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## A REVISION OF THE GENUS *CYLINDROMYIA* MEIGEN IN THE AMERICAS SOUTH OF THE UNITED STATES (DIPTERA, TACHINIDAE)

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### ABSTRACT

*Species of the genus Cyindromyia Meigen (Diptera, Tachinidae) occurring in the Americas south of the United States are fully revised with keys, illustrations and descriptions for the identification of species. Morphological characters useful in distinguishing taxa are discussed and illustrated. The distribution of each revised species is illustrated by a map. Three subgenera are recognized for the New World Cyindromyia s.l.; Cyindromyia Meigen, Apinocyptera Townsend and Neocyptera Townsend. Twenty-eight species of Cyindromyia s.l. are recognized for the Americas south of the United States of which five are described as new. New taxa are: C. anthracina, C. arnaudi, C. platensis, C. thompsoni and C. uruguayensis. One lectotype and two neotypes are designated.*

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### 1. INTRODUCTION

*Cylindromyia* Meigen is a common and dominant genus of Phasiinae belonging to the nearly cosmopolitan tribe Cyindromyiini. This tribe is worldwide in distribution, some of its members are common and important parasitoids of a wide variety of Hemiptera, the Pentatomidae

being the preferred host. A notable feature of *Cylindromyia* s. l. is the elongate and subcylindrical abdomen, palpi often absent, R5 closed and petiolate and metasternum closed behind hind coxae. The vast complex of diverse forms which constitute the genus *Cylindromyia* is exceedingly hard to classify satisfactorily, especially when a regional fauna is studied and this group may or may not survive as a distinct taxon when the generic classification is studied in a broader basis. Nearly all the species of *Cylindromyia* s. l. form a rather homogeneous group having characters closely similar to those of the type species, *C. brassicaria* Meigen.

The North American species of *Cylindromyia* Meigen were revised by Aldrich (1926). Aldrich (1934) and Cortés (1944) treated the Chilean species. Determination of extensive material purchased from F. Plau-mann (by the funds provided by FAPESP) and the study of additional material accumulated during the recent years prompted the author to present this revision. As occurs with many New World Tachinidae the taxonomic status of the group was drastically affected by the excessive splitting of Townsend. Eleven genera have been recognized by this author for the New World *Cylindromyini* which here are not generically distinguishable from *Cylindromyia*, s. l. These are: *Glossidionophora* Bigot, *Melanocyptera* Townsend, *Ocypterodes* Townsend, *Ecatocypterops* Townsend, *Dolichocyptera* Townsend, *Catocyptera* Townsend, *Neocyptera* Townsend, *Ocypteryx* Townsend, *Aldrichocyptera* Townsend, *Apinocyptera* Townsend, and *Odontocyptera* Townsend. Two of these names, however, apply to rather defined segregates within *Cylindromyia* s. l. which I thought useful to recognize as subgenera. These subgenera (viz. *Apinocyptera* and *Neocyptera*) can be defined by quite constant differences in female genitalia (cf. Sabrosky, 1957), the other nine names are treated as synonyms, and many have already been sunk in synonymy by Sabrosky & Arnaud (1965) and Guimarães (1971).

## 2. ACKNOWLEDGMENTS

I wish to thank Drs. C. W. Sabrosky, U. S. National Museum, Washington, D.C.; D. M. Wood, Canada Department of Agriculture, Ottawa; P. H. Arnaud Jr., California Academy of Sciences, San Francisco; A. C. Pont, British Museum (Nat. History), London; P. Wygodzinsky, American Museum Nat. History, New York; C. Hogue, Los Angeles County Museum, Los Angeles, and Raul Cortés, Universidad de Chile, for the loan of specimens. Particular thanks are due to Drs. R. W. Crosskey, C. W. Sabrosky and N. Papavero who provided valuable informations on the types of previously described species; without their assistance the identification of many species would be impossible.

The following abbreviations are used for collections: AMNH — American Museum of Natural History, New York; BM — British Museum (Nat. Hist.), London; CM — Carnegie Museum, Pittsburgh; CNC — Canadian National Collection, Ottawa; DEI — Deutsches Entomologisches Institut, Berlin Dahlem; MAHN — Museo Argentino de Historia Natural, Buenos Aires; MLU — Martin Luther Universität, Halle; MNHN —

Muséum National d'Histoire Naturelle, Paris; MZSP — Museu de Zoologia, Universidade de São Paulo, São Paulo; IOC — Instituto Oswaldo Cruz, Rio de Janeiro, Guanabara; NM — Naturhistorisches Museum, Vienna; USNM — United States National Museum, Washington, D. C.; UZM — Universitetets Zoologiske Museum, Copenhagen; ZM — Zoological Museum, Amsterdam.

### 3. ADULT CHARACTERS AND THEIR TAXONOMIC VALUE

#### Body color and polinosity

The ground color of the head and its overlying pollinosity often provide useful characters for distinguishing allied species: some species, such as *carinata* and *obscura* have sexually dimorphic parafrontalia color (golden yellow in males; silvery in females). The presence and extent of yellow coloration on the abdomen provides useful characters at the specific level but in some species-groups there is conspicuous intraspecific variability. Conspicuous spots of "thick" white pollinosity occur in few forms in a standard pattern in the mesopleura, humeral calli, sternopleura and pleurotergite (= supraspiracular convexity). The presence of such bold spots is often a specific or group character.

The color of the legs, and, to a minor extent, the antennal color, can provide useful specific characters. In some forms, however, such as *signatipennis*, there appears to be intraspecific variability in tibial color, going from reddish-yellow to black.

#### Head

An important feature in the Neotropical *Cylindromyia* is the shape of the facial carina, present in some segregates. A particular group of species usually shows a more or less constant facies in the shape of the carina, but there is normally also intraspecific and interspecific variation. In some segregates the carina forms a prominent, bulbous, median swelling below the antennal bases (viz. *carinata*, *brasiliana*) while in others it is indicated by a slight median swelling (viz. *atra*). The relative width of the third antennal segment and of the middle of the parafacialia provides useful specific differences.

#### Thorax, legs and wings

In the thorax the most dependable setae for taxonomic purposes are the sternopleurals and scutellars. The sternopleurals (stpl) provide a useful supporting character in the definition of certain species-groups but can be intraspecifically variable. Some groups have only a single (posterior) stpl; others have either 1+1 or 2+1 stpl, but some variability occurs; for example, groups normally having 1+1 stpl may have the anterior one absent or virtually indistinguishable from the sternopleural hairs. Failure to appreciate this variation led Townsend to erect some untenable genera (viz. *Melanocyptera*, *Ecatocypteroptis*) while working with rather limited material. The combination of scutellar chaetotaxy

has provided essential key characters in the classification of the *Cylindromyia*-group since Pandellé (1894: 57-64). This character was widely used at supraspecific classification by Townsend (1936). However, Dupuis (1953), after careful analysis, has shown that the variants of scutellar chaetotaxy provide only specific differences. In the New World *Cylindromyia* the scutellar bristling is useful in providing group characters but must be used with great caution and long series of specimens require study before any conclusion can be reached about which setae are more or less dependable. Three groups of scutellar bristling are recognized in the Neotropical species and the arrangement of chaetotaxy is indicated schematically in fig. 1.

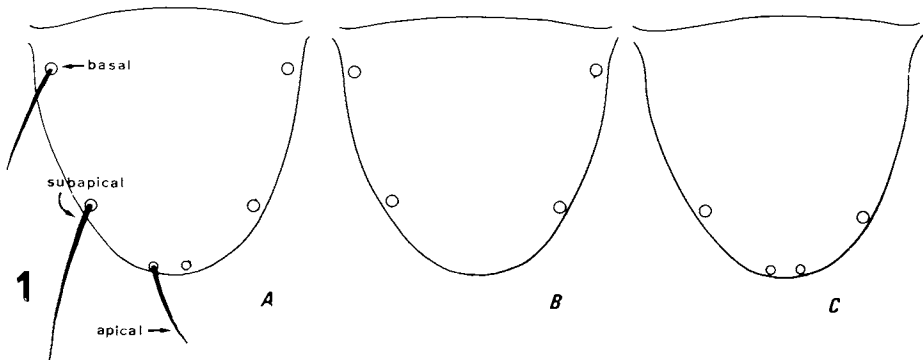


Fig. 1. Terminology of scutellum bristling in *Cylindromyia* spp. A, basal, subapical and apical scutellars present; B, basal and subapical scutellars present; C, subapical and apical scutellars present.

The structure of thorax and legs is extremely uniform and provides very few taxonomic characters. In the wing (figs. 77-82) there are small differences in the length and shape of the petiole ( $R_{4+5}$  M1) of the third vein curving forward to join the costa. The sinuosities of the *m-cu* and M1 veins are also of some importance. Partial or complete infuscations of the wing occurs in some species, and can provide a helpful specific character.

#### Abdomen and genitalia

The preabdomen is always narrow and elongate and this shape is moderately uniform in each genus-group segregate.

*Male genitalia.* The epandrium in this group is well developed but of limited taxonomic use; the conformation of cerci and surstyli (fig. 34) provides the most important taxonomic character at the specific level; sternite 6, completely concealed in the male hypopygium is of considerable taxonomic importance at specific level, and was extensively used by Aldrich (1926) as "fifth sternite". Recently Rubtzov (1951) established that this sclerite is morphologically the sternite 6 and this usage has been followed by Draber-Monko (1964).

*Female genitalia.* The conformation and vestiture of sternite 8 provides very valuable taxonomic character at the specific level. The most dependable genitalic structure for supraspecific level is T 8 and to a lesser extent T 6+7. In the subgenera *Neocyptera* and *Cylindromyia* T 8 ends in a symmetrical pair of hooks. A remarkable condition is found in the subgenus *Apinocyptera* where T 8 ends in a sharply asymmetrical pair of hooks and this usually is associated with the development of special group of spines on the venter.

#### 4. Genus *Cylindromyia* Meigen

*Cylindromyia* Meigen, 1803: 279. Type-species, *Musca brassicaria* Fabr. by monotypy. (European synonymy and usage will appear in a catalogue of Palaearctic generic names now being prepared by Dr. B. Herting and therefore is omitted here).

*Diagnosis.* Elongate species of small to large size (6 to 12 mm). Color black, but abdomen nearly always red except base, or except base and apex or only at the sides. Head in profile more or less quadrangular. Frontal profile varying from flat to arcuate. Females with two or three pairs of proclinate orbitals. Inner verticals present, usually straight; outer verticals absent. Ocellars two or three smallish pairs, proclinate to divaricate. Face with a bulbous median carina or a slight swelling at middle. Palpi absent (sometimes present in rudimentary condition in some Palaearctic species). Eye set very obliquely in profile. Frontalia broad, of uniform width toward antennae in both sexes. Antennae moderately long, inserted above middle of head; arista bare, second segment sometimes elongate. Parafacialia bare. Haustellum slender, rarely longer than height of head. Vibrissae usually strong and decussate. Prescutum a little longer than postscutum. Humeral callus prominent. Acrostichals 0:0; dorsocentrals 3:3; humerals 2; posthumeral 1; notopleurals 2; supra-alars 2; postalars 2. Scutellum usually with one, two or three (most often three) pairs of laterals (see plate 1 for terminology). Sternopleurals 0 to 3; hypopleurals 3 to 4; mesopleurals 5 to 6. Propleuron usually bare or with a few hairs on the middle. Wings elongate, often infusate; cell R 5 usually closed and petiolate; lower calypter evenly rounded on its hind margin. Legs moderately slender; claws and pulvilli elongate in male, not in the female; hind coxae widely separated from abdominal base. Abdomen narrow and elongate, subcylindrical.

*Discussion.* In the old literature *Cylindromyia* has usually been known as *Ocyptera* Latreille (1804) and the type-species of the latter, by designation of Latreille (1810), is *Musca lateralis* Fabricius. It should be noted that *Musca lateralis* Fabricius is actually a synonym of *Eriothrix rufomaculata* De Geer and the name *Cylindromyia* Meigen stands valid for the present genus of Tachinidae.

5. KEY TO THE NEW WORLD SUBGENERA OF *CYLINDROMYIA* s.l.

1. Females. T 6+7 longer than T 8, usually curved under venter; T 1+2, T3 and T4 usually with a ventral protuberance or a cluster of short stubby spines ventrally. Males. Sternite 6 with a row of bristles laterally that decrease in size toward the middle (Figs. 50, 51 and 61) ..... 2  
 Females. T 6+7 usually of same size or smaller than T8, not curved under venter (except in *C. porteri*); T8 ending in two symmetrical and curved hooks; T 1+2 to T3 of normal appearance, without ventral protuberances or cluster of spines. Males. Sternite 6 usually with a few bristles at sides, usually with projections at the middle, bearing tufts of setules and separated by a deep notch (Figs. 52-60) ..... *Cylindromyia* Meig. (widespread).
2. T 1+2 and T3 without discals. Females. T8 sting-like, ending in two elongate asymmetrical hooks (the left one strong, constricted at base and usually broken off). T3 usually with a spine-studded prominence ventrally .....  
 ..... *Apinocyptera* Townsend (Nearctic, Neotropical)
- T 1+2 and T3 with discals. Females. T8 blade-like, ending in two symmetrical hooks in a form of a deep spoon. T3 not protuberant, with numerous short spinules ventrally .....  
 ..... *Neocyptera* Townsend (Holarctic, only)

6. Subgenus *Cylindromyia* Meigen

- Cylindromyia* Meigen, 1803: 279. Type-species, *Musca brassicaria* Fabricius by monotypy.
- Glossidionophora* Bigot, 1855: 1v. Type-species *Glossidionophora nigra* Bigot, by subsequent designation of Townsend (1916: 7) (synonymy by Aldrich, 1934: 8).
- Ocypterodes* Townsend, 1916: 631. Type-species *Ocyptera euchenor* Walker by original designation; misident. (= *Ocyptera fumipennis* Bigot).
- Melanocyptera* Townsend, 1927: 215. Type-species, *Melanocyptera carinata* Townsend, by original designation (Synonymy by Guimarães, 1971: 15).
- Catocyptera* Townsend, 1927: 215. Type-species, *Catocyptera brasiliiana* Townsend, by original designation. *Syn. n.*
- Ocypteryx* Townsend, 1931: 326. Type-species, *Ocypteryx ochrescens* Townsend, by original designation (junior homonym, preoccupied by *Ocypteryx* Leach, 1817: 162).
- Dolichocyptera* Townsend, 1931: 325. Type-species, *Dolichocyptera pi-rioni* Townsend, by original designation.
- Ecatocypterops* Townsend, 1935: 217. Type-species *Ecatocypterops ater* Townsend, 1935 (= *townsendi* Guimarães, nom. n.) by original designation.

(*Ocyptera sensu* authors, not Latreille, misident.)

Included in this subgenus are the majority of the species of New World *Cylindromyia*. Most of the species are to be found in the Neotropical Region; of the 25 known species occurring in the Neotropical Region, only 4 occur in America North of Mexico.

The following key will serve to separate the species occurring in the Americas South of the United States.

#### 6.1 KEY TO SPECIES OF SUBGENUS *CYLINDROMYIA*

1. Scutellum with basal, subapical and apical scutellar bristles; apicals small and decussate ..... 2  
 Either the basal or the apical scutellar lacking ..... 14
2. Abdomen with red markings ..... 3  
 Abdomen black without red markings ..... 4
3. Abdomen red, except base or except base and apex, or only at sides ..... 7  
 Abdomen black, except the apical third or less which is red ... 13
4. Propleura, humeral calli, pleurotergite, posterior half of mesopleura and sternopleura dusted with a "thick" white pollinosity ..... 5  
 Propleura, humeral calli, pleurotergite, posterior half of mesopleura and sternopleura dusted with a thin white pollinosity ..... 6
5. Wings entirely or evenly hyaline, only slightly browned; intermediate terga pollinose on about basal halves (Chile) ..... *pirioni* (Townsend)  
 Wings strongly patterned with brown, similar to *signatipennis*; intermediate terga more narrowly pollinose, 1/2-1/3 (Cuba) ... *bakeri* Aldrich
6. Large species (9-10 mm). Wings tinged with brown around the veins on costal border (widespread) ..... *atra* (Roeder)  
 Small species (6.5-7 mm). Wings uniformly subhyaline (Chile, Argentina) ..... *nigra* (Bigot)
7. Abdomen predominantly red, except base, or except base and apex, exceptionally with a median vitta on T3 and T4 ..... 8  
 Abdomen predominantly black, red only at sides, usually with a median vitta on T3 and T4 ..... 10
8. Haustellum as long as head height, wings tinged with yellow costobasally with a blackish suffusion on the apical half; apicals long and slender (eastern Brazil, N. Argentina) ..... *brasiliانا* (Townsend)  
 Haustellum distinctly shorter than head height; wings uniformly greyish; apicals present and usually well developed ..... 9
9. Abdomen red except at base and apex. Females. T 6+7 not longer than T8 (fig. 21); T8 of uniform color (Uruguay, N. Argen-

- tina) ..... *uruguayensis*, sp. n.  
 Abdomen red, except base; T 6+7 longer than T8, curved under venter (fig. 28); T8 brown tinged with yellow on base (Chile) ...  
 ..... *porteri* (Brèthes)
10. Wings subhyaline, slightly infusate, sides of abdomen largely red, usually with a distinct median vitta on T3 and T4 ..... 11  
 Wings orange-yellow along veins anterobasally with a smoky-brown suffusion on apical halves. Abdomen mostly black, tawny or reddish on sides ..... 12
11. Males. Surstyli moderately curved and pointed at apex, with a rounded protuberance dorsally near apex (fig. 49); Females. T8 ending in a pair of slender and curved hooks as in fig. 20 (West Indies, Mexico) ..... *uniformis* Aldrich  
 Males. Surstyli falciform, strongly curved and pointed at apex (fig. 66). Females. T8 ending in a more robust pair of hooks as in fig. 63 (USA, West Indies) ..... *decora* Aldrich
12. Propleura bare. Antennae wholly black. T5 shining black without traces of pollinosity; gena silvery pollinose in female (Guatemala) ..... *arnaudi*, sp. n.  
 Propleura pilose on middle. Antennae with first and second segments yellow, third black. T5 dusted with thin white pollinosity. Gena golden pollinose (S. Brazil) ..... *obscura* (Bigot)
13. Males. Cerci elongate approximately 3/4 as long as surstyli (fig. 40). Sternite 6 with two median short bristled stubs (fig. 56) (Chile) ..... *apicalis* (Bigot)  
 Males. Cerci very short, approximately 1/4 as long as surstyli (figs. 39, 41). Sternite 6 with a slender mesal process bristled at apex (fig. 55) (Chile) ..... *aldrichi* Cortés
14. Subapical and apical scutellar bristles present ..... 15  
 Basal and subapical scutellar bristles present ..... 19
15. Abdomen red, except base. Males. Hind tibiae villous on inner sides (N. USA, N. Mexico) ..... *californica* (Bigot)  
 Abdomen black, without red markings. Males. Hind tibiae not villous on inner sides ..... 16
16. Large to medium size species (8-9 mm). Wings subhyaline, darkened along anterior margin ..... 17  
 Small species (5-7 mm). Wings subhyaline, without darker patterns ..... 18
17. Males. Surstyli strong, of uniform width almost to their tip. Cerci enlarged on apical third (fig. 42) (widespread) .....  
 ..... *carinata* (Townsend)  
 Males. Surstyli slender, enlarged at base, tapering toward apex. Cerci not enlarged apically (fig. 35) (Central America) .....  
 ..... *anthracina*, sp. n.
18. Males. Cerci distinctly constricted near base, enlarged apically; surstyli of uniform width almost to their tip (fig. 45). Female



- genitalia as in fig. 19 (West Indies, Central America) .....  
 ..... *minor* (Roed.)  
 Males. Cerci evenly curved, not constricted near base; surstyli slender, ending in a sharp point (fig. 38). Female genitalia as in fig. 17 (Nearctic, Mexico) ..... *propusilla* Sabrosky & Arnaud
19. Humeral calli black, whitish pollinose; haustellum as long as head height (eastern Brazil, N. Argentina) ..... *brasiliana* Townsend  
 Humeral calli yellowish, golden pollinose; haustellum distinctly shorter than head height (S. Brazil, Paraguay, N. Argentina)  
 ..... *dorsalis* (Wied.)

***Cylindromyia* (*Cylindromyia*) *aldrichi* Cortés, 1944**

(Figs. 39, 41 and 55)

*Cylindromyia* sp. nov.; Aldrich, 1934: 9.

*Cylindromyia aldrichi* Cortés, 1949: 179 (Holotype ♂, Santiago, Chile. In USNM); Cortés & Hichins, 1969: 29; Guimarães, 1971: 15.

*Cylindromyia aldrichi* Cortés is closely allied to *apicalis* (Bigot) but is easily distinguished from this species by the scale-like projection laterally on epandrium, by the very short cerci, about one-fourth as long as the surstyli (figs. 39, 41), and by sternite 6 with an exceptionally elongate median process with a group of divergent setae at apex (fig. 55). This species was previously recognized as new by Aldrich (1934) but not described.

Material examined (map 1). 4 males, CHILE: Valparaiso (CAS); Angol, Malleco (MZUSP).

Distribution. Chile (Valparaiso, Santiago, Ñuble and Malleco).

***Cylindromyia* (*Cylindromyia*) *anthracina*, sp.n.**

(Fig. 35)

♂. Length 6 to 7 mm

Vertex 0.27 of head width. Occiput black, thinly white pollinose. Parafrontalia yellow, pale yellow pollinose. Parafacialia yellow, silvery pollinose, at the narrowest point about the width of third antennal joint. Antennae brownish, yellowish on base of third joint. Vibrissae long and slender. Gena black, silvery pollinose. Face blackish, facial carina well developed in profile.

Thorax dark brown to black, thinly white pollinose. Propleura bare. Sternopleurals 2. Hypopleurals 2, rarely 3. Scutellum with two lateral scutellars (subasals and apicals). Legs dark brown. Wings hyaline, very similar to *minor* Roed.

Abdomen dark brown. Cerci broad, elongate, obliquely truncate at apex; surstyli as long as cerci, slender and pointed apically (fig. 35).

This species is very closely allied to *C. carinata* but is distinguished from this species by the elongate and pointed surstyli.

Distribution (map 3). Central America (Mexico to Costa Rica).

Holotype ♂ Guadalajara, Jalisco, Mexico, 1909. McConnel (CM). Paratypes: 1♂ Cuautla, Morelos, Mexico, August 1903 (AMNH); 1♀ Guadalajara, Jalisco, Mexico, McConnel, 1909 (CM); 1♀ Moca, Guatemala, III-IV. 1931, J. Bequaert (AMNH); 1♂ San José, Costa Rica, 1924, Schmidt (CAS); 1♂ Estancia Virgen, Guatemala, VIII-12, 1965, P. J. Spangler (USNM); 1♀ La Suiza de Turrialba, Costa Rica, 24.VIII. 1961, P. Schild (USNM); 1♀ Pedregoso, Costa Rica (USNM).

### ***Cylindromyia (Cylindromyia) apicalis* (Bigot, 1878)**

(Figs. 5, 40 and 56)

*Ocyptera apicalis* Bigot, 1878: 45 [Lectotype ♂ (by present designation, see note below), Chile. In BM]; Reed, 1888: 312; Brèthes, 1925: 208).

*Cylindromyia apicalis*; Aldrich, 1934: 10; Cortés, 1944: 178; Guimarães, 1971: 15.

♂. Length 8-10 mm

Vertex black. 0.34 of head width. Parafrontalia and parafacialia black, silvery pollinose. Parafacialia broad, distinctly wider than third antennal segment at middle. Antennae black, third segment twice as long as second. Vibrissae strong and decussate. Gena broad with few black setulae on middle. Haustellum a little shorter than head height. Face dark, silvery pollinose slightly elevated on middle.

Thorax black. Propleura, humeral calli, upper part of mesopleura and sternopleura rather white pollinose. Sternopleurals 3. Mesonotum silvery pollinose with two heavy black stripes extending over scutellum. Legs black, front femora dusted with white pollen on posterior side. Wings uniformly subhyaline.

Abdomen black (fig. 5). T5 and genitalia red. Sternite 6 with two median bristled stubs (fig. 56). Cerci elongate 3/4 as long as surstyli; surstyli curved and pointed at apex (fig. 40).

Material examined (map 2). 9 males as follows: Chile: Angol, Malleco (AMNH); Angol, Malleco, P. S. Bullock; Santiago (MZSP); El Canelo, Santiago, (MZUSP); Viña del Mar, Valparaíso (CAS); Peru: Lima, Monte de S. Cristóbal (USNM).

Distribution. Chile (Coquimbo to Malleco)

According to Dr. Crosskey (personal communication) the type series of *Ocyptera apicalis* Bigot in the British Museum (Nat. Hist.) is composed of 5 syntypes (2 without head). All specimens are males and conspecific. One specimen in good condition received for study, had the original label from Bigot collection, a black-edged label reading "*O. Api-*

*calis*, ♀, Chili, J. Bigot", and has been designated as lectotype. All specimens bear the BM syntype label, Brauer's label reading "Brauer Wien CVII (No. 8)" and referring to Brauer's serial numbering in his paper on Bigot's collection.

*Cylindromyia apicalis* (Bigot) is very close to *C. aldrichi* Cortés and easily recognized by the structure of the male.

***Cylindromyia (Cylindromyia) arnaudi*, sp. n.**

(Figs. 24 and 74)

♀. Length 9 mm

Vertex 0.31 of head width. Head black, silvery pollinose. Antennae black. Parafacialia about as wide as third antennal segment. Face pale yellow, silvery-white pollinose. Facial carina bulbous and prominent in profile. Vibrissae strong and decussate. Haustellum elongate, almost as long as head height.

Thorax black, dusted with thin white pollen. Propleura bare. Sterno-pleurals 2. Scutellum with three pairs of lateral scutellars. Legs black. Wings yellowish on base and infuscated on the apical half. M1 strongly sinuate.

Abdomen dark brown, broadly reddish on sides of T1+2 and T3. Sternite 8 with a shallow emargination on posterior margin and a group of stout and short bristles laterally (fig. 74). T8 subquadrangular in profile, ending in a pair of robust hooks (fig. 24).

Holotype ♀, Hacienda Comelco, 24 km NW Cañas, Inter American Highway, Guanacaste, Costa Rica, III-27, 1971, E. R. Heithaus (CAS).

Distribution. Costa Rica

*Cylindromyia arnaudi*, sp. n. appears to be most closely related to *C. obscura* Bigot but distinguished by the black antennae, by the propleura bare, by silvery pollinose gena in female and by the shape of T8. This species is named in honor of Dr. Paul H. Arnaud Jr., California Academy of Sciences, San Francisco.

***Cylindromyia (Cylindromyia) atra* (Roeder, 1885)**

(Figs. 10, 47, 53, 58, 64 and 85)

*Ocyptera soror* Bigot, 1878: 46 [Holotype ♂ (not ♀), "Mexico". In BM (ex. coll. Bigot), (junior homonym of *Ocyptera soror* Wiedemann, 1830)]. *N. syn.*

*Cylindromyia soror*; Aldrich, 1926: 26; Guimarães, 1971: 16.

*Ocyptera simplex* Bigot, 1878: 47 [Holotype ♀, "Mexico". In BM (ex. coll. Bigot) (junior homonym of *Ocyptera simplex* Fallén, 1820)]. *N. syn.*

- Cylindromyia simplex*; Aldrich, 1926: 26; Guimarães, 1971: 16.  
*Ocyptera atra* Roeder, 1885: 344 [Type(s), (? sex). (Puerto Rico), (not located, possibly lost)]; Giglio-Tos, 1894: 3; Wulp, 1903: 450; Aldrich, 1905: 451.  
*Cylindromyia atra*; Aldrich, 1926: 19, figs. 11, 29; Sabrosky & Arnaud, 1965: 975; Guimarães, 1971: 15.

♂. Length 8,5-11 mm

Vertex 0.26 of head width. Head mostly black, silvery pollinose (fig. 10). Occiput black, dusted with whitish pollen. Parafacialia almost as wide as third antennal segment. Parafrontalia very narrow above. Antennae blackish-brown, except the inner side which is yellow. Face black to dark brown, silvery pollinose, slightly elevated on middle. Vibrissae moderately developed. Gena black, with a few black setulae on anterior half. Haustellum about 1/2 of head width.

Thorax shining black, dusted with a thin white pollen. Sternopleurals 2, sometimes with an additional small bristle. Legs black; front femora dusted with pollen on posterior side. Scutellum with 3 pairs of lateral scutellars. Wings conspicuously brownish in front of discal cell. Genitalia dark brown to black. Sternite 6 with a shallow incision in the center in specimens from South America (fig. 53) or with a narrow incision in the middle in the specimens from Central America (fig. 58). Intermediate forms occur in Trinidad. Cerci soft and elongate, tapering toward apex, longer than surstyli; surstyli broad, curved at apex (fig. 47).

♀ — Very similar to ♂ except for the usual sexual differences. Sternite 8 (fig. 64) subtriangular, posterior margin with a shallow emargination and a cluster of strong spines laterally. T8 (fig. 85) subtriangular in profile, terminal hooks pointed and widely curved.

Neotype ♀, Puerto Rico, Barros, June 4, 1915 (no collector data) (in American Museum Natural History, New York).

Material examined. (Map 5). 10 males and 10 females as follows. Mexico: Colima (AMNH); Puerto Rico; Barros (AMNH). Trinidad (CNC). Peru: Cañete (USNM); Tingo Maria (CAS); Monson Valley (CAS); Brasil: Pará, Fordlandia (USNM). Goiás, Corumbá de Goiás (MZSP); Mato Grosso, Três Lagoas (MZSP); Maracaju (USNM); Distrito Federal, Brasília (MZSP). Argentina: Córdoba, La Granja, Alta Gracia (USNM).

Distribution. Evidently a widespread species in Neotropical Region from Mexico to north Argentina and probably commoner than the few records suggest.

This species was described by Roeder who did not state the number of specimens or their sex. The original type material from Puerto Rico has never been studied and cannot now be found amongst Roeder's types in Martin Luther Universität, Halle, being probably lost according to Dr. Hüsing (personal communication).

Roeder's description gives some data which allows to establish the identity of *atra* amongst the species of *Cylindromyia* known from Puerto Rico. It is desirable, since *atra* has been confused in the past, to designate a neotype to fix the meaning of the name, and I am here designating a specimen studied by Aldrich from Puerto Rico in the AMNH as neotype; its characters agree as closely as possible with those mentioned in the original description. The neotype specimen has been labelled "*Ocyptera atra* Roeder ♀ neotype designated by J. H. Guimarães, 1974". According to Dr. Crosskey's (personal communication) notes on Bigot's types in BM, *Ocyptera simplex* and *Ocyptera soror* from Mexico are certainly just opposite sexes of the same species and their synonymy with *atra* is proposed, based mainly on the scutellar bristling and wing pattern.

*Cylindromyia atra* appears to be a widespread species. I have been unable to separate Central American and West Indies series from those occurring in South America on the shape of sternite 6 (figs. 53, 58). When more material is available evidences may emerge to determine whether a north-south cline exists within a single species from Central America to South America, or if *atra* comprises a complex of species all extremely allied and difficult to distinguish morphologically.

***Cylindromyia (Cylindromyia) bakeri* Aldrich, 1926**

(Fig. 22)

*Cylindromyia bakeri* Aldrich, 1926: 19, fig. 5 (Holotype ♂, Cuba. In USNM); Guimarães, 1971: 15.

This species is easily recognized from other species of *Cylindromyia* by the bold white pollinosity on pleurotergite. *Cylindromyia bakeri* was previously known only from the male holotype from Cuba. I have before me a female specimen from Presto, Oriente, Cuba (AMNH). According to Dr. Sabrosky (personal communication) specimens of *atra* from Puerto Rico in the USNM, have strong pollinosity and would key to *bakeri* and the character of pollinosity alone is a very poor distinction. Unfortunately, no sufficient material of *bakeri* is available to determine which external character is most important to distinguish morphologically these two species. From Aldrich's (1926) figures of lateral view of male genitalia of *bakeri* it is clear that this structure is distinctly different from *atra*. In the female specimen studied T8 is subtriangular in profile with the terminal hooks not strongly curved (fig. 22).

***Cylindromyia (Cylindromyia) brasiliana* (Townsend, 1927), comb. n.**

(Figs. 8, 12, 46, 57, 67, 70 and 79)

*Catocyptera brasiliana* Townsend, 1927: 215, 295 (Holotype ♀, Itaquaquecetuba, São Paulo, Brasil. In USNM); Townsend, 1936: 71 (Key to genera); 1938: 97 (description of genus); Guimarães, 1971: 15.

♂. Length 9-12 mm

Head profile as in fig. 12. Vertex 0.31 of head width. Upper occiput with few scattered black setulae behind postocular row. Parafrontalia tinged with black, silvery pollinose. Parafacialia yellowish, silvery pollinose, at mid height a little wider than third antennal segment. Antennae yellowish; third segment twice as long as second, black, except on the inner side near base which is yellow. Face brownish on middle with a distinct round carina in profile. Vibrissae strong and elongate. Haustellum distinctly longer than head height. Gena black, yellow above, silvery white pollinose.

Thorax black, dusted with thick white pollen on humeral calli, mesopleura, propleura and sternopleura. Propleura bare. Legs black. Sternopleurals 2, rarely 3. Wings (fig. 79) more or less yellowish costobasally tinged with black on apical half. Scutellum with a pair of basal and subapical bristles only; apicals slender, usually absent.

Abdomen (fig. 8) mainly red in ground color, except on base, or except base and apex. T3 and T4 being usually without any black color. Cerci yellow of soft structure; surstyli spatulate, tapering toward apex (fig. 46). Sternite 6 as in fig. 57.

♀. Very similar to ♂ except for the usual sexual differences. Sternite 8 (fig. 70) subtriangular with abundant long bristles laterally; T8 (fig. 67) subtriangular in profile with a broad terminal opening, terminal hooks broad.

Material examined. (Map 1). 24 males and 13 females as follows: Brazil: Rio Grande do Norte. Macaíba (MZSP); Bahia, Mucuri (MZSP); Minas Gerais, Araxá (MZSP); Mato Grosso, Três Lagoas (MZSP); Espírito Santo, Baixo Guandu (MZSP); Guanabara, Rio de Janeiro (MZSP); São Paulo, Araçatuba (MZSP); Barueri (MZSP); Buri (MZSP); Campinas (USNM); Cotia (MZSP); Itápolis (MZSP); Ribeirão Preto (MZSP); Argentina: Mendoza (USNM); Alta Gracia, La Granja, Sierra de Córdoba (USNM).

Distribution. Eastern Brazil (Rio Grande do Norte to São Paulo), N. Argentina.

Among the species with red abdomen *C. brasiliiana* is very reminiscent of *C. uruguayensis*, sp. n. in its generally red body coloration but it is readily recognized by the elongate haustellum which is distinctly longer than the height of the head and by the shape of surstyli and T8.

The type specimen in the USNM is a small and slender specimen without apical scutellar bristles. A study of large series revealed that the absence of apical scutellar is an intraspecific variation and this character cannot support the genus *Catocyptera* Townsend, now relegated to synonymy.

### ***Cylindromyia (Cylindromyia) californica* (Bigot, 1878)**

(Figs. 65, 76 and 84)

*Ocyptera californica* Bigot, 1878: 42 (Holotype ♀, California, U.S.A. In BM).

This species is close to *Cylindromyia fumipennis* (Bigot) resembling

it notably in the broadly red-sided abdomen, differing mainly by the two lateral scutellars and by the hind tibiae villous on inner side in males. Cerci subtriangular in profile; surstyli broad, obliquely truncate at apex. Female genitalia with sternite 8 (fig. 76) subquadrangular with a group of long bristles laterally; T8 ending in a pair of slender and slightly curved hooks (fig. 84). This species is common and widespread in the western USA. I have seen numerous specimens from California, Washington and also Mexico (Baja California).

***Cylindromyia (Cylindromyia) carinata* (Townsend, 1927)**

(Figs. 11, 23, 42, 69 and 81)

*Melanocyptera carinata* Townsend, 1927: 327 (Holotype ♀, Itaquaquecetuba, São Paulo, Brasil. In USNM); Townsend, 1936: 72 (key to genera); 1938: 135 (description of genus).

*Ecatocyterops ater* Townsend, 1935: 217 [Holotype ♀, Itaquaquecetuba, São Paulo, Brasil. (Junior secondary homonym of *Ocyptera atra* Roeder 1885)]; Townsend, 1936: 72 (key to genera); 1938: 105 (description of genus). *N. syn.*

*Cylindromyia townsendi* Guimarães, 1971: 16 (as replacement name for *atra* Townsend).

♂. Length 8-10 mm

Head (fig. 11), with vertex 0.28 of head width. Occiput black, dusted with whitish pollen; a few scattered black setulae behind postalar row. Parafrontalia and parafacialia yellow, dusted with yellow pollen. Parafacialia at mid height about subequal in width to third antennal segment. Antennae brownish-black; third segment about twice as long as second. Face dusted with yellow pollen, with a distinct median carina in profile. Vibrissae strong and decussate. Haustellum distinctly shorter than head height.

Thorax black, dusted with thin white pollen on humeral calli, propleura, mesopleura and sternopleura. Sternopleurals 2 or 3. Propleura bare. Legs black. Wings infuscated, darker on anterior half (fig. 81).

Abdomen black with white pollinose bands, as to include a little of the back edges of T3 and T4 also extending upon the venter. Sternite 6 with a shallow emargination on middle as in fig. 59. Cerci elongate, enlarged apically, as long as surstyli (fig. 42).

♀. Very similar to the male except for the usual sexual differences. Parafrontalia black with silvery pollen. Parafacialia yellow with silvery pollen. Sternite 8 (fig. 69) with a broad rounded emargination on posterior margin, laterally with a group of long and robust bristles. T8 (fig. 23) subtriangular in profile with a pair of strongly curved terminal hooks.

Material examined (map 2). 70 males and 46 females as follows. Panama: Summit, C. Z. (AMNH); Venezuela: Cerro Bolivar (USNM); Brazil: Rio de Janeiro, Muri, Nova Friburgo (MZSP); São Paulo,

Barueri (MZSP); Caraguatatuba (MZSP); Cajuru, Cássia dos Coqueiros (MZSP); Horto Florestal (MZSP); Ilha Bela (MZSP); Jabaquara (MZSP); Mogi das Cruzes (MZSP); Tapanhau (MZSP). Santa Catarina: Nova Teutônia (AMNH, Arnaud coll., BM, CAS, CNC and MZSP). Argentina: Tucumán, (MZSP); Cordoba (USNM).

Distribution. Central America (Panamá), Venezuela, S. Brazil. (Rio de Janeiro to Santa Catarina) to N. Argentina.

*C. carinata* belongs to the group of species with black abdomen, and apical and subapical scutellars only. This species differs from *anthracina* sp. n., its nearest relative, mainly by the shape of surstyli and cerci. *C. carinata* presents a distinct swollen median carina in both sexes, the parafrotaia is yellow pollinose in the male and silvery in the female. The examination of type specimens of *Ecatocypterops ater* Townsend by Dr. Sabrosky confirms its synonymy with *carinata*, both described from the same sex and locality.

#### **Cylindromyia (Cylindromyia) decora** Aldrich, 1926

(Figs. 63 and 66)

*Cylindromyia decora* Aldrich, 1926: 21, figs. 12, 30 (Holotype ♂, New Hampshire, USNM); Sabrosky & Arnaud, 1965: 973.

This species is very close to *uniformis* Aldrich, the surstyli are long falciform and pointed at apex (fig. 66). Female genitalia (fig. 63) with T8 ending in a pair of terminal hooks very similar to those of *uniformis*, but more robust. *Cylindromyia decora* Aldrich is widely distributed in the USA from British Columbia to New Hampshire south to California and Texas. I have before me 1♂ from Lehigh Gap, Pennsylvania and 1♀ from Franconia, New Hampshire identified by Dr. Sabrosky. In the Neotropical Region (map 2) this species has been recorded from Jamaica and Haiti.

#### **Cylindromyia (Cylindromyia) dorsalis** (Wiedemann, 1830)

(Figs. 3, 15, 16, 44, 62 and 77)

*Ocyptera dorsalis* Wiedemann, 1830: 264 (Holotype ♂, "Brazil". In NM). *Cylindromyia dorsalis*; Aldrich, 1929: 30 (redesc. of type); Guimarães 1971: 15.

*Ocypteryx ochrescens* Townsend, 1931: 327 (Holotype ♂, Santa Trinidad, Paraguay. In DEI, Berlin); Townsend, 1936: 74 (Key to genera); 1938: 142 (description of genus). *N. syn.*

*Cylindromyia ochrescens*; Guimarães, 1971: 16.

♂. Length 9.5-11 mm



Head as in fig. 16. Vertex 0.28-0.30 of head width. Occiput thinly dusted with whitish pollen. Postocular cilia stopping before eye middle. Parafrontalia and parafacialia yellow, dusted with silvery pollen. Parafacialia at mid height about twice the width of third antennal segment. Antennae yellow except the apical third of third segment which is black. Face yellowish, dusted with thin white pollen, with a distinct median carina. Vibrissae weakly developed. Peristomal setae not reaching the apex of eye level. Haustellum shorted than head height.

Thorax black, dusted with yellow pollen. Mesonotum with four black vittae, outer pair broad and nearly reaching scutellum, inner pair narrow and confined to postscutum. Humeral calli yellow, golden pollinose. Sternopleurals 2. Propleura bare. Scutellum black, with a pair of marginals and subapicals. Legs yellow, tarsi black. Wings yellow at base, extending along costa past the apex of R1; from about *r-m* the veins toward apex and costa bordered with brownish black infuscation; M1 strongly sinuose (fig. 77).

Abdomen rufolvous to dark brown, dusted with thin silvery pollen (fig. 3). T 1+2 and T3 sometimes yellowish on sides. Sternite 6 (fig. 62) with a single median process bearing two tufts of setules close together. Epandrium with a scale-like lobe projecting laterally; cerci short, of soft consistency; surstyli elongate, well sclerotized, curved near apex (fig. 44).

Female. Very similar to ♂ except for the usual sexual differences. T8 (fig. 16) with terminal hooks pointed backward slightly curved at apex.

Material examined (map 4). Brasil: Bahia; Bom Jesus da Lapa (MZSP); Mucuri (MZSP). Minas Gerais, Alpinópolis (MZSP). Espírito Santo, Córrego do Itá (MZSP). Rio de Janeiro, Itatiaia (MZSP). Guanabara, Ilha do Governador (MZSP); Jardim Botânico (MZSP). Mato Grosso, Chapada dos Guimarães (AMNH); Goiás, Corumbá (MZSP); Monjolinho (MZSP); São Paulo, Campos do Jordão (MZSP); Guaraguaatuba, Reserva Florestal (MZSP); Castelhanos (MZSP); Cidade Jardim (MZSP); Faz. Itaquerê, Tabatinga (MZSP); Guarujá (MZSP); Ilha dos Búzios (MZSP); Rio Claro (MZSP). Paraná, Foz do Iguaçu (MZSP). Santa Catarina, Nova Teutônia (Arnaud coll.). Paraguay: Piroreta (MZSP); Villarica (USNM). Argentina: Jujuy (MZSP); S. P. Colalao, Tucumán (MZSP); Sierra de Córdoba (AMNH).

Distribution. Brasil (Bahia to Santa Catarina), Paraguay, N. Argentina.

The holotype of *Ocyptera dorsalis* Wiedemann labelled "Brasilia Col. Winthem" deposited in Naturhistorisches Museum, Vienna was studied by Aldrich (1929) who established its identity giving a detailed redescription. *Ocypteryx ochrescens* Townsend, according to a paratype ♂ from Rio de Janeiro in the Instituto Oswaldo Cruz, is a synonym. This species is very characteristic in having the scutellum with basal and apical scutellar bristles only.

**Cylindromyia (Cylindromyia) minor** (Roeder, 1885)

(Figs. 19, 45 and 59)

*Ocyptera minor* Roeder, 1885: 344 [Neotype ♂ (by present designation, see below). Puerto Rico]; Wulp, 1903: 451; Aldrich, 1905: 451.

*Cylindromyia minor*; Curran, 1928: 114; Guimarães, 1971: 16.

♂. Length 5-7 mm

Vertex 0.28 of head width. Head yellow. Parafrontalia black. Parafacialia yellow, silvery pollinose, at its narrowest point hardly wider than third antennal segment. Antennae yellow, with the third segment twice the length of second; third segment dark brown except the inner side near base which is yellow. Face yellowish, silvery pollinose, with a conspicuous median carena. Vibrissae long and decussate. Gena black, yellow above, silvery white pollinose.

Thorax dark brown to black, dusted with a thin white pollen. Propleura bare. Sternopleurals 2. Hypopleurals reduced to one or three slender bristles. Scutellum with a pair of subapical and apical scutellars only. Legs black. Wings very similar to *propusilla* (fig. 80); m-cu and M1 not strongly sinuate.

Abdomen black. Cerci enlarged apically, distinctly constricted above middle; surstyli subtruncate at apex (fig. 45). Sternite 6 similar to that of *carinata* (fig. 59).

♀. Very similar to male except for the usual sexual differences. T8 (fig. 19) subtriangular with a pair of apical hooks slender and curved.

Neotype ♂, Puerto Rico, Coamos Springs, July 17-19, 1914 (no collector data). (In American Museum of Natural History, New York).

Material examined (map 6). 2 males and 8 females as follows: Mexico: San Luis Potosi (AMNH); Nayarit, 20 mi N. Tepic (AMNH); Guatemala: Chimaltenango (USNM); Costa Rica: Pedregoso (USNM); Guanacaste, near Cañas (CAS); Barranca, near Puntarenas (CAS). Panama: Frijoles, C. Z. (AMNH); Arraijan (USNM).

Distribution. Central America (Mexico to Panama), Antilles.

Roeder described this species from a male and a female collected at Puerto Rico by Krug without further data. According to Dr. Hüsing (personal communication) the original material of this species has not been located in Martin Luther Universität collection at Halle (Saale) and is certainly lost. Giglio-Tos and Aldrich (1926) misplaced this species under the synonymy of *atra*. A careful interpretation of the original description leaves no doubt about the identity of *minor* since Roeder mentioned the size (7 mm) and the uniformly infuscated wings as a distinctive feature between *atra* and *minor*. The existence of several species of *Cylindromyia* which are extremely similar to *minor* and easily

confounded with it, makes neotype fixation desirable. A specimen from Puerto Rico agreeing with the original description is herewith designated Neotype to which the name *minor* is therefore restricted. Structurally it appears that *C. propusilla* is its nearest relative although it is very distinct from that species by the shape of male genitalia.

**Cylindromyia (Cylindromyia) nigra** (Bigot, 1885)

(Figs. 18 and 71)

*Glossidionophora nigra* Bigot, 1885: 55 [Holotype ♀ (not ♂), Argentina, Buenos Aires. In BM]; Townsend, 1936: 71 (key to genera); 1938: 119 (description of genus). Brèthes, 1908: 296; Guimarães, 1971: 16.

*Glossidionophora cylindrica* Brauer, 1899: 5 [Holotype ♀ (not ♂) Buenos Aires]. *N. Syn.*

*Cylindromyia atricauda* Aldrich, 1934: 10 (Holotype ♀, Chile. In BM); Cortés, 1944: 179; Cortés & Hichins, 1969: 25; Guimarães, 1971: 15. *N. syn.*

♀. Length 6-8 mm

Vertex shining black, 0.25 of head width. Occiput, parafacialia and parafrontalia dark brown with silvery pollinosity. Face slightly elevated on the middle. Parafacialia narrow at mid height, a little smaller in width than the third antennal segment. Antennae black; third segment twice as long as second. Occiput black, silvery pollinose. Vibrissae strong.

Thorax shining black. Mesonotum, propleura, sternopleura and humeral calli dusted with a thin white pollinosity. Sternopleurals 2. Propleura bare on middle. Legs black. Wings subhyaline, lighter towards the hind margin. Scutellum with 3 pairs of lateral scutellars; apicals long and decussate.

Abdomen black as in *atra*. T5 shining black without traces of pollinosity. Sternite 8 (fig. 71) subquadrangular with posterior margin subtruncate with long and robust bristles laterally. T8 (fig. 18) ending in a pair of slender terminal hooks.

Material examined (map 3). 3 females, as follows: Chile: Maipu, Rinconada, Santiago (MZSP); Osorno, Villarica (USNM); Valdivia, Lago Puyehue, (MZSP).

Distribution. Argentina, Chile.

The holotype in BM bears a yellow, black-bordered, label reading "*G. Glossidionophora* J. Bigot" and a white-bordered label reading "*G. Cylindrica* ♂ Buenos Aires. J. Bigot", both these labels from Bigot's original collection. Also a handwritten ink label by Crosskey which reads as follows "Standing under name *Glossidionophora cylindrica* in

coll. Bigot from Buenos Aires, but name not publ. by Bigot. Assumed to be the holotype of *G. nigra* from Buenos Aires and different name adopted by Bigot in his collection, R. W. C. 25/8/69". The type is a ♀ not a ♂ as originally stated. According to Dr. Crosskey (personal communication) the specimen mentioned above is the type of *nigra*, in spite of discrepancies. On the reverse of Bigot's species label the words "Brauer. Wien cviii (no. 8)" in Verrall's writing which refers to Brauer, 1899, nota no. 8 on pp. 499-500 on *G. Cylindrica*.

*Cylindromyia atricauda* Aldrich (♀ type in BM) is the same and sinks as synonym of *nigra* Bigot according to Dr. Crosskey's notes on types.

### ***Cylindromyia (Cylindromyia) obscura* (Bigot, 1878)**

(Figs. 2, 14, 25, 60, 68, 82 and 83)

*Ocyptera obscura* Bigot, 1878: 44 [Holotype ♂ (not ♀), "Brasil". (ex. coll. Bigot). In BM]; Brauer, 1898: 483 (noted that the type was a male).

*Cylindromyia obscura*; Guimarães, 1971: 16.

♂. Length 8.5-9 mm

Vertex 0.27 of head width. Head (fig. 14) yellow, golden pollinose. Occiput black, dusted with whitish pollen, with a few black setulae behind postocular row. Parafacialia rather broad at middle height, a little wider than third antennal segment. Antennae yellow with third segment brown to blackish, except the inner side near base which is yellow. Face yellow, golden pollinose, with a slight elevation on the middle. Vibrissae strong and decussate. Haustellum distinctly shorter than head height.

Thorax black, silvery white pollinose. Humeral calli black, dusted with pale yellow pollen. Propleura pilose. Sternopleurals 3. Trochanters, posterior half of mesopleura and sternopleura thickly white pollinose. Scutellum with three pairs of lateral scutellars. Legs dark brown to black. Wings (fig. 82) yellow costobasally, darkly infuscated on apical one fourth.

Abdomen (fig. 2) with T 1+2 and T 3 dark brown to black, broadly red on sides; T4 and T5 black. Sternite 6 as in fig. 60. Cerci broad, ending in a complex pointed process (fig. 83).

♀. Differs from male as follow. Frontalia and parafacialia silvery white pollinose. Parafacialia narrow at mid height, distinctly narrower than third antennal segment. Sternite 8 (fig. 68) strongly sclerotized with a broad shallow emargination posteriorly, with a compact cluster of strong bristles laterally. T8 (fig. 25) subelliptical in profile with a pair of long and curved apical hooks.

Material examined (map 3). 15 males and 17 females as follows: Brasil: Rio de Janeiro, Nova Friburgo (MZSP); Minas Gerais, Pouso Alegre (USNM); Santa Rita de Cássia (MZSP); Mato Grosso, Maracaju (MZSP). São Paulo, Brás, (USNM); Santa Catarina, Nova Teutônia (AMNH, CAS, MZSP, CNC, BM, and Arnaud coll.); Corupá (AMNH).

Distribution. Brazil.

The holotype in BM, according to Dr. Crosskey (personal communication), bears the usual black-edged label from Bigot's coll. reading "*O. obscura* ♀ Brazil J. Bigot" and has one wing stuck to this label on the reverse of which is "Brauer Wien CVII (No. 6)" in Verrall's handwriting. Also BM red-edged type circle. The type is a male, not a female, as originally stated, indicating that Bigot was unable to sex this group (see Brauer, 1898: 493).

Specimens sent for comparison with Bigot's type in BM agree very closely, according to Dr. Crosskey.

### *Cylindromyia* (*Cylindromyia*) *porteri* (Brèthes, 1925)

(Figs. 6 and 28)

*Ocyptera porteri* Brèthes, 1925: 208 (Holotype ♂, Chile. In MNHN); Cortés, 1963: 251.

*Cylindromyia porteri*; Aldrich, 1934: 9; Cortés, 1944: 178; Parker & al. 1951: 32 (host); Cortés & Hichins, 1969: 29; Guimarães, 1971: 16.

*Dolichocyptera porteri*; Townsend, 1938: 104.

♀. Length 7 mm

Vertex 0.33 of head width. Occiput, parafacialia and parafrontalia black, with silvery pollinosity. Parafacialia broad, wider than third antennal segment on the middle. Antennae black; third segment twice as long as second. Face black, silvery pollinose, distinctly keeled on middle. Vibrissae robust and decussate. Haustellum slender, about as long as head height.

Thorax black, dusted with thin white pollen, specially on propleura, humeral calli, mesopleura and sternopleura. Sternopleurals 3. Propleura bare on middle. Scutellum with three pairs of lateral scutellars. Legs black. Wings hyaline.

Abdomen mostly red, black on base (fig. 6). T 6+7 elongate and curved under venter. T8 black, yellow on base ending in a pair of symmetrical hooks curved upward.

Material examined (map 5). 2 females, as follows: Chile: Angol (MZSP); La Reina (MZSP).

Distribution. Chile (Valparaiso, Santiago and Malleco).

The type of *Ocyptera porteri* is a well preserved male in the Museo Argentino de Historia Natural, studied by Cortés (1963), who confirmed

its identity. According to Parker *et. al.* (1951) this species was reared in Chile (Angol) from *Acedra albocostata* and *Acedra dimiaticollis* (Pentatomidae) and as far as I know this is the only host record for the genus *Cylindromyia* in South America.

*Cylindromyia porteri* is a very distinctive species differing from all other South American species of subgenus *Cylindromyia* by the elongate T 6+7 in female. Except for the type all known specimens are females.

#### ***Cylindromyia* (*Cylindromyia*) *pirioni* (Townsend, 1931)**

*Dolichocyptera pirioni* Townsend, 1931: 325 (Holotype ♀, San Cristóbal, Antofagasta, Chile. In USNM); Aldrich, 1934: 9 (key); Townsend, 1936: 73 (key to genera); Townsend, 1938: 103 (description of genus); Cortés, 1944: 179.

*Cylindromyia pirioni*; Guimarães, 1971: 15.

*Cylindromyia pirioni* is only known from the type specimen, a female from San Cristóbal, Chile, in the USNM, not examined. This species is apparently close to *nigra* (Bigot), differing in the following points according to Dr. Sabrosky (personal communication). "*C. pirioni* is very gray pollinose on sides and middle of mesonotum, leaving two moderately narrow shining black stripes: *nigra* seems to be more extensively black, but it is slightly greased and this probably influences the appearance. The front of *pirioni* projects distinctly ahead of the eyes but less in *nigra*. Mesopleuron shining black in *nigra* with only a slight bloom of pollen seen at a very low angle, but densely gray pollinose in *pirioni*. Face is definitely wider and parafacialia narrower in *nigra* than in *pirioni*, as noted by Aldrich".

#### ***Cylindromyia* (*Cylindromyia*) *propusilla* Sabrosky & Arnaud, 1955**

(Figs. 17, 38, 54 and 80)

*Cylindromyia nigra* Aldrich, 1926: 11 [junior secondary homonym of *Ocyptera nigra* Villeneuve, 1917]. (Holotype ♂, Virginia, USA. In AMNH).

*Cylindromyia pusilla* Aldrich, 1927: 18 (replacement name for *nigra* Aldrich, but preocc. Meigen, 1824).

*Cylindromyia propusilla* Sabrosky & Arnaud, 1965: 973 (as replacement name for *pusilla* Aldrich).

*Cylindromyia argentea*; authors, not Townsend.

*Cylindromyia propusilla* appears most closely related to *C. minor*, agreeing with this species in the subhyaline wings with *m-cu* not strongly sinuose; it differs from *minor* in the male by the sternite 6 deeply notched on the middle (fig. 54), by the curved cerci not constricted apically,

by the slender surstyli ending in a sharp point (fig. 38). In the female by the T8 subtriangular in profile ending in a strongly curved pair of apical hooks (fig. 17).

In the Americas South of the United States this species has been recorded from Mexico (cf. Sabrosky & Arnaud, 1965).

***Cylindromyia (Cylindromyia) uniformis* Aldrich, 1926**

(Figs. 9, 13, 20, 49 and 52)

*Cylindromyia uniformis* Aldrich, 1926: 24, fig. 4 (Holotype ♂, San Jacinto, Mexico, D. F. In USNM); Cole, 1969: 530; Guimarães, 1971: 16.

♂. Length 6.5-10 mm

Vertex 0.27 of head width. Head (fig. 13) black, dusted with silvery pollen. Parafacialia about as wide as third antennal segment. Occiput black, with a few black setulae above. Antennae black.

Thorax black, dusted with thin white pollen. Humeral calli, propleura, mesopleura and sternopleura thickly dusted with silvery pollen. Sternopleurals 3. Scutellum with three pairs of lateral scutellars. Legs black. Wings brown along the veins on the anterior part.

Abdomen dark brown, yellow on sides of T 1+2 and T3 (fig. 9). Cerci broad, yellow, pointed at apex; surstyli curved and pointed at apex (fig. 49). Sternite 6 as in *atra* (fig. 64).

♀. Differs from male as follows. Sternite 8 very similar to *atra*. T8 (fig. 20) with a slender pair of terminal hooks.

Material examined (map 4). 5 males and 20 females as follows. Mexico: Chihuahua (AMNH); Guadalajara, Jalisco (CAS); Hidalgo Chapulhuacán (AMNH); Alpuyeca, Morelos (MZSP); Oaxaca (AMNH); Huichihuayan, San Luis Potosi, (AMNH); Tamazunchale, San Luis Potosi (AMNH). Honduras. Tegucigalpa (CAS). Jamaica: St. Catherine (USNM). Dominica: Layon Valley (MZSP); Rosendu Valley (BM), St. Chiltern (MZSP). Trinidad (CNC). Brazil: São Paulo, Santos (? introduced) (USNM).

Distribution. Central America (Mexico, Honduras), Antilles.

This species is probably most closely allied to *decora* as shown by the close resemblance in the two species of T8, cerci and surstyli.

***Cylindromyia (Cylindromyia) uruguayensis*, sp. n.**

(Figs. 21 and 36)

♂. Length 8.5-10 mm

Vertex 0.30 of head width. Head brown. Parafrontalia silvery pollinose. Occiput black, dusted with thin white pollen. Parafacialia

broad, silvery pollinose, at narrowest point twice width of third antennal segment. Antennae yellow, third segment black, except the inner side near base which is yellow. Face brown, slightly elevated on the middle. Vibrissae strong. Gena black, silvery pollinose, with a few black setulae anteriorly. Haustellum a little shorter than head height.

Thorax dark brown to black. Humeral calli, propleura, mesopleura and posterior half of sternopleura thickly white pollinose. Propleura bare. Sternopleurals 2. Legs dark brown. Scutellum with three pairs of laterals present. Wings subhyaline, m-cu almost straight.

Abdomen reddish, with a median vitta on T 1+2 and T3. T5 brownish to black. Cerci very short; surstyli broad, subtriangular in profile, curved at apex (fig. 36).

♀. Very similar to male except for the usual sexual differences. T8 as in figs. 21.

Distribution. South America (Uruguay, Argentina).

Holotype ♂ Rio Colorado, Argentina, Jan. 10, 1943, Berry (USNM); Paratype. 1 ♀ Montevideo, Uruguay, XI.22, 1942, Parker & Silveira (USNM).

#### 7. Subgenus **Apinocyptera** Townsend

*Apinocyptera* Townsend, 1915a: 94. Type-species, *Apinocyptera signata* Townsend (as genus) by original designation.

*Odontocyptera* Townsend, 1915b: 233. Type-species, *Odontocyptera nana* Townsend, by original designation.

This subgenus contains four species, two of which have the female abdomen ventrally with a spine-studded protuberance. All four species have been recorded in the Americas South of the United States. The species of this subgenus may be identified by means of the following key.

Key to species of subgenus *Apinocyptera* Townsend in the Americas South of the United States.

1. Females. Abdominal T3 ventrally with a spine-studded protuberance; Males. Cerci more or less straight in lateral view without constrictions on middle ..... 2
  - Females. T3 of normal appearance; Males. Cerci with a characteristic constrictions on middle in lateral view ..... 3
2. Females. T8 elongate nearly 0.7 length of T6 7; T5 with a group of stubby setae ventrally close to anterior margin; Males. Surstyli elongate more or less pointed at apex (fig. 34); sternite 6 with a row of stubby setae decreasing in size toward middle (fig. 61) (Central America) ..... *signatipennis* Wulp.
  - Females. T8 0.5 length of T6 7; T5 without a group of stubby setae ventrally near anterior margin (fig. 29); Males. Surstyli more or less digitiform at apex; sternite 6 with a row of hairs of normal appearance decreasing in size toward middle (N. Mexico,



- S. USA) ..... *nana* (Townsend)
3. Small to median size species (6-8 mm) Propleura bare on median portion. None or one sternopleural (West Indies, N. South America, C. America) ..... *thompsoni*, sp. n.
- Median sized to large species (8-12 mm). Propleura with at least one or two setae on median portion. Two, rarely three sternopleurals (N. Argentina) ..... *platensis*, sp. n.

### ***Cylindromyia* (Apinocyptera) *nana*** (Townsend, 1915)

(Figs. 29, 48 and 51)

*Odontocyptera nana* Townsend, 1915b: 233 (Holotype ♀, Mexico. In USNM); Townsend, 1936: 71 (key to genera); 1938: 143 (description of genus).

*Cylindromyia nana*; Aldrich 1926: 17, figs. 14, 19 & 20; Sabrosky & Arnaud, 1965: 973; Guimarães, 1971: 16; Cole, 1969: 530.

*Cylindromyia limbata* Aldrich, 1936: 25 figs. 6, 21 (Holotype ♂; San Bernadino County, California. In USNM). *N. Syn.*

♂. Length, 5.5 to 8 mm

Parafacialia and parafrontalia silvery. Antennae black; second segment about twice the length of third. Face with facial carina obsolete. Vibrissae slender, as long as third arisal segment. Occiput black, dusted with white pollen.

Thorax black with metallic reflexion. Propleura with few hairs on middle. Sternopleura and hypopleura thinly pollinose. Sternopleurals 2 or 3. Legs black. Wings subhyaline, veins on costal border strongly infuscated.

Abdomen mostly yellow. T 1+2 to T8, dark brown, Sternite 6 with long and slender bristles laterally (fig. 51). Surstyli elongate more or less digitiform (fig. 48).

♀. Differs from male as follow. T8 about 0.5 of T 6+7. T5 without a group of stubby setae ventrally near anterior margin (fig. 29).

Material examined. 10 males and 2 females as follows. USA. California: Westwood Hills, Los Angeles Co. (LACM); Big Tujunga Canyon, Los Angeles County (LACM); Glacier Lodge, Inyo Co., (LACM); Cushenberry Springs, Sn. Bernadino Mts. (LACM); nr. Antelope Valley (LACM). Arizona: Madera Co., St. Rita Mts. (MZSP). Mexico: 10 mi. E. San Ignacio, Baja California (LACM); El Bonito, San Luis Potosi (Arnaud Coll.); 10 mi. N. Tamanzuchale, San Luis Potosi (CAS); Huichihyan, 20 mi N. Tamazunchale, San Luis Potosi (AMNH).

Distribution. SW United States (Arizona and adjacent Southeastern California) and southward into Mexico (Baja California, San Luis Potosi).

*C. nana* is very close to *signatipennis* being small in size and occurring more northerly. The allotype of *limbata* looks very like to *nana* at least the genitalia and ventral spines according to Dr. Sabrosky (personal communication) and are here considered conspecific with *nana*. Dr. Sabrosky has observed some variation in the length and shape of T8 in some Mexican and Californian specimens under *limbata* creating a problem about the identity of all this complex. In the allotype of *limbata* from Mexico T8 is about 0.5 length of T 6+7 and pointed at apex, but in some specimens from San Diego, California T8 is about 0.7 of T 6+7 and not pointed at apex. Unfortunately insufficient material of all this complex is available to establish if the variation of length and shape of T8 presupposes the occurrence of allometric growth or if there are more species involved with peculiar shape and dimensions in this sclerite.

***Cylindromyia (Apinocyptera) platensis*, sp. n.**

(Figs. 32-34 and 50)

♂. Length 10-13 mm

Vertex 0.30 of head width. Parafrontalia silvery pollinose narrow above. Parafacialia pale yellow about 1.5 as wide as third antennal segment. Antennae yellow; third segment black about 0.66 of length of second. Arista brown with the basal segments subequal in length. Face pale yellow, dusted with silvery pollen. Facial carina bulbous and prominent in profile. Gena yellow, silvery pollinose. Vibrissae slender.

Thorax dark brown to black. Mesonotum dusted with a thick whitish pollen on ventral view. Propleura pilose on middle. Sternopleurals 2 or 3. Legs dark brown to black. Scutellum with three pairs of lateral scutellars; apicals long and decussate. Wings subhyaline all veins bordered with brown.

Abdomen reddish to black. Sternite 6 as in fig. 50. Cerci elongate, constricted at middle; surstyli elongate, subtriangular in profile with a group of long hairs on base (fig. 34).

♀. Differs of male as follow. T3 to T5 of normal appearance without ventral protuberance or cluster of spines. T8 ending in an asymmetrical pair of hooks as in figs. 32-33.

Holotype ♂ Alta Gracia, La Granja, Argentina, Jan. 1, 1922. C. Bruch (USNM); Paratypes. Argentina: Santiago del Estero, 25.V.1927 (USNM); 1♂ Tucumán, R. P. Colalao, II.1949, Arnaud (MZSP); 1♀ Salta, Yacochuya, 8 km NW Cafayate, 2-7 Feb. 1972, A. E. Evans (USNM).

Distribution (map 2). Argentina.

This species and *thompsoni* are rather distinctive in the female by lacking the spinne-studded protuberance on T3. *C. platensis* is most readily recognized from *thompsoni* by the two or three sternopleurals.

**Cylindromyia (Apinocyptera) signatipennis** (Wulp, 1892)

(Figs. 7, 27 and 61)

*Ocyptera signatipennis* Wulp, 1892: 187 (Holotype ♂, Chilpancingo, Guerrero, Mexico. In BM); Wulp, 1903: 450, pl. 13, fig. 11; Aldrich, 1905: 451.

*Cylindromyia signatipennis*; Aldrich, 1926: 26; Sabrosky & Arnaud, 1965: 973; Guimarães, 1971: 16; Cole, 1969: 530.

*Apinocyptera signata* Townsend, 1915a: 94 (Holotype ♀, Gualán, Guatemala. In USNM). *N. Syn.*

*Cylindromyia signata*; Aldrich, 1926: 23, fig. 18; Guimarães, 1971: 16.

*Cylindromyia sternalis* Reinhard, 1955: 327 (Holotype ♂, Ahuacatlán, Nayarit, Mexico. In CNC). *N. syn.*

♂. Length 8.5-11 mm

Vertex 0.28 of head width. Head yellow. Parafrontalia yellow, pollinose. Occiput black. Antennae reddish nearly to as below arista: third segment black reddish on base. Parafacialia about the width of third antennal segment on middle. Haustellum distinctly shorter than head height. Face yellow, silvery pollinose; slightly elevated on middle.

Thorax black, thinly pollinose. Humeral calli, propleura and sternopleura more intensely dusted with white pollen. Mesopleura shining black with metallic reflection. Sternopleurals 3. Scutellum with three pairs of lateral scutellars. Legs black; tibiae brownish red to black; anterior femora thickly white pollinose in posterior view. Wings infuscated around cell R5 and *m-cu*; costa yellow from base to apex of R1.

Abdomen reddish brown to black more or less reddish on sides of T3 and T4 (fig. 7). Cerci and surstyli yellow, weakly sclerotized; surstyli elongate more or less rounded at apex (fig. 37). Sternite 6 U-shaped with a row of short and stubby setae laterally decreasing in size toward middle (fig. 61).

♀. Differs of male as follows. T 6+7 ventrally with a group of small stubby-bristles near the anterior margin; T8 elongate about 0.7 of T 6+7.

Material examined: (map 5). Mexico: 9 mi. NW. Santa Isabela, Nayarit (USNM); San Luis Potosí, 10 mi. N. Tamazunchale (CAS); El Benito, 7 m. S. of Ciudad Valley San Luis Potosí (Arnaud coll.); Guatemala: Sacapulas, 4.500 m (AMNH). Costa Rica: Cañas, Guanacaste, Hacienda Comelco, 24 km NW Cañas (CAS).

Distribution. Central America (Mexico to Costa Rica).

This species is structurally very close related to *C. nana* and there is a strong similarity in the shape of the spine-studded protuberance in T4 but is easily distinguished from this and other species by the T8 in female about 0.7 length of T 6+7, by T5 with a group of stubby-setae

ventrally near the anterior margin in the male: sternite 5 presents a shallow emargination along the center with a row of stubby bristles at side increasing in size toward middle (fig. 61), and by the elongate surstyli more or less rounded at apex (fig. 37). There is some variation in tibiae color in *signatipennis* going from the brownish red to black. *C. signata* and *C. sternalis* are regarded as synonyms.

***Cylindromyia* (*Apinocyptera*) *thompsoni*, sp. n.**

(Figs. 27, 43 and 78)

♂. Length 7 to 9 mm

Vertex 0.30 of head width. Head pale yellow, silvery white pollinose. Parafacialia about as wide as third antennal segment. Antennae yellow; third segment reddish brown. Face yellow, silvery pollinose, slightly elevated on middle. Vibrissae very weak. Gena yellow slightly infuscate in middle with few black setulae above. Occiput black, silvery white pollinose.

Thorax dark brown to black. Mesonotum dusted with thick white pollen. Humeral calli, propleura, posterior half of mesopleura and sternopleura dusted with thick whitish pollen. Sternopleurals 0 or 1, rarely 2. Propleura bare. Scutellum with three pairs of laterals; apicals long and decussate. Wings subhyaline, yellow on base; veins bordered with brown (fig. 78). Legs dark brown, trochanters yellowish; hind tibiae sometimes more or less yellowish; tarsi black.

Abdomen reddish brown to black more or less reddish on sides. Cerci slender; surstyli longer than cerci, subtriangular in profile (fig. 43).

♀. Very similar to ♂ except for the usual sexual differences. T3 and T4 (fig. 27) of normal appearance without cluster of spines or protuberance ventrally; T8 with an asymmetrical pairs of hooks.

Holotype ♂, Trinidad, St. Joseph, July 15, 1953, F. J. Simmonds coll. (CNC). Paratypes. Trinidad: 1♂, 1♀, St. Joseph, Feb. 13, 1953, July 13, 1953, F. J. Simmonds (CNC); 1♂, 2♀, ICTA (Dec. 1, 1952, July 15, 1953, March 1954), F. J. Simmonds (CNC); 1♂ Piarco, Dec. 3, 1953, F. J. Simmonds (CNC); 3♂♂, 3♀♀, Maracas Valley, (July 13, 1953, Oct. 28, 1963, Feb. 14, 1964). F. J. Simmonds. 1♀ American Road, Dec. 30, 1960, F. J. Simmonds (CNC); 1♂ Caroni Rd. Nov. 4, 1952, F. J. Simmonds (CNC); 1♂ Comuto, Jan. 18, 1964, F. J. Simmonds (CNC); 1♀ Tacarigua, Oct. 16, 1964, F. J. Simmonds (CNC); 2♂♂, Brazil village (April 2, 1953, July 14, 1953) F. J. Simmonds (CNC); 1♂ Simla (CNC); 2♂♂ Corupe, July 15, 1959, F. J. Simmonds (CNC), 1♂ Simla (CNC); 2♂♂ Floradale, Jan. 26, 1953, F. J. Simmonds; 1♂ Mt. Benedit, March 5, 1954 (CNC); 1♂ Aripo Valley, July 14, 1964, F. J. Simmonds (CNC),

1♂ Clayton Bay, Nov. 5, 1960, F. J. Simmonds (CNC). Venezuela: 1♀ Caracas, Altigrecia de Orituca, Oct. 1952, Maria Mirsa (USNM); San Esteban, Nov. 28, 1939. Anduze (USNM). Panama: 1♂ Corozal, CZ, Jan. 21, 1929, C. H. Curran (AMNH); Brazil: 1♂ Belém, Pará, July 15, 1924 (MZSP).

This species belongs to the species group of subgenus *Apinocyptera* Townsend without cluster of spines on ventral protuberance in T3. Morphologically is close to *platensis*, differing mainly in size (7-9 mm) and by sternopleurals 0-1. *C. thompsoni* is named in honor of Dr. W. R. Thompson in recognition for his arduous study on Trinidad Tachinids.

#### 8. UNRECOGNIZED SPECIES

##### ***Cylindromyia (Cylindromyia) dotadas* (Walker, 1849)**

*Ocyptera dotadas* Walker, 1849: 694 (Holotype ♂, "Jamaica". In BM). *Cylindromyia dotadas*; Aldrich, 1926: 26; Guimarães, 1971: 15 (as *dotatas*, error).

The holotype according to Dr. Crosskey (Personal communication) bears circular white label with the word "Jamaica"; also a square white label in Austen's hand reading "Jamaica Purchd. fr. Gosse 48.110" and the usual BM labels (red-edged and green edged circles). The *holotype* of this species is in bad condition with the abdomen lost and legs badly damaged. According to Dr. Crosskey's notes what remained from the holotype fits with *soror* and *simplex* (wings identical) but the loss of abdomen make it impossible to determine its identity.

##### ***Cylindromyia nigrina* (Wulp, 1883)**

*Ocyptera nigrina* Wulp, 1883: 15 [Holotype ♀, "Argentina" (type destroyed, see below). In ZM. Amsterdam]; Brèthes, 1908: 295. *Cylindromyia nigrina*; Guimarães, 1971: 16.

Wulp described this species from a female from "Argentina". According to Dr. Papavero's notes, only one wing glued to the pin is what remained of the type specimen of *Ocyptera nigrina* in the Zoological Museum, Amsterdam. Wulp's description might well belong to any South American *Cylindromyia* species of black abdomen.

##### ***Cylindromyia similis* (Robineau-Desvoidy, 1830)**

*Ocyptera similis* Robineau-Desvoidy, 1830: 230. Type(s), "Brazil" (presumably lost).

The type specimen of *Ocyptera similis* cannot be found in the Robineau-Desvoidy collection in the Museum National d'Histoire Naturelle. I gratefully acknowledge Dr. Papavero for this information. In the absence of type the identity of this species is completely uncertain, and

there is even some doubt as whether *O. similis* belongs in the *Cylindromyiini*.

#### ADDENDUM

New records of *Cylindromyia s.l.* in the Americas South of the United States.

#### ***Cylindromyia armata* Aldrich, 1926**

Sabrosky & Arnaud, 1965 records in the North America Diptera Catalog the distribution of this species as "Mont., Calif. to Kansas and N. Mex., Mich., Mass. to Ga.". Recently Dr. Sabrosky (personal communication) kindly sent me a new record in the Americas South of the United States from Sr. Catherine, Jamaica, Jan. 6, 1963, T. H. Farr coll. (In USNM). I have seen numerous specimens from California, Nevada and Texas received to study from Los Angeles County Museum.

#### ***Cylindromyia euchenor* (Walker), 1849**

Aldrich (1926) recorded this species mainly from Eastern USA but is of wide, though rather uncommon occurrence in the western states. According to Sabrosky (personal communication) in the collection of United States National Museum and Florida Department of Agriculture there are specimens from Mexico, El Salto San Luis Potosi, July 2, 1968, Pamela Weems, extending the distribution states in the North American Diptera Catalog to "Minn. to Nfld., S. to N. Mexico and Fla., also California and Mexico".

#### ***Cylindromyia fumipennis* (Bigot), 1878**

This species is widely spread in America North of Mexico from British Columbia to Connecticut, s. to California and Florida (Cf. Sabrosky & Arnaud, Jr., *in Stone et al.* 1965: 873). In the material received for study from the U. S. National Museum we have found a female from Mexico (D. F.). Sabrosky (1971: 63) revised the Aldrich's keys presenting a more accurate study on the male genitalia of this species.

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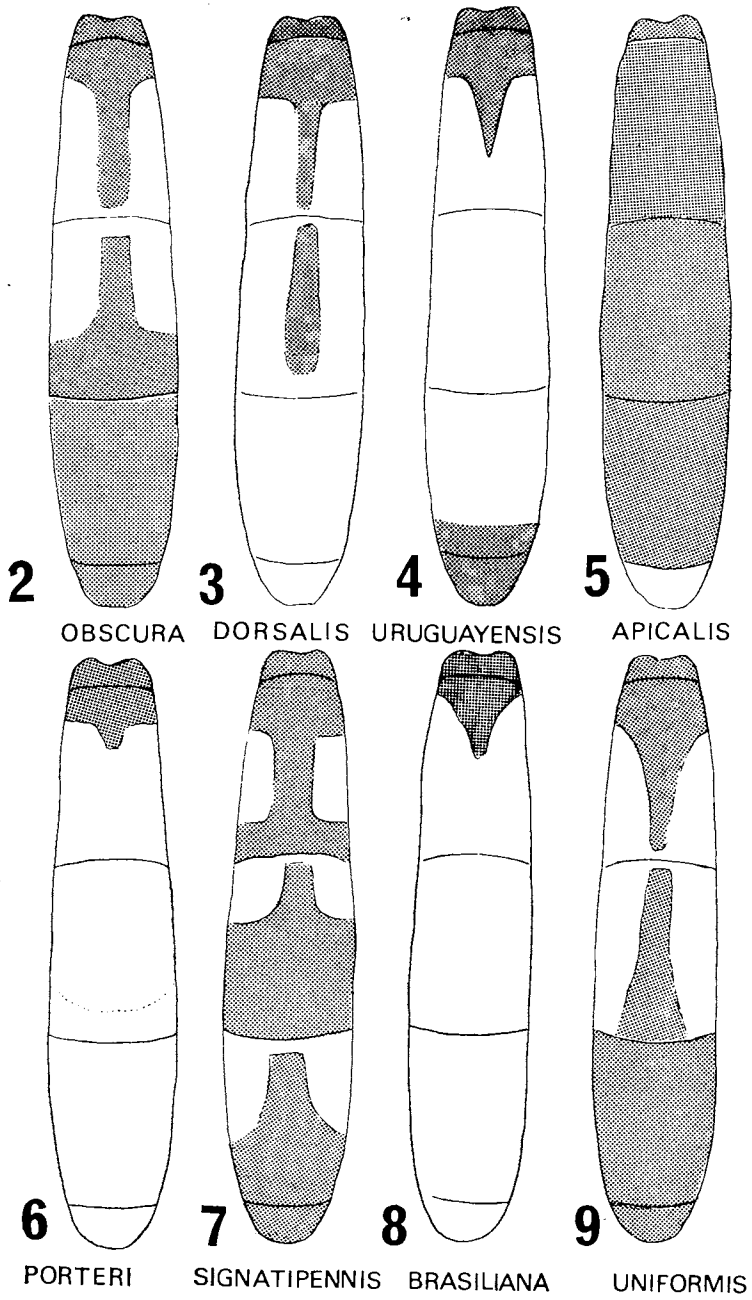
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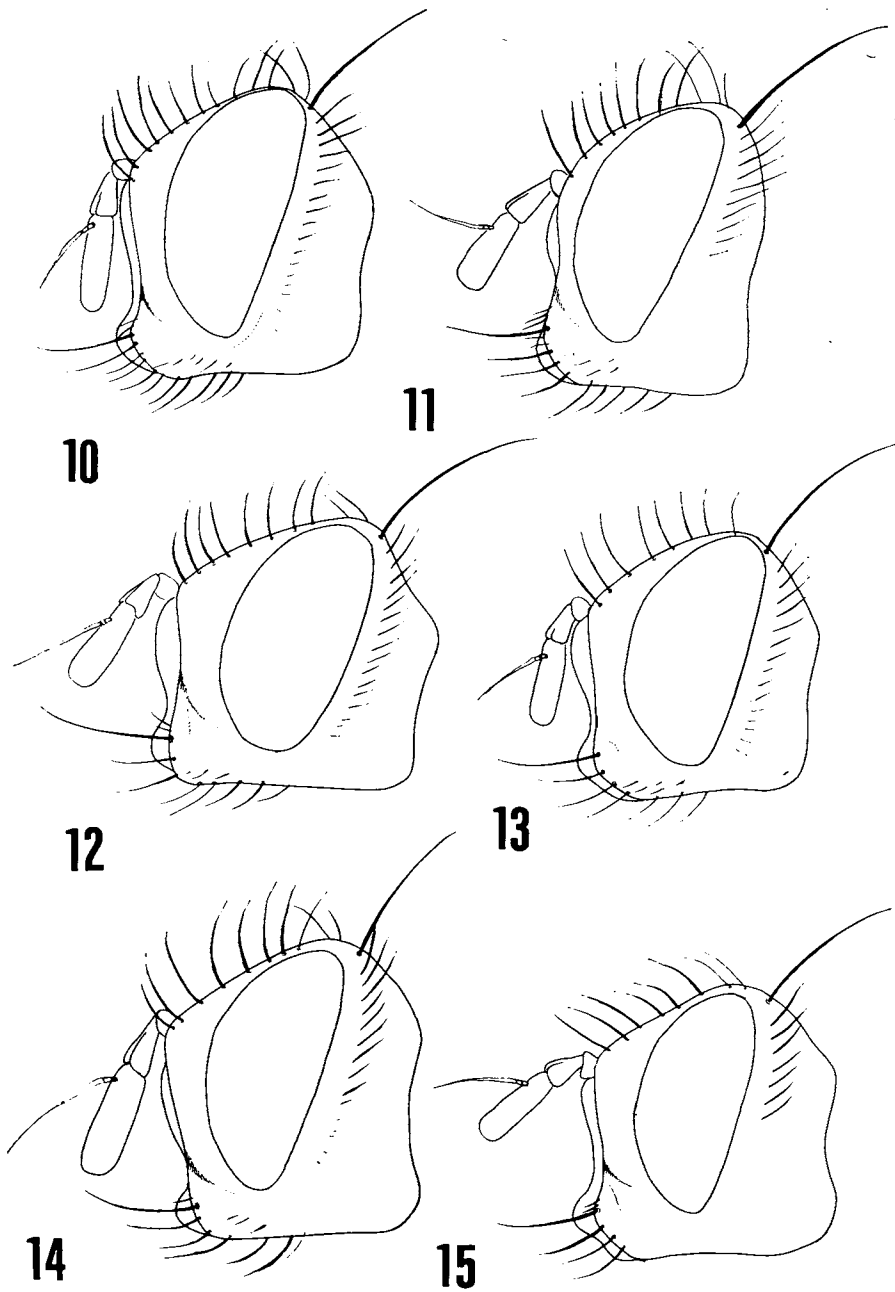
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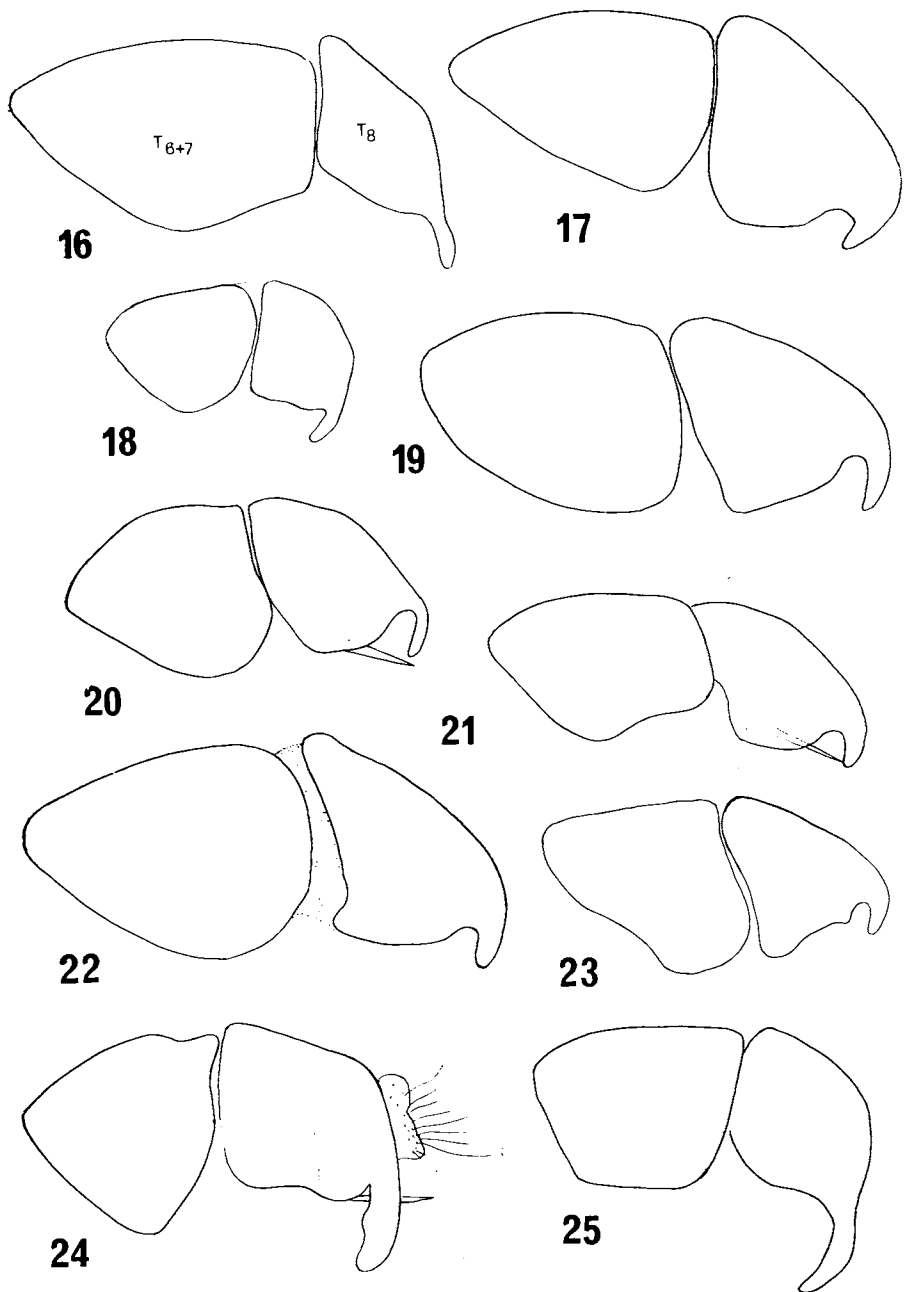
1883. Amerikaansche Dipt (concl.). *Tidjschr. v. Ent.* **26**: 13-35, pls. 1-2.
1892. Remarks on certain American Diptera in the Leyden Museum and descriptions of nine species. *Notes Leyden Mus.* **4**: 73-92.
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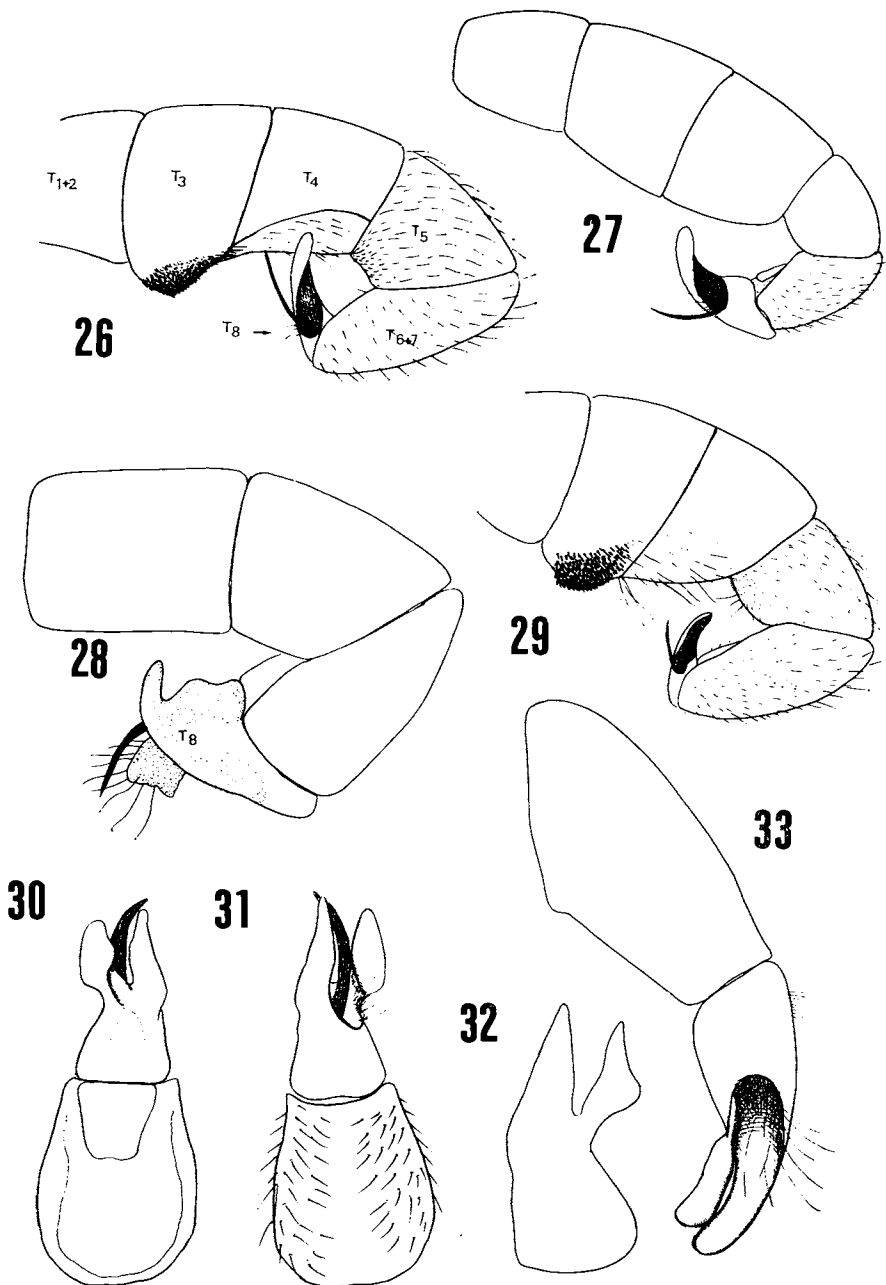
Figs. 2-9. Abdominal color patterns in some *Cylindromyia* spp. (vestiture omitted).



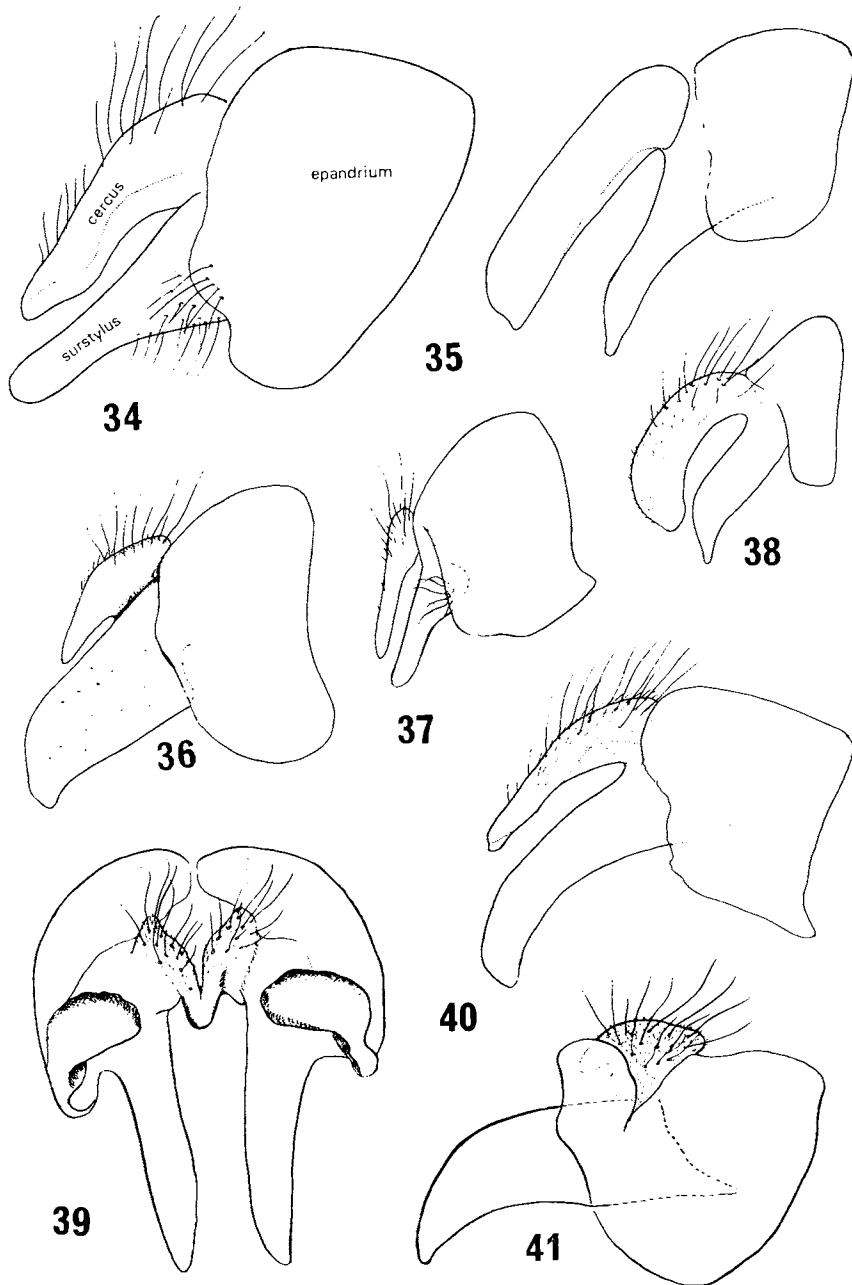
Head profiles in representative males of *Cyindromyia* spp. (hairing omitted).  
10, *atra*; 11, *carinata*; 12, *brasiliana*; 13, *uniformis*; 14, *obscura*; 15, *dorsalis*.



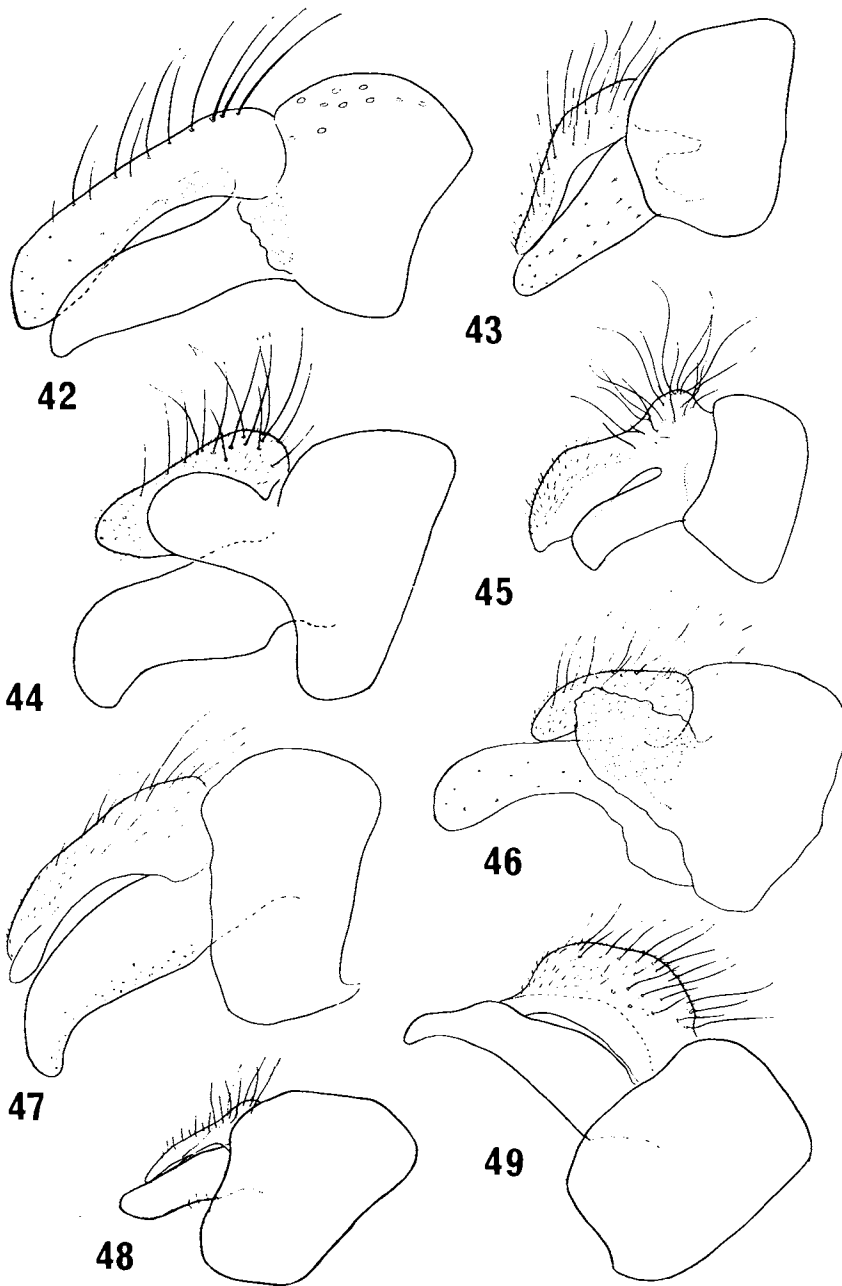
Profiles of terminal segments of female genitalia of *Cyindromyia* spp. in lateral view (vestiture omitted). 16, *dorsalis*; 17, *propusilla*; 18, *nigra*; 19, *minor*; 20, *uniformis*; 21, *uruguayensis*; 22, *bakeri*; 23, *carinata*; 24, *arnaudi*; 25, *obscura*.



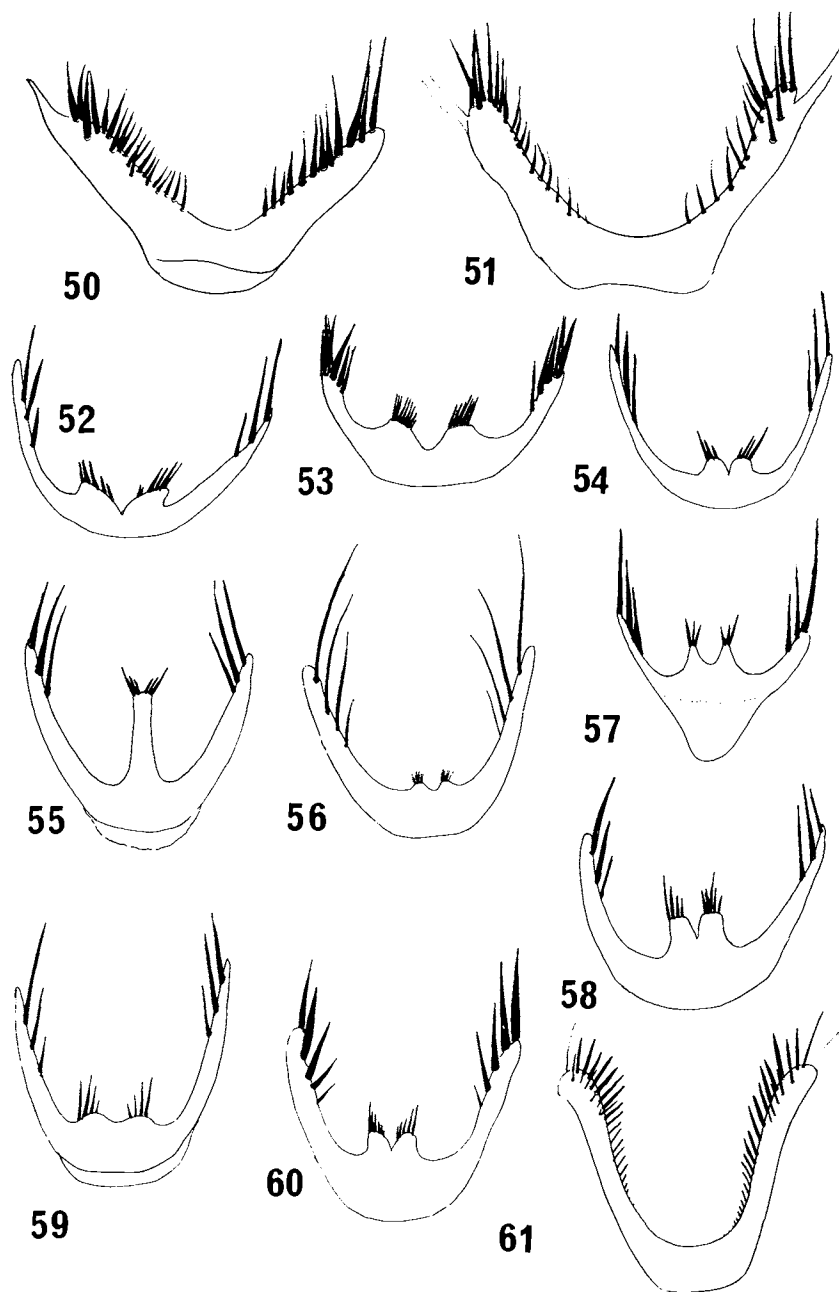
Terminal segment of female abdomen of *Cylindromyia* spp. 26, *signatipennis*; 27, *thompsoni*; 28, *porteri*; 29, *nana*; 30, *thompsoni* (ventral view); 31, *thompsoni* (dorsal view); 32, *platensis* (dorsal view); 33, *platensis* (lateral view).



Epandrium, cerci and surstyli of *Cylindromyia* spp. (main hairing only shown). 34, *platensis*; 35, *anthracina*; 36, *uruguayensis*; 37, *signatipennis*; 38, *propusilla*; 39, *aldrichi* (apical view); 40, *apicalis*; 41, *aldrichi*.

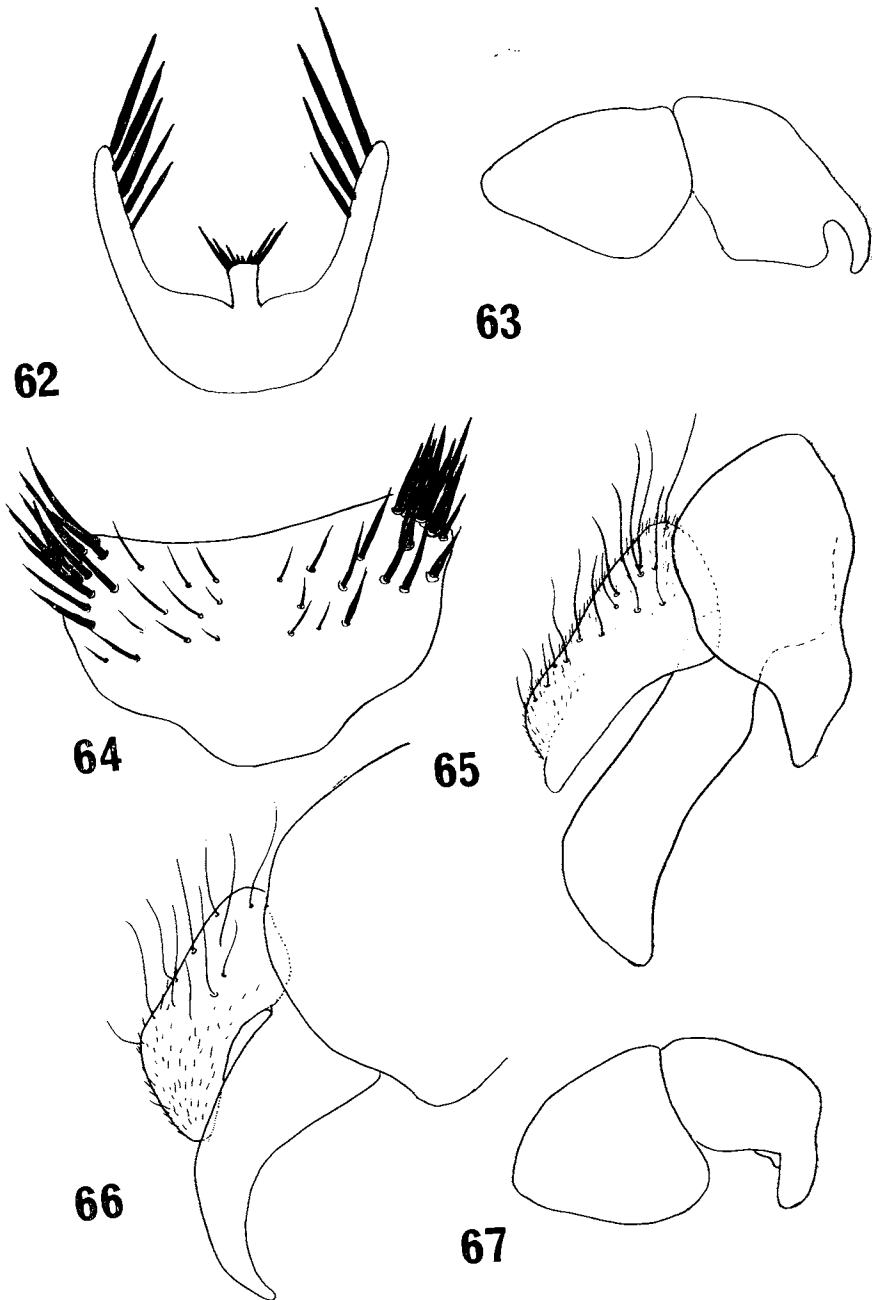


Epandrium, cerci and surstyli of *Cylindromyia* spp. (main hairing only shown).  
 42, *carinata*; 43, *trompsoni*; 44, *dorsalis*; 45, *minor*; 46, *brasiliana*; 47, *atra*;  
 48, *nana*; 49, *uniformis*.

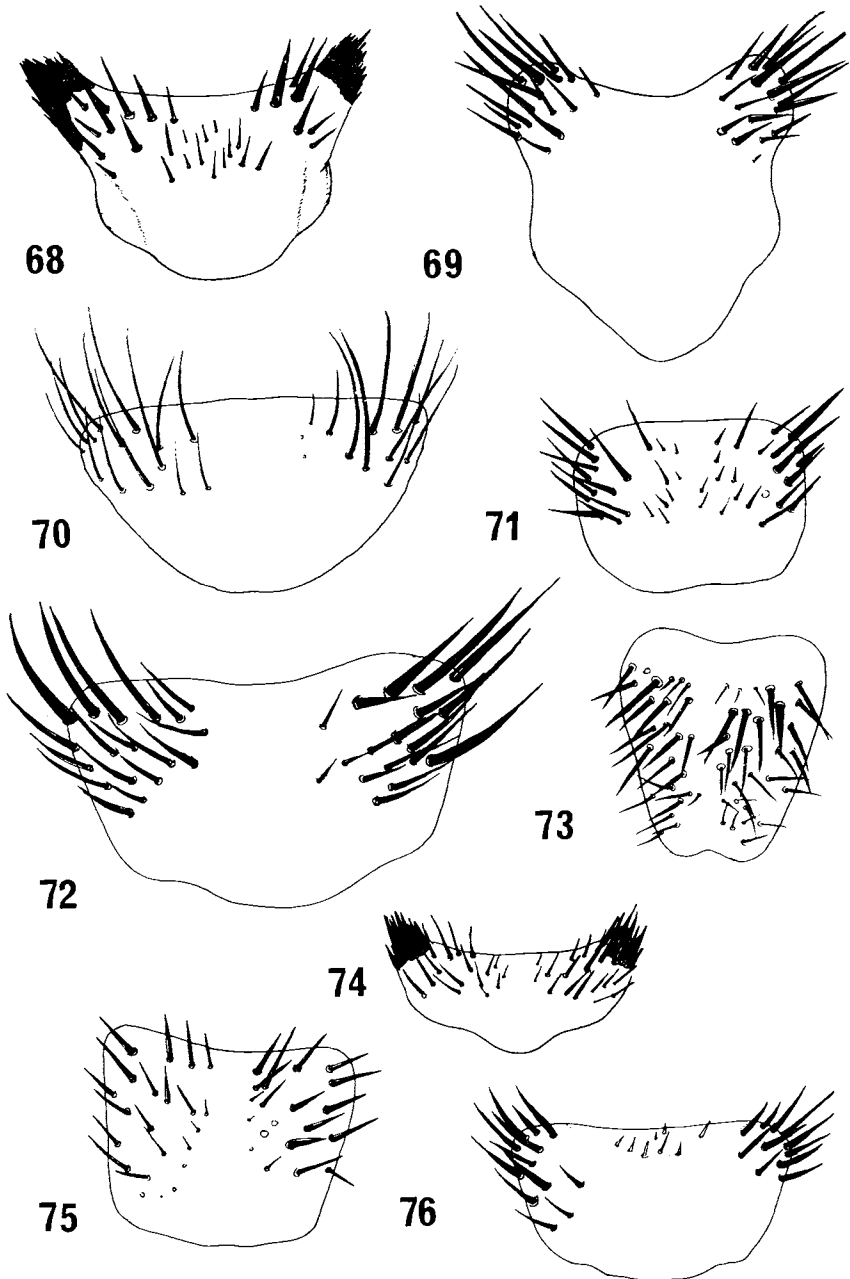


Sternite 6 of male *Cyldromyia* spp. 50, *platensis*; 51, *nana*; 52, *uniformis*; 53, *atra* (Argentina); 54, *propusilla*; 55, *aldrichi*; 56, *apicalis*; 57, *brasiliiana*; 58, *atra* (Mexico); 59, *minor*; 60, *obscura*; 61, *signatipennis*.

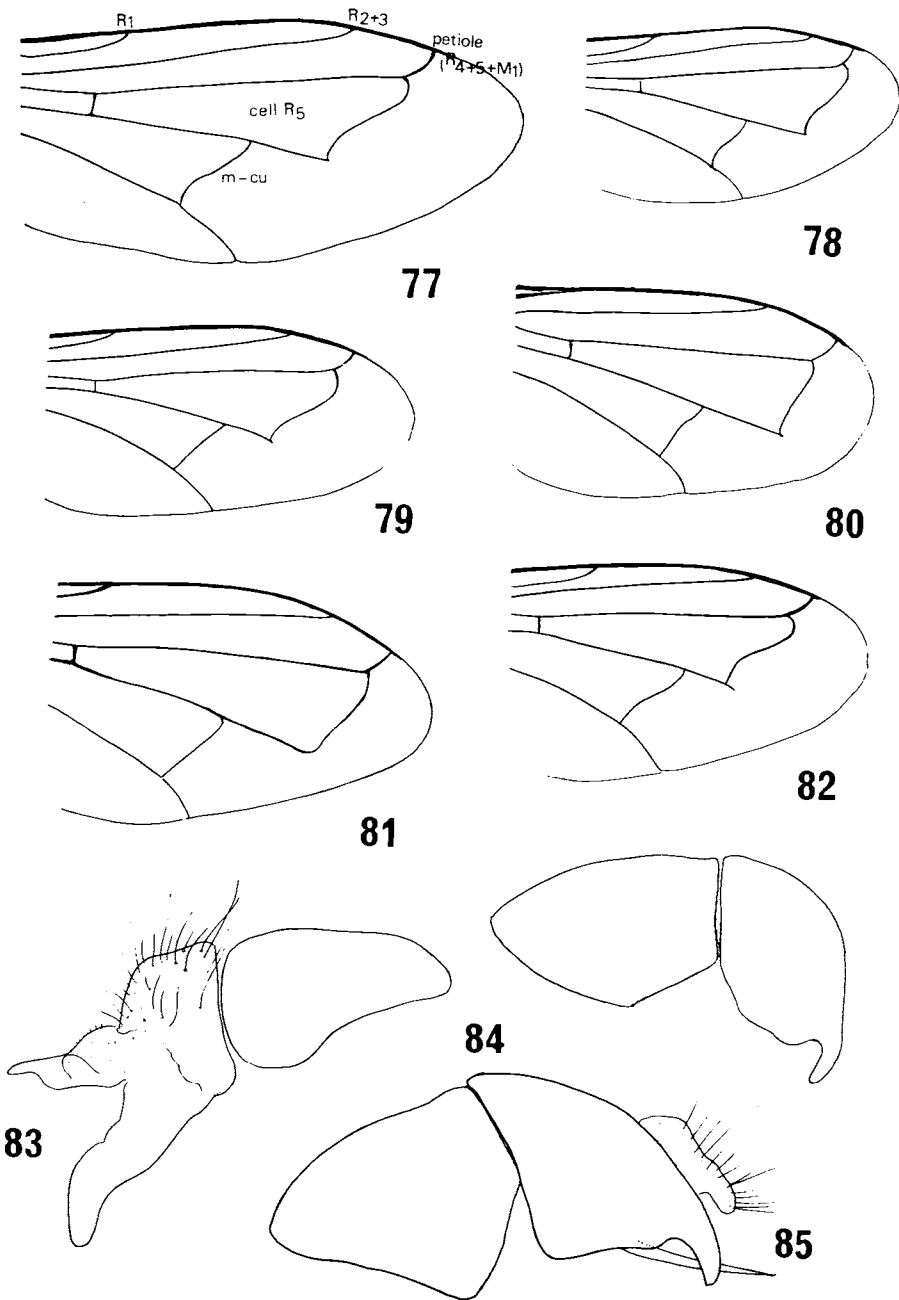




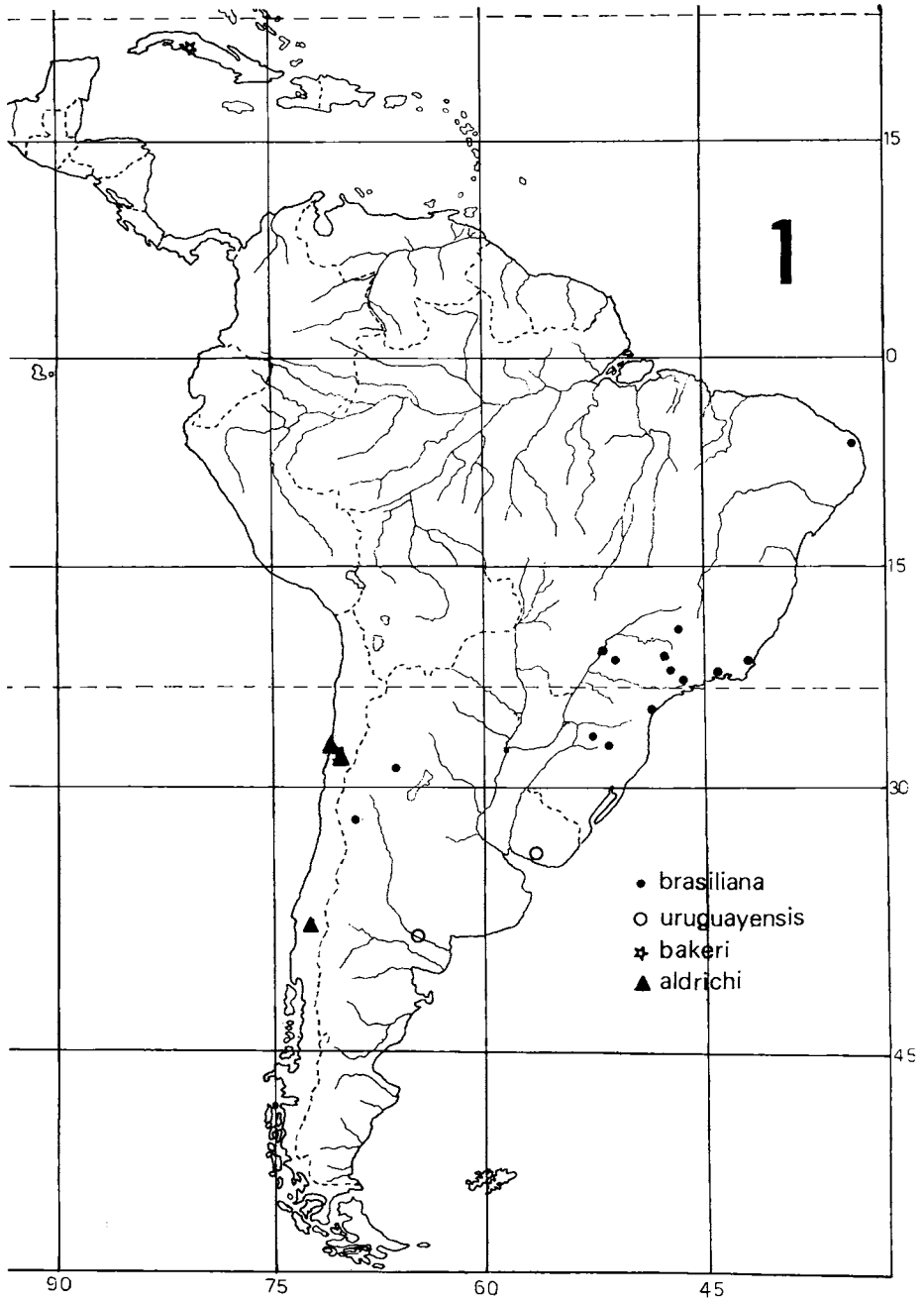
62, male sternite 6 of *dorsalis*. 63, lateral view of female genitalia of *decora*. 64, female sternite 8 of *atra*. 65, lateral view of male genitalia of *californica*, 66, *decora*, lateral view of male genitalia. 67, *brasiliana*, female genitalia, lateral view.

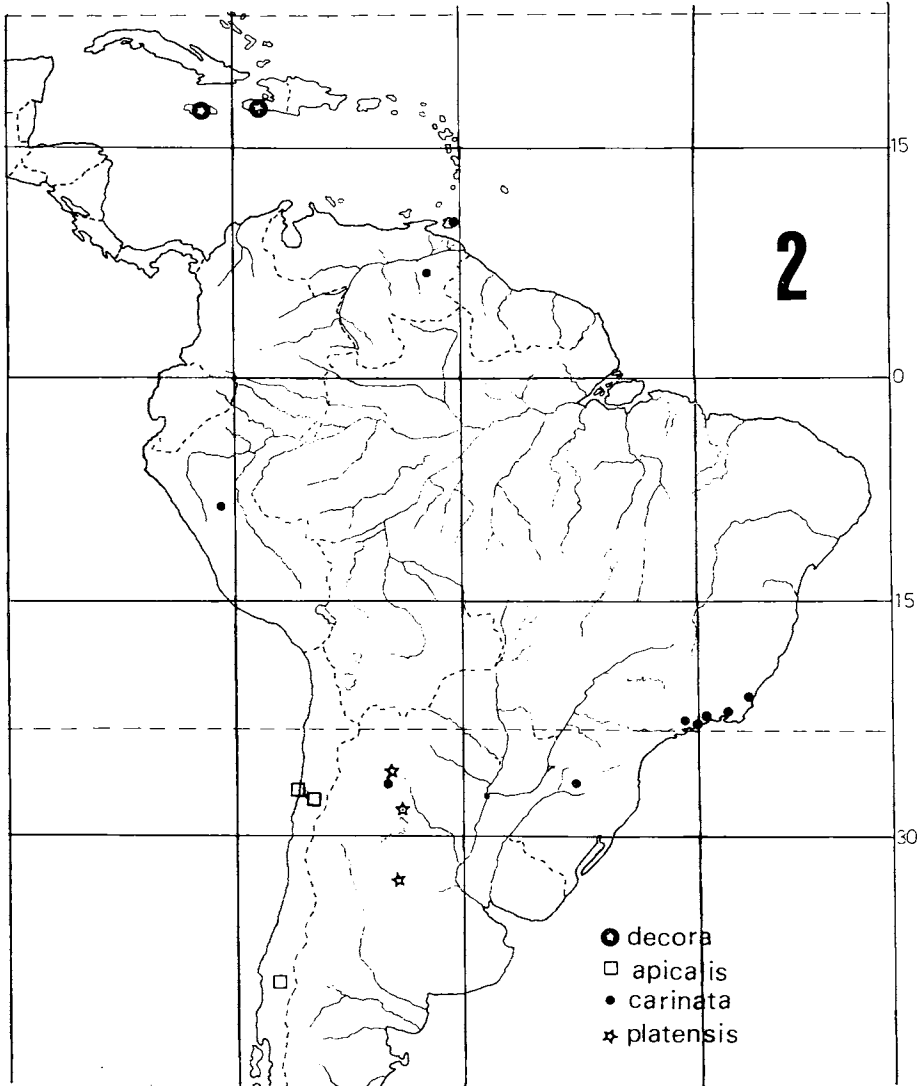


Female sternite 8 of *Cylindromyia* spp. 68, *obscura*; 69, *carinata*; 70, *brasiliana*; 71, *nigra*; 72, *bakeri*; 73, *thompsoni*; 74, *arnaudi*; 75, *ochrescens*; 76, *californica*.



Wing venation in representative species of *Cylindromyia* spp. 77, *dorsalis*; 78, *thompsoni*; 79, *brasiliانا*; 80, *propusilla*; 81, *carinata*; 82, *obscura*; 83, *obscura*; male genitalia; 84, *californica*, male genitalia; 85, *atra*, female genitalia.

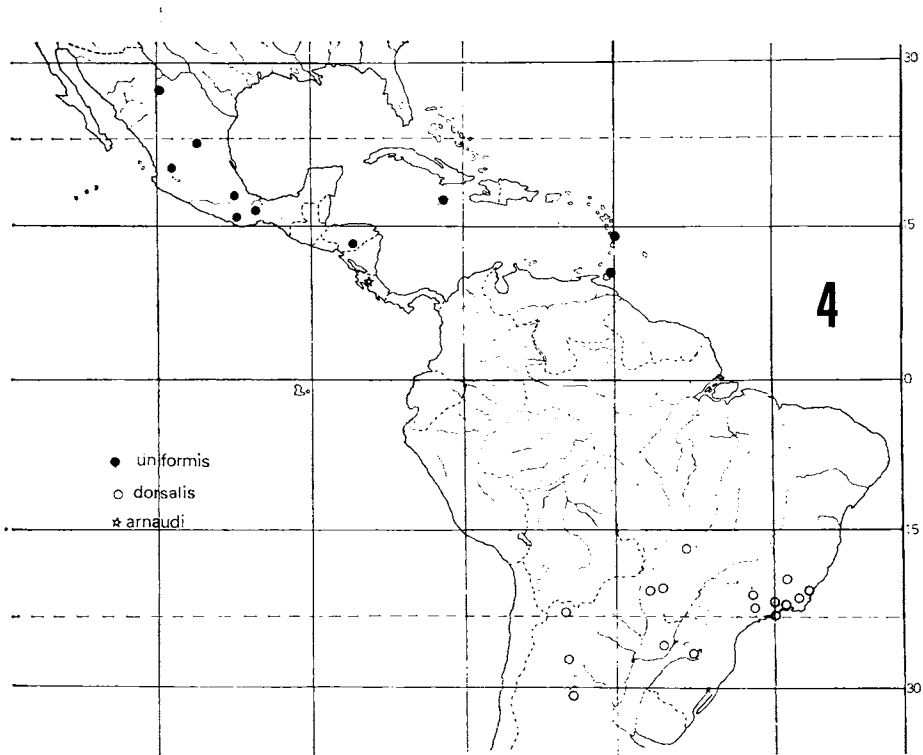




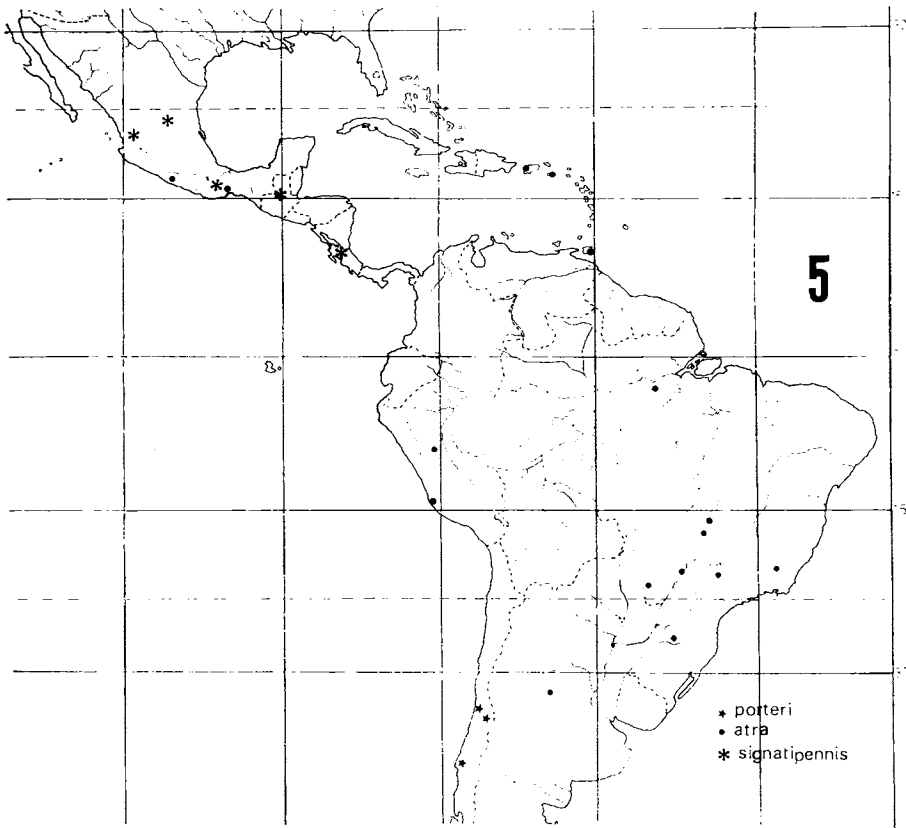
Map 2. Distribution of *Cyldromyia* spp.



Map. 3. Distribution of *Cyldromyia* spp.

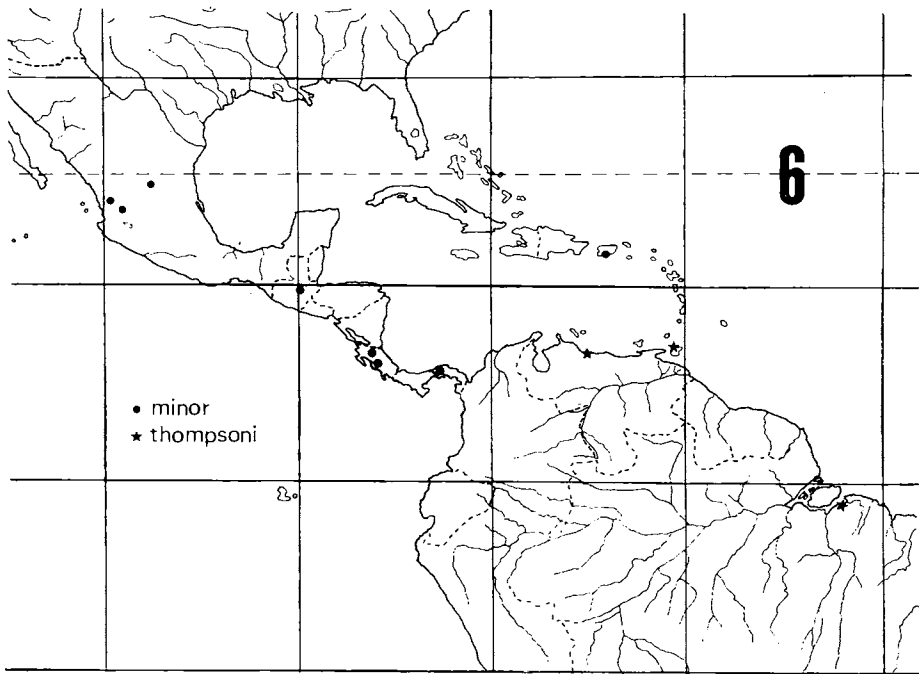


Map 4. Distribution of *Cylindromyia* spp.



Map 5. Distribution of *Cyindromyia* spp.





Map 6. Distribution of *Cylindromyia* spp.