strongly crenulate, absent anteriorly and posteriorly; mesopleuron above precoxal area smooth; pleural sulcus smooth; metapleu-



Figs 30-32, 34, *Phaedrotoma mesoclypealis* spec. nov., ♀, holotype; figs 33, 35, 36, *P. angiclypealis* spec. nov., ♀, holotype. 30, 35, wings; 31, 35, first metasomal tergite, dorsal aspect; 32, 33, clypeus, frontal aspect; 34, hind femur. 30, 35: 1.0 × scale-line; 31: 0.6 ×; 32-34, 36: 2.3 ×.

ron smooth dorsally, rugose ventrally and distinctly crenulate antero-ventrally; notauli absent on disc, anteriorly crenulate; sublateral groove of mesoscutum smooth and near lateral margin of mesoscutum; mesoscutum smooth, without medio-posterior depression and only setae near imaginary course of notauli and near lateral margin; scutellar sulcus deep, medium-sized, with seven short carinae; scutellum flat, smooth, wide posteriorly, with some long setae laterally and glabrous medially, and antero-medially without pit; side of scutellum smooth; metanotum with short median carina anteriorly; propodeum rugose, but narrowly anteriorly and latero-posteriorly smooth, with incomplete and wide areola, its median carina short.

Wings.— Fore wing: pterostigma elliptical, strongly narrowed apically (fig. 30); 1-R1 distinctly longer than pterostigma (fig. 30); r not angled with 3-SR; SR1 distinctly curved; 1-SR+M straight; cu-a subinterstitial (fig. 30); r:3-SR:SR1 = 1:21:53; 2-SR:3-SR:r-m = 15:21:6; 1-M nearly straight; m-cu distinctly postfurcal, converging to 1-M posteriorly (fig. 30); vein CU1b present, much shorter than 3-CU1; first subdiscal cell rather robust (fig. 30); basal quarter of 3-M sclerotized. Hind wing: m-cu absent; M+CU:1-M = 15: 13.

Legs.— Tarsal claws setose, simple; hind coxa smooth; length of femur, tibia and basitarsus of hind leg 4.0, 8.2 and 5.1 times their width, respectively; length of hind tibial spurs 0.4 and 0.5 times hind basitarsus; hind tibial comb absent; length of fore tibial spur 0.5 times fore basitarsus.

Metasoma.— Length of first tergite 1.2 times its apical width (fig. 31), ventrally open, subparallel-sided posteriorly, its spiracles at middle of tergite, its surface densely finely rugose, concave basally, medially strongly convex, its dorsal carinae present at basal 0.8, strong, dorso-lateral carinae strong; second (except some indistinct basal striae) and third tergites smooth; basal depressions of second tergite medium-sized, rather long and oblique; second metasomal suture absent; second-fifth tergites without sharp lateral crease; length of ovipositor sheath 0.08 times fore wing, sheath not protruding beyond apex of metasoma.

Colour.— Brownish-yellow; second and follwoing tergites, palpi, legs and tegulae pale yellow (but first and second tergite laterally, and following tergites apically dark brown or infuscate); ovipositor sheath black; antenna (except scapus largely and part of pedicellus) dark brown; pterostigma and veins (rather) dark brown; wing membrane subhyaline.

Variation.— Length of fore wing 1.4-2.1 mm, and of body 1.2-1.7 mm; antennal segments of ♀ 18(1), 19(1), 20(1), 21(3), 22(1) or 23(1); of ♂ 16(1), 20(2), 21(2), 22(3), 23(2), 24(1), 25(1), or 26(1); length of first metasomal tergite 1.1-1.3 times its apical width; length of ovipositor sheath 0.07-0.08 times fore wing; fourth-sixth tergites may be completely dark brown; humeral plate yellow to dark brown; some females have clypeus narrower than figured; body may be largely dark brown (usually except for (part of) the yellowish face and the pale yellowish second tergite); sometimes face and dorsal part of clypeus dark brown; sculpture and areolation of propodeum is very variable, it may be completely absent or distinct, with rather distinct transverse carina; vein m-cu of fore wing distinctly postfurcal or subinterstitial; vein SR1 of fore wing straight or distinctly curved.

Biology.— Reared from *Haplopeodes lycivora* on *Lycium cestroides*; *H.* spec. on *Salpichroa origanifolia.*; *Liriomyza huidobrensis* (= *L. sativae* on label) on *Hydrocotyle* spec.;

Calycomyza verbenivora Spencer, 1973, on *Aloysia gratissima* (Gill. & Hook) Tronc. (= *Lippia turbinata*); *Phytomyza williamsoni* on *Clematis* spec.

Note.— Runs in the key by Fischer (1977) to *Opius* (*Lissosema*) *rhodosoma* Fischer, 1968, from Brazil, or *O.* (*L.*) *callaensis* Fischer, 1963, from Peru. *Opius* (*Lissosema*) *rhodosoma* has the antenna with about 29 segments (♀), the clypeus four times as wide as long, the vein CU1b of fore wing about as long as vein 3-CU1, the ovipositor sheath more protruding, and the apex of the hind tibia and the hind tarsus infuscate. *Opius* (*Lissosema*) *callaensis* has the vein r angled with vein 3-SR of fore wing, the first metasomal tergite black, and postero-laterally smooth, the apex of the hind tibia and the hind tarsus infuscate, the veins and pterostigma yellow.

Specimens of the type series with the propodeum and precoxal sulcus smooth run to the subgenus *Phaedrotoma* Foerster, 1862, and the specimens with vein m-cu of fore wing subinterstitial to the subgenus *Phlebosema* Fischer, 1972, indicating the limited use of subgenera in the genus *Opius* Wesmael, 1835, as defined by Fischer. In both subgenera the new species does not fit any of the species descriptions included by Fischer (1977).

Phaedrotoma cf. *pyrosoma* (Fischer, 1966)

Opius pyrosoma Fischer, 1966: 128.
Opius (*Phaedrotoma*) *pyrosoma*; Fischer, 1977: 649-651, figs 575- 576.

Material.— 1 ♀(RMNH), "Argentina, Cordoba, ex *Liriomyza sativae* (Agromyz.) on *Hydrocotyle* sp. (1205), A. Salvo, RMNH'92"; 1 ♀ + 3 ♂♂ (RMNH),"Argentina, Cordoba, ex *Phytomyza wiiliamsoni* (Agromyz.) on *Clematis* sp. (1401), A. Salvo, RMNH 1992".

Biology.— Reared from *Liriomyza huidobrensis* (= *L. sativae* on label) on *Hydrocotyle* spec.; *Phytomyza williamsoni* on *Clematis* spec.

Note.— Males have the apical half of metasoma blackish, and of females the entire body is yellowish.

Phaedrotoma cf. *ribeiroensis* (Fischer, 1966) comb. nov.

Opius ribeiroensis Fischer, 1966: 130.
Opius (*Stomosema*) *ribeiroensis* Fischer, 1977: 242-243, figs 254-255.

Material.— 6 ♀♀ + 3 ♂♂ (RMNH), "Argentina, Cordoba, ex *Japanagromyza polygoni* on *Polygonum* sp. 3201/3205, A. Salvo, RMNH, 1992".

Biology.— Reared from *Japanagromyza polygoni* Spencer, 1973, on *Polygonum* spec.

Note.— The typical form has the body largely black, but the body is frequently largely orange-brown in the series examined.

Phaedrotoma scabriventris (Nixon, 1955) comb. nov.

Opius scabriventris Nixon, 1955: 160.
Opius (*Gastrosema*) *scabriventris*: Fischer, 1977: 388-389, fig. 349.

Material.— 6 ♀♀ + 5 ♂♂ (RMNH), "Argentina, Cordoba, ex *Liriomyza sativae* (Agromyz.) on *Hydrocotyle* sp. (1205), A. Salvo, RMNH'92"; 9 ♀♀ + 5 ♂♂ (RMNH),"Argentina, Cordoba, ex *Phytomyza williamsoni* (Agromyz.) on *Clematis* sp. (100+101), A. Salvo, RMNH 1992"; 2 ♀♀ + 3 ♂♂ (RMNH), "Argentina, Cordoba, ex *Liriomyza huidobrensis* (Agromyz.) on *Beta vulgaris rapacea* (2), A. Salvo, RMNH 1992"; 1 ♀ + 2 ♂♂ (RMNH), "Argentina, Cordoba, ex *Liriomyza huidobrensis* (Agromyz.) on *Beta vulgaris* var. *cycla*(1), A. Salvo, RMNH 1992"; 10 ♀♀ + 8 ♂♂ (RMNH), "Argentina, Cordoba, ex *Haplopeodes cordobensis* [uncertain identification] (Agromyz.) on *Alternanthera pungens* (1707), A. Salvo, RMNH 1992"; 2 ♀♀ + 3 ♂♂ (RMNH), "Argentina, Cordoba, ex *Liriomyza brassicae* (Agromyz.) on *Brassica oleracea* (5001), A. Salvo, RMNH'92"; 1 ♀ (RMNH), "Argentina, Cordoba, ex *Chromatomyia platensis* (Agromyz.) on *Mentha* sp. (36), A. Salvo, RMNH 1992"; 2 ♀♀ + 3 ♂♂ (RMNH), "Argentina, Cordoba, ex *Liriomyza huidobrensis* (Agromyz.) on *Tropaeolum majus* (278), A. Salvo, RMNH 1992"; 1 ♀ (RMNH), "Argentina, Cordoba, ex *Haplopeodes lycivora* (Agromyz.) on *Lycium cestroides* (3905), A. Salvo, RMNH 1992".

Biology.— Reared from *Liriomyza langei* (Frick, 1951); *L. huidobrensis* (= *L. sativae* on label) on *Hydrocotyle* spec., on *Beta vulgaris* Linnaeus, on *Alternanthera pungens* H.B.K., and on *Tropaeolum majus* Linnaeus; *L. brassicae* (Riley, 1884) on *Brassica oleracea* var. *botrytis* Linnaeus; *Chromatomyia platensis* (Brèthes, 1923) on *Mentha* spec.; *Haplopeodes* spec. on *Alternanthera pungens*; *Haplopeodes lycivora* on *Lycium cestroides*; and *Phytomyza williamsoni* on *Clematis* spec.

Checklist of species of Opiinae from Argentina

Biosteres novissimus (Fischer, 1964)

Opius (*Biosteres*) *novissimus* Fischer, 1964: 35.

Biosteres (*B.*) *novissimus*; Fischer, 1977: 833-834, fig. 775.

Bracanastrepha anastrephae (Viereck, 1913). Biology: parasite of *Anastrepha* spp. (Tephritidae).

Opius (*Utetes*) *anastrephae* Viereck, 1913: 563; Wharton & Marsh, 1978: 161.

Bracanastrepha (*Bracanastrepha*) *anastrephae*; Fischer, 1977: 886-888.

Bracanastrepha argentina Brèthes, 1924: 8; Fischer, 1977: 888-889.

Opius mombinpraeoptantis Fischer, 1966: 116.

Bracanastrepha bella (Gahan, 1930) **comb. nov.** Biology: parasite of *Anastrepha* spp. (Tephritidae).

Opius bellus Gahan, 1930: 1; Wharton & Marsh, 1978: 162.

Desmiostoma bellum; Fischer, 1977: 853-855, figs 791-792.

Opius gomesi Costa Lima, 1938: 71.

Opius turicai Blanchard, 1966: 24.

Bracanastrepha marguinezi Blanchard, 1950) **comb. nov.** Parasite of *Tomoplagia cuculi* Hendel (Tephritidae).

Opius (*Utestes*) [sic!] *marguinezi* Blanchard (in Ratkovich), 1950: 13 (nom. nud.; not in Fischer, 1977).

Bracanastrepha obscuripennis (Schrottky, 1902) **comb. nov.**

Opius obscuripennis Schrottky, 1902: 105-106; Fischer, 1977: 989 (under species inquirendae).

Note.— The description is incomplete, but considering the length of the ovipositor (about as long as mesosoma), its dominantly yellowish colour of the body and the long second submarginal cell of fore wing (three times as long as high) it is most likely a member of the genus *Bracanastrepha* Brèthes, 1924.

Bracanastrepha pseudobella (Blanchard, 1950) **comb. nov.** Parasite of *Anastrepha* spp. and *Ceratitis capitata* (Wied.) (Tephritidae).

Opius pseudobellus Blanchard (in Ratkovich), 1950: 13 (nom. nud.; not in Fischer, 1977).

Bracanastrepha schultzi (Blanchard, 1950) **comb. nov.** Parasite of *Anastrepha* spp. and *Ceratitis capitata* (Wiedemann) (Tephritidae).

Opius schultzi Blanchard (in Ratkovich), 1950: 13 (nom. nud.; not in Fischer, 1977).

Bracanastrepha tafivallensis (Fischer, 1968) **comb. nov.** Biology: parasite of *Gerrhoceras* spec. (Tephritidae).

Opius tafivallensis Fischer, 1968a: 69; Wharton & Marsh, 1978: 164.

Desmiostoma tafivallense; Fischer, 1977: 877-879, figs 812-813.

Note.— Belongs to the genus *Bracanastrepha* Brèthes, 1924, because the occipital carina is absent or nearly so. It is aberrant because of its black and white colour pattern.

Doryctobracon areolatus (Szépligeti, 1911). Biology: parasite of *Anastrepha* spp. (Tephritidae).

Biosteres areolatus Szépligeti, 1911: 286.

Diachasma areolatum; Fischer, 1977: 842-843, fig. 782.

Doryctobracon areolatus; Wharton & Marsh, 1978: 159.

Opius cereus Gahan, 1919: 169.

Doryctobracon cereus; Fischer, 1977: 956-958, figs 867-868.

Opius saopaulensis Fischer, 1961: 290.

Doryctobracon brasiliensis (Szépligeti, 1911). Biology: parasite of *Anastrepha fraterculus* Wiedemann (Tephritidae).

Biosteres brasiliensis Szépligeti, 1911: 285.

Opius (Diachasma) brasilianus Fischer, 1963: 392.

Doryctobracon brasiliensis; Wharton & Marsh, 1978: 159; Fischer, 1977: 953-954, fig. 865.

Coeloides anastrephae Brèthes, 1924: 7.

Doryctobracon duplina (Fischer, 1980).

Doryctobracon duplina Fischer, 1980: 249-251, figs 28-30.

Doryctobracon flavofasciatus (Blanchard, 1944) **comb. nov.** Biology: parasite of *Anastrepha fraterculus* Wiedemann, and *A. pseudoparalella* (Loew) (Tephritidae).

Diachasmoides flavofasciatus Blanchard (in Hayward), 1944: 23 (nom. nud.; not in Fischer, 1977).

Doryctobracon turicai (Turica & Mallo, 1961) **comb. nov.**

Opius turicai Turica & Mallo, 1961: 149, 160; Blanchard, 1966: 24-25 (not in Fischer, 1977).

Doryctobracon tucumanus (Turica & Mallo, 1961). Biology: *Anastrepha* spec. (Tephritidae) on ubajay [or ubaya = *Eugenia pyriformis* Camb. (Myrtaceae), a tropical South American tree].

Diachasmoides tucumana Blanchard, 1940: 4; Blanchard (in Hayward), 1944: 23 (nom. nud.; not in Fischer, 1977).

Opius tucumanus Turica & Mallo, 1961: 149 (not in Fischer, 1977).

Doryctobracon tucumanus; Wharton & Marsh, 1978: 160.

Lorenzopius calycomyzae spec. nov. Biology: parasite of *Calycomyza mikaniae* Spencer, 1973 (Agromyzidae).

Lorenzopius sanlorenzensis (Fischer, 1964) **comb. nov.**

Opius sanlorenzensis Fischer, 1964: 49.

Opius (Utetes) sanlorenzensis; Fischer, 1977: 147-148.

Opius balthasarius Fischer, 1978.

Opius (Opius) balthasarius Fischer, 1978: 145-147, figs 1-2.

"Opius" caudisignatus Fischer, 1979.

Opius (Pendopius) caudisignatus Fischer, 1979b: 491-493, figs 10-12.

Note.— Position uncertain, because in the original description the presence of a pronope and the absence of the dorsope is not mentioned. It has a long ovipositor indicating that it does not parasitize Agromyzidae.

Opius gracielae De Santis, 1982. Biology: parasite of *Amauromyza maculosa* (Maloch, 1913) (Agromyzidae).

Opius gracielae De Santis, 1982: 326, figs.

Opius (Opius) gracielae; Fischer, 1986: 46-48, figs 1-4 (redescription).

"Opius" magnicorum Fischer, 1979.

Opius (Allophlebus) magnicorum Fischer, 1979a: 232-234, figs 2-4.

Note.— Position uncertain, because in the original description the presence of a pronope and the absence of the dorsope is not mentioned. It has a long ovipositor indicating that it does not parasitize Agromyzidae.

Opius rumecatus Fischer, 1983.

Opius (*Opius*) *rumecatus* Fischer, 1983b: 90-92, figs 35-39.

"Opius" vinoanus Fischer, 1983.

Opius (*Pendopius*) *vinoanus* Fischer, 1983a: 91-93, figs 37-39.

Note.— Position uncertain, because in the original description the presence of a pronope and the absence of the dorsope is not mentioned. It has a long ovipositor indicating that it does not parasitize Agromyzidae.

Phaedrotoma agromyzophaga (Blanchard, 1940) **comb. nov.** Biology: parasite of Agromyzidae spp.

Diachasmoides agromyzophaga Blanchard, 1940: 25; De Santis, 1967: 37 (nom. nud.; not in Fischer, 1977).

Phaedrotoma alternantherae (Fischer, 1966) **comb. nov.** Biology: parasite of *Pseudonapomyza alternanthera* Séguy (Agromyzidae).

Opius alternantherae Fischer, 1966: 87.

Opius (*Gastrosema*) *alternantherae*; Fischer, 1977: 317-319, figs 300-301.

Phaedrotoma angiclypealis spec. nov. Biology: parasite of *Haplopeodes lycivora* Valladares, 1982, and *H. flavinotus* Valadares, 1982.

Phaedrotoma atomica (Fischer, 1962) **comb. nov.**

Opius atomicus Fischer, 1962: 77.

Opius (*Opiothorax*) *atomicus*; Fischer, 1977: 771-772, fig. 699.

Phaedrotoma brethesi (De Santis, 1967) **comb. nov.**

Opius tucumanus Fischer, 1964: 58 (not Turica & Mallo, 1961).

Opius (*Lissosema*) *tucumanus*; Fischer, 1977: 582-583.

Opius brethesi De Santis, 1967: 8, 33 (replacement name).

Phaedrotoma brevimarginalis spec. nov. Biology: parasite of *Haplopeodes lycivora* Valladares, 1982.

Phaedrotoma curtinotum (Fischer, 1983) **comb. nov.**

Opius (*Gastrosema*) *curtinotum* Fischer, 1983a: 72-74, figs 13-14.

Phaedrotoma denticlypealis spec. nov. Biology: parasite of *Amauromyza maculosa* (Maloch, 1913) (Agromyzidae).

Phaedrotoma ebriops (Fischer, 1978) **comb. nov.**

Opius (*Opius*) *ebriops* Fischer, 1978: 150-152, figs 5-6.

Phaedrotoma eunomia (Fischer, 1968) **comb. nov.**

Opius eunomia Fischer, 1968a: 74.

Opius (*Gastrosema*) *eunomia*; Fischer, 1977: 341-343, figs 322-324.

Phaedrotoma euterpe (Fischer, 1968) **comb. nov.**

Opius euterpe Fischer, 1968a: 81.

Opius (*Lissosema*) *euterpe*; Fischer, 1977: 531-533.

Phaedrotoma fissilis (Fischer, 1969) **comb. nov.**

Opius (*Phaedrotoma*) *fissilis*; Fischer, 1977: 642-643, fig. 568; 1978: 167.

Phaedrotoma golbachi (Fischer, 1964) **comb. nov.**

Opius golbachi Fischer, 1964: 16.

Opius (*Frekius*) *golbachi*; Fischer, 1977: 67-68, fig. 62.

Phaedrotoma horcomollensis (Fischer, 1968) **comb. nov.**

Opius horcomollensis Fischer, 1968b: 357.

Opius (*Opius*) *horcomollensis*; Fischer, 1977: 602-604, figs 525-527.

Phaedrotoma insularis(Ashmead, 1894) **comb. nov.**

Opius (*Opiothorax*) *insularis*; Fischer, 1977: 788-790, figs 719-721; 1978: 166.

Phaedrotoma lacarensis (Fischer, 1979) **comb. nov.**

Opius (*Lissosema*) *lacarensis* Fischer, 1979a: 261-263, figs 28-30.

Phaedrotoma laplatana (Fischer, 1968) **comb. nov.**

Opius laplatanus Fischer, 1968b: 361.

Opius (*Opius*) *laplatanus*; Fischer, 1977: 611-613, figs 534-535.

Phaedrotoma lasis (Fischer, 1979) **comb. nov.**

Opius (*Allophlebus*) *lasis* Fischer, 1979a: 230-232, fig. 1.

Phaedrotoma latita (Fischer, 1979) **comb. nov.**

Opius (*Phaedrotoma*) *latitus* Fischer, 1979a: 279-281, figs 43-44.

Phaedrotoma luteoclypealis spec. nov. Biology: parasite of *Haplopeodes lycivora* Valladares, 1982, *Phytomyza williamsoni* Blanchard, 1938, *Liriomyza commelinae* (Frost, 1931) and *L. huidobrensis* (Blanchard, 1926) (Agromyzidae).

Phaedrotoma magdalenae (Fischer, 1968) **comb. nov.**

Opius magdalenae Fischer, 1968b: 470.

Opius (*Opiothorax*) *magdalenae*; Fischer, 1977: 791-793, fig. 727.

Phaedrotoma mallecoensis (Fischer, 1968) **comb. nov.**

Opius (*Lissosema*) *mallecoensis*; Fischer, 1977: 544-546; 1980: 266.

Phaedrotoma melpomene (Fischer, 1968) **comb. nov.**

Opius melpomene Fischer, 1968a: 107.

Opius (*Pleurosema*) *melpomene*; Fischer, 1977: 478-479, figs 426-427.

Phaedrotoma mesoclypealis spec. nov. Biology: parasite of *Haplopeodes lycivora* Valladares, 1982, *Liriomyza huidobrensis* (Blanchard, 1926), *Phytomyza williamsoni* Blanchard, 1938, and *Calycomyza verbenivora* Spencer, 1973 (Agromyzidae).

Phaedrotoma miniacea (Brèthes, 1913) **comb. nov.**

Rhogadopsis miniacea Brèthes, 1913: 44; Shenefelt, 1975: 1212; (not in Fischer, 1977).

Phaedrotoma noclya (Fischer, 1983) **comb. nov.**

Opius (*Opius*) *noclyus* Fischer, 1983b: 84-87, figs 23-27.

Note.— Position uncertain, because in the original description the presence of a pronope and the absence of the dorsope is not mentioned.

Phaedrotoma noguesensis (Fischer, 1968) **comb. nov.**

Opius noguesensis Fischer, 1968a: 63.

Opius (*Nosopaeopius*) *noguesensis*; Fischer, 1977: 184-185, figs 193-195.

Phaedrotoma oeconomica (Fischer, 1962) **comb. nov.**

Opius oeconomicus Fischer, 1962: 80.

Opius (*Merotrachys*) *oeconomicus*; Fischer, 1977: 689-690, fig. 614.

Phaedrotoma platensis (Brèthes, 1913) **comb. nov.**

Doryctomorpha platensis Brèthes, 1913: 44; Shenefelt & Marsh, 1976: 1295; (not in Fischer, 1977).

Phaedrotoma porterodedicata (Fischer, 1983) **comb. nov.**

Opius (*Apodesmia*) *porterodedicatus* Fischer, 1983a: 81-83, figs 22-24.

Note.— Position uncertain, because in the original description the presence of a pronope and the absence of the dorsope is not mentioned, and the holotype is a male.

Phaedrotoma pylades (Fischer, 1969) **comb. nov.**

Opius pylades Fischer, 1969: 249.

Opius (*Thoracosema*) *pylades*; Fischer, 1977: 446-448, fig. 399.

Phaedrotoma pyrosoma (Fischer, 1966) **comb. nov.** Biology: parasite of *Liriomyza huidobrensis* (Blanchard, 1926) and *Phytomyza williamsoni* Blanchard, 1938 (Agromyzidae).

Opius pyrosoma Fischer, 1966: 128.

Opius (*Phaedrotoma*) *pyrosoma*; Fischer, 1977: 649-651, figs 575- 576.

Phaedrotoma raphaeli (Fischer, 1968) **comb. nov.**

Opius raphaeli Fischer, 1968a: 98

Opius (*Merotrachys*) *raphaeli*; Fischer, 1977: 702-704, figs 626-628.

Phaedrotoma renerrens (Fischer, 1983) **comb. nov.**

Opius (*Opiothorax*) *renerrens* Fischer, 1983a: 86-88, figs 30-32.

Phaedrotoma ribeiroensis (Fischer, 1966) **comb. nov.** Biology: parasite of *Japanagromyza polygoni* Spencer, 1973 (Agromyzidae).

Opius ribeiroensis Fischer, 1966: 130.

Opius (*Stomosema*) *ribeiroensis* Fischer, 1977: 242-243, figs 254-255.

Phaedrotoma roveretoi (Fischer, 1962) **comb. nov.**

Opius roveretoi Fischer, 1962: 81.

Opius (*Lissosema*) *roveretoi*; Fischer, 1977: 568-569, figs 498-499.

Phaedrotoma sanensis (Fischer, 1979) **comb. nov.**

Opius (*Stomosema*) *sanensis* Fischer, 1979a: 289-291, fig. 51.

Phaedrotoma scabriventris (Nixon, 1955) **comb. nov.** Biology: parasite of *Liriomyza langei* Frick (Nixon, 1955), *L. sativae* Blanchard, 1938, *L. brassicae* (Riley, 1884), *L. huidobrensis* (Blanchard, 1926), *Chromatomyia platensis* (Brèthes, 1923) *Haplopeodes* spec. and *Phytomyza williamsoni* Blanchard, 1938 (Agromyzidae).

Opius scabriventris Nixon, 1955: 160.

Opius (*Gastrosema*) *scabriventris*: Fischer, 1977: 388-389, fig. 349.

Phaedrotoma simplicornis (Fischer, 1968) **comb. nov.**

Opius simplicornis Fischer, 1968b: 477.

Opius (*Pendopius*) *simplicornis*; Fischer, 1977: 736-738, fig. 660.

Phaedrotoma sinecostulis (Fischer, 1983) **comb. nov.**

Opius (*Opiothorax*) *sinecostulis* Fischer, 1983a: 88-90, figs 33-36.

Phaedrotoma testaceipes (Brèthes, 1913) **comb. nov.**

Doryctomorpha testaceipes Brèthes, 1913: 43-44; Shenefelt & Marsh, 1976: 1296; (not in Fischer, 1977).

Phaedrotoma thoracotuberculatus (Fischer, 1964) **comb. nov.**

Opius (*Pendopius*) *thoracotuberculatus*; Fischer, 1977: 738-739, fig. 661; 1978: 167.

Phaedrotoma trimaculata (Spinola, 1851) **comb. nov.** Biology: parasite of *Drosophila flavopilosa* Frey (Drosophilidae).

Opius trimaculatus Spinola, 1851: 528.

Opius (*Opius*) *trimaculatus*; Fischer, 1977: 629-630.

Phaedrotoma urania (Fischer, 1968) **comb. nov.**

Opius urania Fischer, 1968a: 135.

Opius (*Pleurosema*) *urania*; Fischer, 1977: 504-506, figs 451-452.

Psyttalia ovaliops (Fischer, 1980) **comb. nov.**

Bracanastrepha (*Buckanastrepha*) *ovaliops* Fischer, 1980: 227-229, figs 6-8.

Note.— Position uncertain, because in the original description the presence of a pronope, and the absence of the dorsope is not mentioned.

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RMNH stands for Nationaal Natuurhistorisch Museum, Leiden; TMA for Természettudományi Múzeum Allatára, Budapest.

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