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Manual of Neotropical Diptera. Tabanidae[1]

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Introduction

According to Fairchild (1981: 290-291): "Adult tabanids are found in almost all conceivable habitats, from salt lakes and ocean beaches to snowline in the Andes, and from the extreme deserts of coastal Peru and Chile to the nearly perpetually rainy cloud forests of many parts of central America and the eastern slopes of the Andes. With the exception of about a dozen common and wide-ranging species which seem to prefer the more open and disturbed habiats created by man's agricultural activities, most tabanids have definite habitat preferences. This aspect of their biolgy has been little studied, although Fairchild (1953) summarized knowledge of the arboreal species and Chvala & Stary (1967) noted habitat referencs for Cuban speces. Philip (1978) and Fairchild (1973) noted preferences of certain species for the mangrove swamp habitat [Lutz, 1922: 148 had already noted that larvae of *Tabanus obsoletus* Wiedemann, 1821 live in that environment]. In general, Diachlorini and Pangoniini seem most restricted in choice of habitats. Chrysopsini slightly less so, while most of the ubiquitous and wide ranging species belong to Tabanini. Unlike the situation in temperate areas of the world, in the tropics adults of many species are crepuscular or even nocturnal. Sometimes this is true of both sexes, in other cases only the males appear to be active at night, judging by the results of light trap catches. This is very likely due to the generally low night temperatures prevailing in the north, but we need much more information on the periods of activity of the Neotropical species. On a seasonal basis, with the possibility of year round activity in the tropic, most species nevertheless have a definite season of flight. Lutz (1910) seems to have been the first worker in the Neotropics to note the varying flight periods of tabanids. The literature was briefly summarized by Fairchild (1942) in a report on a year's study of the seasonal distribution of 35 Panamenian species. The evidence suggested strongly that the majority of species had an annual life cycle and a definite flight season, which might be long or short and in either the wet or dry season. Very few species gave evidence of more than one brood per year, or of being on the wing throughout the year in equal abundance".

Studies on the biology, physiology and ecology of some species have been published by Allee (1926), Aragão

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(1975), Barbosa, Henriques, Rafael & Fonseca (2005), Barros & Foil (1999, 2007), Barros, Foil & Vazquez (2003), Bassi, Cunha & Coscarón (2000), Buestán (1980), Camus & Barahona (2002), Dunn (1934), Fairchild (1942f), Ferreira, Henriques & Rafael (2002), Ferreira & Rafael (2004), Foil, Leprince & Byford (1991), Galvão (1936), Gorayeb (1995, 1999, 2000), Gorayeb & Ribeiro (2001), Hack (1970), Hollander & Wright (1980), Hoppe, Dillwith, Wright & Szumlas (1990); Hine (1906), Jones (1956), Lajmanovich (1994), McKeever & French (1997), Medem (1981), Mignot & Anderson (1970), Pino, Candia, Letelier, Ostoic, Sánchez & Sánchez (1973); Poi de Neiff & Neiff (2006), Rafael (1982), Rafael & Charwood (1980), Raymond (1989), Raymond, Barre & Camus (1985), Raymond & Rousseau (1987), Roberts (1971a, 1974, 1980); Schwardt (1931), Stoffolano Jr., Angioy, Crnjar, Liscia & Pietra (1990), Stoffolano Jr. & Majer (1997), Stone (1930), Strickman & Hagan (1986), Velázquez de Ríos, Tiape Gómez, Gorayeb & Tamasauskas (2004), Wilkerson, Butier & Pechuman (1985) and Wilson (1967).

Castro (1937) published on the color of tabanid eyes and Goffe (1932) on a method of preserving and restoring the colour bands on the eyes of tabanids after death. The musculature of *Fidena* (*Fidena*) *fusca* (Thunberg, 1827) [as *besckii* Wiedemann, 1828] was studied by Barth (1961a), who also investigated the salivary glands of certain horsefly species (1961b, 1962). The mouthparts were studied by Fang, McKeever & French (1999), González, Brevis, Miranda & Sotomayor (2005), González & Flores (2004), González & Sanhueza (2003, 2004), González, Sanhueza, Flores & Vargas (2004) and MacKeever & French (1999). The possible importance in classification of the fore coxae, mesokatepimeron and mesokatespisternum was dealt with by Bernardi (1992). The wing venation was studied by Shannon & Bromley (1924). The chromosomes of certain Tabanidae has been the suject of studies by Boyes & Wilkes (1972).

Most female tabanids are hematophagous and usually require a blood meal to mature at least their eggs subsequent to the first batch. That is, they may be autogenous, partly autogenous or anautogenous. Males are exclusively nectar feeders, or do not feed, while females of a number of species seem also to be mainly or exclusively nectar feeders (Fairchild, 1981: 290) or feed upon tree sap (Roberts, 1967). Those that suck blood attack a wide range of vertebrates, mostly wild and domestic mammals and man. Some species also feed on birds (Ferreira & Rafael, 2004 (*Cairina moschata*)), alligators (Medem, 1971; Ferreira, Henriques & Rafael, 2002 (*Caiman crocodilus* (L.)), snakes (Philip, 1986 (reports *Phaeotabanus innotescens* (Walker, 1854), *Tabanus secundus* Walker, 1848 [as *T. stenocephalus* Hine, 1906], *Tabanus occidentalis* Linnaeus, 1758 [as *T. modestus* Wiedemann, 1828] and *Stenotabanus incipiens* (Walker, 1860) biting a giant anaconda in Peru); Ferreira, Henriques & Rafael, 2002 (*Eunectes murinus* (L.)) and *Tabanus vittiger* Thomson feeds on the Galapagos iguanas (Philip, 1976, 1983). A *Fidena* species from Costa Rica (Puntarenas, Rincón de Osa) has a very long proboscis, much longer than the fly's body (Merritt & Philip, 1976: 501, fig. 1).

Females are more easily captured, as they are attracted to man and animals; males are most rarely met with; for this reason, most species have been described only from females. Several kinds of traps and chemicals or the use of bait animals have been devised for the capture of horseflies, either for increasing collections or for other types of studies and control (e. g., Adkins Jr., Ezell Jr., Sheppard & Askey Jr., 1972; Ailes, Brown, Church, French & Gale, 1992; Anderson, Olkowski & Hoy, 1973; Axtell, Edwards & Dukes, 1975; Catts, 1970; Foil, 1999; Foil & Hissel, 1991; Foil & Hribar, 1995; French & Hagan, 1995; French & Kline, 1989; Granger, 1970; Hanec & Bracken, 1964; Hansens, Bosler & Robinson, 1971; Hayakawa, 1988; Hayakawa, Tanaka, Iwane & Yamashita, 1990; Hayes, Doane, Sakolky & Berrick, 1993; Hribar & Foil, 1994; Hribar, Leprince & Foil, 1991a, 1991b; Knox & Hays, 1972; Krcmar, Hribar & Kopi, 2005; Krcmar, Mikuska & Merdic, 2006; Mihok, 2002; Mizell III, Mizell IV & Mizell, 2002; Moucha, 1963; Rafael & Gorayeb, 1982; Raymond, 1987; Roberts, 1965, 1969, 1970, 1971b, 1972a, 1972b, 1975a, 1975b; Smith, Breeland & Pickard, 1965; Snoddy, 1970; Tallamy, Hansens & Denno, 1976; Thompson, 1969; Thompson & Gregg, 1971; Thompson & Holmes Jr., 1974; Thorpe & Hansens, 1978; Thorsteinson, Bracken & Hanec, 1965; Thorsteinson, Bracken & Tostowaryk, 1966; Wall & Doane Jr., 1980; Wilson, 1968; Wilson & Richardson, 1970; Wilson, Tugwell & Burns, 1966).

Adults of some species may be preyed upon by certain wasps (Cane & Miyamoto, 1979; Fischer, 1929a, 1929b; Pechuman, 1957a (*Bembix cinerea* (Handl.)) and trumpeter birds (Psophiidae) (Peres, 1996). They are also infected by *Spiroplasma* bacteria (Clark, Peterson, Whitcomb, Henegar, Hackert & Tully, 1984; French, Whitcomb, Tully, Carle, Bove, Henegar, Adams, Gasparich & Williamson, 1997). Larvae of *Tabanus nigrovittatus* Macquart, 1847 are parasitized by *Trichopria sp*. (Hymenoptera: Diapriidae) (Magnarelli & Anderson, 1980); those of *Tabanus subsimilis* Bellardi by larvae of *Macronychia sp.* near *aurata* (Coquillett) (Diptera, Sarcophagidae) (Thompson, 1978).

Some species of this family present medical and economic importance, acting as mechanical vectors of several pathogenic organisms, as viruses, bacteria, protozoans (especially *Trypanosoma*) and helminths (Barretto, 1949; Coscarón, 1998; Diéguez Fernández, Rodríguez González & Sánchez Alonso, 1997; Foil, 1989; Foil & Issel, 1991; Hack & García, 1959; Hall, Chainey, Betella & Aramayo, 1993; Hoffmann, 1961; Krinsky, 1976 (evaluates over 200 references of the disease agents transmitted by tabanids); Lutz & Núñez Tovar, 1928; Mateus, 1975; Woke, 1947). They are especially important in the mechanical transmission of trypanosomiases to some domestic and wild mammals (Bazzoli, Marques, Machado, Aquino, Alessi & Camacho, 2002; Coscarón & Led, 1968a; Curasson, 1943; Dávila & Silva, 2000; Franke, Greiner & Mehlitz, 1994; Herrera, Dávila, Novak, Abrey, Souza, d'Andrea & Jansen, 2004; Herrera, Novak, Freitas, Rademaker, Fernandes & Jansen, 2005; Horn, 1984; Lerger & Vienne, 1919; Losos, 1980; Melendez, Forlano & Figueroa, 1995; Monzón & Villavicencio, 1990; Morales, Wells & Angel, 1976; Nunes & Oshiro, 1980; Nunes, Oshiro, Dorval, Espindola, Cristaldo, Rocha & Nunes,

1994; Nunes, Oshiro, Dorval, Garcia, Silva & Bogliolo, 1993; Otte & Abuabara, 1991; Page, 1972; Paiva, Lemos, Nakazato, Mori, Bum & Bernardo, 2000; Raymond, 1990; Rodrigues, Fighera, Souza, Schild, Soares, Milano & Barros, 2005; Screck, Kline, Williams & Tidwell, 1993; Serra-Freire, 1981, 1983; Shaw, 1977; Shaw & Lainson, 1972; Silva, 2005; Silva, Barros & Herrera, 1995; Silva, Pellegrin, Lima, Ramirez & Dávila, 2004; Silva, Lima, Ramírez & Dávila, 2004; Silva, Morales, Eulert, Montenegro & Ybáñez, 1998; Silva & Silva, 2001; Silva, Silva, Schneider, Freitas, Mesquita, Mesquita, Ramírez, Dávila & Pereira, 1995, 1996; Stevens, Nunes, Lanham & Oshiro, 1989; Wells, 1984, Wells, Bethancourt & Page, 1970,). They can also transmit bovine leukemia (Foil, Seger, French, Issel, McManus, Ohrberg & Ramsey, 1988), anaplasmosis (Hawkins, Love & Hildalgo, 1982) and the hog cholera virus (Tidwell, Dean, Combs, Anderson, Cowart & Axtell, 1972).

The larvae are elongate, of light (generally whitish) coloration, very active when excited, and given to a crawling mode of locomotion. They are found in very fast to slow running waters, in lentic habitats and in damp soils and leaf litter, usually in protected microhabitats such as under objects (rocks, logs), among algae or the roots of plants or yet among organic debris, where other invertebrates, such as oligochaetes and insect larvae, abound, upon which they feed. Some larvae are parasitized by Nematoda (Rhabditidae) worms (Camino & Stock, 1993; Stock & Camino, 1991).

The larvae leave the water to pupate and usually have a short pupal stage; they lack a cocoon and are very difficult to find.

The difficulty of finding larvae and pupae and especially of maintaining the former during the long lapse of time they require to complete their development (it may take up to three years) are probably the reason why it has been rarely possible to associate adults and preimaginal forms. Several techniques have been developed for inducing oviposition and the collection, sampling, rearing and study of larvae (e. g., Bailey, 1948; Ferreira & Rafael, 2006; Lane & Anderson, 1978; Lutz, 1920; Magnarelli, 1985; Marchand, 1917; Philip, 1928; Roberts, 1966a, 1966b, 1971, 1976a, 1976b; Shannon, 1922; Stammer, 1914; Tashiro & Schardt, 1949; Teskey, 1962; Thompson, Holmes Jr., Krauter, Raney & Clay, 1979; Thompson & Krauter, 1978; Wall & Jamnback, 1957).

Up to now, immature forms of the following neotropical species have been described:

Subfamily Chrysopsinae

Tribe Chrysopsini

Chrysops dampfi Philip, 1955 – Bermúdez & Bermúdez, 1994: 258, figs. 1A-E
Chrysops facialis Townsend, 1897 – Burger, 1977: 192, figs. 11, 35
Chrysops flavidus Wiedemann, 1821 – Teskey, 1969: 39, fig. 31
Chrysops pachycerus Williston, 1887 – Burger, 1977: 194, figs. 12, 36
Chrysops pachycnemius Hine, 1905 – Bermúdez & Bermúdez, 1999: 259, figs. 2A-D
Chrysops subcecutiens Bellardi, 1859 – Bermúdez & Bermúdez, 1999: 250, figs. 3A-E
Chrysops variegatus (De Geer, 1776) – Bernúdez & Bermúdez, 1999: 261, figs. 4A-E
Chrysops virgulatus Bellardi, 1859 – Burger, 1977: 195, figs. 13, 37

Subfamily Pangoniinae

Tribe Pangoniini

Esenbeckia (*Ricardoa*) *delta* (Hine, 1920) – Burger, 1977: 181, figs. 6, 9
Protodasyapha (*Protodasyapha*) *hirtuosa* (Philippi, 1865) – González, 1998: 466, figs. 1-14; Coscarón, 2002: 12, fig. 1F-H (larva), 15, fig. 3C (pupa)

Tribe Scionini

Fidena (*Laphriomyia*) *rufopilosa* (Ricardo, 1900) – Zillikens, Gorayeb, Steiner & Marcondes, 2005: 381 (larva, pupa, in bromeliad).
Scaptia (*Scaptia*) *lata* (Guérin-Méneville, 1835) – Coscarón & González, 1989: 251, figs. 1A-O (larva), 2A-F (pupa); Coscarón, 2002: 12, figs. 1B, D-E (larva), 15, figs. 3A-B, 5A (pupa)

Subfamily Tabaninae

Tribe Diachlorini

Acanthocera (*Polistimima*) *vespiformis* Burger, 2002 – Burger, 2002: 932, figs. 7-11
Agelanius cortesi (González & Henry, 1996 – González, 2007: 5
Agelanius fuscus González, 2004 – González, 2004a: 211, figs. 1-8
Bolbodimyia atrata (Hine, 1904) – Burger, 1977: 196, figs. 14, 38
Bolbodimyia bermudezi Tidwell & Philip, 1977 – Tidwell & Philip, 1977: 100, figs. 2a-b (pupa)
Catachlorops (*Psalidia*) *baliopterus* Gorayeb, Bermúdez, Bermúdez & Villalba, 1989 – Gorayeb, Bermúdez, Bermúdez & Villalba, 1989: 153, figs. 4A-E (larva), 154, figs. 5A-D (pupa)
Chlorotabans inanis (Fabricius, 1787) – Coscarón, 2002: 13 (larva), 17 (pupa)
Cryptotylus unicolor (Wiedemann, 1828) – Coscarón & Poi de Neff, 1996: 65, figs. 1-8 (pupa); Coscarón,

Mancebo & Coscarón Arias, 1998: 91, figs. 1-14 (larva), 15-20 (pupa); Coscarón, 2002: 14, figs. 1M-N, 2M-N (larva), 17, figs. 3N, 4C (pupa)

Dasybasis (*Dasybasis*) *andicola* (Philippi, 1865) – Coscarón, 1991: 10, figs. 1A-H (larva), 2A-E (pupa), 2002: 15, figs. 2C-F (larva), 19, figs. 3R, 6G (pupa)

Dasybasis (*Dasybasis*) *bruchii* (Brèthes, 1910) – González, 2002: 724, figs. 11-14, 15-21

Dasybasis (*Dasybasis*) *canipilis* (Kröber, 1934) – Coscarón, 1991: 12, figs. 3A-E (pupa), 2002: 15 (larva), 20, figs. 3S, 4L, 6H (pupa)

Dasybasis (*Dasybasis*) *chilensis* (Macquart, 1838) – Coscarón, 1991: 14, figs. 4A-D (pupa), 2002: 20, fig. 6C (pupa)

Dasybasis (*Dasybasis*) *fairchildi* Coscarón & Philip, 1967 – Coscarón & Philip, 1967: 45, figs. 1-15 (larva), 16-24 (pupa), Coscarón, 1991: 14, figs. 5A-B (larva), C-F (pupa), 2002: 15 (larva), 20, figs. 4G, 6E (pupa)

Dasybasis (*Dasybasis*) *nigra* (Enderlein, 1925) – Coscarón, 1969: 19, figs. 1 (larva), 2 (pupa), 1991: 17, figs. 6A-E (pupa), 2002: 15 (larva), 19, fig 4J (pupa)

Dasybasis (*Dasybasis*) *nigrifrons* (Philippi, 1865) – González, 2002: 273, figs. 2-4, 5-10

Dasybasis (*Dasybasis*) *opaca* (Brèthes, 1910) – Coscarón, 1991: 17, figs. 7A-B (larva), C-G (pupa), 2002: 15, fig. 2B (larva), 19, figs. 6A-B (pupa)

Dasybasis (*Dasybasis*) *pruinivitta* (Kröber, 1934) – González, 2004b: 1, figs. 8A-B (larva), C-J (pupa)

Dasybasis (*Dasybasis*) *testaceomaculata* (Macquart, 1838) - Coscarón, 1991: 19, figs. 8A-B (larva), C-J (pupa), 2002: 15, figs. 2I-J (larva), 20, fig. 6F (pupa)

Lepiselaga (*Lepiselaga*) *crassipes* (Fabricius, 1805) – Lutz, 1928: 63-64 (notes); Fairchild, 1940c: 8, pl. II, figs. 1-3 (larva), 4-5 (pupa); Goodwin & Murdoch, 1974: 104, 106, figs. 22, 27; Coscarón, Coscarón Arias & Mancebo, 1996: 25, figs. 22-25 (larva), 26-32 (pupa); Coscarón, 2002: 13, fig. 1I (larva), 16, figs. 3J, 4B (pupa)

Leucotabanus albovarius (Walker, 1854) – Godoi & Rafael, 2007: 101, figs. 8-10, 16 (larva), 11-13, 17-18 (puparium).

Leucotabanus exaestuans (Linnaeus, 1758) – Goodwin & Murdoch, 1974

Leucotabanus flavinotum (Kröber, 1934) – Goodwin & Murdoch, 1974: 106, 108, figs. 15, 29

Myiotabanus amazonicus Rafael & Ferreira, 2004 – Rafael & Ferreira, 2004: 326, figs. 11-13 (pupa)

Myiotabanus barrettoi Fairchild, 1971 – Coscarón, Coscarón Arias & Mancebo, 1996: 21, figs. 1-10 (larva), 11-21 (pupa); Coscarón, 2002: 13, fig. 1J (larva), 16, figs. 3E, G, 4A (pupa)

Stibasoma (*Stibasoma*) *flavohirtum* (Wiedemann, 1828) – Goodwin & Murdoch, 1974: 114, fig. 33

Stibasoma (*Stibasoma*) *theotaenia* (Wiedemann, 1828) – Coscarón, Mancebo & Coscarón Arias, 1999: 619, figs. 6-11, 12-18; Coscarón, 2002: 14, fig. 1K (larva), 16, figs. 3L-M, 4D (pupa)

Tribe Tabanini

Agkistrocerus aurantiacus (Bellardi, 1859) – Burger, Martínez, Pechuman & Bermúdez, 1990: 183, figs. 2-11

Poeciloderas quadripunctatus (Fabricius, 1805) – Bermúdez & Bermúdez, 1998: 263, fig. 5; Coscarón, 2002: 17 (pupa)

Tabanus abactor Philip, 1936 – Montandon, Slosser & Lucia, 1993: 61 (larval habitat)

Tabanus atratus Fabricius, 1775 - Walsh, 1865 (larva), Riley, 1870 (larva), Hart, 1895 (larva), Hine, 1906: 33, fig. 10 (pupa), Stone, 1930 (larva), Jamnback & Wall, 1959 (larva), Teskey, 1969: 64, figs. 48, 114 (larva, pupa)

Tabanus boharti Philip, 1950 – Burger, 1977: 219, figs. 22, 26

Tabanus caenosus Burger, 1974 – Burger, 1977: 221, figs. 23, 47

Tabanus claripennis (Bigot, 1892) – Coscarón & Led, 1968b: 13, figs. 4-5 (larva), 6-7 (pupa) ; Coscarón, 2002: 14 (larva), 18, fig. 4E (pupa)

Tabanus dorsifer Walker, 1860 – Roberts, 1962: 436, figs. 1-3 (larva), 4-6 (pupa); Burger, 1977: 226, figs. 25, 49

Tabanus gilanus Townsend, 1897 – Burger, 1977: 228, figs. 26, 50

Tabanus laticornis Hine, 1904 – Burger, 1977: 207, fig. 18

Tabanus lineola Fabricius, 1794 – Hart, 1895; Philip, 1931; Schwardt, 1931: 411-412 (descr. of larva, larval period, number and duration of larval stages), 413 (descr. of pupa, the pupal period); Tashiro, 1950; Jamnback & Hall, 1959; Teskey, 1969: 69, figs. 51, 123 (larva, pupa)

Tabanus morbosus Stone, 1938 – Burger, 1977: 236, figs. 28, 52

Tabanus nebulosus De Geer, 1776 – Coscarón, Mancebo & Coscarón Arias, 1998: 96 (as *nebulosus ornativentris* Kröber, 1929), figs. 21-22 (larva), 23-28 (pupa); Coscarón, 2002: 15 (larva), 18, fig. 3P (pupa)

Tabanus nigrovittatus Macquart, 1847 – Teskey, 1969: 72, fig. 58 (larva, pupa)

Tabanus oculus Walker, 1848 – Bermúdez & Bermúdez, 1999: 264, figs. 6A-F
Tabanus platensis Brèthes, 1910 - Coscarón, 1969: 21, fig. 4 (pupa), 2002: 18 (pupa)
Tabanus pruinosus Bigot, 1892 – Burger, 1977: 237, figs. 29-53
Tabanus punctifer Osten Sackenm, 1876 – Burger, 1977: 240, figs. 30, 54
Tabanus pungens Wiedemann, 1828 - Coscarón, 2002: 14 (larva), 18 (pupa) (in key).
Tabanus subsimilis Bellardi, 1859 – Thompson, 1975: 494 (larval habitats)
Tabanus triangulum Wiedemann, 1828 – Coscarón, 1969: 21, fig. 3 (pupa), 2002: 18, fig. 4F (pupa)

Coscarón (2002) published an illustrated key to the larvae and pupae of Argentinian Tabanidae, with notes on the habitat of the larvae. González, Coscarón & Burger (1997) investigated the relationships of temperate South American Tabanidae with those from the Australasian region.

Key to Subfamilies

l. Tergite 9 undivided in both sexes (Figs. 1F, *t ix,* 2H, K, 3H, L, 4I, L, 7H, 8C, 9I, 10I, l1I, 12H, 13I, 15G, 16L, 17H, 20H, L, 22F, 23E, 24C, J, 25G, K, 26D, 30I, 32G, 33F, 34E, 35D). Antennal flagellum generally with 8 (or 7) distinct flagellomeres (Figs. 2A-B, 3A-B, 4N, 5A-B, 6A, C, 7D, 8A, 9G, 10C, 20C, 22D, 23C, 25D, 28C, 35A, 37A, C, 38D) or with a basal plate of fused flagellomeres (Figs. 11D, 12C, 13C, H, 15F, J, 16C, 17C, 18C, 21B). Gonostylus of male terminalia simple, pointed (Figs. 1D, 2L-M, 3G, 4H, 24D-E, N, 25N, O, 31B-C, 33C- D, 36C-D) or double (bifid) (Figs. 8D, E, 10F-H, 12E-F, 13J, 15H-I, M, 17E-G, 20J-K, 23F-G). Female with caudal end of spermathecal ducts simple, without cup-like expansion (Figs. 1E, 2G, 3K, 4K, 7F, 9H,11G, 13H, 16J, 18F. 22G, 24I, 25L, 26F, 27C, 29F, 30J, 32F, 35F). Ocelli and hind tibial spur present. Eyes unpatterned in life ..... Pangoniinae

Tergite 9 divided, forming two separate plates in both sexes (Figs. 39F, 40E, 43G, 46F, 48H, 49E, 50J, 51F, N, 52I, 55M, 56I, 57F, 60J, 64G, 65E, 66G, 67G, 70B, 71J, 74G, 77I, 78H, 79J, S, 81F, 82C, 83F, 84H, 85L, 86D, 87H, 88D, 90G, 91D, 92G, 93I, 94G, 95F, 96G, 97I, 98H, 101J, 102G, 103I, 104E, 105D, 106G, 109H). Antennal flagellum with a basal plate plus 4 or fewer flagellomeres (Figs. 39B, 41G, M, 43B, 44A-B, 45D, 47C, 48C, 50D, 51B, I, 52C, O, 53A-B, 54A-B, D-E, G, 55B-C, J, 56C, 58B, F, I, L, 59D, H, 60D, 61B, 62H, 63C, 64C, 66C, 67C, 68A-B, 69C, 73A-B, 74B, 75A, 76A, 77A, C, 78C, K, 79D, M, 80C, 81B, 83B, 84C, 85C, 86A, 87B, 88A, 89E, 91B, 92C, 93D, 94B, 95A, C, 96B, 97C, 98B, 99B, 100B, 101D, 102C, 103C, 106B, 107D, 108C, 109B-C). Gonostylus of male terminalia either as above or truncate at apex. Female with caudal ends of spermathecal ducts simple or with cup-like expansion. Ocelli and hind tibial spur present or absent. Eye plain, patterned or with horizontal stripes in life 2

2(1). Gonostylus of male terminalia simple, pointed (Fig. 42A-B). Female: caudal end of spermathecal ducts without cup-like expansion (Figs. 40C, 41J, P, 43E). Ocelli present (Figs. 40A, 41A-B, E-F, K-L, 43A, 44A-B). Hind tibial spurs usually present, rarely apparently absent or difficult to see. Eyes frequently patterned with bands or spots of contrasting color in life (Figs. 41A, E, J) ..... Chrysopsinae

Gonostylus of male terminalia truncate at apex (Figs. 46A-B, 49C-D, 51L-M, 57D-E, 65D, 67E-F, 70C, 72B, 75F, 79P-Q, 82B, 86C, 88C, 91C, 95E, 94E-F, 99E, 102E-F, 104C-D, 106F, 107I, 109G). Female: caudal ends of spermathecal ducts with cup-like expansion (Figs. 46C. 48E, 50G, 51E, 52G, 55G, 56F, 60H, 64E, 66E, 68C. 69F, 74E, 75E, 76D, 77F, 78F, 79H, 81D, 83D, 84F, 85G, 87E, 90B, 93F, 97F, 98F, 101G, 103F, 105B, 106D, 107H, 109F). Functional ocelli absent, though vestiges frequently present (Figs. 45A-C, 47A-C, 48A-B, 49A, 50A-C, 51A, G-H, 52A-B, J, 53A-C, 54A-B, D-E, 55A-B, I, 56A-B, 58A, 59A-B, G, 60A-C, 61A, 62A, C-E, 63A, 64A, 66A-B, 67A-B, 74A, 77A-B, 78A-B, 80D, 81A, 83A, 85A-B, 87A-B, 84B, 89C-D, 92B, 93A-C, 94A, 96A, 97B, 98A, 100A, 101A, 103B, 105A, 106C, 107A, 108B, 109A). Hind tibial spur absent. Eyes plain, or with horizontal stripes (e. g., Figs. 56A, 58H, 78A-B, 79B-C, l06A), rarely otherwise (e. g., Fig. 77A) ..... Tabaninae

Subfamily Pangoniinae (Figs. 1-38)

Key to tribes

l. Male terminalia with dististylus simple, the apex sometimes hooked (Figs. 1D, 3G, 4H, 24D, E, N, 25O, 27C-D, 29I, 31B-C, 36C-D). Eyes generally pilose (bare in *Promycteromyia* and *Silvestriellus*). Face usually inflated, often strongly conically produced, the proboscis frequently longer than head height (Figs. 2A, D, 3A-B, I, 4A-B, E-F, J, N-O, 24F, M, 26A, 27A, 28A, 29B, E, 30D, 32A, 33A, 34A, G, 35A, 36A, 38A). Vein R_4 often without an appendix (stump vein) (Figs. 30G, 32E) 2

Male terminalia with dististylus bifid (Figs. 8D-E, 10F-H, 12E-F, 13J, 15H-I, M, 17E-G, 20J-K, 23F-G). Eyes generally bare (pilose in *Veprius* (Figs. 11A-B), *Austromyans* (Fig. 6A), *Protodasyapha* (Figs. 10A-B) and *Fairchildimyia* (Fig. 14A)). Face not markedly conically produced, the proboscis rarely much longer than head height (Figs. 5A-B, 6A, 7A-B, 9A-B, 10A-B, 11A-B, 12A-B, 13B, F-G, 14A, 15A-B, 16A-B, 17A-B, 18A, 19A-C, 20A-B, 21A, 22A-B, 23A-B). Vein R_4 nearly always with a strong appendix (stump vein, reactivation of R_3 field) (Figs. 3C, 5E, 15C, 18E, 19D) 3

2(l). Wing elongated, with clouds accentuated on crossveins; cell r_5 ("first posterior cell") closed and petiolate (Fig. 3C). Eyes bare. Legs elongate, particularly the fore pair. Male dichoptic (Figs. 3A, 4B). Tergites 9-10 not retracted beneath tergite 7 (Figs. 2E-F). Cerci projected distally (Figs. 1B-C, F, 2H-K, 3H, L). Gonostylus incompletely sclerotized internally and with well-developed apical style (Figs. 1D *st,* 2L, 3G, 4H). Female: caudal spermathecal ducts elongated, with projections on spermathecal ducts (Figs. lE, 2G, 3K, 4K). Frons as wide as high (Figs. 2D, 3A, 4B, N). Proboscis with unusual hinge-like articulation (Figs. 2A, 3I, 4A, E, J, O) ..... Mycteromyiini

Wing and legs normal. Cell r_5 generally open (Fig. 32E), but sometimes closed and petiolate (Fig. 30G). Eyes pilose (bare in *Caenopangonia*). Male holoptic (dichoptic in *Caenopangonia*). Tergites 9-10 retracted beneath tergite 7 (Fig. 24B). Cerci not projected distally (Figs. 24J, 25G, M, 26D, 27E, 29G, 30I, 31D, 32G, 33G, 34E). Gonocoxites well sclerotized internally, without apical style (Figs. 24D, N, 25N-O, 36C-D). Female: caudal spermathecal ducts normal and without projections on spermathecal ducts (Figs. 24I, 25L, 26F,E, 29F, 30J, 32F, 33E, 34D, 35F). Frons generally less than half as wide as high (Figs. 24A, 25B, K, 28B, 29A, 30C, 31E, 32B, 33B, 34B, 35B). Proboscis without basal articulation ..... Scionini

3(1). Mouthparts vestigial (Figs. 22A-B, 23A-B). Apical palpal segment nearly spherical, with a terminal pit (Figs. 22C, 23D). Frons of female much wider than high, without callus (Fig. 22A). Male dichoptic, frons about twice as high as wide (Fig. 23A). Flagellum subulate, slender, with 8 flagellomeres (Figs. 22D, 23C). Small, slender, whitish flies, with milky-white wings, found on sea beaches ..... Scepsini

Mouthparts functional (Figs. 5A-B, 6A, 7A-B, 9A-B, 10A-B, 11A-B, 12A-B, 13B, F-G, 14A, 15A-B, 16A-B, 17A-B, 18A, 19A-C, 20A-B, 21A). Palpus not as above (Figs. 5D, 6D, 7E, 8B, 9D, 10D, 11C, 12D, 13D, 14C, 15E, K, 16D, 17D, 18D, 20D-E). Male holoptic. Antennae variable. Different flies, with different habitat ..... Pangoniini

Tribe Mycteromyiini (Figs. 1-4)

Key to genera

l. Male terminalia with gonocoxite bearing tuberosities in the median internal surface (Fig. 1D *tu*). Aedeagus funnel-shaped (Fig. 1D). Female: tergite 10 undivided (Figs. 1F *t x,* 2H); caudal spermathecal duct with sclerotized portion "twisted" (Fig. 1E, 2G) (Chile) ..... *Promycteromyia* Coscarón & Philip, 1979

Male terminalia with gonocoxite without tuberosities in the median internal surface (Figs. 3G, 4H). Aedeagus somewhat thicker distally, not funnel-shaped (Figs. 3G, 4H). Female: tergite 10 divided (Figs. 3L, 4L); caudal spermathecal ducts sclerotized portion not "twisted" (Figs. 3K, 4K) 2

2(1). Large flies (wing length 14-17mm). Male gonocoxite with thin and elongated apical style (Figs. 3G, 4H) and cerci acute distally (Fig. 3H). Female: caudal spermathecal ducts relatively thin, with more or less thumb-like diverticles (Fig. 3K) (Chile) ..... *Mycteromyia* Philippi, 1865

Medium to small flies (wing length 8-11mm). Male: gonostylus with thick and short apical projection (Fig. 4H); cerci truncated distally (Fig. 4I). Female: caudal spermathecal ducts thick, with constrictions (Fig. 4K). (Argentina) ..... *Silvestriellus* Brèthes, 1910

Tribe Pangoniini (Figs. 5-21)

Key to genera and subgenera

l. Palpus with a deep sensorial groove on dorsal surface (Figs. 5B, D). Eye bare (Figs. 5A-B). Antennal flagellum often showing evidence of incomplete fusion of basal flagellomeres to form a basal plate (Figs. 5A-B). Frons broad, generally less than 3 times as high as its basal width, nearly always with bare callus or largely bare and shining (Figs. 5A, C). Proboscis short, subequal in length to palpus, the labella large and fleshy (Fig. 5B). Gonostylus bifid 2

Palpus without sensorial groove; if a sensory organ present, then its opening is a circular or elliptical orifice. Eye bare or pilose. Antennal flagellum with variable number of free flagellomeres, with or without a basal plate. Frons and proboscis variable 7

2(1) Frons with a well evident, bright callus (Figs. 5B-C) 3
Frons without callus, or, if a callus present, not very evident and with rugosities 5

3(2). Frons vey wide, ratio length/width 1.1. Body in both sexes unusually pilose, hiding the palpi and the mouthparts (U.S.A. (California), Mexico (Baja California Norte)) ..... *Apatolestes* (*Lanellus*) Philip, 1984
Frons moderately wide, ratio length/width 1.5-1.7. Body never with abundant pilosity, which does not hide the palpi and the mouthparts 4

4(3). Callus sub-quadrate, touching the eyes, ratio length/width 1.5 (Figs. 5A, C). Gonostylus with a basal process (Canada, U.S.A. (Arizona, California, Montana), Mexico) ..... *Apatolestes* (*Apatolestes*) Williston, 1885
Callus sub-ovoidal, not touching the eyes, ratio length/width 1.7. Gonostylus without basal process (Bolivia) .... *Boliviamyia* Chainey & Hall, 1996

5(2). Eyes hairy. Body very pilose. Frons with callus; callus elongated, not touching the eyes and nearly reaching ocellar tubercle (Mexico (Baja California)) ..... *Brennania* Philip, 1935
Eyes bare (except in some males). Frons without callus 6

6(5). Male eyes with hairs. Gonostylus with basal process pointed outwards (Canada to Mexico) ... *Stonemyia* Brennan, 1935
Male eyes bare. Gonostylus without an outwardly projected basal process (U.S.A. (California), Mexico (Baja California)) ..... *Pegasomyia* Burger, 1985

7(1). Eye distinctly pilose (Figs. 6A, 10A,11A-B, 14A, 15A-B, 16A-B, 17A-B). Proboscis short, not much longer than palpus, the labella large and fleshy (Figs. 6A, 7A-B, 9A-B, 10A-B). Frons broad (Figs. 7B-C, 9A, C), seldom over twice as high as wide, usually with median or basal calli 8
Eye apparently bare. Proboscis and frons variable 15

8(7). Antennal flagellum with 8 flagellomeres (Figs. 6C, 7D, 8A, 9G, 10C). Palpus apically without orifice of sensory organ ... 9
Antennal flagellum with a consolidated basal plate composed of fused flagellomeres (Figs. 11D, 12C, 13C, 15F, J, 16C, 17C). Palpus apically with orifice of sensory organ (generally) 11

9(8). Large flies (body length 15mm). Frons without callus (Figs. 6A-B). Sternite 8 with narrow base (Fig. 6E) (Central Chile) ..... *Austromyans* Philip & Coscarón, 1971
Medium-sized flies (body length 9-12mm). Frons with callus (Figs. 7A-C). Sternite 8 wider basally (Figs. 7G, 9J) (genus *Protodasyapha* Enderlein, 1922) 10

10(9). Frons about as high as wide at base (Figs. 7B-C). Frontal callus wide, high in the middle, touching the eyes (Figs. 7B-C). Female: clypeus without dark spot; basal portion of spermathecal ducts strongly sclerotized and apical portion weakly sclerotized (Fig. 7F); gonapophyses with a weak median notch (Fig. 7G). Male gonostylus with the dorsal branch weakly curved and of same length as the ventral branch (Figs. 8D-E) (Central Chile) .... *Protodasyapha* (*Protodasyapha*) Enderlein, 1922
Frons higher than wide, frontal callus elongate, flat, not touching eyes (Figs. 9A-C). Female: clypeus with dark spot (Figs. 9A-B), basal portion of spermathecal ducts weakly sclerotized and apical portion strongly sclerotized (Fig. 9H); gonapophyses with a deep median notch (Fig. 9J). Male gonostylus with dorsal branch hardly curved and longer than ventral branch (Figs. 10F-H) (Central Chile and central-west Argentina) ... *Protodasyapha* (*Curumyia*) Coscarón, 1976

11(8). Blackish flies, wing not fumose, no dark spot on crossveins. Apical segment of palpus without sensorial orifice 12
Greyish to greyish-brown flies, wings fumose on crossveins and sometimes with a peculiar pattern (Fig. 15C). Apical segment of palpus with sensorial orifice 13

12(11). Frons without callus, only two elongated dark spots present (Figs. 11A, E). Basal plate of flagellum with evident transverse sulci (Figs. 11D, 12C). Female: distal spermathecal ducts bulbous (Fig. 11G). Male gonocoxite wider at

base and gonostylus with dorsal branch narrower apically than ventrally (Figs. 12E-F) (Central Chile and southwestern Argentina) ..... *Veprius* Rondani, 1863

Frons with evident calli (Fig. 13A). Basal plates of flagellum without transverse sulci (Figs. 13C, H). Female: distal spermathecal ducts with similar diameter from base to apex (Fig. 13E). Male gonocoxite narrow at base and gonostylus branches of approximately same size (Fig. 13J) (Mexico (Baja California)) ..... *Zophina* Philip, 1954

13(11). Frons with a circular-shaped callus (Fig. 14B). Palpus with a short apical segment (Figs. 14C, 15E, K). Eye unbanded (Figs. 14A, 15B). Female sternite 8 very wide basally (Fig. 14D). Male gonostylus thin basally (Figs. 15H-I, M) (Central-western Argentina) ..... *Fairchildimyia* Philip & Coscarón, 1971

Frons without callus (Figs. 16A, E, 18B). Palpus with elongated apical segment (Figs. 16D, 17D, 18D). Eye unbanded (Figs. 17A-B, 18A, 19A). Female sternite 8 from narrow to more or less wide basally (Fig. 16M). Male gonostylus thicker basally (Figs. 17E-G) 14

14(13). Wing not elongate, fumose only near veins. Transverse diameter of head only a little longer than head height (Figs. 16A, 17A). Medium-sized to small (body length 8-9mm), greyish flies. Female: frons divergent below (Fig. 16A); genital furca narrow basally, without projections (Fig. 16J); cerci sub-circular in shape (Fig. 16L). Male gonocoxite as in Fig. 17E (Central Chile) ..... *Chaetopalpus* Philippi, 1865

Wing rather elongated and narrow (Fig. 18E) and peculiarly mottled. Transverse diameter of head less than twice head height. Large (body length 17mm), brownish flies. Female: frons convergent below (Fig. 18B), the genital furca not narrowed basally, with small, upturned, hook-like projections (Fig. 18F); cerci sub-triangular in shape. Male terminalia unknown (Central Chile) ..... *Archeomyotes* Philip & Coscarón, 1971

15(7), Cell r_5 closed at or before wing margin (Fig. 19D). Antennal flagellum with 8 flagellomeres (Fig. 20C), the basal ones wider, the apical ones long and slender. Frons generally over 3 times as high as its basal width, widened below, pollinose, or with a narrow to clavate, bare callus (Figs. 19A-B, 20A). Female sternite 8 wider than long, with elongated gonapophyses (Fig. 20G); genital furca with elongate arms basally (Fig. 20I). Male gonostylus acuminate (Fig. 20J-K) (Southern U.S.A., south to Argentina and Chile) (genus *Esenbeckia* Rondani, 1863) 16

Cell r_5 open. Antennal flagellum with 7 or 5 flagellomeres (the basal 3 frequently fused into a basal plate) (Figs. 21B-C). Frons about 3 times as high as its basal width and with sub-parallel sides (Fig. 21F). Female sternite 8 wider than high, with undivided gonapophyses (Fig. 21G). Genital fork convex basally, without elongate arms. Male gonostylus blunt distally (Fig. 21D) (Southeastern Brazil) ..... *Protosilvius* Enderlein, 1922

16(15). Proboscis short, markedly shorter than head height (Figs. 19B-C) 17

Proboscis longer than head height (Figs. 19A, F, 20B) 18

17(16). Proboscis about ¼ head height (Figs. 19B-C), labella soft, not sharply pointed apically, without sclerotized areas. Wing with rounded dark spots (Fig. 19D) (Central Chile) ..... *Esenbeckia* (*Palassomyia*) Fairchild, 1968

Proboscis about half head height, labella slerotized dorsally and laterally, sharply pointed apically. Wing immaculate (Northern Chile) ..... *Esenbeckia* (*Astomyia*) Burger, 1999

18(16). Proboscis entirely sclerotized, narrow, forceps-like, apparently without pseudotracheae on inner surface (Fig. 19A). Palpus long, slender to broad. Wing at most slightly tinged. Hairs on oculogenal margin sparse (Panama to Argentina) ..... *Esenbeckia* (*Proboscoides*) Philip, 1943

Labella not as above, either with pseudotracheae, or partly sclerotized, or slender and *Fidena*-like. Other combinations of characters 19

19(18). Labella small and slender, *Fidena*-like (Fig. 19F). No hairs on oculogenal margin below antennal base. Palpus (Fig. 19E) deeply grooved on outward aspect, generally shorter than half length of proboscis (Southern U.S.A. to Panama) ..... *Esenbeckia* (*Ricardoa*) Enderlein, 1922

Labella broader, partly or wholly sclerotized and with pseudotracheae on inner aspect. At least a single row of long hairs along oculogenal margin, immediately below sub-antennal suture. Palpus slender lo spathulate or pointed (Figs. 20D-E), at most flattened on outer aspect, generally over half length of proboscis (Mexico to Argentina) ..... *Esenbeckia* (*Esenbeckia*) Rondani. 1863

Tribe Scepsini (Figs. 22-23)

The tribe includes the sole genus *Scepsis* Walker, 1850 (Figs. 22A-H, ♀; 23A-G, ♂), distributed along seashores of southern Brazil and Uruguay.

Tribe Scionini (Figs. 24-38)

Key to genera and subgenera

l. Eye bare. Frons nearly as wide as high, without transverse sulcus between frons and subcallus (Fig. 24K). Face short (Figs. 24F, M). Male dichoptic (Fig. 24A). Female: median caudal spermathecal duct much wider than lateral ones (Figs. 24I). Male gonocoxite short and gonostylus thicker distally (Figs. 24D-E, N). (Central Chile and southwestern Argentina) ..... *Caenopangonia* Kröber, 1930

Eye pilose (Figs. 26A, 27A, 28A-B, 29A, E, 30D, 32A, 33A, 34A, G). Frons never nearly as wide as high (Figs. 25B, I, 26B, 28B, 29A, 30C, 31E, 33B, 34 B, 35B, 38C). Face short (Fig, 26A, 27A, 28A, 29B, E, 30D) or produced (Figs. 32A, 33A, 34A, G, 35A, 36A, 38A). Male holoptic. Female: caudal spermathecal ducts of similar size (Figs. 25L, 26F, 29F, 30J, 32F, 33E, 34D, 35F). Male gonocoxite elongate and gonostylus thin distally (Figs. 25N-O, 27C-D, 29I, 31B-C, 34I, 36C-D) 2

2(1). Proboscis short, generally less than half head height and never more than twice length of palpus (Figs. 25A, 28A). Labella large and fleshy 3

Proboscis longer, generally exceeding head height and always over 3 times length of palpus. Labella small, compact, often shining and sclerotized (Figs. 26A, 27A, 29B, E, 30D, 32A, 33A, 34A, G, 35A, 36A, 39A) 4

3(2). Antennal flagellum with 8 clearly separated flagellomeres (Figs. 25D, J). Palpus flattened or grooved outwardly (Figs. 25C, E-F) (Andean area, from Peru and Bolivia to southern Argentina and Chile) ... *Scaptia* (*Scaptia*) Walker, 1850

Antennal flagellum with basal flagellomeres partially fused, forming a pseudoplate and 4 to 6 free flagellomeres (Fig. 28C). Palpus stout and cylindrical (Fig. 28D). Small, densely haired flies (Southern Chile) ..... *Scaptia* (*Pseudomelpia*) Enderlein, 1922

4(2). Proboscis seldom more than twice head height, with labella well marked, fleshy, broader than theca or wholly shining, sclerotized (Figs. 26A, 27A, 29B, E). Palpus generally short and broad or hollowed on external aspect (Figs. 26C, 27B, 29C) 5

Proboscis generally over twice head height, the labella small and slender, usually not broader than theca (Figs. 28A, 29A, 31A, 32A, 33A, 35A). Palpus generally slender (Figs. 29C, 30C, 31C, 32C, 33B, 34D, 35B); if otherwise (Fig. 28C), cell r_5 closed (Fig. 28D) 6

5(4). Proboscis heavily sclerotized, the labella clubbed, wholly shining (Fig. 26A). Palpus flat, nearly half as broad as long (Fig. 26C). Female: cerci wider than long, with hind border concave (Fig. 26D); genital furca elongate (Fig. 26F). Male terminalia as in Figs. 27C-E. (Southern Brazil) ..... *Scaptia* (*Lepmia*) Fairchild, 1969

Proboscis not as above, the labella at least partly fleshy (Fig. 29A, E). Palpus variable (Fig. 29C). Female: cerci about as long as wide, hind border convex or flat (Fig. 29D); genital furca (Fig. 29F) shorter than above (Southern South America) ..... *Scaptia* (*Pseudoscione*) Lutz, 1918

6(4). Flagellum subulate, the flagellomeres almost always without projections or prominent hair tufts (Fig. 30A, 32A, 33A, 34A, G, 35A, 36A). Female: genital furca without basal projections, or very small (Figs. 30J, 31F, 33E, 34D, 35F) 7

Flagellum with projections or prominent hair tufts on one or more flagellomeres (Figs. 37A, C, 38D). Female: genital furca with basal projection (Fig. 37D) (genus *Pityocera* Giglio-Tos, 1896) 11

7(6). Cells r_5 and m_3 closed and generally stalked (Fig. 30G). Wing often patterned or spotted (Fig. 30G) and mesonotum usually patterned. Male terminalia as in Figs. 31B-D. (Central and South America) ..... *Scione* Walker, 1850

Cell m_3 open, cell r_5 closed or open. Wing and mesonotum patterned (genus *Fidena* Walker, 1850) 8

8(7). Cell r_5 broadly open (Fig. 32E). Face pollinose and with abundant long hairs (Fig. 32A). Small flies, usually with strongly patterned mesonotum (Fig. 32D) and long and slender proboscis (Fig. 32A) (Southeastern Brazil) ..... *Fidena* (*Neopangonia*) Lutz, 1909

Cell r_5 normally closed, always coarctate. Face pollinose or bare, rarely with sparse, scattered, long hairs (Figs. 33A, 34A, G, 35A, 36A). Mesonotum rarely strongly patterned 9

9(8). Hind tibia and all femora with long, dense, outstanding hairs (Fig. 33D). Face largely or wholly bare (Fig. 33A) (Peru, Brazil, Bolivia) ..... *Fidena* (*Laphriomyia*) Lutz, 1911
All tibiae sparsely short-haired. Femora short or long-haired. Face bare or pollinose 10

10(9). Palpus inflated, shining, grooved on outer aspect (Fig. 34C). Frons with a small subbasal protuberance (Figs. 34A-B). Face pollinose. Cell r_5 long-petiolate (Northwestern Argentina) ..... *Fidena* (*Leptofidena*) Kröber, 1930d
Palpus flattened on outer aspect (Fig. 35C). Frons without protuberance (Figs. 35A-B). Face variable. Cell r_5 not as above. Msle terminalia as in Figs. 36C-E (Neotropical) ..... *Fidena* (*Fidena*) Walker, 1850

11(6). Flagellomeres without projections, the first flagellomere much enlarged and densely haired dorsally (Figs. 37B) (Amazon basin of Ecuador, Brazil and Bolivia) ..... *Pityocera* (*Pseudelaphella*) Kröber, 1930
Flagellomeres with projections (Figs. 37A, 38A, D) 12

12(11). First flagellomere with long, hirsute, forwardly projected, dorsal, finger-like horn (Figs. 38A, D); second to sixth flagellomeres with shorter teeth, seventh and eighth flagellomeres fused into a single, long, cylindrical segment (Figs. 38A, D) (Northern South America) ..... *Pityocera* (*Elaphella*) Bezzi, 1913
First to sixth flagellomeres with long dorsal and ventral finger-like processes, those on the first longest, and then decreasing progressively in size towards apex; seventh flagellomere very short, often fused to long, finger-like eighth flagellomere (Fig. 37A) (Panama to Ecuador) ..... *Pityocera* (*Pityocera*) Giglio-Tos, 1896

Subfamily Chrysopsinae (Figs. 39-44)

Key to tribes, genera and subgenera

l. Antennal scape nearly as long as wide and pedicel half as long as wide (Figs. 39B). Antenna shorter than anteroposterior thickness of head (Fig. 39C). Frons elongated, about 3 times as long as wide at base (Fig. 39A). Eye with a narrow transverse band (Fig. 39C). Tabaninae-like flies. Female: genital furca not elongated basally (Fig. 39D). Male gonostylus thick apically (Fig. 39G). (Chile) (Tribe Bouvieromyiini) ..... *Pseudotabanus* (*Coracella*) Philip, 1960
Scape clearly longer than wide, at least twice as long as wide: pedicel over two times as long as wide (Figs. 40A, 41A, E, K, 43B, 44A-B). Frons shorter, about as long as wide (Figs. 41B, F, L, 43A, 44A). Eye without bands, either speckled or with a specific pattern of spots (e. g., Figs. 41A, E, K). Female: genital furca elongated basally (Figs. 40C, 41J, P, 43E). Male gonostylus thin distally (Fig. 42A) 2

2(1). Eye hairy, without spots (Fig. 40A). Body slender, abdomen basally constricted, wasp-like. Wing blackish, more or less homogeneously pigmented; cell r_5 closed (Fig. 47B). (Amazonian region of Brazil) (Tribe Rhinomyzini) ..... *Betrequia* Oldroyd, 1970
Eye bare, with peculiar spots (Figs. 41A, E, K). Body never as above. Wing from hyaline to (generally) with specific spots or bands and cell r_5 open (Figs. 41C, H, N, 43C). Female: genital furca basally with outwardly directed small projections (Figs. 41J, P, 43E) (Tribe Chrysopsini) 3

3(2). Eye in life irregularly-speckled. Wing hyaline or with clouds on crossveins and elsewhere, but not with distinct crossbands (genus *Silvius* Meigen, 1820) 4
Eye in life specifically and characteristically patterned with spots and bands (Figs. 41A, E, K). Wing nearly always with dark cross band (if cross band absent, then abdomen globose and spotted, or slender, black and shining) (Figs. 41C, H, N). Male terminalia as in Fig. 42. (Cosmopolitan) ..... *Chrysops* Meigen, 1803

4(3). Antennal flagellum longer than scape and pedicel together (Fig. 43B). Flies with predominantly grey abdomen (Fig. 43D) and strongly spotted wing (Fig. 43C). R_4 usually without stump vein at fork (Fig. 43C). (Southern and western USA to Guatemala) ..... *Silvius* (*Griseosilvius*) Philip, 1961
Antenna much longer than head width, the flagellum clearly shorter than pedicel and not over half length of scape (Figs. 44A-B). Brownish flies with fumose wing but without distinct spots (Southwestern USA and Central America) ..... *Silvius* (*Assipala*) Philip, 1941

Subfamily Tabaninae (Figs. 45-109)

Key to tribes

l. Basicosta smoothly pollinose, without setae (if setae present, sparse or numerous, then there are vestiges of ocelli, or a strong tubercle at the vertex, or the labella is partly sclerotized, or there exists a long tooth on the antennal flagellum, or the wing is strongly patterned, or some other striking specialization is present) ..... Tribe Diachlorini
Basicosta with setae as dense as on adjoining Costa and rarely with any of the above characters ..... Tribe Tabanini

Tribe Diachlorini (Figs. 45-104)

Key to genera and subgenera

l. Basicosta smoothly pollinose, without setae 2
Basicosta with few to numerous setae, but seldom with setae as dense as on adjoining Costa and generally with one or more of the following characters: tubercle at vertex of head, bare areas on face, partly sclerotized proboscis, long dorsal projection on basal plate of antennal flagellum (Fig. 98B), scape subcylindrical, wing with extensive dark pattern, or tibiae swollen 52

2(1). With one or both of the following characters: basal plate with an acute dorsal projection; labella with at least some shiny, sclerotized areas 3
Without either of the above characters; basal plate at most obtusely angled dorsally and the labella wholly pollinose 29

3(2). Basal plate of antennal flagellum with at most an obtuse angle, with 90 degrees or more, never excessively long; scape never cylindrical and elongate (Figs. 45D, 47A-B, 48C, 50D, 51B, I, 52C). Labella of proboscis partly or wholly sclerotized (Figs. 45B, 47A, 48A, 49A, 50A, 52J) 4
Basal plate of antennal flagellum with a long or short projection or acute angle, or greatly elongate, both free flagellomeres and scape unusually long (Figs. 53A-B, 54A-B, D-E, G, 55B-C, J, 56C, 57B, 58B, F, H-I, L, 59A-B, D, H, 60B, D, 61B, 62D, E, H, 63A, C, 64A, C, 66A, C, 67A, C, 68A-B). Labella of proboscis sclerotized or not 9

4(3). Antennal scape shiny and globose, moderately to markedly inflated (Figs. 45B-D, 47A-D). Subcallus inflated and shiny (Figs. 45B-C, 47A-B). Female: genital furca without projections below (Fig. 46C) 5
Antennal scape not as above (Figs. 48C, 50D, 51B, I, 52C). Subcallus not as above. Female: genital furca with two projections below (Figs. 48E, 50G, 51E, 52G) 6

5(4). Vein R_4 bent abruptly forward, so that cell r_{2+3} is somewhat narrowed at wing margin (Fig. 45F). All tibiae more or less inflated. Callus nearly as wide as frons and prolonged to the upper border (Figs. 45A, C). Frontoclypeus not entirely bright. Male terminalia as in Figs. 46A-B. (Neotropical, except southern area) ..... *Bolbodimyia* Bigot, 1892
Vein R_4 not bent forward. Tibiae slender, not inflated. Callus much narrower than frons and very short (Fig. 47D). Frontoclypeus entirely bare and shining. (U.S.A.: Arizona, Mexico: Durango) ..... *Holcopsis* Enderlein, 1923

6(4). Frontal callus absent (Fig. 48B). Basal plate of antennal flagellum broad, with obtuse dorsal angle (Fig. 48C). Labella of proboscis wholly sclerotized (Figs. 48A, 49A). Pale-yellowish or greenish unicolorous stout flies with wing hyaline or with small discrete black spots. Female: cerci subcircularly shaped (Fig. 48H), sternite 8 at base wider than gonapophyses (Fig. 48G). Male terminalia as in Figs. 49C-E. (Neotropical, except southern area) ..... *Chlorotabanus* Lutz, 1909
Frontal callus present (Figs. 50B-C, 51A, 52A-B). Other combinations of characters 7

7(6). Fore tibia incrassate and curved. Notopleural lobes inflated and protuberant. Frontal callus a slender line (Figs. 50B-C). Wing basally blackish to end of discal cell (Fig. 50F). Eye unicolorous. (Southeastern Brazil, northeastern Argentina) ..... *Pachyschelomyia* Barretto, 1950
Fore tibia slender. Notopleural lobes normal. Frontal callus broader. Wing variable..... 8

8(7). Very small (wing length 6.5-7.0mm), muscoid-like flies, with striped thorax and banded abdomen (Fig. 51K). Frontal callus clavate; subcallus bare on middle (Fig. 51A). Eye with a single dark median stripe (Figs. 51A, G-H). Palpus very short and inflated, hardly half length of slender proboscis (Figs. 51C, J), latter with small, compact, partly

sclerotized labella. Antennal flagellum with basal plate trapezoidal, nearly as broad as long (Figs. 51B, I). Abdomen of female acutely pointed (Fig. 51K). Female genital furca elongated, with two thin projections at base (Fig. 51E); sternite 8 elongated, with gonapophyses subacute distally (Fig. 51D) and cerci approximately two times as long as wide (Figs. 51F, N). Male terminalia as in Figs. 51L-N (Guatemala and Venezuela to Brazil, Paraguay and northeastern Argentina) ..... *Myiotabanus* Lutz, 1928

Larger (wing length 9.6-14.0mm) flies, with unstriped thorax, and not mimetic. Frontal callus small and rounded, usually with a slender upper ridge-like extension; subcallus bare or pollinose (Figs. 52A-B). Eye unicolorous, green or bronzy in life. Palpus more slender, pointed, over half length of proboscis (Figs. 52D, J-K). Labella largely or wholly sclerotized. Wing generally with dark pattern (Fig. 52E), sometimes hyaline. Abdomen of female not acutely pointed; genital furca with projections below, the branches acutely pointed outwards (Fig. 52G); sternite 8 with gonapophyses concave distally (Fig. 52F); cerci approximately as long as wide (Fig. 52I) (Costa Rica to northern Argentina except southern area) ..... *Phaeotabanus* Lutz, 1913

9(2). Metallic blue flies with densely pilose eye, transverse swollen frontal callus (Fig. 52N), inflated bare subcallus and gena, and antennal flagellum with dorsal projection nearly reaching apex of basal plate (Fig. 52O). Wing hyaline (Ecuador) ..... *Eristalotabanus* Kröber, 1913

Without such a combination of characters. Never metallic blue 10

10(9). Frontal callus as wide as frons, or, if not, frons widened below, callus rounded and protuberant and bare areas on face (Figs. 53A-C, 54A-B, D-E, 55A, I, 56A-B, 58A). Eye usually with at least a median dark transverse stripe (Figs. 55B, 56A, 58H), rarely unicolorous. Slender flies, the tibiae slender, abdomen never green (Figs. 53E-F, 55E, L). Female: genital furca slightly projected laterobasally (Figs. 55G. 56F), sternite 8 at base about of same width as or slightly wider than gonapophyses (Figs. 55H, N, 56H) 11

Frontal callus narrower than frons (Figs. 59A-B, 60A, C, 61A, 62A, C-E, 63A, 64B); if not, then triangular and extended upwards into a ridge (Fig. 58G), the lower angles barely touching the eyes, or tibiae or abdomen greenish. Eye unicolorous or bicolored, very rarely striped 19

11(10). Antennae very long, scape and pedicel notably elongated, scape subequal in length to basal plate of flagellum (Figs. 53A-B, 54A-B, D-E, G, 55A-C, J). Free flagellomeres generally hirsute and much exceeding in length basal plate, stout, dorsal projection of basal plate moderate to absent. Frontoclypeus and gena largely or wholly bare and shining, at least the first much inflated (Figs. 54A, 55B). Abdomen generally constricted basally, wasp-like (Figs. 53E-F, 55E, L). Wing with fore border broadly infuscated, rarely with an additional diagonal fascia (Figs. 54C, 55F). Labella of proboscis partly sclerotized. Female cerci wider than high, slightly acuminate distally (Fig. 55 M) (genus *Acanthocera* Macquart, 1834) 12

Antenna not unusually long, the scape noticeably shorter than basal plate of flagellum; dorsal projection of flagellum short to very long; free flagellomeres not unusually hirsute, rarely longer than basal plate, slender (Figs. 56C, 58B, F, I, L). Abdomen slightly, if at all, constricted. Wing variable, rarely unpatterned (Figs. 56E, 58C, J, N). Labella often entirely sclerotized. Female cerci longer than wide (Fig. 56I) (genus *Dichelacera* Macquart, 1838) 15

12(11). Antennal flagellum shorter than scape and pedicel together (Fig. 54G). Basal plate of flagellum with low dorsal hump, slightly shorter than apical portion of flagellum (style); first three flagellomeres of style wider than long or as wide as long (Fig. 54G). Legs and wing unicolorous (Amazonia) ..... *Acanthocera* (*Polistimima*) Fairchild, 1969

Antennal flagellum subequal to or longer than scape and pedicel together, all flagellomeres longer than wide (Fig. 54A). Legs and wing variable 13

13(12). Basal plate of antennal flagellum cylindrical, without dorsal projection or angle (Figs. 53A-B). Abdomen strongly constricted (Figs. 53E-F). Frons wider than long, the callus transverse (Fig. 53C). (Brazil, Paraguay) .... *Acanthocera* (*Mimodynerus*) Enderlein, 1922

Basal plate of antenal flagellum more or less flattened, with a dorsal projection (Figs. 47C, 55B-C, J). Abdomen not constricted. Frons higher than wide, the callus about as long as wide (Figs. 47B, 55A, I) 14

14(13). Scape subglobose, over twice as wide as pedicel (Figs. 47A-C). Subcallus inflated. Scape and distal palpomere of a bright bluish-black color (Figs. 47A-B). (Peru, Bolivia) ..... *Acanthocera* (*Querbetia*) Fairchild, 1964

Scape subcylindrical, about as wide as pedicel (Figs. 55B-C, J). Subcallus not inflated. Scape and distal palpomere light brownish-grey pubescent (Figs. 55A-B, I) (Brazil, Peru, Uruguay and northeastern Argentina) .... *Acanthocera* (*Acanthocera*) Macquart, 1834

15(11). Labella of proboscis wholly sclerotized and shining. Wing with a diagonal dark fascia from apex to fifth posterior cell (Fig. 56E). Eye with one or more transverse bands (Figs. 56A) (except in *D.* (*D.*) *ochracea* Hine). Scutellum nearly always darker than adjoining mesonotum, the latter usually transversely banded. Male terminalia as in Figs. 57D-F. (Neotropical, except southern area) ..... *Dichelacera (Díchelacera)* Macquart, 1838

Labella partly pollinose. Wing otherwise. Eye banded or unicolorous. Scutellum often paler than mesonotum, the latter never transversely banded 16

16(15). Frontoclypeus inflated and shining, the gena bare, or at least with bare stripe. Flagellum with a short projection, which does not reach apex of basal plate. Wing (Fig. 58J) with area anterior to vein R infuscated, or apical 1/3 of wing dusky, or wing largely black, rarely with vestiges of a diagonal dark fascia. Subcallus pollinose. Scutellum generally with some pale hairs, often contrastingly pale. All tibiae at least basally white. Eye usually banded. (Costa Rica and South America, except southern area) ..... *Dichelacera* (*Nothocanthocera*) Fairchild, 1969

Frontoclypeus pollinose or partly bare, gena pollinose. Wing not as above. Other combinations of characters 17

17(16). Center of frontoclypeus and subcallus bare and shining (Fig. 58D). Wing tinged with yellow, with area beyond fork of third vein and apex of discal cell faintly dusky. Mesonotum striped, the scutellum black. Eye unbanded. (Costa Rica to Peru) ..... *Dichelacera (Idiochelacera)* Fairchild, 1969

Frontoclypeus and subcallus wholly pollinose. Other combinations of characters 18

18(17). Wing (Fig. 58N) with irregular dark discal patch, extending along Costa to apex, with an extension along R_4. Vertex rather sunken (Fig. 58K), without vestiges of a tubercle. Scutellum brown- or pale-haired. Abdomen with pale-haired triangles on tergites 2 or 3-4. Eye bicolored or unicolorous. Legs unicolorous or tibiae darker than femora. (Colombia: Cauca, and Brazil: Bahia, Rio de Janeiro and São Paulo) ..... *Dichelacera* (*Orthostyloceras*) Lutz in Borgmeier, 1933

Wing black with hyaline band from Costa to hind margin, crossing tip of basal cells (Fig. 58C). Body black with white triangles on abdominal tergite 4. Legs black, only fore tibiae bicolorous. Eye unicolorous. (Costa Rica to northern South America) ..... *Dichelacera* (*Desmatochelacera*) Fairchild, 1969

19(10). All tibiae slender. Tubercle at vertex generally distinct and prominent, rarely obsolete (Figs. 59A-B, G, 56C, 61A, 63A). Palpus slender to thread-like (Figs. 59A, E, I, 60E, 62B, E, 63A, D). Proboscis generally with small compact labella, wholly or partly sclerotized, rarely wholly membraneous (Figs. 59C, 62F, 63B). Antenna slender, the dorsal tooth of the flagellum slender, pointed, rarely shorter than basal plate of flagellum (Figs. 59D, H, 60D, 61B, 62C-E, H, 63C). Frons usually narrow, the callus clavate or ridge-like, rarely otherwise (Figs. 59A-B, G, 60A, C, 61A, 62A, C-E, 63A). Wing nearly always patterned, rarely tinged, never wholly clear (Figs. 59F, 60F, 61C, 62B). Female: genital furca without projections basally (Fig. 60H); base of sternite 8 as wide as gonapophyses (Fig. 60G); cerci wider than long (Fig. 60J) (genus *Catachlorops* Lutz, 1911 b) 20

Tibiae inflated, or tubercle at vertex absent, or palpus inflated, or dorsal flagellar tooth clubbed, or very short, or frons broad 25

20(19). Cell r_5 closed or strongly coarctate (Figs. 59F, J). Wing with dark pattern leaving area around apices of basal cells or most of discal cell and apex, or oval spots on r_1 and r_3, clear or paler (Figs. 59F, J). Frons very narrow, the callus ridge-like (Figs. 59A-B, G). Antennal flagellum with long slender projection, its apex often curved (Figs. 59D, H). Labella wholly sclerotized. Palpus very slender (Figs. 59A, E, I). (Mexico to Brazil) ..... *Catachlorops* (*Psalidia*) Enderlein, 1922

Cell r_5 open; if somewhat coarctate, wing never patterned as above (Figs. 60F, 61C, 62B). Other combinations of characters 21

21(20). Wing with a dark discal patch including all of discal cell, the latter sometimes fenestrate, or wing wholly black, or black with hyaline apex, the basal cells hyaline or partly or wholly dark (Fig. 60F). Frontal callus often clavate (Fig. 60C). Labella often partly pollinose. Thorax at most faintly striped. (South America, except southern area) ..... *Catachlorops (Catachlorops)* Lutz, 1911b

Not as above 22

22(21). Wing with definite pattern of bands or spots (Figs. 61C, 62B) 23

Wing without a definite pattern; yellow, smoky, or veins margined with brown 24

23(22). Wing with a characteristic irregular dark diagonal band crossing discal cell and a dark spot at base of cell r_4 (Fig. 61C). Thorax prominently striped. Abdomen with prominent white triangles on tergites 1-6. Frontal callus clavate, its lower angles often touching eyes (Fig. 61A). Labella nearly wholly or wholly pollinose. (Brazil and Argentina, except southern area) ..... *Catachlorops* (*Rhamphidommia*) Enderlein, 1922

Wing pattern similar to *Psalidia* (see couplet 20), but more reduced, often reduced to a series of spots on fork of third vein,

apex of discal cell, tip of R_{2+3} and R_4, and bases of cells r_1 and r_5 or only two connected dark patches (Fig. 62B). Frons generally wider, callus clavate, rarely obsolescent (Figs. 62A, C-E). Labella largely pollinose. Thorax not striped. Abdomen without prominent median white triangles on tergites 1-6 (North America and tropical South America) ... . *Catachlorops* (*Psarochlorops*) Fairchild, 1969

24(22). Stout flies with relatively broad frons (Fig. 62E), wholly pollinose labella (Fig. 62F), moderately stout palpus (Fig. 62G) and chunky antenna (Fig. 58H) (Southeastern Brazil) ..... *Catachlorops* (*Hadrochlorops*) Fairchild, 1969

Slender flies with narrower frons (Fig. 63A), partly sclerotized labella (Fig. 63B), slender palpus (Fig. 63D) and slender antenna (Figs. 63C) (Colombia, Peru, Brazil and Uruguay) ..... *Catachlorops* (*Amphichlorops*) Lutz, 1909b

25(19). Second palpal segment basally inflated (Figs. 64D, 66D). Proboscis short, heavy, labella wholly sclerotized (Figs. 64A, 66A. 67A). Stout flies with proportionately stout antenna 26

Second palpal segment long, slender, generally exceeding antenna. Proboscis long to very long, slender, the labella pollinose. Not stout, chunky species, the antenna slender. Brown flies with a dark wing pattern which leaves area around tip of basal cells and apex of wing hyaline or paler. (Central America, northern and central South America) (genus *Dasychela* Enderlein, 1922) 28

26(25). Dorsal projection or tooth of antennal flagellum short, from an acute angle to a short spine, seldom exceeding apex of basal plate (Figs. 64C, 67C). Fore tibiae slender to moderately inflated, remaining tibiae slender. Wing hyaline or slightly fumose, or veins margined with brown. Abdomen and appendages often greenish in life. Never bee-like flies 27

Dorsal tooth of flagellum always exceeding apex of basal plate, sometimes nearly reaching apex of flagellum. often clubbed (Fig. 64C). Fore tibiae incrassate, remaining tibiae generally also inflated. Wing variable, never wholly hyaline or uniformly tinged, generally with black or contrasting pattern. Flies often resembling bees. Female: genital furca with thick and divergent branches basally (Fig. 64E), sternite 8 narrow at base and concave with wide gonapophyses (Fig. 64F); cerci twice as wide as high (Fig. 64G). Male terminalia as in Figs. 65D-E (Neotropical, except southern area) ..... *Stibasoma* (*Stibasoma*) Schiner, 1867

27(26). Frontal callus round or square, as wide as frons, extending above into a broad or narrow ridge. Wing yellowish or smoky, veins sometimes margined with brown. Thorax brown, abdomen strongly greenish or yellowish, both body and legs with contrasting hair pattern (Guatemala to Venezuela, Ecuador and Brazil) ..... *Stibasoma* (*Rhabdotylus)* Lutz, 1909

Frontal callus reduced to a short, narrow ridge, small streak, or virtually absent (Fig. 66B). Wing glass clear to fumose, the coastal cell yellowish. Yellow, greenish, or brown unicolorous flies, the legs unicolorous, the body without contrasting hair patterns. Antenna with robust basal plate (Figs. 66C, 67C). Female: genital furca with acuminate branches basally (Fig. 66E); sternite 8 with base approximately as wide as gonapophyses (Fig. 66H); cerci subcircular (Fig. 66G). Male terminalia as in Figs. 67E-G. (Panama to Argentina, except southern area) ..... *Cryptotylus* Lutz, 1909

28(25). Basal plate of antennal flagellum with one or two dorsal projections, one or both of which reach beyond apex of basal plate, their opposing surfaces fringed with erect hairs; apical part of flagellum very short, hardly more than 1/3 length of basal plate (Fig. 68A). Proboscis exceeding head height, the labella small, pollinose. Eye bare. (Ecuador, Peru and Bolivia) ..... *Dasychela* (*Triceratomyia*) Bequaert, 1937

Basal plate with but one dorsal projection, without fringing hairs; antenna generally shorter than above, apical flagellomere proportionately longer (Fig. 68B). Proboscis as above, or shorter. Eye often pilose. Female: genital furca as in Fig. 68C; sternite 8 with wide base (Fig. 68D); cerci a little wider than high (Fig. 68E) (Central America to Peru and Brazil (Amazonas) ..... *Dasychela* (*Dasychela*) Enderlein, 1922

29(2). Discal cell of wing narrowed by anterior bending of vein M_3 (Figs. 69D, 71F). Small, blackish flies with wings largely black to beyond discal cell and inflated shiny palpus (Figs. 69B, 70A, 71C, 72A) and inflated tibia (Fig. 69E). Female: genital furca with elongated basal branches (Figs. 69F, 71G); sternite 8 and gonapophyses narrow (Figs. 69H, 71I); cerci longer than wide (Figs. 69I, 71J). Male gonocoxite projected into an acuminate process (Figs. 70C, 72B) (genus *Lepiselaga* Macquart, 1838) 30

Discal cell not as above. Other combination of characters 31

30(29). Frons higher than wide, parallel-sided, the vertex without bare area (Fig. 69A). Scape of antenna only a little longer than wide (Fig. 69C). Body, when undenuded, clothed with iridescent greenish scales (Neotropical, except southern area) ..... *Lepiselaga* (*Lepiselaga*) Macquart, 1838

Frons as wide as or wider than high, widened below, the vertex protuberant and shiny (Fig. 71B). Scape of antenna three times as long as wide (Fig. 71E). Body without greenish scales (South America to central Argentina)

..... *Lepiselaga (Conoposelaga)* Barretto, 1949

31(29). Scape of antenna shiny and spherical (Fig. 73A). Second palpal segment moderately inflated, pollinose. Very small, *Tabanus*-like flies with fore border of wing and all crossveins clouded with brown (Brazil) ..... *Oopelma* Enderlein, 1923
Scape not inflated (Fig. 73B) or not shiny. Other combinations of characters 32

32(31). Wing with strong, solid, black areas including at least basal half of wing and contrasting with remainder of wing. Female genital furca without projections basally (e. g., Fig. 74E) 33
Not as above 35

33(32). Wing basally black or heavily tinged up to tip of basal cells, remainder hyaline. Whole face and entire body, including legs, black and shiny. Second palpal segment strongly inflated (Fig. 73C). Antennal flagellum subcylindrical, without marked dorsal angle (Fig. 73B). Female sternite 8 basally wider than gonapophyses (Fig. 73D), cerci as long as wide (Panama to Bolivia) ..... *Himantostylus* Lutz, 1913
Wing entirely brownish-black, except for a triangular area on outer margin and two small round spots on tip of basal cells (Fig. 74D). Face and body brown, greyish pollinose. Palpus slender (Fig. 74C). Flagellum with a well-marked dorsal angle (Fig. 75A). Female sternite 8 at base as wide as or narrower than gonapophyses (Fig. 75C) and cerci wider than long (Fig. 75D). 34

34(33). Frons narrow medianly, frontal index = 3.7. Frontal callus subquadrate, touching the eyes (Fig. 74A). Basal flagellomere with acute dorsal angle, but not elongated (Fig. 74B). Distal angle of wing darkened anteriorly and without 1 + 1 light spots on median distal darker area (Fig. 74D). Female sternite 8 and gonapophyses relatively narrower than in *Stigmatophthalmus* (see below) (Fig. 74F). Genital furca wider basally (Fig. 74E) (Southeastern Brazil) ..... *Erioneura* Barretto, 1950
Frons less narrow, frontal index = 5.8. Frontal callus subtriangularly shaped, not touching the eyes. Basal flagellomere with relatively elongated process (Fig. 75A). Distal angle of wing not darkened and with 1 + 1 light spots on median distal darker area (Fig. 75B). Female sternite 8 and gonaphyses hardly wider than long (Fig. 75C). Genital furca narrower basally (Fig. 75E). Male terminalia as in Figs. 75F-G (Brazil: Rio de Janeiro to Santa Catarina) ..... *Stigmatophthalmus* Lutz, 1913

35(32). Notopleural lobes bluntly conical, protuberant (Fig.76A). Fore tibia inflated, hind tibia flattened and with a fringe of long hairs. Subcallus bare, frontal callus broadly clavate (Fig. 76B). Wing with a narrow abbreviated dorsal band below stigma (Fig. 76C). Eye unicolorous. Female: genital furca basally with two acuminate divergent branches (Fig. 76D), sternite 8 at base narrower than gonapophyses (Fig. 76E) (Ecuador, Peru, Brazil: Amazonas) ... *Eutabanus* Kröber, 1930
Notopleural lobes not as above, tibiae usually slender, the hind pair never flattened. Female: genital furca generally not projected into elongated branches (Figs. 77F, 78F, 79H, 83D, 84F, 85G, 87E, 92F). Sternite 8 at base generally as wide as or wider than gonapophyses (Figs. 77H, 78E, 79G, 81E, 83E, 84G, 85K, 87G, 90H, 93H) 36

36(35). Mesopleuron and mesosternum darker than adjoining sclerites, the mesopleuron shining pearly pollinose. Wing usually with dark markings, the apex often blackish. Eye with characteristic pattern of green spots and stripes, resembling *Chrysops* (Fig. 77A). Frons divergent, with prominent callus (Fig. 77B). Antennal flagellum with narrow basal plate (Fig. 77C). Female: genital furca more or less concave basally (Fig. 77F), sternite 8 at base wider than gonapophyses (Fig. 77H). (Southeastern U.S.A. and Neotropical, to northeastern Argentina) ..... *Diachlorus* Osten Sacken, 1876
Mesopleuron and mesosternum concolorous with adjoining sclerites, not pearly pollinose. Wing variable. Eye unicolorous or banded, but never as above. Other combinations of characters 37

37(36). Eye bare, with at least two transverse bands in life, light on dark, or dark on light, the light usually greenish, the dark purplish or blackish (Figs. 78A-B, 79B-C). Mostly small flies with bare eye, moderately broad frons with often a median dark-haired patch, and a rounded or square callus generally as wide as frons (if frons very narrow, callus ridge-like and eye unbanded, see *Stypommisa,* couplet 62). Female: genital furca with concave base (Figs. 78F, 79H), sternite 8 basally wider than gonapophyses (Figs. 78E, 79G). (Neotropical, except southern area) (genus *Stenotabanus* Lutz, 1913b) 38
Eye often pilose, with at most a single dark median stripe, generally unicolorous or rarely bicolored. Other combination of characters 45

38(37). Frons very broad, ratio length/width about 1.6. Callus reduced, subcircular, not touching the eyes (Fig. 78A). (Costa Rica to Venezuela) ..... *Stenotabanus* (*Brachytabanus*) Fairchild, 1942
Frons relatively narrow, ratio length/width 2.2-6.7. Callus subquadrate, touching the eyes (Figs. 78J, L. 79A) 39

39(38). Subcallus and face largely bare and shining. Wing glass clear, the stigma yellow. Eye with slender green lines forming two narrow transverse loops. Scutellum contrastingly pale haired, the abdomen black, shining, immaculate. All tibiae largely white 40

At least face wholly pollinose. Eye not as above, with two or more wider green bands (Figs. 79B-C). Other combinations of characters 41

40(39). Wing glass clear, the stigma yellow. Eye with slender green lines forming two narrow transverse loops (Brazil) ..... *Stenotabanus* (*Stenochlorops*) Fairchild, 1969

Wing hyaline, with a subapical costal brown patch. Eye with two iridescent dark blue stripes on a black background. (Colombia) ..... *Stenotabanus* (*Wilkersonia*) Fairchild & Burger, 1994

41(39). Frons distinctly widened below, the callus large, protuberant, filling width of frons. Wing smoky, veins heavily margined, appendix at fork of R_4 long. (Brazil (Rio de Janeiro to Santa Catarina)) ..... *Stenotabanus* (*Melanotabanus*) Lutz & Neiva, 1914

Frons parallel-sided or narrowed below. Other combinations of characters 42

42(41). Frons narrow inferiorly, over twice as wide at vertex as at base, with tubercle at vertex bearing 3 ocelli (Figs. 78I, 80A) ... 43

Frons parallel-sided or but slightly narrowed below (Figs. 78J, 79A); if strongly narrowed, then callus square or wider than high 44

43(42). Frons over six times as high as basal width, with strong tubercle at vertex and callus much higher than wide, callus touching eyes (Fig. 78I). Black flies with thorax and abdomen boldly marked with white. (Brazil: Amazonas) ..... *Stenotabanus* (*Cretotabanus*) Fairchild, 1969

Frons below five times as high as basal width, with slightly raised tubercle at vertex, callus close to but not touching eyes (Fig. 80A). Muscoid-like flies with pale grey and dark-brown scutum and blackish-brown abdomen with a series of large sublateral pale grey spots on tergites 3-6. (Bolivia) ..... *Roquezia* Wilkerson, 1985

44(42). Basal frontal callus rarely with upper median prolongation: a median expanded callus never present (Fig. 78J). Frons generally broad, often slightly narrowed below, the basal callus generally as wide as or wider than high (Fig. 78J). Abdomen whitish to brown, patternless, or with median stripe and often with sublateral rows of pale spots. Eye often with 2-3 or more transverse green bands (Southwestern U.S.A. and Neotropical, to southern Brazil) ..... *Stenotabanus* (*Aegialomyia*) Philip, 1941b

Basal frontal callus usually with upper median prolongation (Figs. 79A-B), a median expanded callus and black hairs patch often present. Frons generally narrower than above, seldom narrowed below, the basal callus frequently higher than wide, rarely wider than high (Figs. 79A-B). Abdomen variable, but not whitish (Fig. 79F) and rarely with sublateral spots. Eye normally with two green bands (Figs. 79B-C) (U.S.A. (Arizona) and Neotropical, except southern area) ..... *Stenotabanus* (*Stenotabanus*) Lutz, 1913b

45(37). Eye bare. Frontal callus replaced by a strong median sulcus (Fig. 80B). Antennal flagellum with only two free flagellomeres (Fig. 80C). (Mexico) ..... *Teskeyellus* Philip & Fairchild, 1974

Eye bare or pilose. Frontal callus present. Antennal flagellum with more than two free flagellomeres 46

46(45). Eye bare, bicolored, reddish-violet above, green below. Face with extensive bare areas (Fig. 80D). Wing with apex and large circular spot surrounding all crossveins brown (Fig. 80E). (Southeastern Brazil) .... *Anaerythrops* Barretto, 1948

Eye sometimes pilose, unicolorous or with a simple dark stripe. Wing not as above 47

47(46). Small, black, and almost wholly shining flies, lacking pollinosity even on frons and face (Fig. 81A). Wing entirely hyaline. Female sternite 8 with wide base (Fig. 81E). Male terminalia as in Figs. 82B-C. (Southern Argentina and Chile) ..... *Scaptiodes* Enderlein, 1922

Generally larger flies, variously colored and, even if black, extensively pollinose 48

48(47). Basal plate of antennal flagellum with a strong, acute, dorsal projection of tooth (Figs. 83B, 84C). Frontal callus ridge-like (Fig. 83A, 84B). Tubercle at vertex well-marked, with vestiges of ocelli (Figs. 83A, 84B). Black flies with all wing veins heavily margined with black. Female sternite 8 with very wide projections at base (Figs. 83E, 84G). (Southwestern Argentina and central Chile) ..... *Nubiloides* Coscarón & Philip, 1967

Basal plate of antennal flagellum usually with only an obtuse dorsal angle. Tubercle of vertex rarely prominent, often absent. Body and wing variable 49

49(48). Frons very broad, never one and half times as high as wide, ratio length/width 1.3, with a transverse dark pollinose median band, callus wider than high (Figs. 85A-B). Wing with crossveins spotted and a pattern of greyish nebulosity (Fig. 85E) similar to that of species of *Haematopota*. Female genital furca with two more or less broad basal projections (Fig. 85G) and sternite 8 elongate (Fig. 85K). Male terminalia as in Figs. 86C-D. (Western Argentina, Bolivia and northern Chile) ..... *Haematopotina* Coscarón & Philip, 1967

Frons variable, without median band. Wing hyaline or spotted, but without grey *Haematopota*-like pattern. Female: genital furca without basal projections (Figs. 87E, 90B, 93F); sternite 8 relatively short (Figs. 87G, 90H, 93H) 50

50(49). Frons relatively narrow, callus narrow, about 1/3 width of frons and prolonged into a ridge or spur; tubercle at vertex generally with vestiges of 3 ocelli (Fig. 87A); abdomen with prominent pale median triangles (see also couplet 61). Male terminalia as in Figs. 88C-D. (Southern Argentina and Chile) ..... *Agelanius* Rondani, 1863

Frons of variable width, callus subquadrate or subovoidal, touching or not the eyes (Fig. 89C, 93A, 94A), and generally not prolonged into a ridge or spur; tubercle at vertex reduced or absent, with or without vestigial vestigial ocelli; abdomen without prominent pale triangles 51

51(50). Palpus slender and elongated (Fig. 89B); frontal callus not touching the eyes, with a dorsal prolongation (Fig. 89C); ocelli and ocellar triangle absent. Female genital furca, spermathecal ducts and terminalia as in Figs. 90B-H. Male terminalia as in Figs. 91C-D. (Southern Chile and Argentina, Peru and Ecuador) ..... *Acellomyia* González, 1999

Palpus stout and broader at base (Figs. 93E, 94C); frontal callus generally touching the eyes (93A, 94A); ocellar triangle and ocelli vestigial. Male terminalia as in Figs. 95E-F. (Predominantly on Andean area from Colombia to southern Chile and Argentina, extending eastwards to Brazil (Rio Grande do Sul) and Uruguay) ... *Dasybasis* Macquart, 1847

52(1). All tibiae greatly inflated (Fig. 96E). Wing black at base to middle of discal cell, hyaline beyond (Fig. 96D). Second palpal segment inflated, shining black (Fig. 96C). Subcallus and face shining black (Fig. 96A). Antennal flagellum with basal plate much longer than sum of free flagellomeres, flattened, obtusely angled above (Fig. 96B). Female: genital furca with basal projections laterally (Fig. 96F); sternite 8 narrow basally (Fig. 96H); cerci a little wider than high (Fig. 96G). (Mexico to northern Argentina) ..... *Selasoma* Macquart, 1838

Tibiae not inflated. Other combinations of characters..... 53

53(52). Frontoclypeus and/or gena with bare shining areas, or wholly bare, or with shining inflated second palpal segment 54

Face entirely pollinose; palpus pollinose 56

53(52). Wing black, except for axillary area and apices of basal cells. Face wholly subshining, much produced, proboscis equaling head heigth. Frontal callus slender, flat, clavate, narrower than frons, vertex with a well-marked tubercle (Fig. 80F). (Costa Rica to Colombia) ..... *Hemichrysops* Kröber, 1930

Wing not black. Face not produced. Frontal callus as wide as frons (Figs. 97B, 100A). Female cerci subovoid, longer than wide (Fig. 97I); sternite 8 with a wide base (Figs. 97H, 100D) 55

55(54). Antennal flagellum very long and slender, over twice sum of scape and pedicel, the basal plate with a dorsal angle close to base (Fig. 100B). Subcallus pollinose. Tubercle at vertex obscure, ridge-like, without vestiges of ocelli (Fig. 100A). Area around tentorial pits bare and shining. Second palpal segment slender, pollinose (Fig. 100C). Pale-brownish flies with brown-tinted wing, unicolorous abdomen and white tibiae. Female: genital furca not projected basally and gonapophyses very wide (Fig. 100D) (Brazil) ..... *Leptapha* Enderlein, 1923

Flagellum not as above, less than twice sum of scape and pedicel (Fig. 97C). Second palpal segment somewhat inflated and shining (Fig. 97D). Subcallus partly or wholly bare, tubercle at vertex well-marked, with vestiges of ocelli (Fig. 97B). Wing hyaline, often with a more or less distinct dark costal border. Abdomen brownish-black, with white transverse bands on some segments (Fig. 97E). Female: genital furca basally with small upturned projections (Fig. 97F) and gonapophyses narrow (Fig. 97H). (Colombia to southern Brazil and northern Argentina) ..... *Pseudacanthocera* Lutz, 1913

56(53). Basal plate of antennal flagellum with acute dorsal angle or long projection, which may reach beyond first free flagellomere (Fig. 98B). Frons seldom over 4 times as wide as its base, usually narrower (Fig. 98A). Second palpal segment rather long and stout, never very slender nor markedly inflated basally (Fig. 98C). Eye often pilose. Wing very rarely entirely hyaline, generally with a dark discal patch below stigma and usually with discal cell fenestrate (Fig. 98D). Basicosta rarely bare. Female: genital furca without branches basally (Fig. 98F); cerci subcircular (Fig. 98H) and base of sternite 8 wider than gonapophyses (Fig. 98I). Male terminalia as in Figs. 99D-E. (Western South America, from Colombia to central Argentina) ..... *Dicladocera* (*Dicladocera*) Lutz, 1909

Basal plate of antennal flagellum with dorsal angle obtuse (Figs. 101D, 102C, 103C) or frons much narrower (Figs. 100E,

101A, C. 103B). Other combinations of characters 57

57(56). Wing with extensive dark pattern not consisting of spots on crossveins (Fig. 100H). If wing apparently unmarked, then thorax prominently striped or frons exceedingly narrow and callus thread-like (genus *Philipotabanus* Fairchild, 1943) 58
Wing hyaline, tinged or with dark pattern primarily of dark spots around crossveins 60

58(57). Wing with an irregular dark pattern of variable extent which always leaves clear areas surrounding all crossveins and fork of third vein (Fig. 100G). Frons narrow, 7 or more times as high as wide (Fig. 100E). Second palpal segment very slender (Fig. 100F). Eye unicolorous, bronzy in life. Female: genital furca without basal projections, cerci subcircular and sternite 8 wider than gonapophyses. (Central America, western South America to Bolivia) .... *Philipotabanus* (*Philipotabanus*) Fairchild, 1947
Wing ranging from almost all black (Fig. 100H) to hyaline with small dark area below stigma, but crossveins not surrounded by clear spots when within dark areas 59

58(58). Slender flies, frons 7 times as high as wide or narrower; palpus and abdomen slender; proboscis considerably longer than palpi, with small labella. Eye bright green in life. (Guatemala, Panama, Colombia, Ecuador, Brazil) .....…... ..... *Philipotabanus* (*Melasmatabanus*) Fairchild, 1964
Stouter flies, frons not over 6 times as high as wide (Fig. 100I); palpus inflated (Fig. 100J); antenna broader (Fig. 100K); proboscis hardly longer than palpi, labella large. Eye green or brick-red in life. (Panama, Colombia, Peru) .... *Philipotabanus* (*Mimotabanus*) Fairchild, 1964b

60(57). All crossveins and tips of all longitudinal wing veins, close to wing margin, with large dark spots, sometimes confluent. Frons broad, not over 3 times as high as wide, the callus rounded, pointed above, as wide as frons, vertex with distinct tubercle. Palpus slender, flattened, shorter than long proboscis. Thorax prominently striped. (Colombia to Bolivia) ..... *Spilotabanus* Fairchild, 1969
Wing never as extensively spotted, never with distinct spots on tips of longitudinal veins. Palpus not flattened, proboscis short 61

61(60). Frons less than 4 times as high as wide, generally wider (Fig. 87A). Eye usually densely pilose (see also couplet 50) (Peru, southern Argentina and Chile) ..... *Agelanius* Rondani, 1863
Frons more than 4 times as high as wide, generally narrower (Figs. 101A, C, 103B). Eye very rarely pilose 62

62(61). Wing hyaline or evenly tinted, the costal cell often darker, but never with spots on crossveins or apical clouds. Frontal callus clavate or ridge-like (Figs. 101A, C). Abdomen black or brown, nearly always with transverse bands, at least on tergite 4 (Fig. 101F), rarely otherwise. At least scutellum and often mesonotum pale pollinose and pale haired, generally contrasting with abdomen. Appendix on fork of third vein absent. Eye unbanded, dark. Female: genital furca with base from flat to acute (Fig. 101G); cerci as long as wide or longer than wide (Fig. 101J) and sternite 8 elongate (Fig. 101I). Male gonocoxite rounded apically (Fig. 102E) (Mexico to Panama to northern Argentina) ..... *Leucotabanus* Lutz, 1913b
Wing with clouds on at least discal cell crossveins, often with apical infuscation; if entirely hyaline or tinted, then abdomen and thorax never as above. Often with appendix on fork of third vein. Eye unbanded, green or bronzy, or light with a single dark stripe. Frontal callus (Fig. 103B) variable. Rarely with basicosta bare. Female: genital furca concave at base (Fig. 103F); cerci longer than wide (Fig. 103I); sternite 8 elongate (Fig. 103H). Male gonocoxite with an acute process apically (Figs. 104C-D) (Mexico, Costa Rica and Panama to northern Argentina) ..... *Stypommisa* Enderlein, 1923

Tribe Tabanini (Figs. 105-109)

Key to genera

1. Eye generally pilose in female, always bare in male 2
Eye very rarely sparsely pilose in female, generally bare in male..... 3

2(1). Frontal callus reduced or absent (Fig. 105A); if present, small and rounded. Eye brown or bronzy, with at most a single narrow median stripe. Female sternite 8 wider than long (Fig. 105C) (Mexico) ..... *AtyIotus* Osten Sacken, 1876

Frontal callus and often a median callus present, the former frequently as wide as frons (Fig. 106C). Eyes violet-black, with two green bands (Fig. 106A). Female sternite 8 longer than wide (Fig. 107G). Male terminalia as in Figs. 106F-G (Mexico to Argentina) ..... *PoeciIoderas* Lutz, 1921

3(1). Callus touching the eyes, without a median keel projection (Figs. 107A, C). Frons with convergent sides below (Fig. 107C). Antennal style with 3 segments (Fig. 107D). General coloration grayish-white (Fig. 107E). Male terminalia as in Fig. 107I (Peru, Bolivia, Brazil, Argentina) ..... *Phorcotabanus* Fairchild, 1961

Callus generally not touching eyes, and with a median keel projection (Figs. 108B, 109A). Frons with parallel sides or slightly convergent (Figs. 108B, 109A). General coloration brownish (Figs. 108E, 109E) 4

4(3). Eyes pilose, purple, with 2 green bands. Frons relatively broad, ratio length/width 2-3. Vestigial ocelli present. Subcallus with hairs. Wing with spots on crossveins (Mexico) ..... *Agkistrocerus* Philip, 1941

Eyes bare, variously patterned (e. g., Fig. 108A) or unicolorous. Frons relatively narrow, ratio length/width over 5 (Fig. 108B). No vestiges of ocelli. Subcallus without hairs. Wing generally without spots on crossveins. Male terminalia as in Figs. 109G-H (Cosmopolitan) ..... *Tabanus* Linnaeus, 1758

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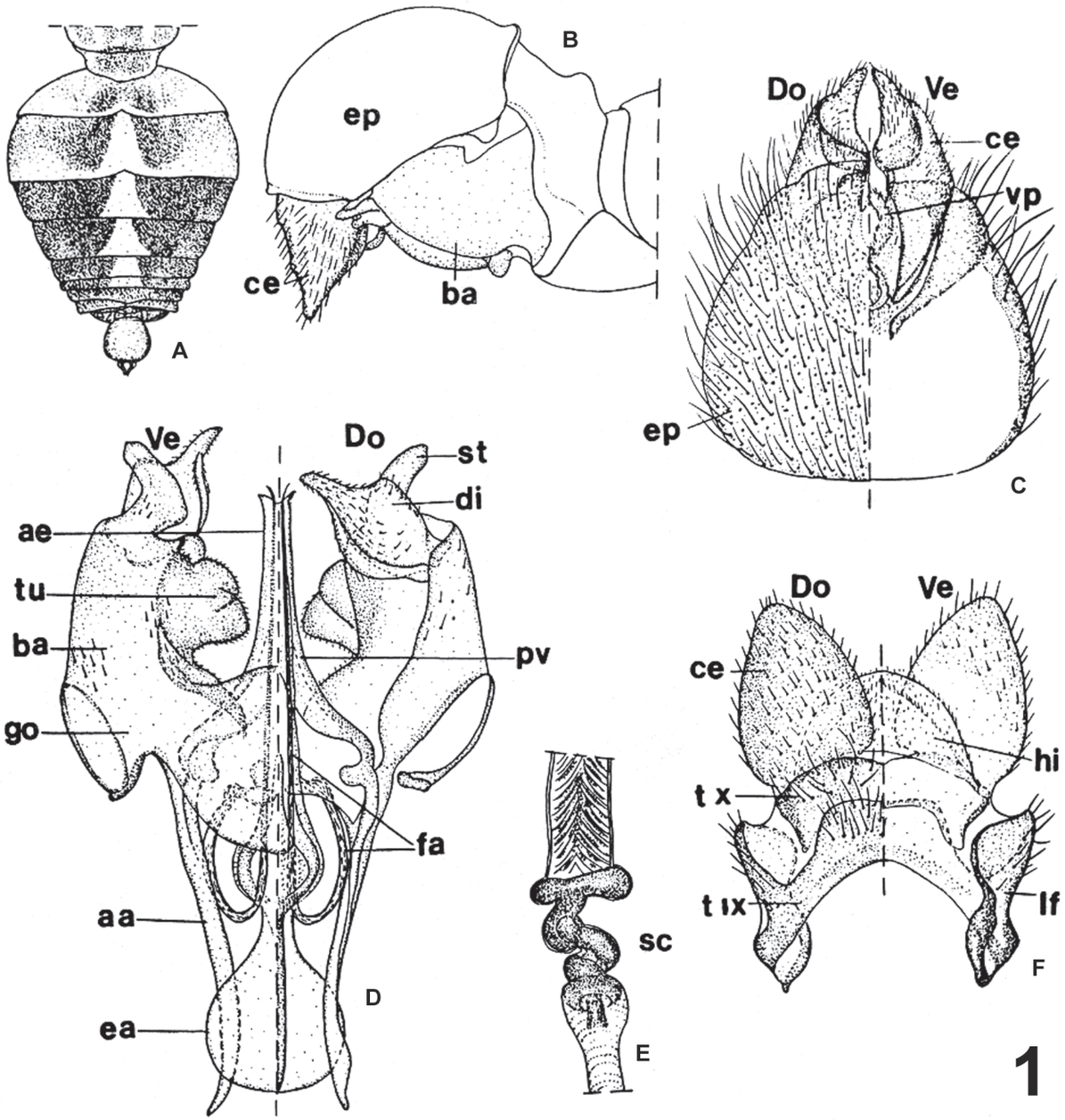

Figure 1. *Promycteromyia philippii* (Philip, 1958). Male (A-D), female (E-F). A. Abdomen, dorsal view. B. Terminalia, lateral view. C. Epandrium and cerci. D. Aedeagus and gonostyli. E. Spermathecal ducts. F. Tergites 9-10 and cerci. Abbreviations: *aa*, aedeagal apodeme; *ae*, aedeagus; *ba*, basistylus; *ce*, cercus; *di*, dististylus; *Do*, dorsal view; *ea*, endophallic apodeme; *ep*, epandrium; *fa*, flagellar aedeagus; *go*, gonostyli; *hy*, hypoproct; *lf*, lateral flap; *pv*, penis valve; *sc*, sclerotized portion; *st*, style; t 9, tergite 9; *Ve*, ventral view; *vp*, ventral plate of proctiger.

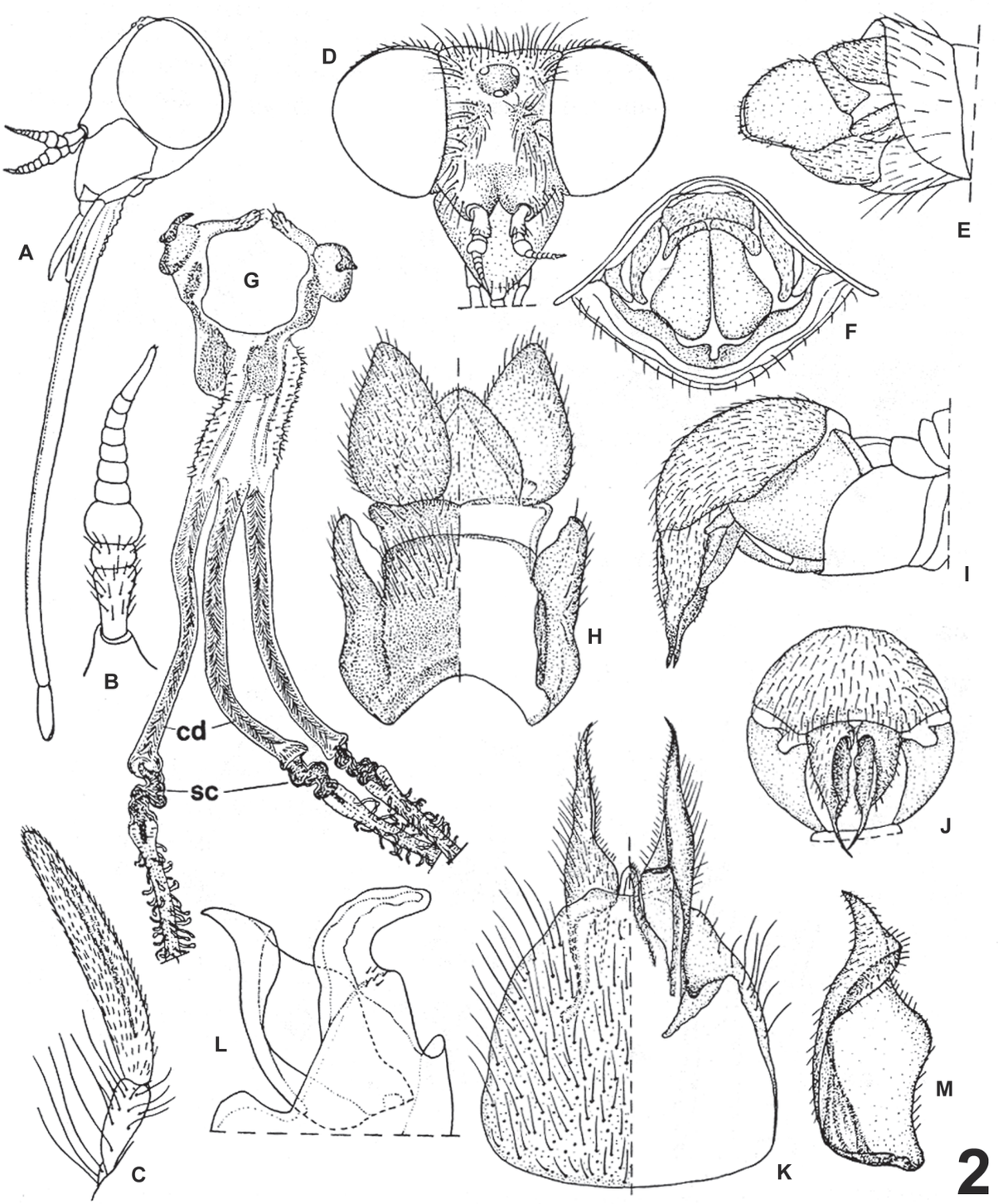

Figure 2. *Promycteromyia derocerca* Coscarón & Philip, 1979. Female (A-H), male (I-M). A. head, lateral view. B. Antenna. C. Palpus. D. head, frontal view. E. External genital appendages, lateral view. E. same, caudal view. G. Genital furca; cd, caudal spermathecal ducts; sc, sclerotized portion (twisted). H. Tergites 9-10 and cerci. I. Terminalia, lateral view. J, same, lateral view. K. Epandrium and cerci. L. Apex of basistylus with style and dististylus. M. Dististylus, ventral view.

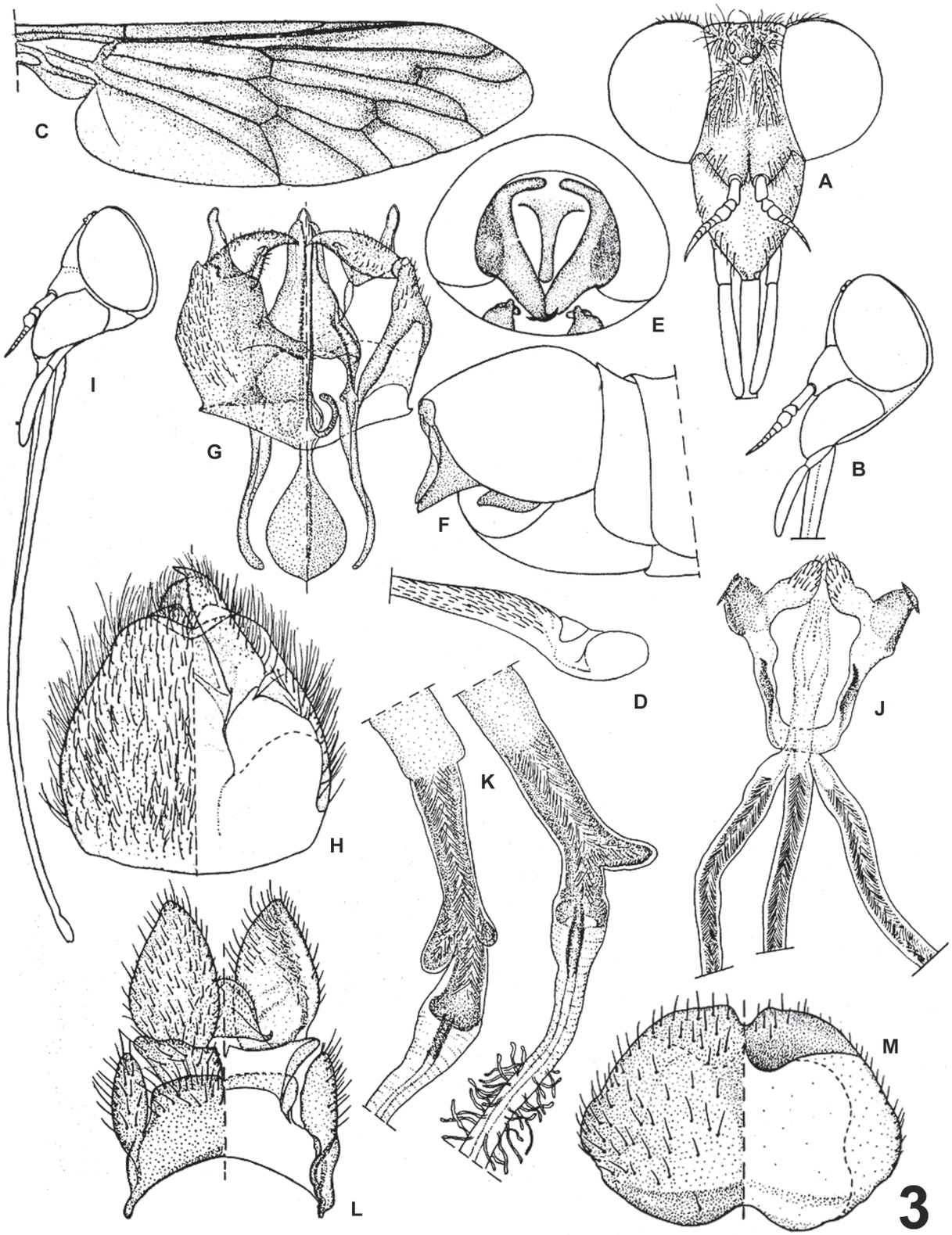

Figure 3. *Mycteromyia conica* (Bigot, 1857). Male (A-H), female (J-M). A. Head, frontal view. B, same, lateral view. C. Wing. D. Detail of basicosta. E. Genital appendages, caudal view. F. Same, lateral view. G. Aedeagus and gonostyli. H. Epandrium and cerci. I. Head, lateral view. J. Genital furca and spermathecal ducts. K Sclerotized portion of spermathecal ducts. L. Tergites 9-10 and cerci. M. Sclerite 8 and gonapophyses.

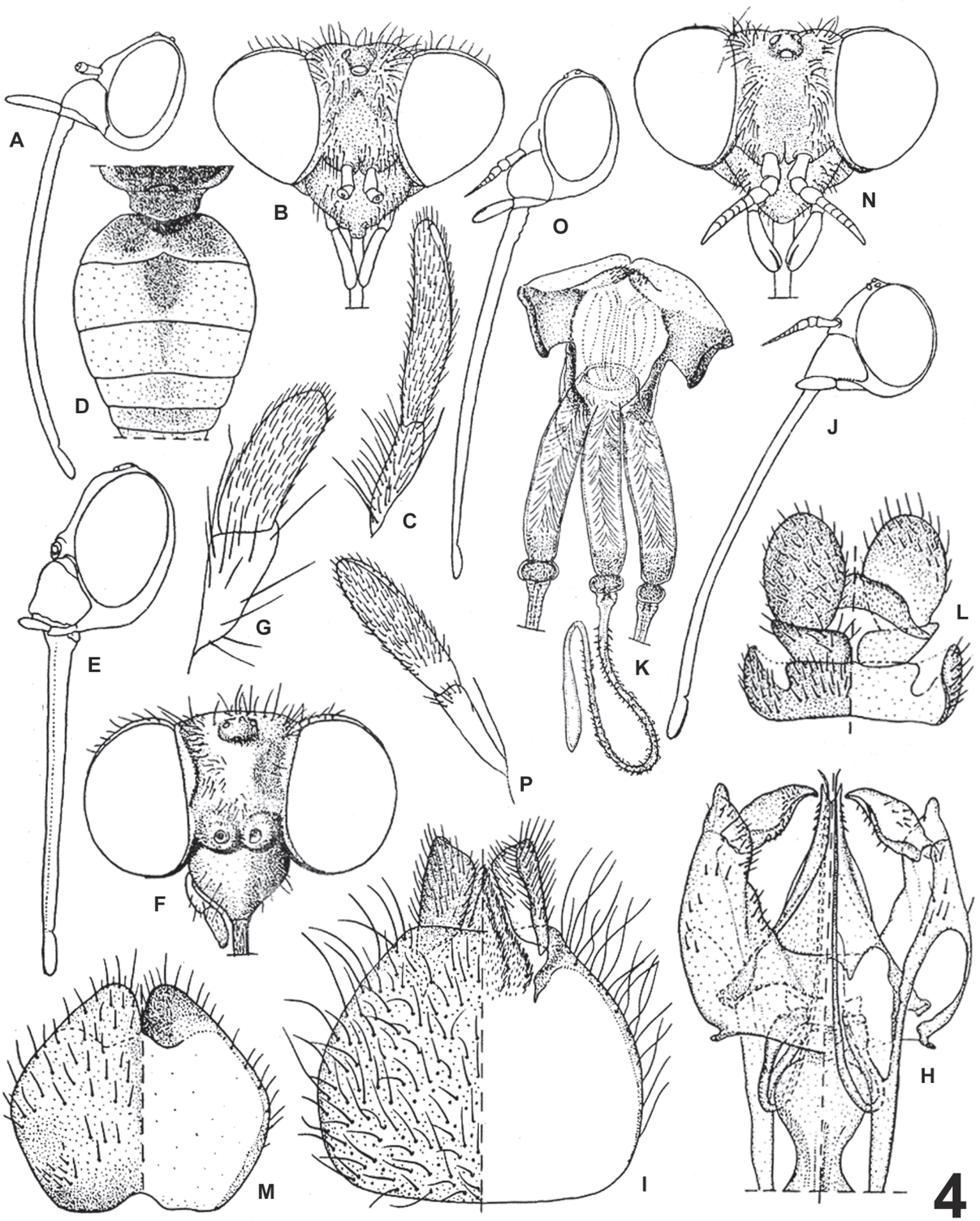

Figure 4A-D. *Silvestriellus flaviventris* (Barretto & Duret, 1954). Male. A. Head, lateral view. B. Same, frontal view. C. Palpus. D. Abdomen, dorsal view. E-G. *Silvestriellus patagonicus* Brèthes, 1910. Female. E. Head, lateral view. F. Same, frontal view. G. Palpus. H-M. *Silvestriellus schlingeri* Coscarón & Philip, 1979. Male (H-J), female (K-M). H. Aedeagus and gonostyli. I. Epandrium and cerci. J. Head, lateral view. K. Genital furca and spermathecal ducts. L. Tergites 9-10 and cerci. M. Sternite 8 and gonapophyses. N-O. *Silvestriellus martinezi* (Barretto & Duret, 1954). Female. N. Head, frontal view. O. Same, lateral view. P. Palpus.

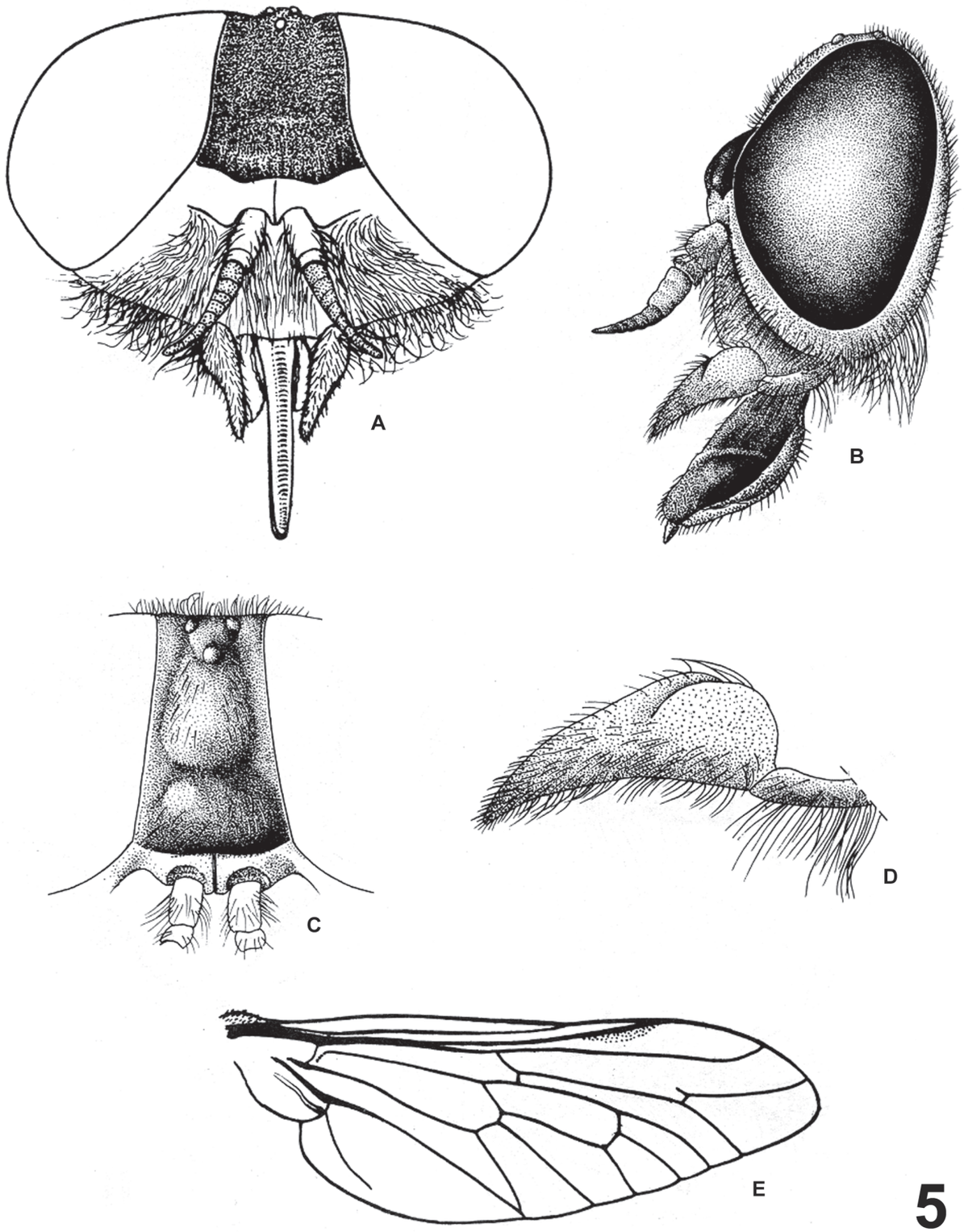

Figure 5. *Apatolestes* (*Apatolestes*) *comastes* Williston, 1885. Female. A. Head, frontal view. B. Same, lateral view. C. Frons. D. Palpus. E. Wing.

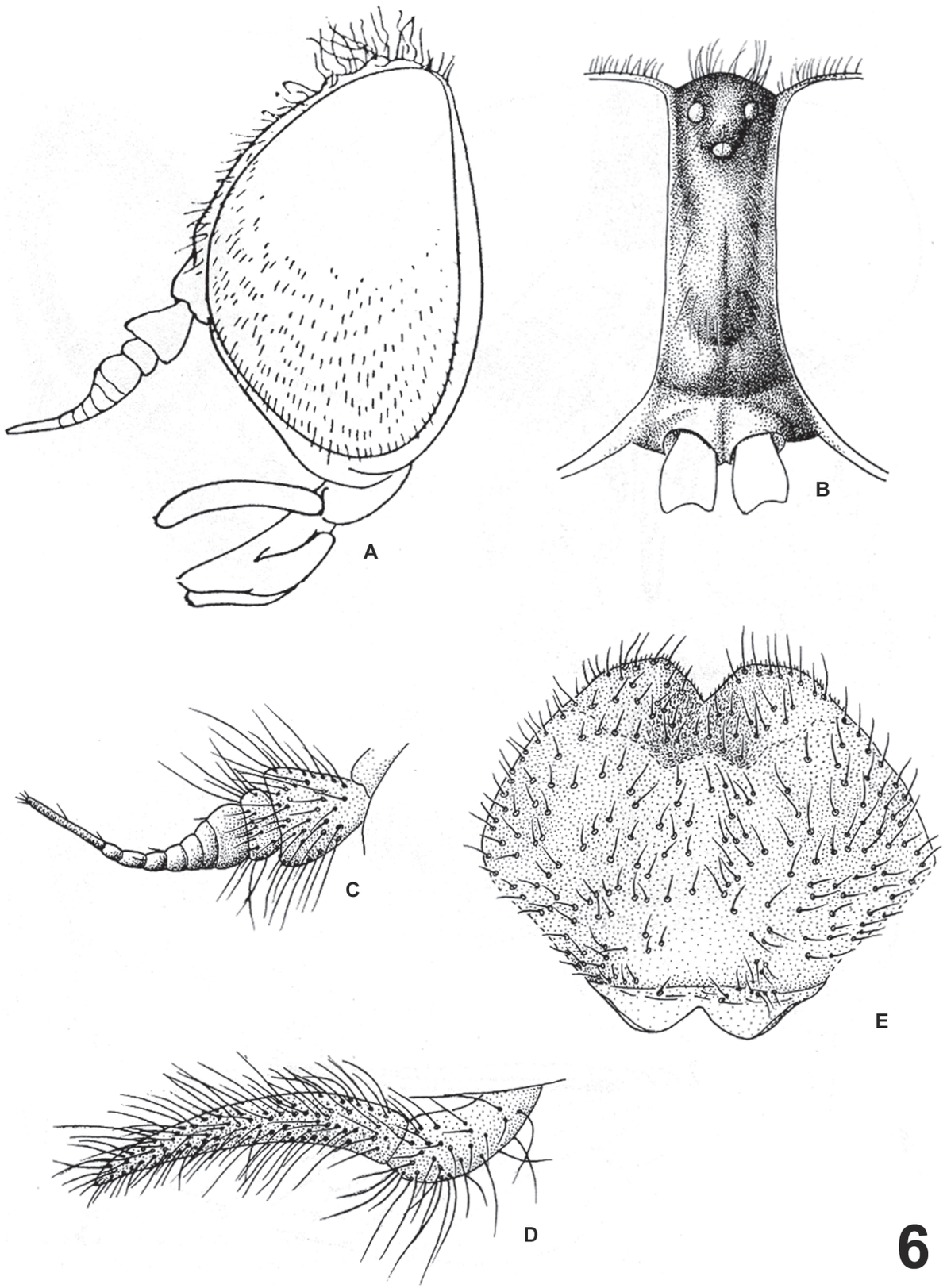

Figure 6. *Austromyans dasyops* (Philip & Coscarón, 1971). Female. A. Head, lateral view. B. Frons. C. Antenna, D. Palpus. E. Sternite 8 and gonapophyses.

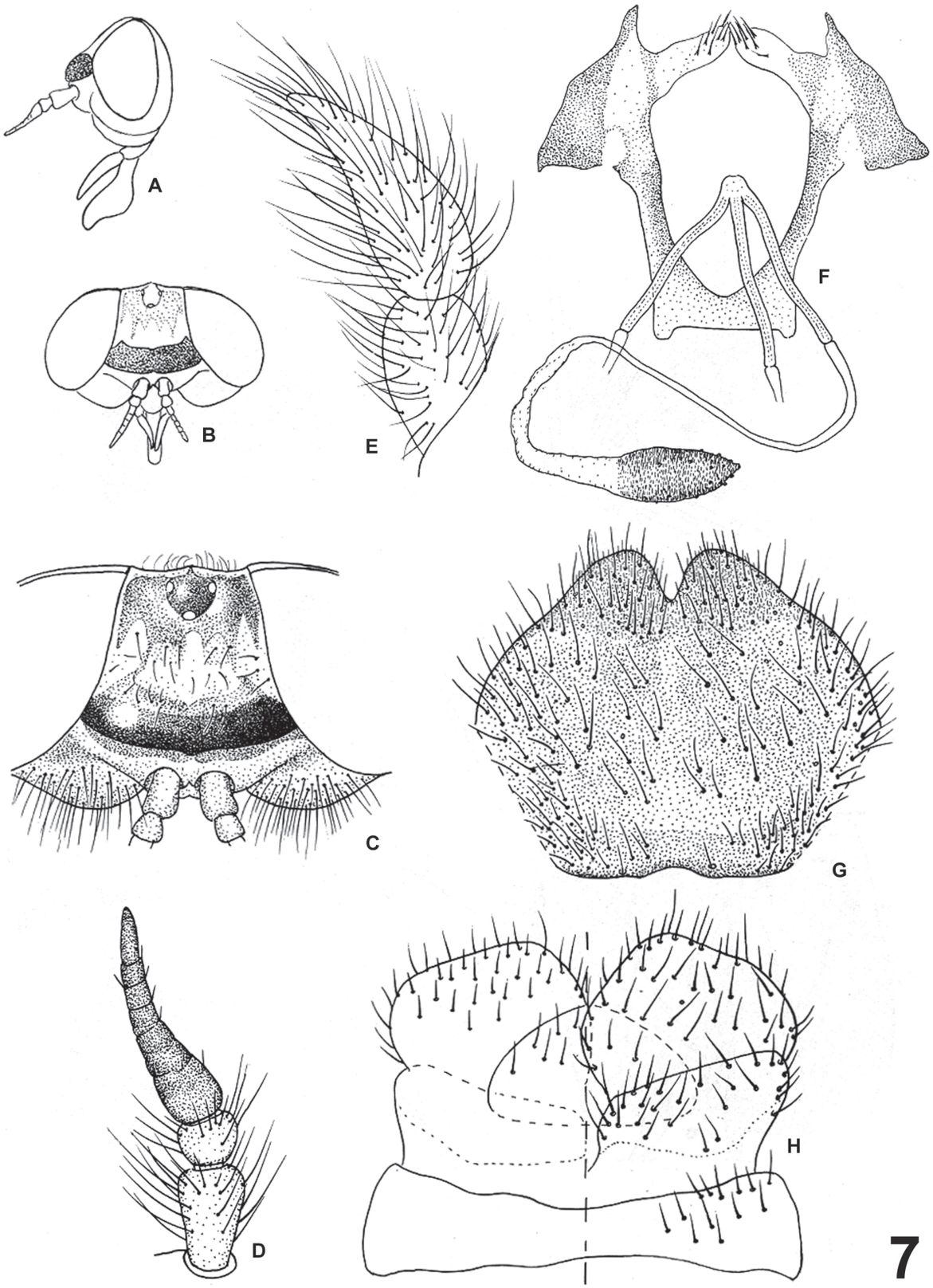

Figure 7. *Protodasyapha* (*Protodasyapha*) *hirtuosa* (Philippi, 1865). Female. A. Head, lateral view. B. Same, frontal view. C. Frons. D. Antenna. E. Palpus. F. Genital furca and spermathecal ducts. G. Sternite 8 and gonapophyses. H. Tergites 9-10 and cerci.

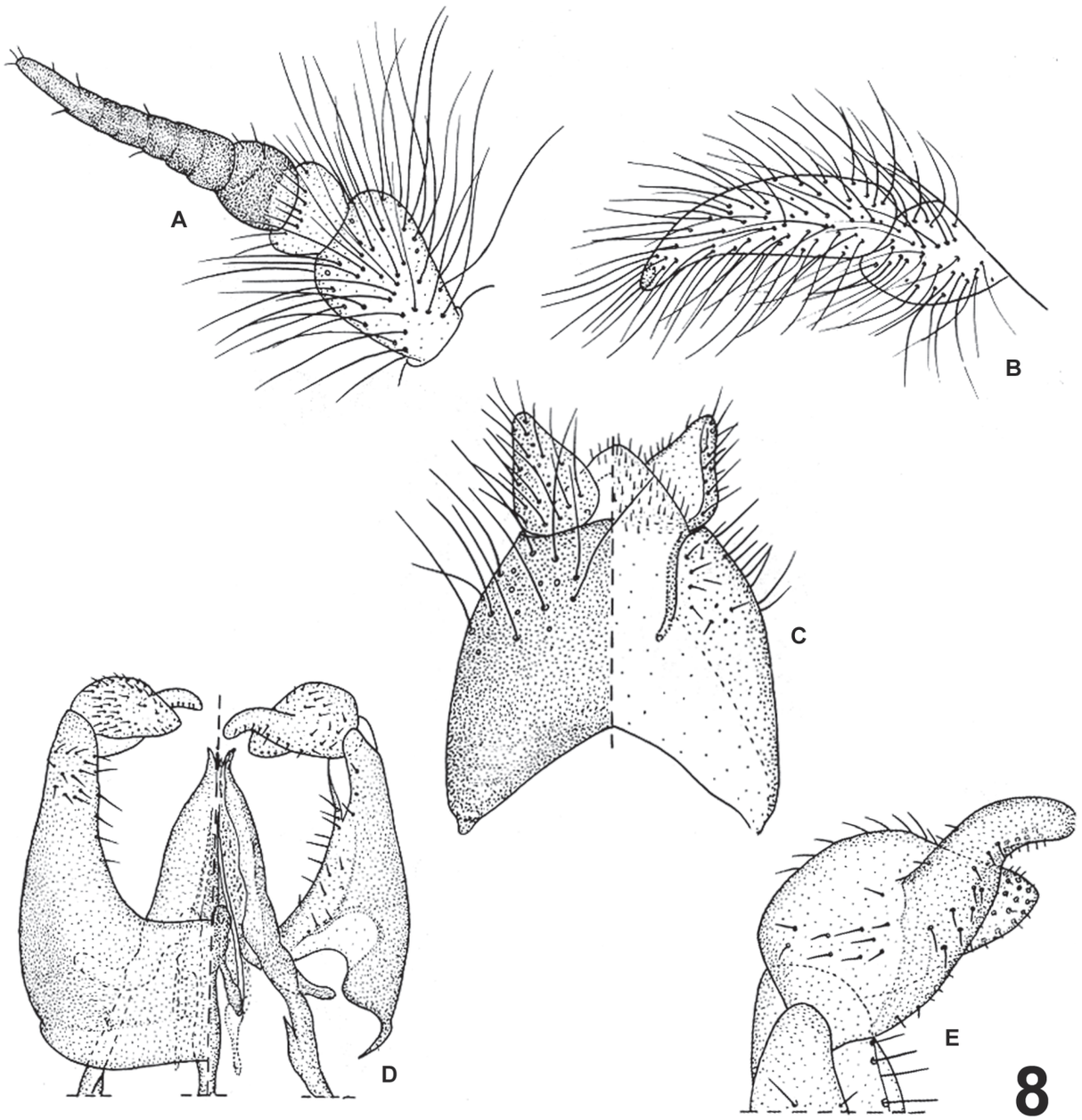

Figure 8. *Protodasyapha* (*Protodasyapha*) *hirtuosa* (Philippi, 1865). Male. A. Antenna. B. Palpus. C. Epandrium and cerci. D. Aedeagus and gonostyli. E. Dististylus.

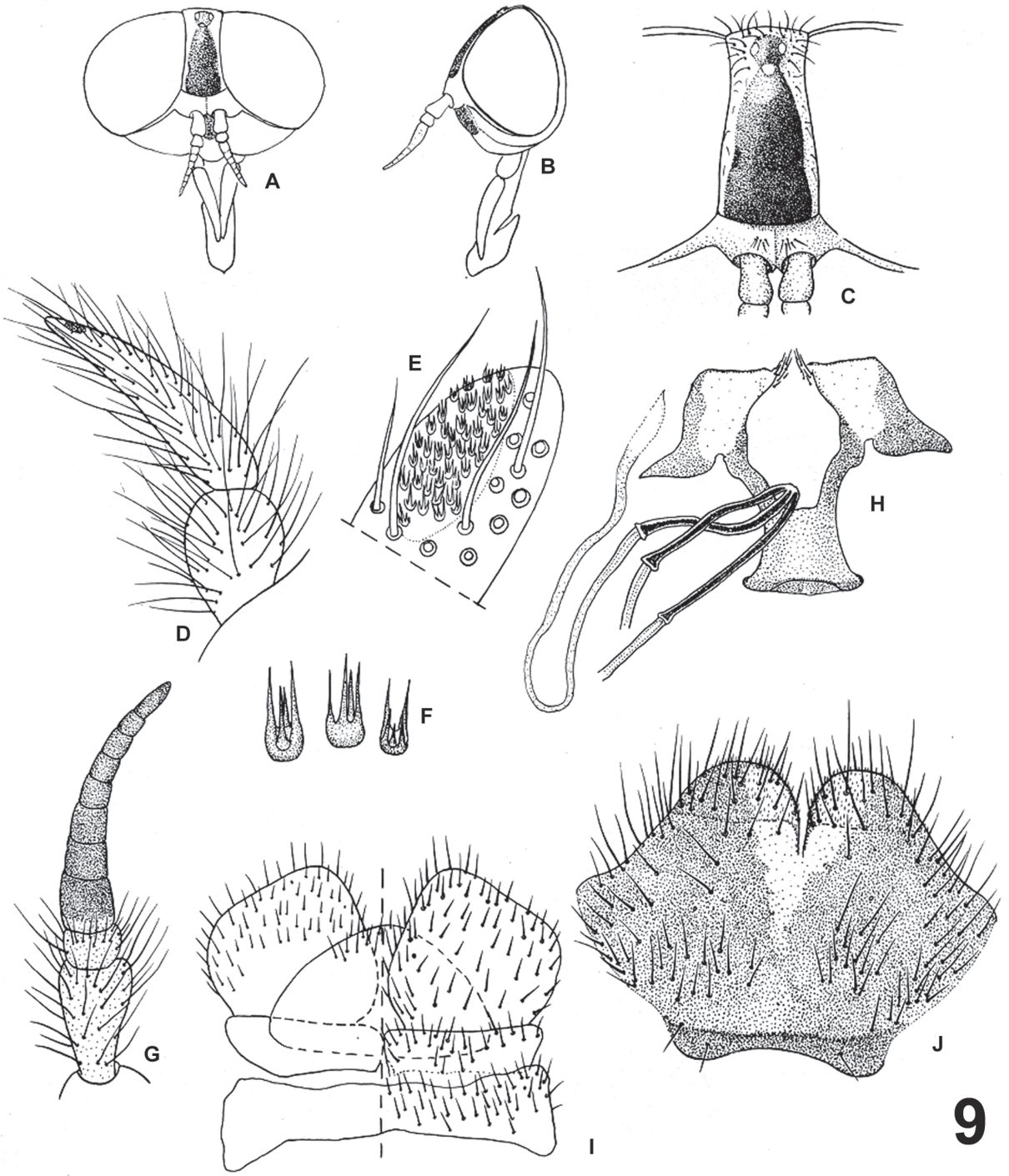

Figure 9. *Protodasyapha* (*Curumyia*) *lugens* (Philippi, 1865). Female. A. Head, frontal view. B. Same, lateral view. C. Frons. D. Palpus. E. Palpal sensory area. F. Macrotrichiae of palpal sensory area. G. Antenna. H. Genital furca and spermathecal ducts. I. Tergites 9-10 and cerci. J. Sternite 8 and gonapophyses.

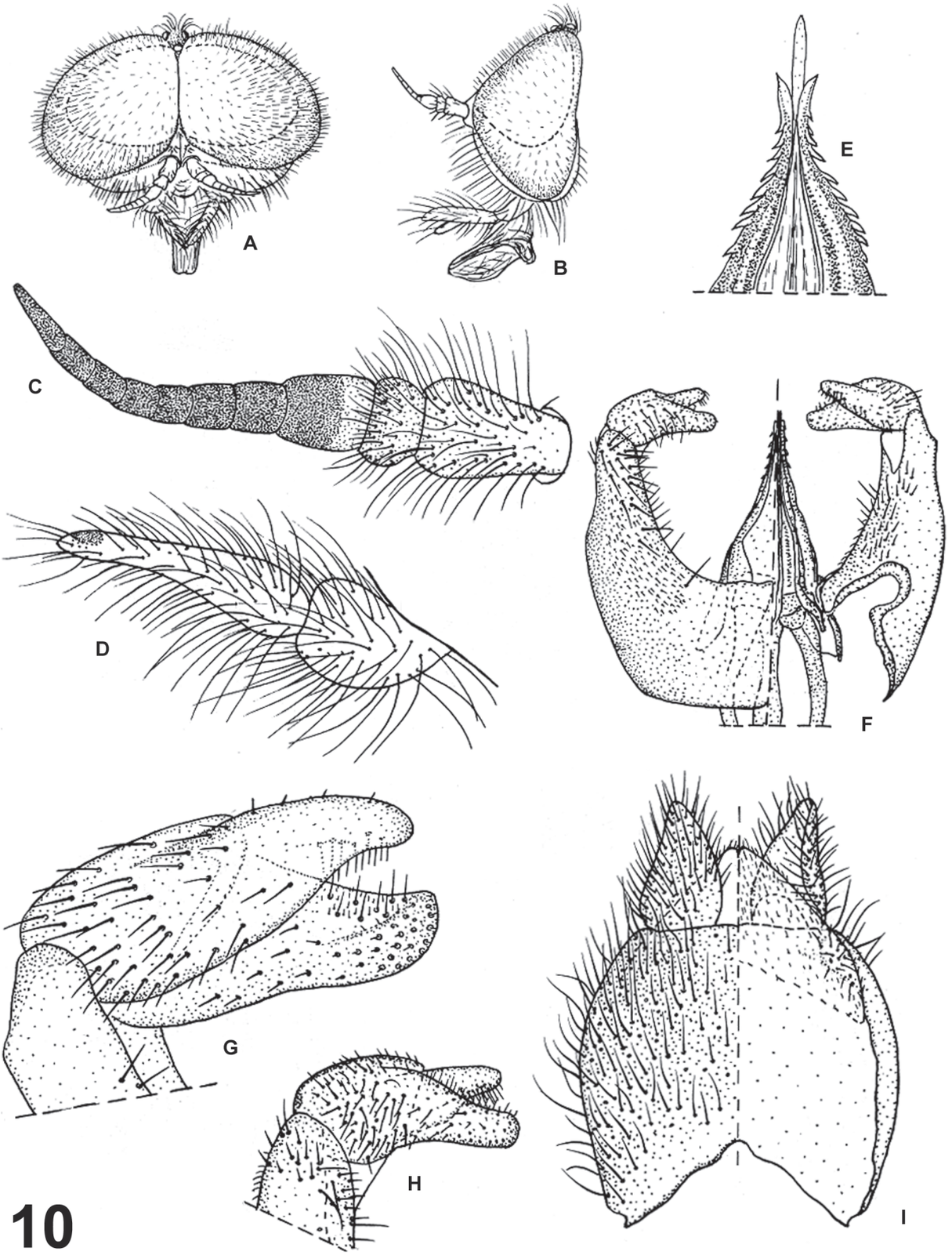

Figure 10. *Protodasyapha* (*Curumyia*) *lugens* (Philippi, 1865). Male. A. Head, frontal view. B. Same, lateral view. C. Antenna. D. Palpus. E. Tip of aedeagus. F. Aedeagus and gonostyli. G. Dististylus, ventral view. H. Same, lateral view. I. Epandrium and cerci.

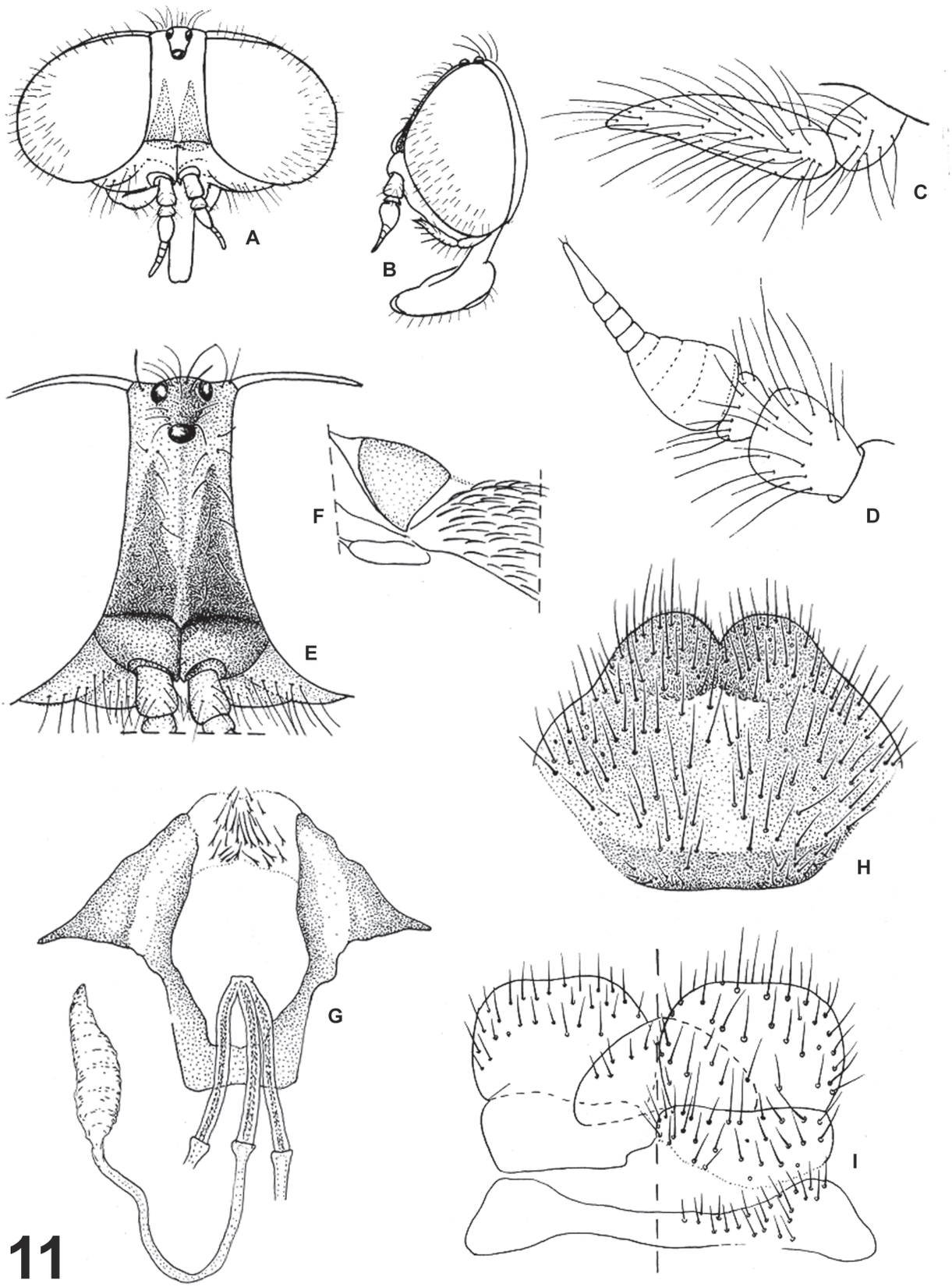

Figure 11. *Veprius presbiter* Rondani, 1863. Female. A. Head, frontal view. B. Same, lateral view. C. Palpus. D. Antenna. E. Frons. F. Basicosta. G. Genital furca and spermathecal ducts. H. Sternite 8 and gonapophyses. I. Tergites 9-10 and cerci.

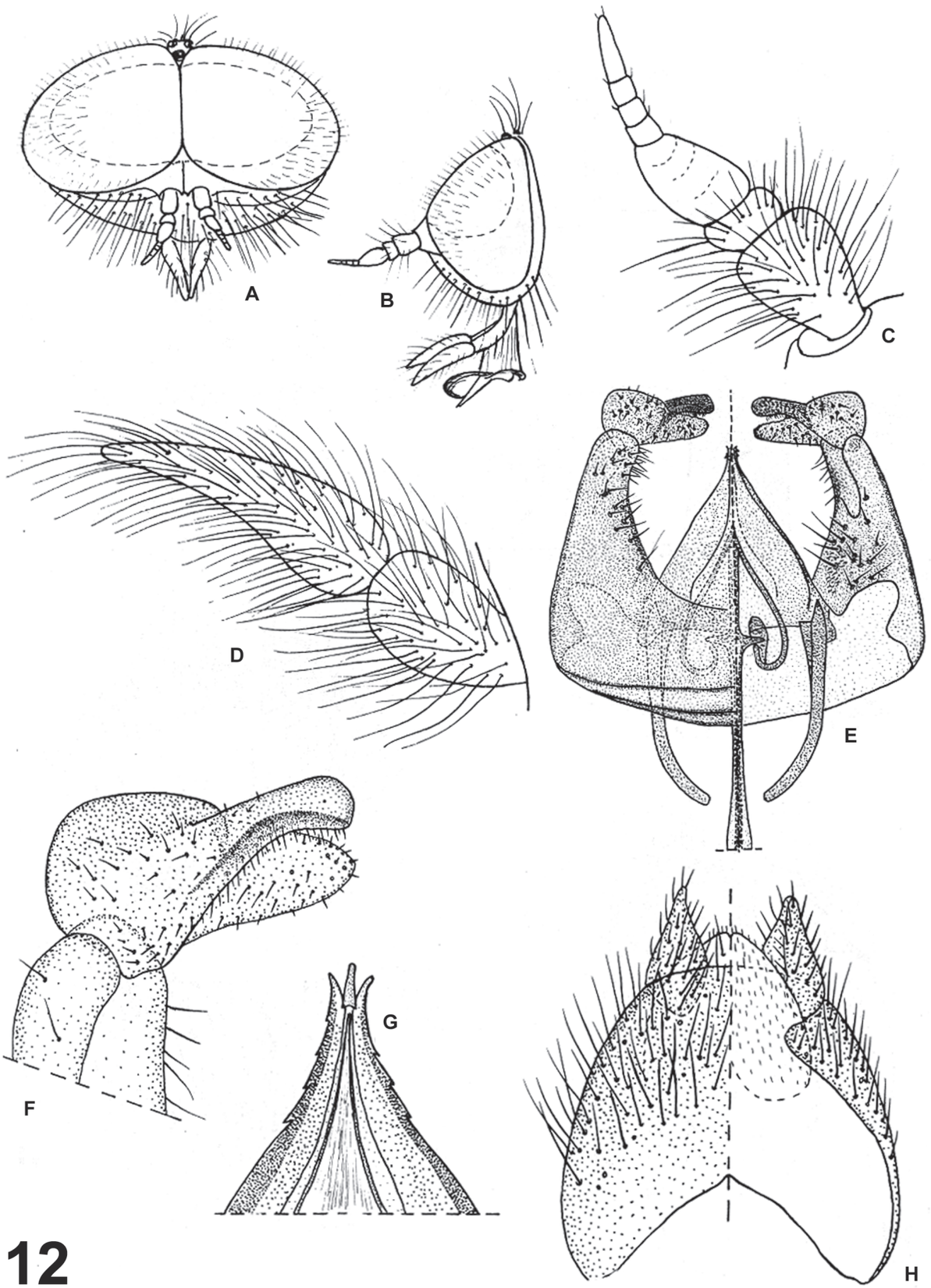

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Figure 12. *Veprius presbiter* Rondani, 1863. Male. A. Head, frontal view. B. Same, lateral view. C. Antenna. D. Palpus. E. Aedeagus and gonostyli. F. Dististylus. G. Tip of aedeagus. H. Epandrium and cerci.

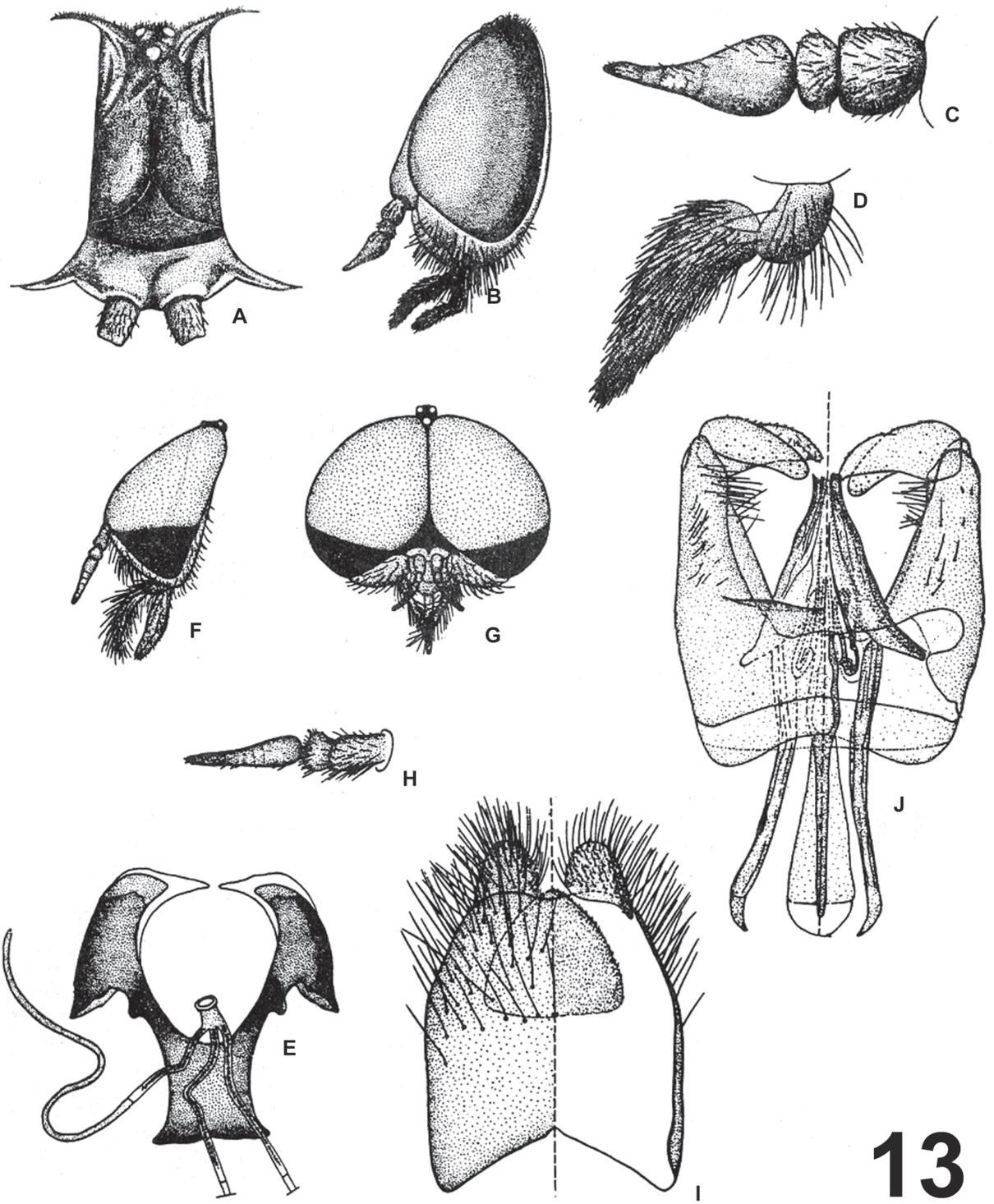

Figure 13. *Zophina eiseni* (Townsend, 1895). Female (A-E), male (F-J). A. Frons. B. Head, lateral view. C. Antenna. D. Palpus. E. Genital furca and spermathecal ducts. F. Head, lateral view. G. Same, frontal view. H. Antenna. I. Aedeagus and gonostyli. J. Epandrium and cerci.

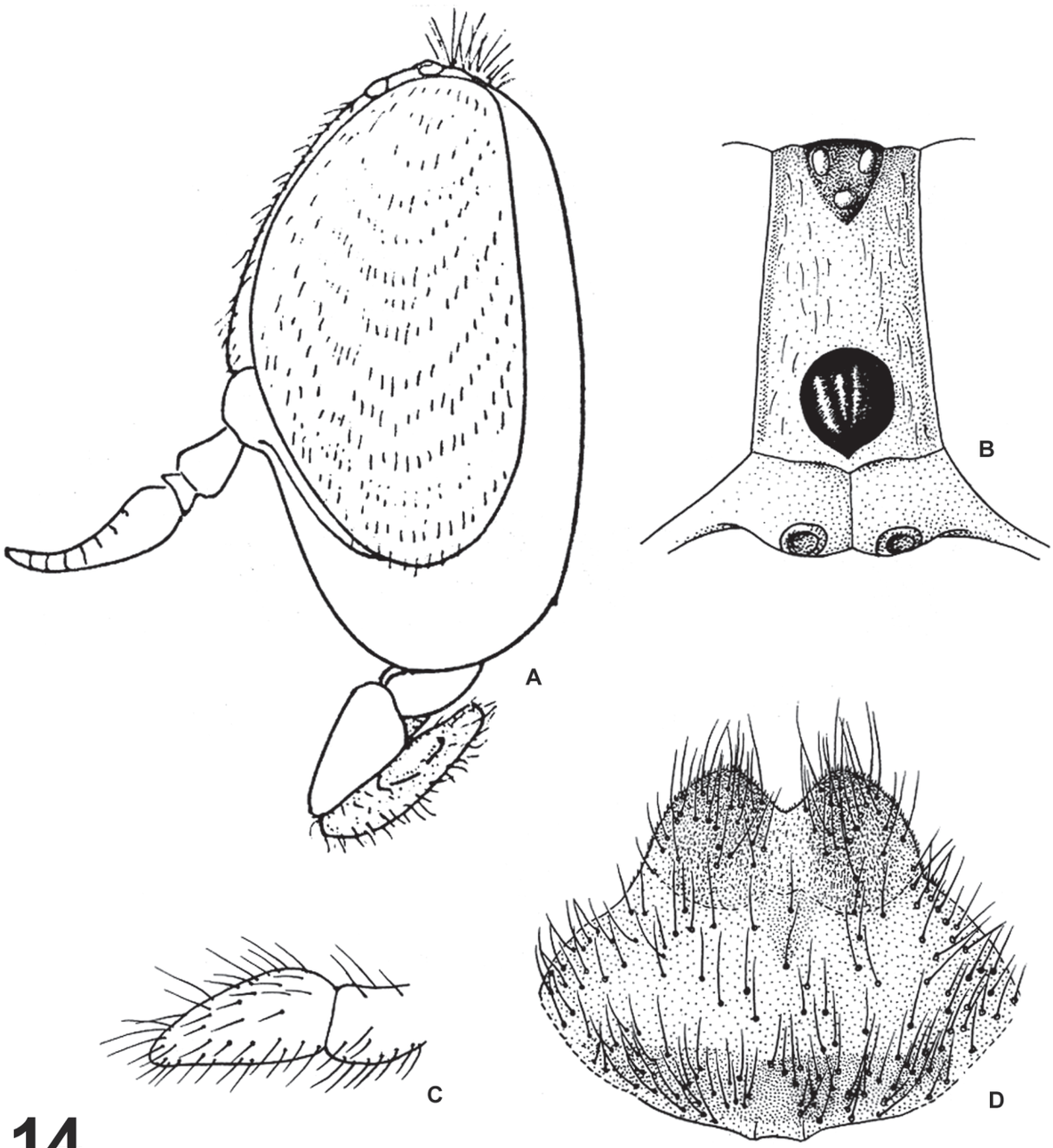

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Figure 14. *Fairchildimyia penai* Philip & Coscarón, 1971. Female. A. Head, lateral view. B. Frons. C. Palpus. D. Sternite 8 and gonapophyses.

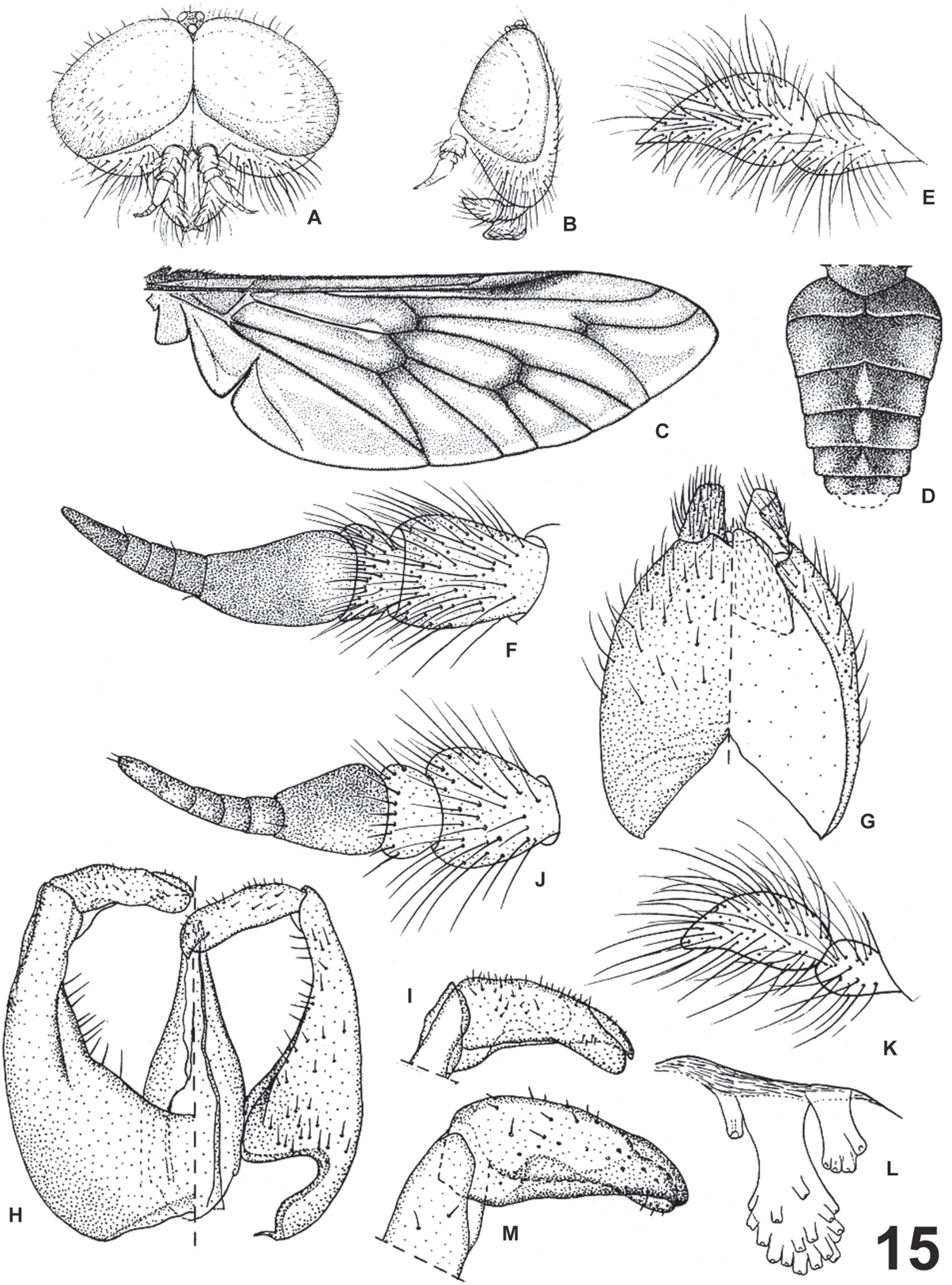

Figure 15 A-J. *Fairchildimyia penai* Philip & Coscarón, 1971. Male. A. Head, frontal view. B. Same, lateral view. C. Wing. D. Abdomen, dorsal view. E. Palpus. F. Antenna. G. Epandrium and cerci. H. Aedeagus and gonostyli. I. Dististylus. J-L. *Fairchildimyia mendozana* (Enderlein, 1925). Female. J. Antenna. K. Palpus. L. Palpal sensory area.

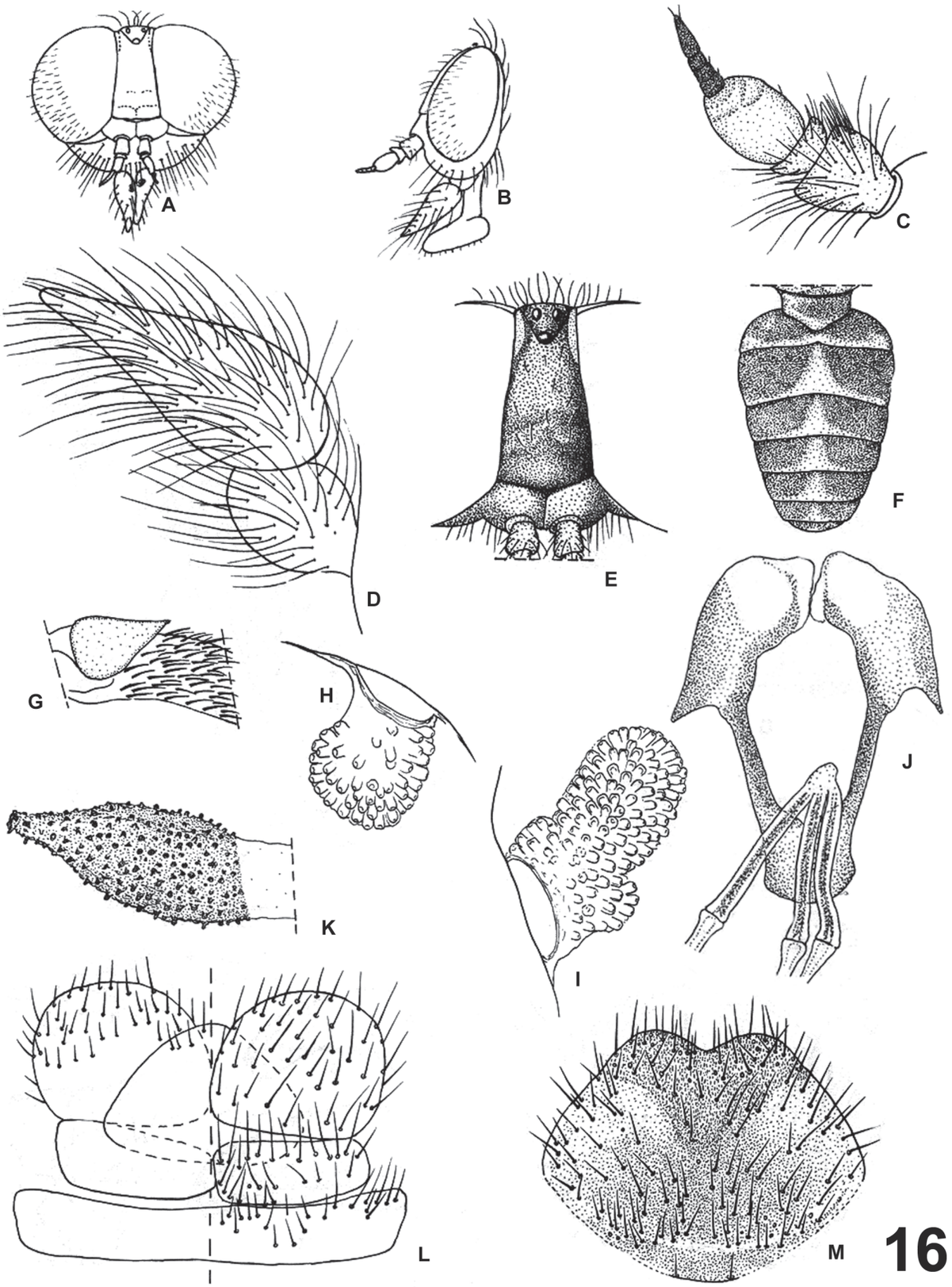

Figure 16 *Chaetopalpus annulicornis* (Philippi, 1865). Female. A. Head, frontal view. B. Same, lateral view. C. Antenna. D. Palpus. E. Frons. F. Abdomen, dorsal view. G. Basicosta. H. Palpal sensory area. I. Same (higher magnification). J. Genital furca and spermathecal ducts. K. Apex of spermatheca. L. Tergites 9-10 and cerci. M. Sternite 8 and gonapophyses.

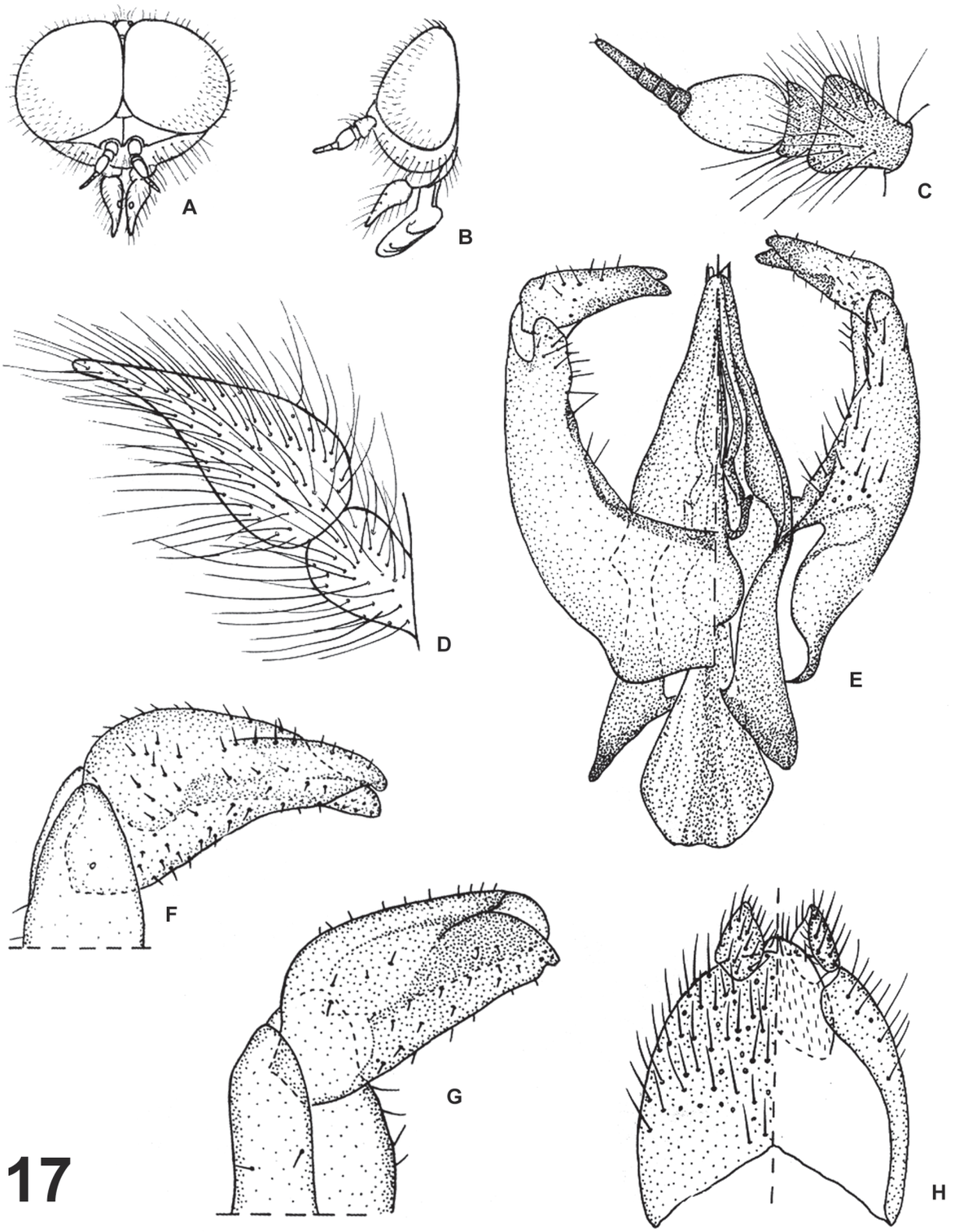

Figure 17. *Chaetopalpus annulicornis*(Philippi, 1865). Male. A. Head, frontal view. B. Same, lateral view. C. Antenna. D. Palpus. E. Aedeagus and gonostyli. F. Dististylus, ventral view. G. Same, dorsal view. H. Epandrium and cerci.

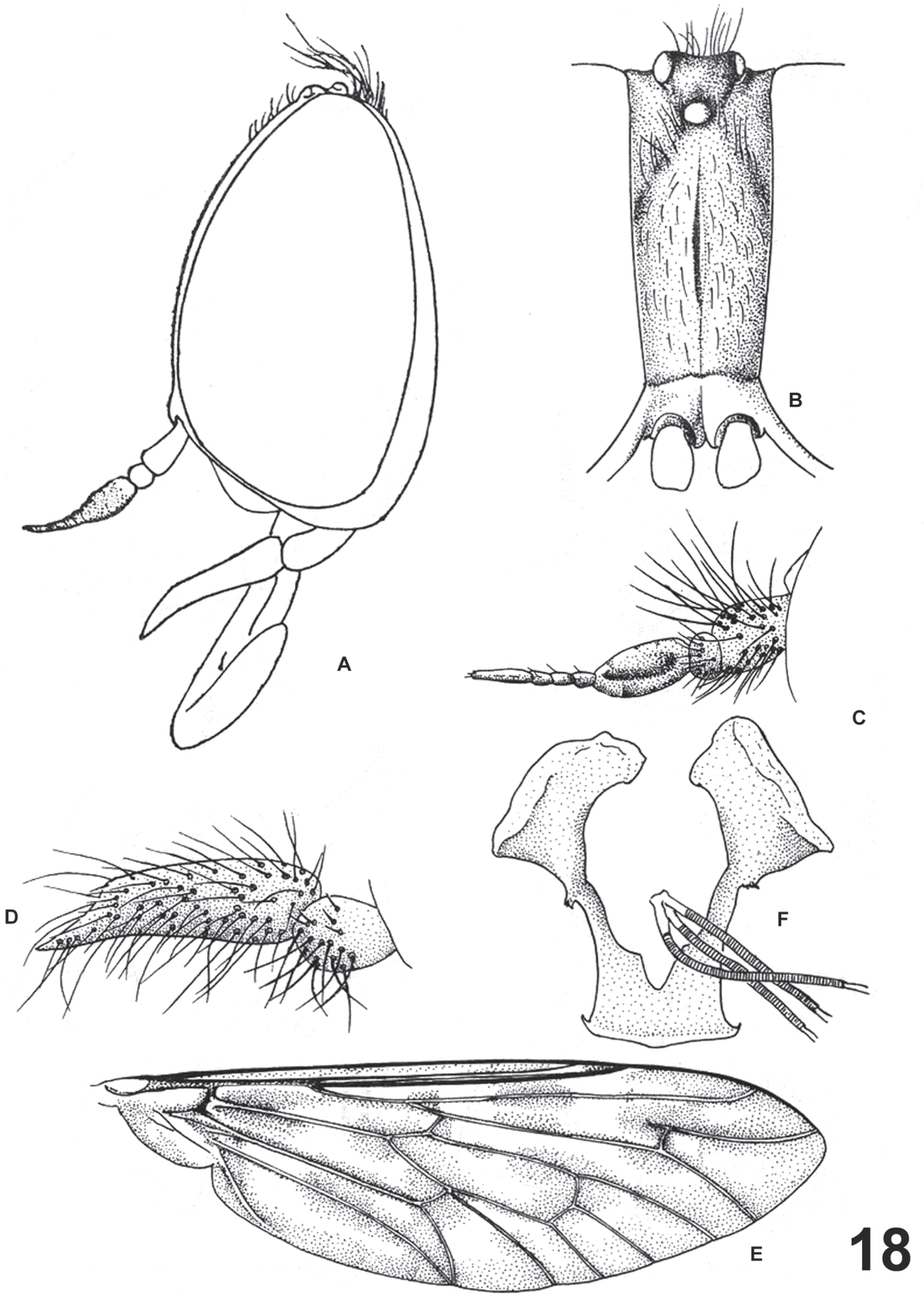

Figure 18. *Archeomyotes angustipennis* Philip & Coscarón, 1971. Female. A. Head, lateral view. B. Frons. C. Antenna. D. Palpus. E. Wing. F. Genital furca and spermathecal ducts.

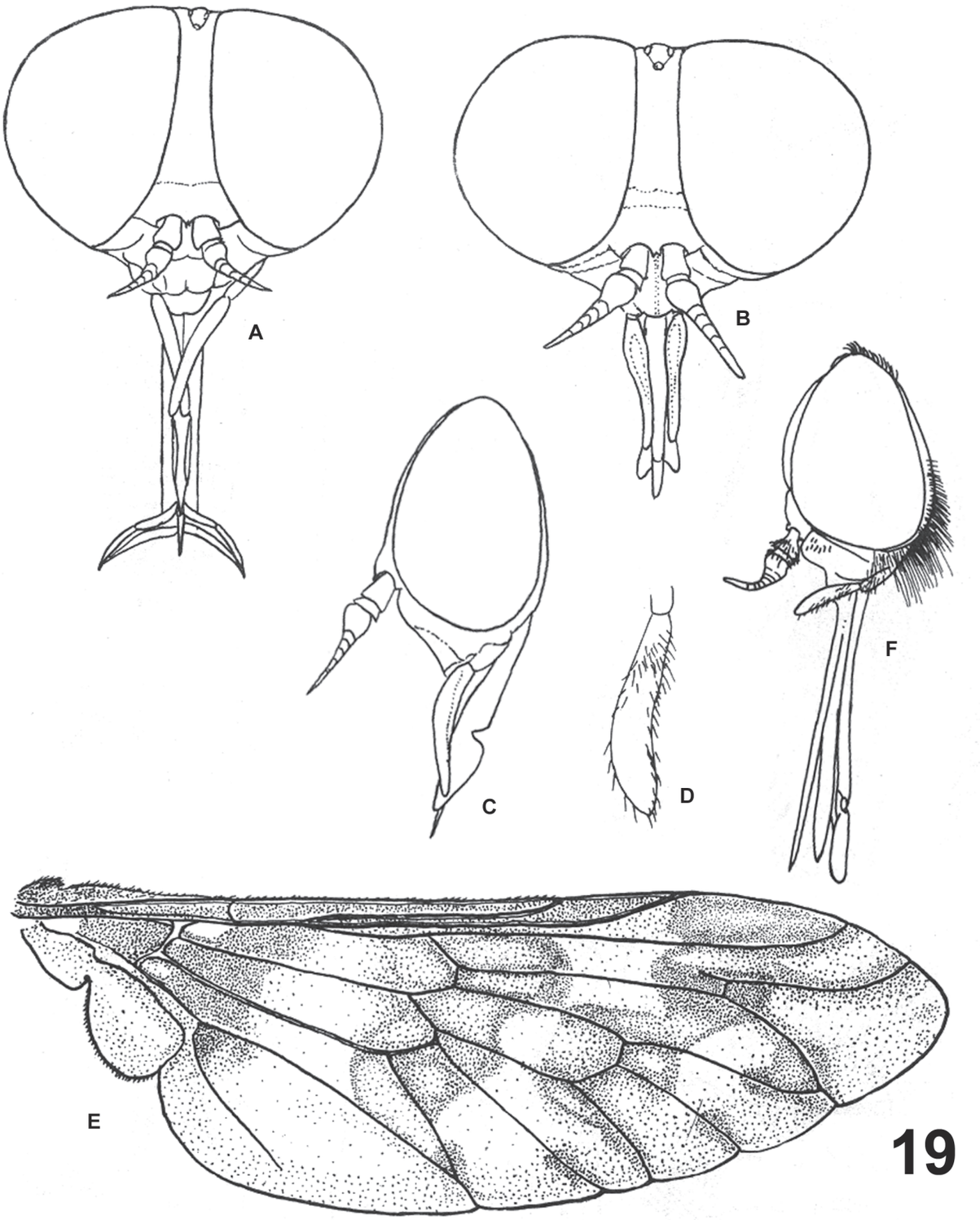

Figure 19. A. *Esenbeckia* (*Proboscoides*) *dichroa* (Brèthes, 1910). Female. Head, frontal view. B-D. *Esenbeckia* (*Palassomyia*) *fascipennis* (Macquart, 1838). Female. B. Head, frontal view. C. Same, lateral view. D. Wing. E-F. *Esenbeckia* (*Ricardoa*) *subguttata* Fairchild, 1964. Female. E. Head, lateral view. F. Palpus.

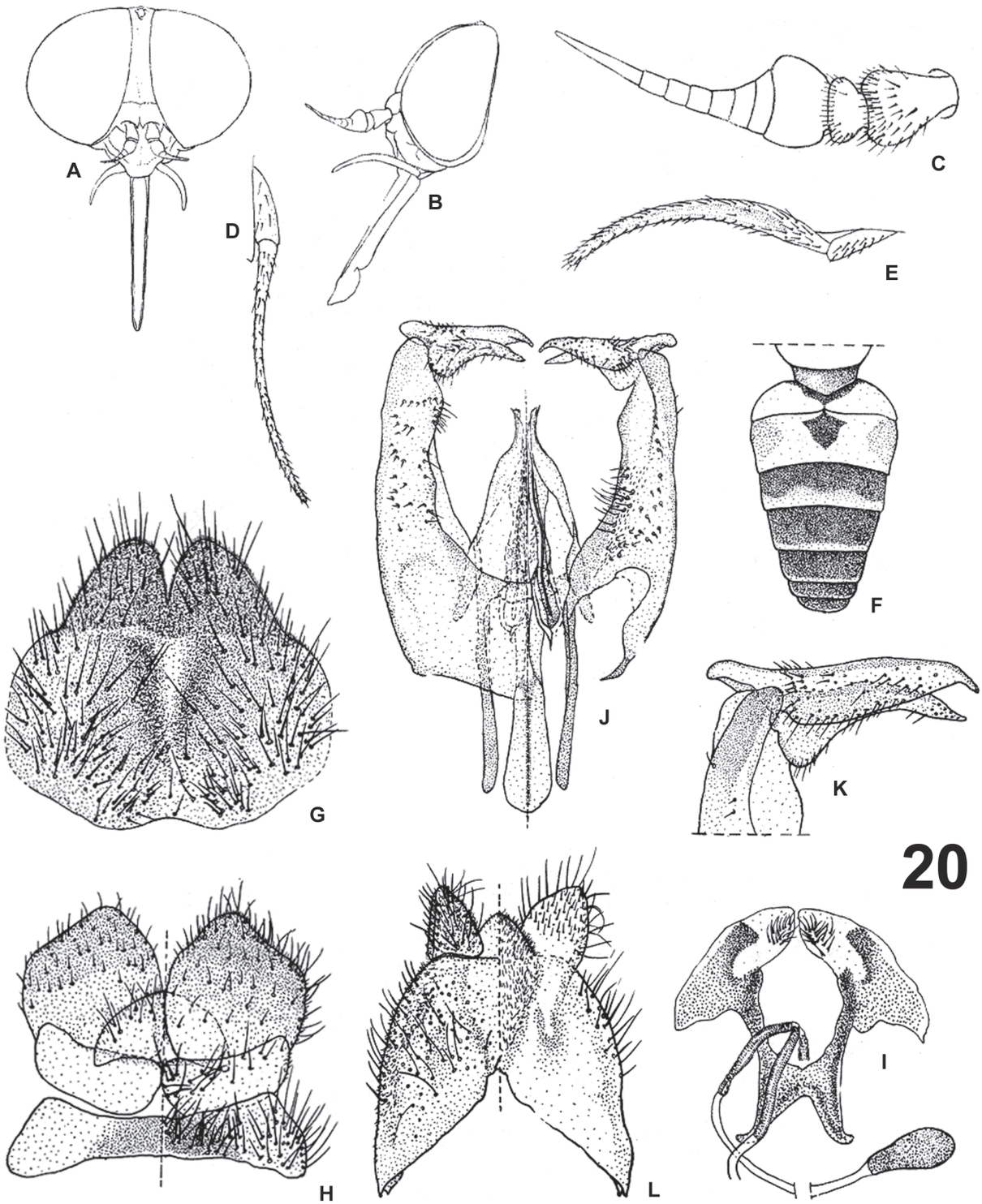

Figure 20. *Esenbeckia* (*Esenbeckia*) *filipalpis* (Williston, 1895). Female (A-I, male (J-L). A. Head, frontal view. B. Head, lateral view. C. Antenna. D-E. Palpus. F. Abdomen. G. Sternite 8 and gonapophyses. H. Tergites 9-10 and cerci. I. Genital furca and spermathecae. J. Aedeagus and gonostyli. K. Dististylus, ventral view. L. Epandrium and cerci.

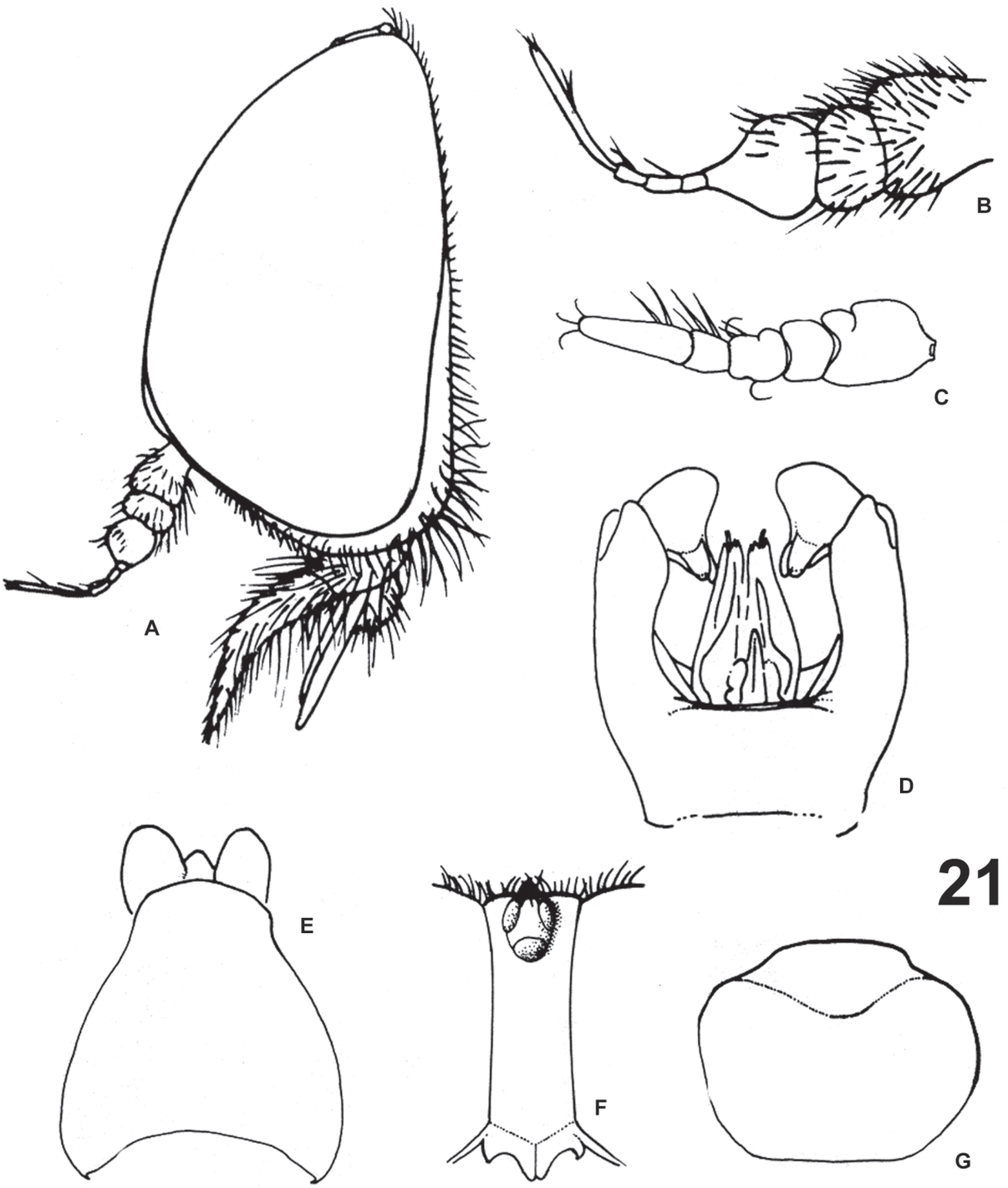

Figure 21. A-B. *Protosilvius sp.* A. Head, lateral view. B. Antenna. C-F. *Protosilvius phoeniculus* Fairchild, 1962. Male (C-E), female (F-G). C. Antenna. D. Male terminalia, ventral view. E. Tergite 9 and cerci. F. Frons. G. Sternite 8.

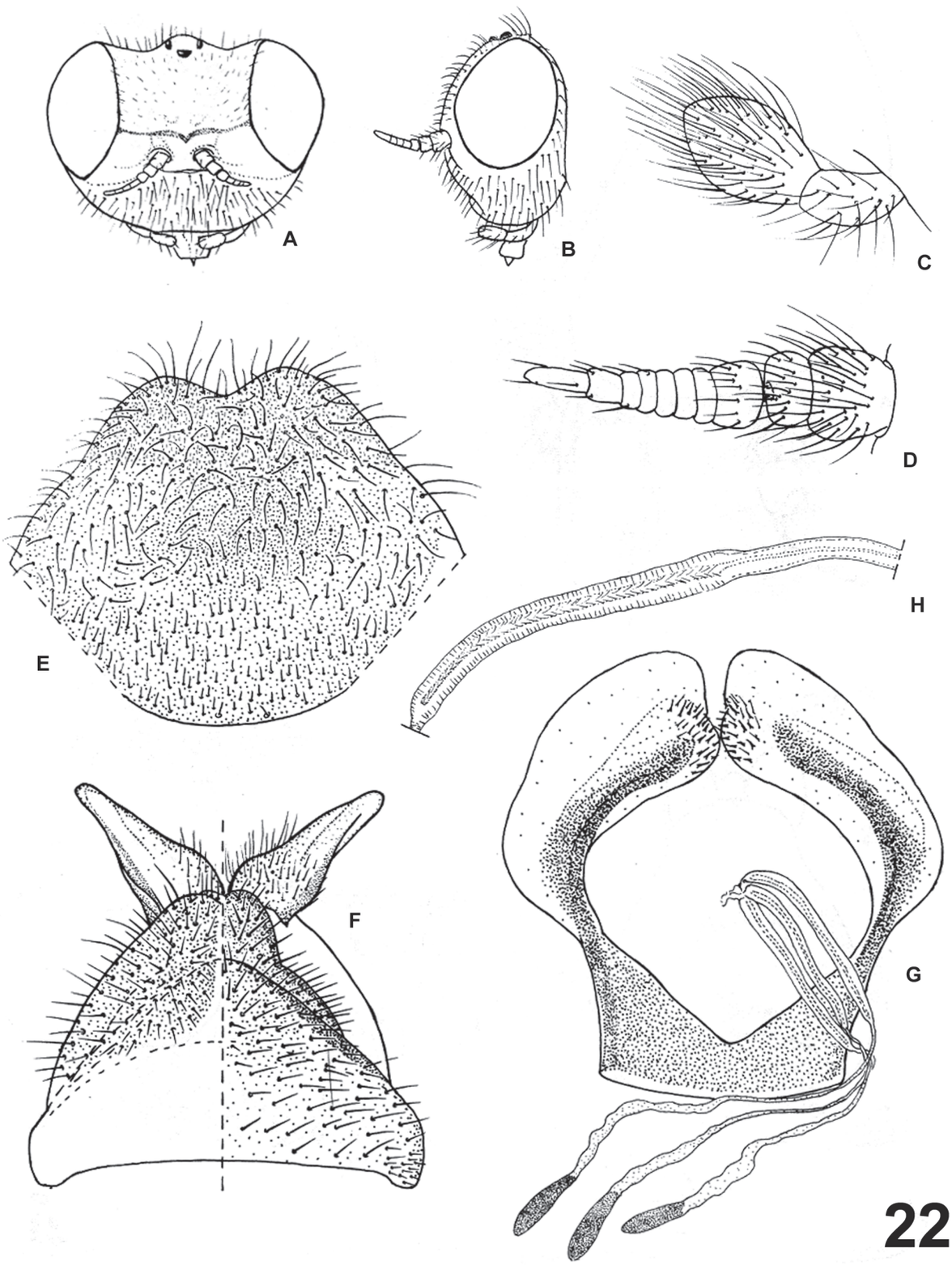

Figure 22. *Scepis nivalis* Walker, 1850. Female. A. Head, frontal view. B. Same, lateral view. C. Palpus. D. Antenna. E. Sternite 8 and gonapophyses. F. Tergite 10 and cerci. G. Genital furca and spermathecae. H. Detail of proximal section of spermathecal duct.

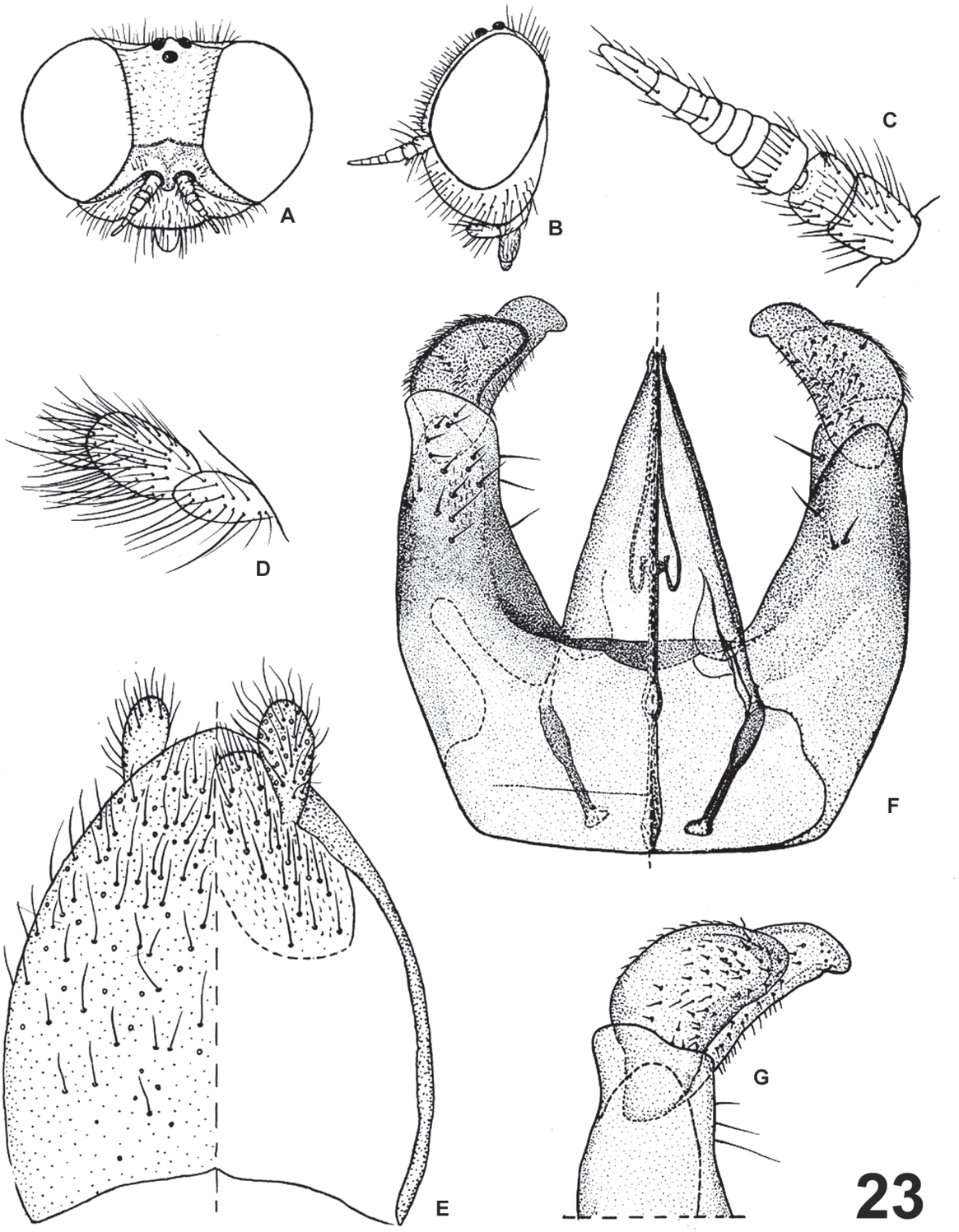

Figure 23. *Scepsis nivalis* Walker, 1850. Male. A. Head, anterior view. B. Same, lateral view. C. Antenna. D. Palpus. E. Epandrium and cerci. F. Aedeagus and gonostyli. G. Dististylus, dorsal view.

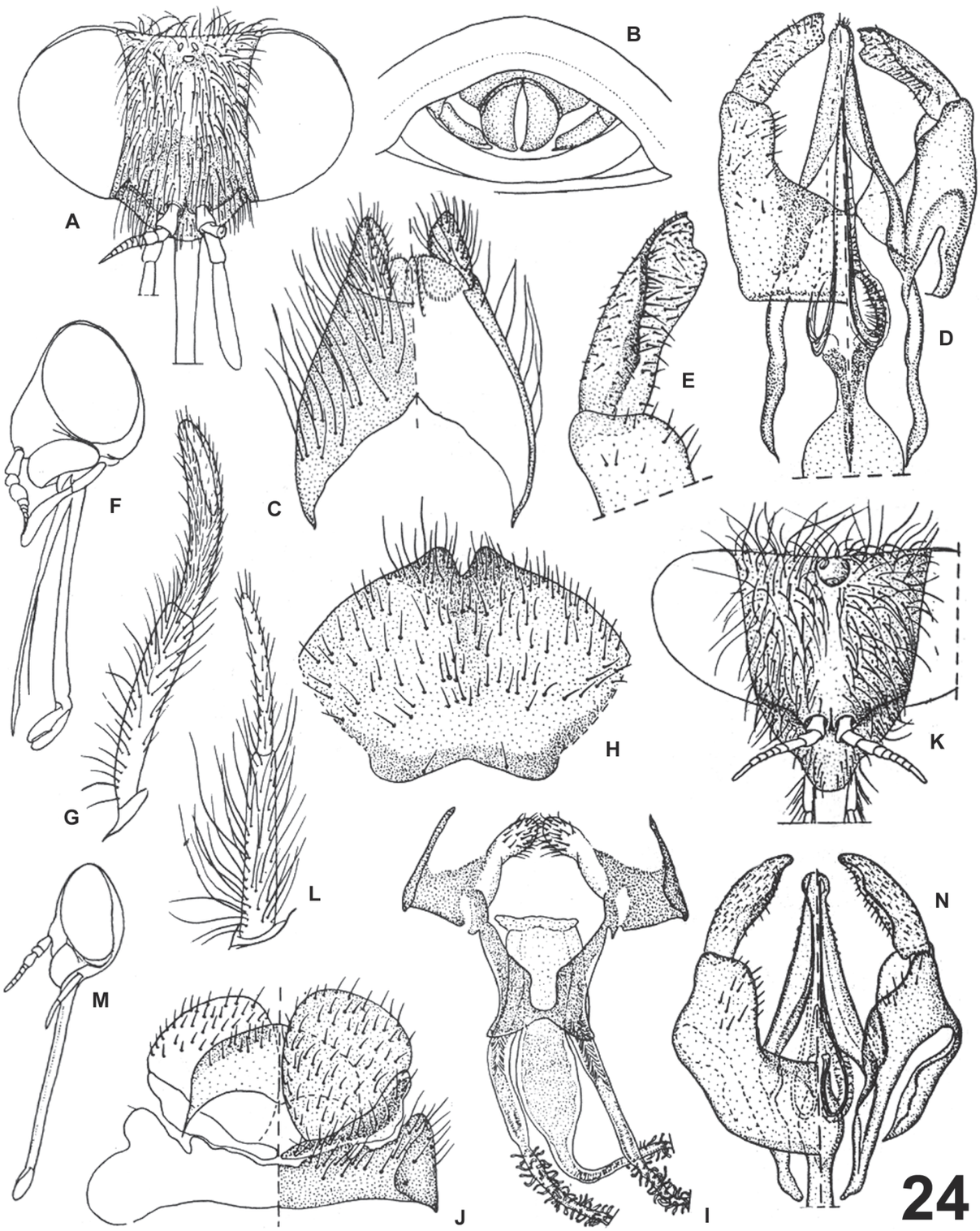

Figure 24. A-E. *Caenopangonia hirtipalpis* (Bigot, 1892). Male. A. Head, frontal view. B. External genital appendages, Caudal view. C. Epandrium and cerci. D. Aedeagus and gonostyli. E. Dististylus, ventral view. F-J. *Caenopangonia brevirostris* (Philippi, 1865). Female. F. Head, frontal view. G. Palpus. H. Sternite 8 and gonapophyses. I. Genital furca and spermathecal ducts. J. Tergites 9-10 and cerci. K-N. *Caenopangonia aspera* (Philip, 1958). Male. K. Head, frontal view. L. Palpus. M. Head, lateral view. N. Aedeagus and gonostyli.

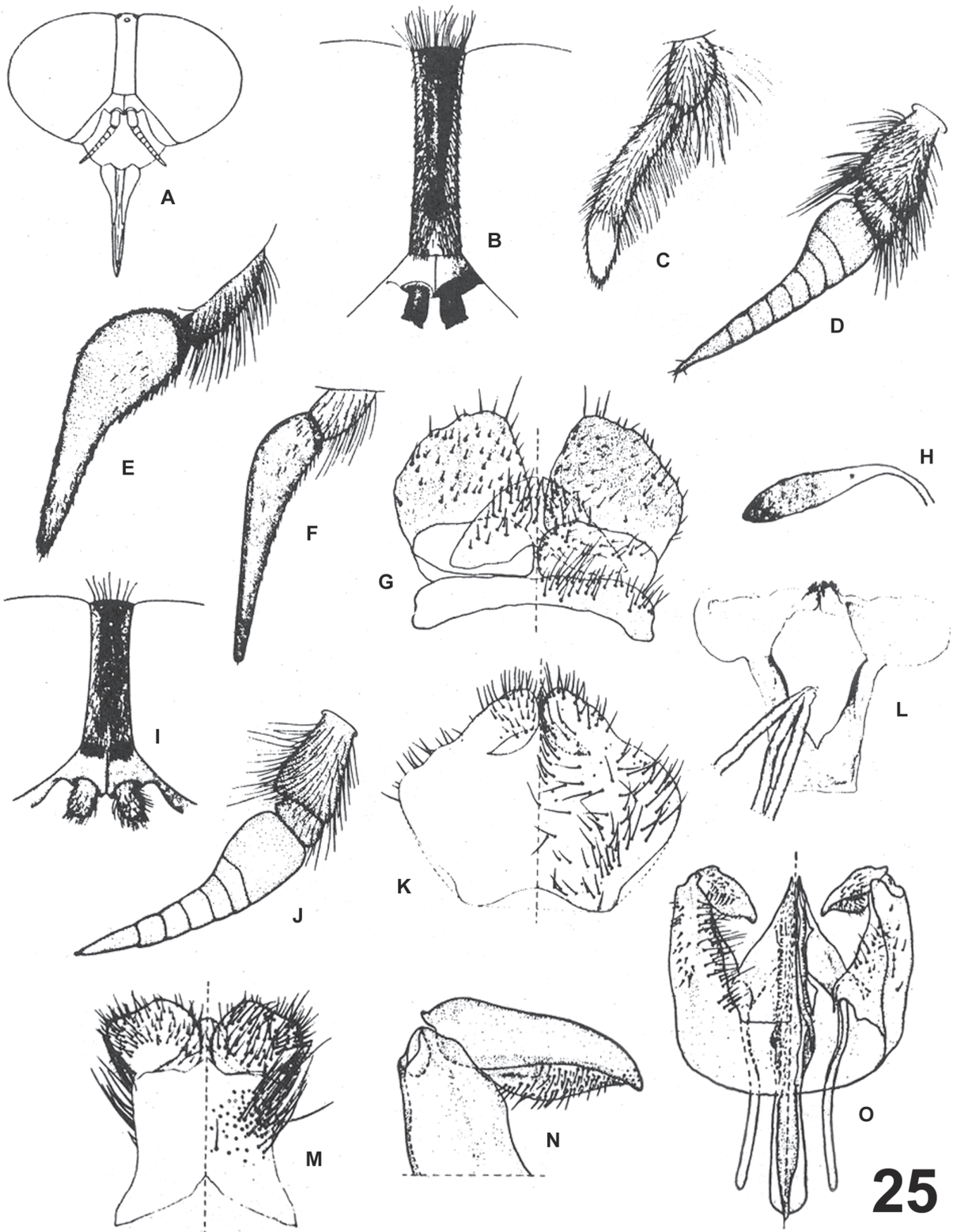

Figure 25. A-E. *Scaptia* (*Scaptia*) *collaris* (Philippi, 1865). Female (A-B, D-E), male (C). A. Head, frontal view. B. Frons. C. Palpus. D. Antenna. E. Palpus. F-O. *Scaptia* (*Scaptia*) *lata* (Guérin-Méneville, 1835). Female (F-L), male (M-O). F. Palpus. G. Tergites 9-10 and cerci. H. Spermatheca. I. Frons. J. Antenna. K. Sternite 8 and gonapophyses. L. Genital furca and spermathecal ducts. M. Epandrium and cerci. N. Dististylus. O. Aedeagus and gonostyli.

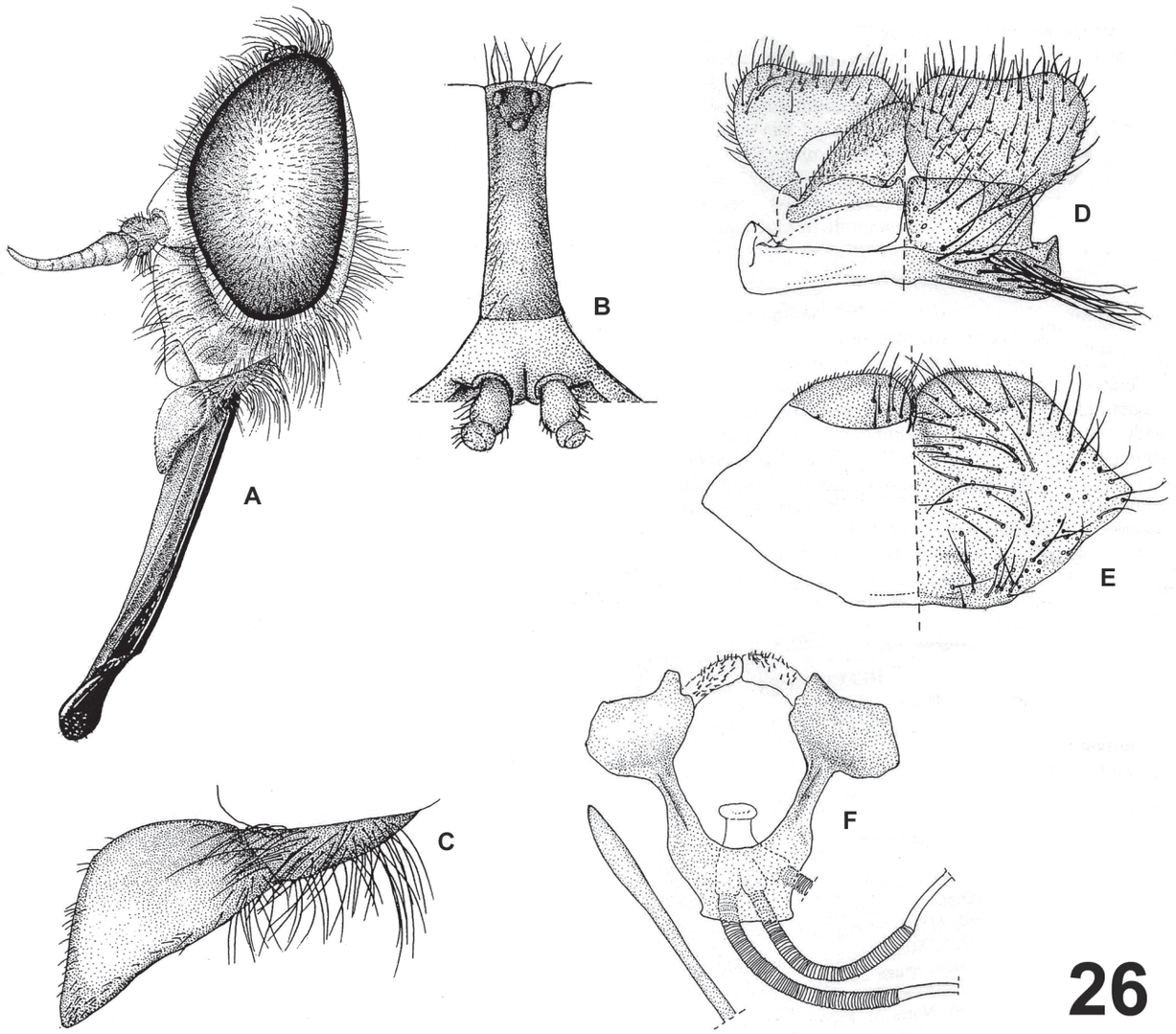

Figure 26. *Scaptia* (*Lepmia*) *seminigra* (Ricardo, 1902). Female. A. Head, lateral view. B. Frons. C. Palpus. D. Tergites 9-10 and cerci. E. Sternite 8 and gonapophyses. F. Genital furca and spermathecae.

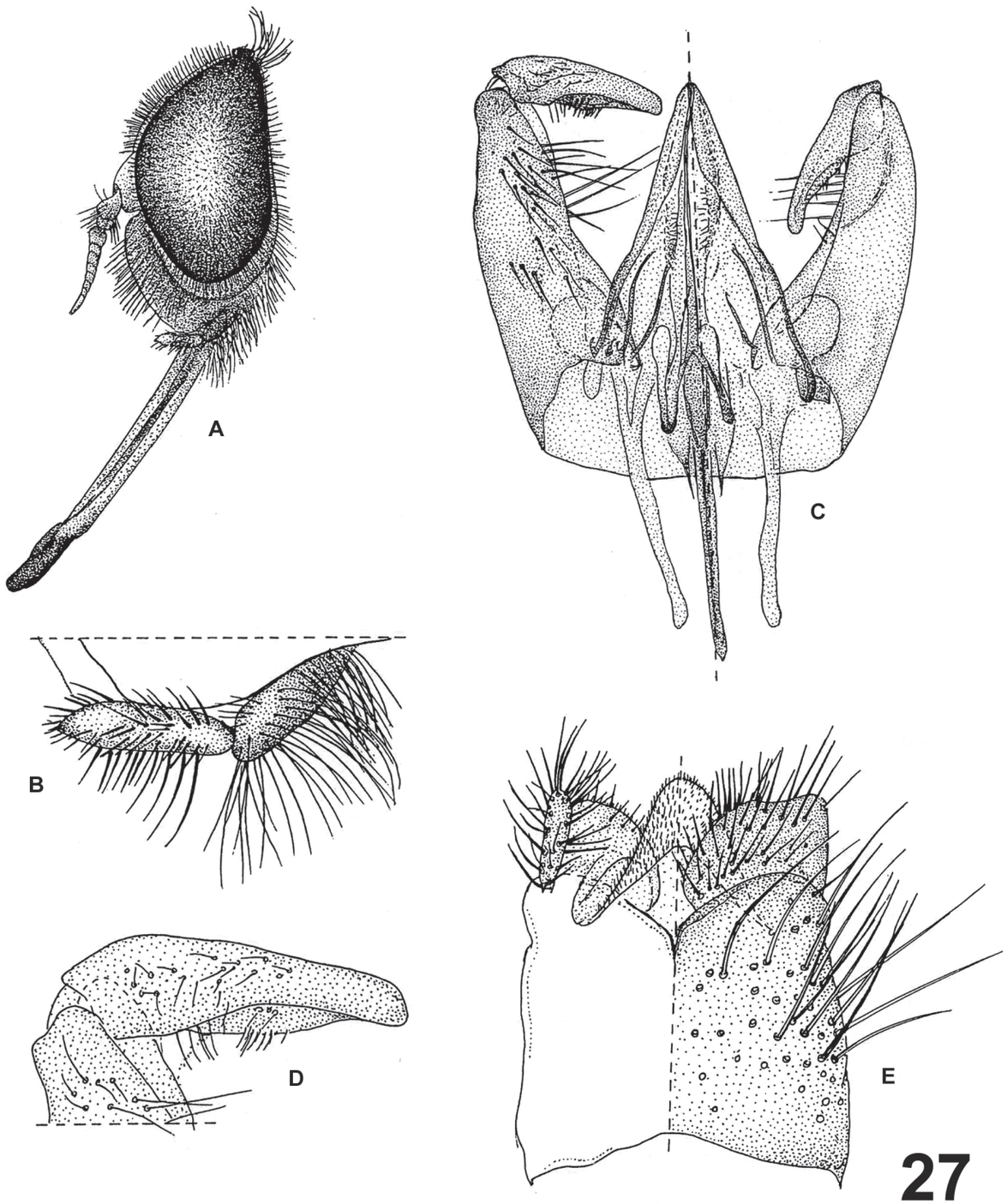

Figure 27. *Scaptia* (*Lepmia*) *seminigra* (Ricardo, 1902). Male. A. Head, lateral view. B. Palpus. C. Gonocoxite, basistyli, dististyli and aedeagus. D. Dististylus. E. Epandrium, ventral view of proctiger and cerci.

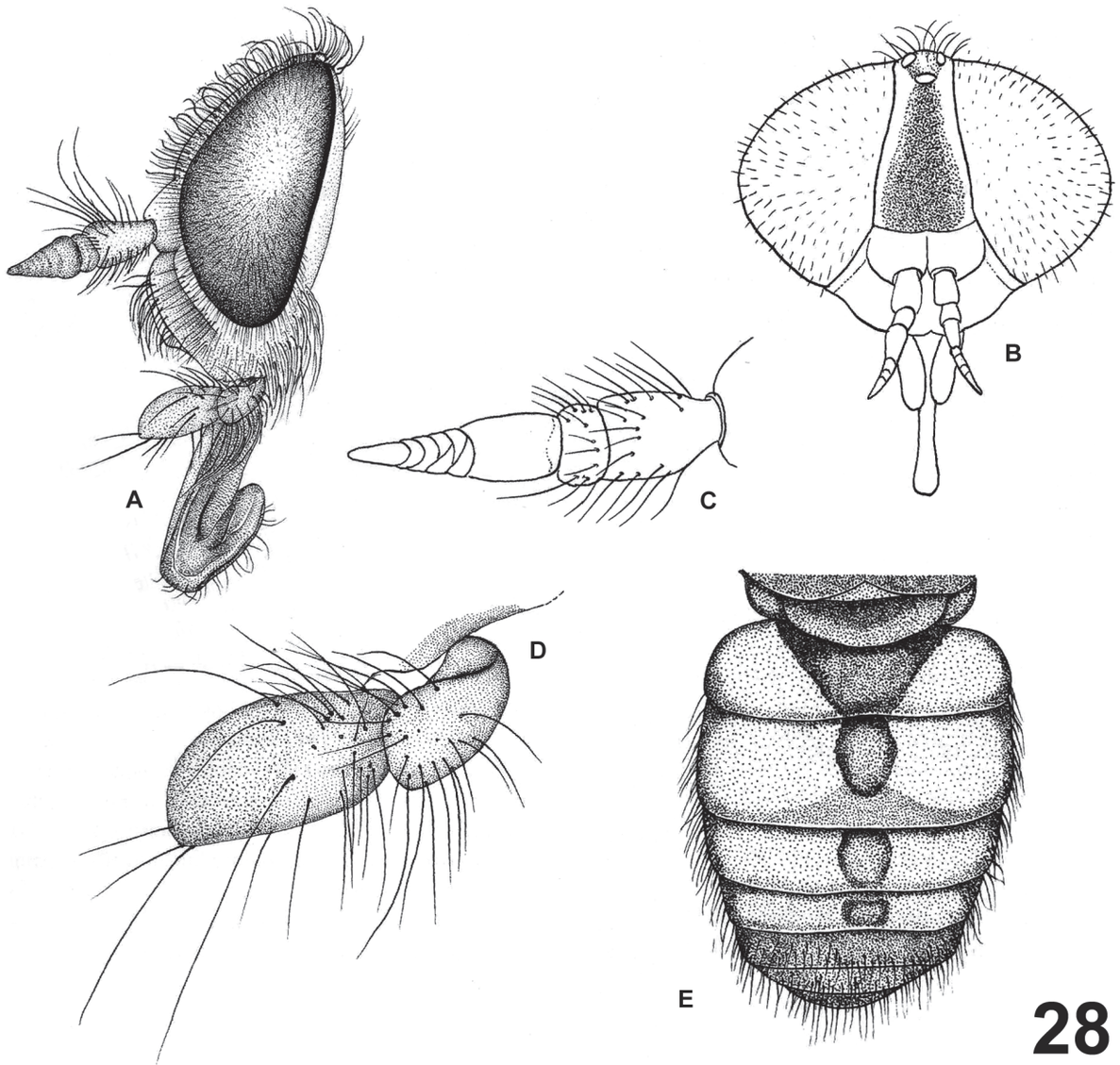

Figure 28. *Scaptia* (*Pseudomelpia*) *horrens* Enderlein, 1925. A. Head, lateral view. B. Frons. C. Antenna. D. Palpus. E. Abdomen, dorsal view.

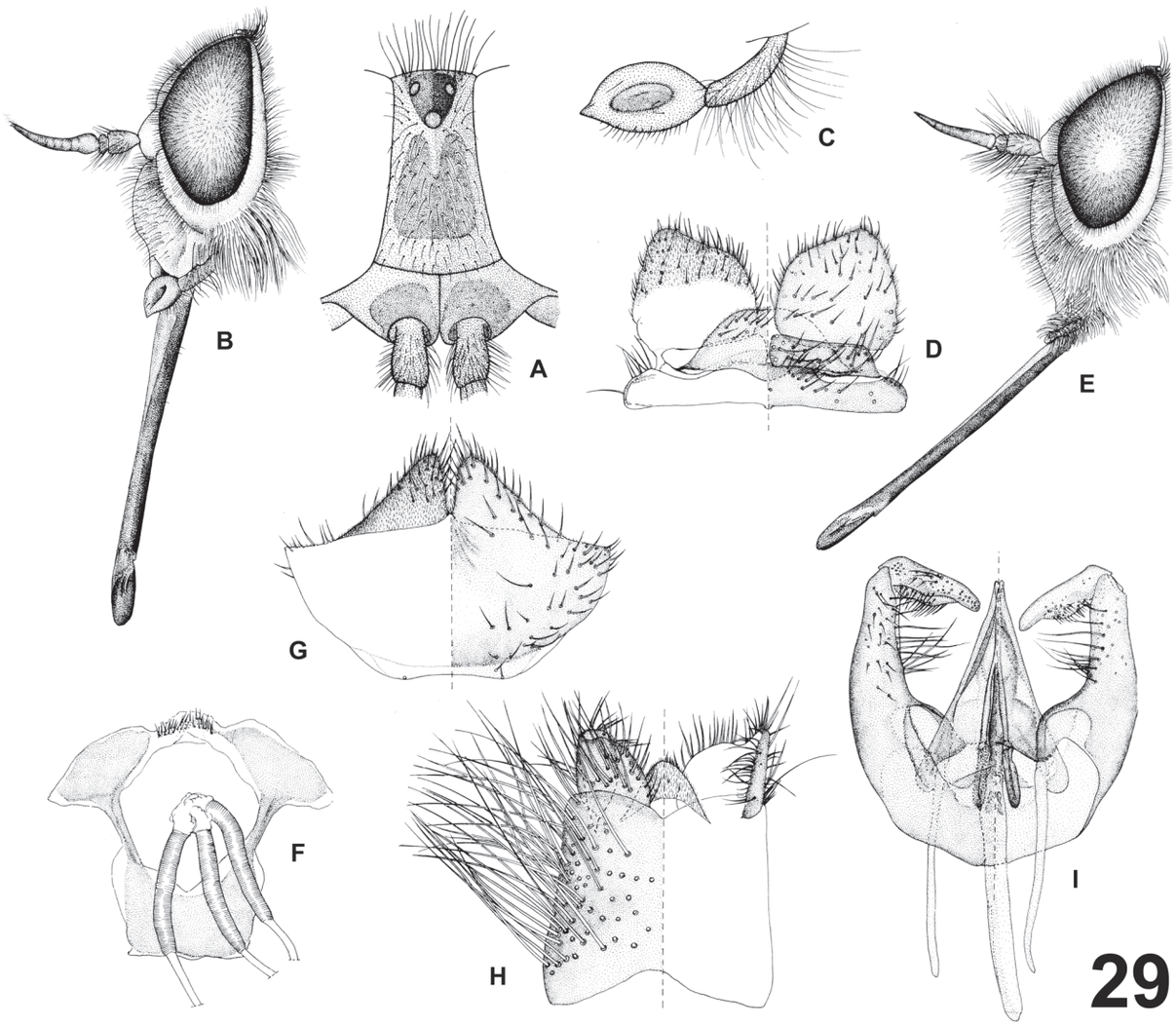

Figure 29. *Scaptia* (*Pseudoscione*) *stictica* Wilkerson & Coscarón, 1984. A. Frons. B. Head of female, lateral view. C. Palpus of female. D. Tergites 9-10 of female. E. Head of male, lateral view. F. Genital furca and spermathecal ducts. G. Infra-anal plate. H. Male epandrium and cerci. I. Male gonopod and aedeagus.

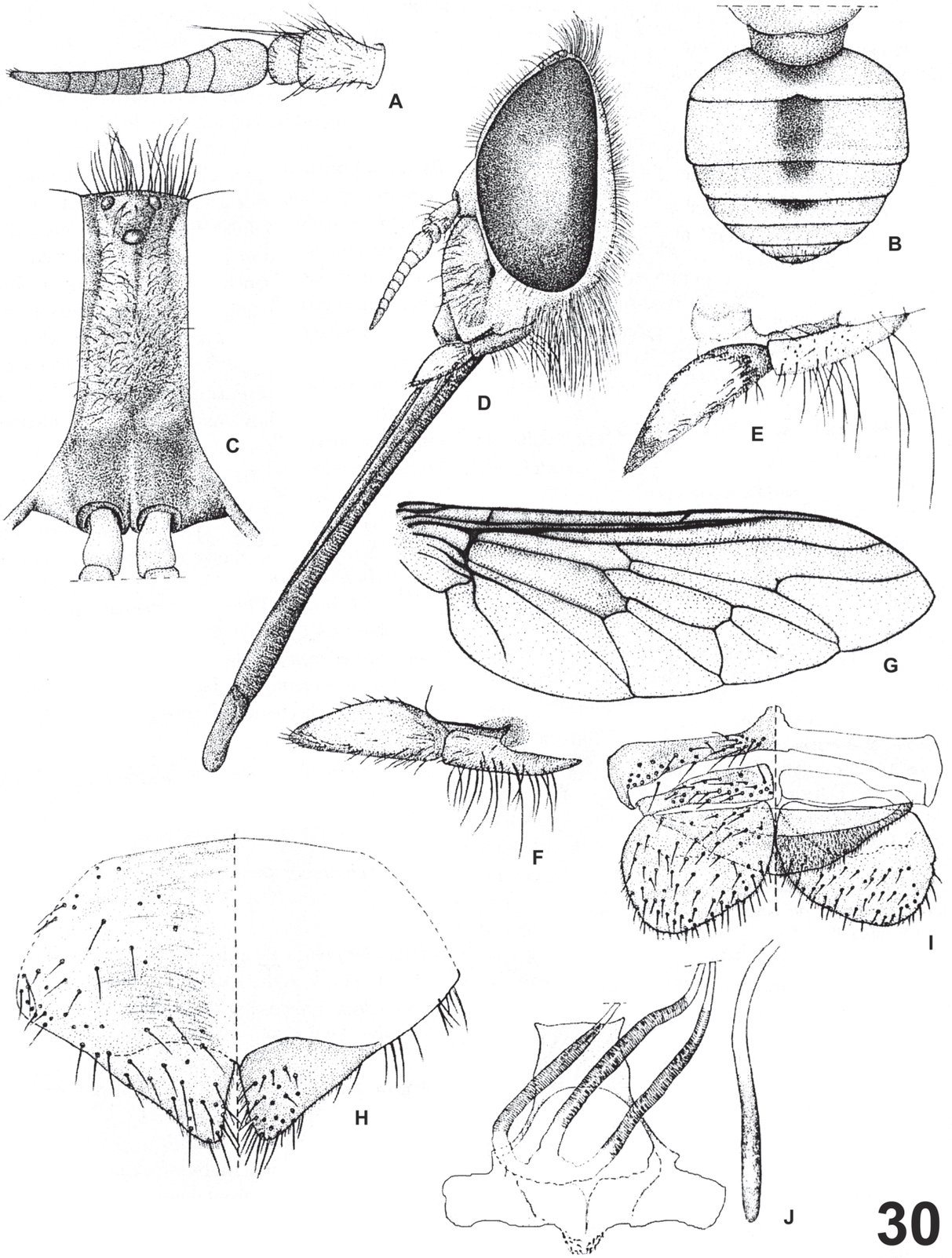

Figure 30. *Scione flavohirta* Ricardo, 1902. Female. A. Antenna. B. Abdomen, dorsal view. C. Frons. D. Head, lateral view. E-F. Palpus. G. Wing. H. Sternite 8 and gonapophyses. I. Hypoproct, tergites 9-10 and cerci. J. Genital furca and spermathecal ducts.

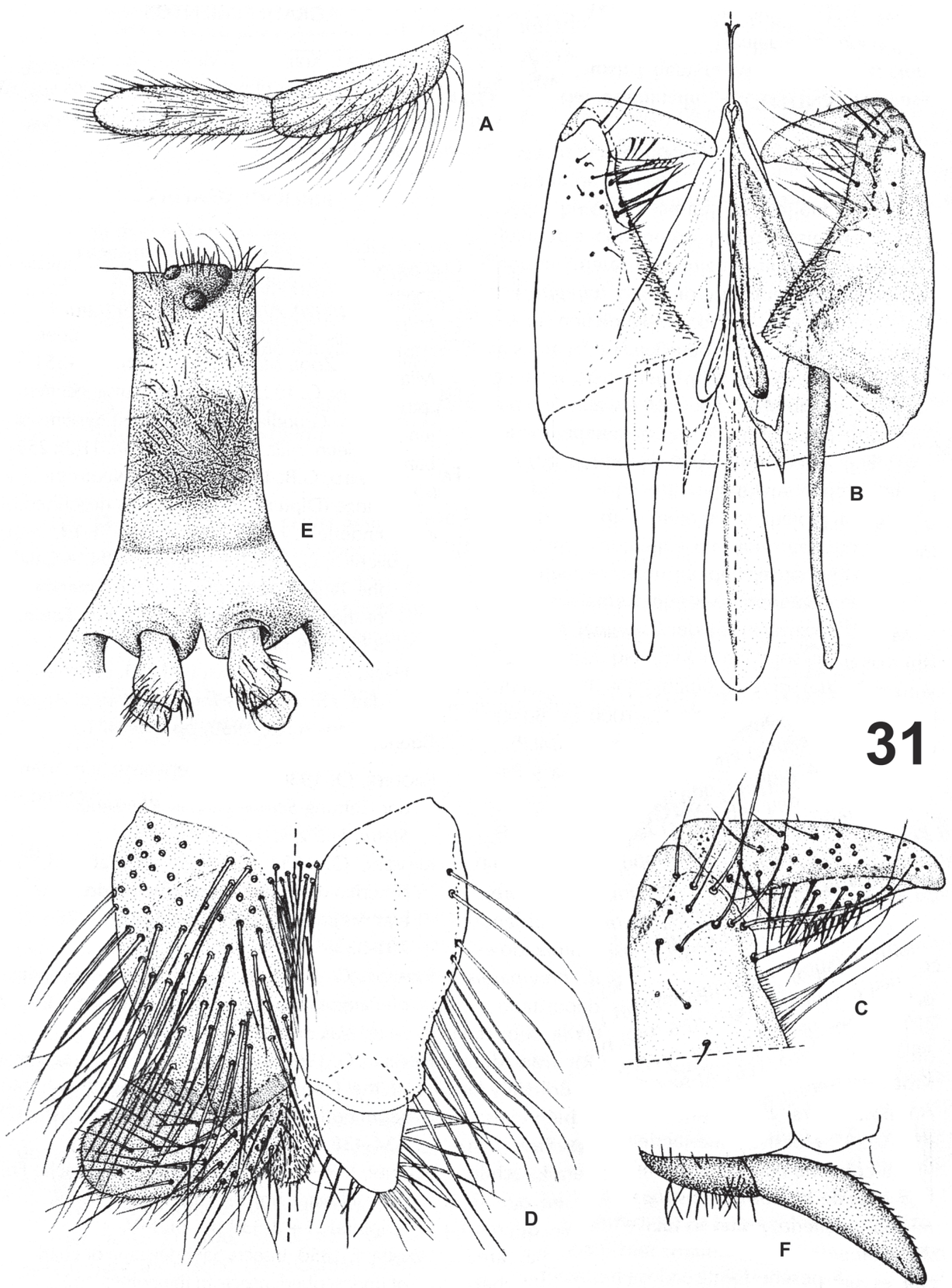

Figure 31. *Scione flavohirta* Ricardo, 1902. Male. A. Palpus. B. Aedeagus, basistyli and dististyli. C. Dististylus. D. Epandrium, hypandrium and cerci.

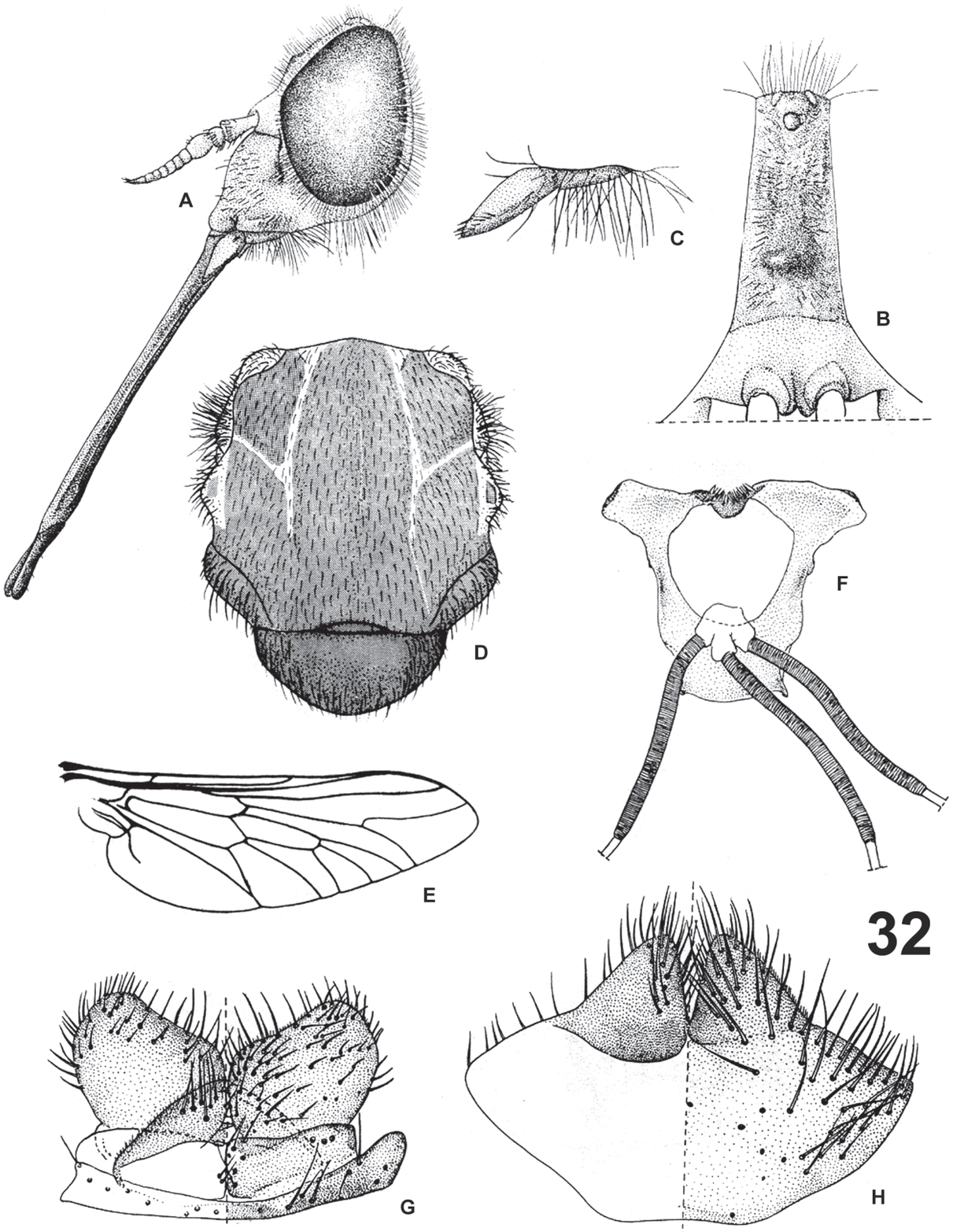

Figure 32. *Fidena* (*Neopangonia*) *pusilla* (Lutz, 1909). Female. A. Head, lateral view. B. Frons. C. Palpus. D. Mesonotum, dorsal view. E. Wing. F. Genital furca and spermathecal ducts. .G. Tergites 9-10 and cerci. H. Sternite 8 and gonapophyses.

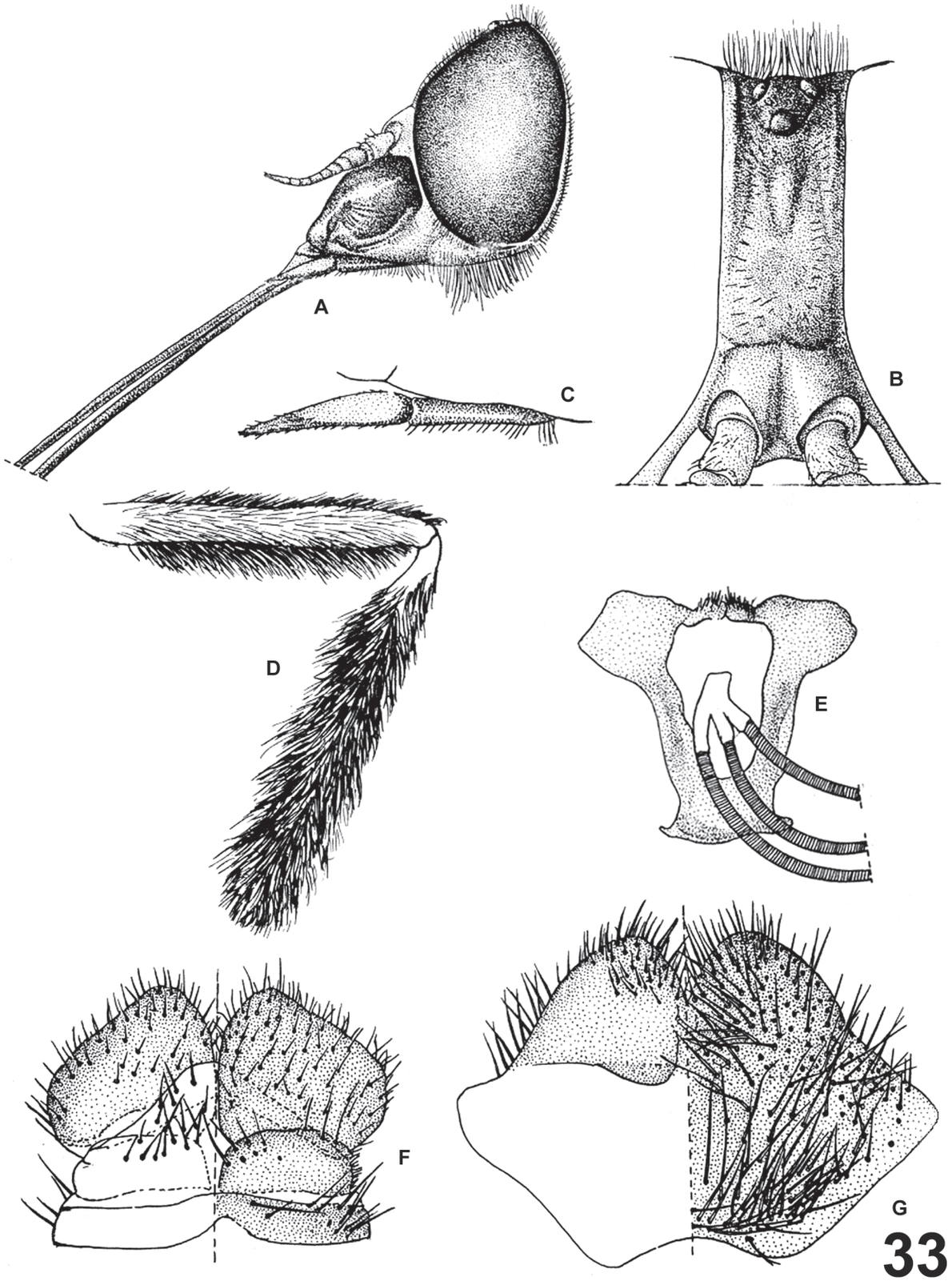

Figure 33. *Fidena* (*Laphriomyia*) *mirabilis* (Lutz, 1911). Female. A. Head, lateral view. B. Frons. C. Palpus. D. Hind leg. E. Genital furca and spermathecal ducts. F. Tergites 9-10 and cerci. G. Sternite 8 and gonapophyses.

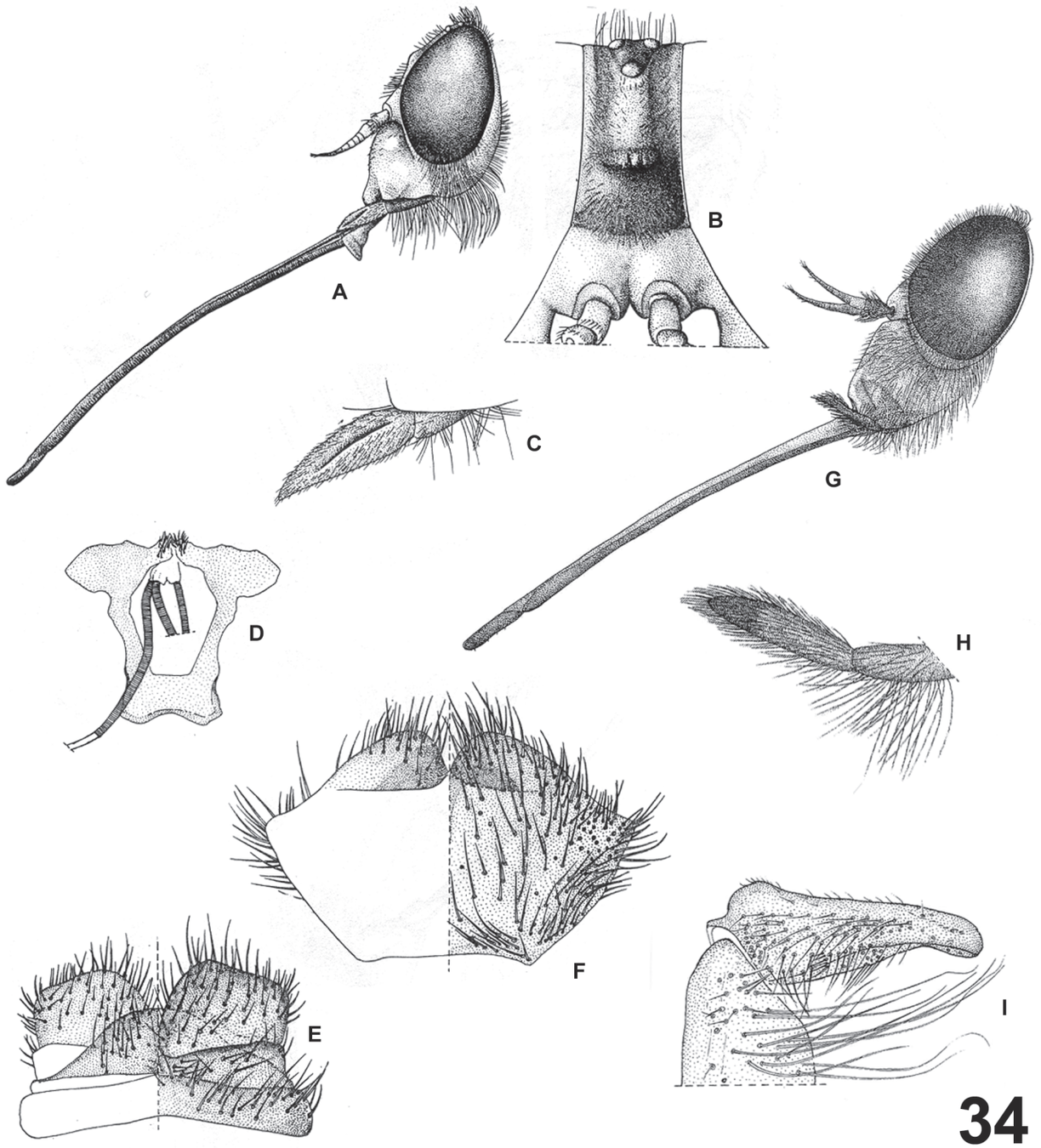

Figure 34. *Fidena* (*Leptofidena*) *morio* (Wulp, 1881). A-F. Female. A. Head, lateral view. B. Frons. C. Palpus. D. Genital furca and spermathecal ducts. E. Tergites 9-10 and cerci. F. Sternite 8 and gonapophyses. G-I. Male. G. Head, lateral view. H. Palpus. I. Dististylus.

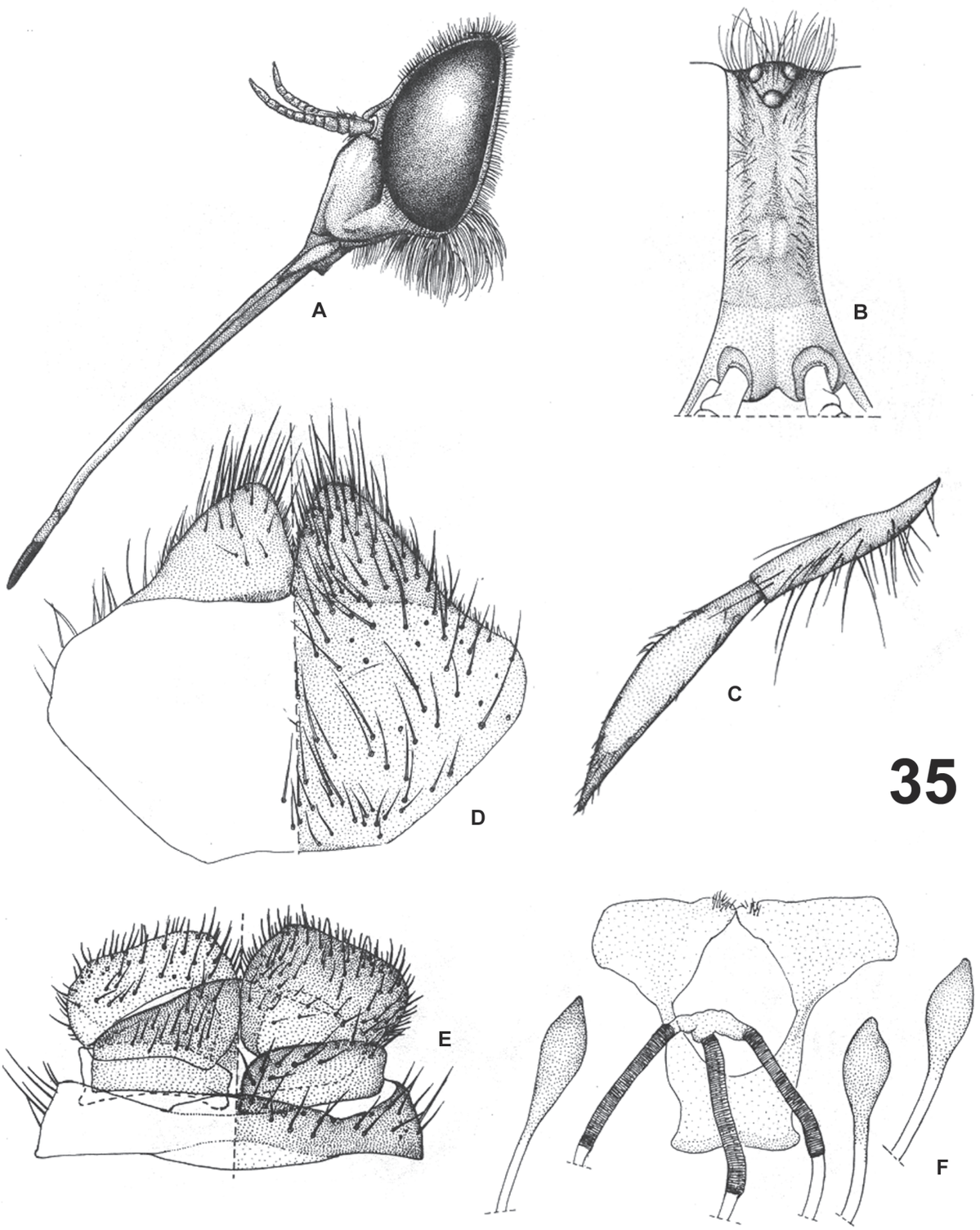

Figure 35. *Fidena* (*Fidena*) *erythronotata* (Bigot, 1892). Female. A. Head, lateral view. B. Frons. C. Palpus. D. Tergites 9-10 and cerci. E. Sternite 8 and gonapophyses. F. Genital furca and spermathecal ducts.

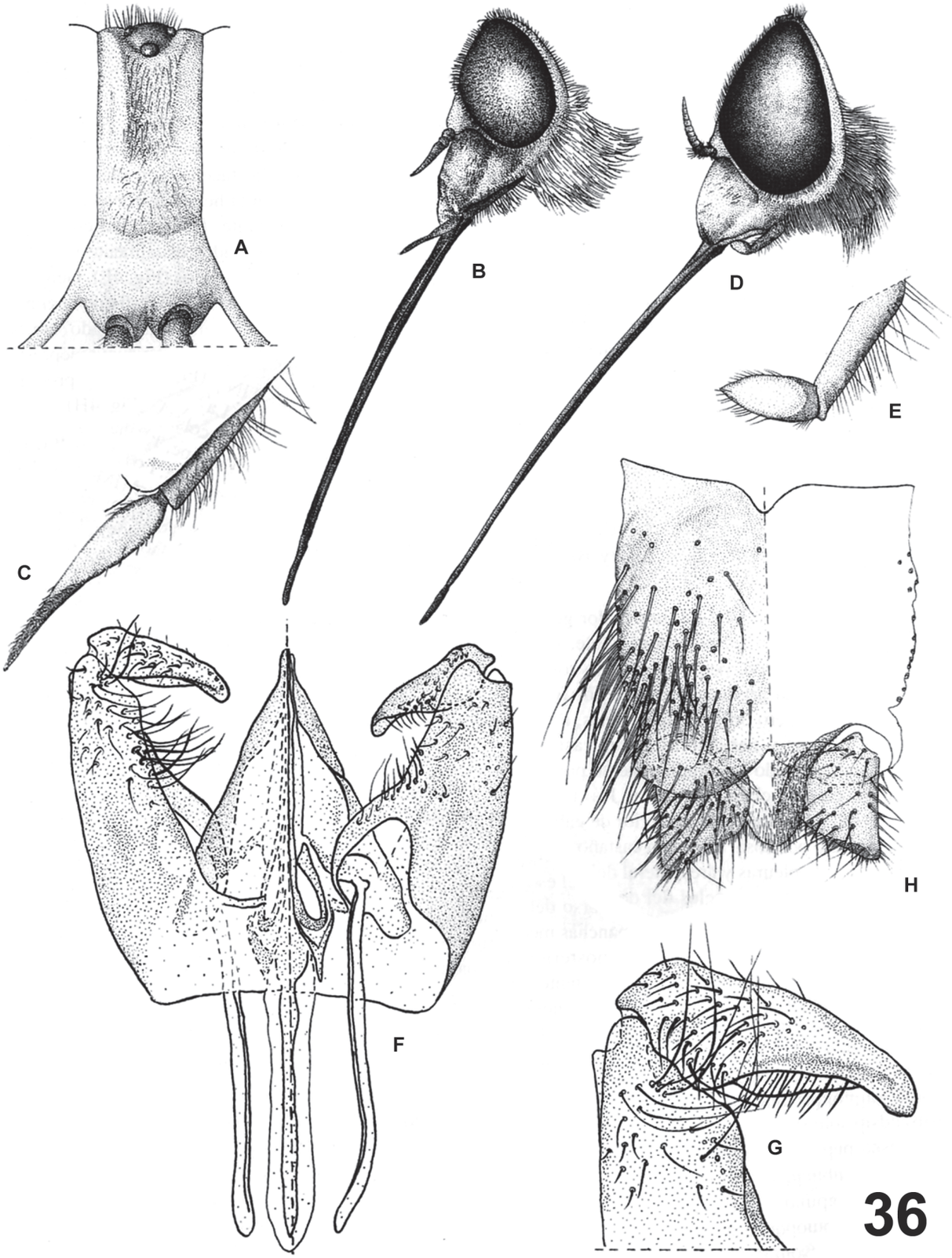

Figure 36. *Fidena* (*Fidena*) *neglecta* Kröber, 1931. Male. A. Head, lateral view. B. Palpus. C. Basistyli, dististyli and aedeagus. D. Dististylus. E. Epandrium, cerci and proctiger.

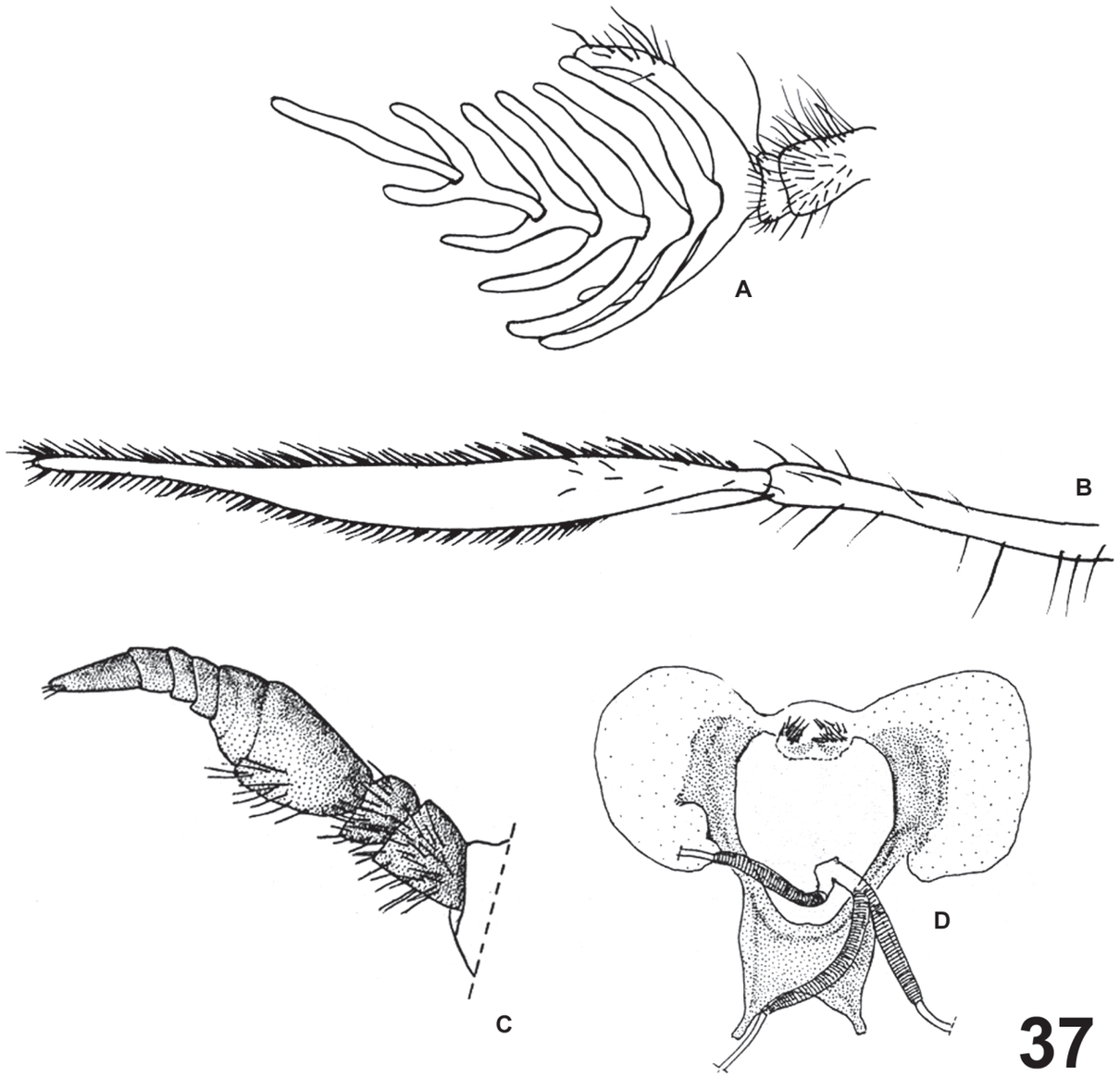

Figure 37. A-B. *Pityocera* (*Pityocera*) *festai* Giglio-Tos, 1896. A. Antenna. B. Palpus. C-D. *Pityocera* (*Pseudelaphella*) *nana* (Walker, 1850). C. Antenna. D. Genital-furca and spermarhecal ducts.

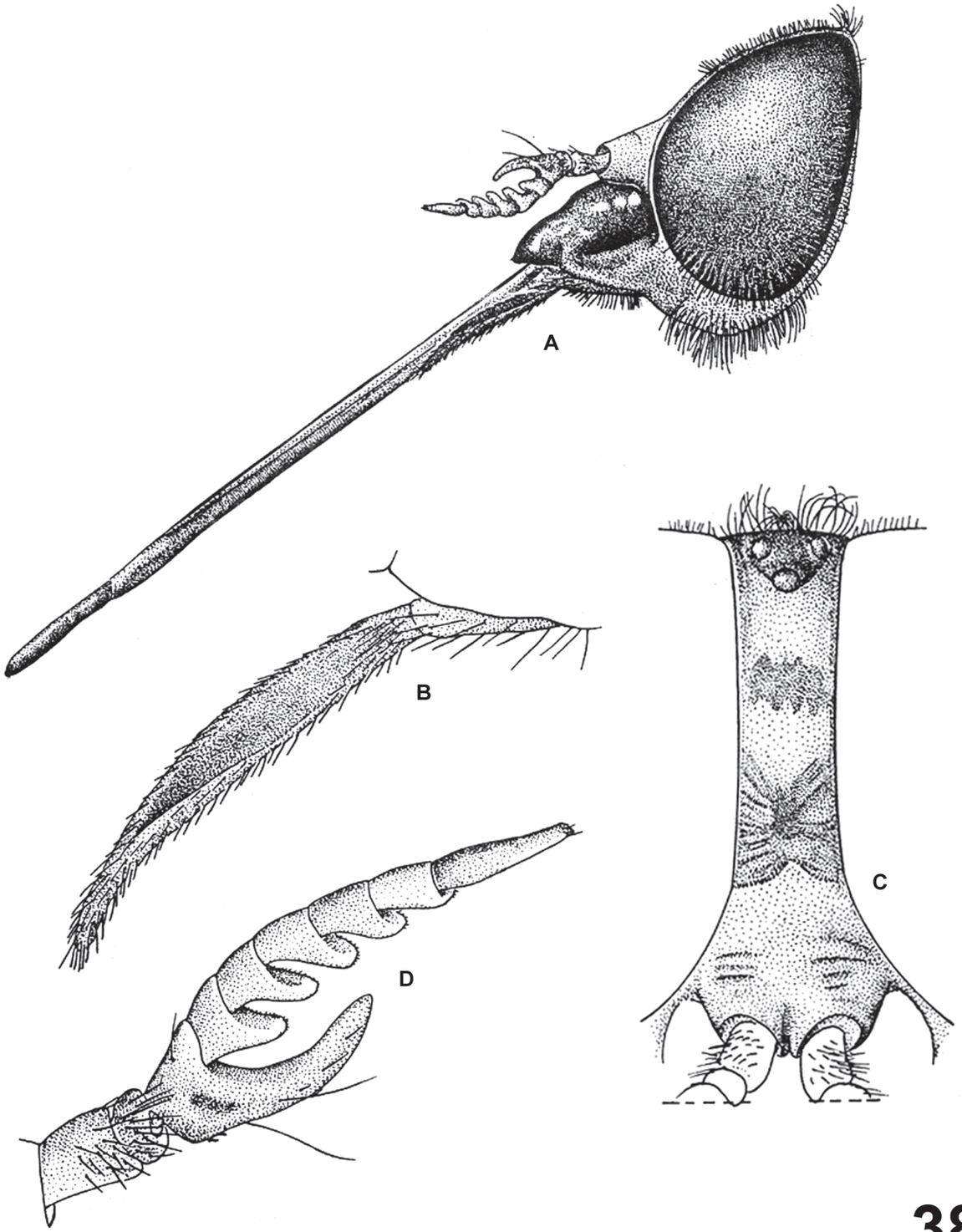

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Figure 38. A-D. *Pityocera* (*Elaphella*) *cervus* (Wiedemann, 1828). A. Head, lateral view. B. Palpus. C. Frons. D. Antenna.

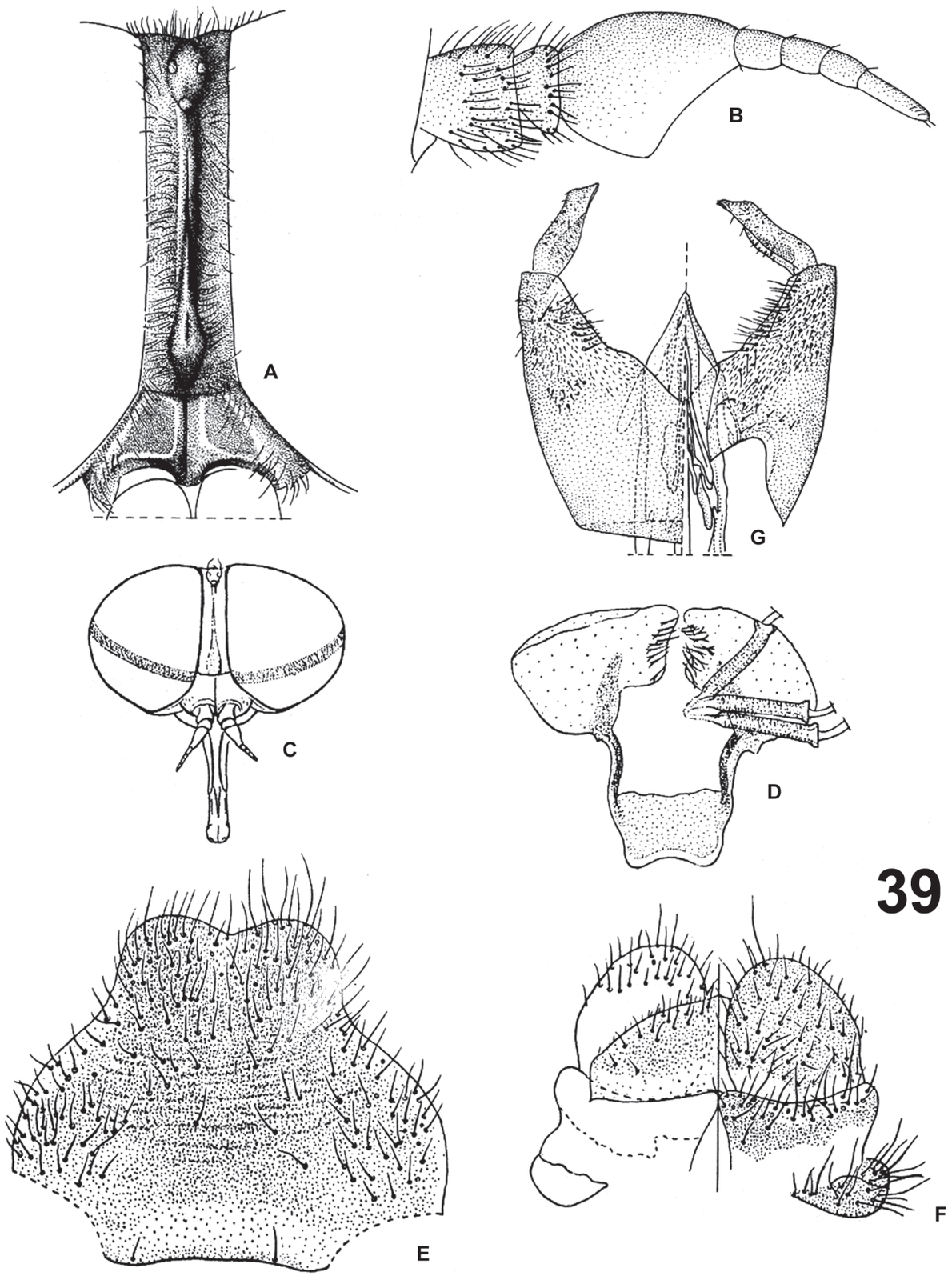

Figure 39. A-B. *Pseudotabanus* (*Coracella*) *carbo* (Macquart, 1850). Female. A. Frons. B. Antenna. C-G. *Pseudotabanus* (*Coracella*) *araucana* (Coscarón, 1972). Female (C-F). C. Head, frontal view. D. Genital furca and spermathecal ducts. E. Sternite 8 and gonapophyses. F. Tergites 9-10 and cerci. G. Male aedeagus and gonostyli.

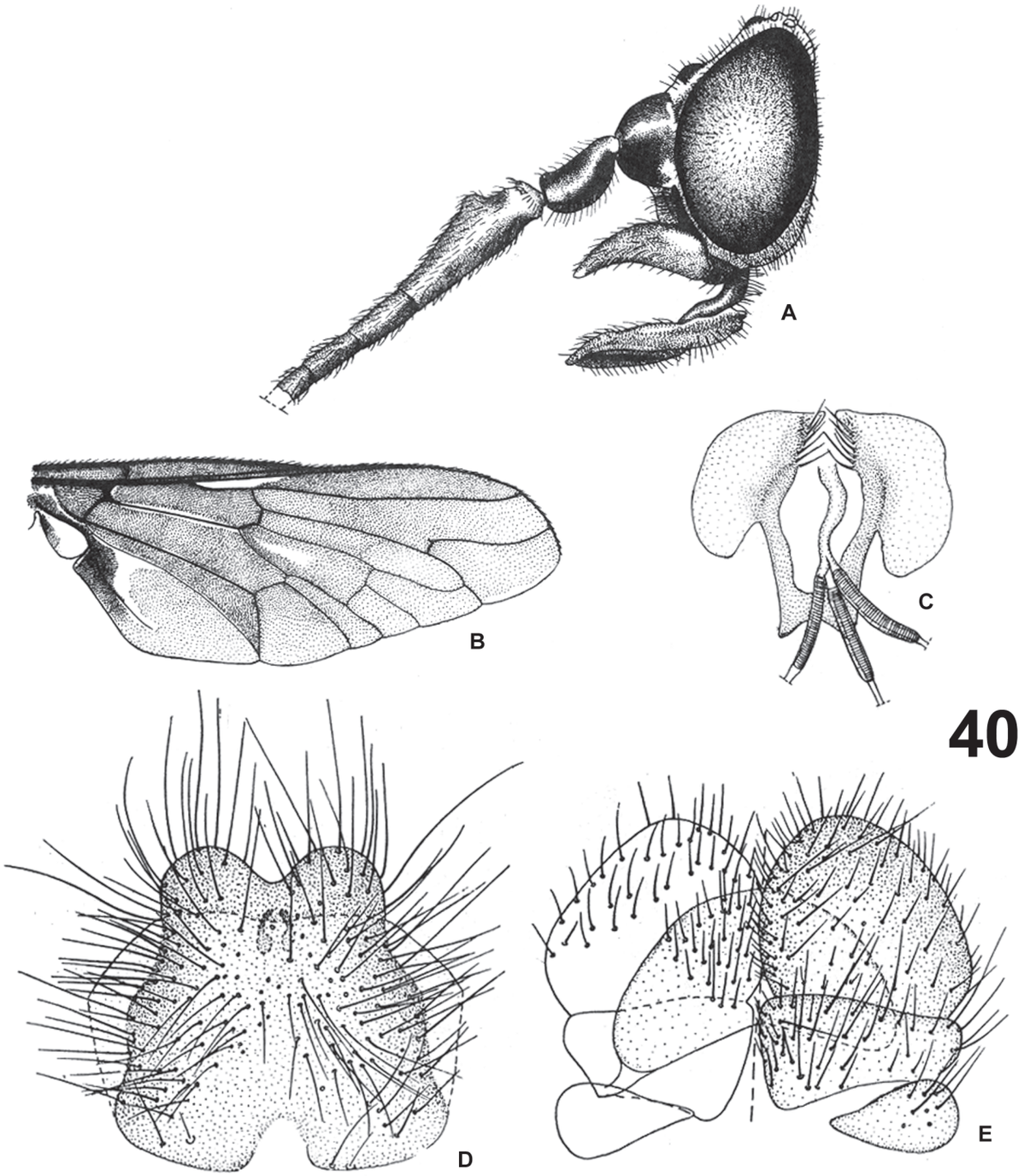

Figure 40. *Betrequia ocellata* Oldroyd, 1970. Female. A. Head, lateral view. B. Wing. C. Genital furca and spermathecal ducts. D. Sternite 8 and gonapophyses. E. Tergites 9-10 and cerci.

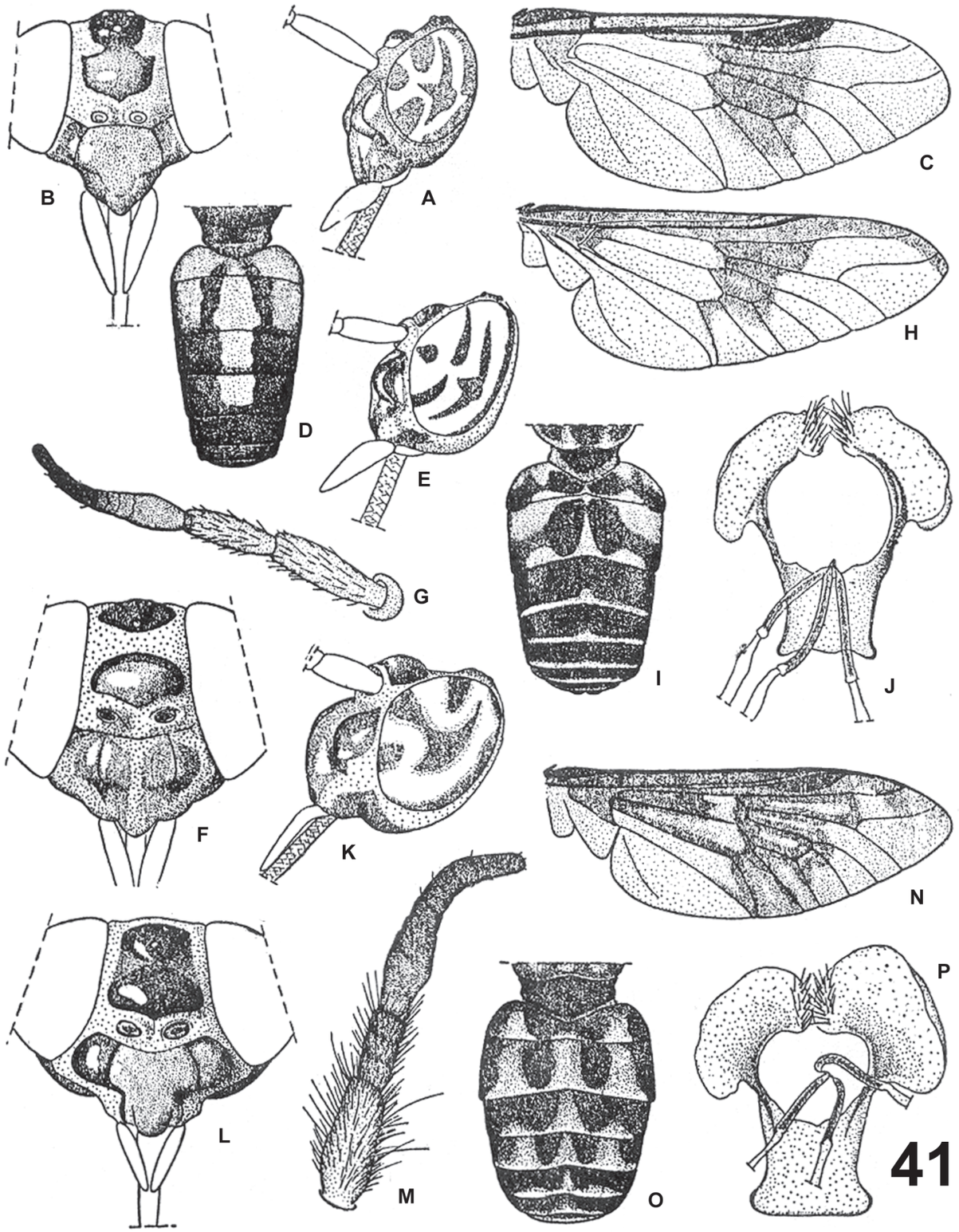

Figure 41. A-D. *Chrysops crucians* Wiedemann, 1828. Female. A. Head, lateral view. B. Frons. C. Wing. D. Abdomen, dorsal view. E-I. *Chrysops flavoscutellatus* Kröber, 1926. Female. E. Head, lateral view. F. Frons. G Wing. H. Abdomen. I. Genital furca and spermathecal ducts. J-O. *Chrysops flinti* Coscarón, 1979. Female. J. Head, lateral view. K. Frons. L. Antenna. M. Wing. N. Abdomen, dorsal view. O. Genital furca and spermahecal ducts.

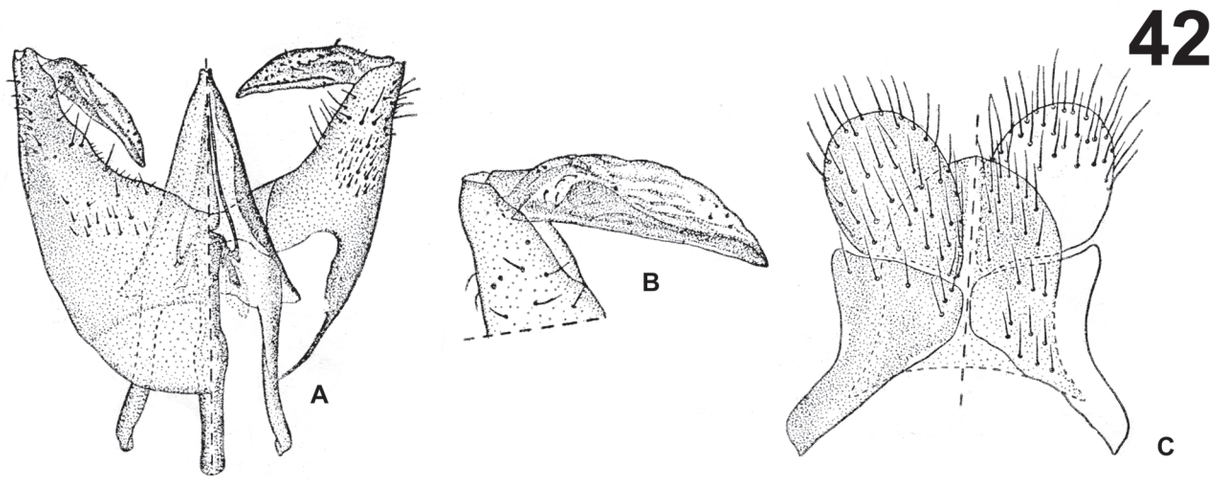

Figure 42. *Chrysops laetus* Fabricius, 1805. A. Basistyli, aedeagus and dististyli. B. Dististylus. C. Paraprocts, cerci and hypoproct.

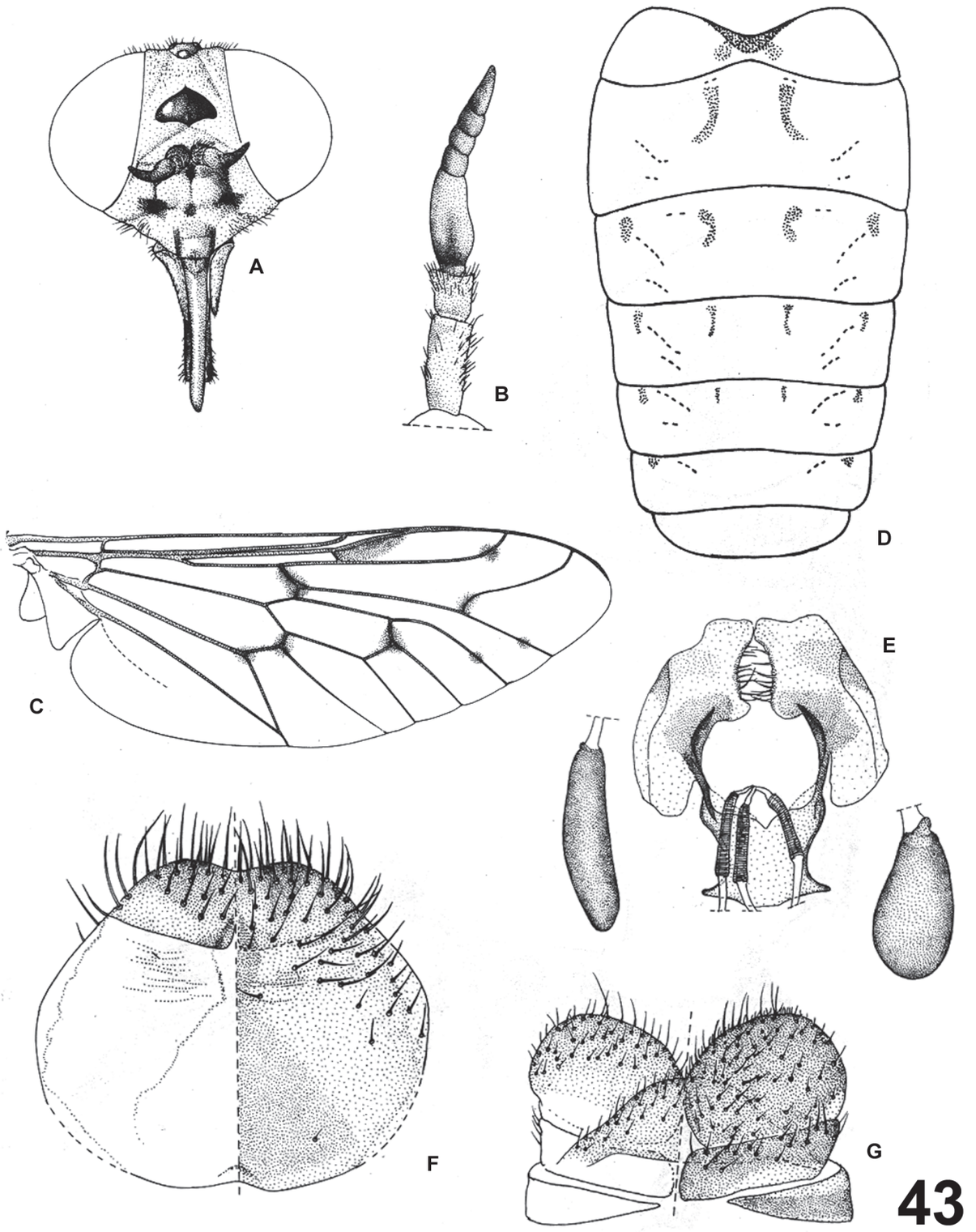

Figure 43. *Silvius* (*Griseosilvius quadrivittatus* (Say, 1823). Female. A. Head, frontal view. B. Antenna. C. Wing. D. Abdomen. E. Genital furca and spermathecal ducts. F. Sternite 8 and gonapophyses. G. Tergites 9-10 and cerci.

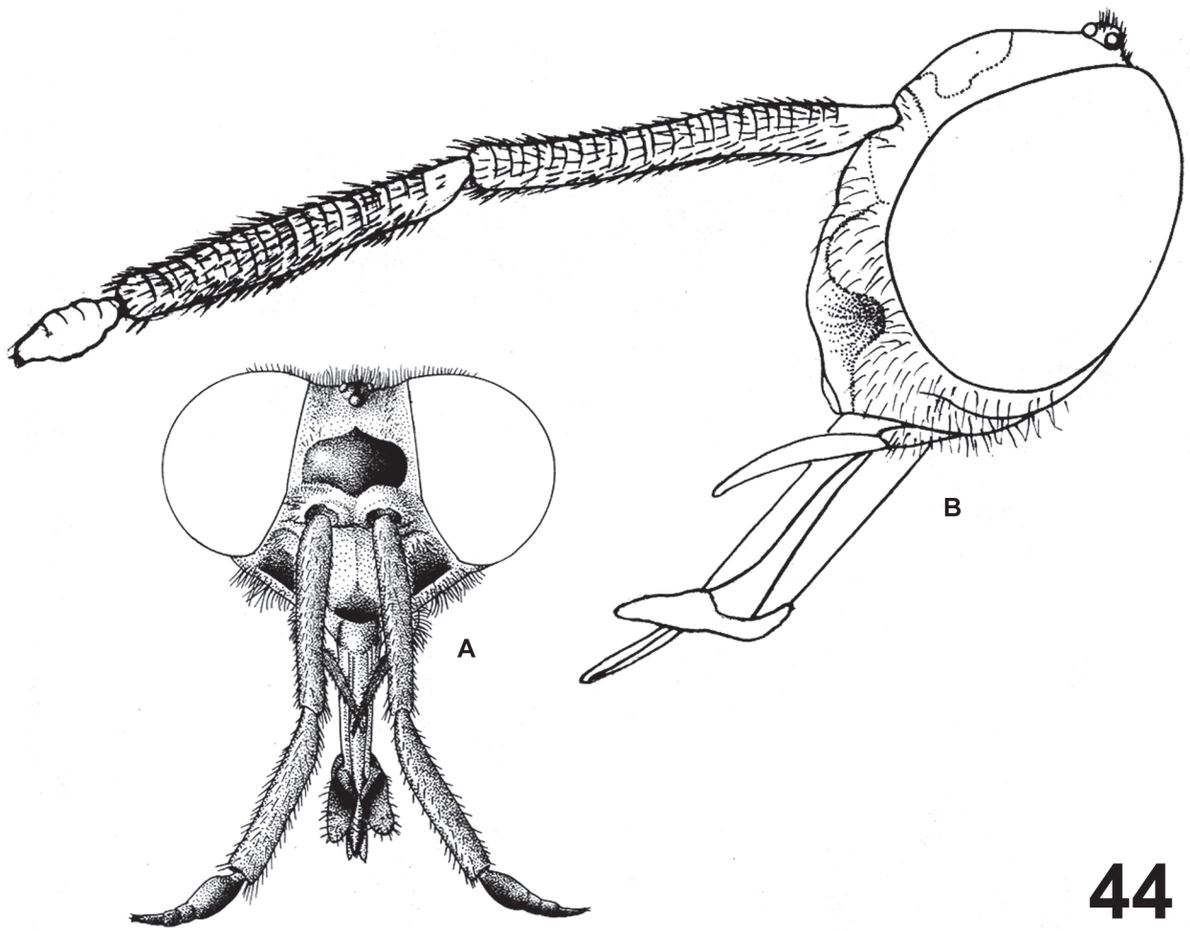

Figure 44. *Silvius* (*Assipala*) *melanopterus* (Hine, 1905). A. Head, frontal view. B. Same, lateral view.

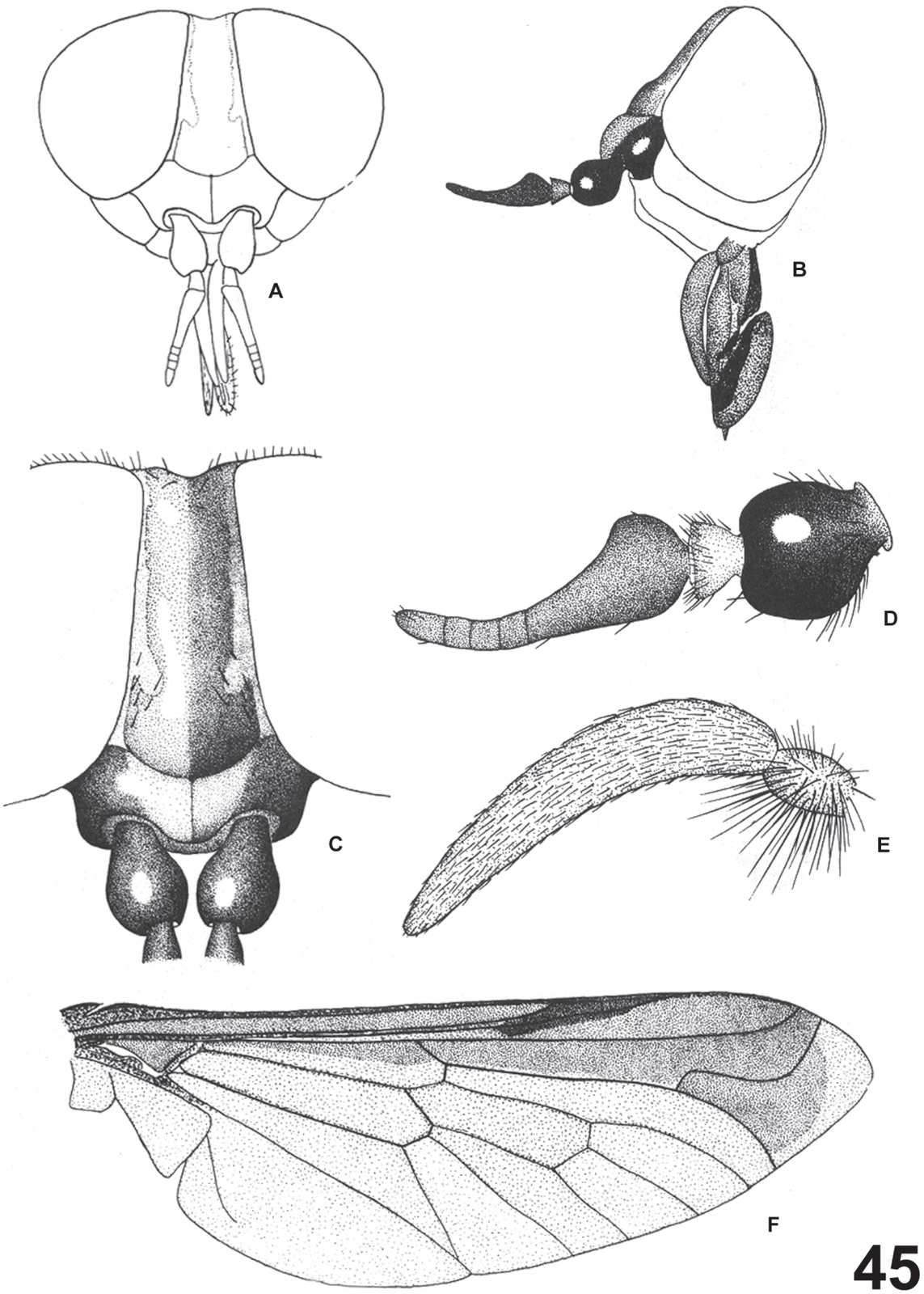

Figure 45. *Bolbodimyia lateralis* Kröber, 1930. Female. A. Head, frontal view. B. Same, lateral view. C. Frons. D. Antenna. E. Palpus. F. Wing.

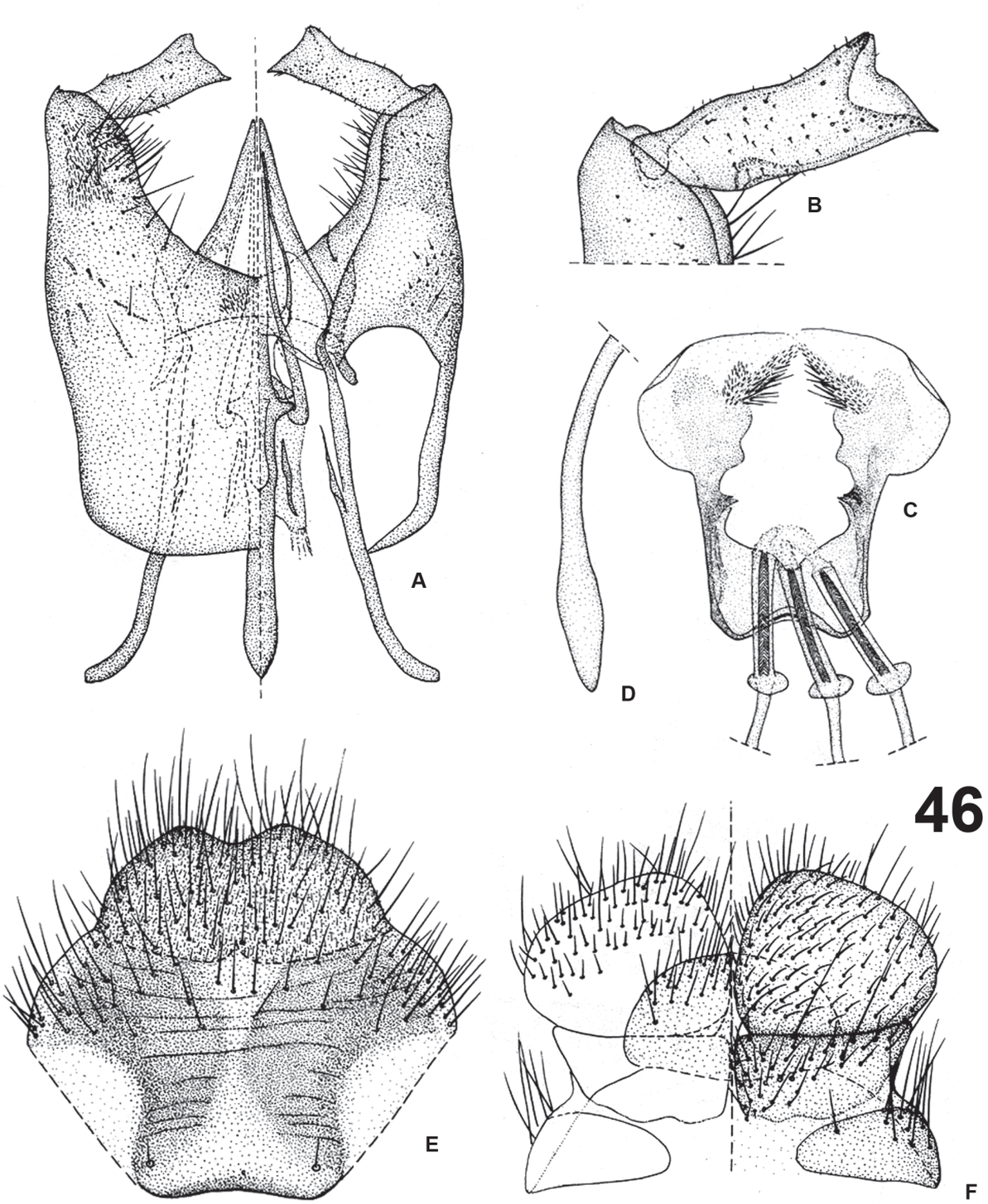

Figure 46. *Bolbodimyia lateralis* Kröber, 1930. Male. (A-B), female (C-F). A. Aedeagus and gonostyli. B. Dististylus. C. Genital furca and spermathecal ducts. D. Spermatheca. F. Sternite 8 and gonapophyses. F. Tergites 9-10 and cerci.

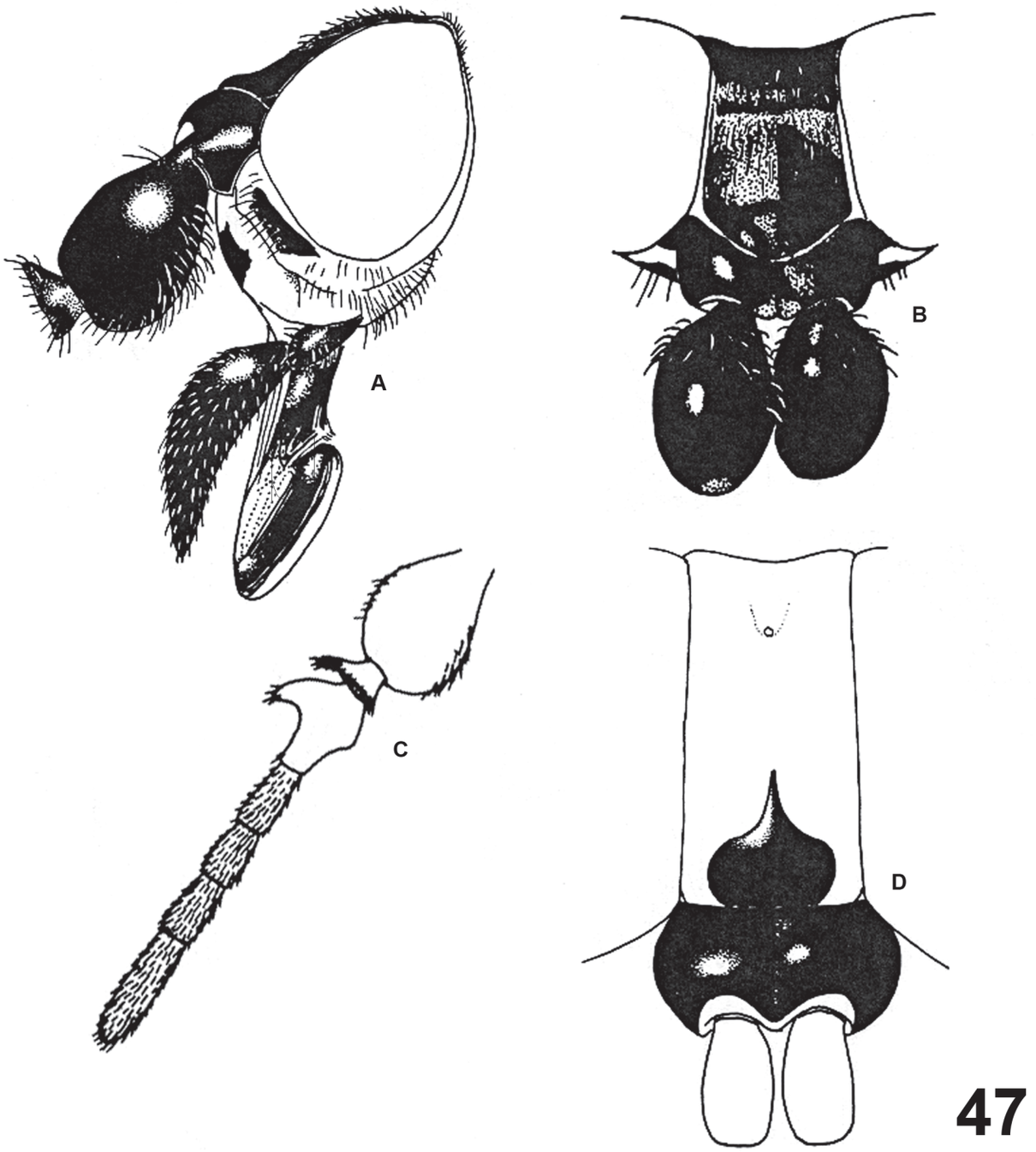

Figure 47. A-B. *Acanthocera* (*Querbetia*) *chaineyi* Fairchild & Burger, 1994. Female. A. Head, lateral view. B. Same, frontal view. C. *Acanthocera* (*Querbetia*) *inopinata* (Fairchild, 1972). Female. Antenna. D. *Holcopsis fenestrata* Enderlein, 1925. Female. Frons.

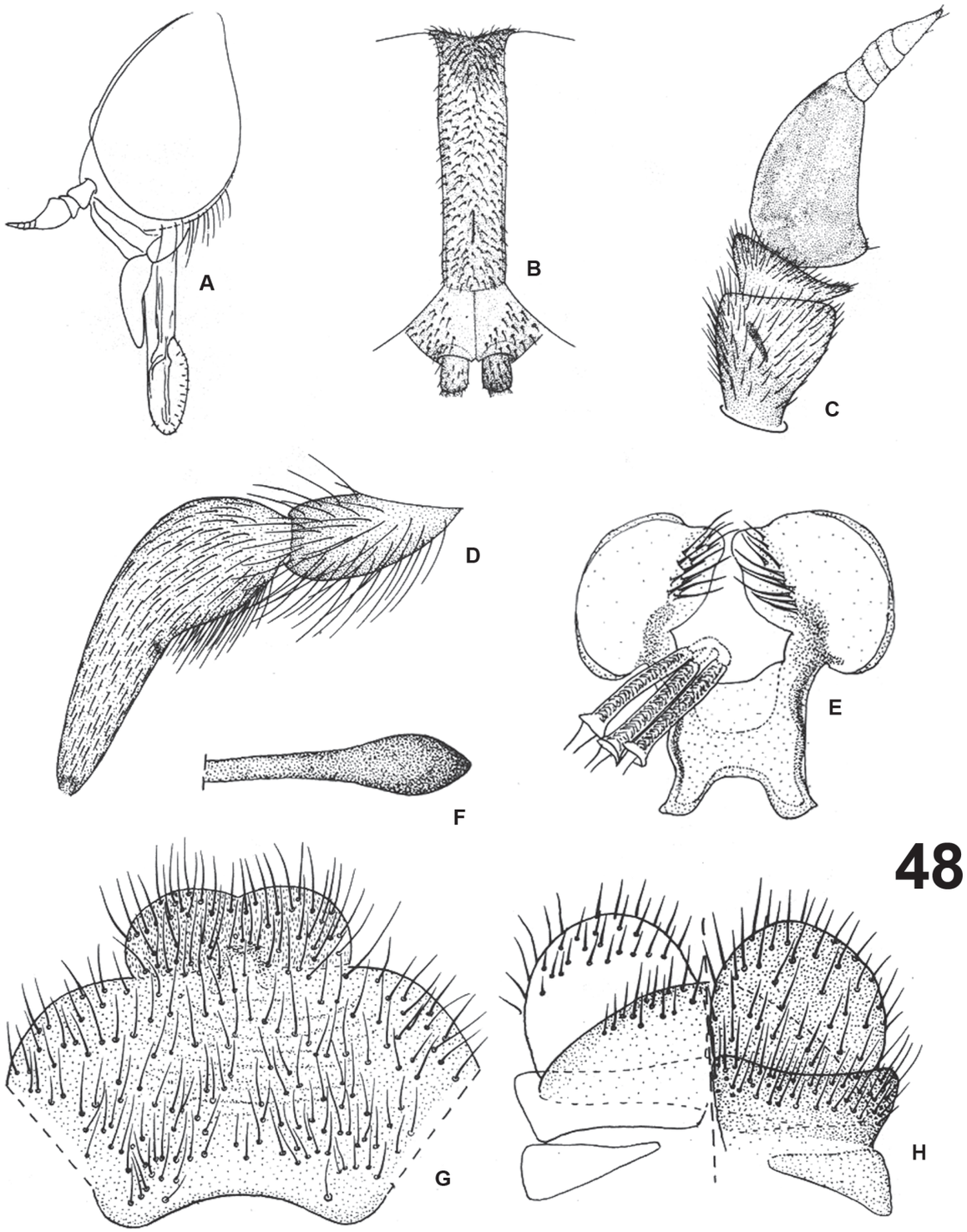

Figure 48. *Chlorotabanus parviceps* (Kröber, 1934). Female. A. Head, lateral view. B. Frons. C. Antenna. D. Palpus. E. Genital furca and spermathecal ducts. F. Spermatheca. G. Sternite 8 and gonapophyses. H. Tergites 9-10 and cerci.

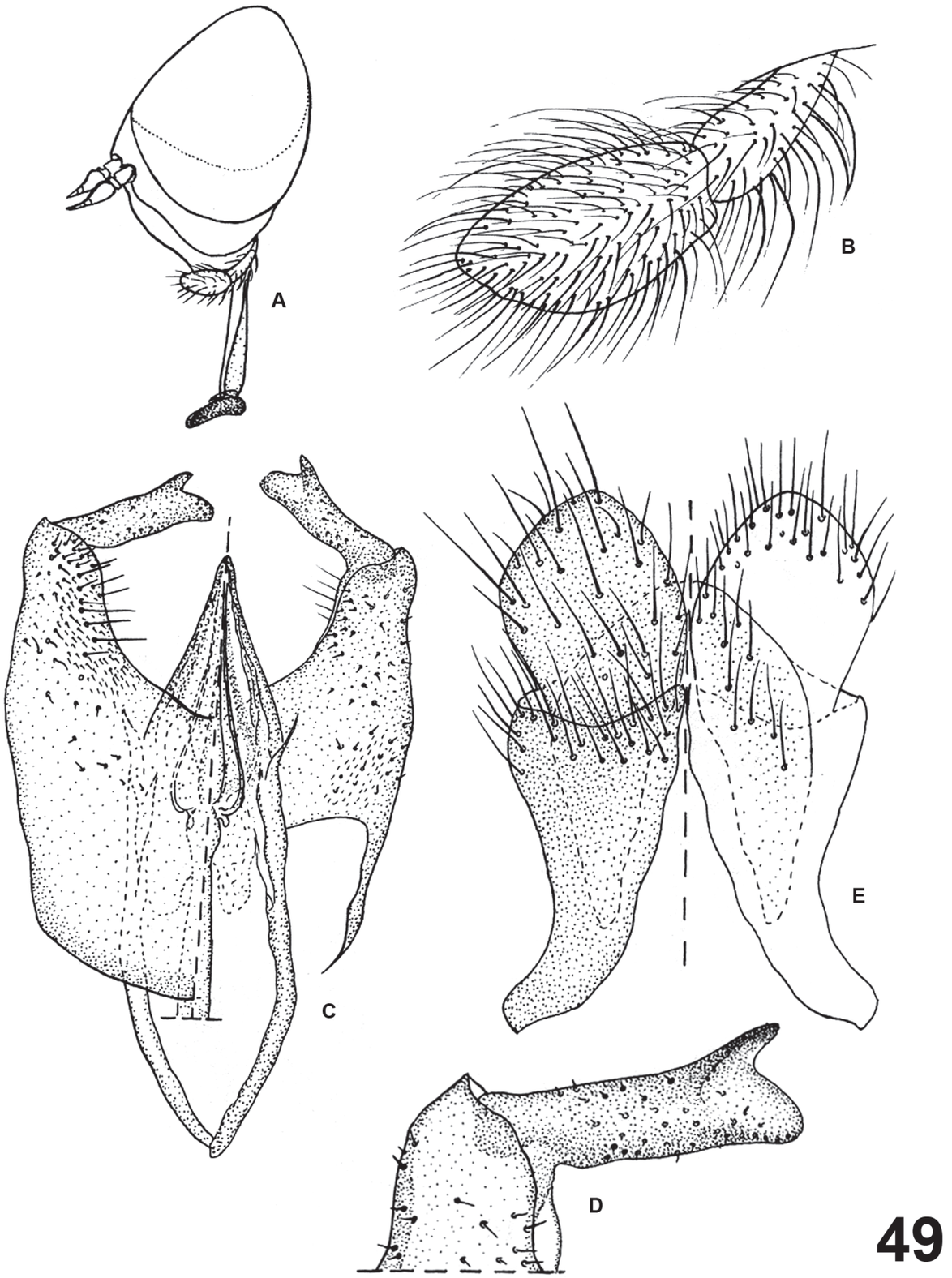

Figure 49. *Chlorotabanus parviceps* (Kröber, 1934). Male. A. Head, lateral view. B. Palpus. C. Aedeagus and gonostyli. D. Dististylus. E. Epandrium and cerci.

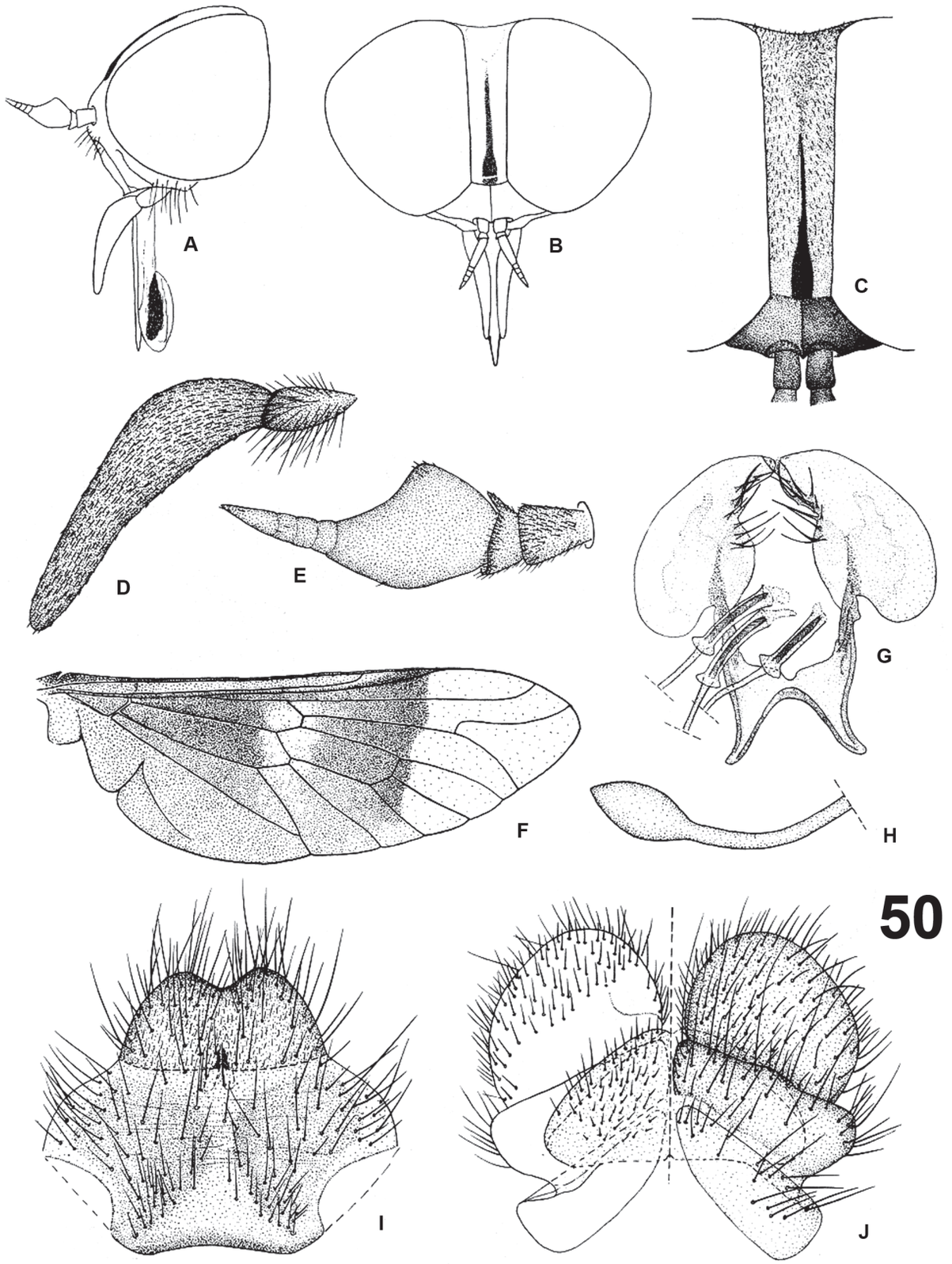

Figure 50. *Pachyschelomyia notopleuralis* Barretto, 1950. Female. A. Head, frontal view. B. Same, lateral view. C. Frons. D. Antenna. E. Palpus. F. Wing. G. Genital furca and spermathecal ducts. H. Spermatheca. I. Sternite 8 with gonapophyses. J. Tergites 9-10 and cerci.

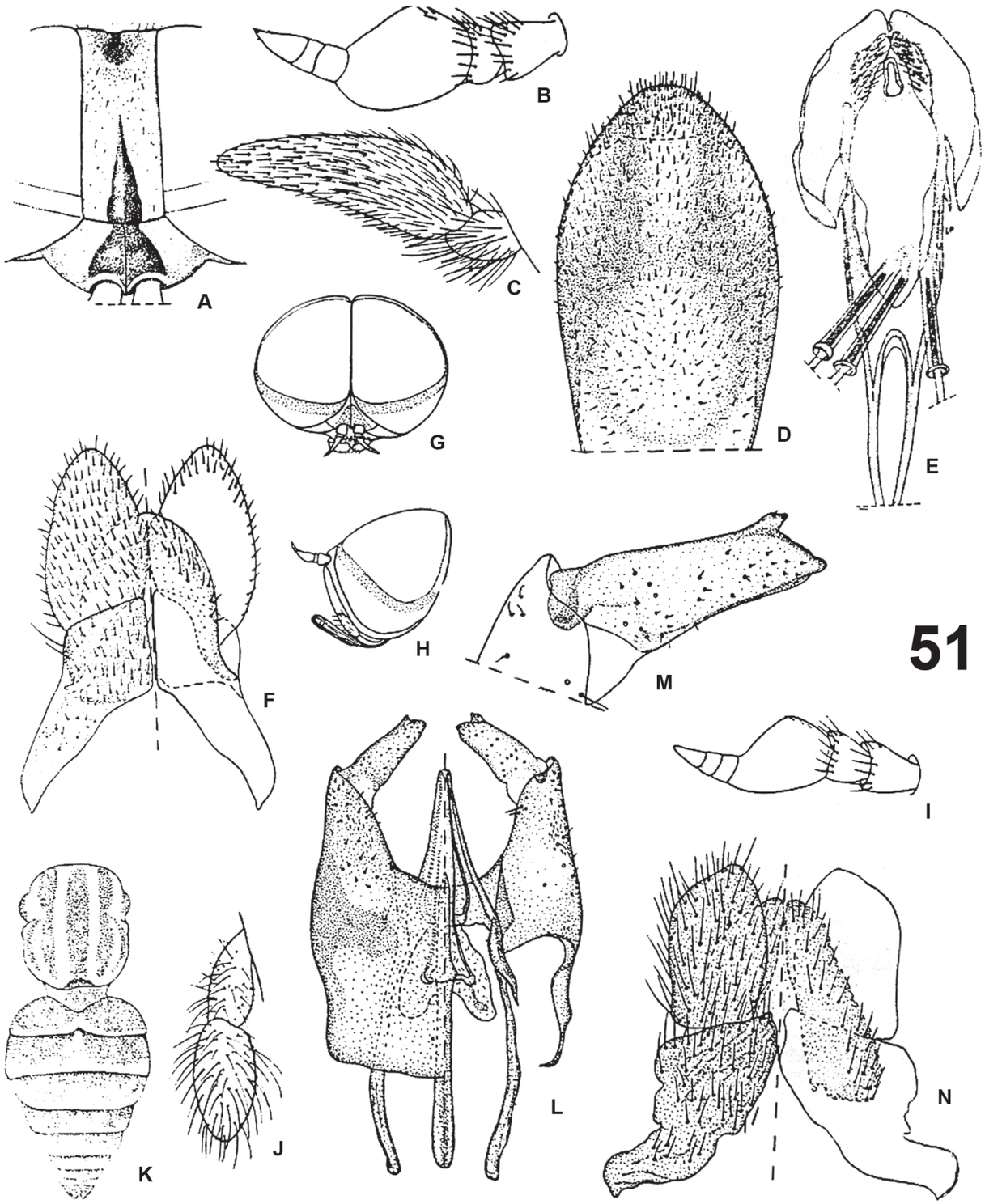

Figure 51. *Myiotabanus barrettoi* Fairchild, 1971. Male (A-F), female (G-N). A. Frons. B. Antenna. C. Palpus. D. Sternite 8 and gonapophyses. F. Genital furca and spermathecal ducts. F. Tergites 9-10 and cerci. G. Head, frontal view. H. Same, lateral view. I. Antenna. J. Palpus. K. Thorax and abdomen, dorsal view. L. Aedeagus and gonostyli. M. Dististylus. N. Epandrium and cerci.

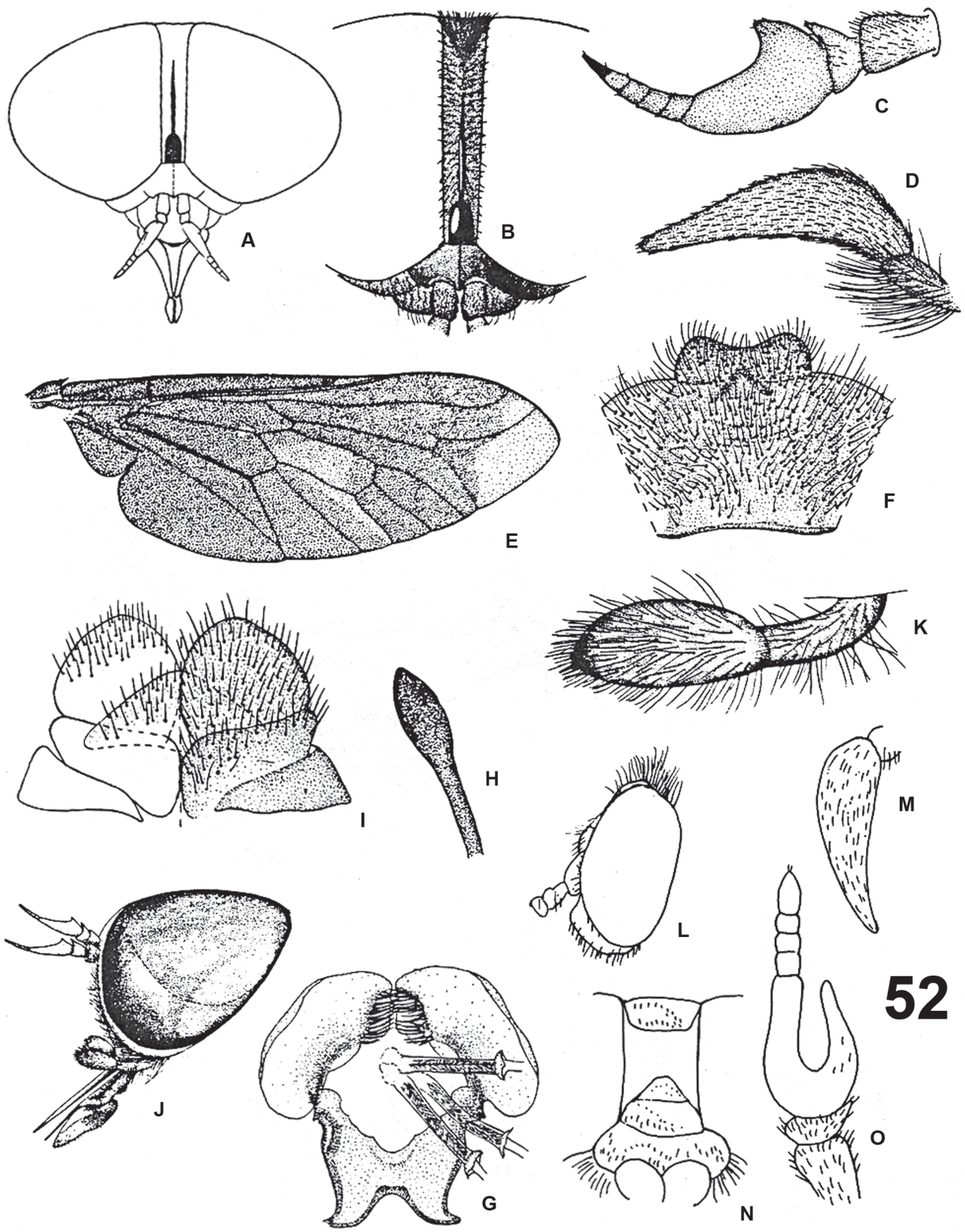

Figure 52. A-K. *Phaeotabanus limpidapex* (Wiedemann, 1828). Female (A-I), male (J-K). A. Head, frontal view. B. Frons. C. Antenna. D. Palpus. E. Wing. F. Sternite 8 and gonapophyses. G. Genital furca and spermathecal ducts. H. Spermatheca. I. Tergites 9-10 and cerci. J. Head, lateral view. K. Palpus. L-O. *Eristalotabanus violaceus* Kröber, 1931. Female. L. Head, lateral view. M. Palpus. N. Frons. O. Antenna.

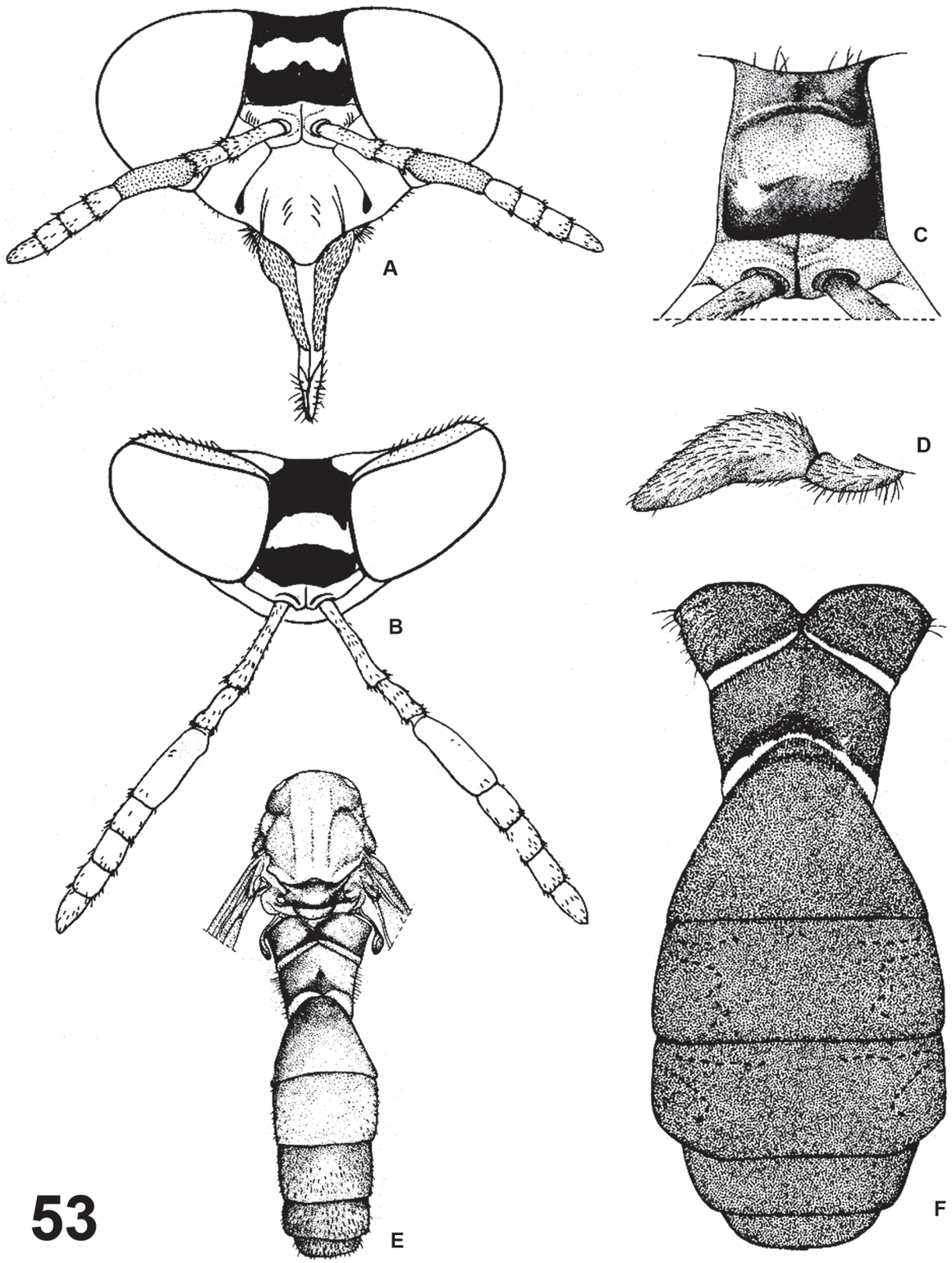

Figure 53. *Acanthocera* (*Mimodynerus*) *anacantha* Lutz & Neiva, 1915. Female. A. Head, frontal view. B. Same, dorsal view. C. Frons. D. Palpus. E. Thorax and abdomen, dorsal view. F. Abdomen, dorsal view.

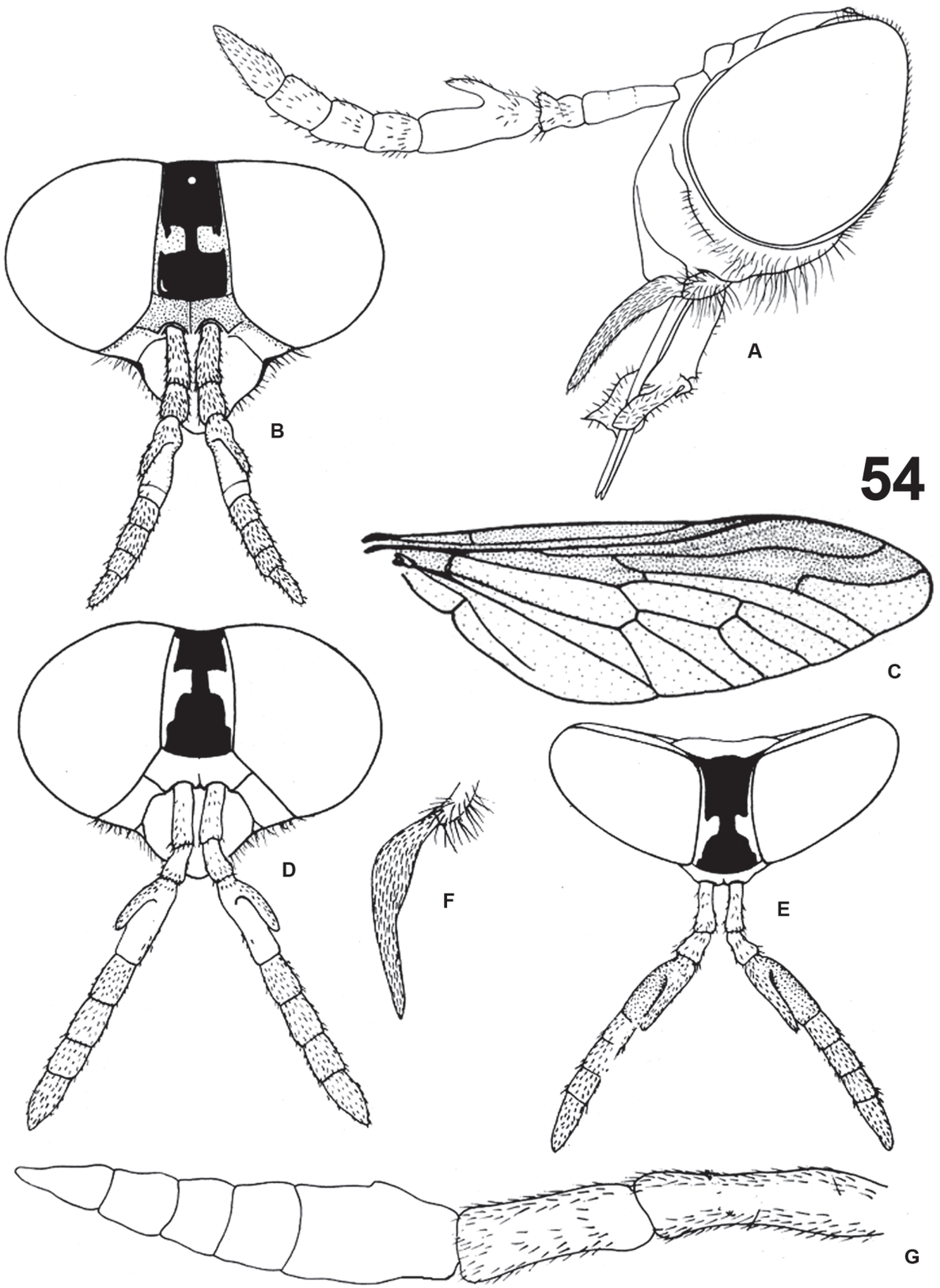

Figure 54. A-C. *Acanthocera* (*Acanthocera*) *coarctata* (Wiedemann, 1828). Female. A. Head, lateral view. B. Same, frontal view. C. Wing. D. D-F. *Acanthocera* (*Acanthocera*) *marginalis* Walker, 1854. Female. D. Head, frontal view. E. Same, dorsal view. F. Palpus. G. *Acanthocera* (*Polistimima*) *polistiformis* Fairchild, 1961. Female. Antenna.

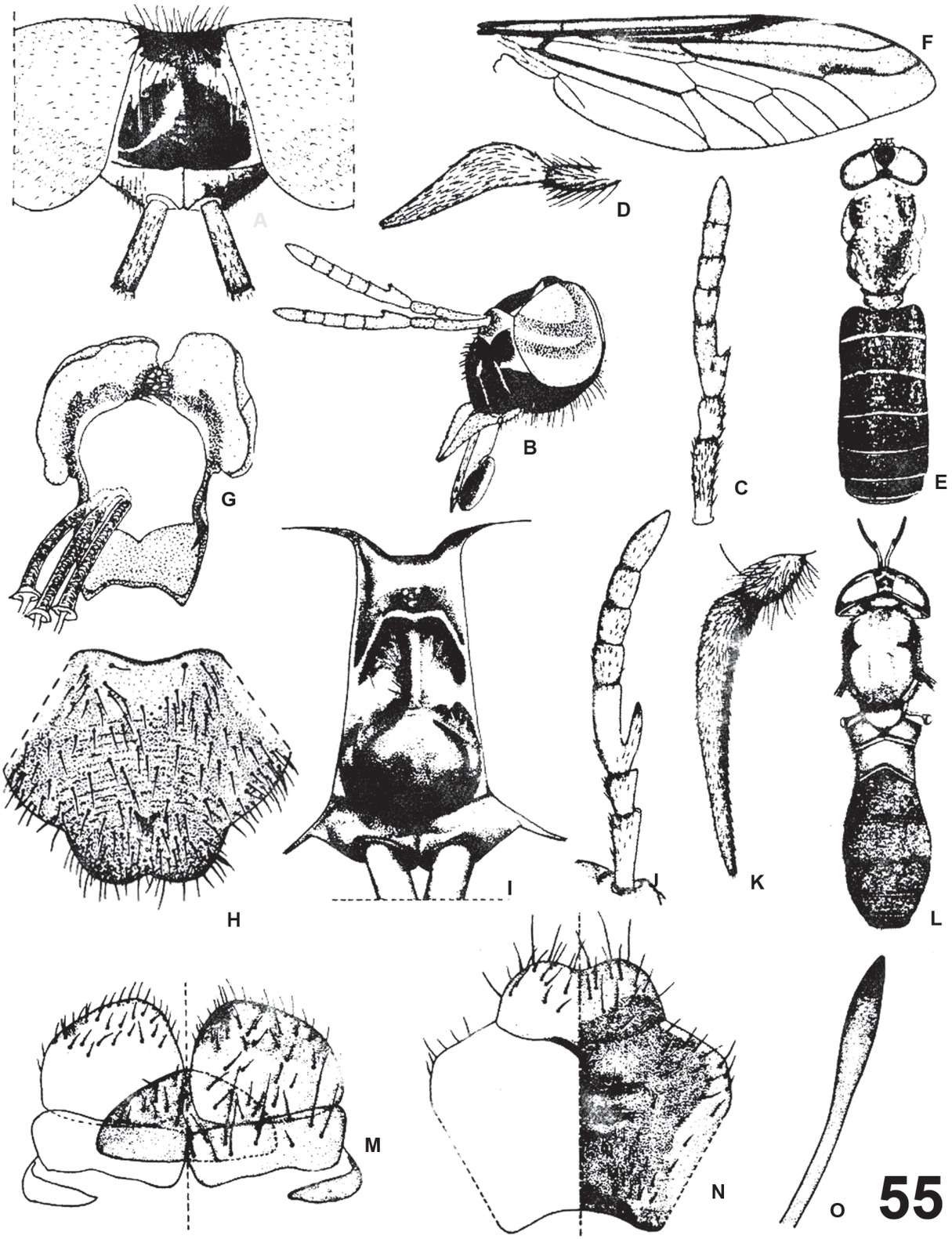

Figure 55. A-H. *Acanthocera* (*Acanthocera*) *exstincta* (Wiedemann, 1828). Female. A. Frons. B. Head, lateral view. C. Antenna. D. Palpus. E. Head, thorax and abdomen, dorsal view. F. Wing. G. Genital furca and spermathecal ducts. H. Sternite 8 and gonapophyses. I-O. *Acanthocera* (*Acanthocera*) *coarctata* (Wiedemann, 1828). Female. I. Frons. J. Antenna. K. Palpus. L. Head, thorax and abdomen, dorsal view. M. Tergites 9-10, cerci and hypoproct. N. Sternite 8 and gonapophyses. O. Distal portion of spermatheca.

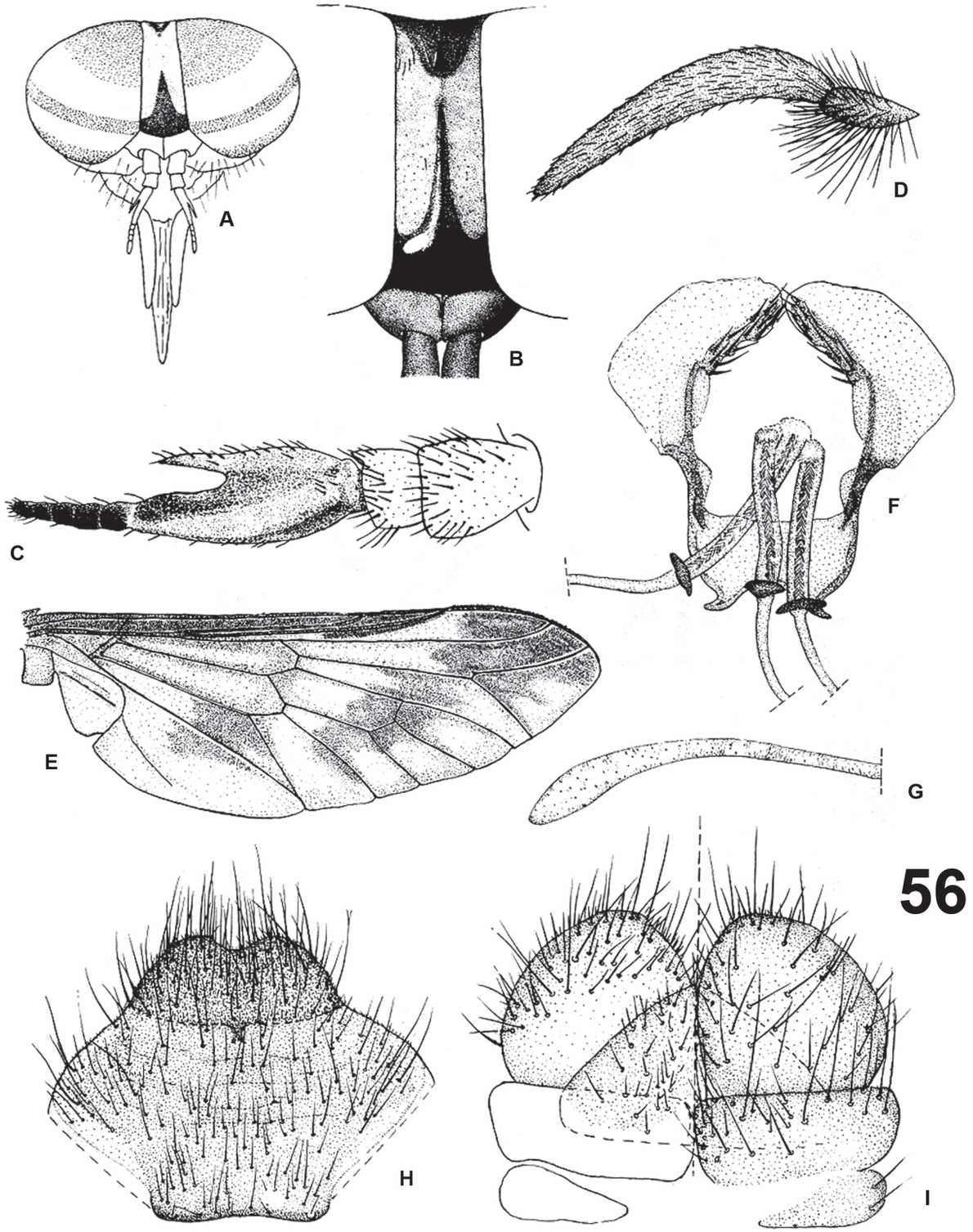

Figure 56. *Dichelacera* (*Dichelacera*) *fuscipes* Lutz, 1915. Female. A. Head, frontal view. B. Frons. C. Antenna. D. Palpus. E. Wing. F. Genital furca and spermathecal ducts. G. Spermatheca. H. Sternite 8 and gonapophyses. I. Tergites 9-10 and cerci.

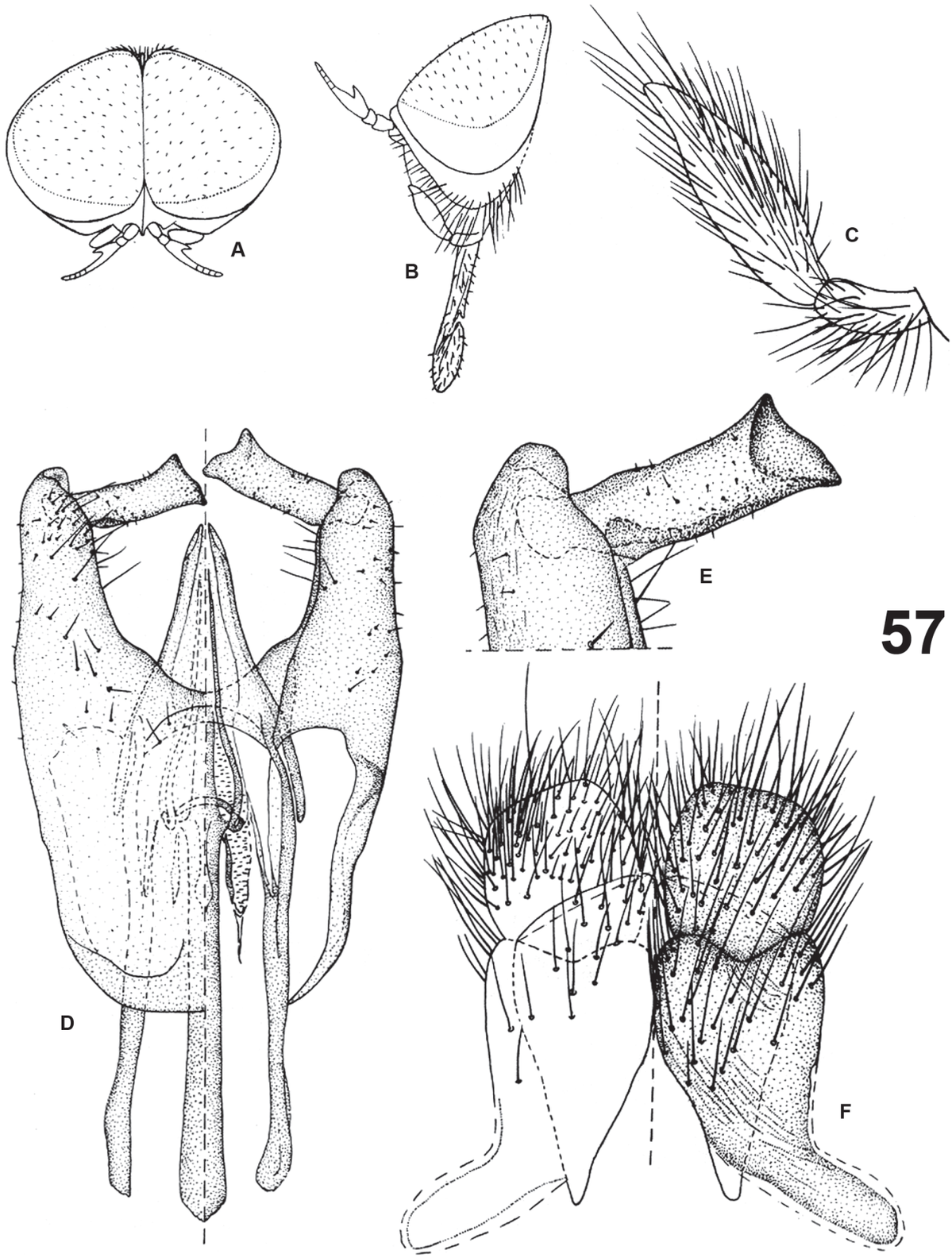

Figure 57. *Dichelacera* (*Dichelacera*) *fuscipes* Lutz, 1915. Male. A. Head, frontal view. B. Same, lateral view. C. Palpus. D. Aedeagus and gonostyli. E. Dististylus. F. Epandrium and cerci.

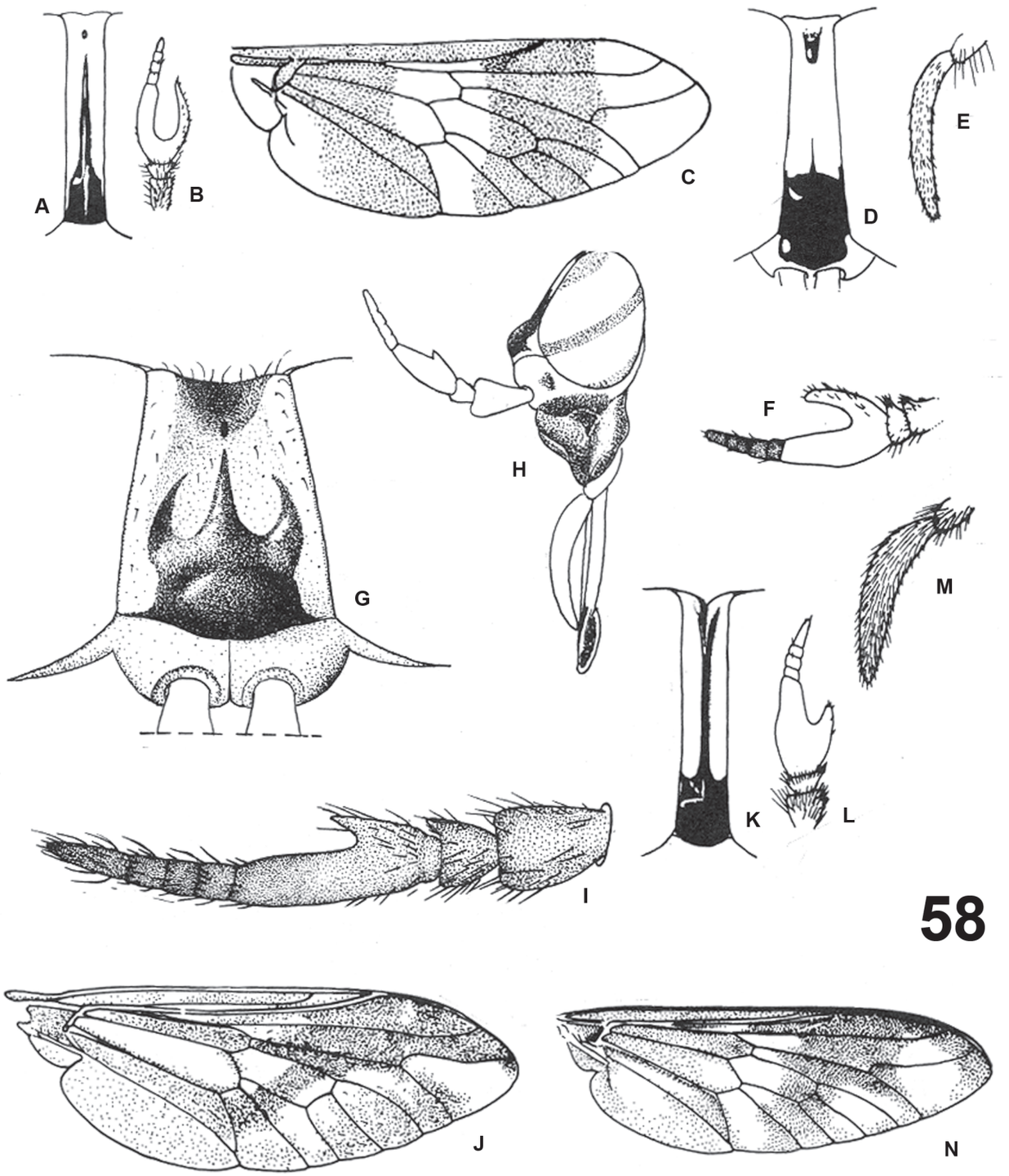

Figure 58. A-C. *Dichelacera* (*Desmatochelacera*) *transposita* Walker, 1854. Female. A. Frons. B. Antenna. C. Wing. D-F. *Dichelacera* (*Idiochelacera*) *subcallosa* Fairchild & Philip, 1960. Female. D. Frons. E. Palpus. F. Antenna. G-I. *Dichelacera* (*Dichelacera*) *boliviensis* (Brèthes, 1910). Female. G. Frons. H. Head, lateral view. I. Antenna. J. *Acanthocera* (*Nothocanthocera*) *tenuicornis* (Lutz, 1915). Female. Wing. K-N. *Dichelacera* (*Orthostyloceras*) *ambigua* (Lutz & Neiva, 1914). Female. K. Frons. L. Antenna. M. Palpus. N. Wing.

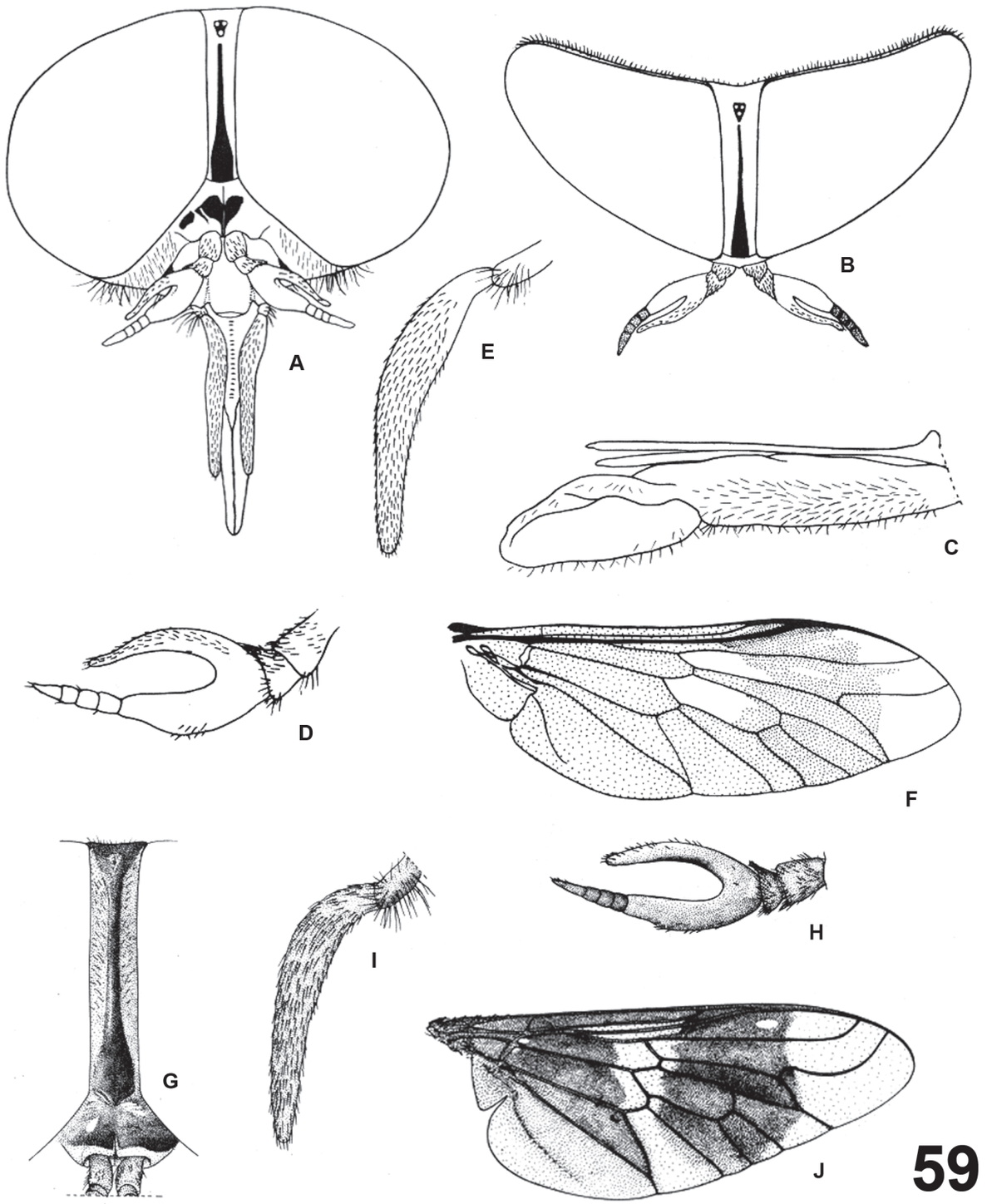

Figure 59. A-E. *Catachlorops* (*Psalidia*) *conspicuus* (Lutz & Neiva, 1914). Female. A. Head, frontal view. B. Same, dorsal view. C. Proboscis, lateral view. D. Antenna. E. Palpus. F. Wing. G-J. *Catachlorops* (*Psalidia*) *furcatus* (Wiedemann, 1828. Female. G. Frons. H. Antenna. I. Palpus. J. Wing.

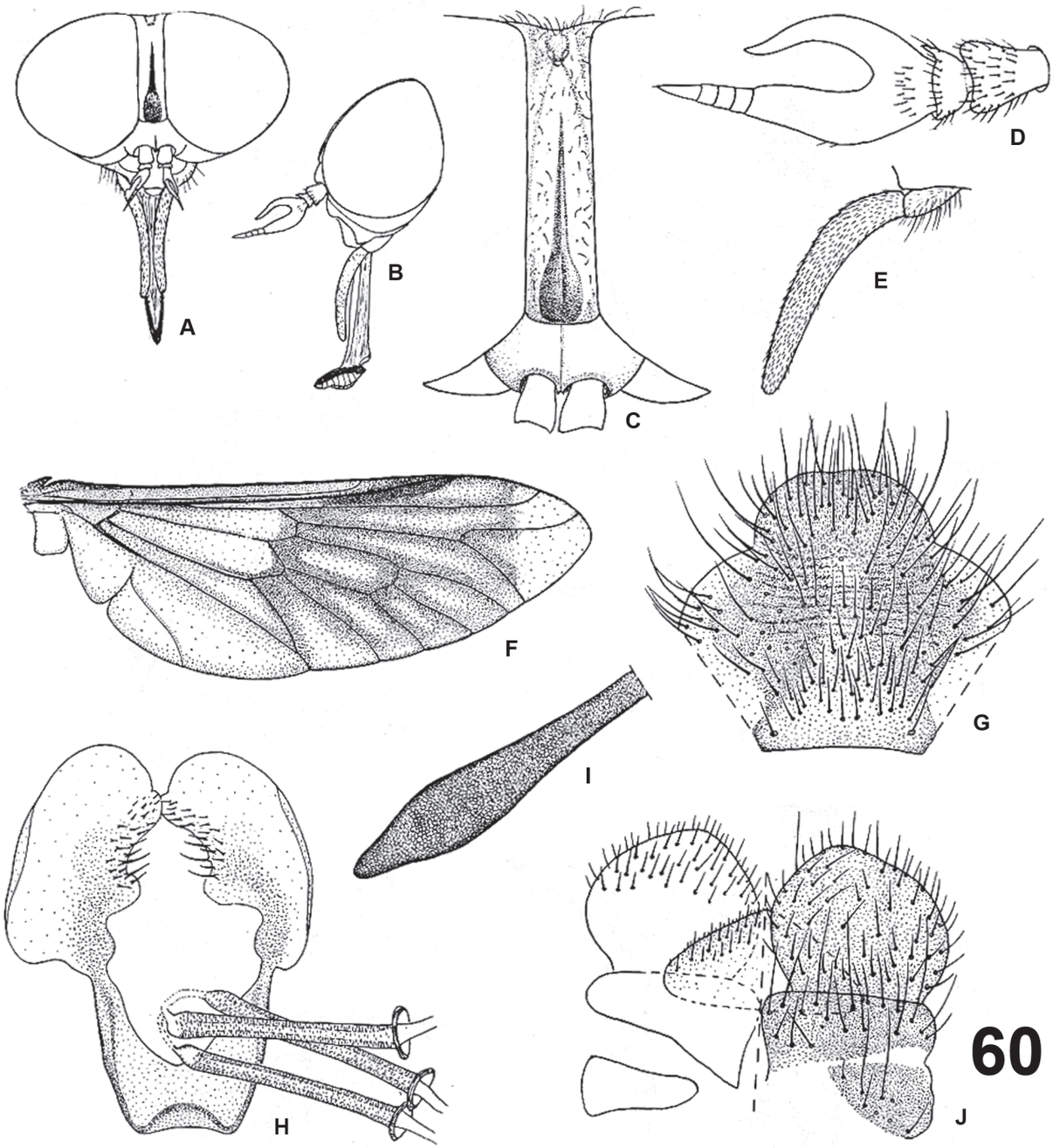

Figure 60. *Catachlorops* (*Catachlorops*) *leptogaster* Barretto, 1946. Female. A. Head, frontal view. B. Same, lateral view. C. Frons. D. Antenna. E. Palpus. F. Wing. G. Sternite 8 and gonapophyses. H. Genital furca and spermathecal ducts. I. Spermatheca. J. Tergites 9-10 and cerci.

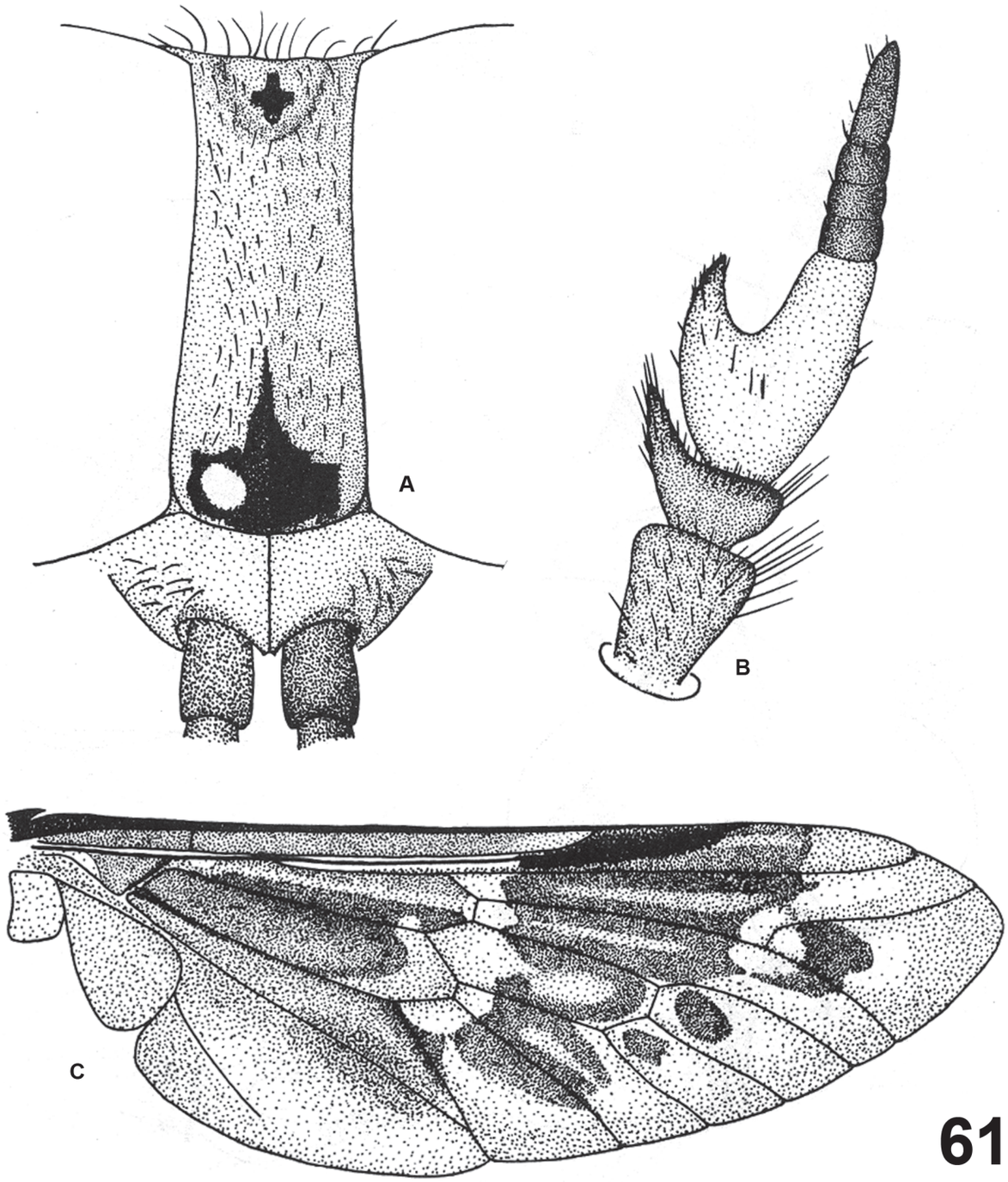

Figure 61. *Catachlorops* (*Rhamhidommia*) *muscosus* (Enderlein, 1925). Female. A. Frons. B. Antenna. C. Wing.

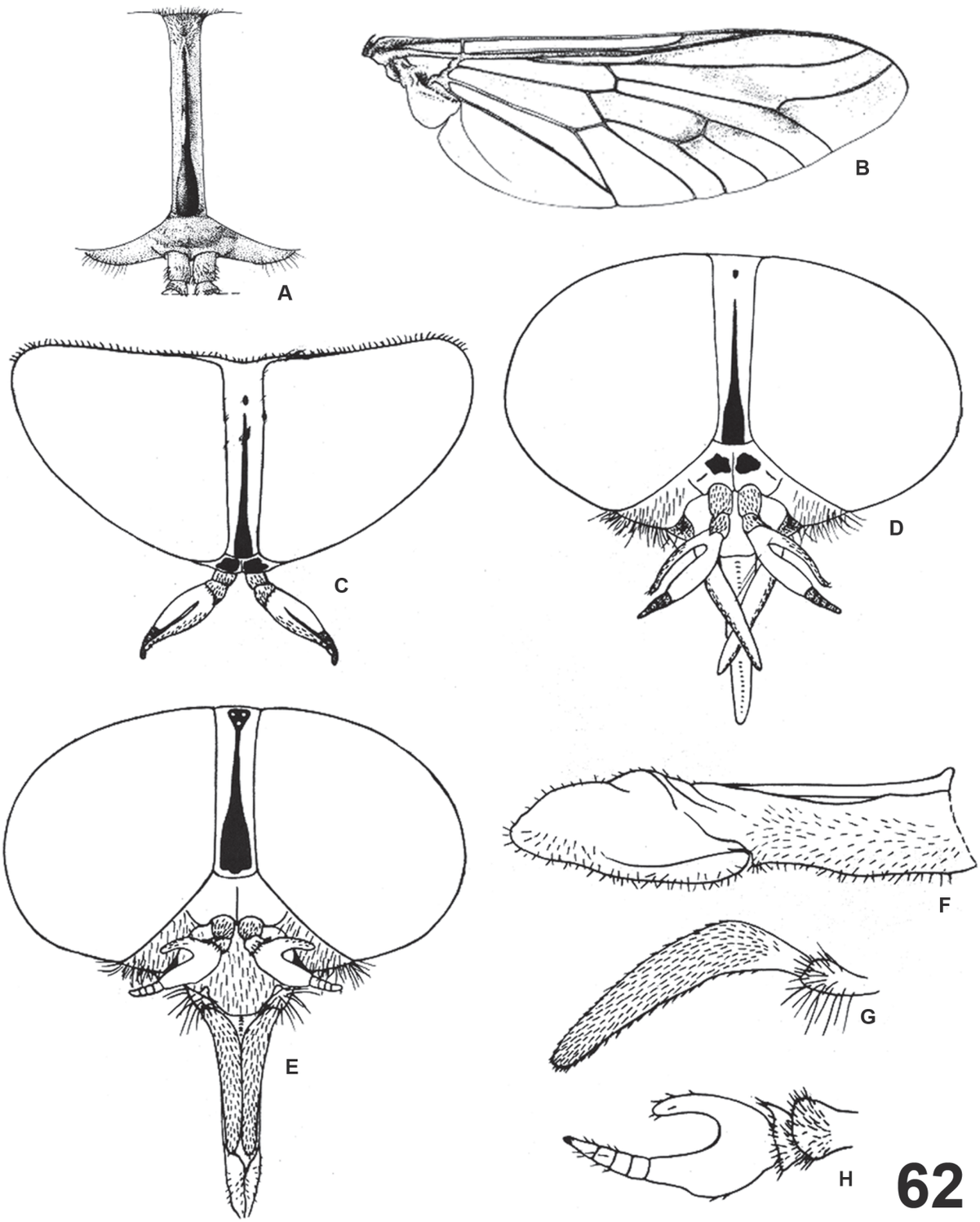

Figure 62. A-B. *Catachlorops* (*Psarochlorops*) *difficilis* (Kröber, 1931). Female. A. Frons. B. Wing. C-D. *Catachlorops* (*Psarochlorops*) *testaceus* (Macquart, 1846). Female. C. Head, dorsal view. D. Same, frontal view. E-H. *Catahlorops* (*Hadrochlorops*) *unicolor* (Lutz, 1912). Female. E. Head, frontal view. F. Proboscis. G. Palpus. H. Antenna.

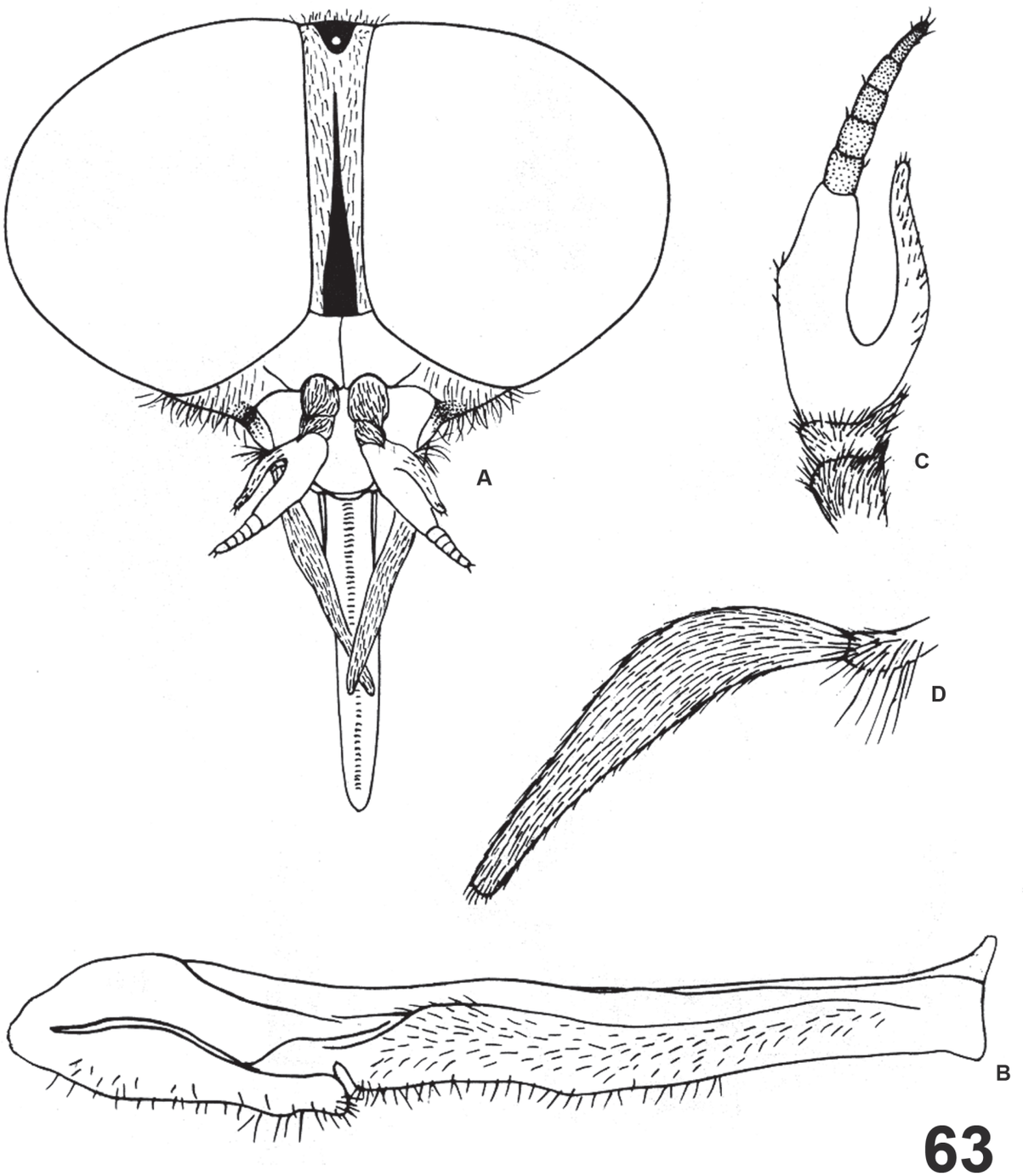

Figure 63. *Catachlorops* (*Amphichlorops*) *flavus* (Wiedemann, 1828). Female. A. Head, frontal view. B. Proboscis. C. Antenna. D. Palpus.

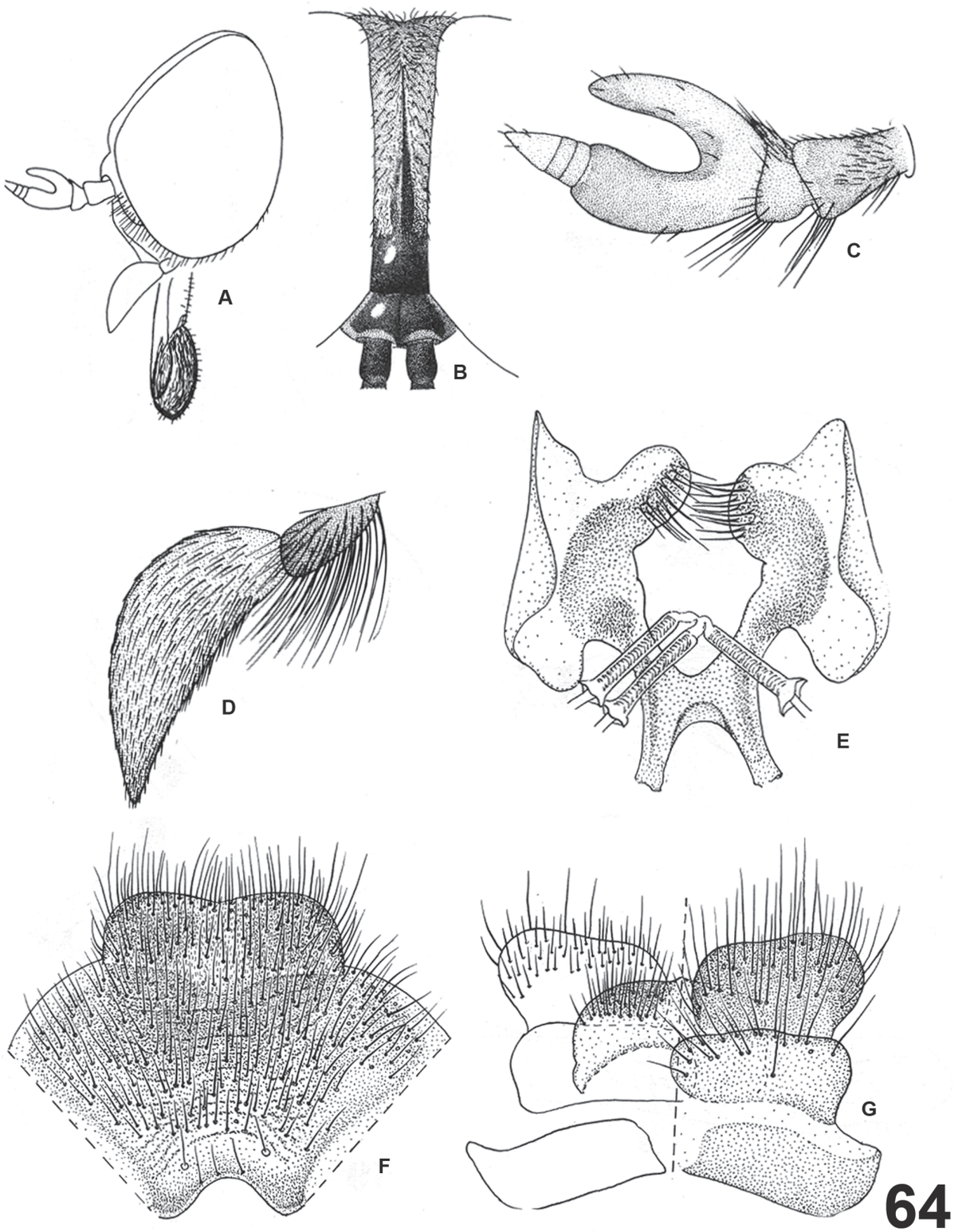

Figure 64. A-G. *Stibasoma* (*Stibasoma*) *theotaenia* (Wiedemann, 1828). Female. A. Head, lateral view. B. Frons. C. Antenna. D. Palpus. E. Genital furca and spermathecal ducts. F. Sternite 8 and gonapophyses. G. Tergites 9-10 and cerci.

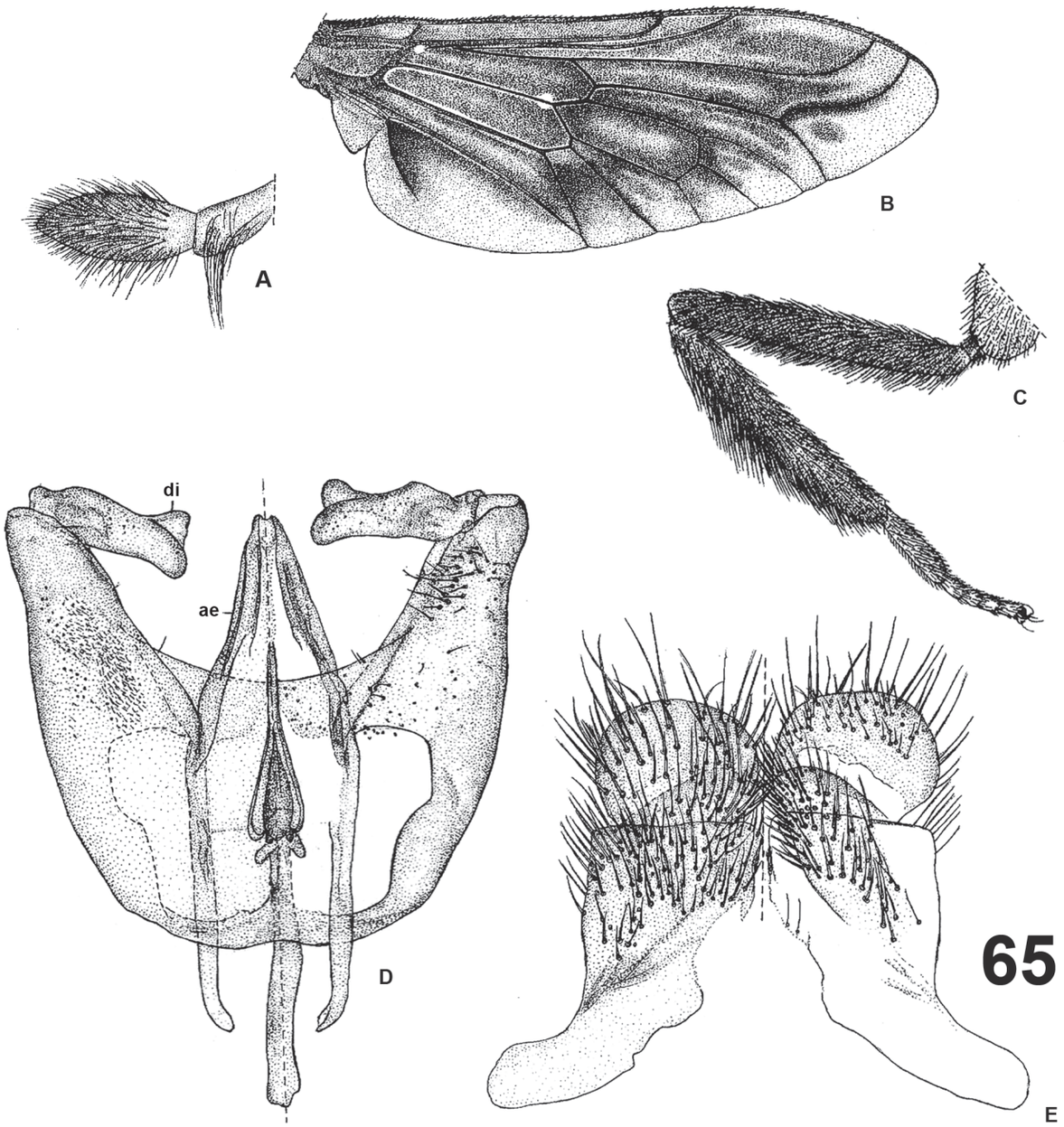

Figure 65. *Stibasoma* (*Stibasoma*) *theotaenia* (Wiedemann, 1828). Male. A. Palpus. B. Wing. C. Hind leg. D. Basistyli, dististyli and aedeagus. E. Cerci and paraprocts. [Figs. D-E with the same scale].

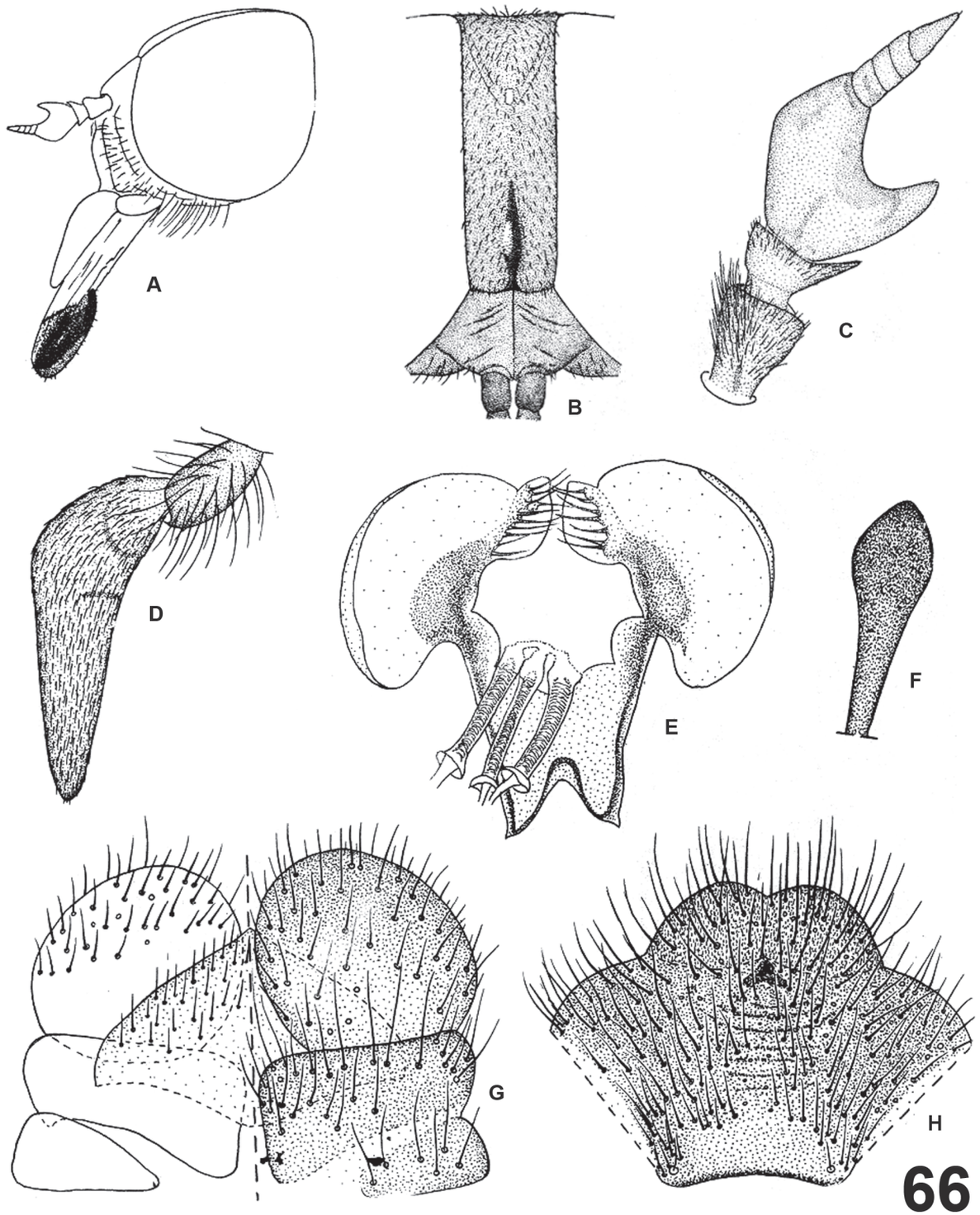

Figure 66. *Cryptotylus unicolor* (Wiedemann, 1828). Female. A. Head, lateral view. B. Frons. C. Antenna. D. Palpus. E. Genital furca and spermathecal ducts. F. Spermatheca. G. Tergites 9-10 and cerci. H. Sternite 8 and gonapophyses.

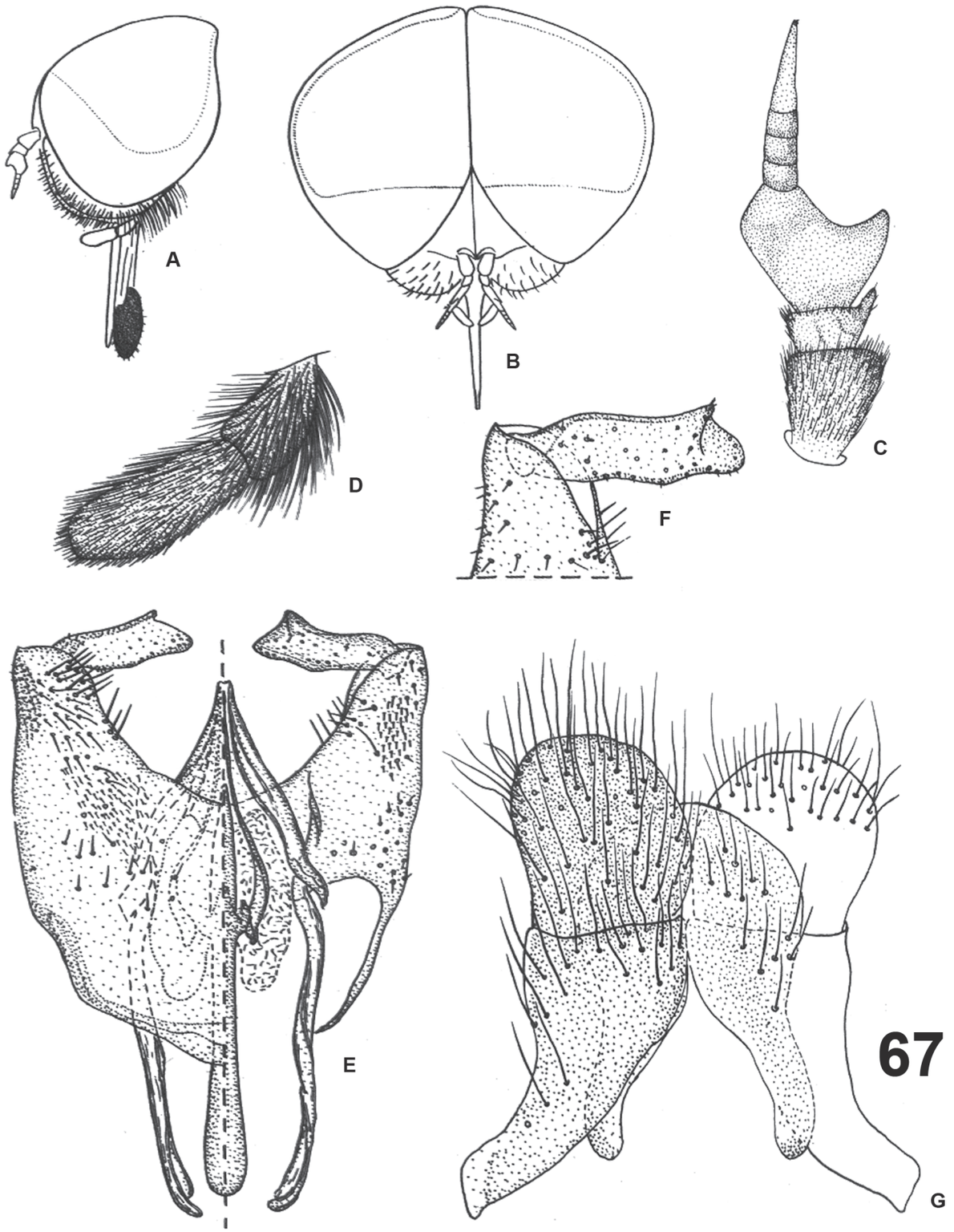

Figure 67. *Cryptotylus unicolor* (Wiedemann, 1828). Male. A. Head, lateral view. B. Same, frontal view. C. Antenna. D. Palpus. E. Aedeagus and gonostyli. F. Dististylus. G. Epandrium and cerci.

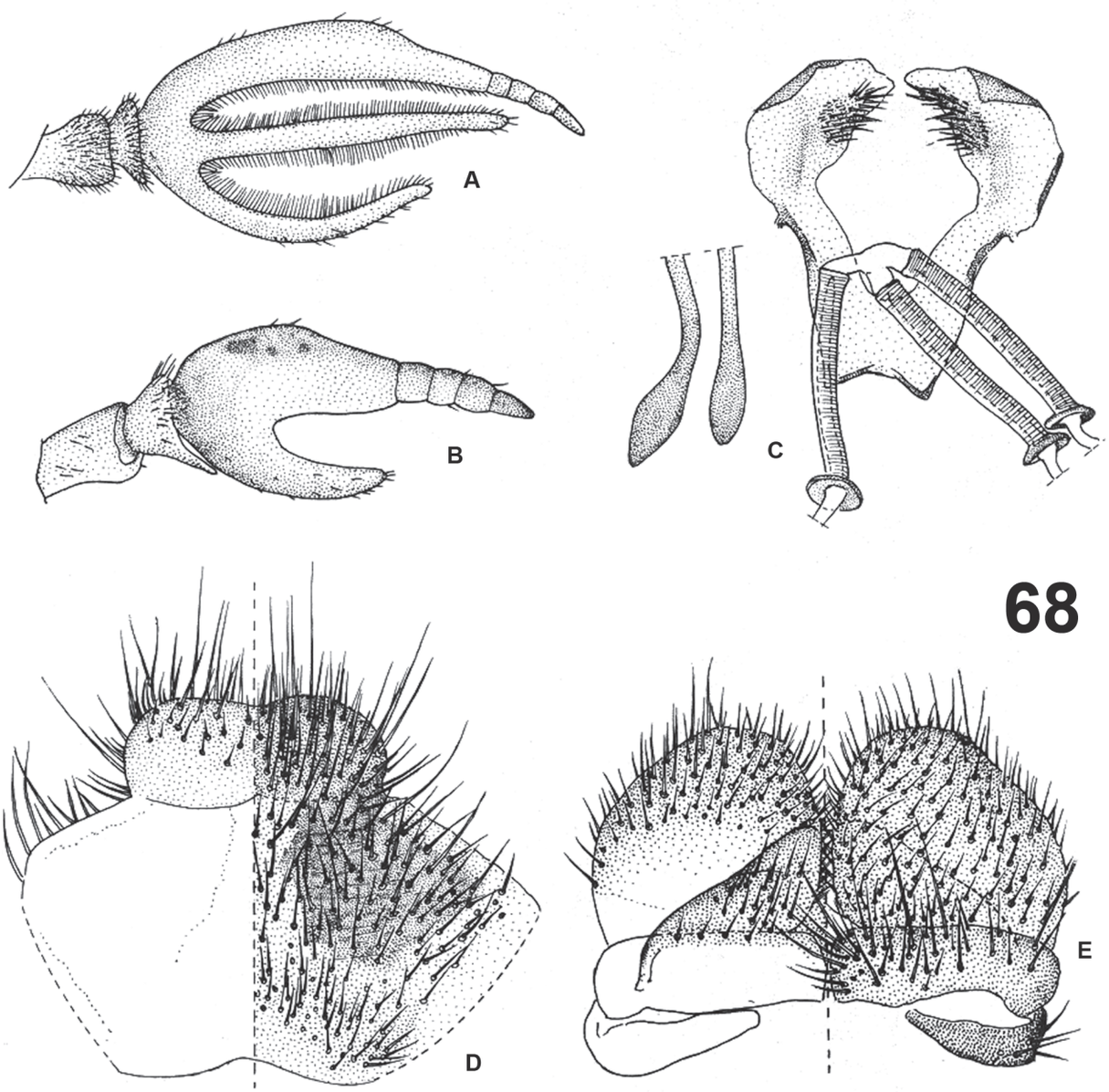

Figure 68. A. *Dasychela* (*Triceratomyia*) *macintyrei* (Bequaert, 1937). Female. Antenna. B-E. *Dasychela* (*Dasychela*) *sp.* Female. C. Genital furca. D. Sternite 8 and gonapophyses. E. Tergites 9-10 and cerci.

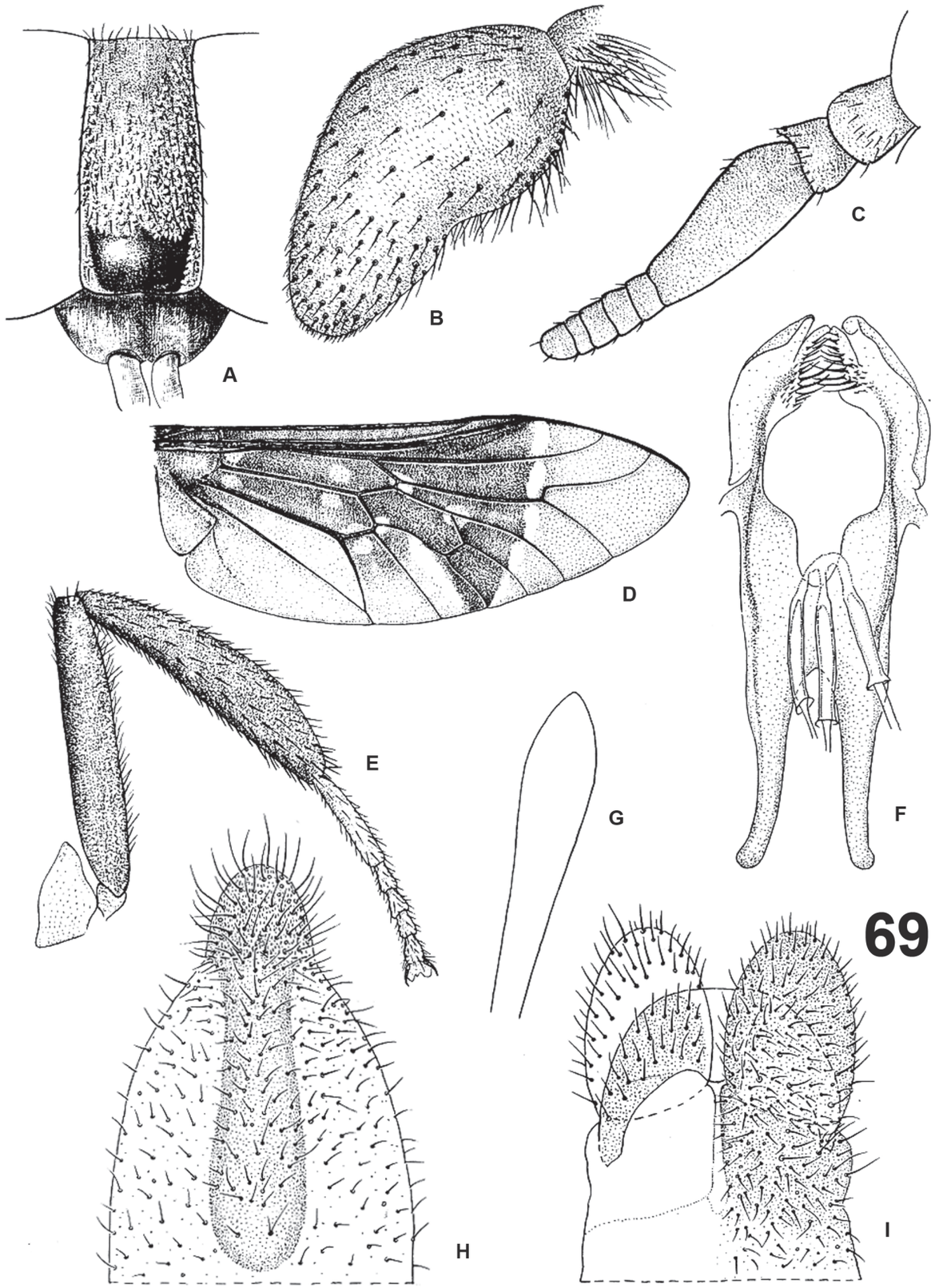

Figure 69. *Lepiselaga* (*Lepiselaga*) *crassipes* (Fabricius, 1805). Female. A. Frons. B. Antenna. C. Palpus. D. Wing. E. Hind leg. F. Genital furca and spermathecal ducts. G. Spermatheca. H. Sternite 8 and gonapophyses. I. Tergites 9-10 and cerci.

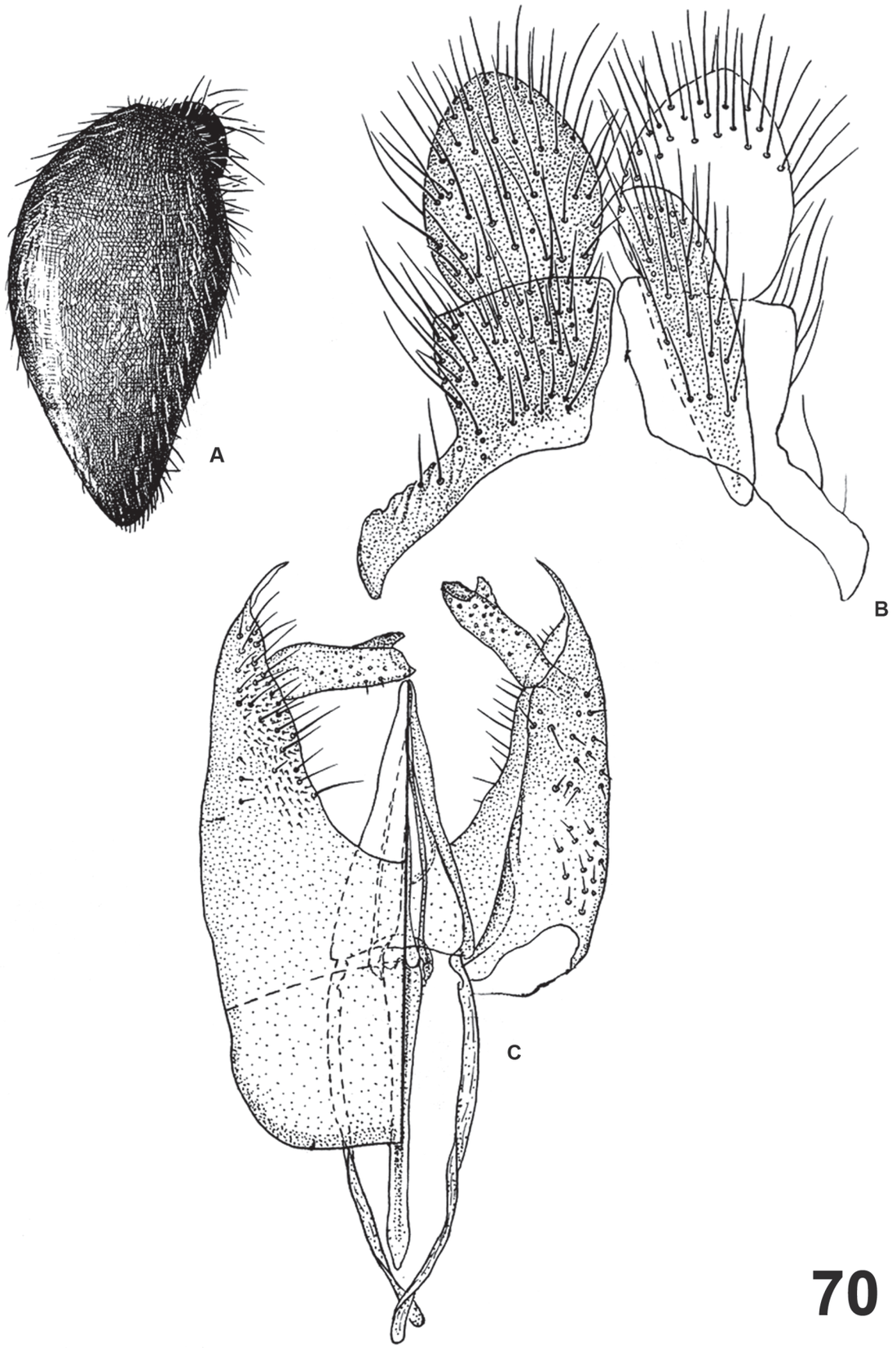

Figure 70. *Lepiselaga* (*Lepiselaga*) *crassipes* (Fabricius, 1805). Male. A. Palpus. B. Epandrium and cerci. C. Aedeagus and gonostyli.

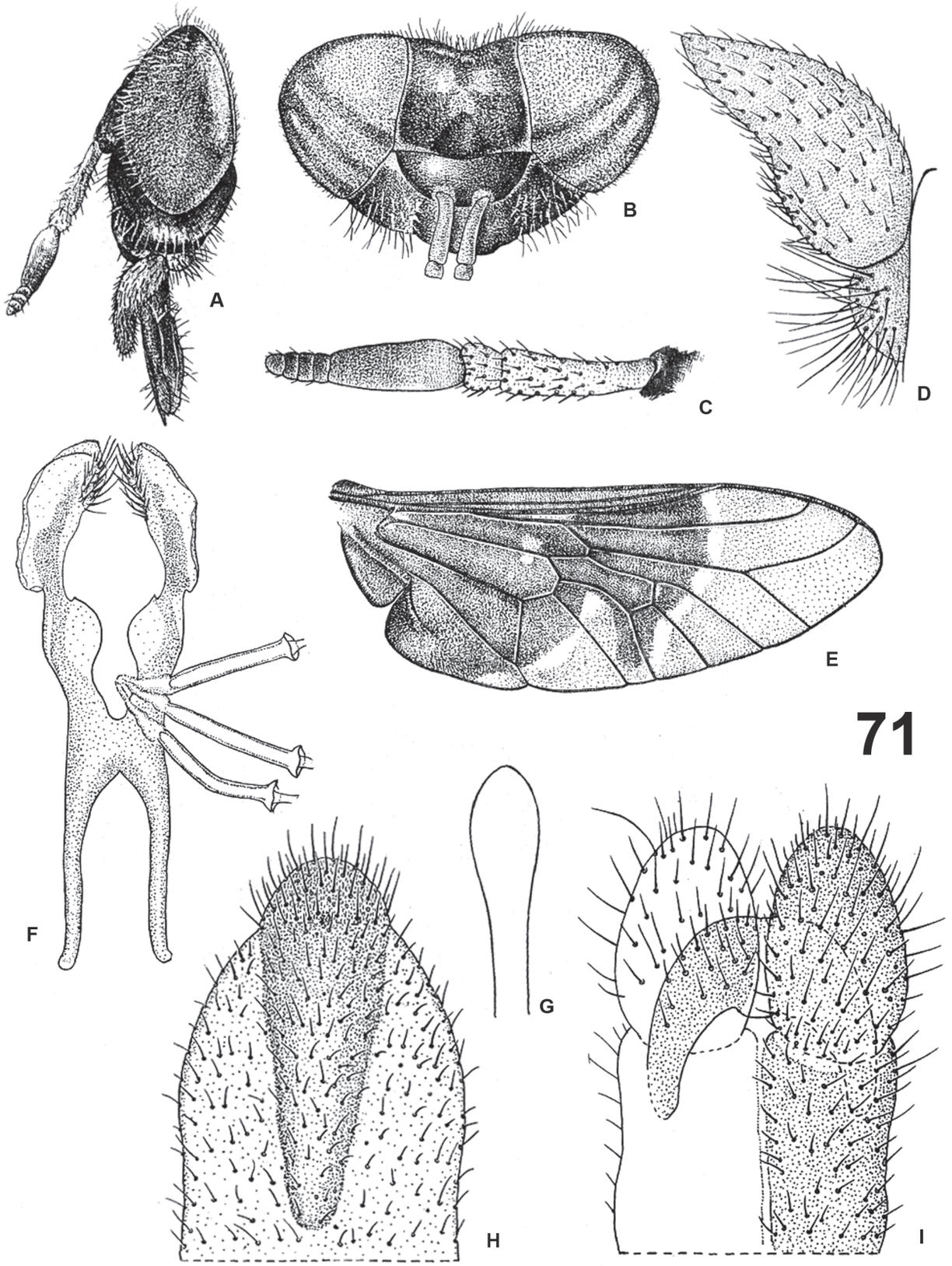

Figure 71. *Lepiselaga* (*Conoposelaga*) *albitarsis* Macquart, 1850. Female. A. Head, lateral view. B. Same, frontal view. C. Antenna. D. Palpus. E. Wing. F. Genital furca and spermathecal ducts. G. Spermatheca. H. Sternite 8 and gonapophyses. I. Tergite 10, cerci and hypoproct.

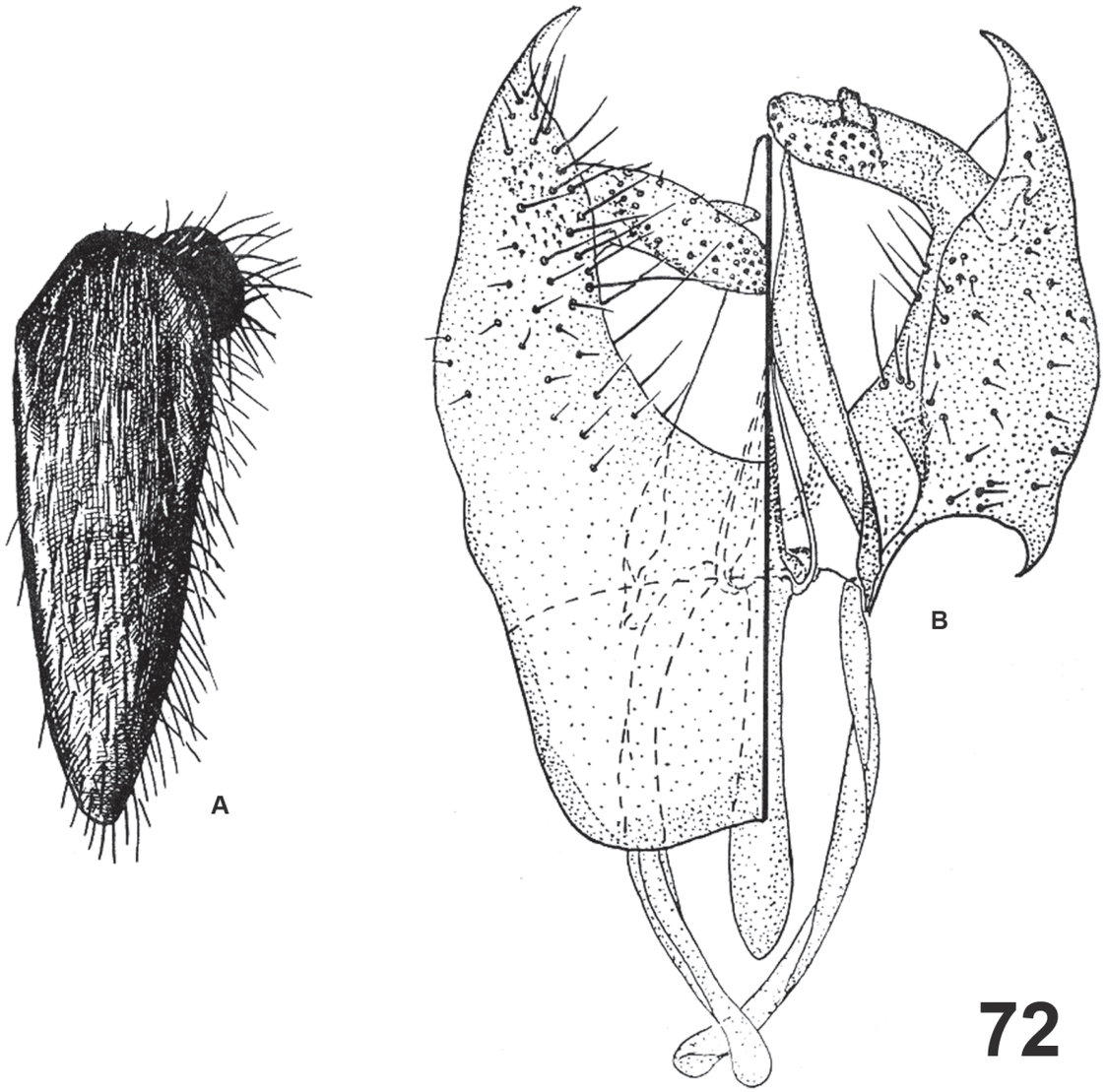

Figure 72. *Lepiselaga* (*Conoposelaga*) *albitarsis* Macquart, 1850. Male. A. Palpus. B. Aedeagus and gonostyli.

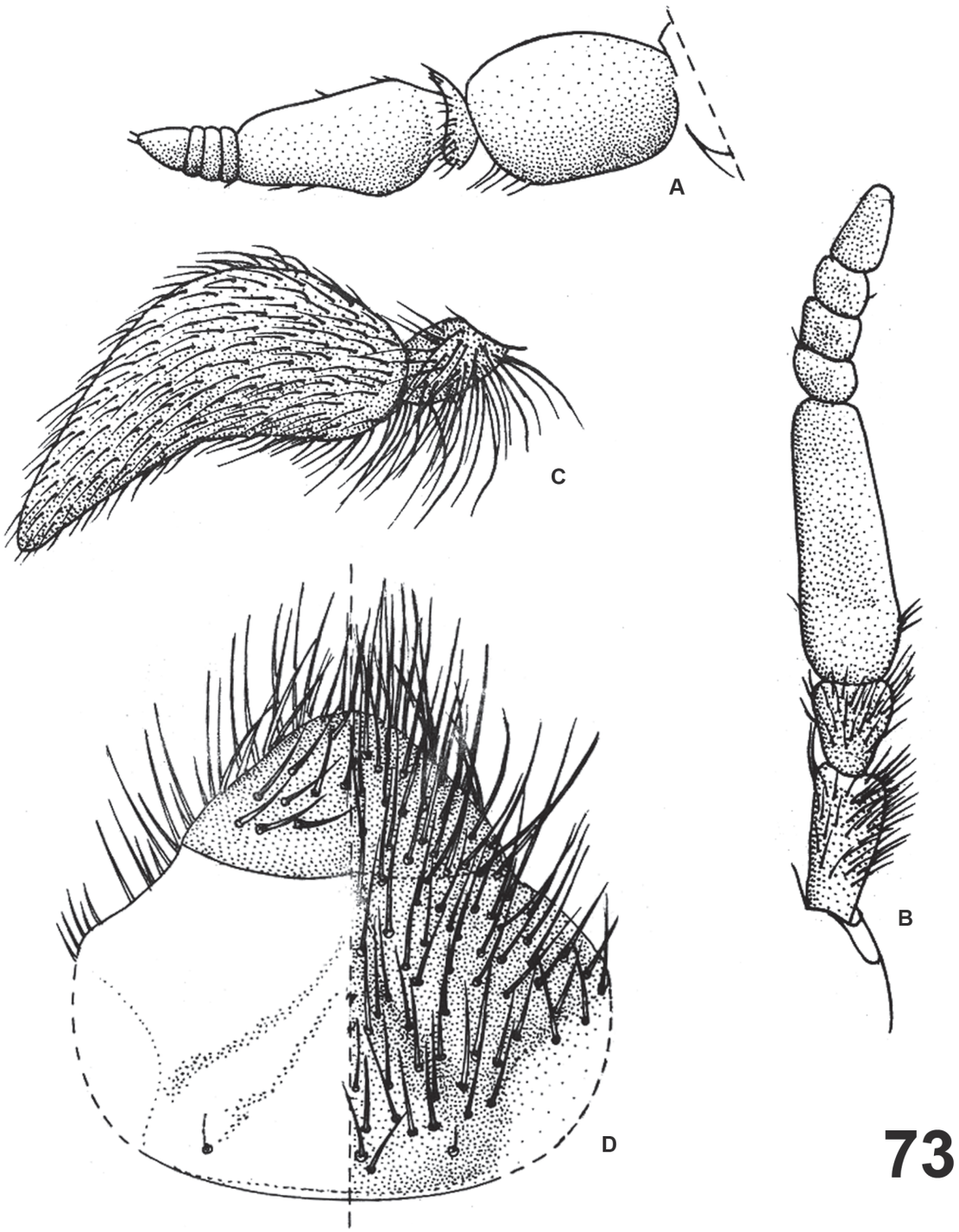

Figure 73. A. *Oopelma globicornis* (Wiedemann, 1821). Antenna. B-D. *Himantostylus intermedius* Lutz, 1913. Female. B. Antenna. C. Palpus. D. Sternite 8 and gonapophyses.

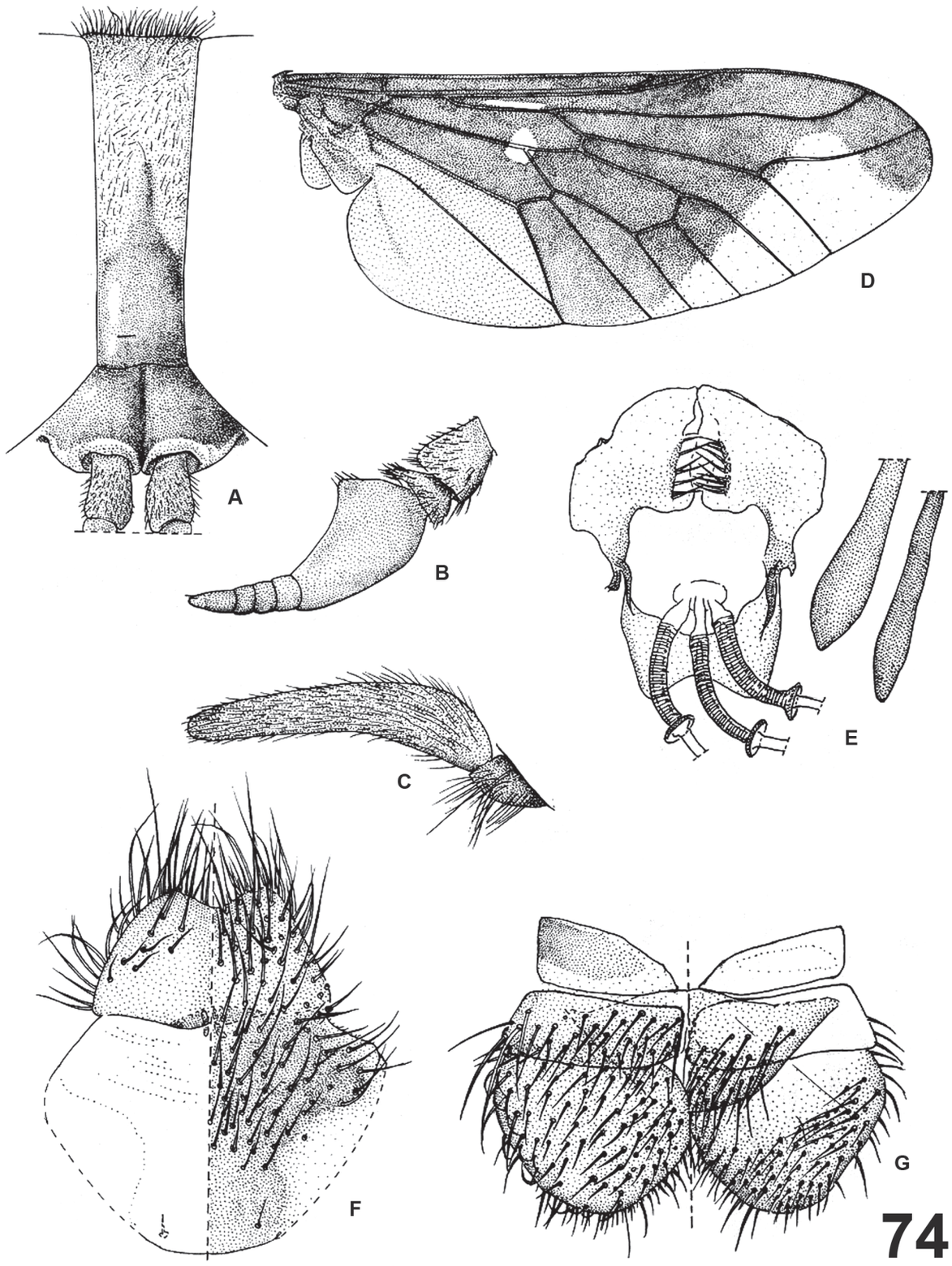

Figure 74. *Erioneura fuscipennis* (Wiedemann, 1828). Female. A. Frons. B. Antenna. C. Palpus. D. Wing. E. Genital furca and spermatheca. F. Sternite 8 and gonapophyses. G. Tergites 9-10 and cerci.

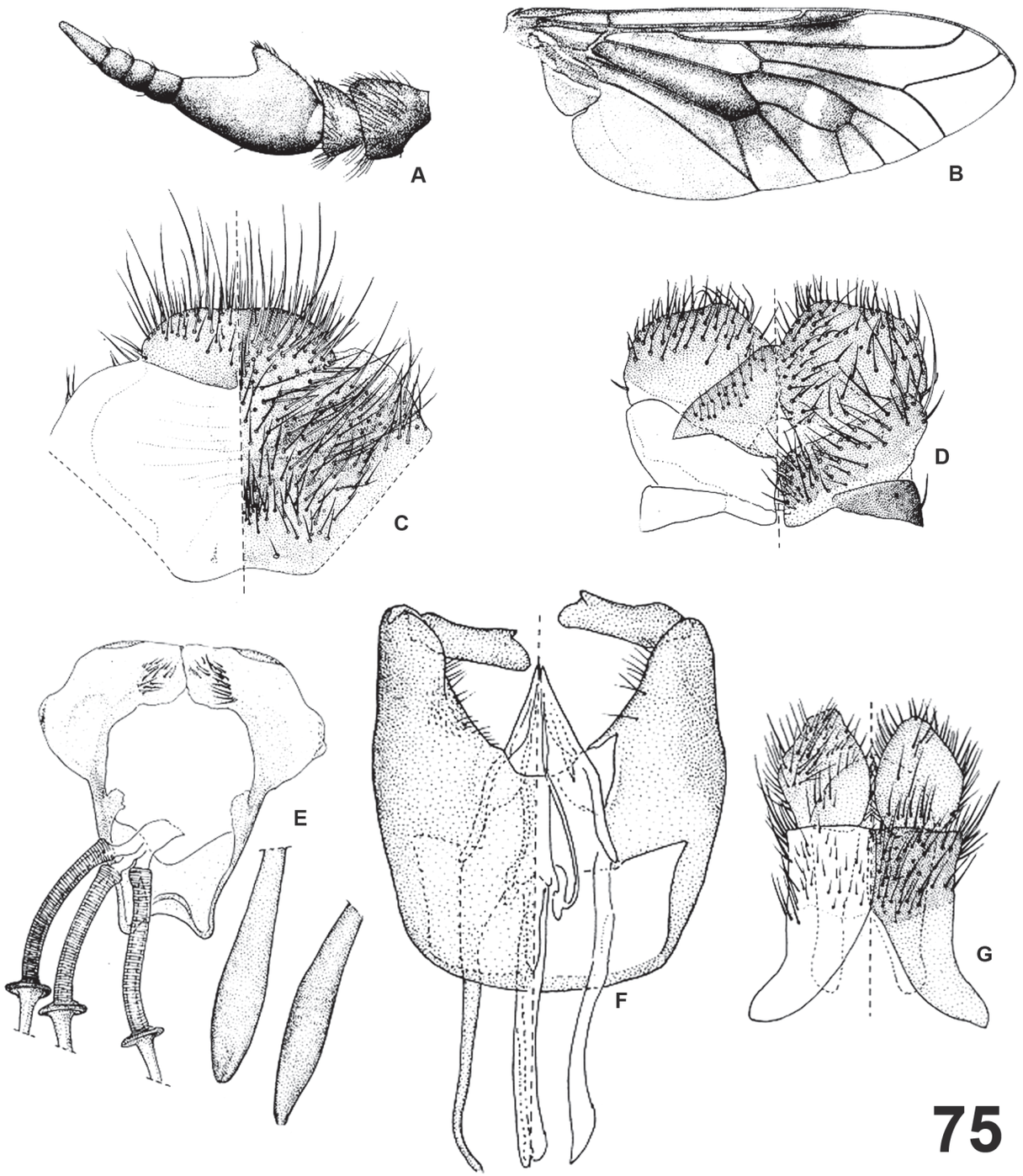

Figure 75. *Stigmatophthalmus altivagus* Lutz, 1913. Female (A-E), male (F-G). A. Antenna. B. Wing. C. Sternite 8 and gonapophyses. D. Tergites 9-10 and cerci. E. Genital furca and spermathecae. F. Aedegus and gonostyli. G. Epandrium and cerci.

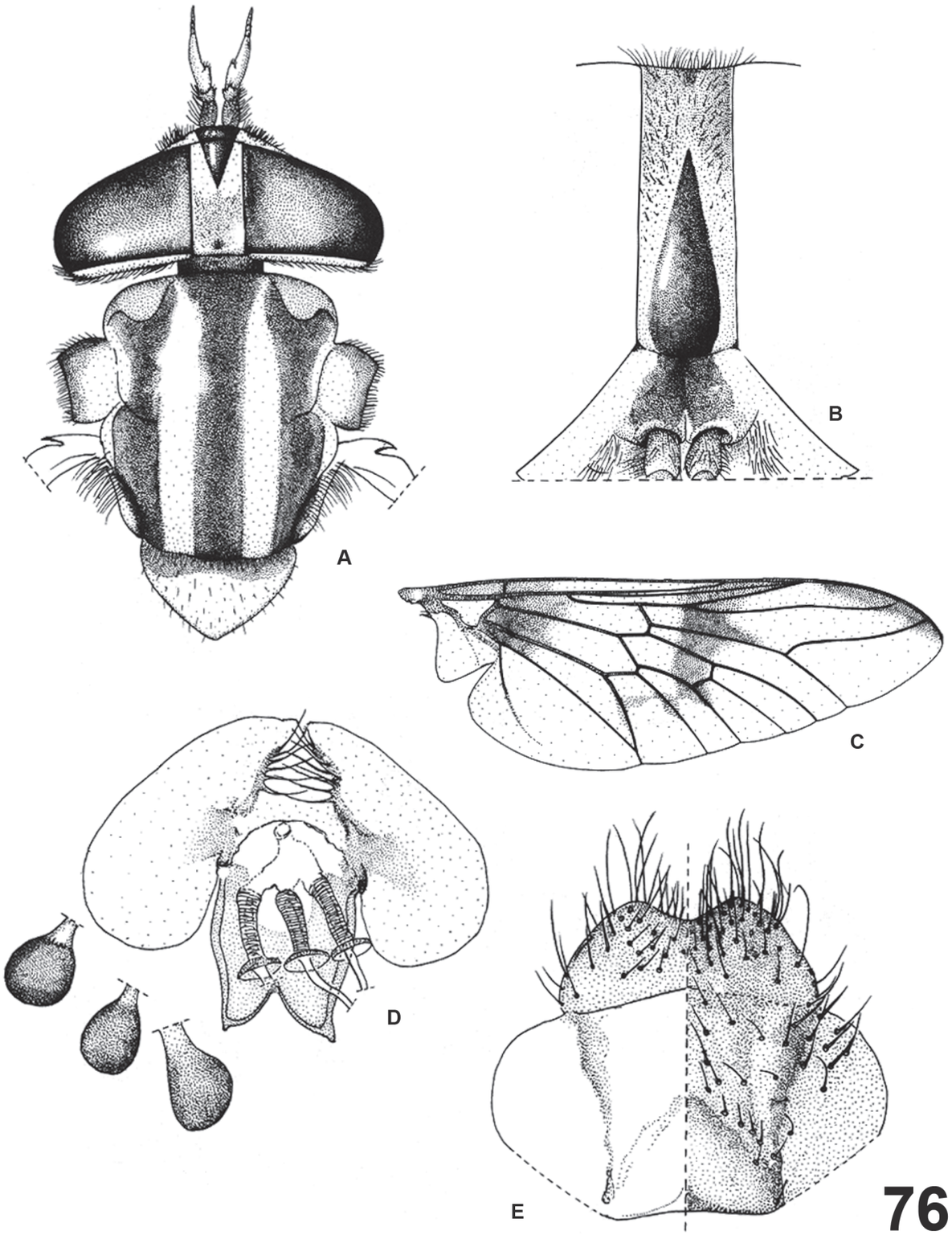

Figure 76. *Eutabanus pictus* Kröber, 1930. Female. A. Head and thorax, dorsal view. B. Frons. C. Wing. D. Genital furca and spermathecae. E. Sternite 8 and gonapophyses.

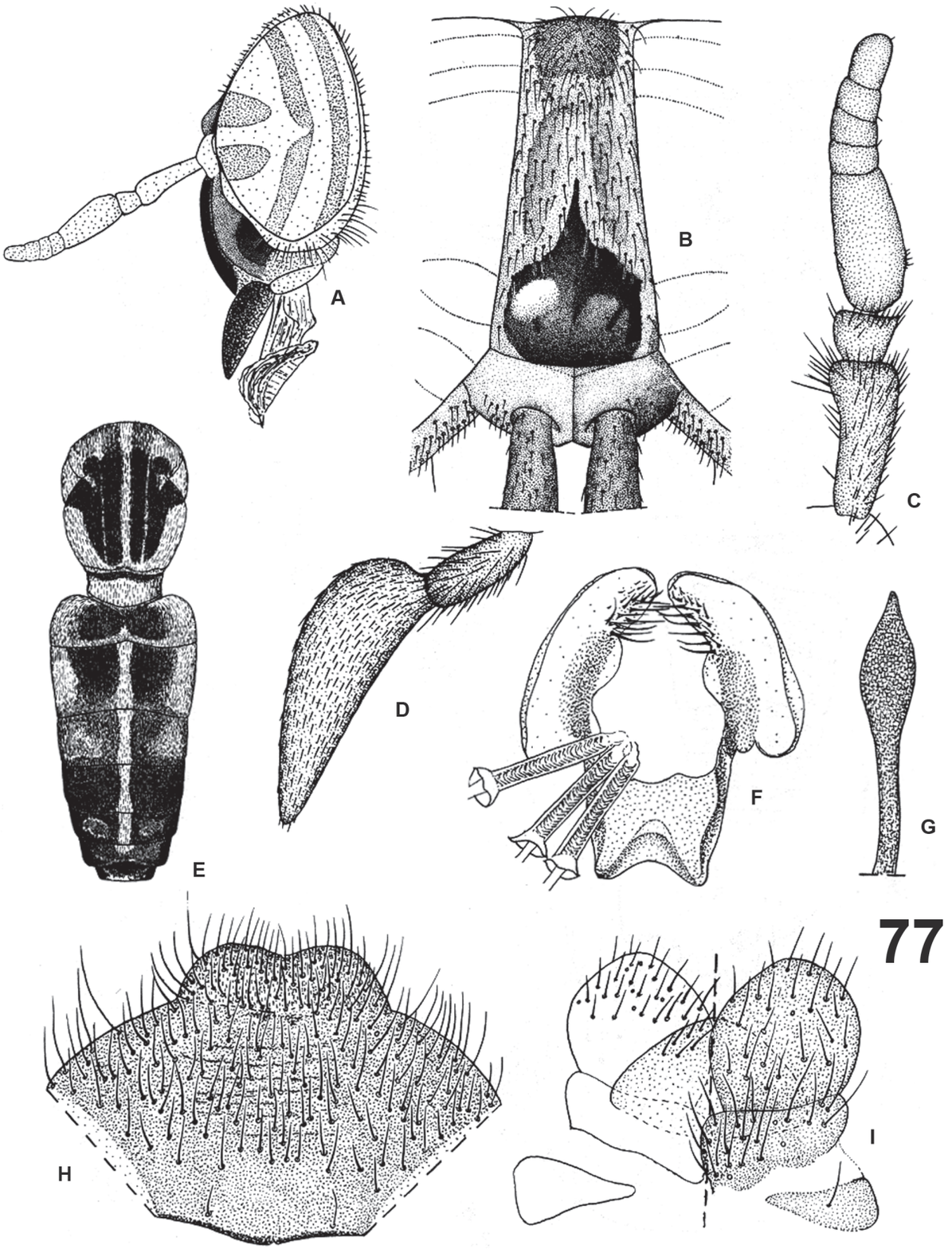

Figure 77. *Diachlorus flavitaenia* Lutz, 1913. Female. A. Head, lateral view. B. Frons. C. Antenna. D. Palpus. E. Thorax and abdomen, dorsal view. F. Genital furca and spermathecal ducts. G. Spermatheca. H. Sternite 8 and gonapophyses. I. Tergites 9-10 and cerci.

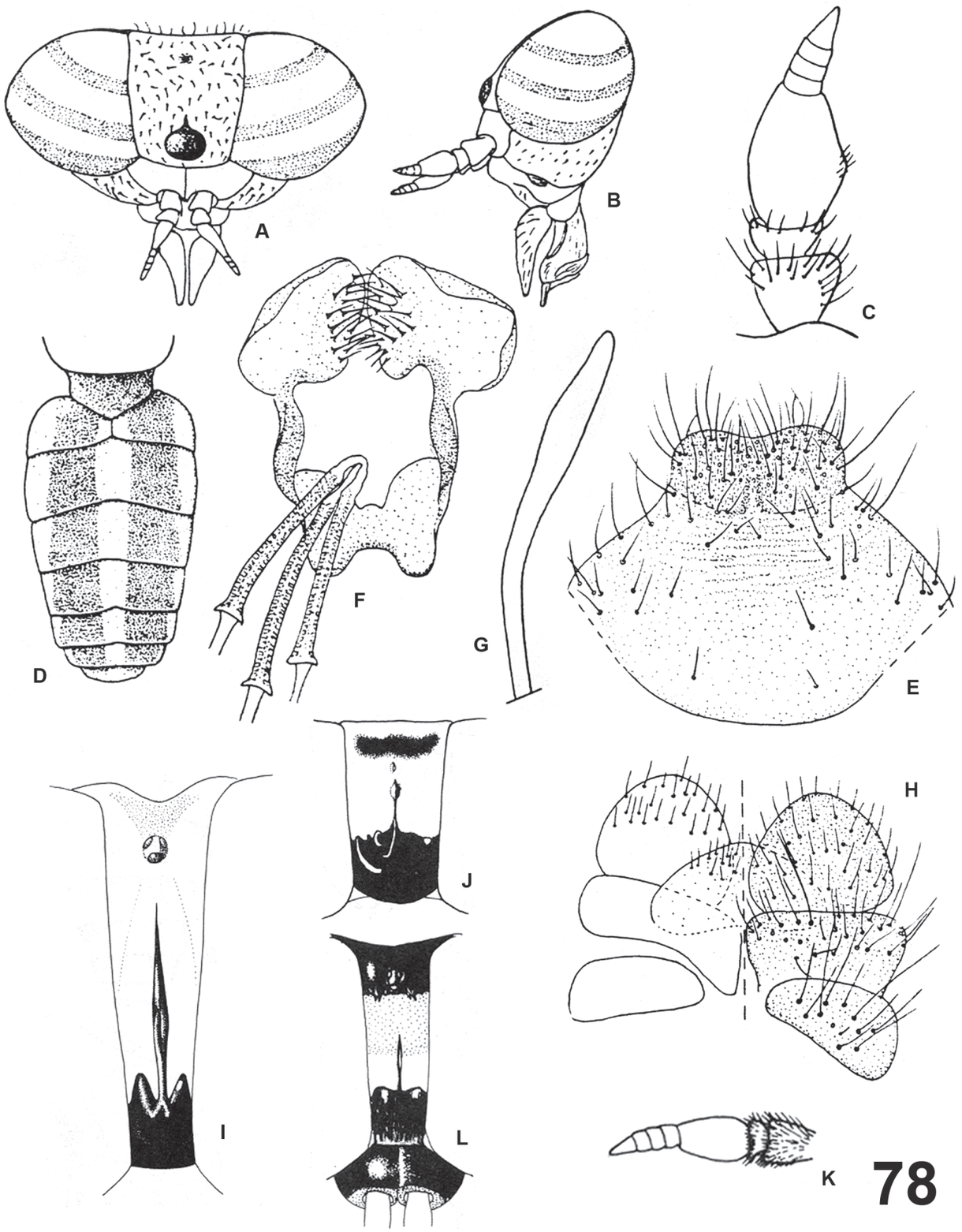

Figure 78. *Stenotabanus* (*Brachytabanus*) *platyfrons* Fairchild, 1964. Female. A. Head, frontal view. B. Same, lateral view. C. Antenna. D. Abdomen, dorsal view. E. Sternite 8 and gonapophyses. F. Genital furca and spermathecal ducts. G. Spermatheca. H. Tergites 9-10 and cerci. I. *Stenotabanus* (*Cretotabanus*) *cretatus* Fairchild, 1961. Female. Frons. J-K. *Stenotabanus* (*Aegialomyia*) *littoreus* (Hine, 1907). Female. J. Frons. K. Antenna. L. *Stenotabanus* (*Wilkersonia*) *roxannae* Wikerson, 1979. Female. Frons.

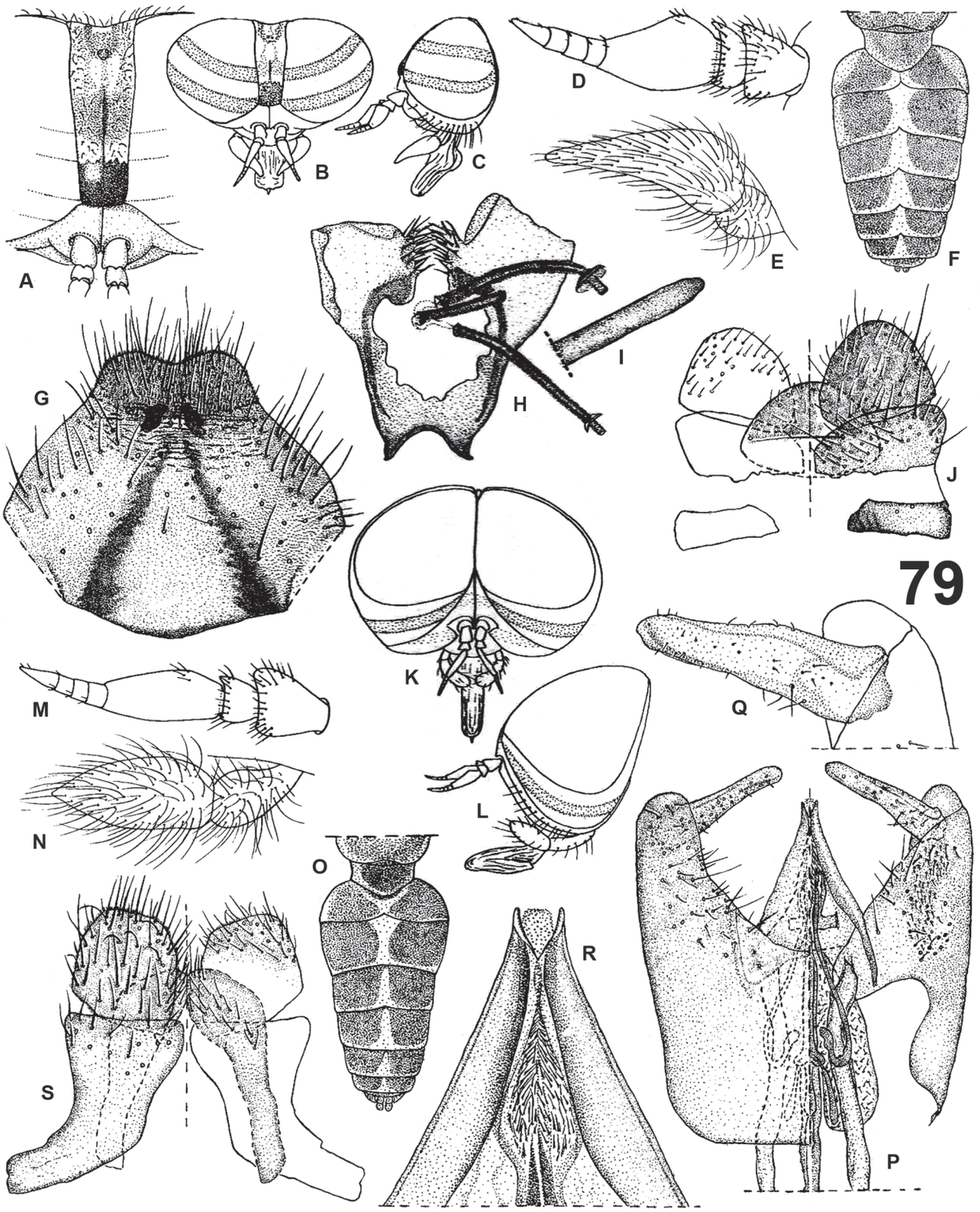

Figure 79. A-I. *Stenotabanus* (*Stenotabanus*) *incipiens* (Walker,). A-J. Female. A. Frons. B. Head, frontal view. C. Head, lateral view. D. Antenna. E. Palpus. F. Abdomen, dorsal view. G. Sternite 8 and gonapophyses. H. Genital furca. I. Apical portion of spermatheca. J. Cerci, tergites 9-10 and hypoproct. K-S. Male. K. Head, frontal view. L. Head, lateral view. M. Antenna. N. Palpus. O. Abdomen, dorsal view. P. Basistyli, dististyli and aedeagus. Q. Dististylus. R. Apical portion of aedeagus. Q. Dististylus. R. Apical portion of aedeagus. S. Paraprocts and hypoproct.

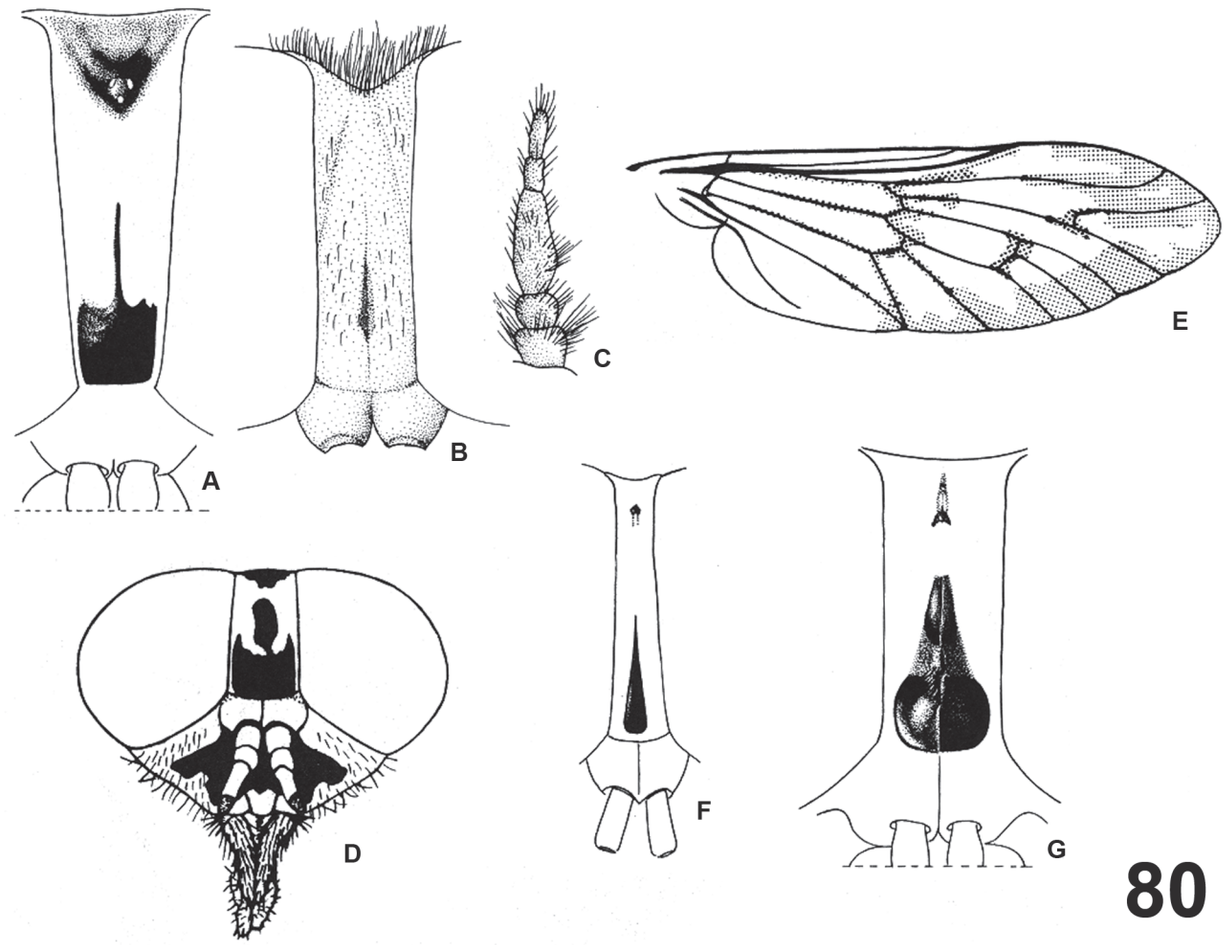

Figure 80. A. *Roquezia signifera* Wilkerson, 1985. Female. Frons. B-C. *Teskeyellus hirsuticornis* Philip & Fairchild, 1974. Female. B. Frons. C. Antenna. D-E. *Anaerythrops lanei* Barretto, 1948. Female. D. Head, frontal view. E. Wing. F. *Hemichrysops fascipennis* Kröber, 1930. Female. Frons. G. *Spilotabanus multiguttatus* (Kröber, 1930). Frons.

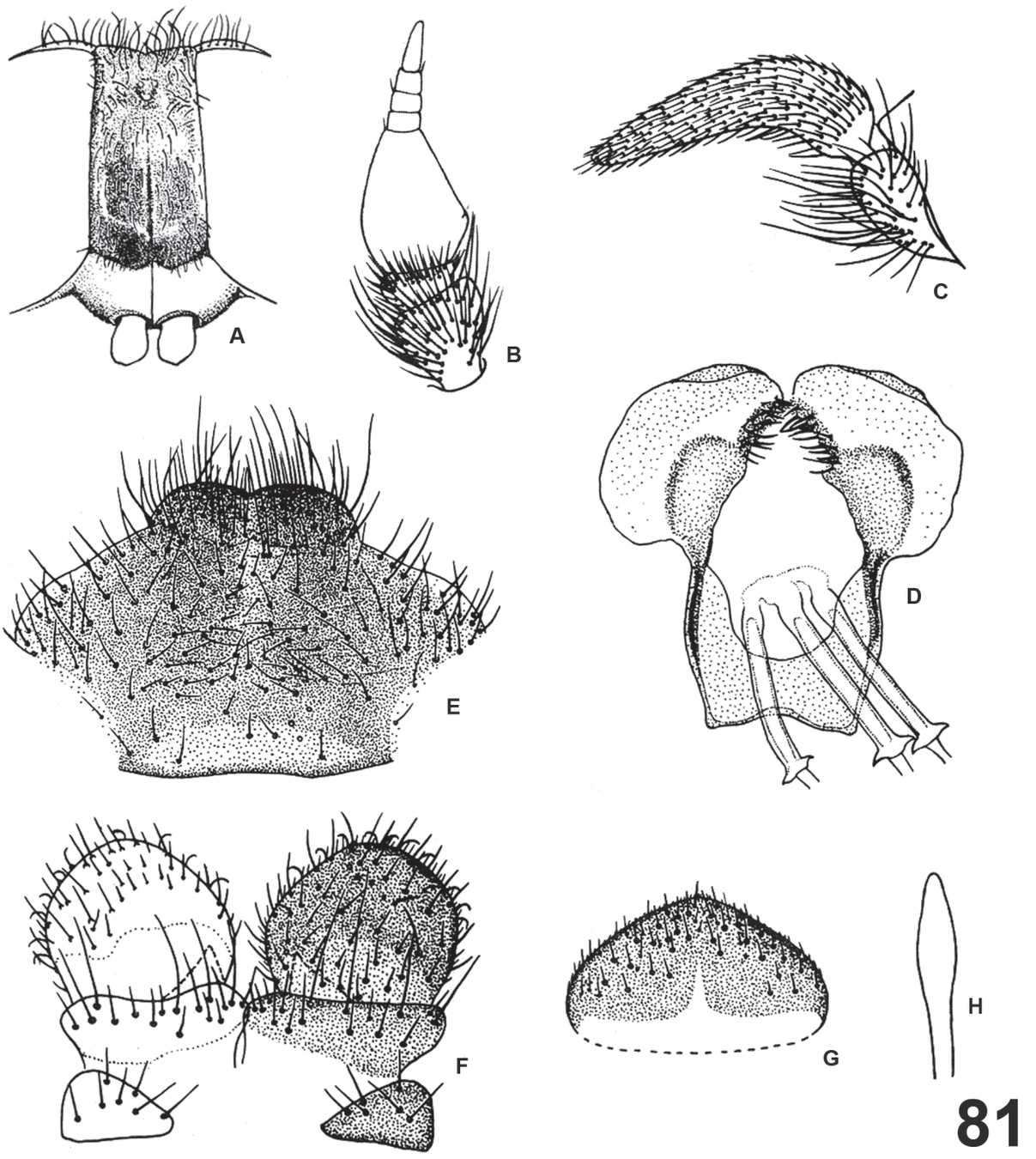

Figure 81. *Scaptiodes gagatina* (Philippi, 1865). Female. A. Frons. B. Antenna. C. Palpus. D. Genital furca and gonapophyses. E. Sternite 8 and gonapophyses. F. Tergites 9-10 and cerci. G. Hypoproct. H. Spermatheca.

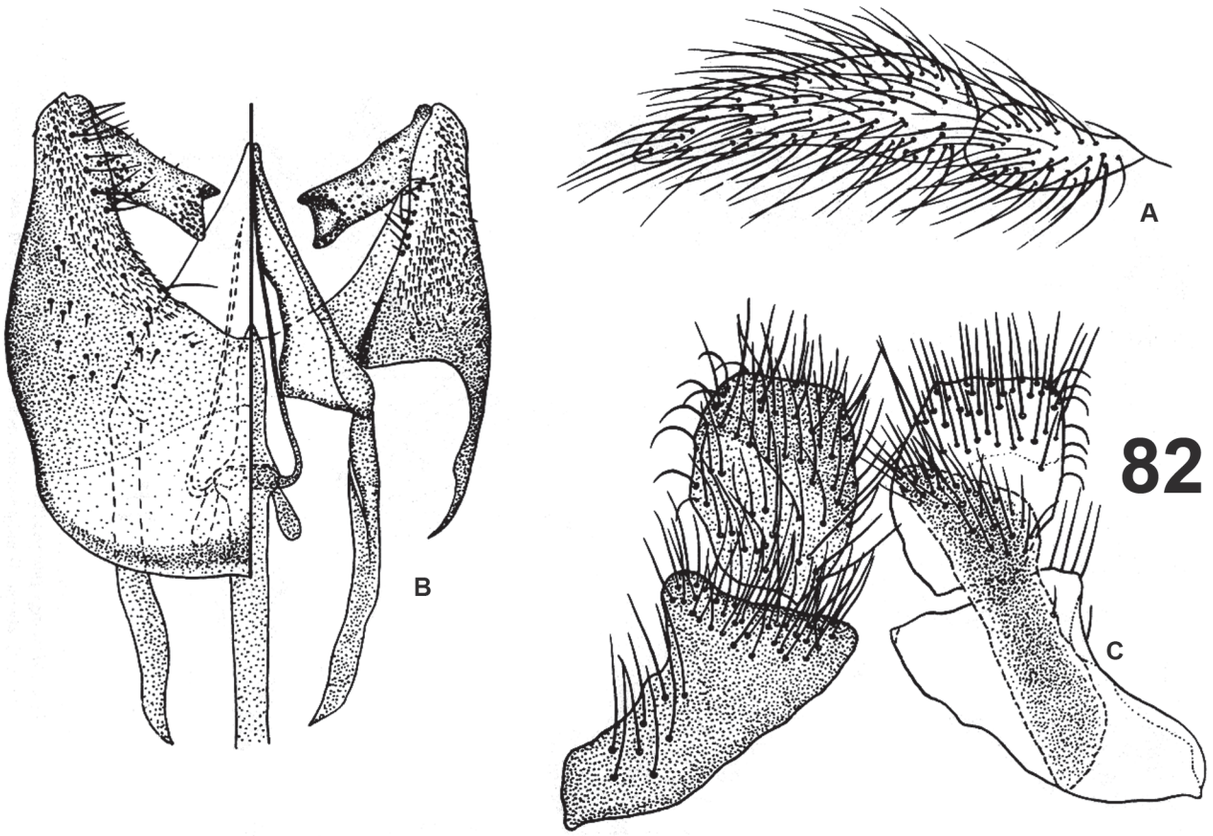

Figure 82. *Scaptiodes gagatina* (Philippi, 1865). Male. A. Palpus. B. Aedeagus and gonostyli. C. Epandrium and cerci.

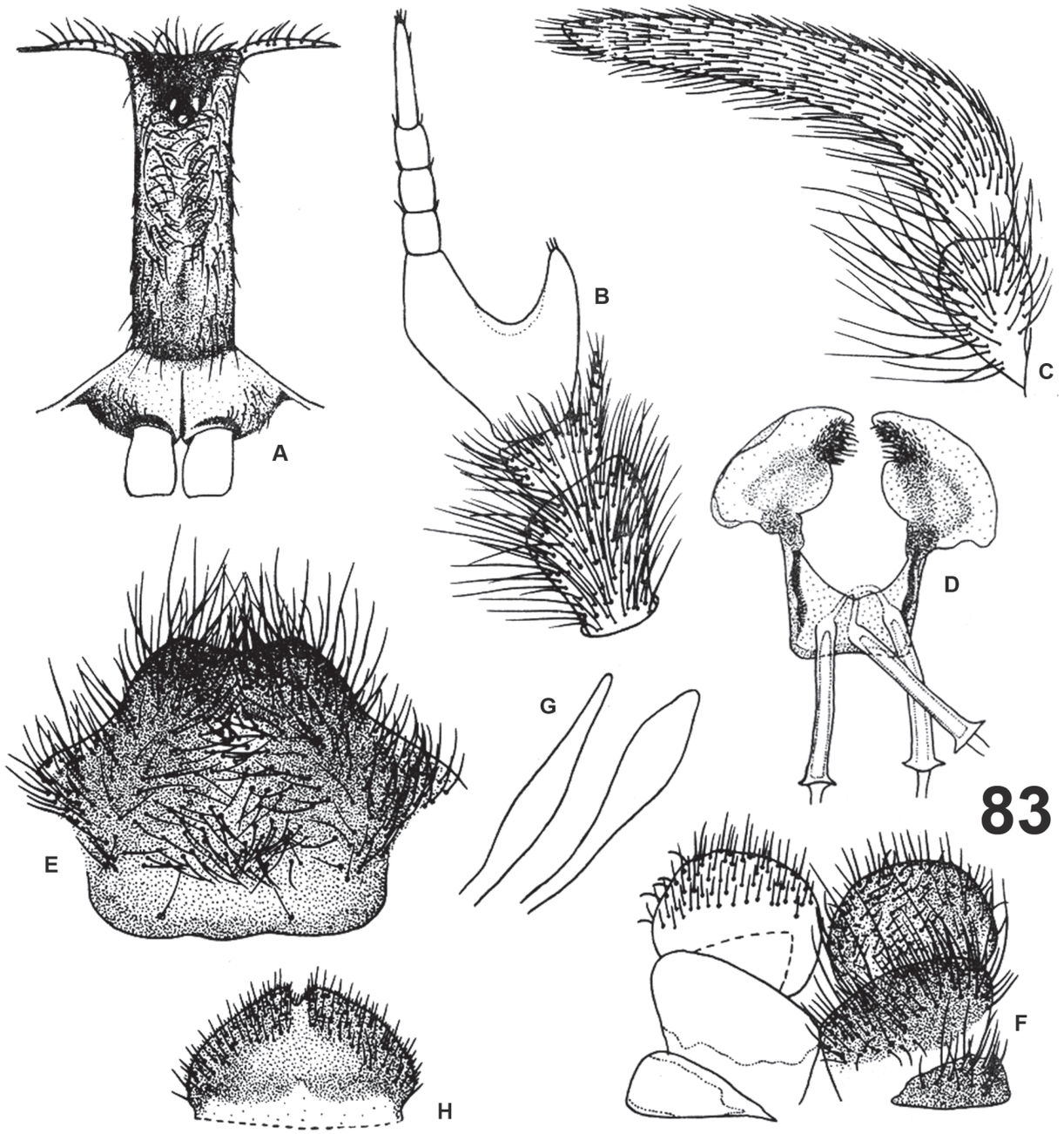

Figure 83. *Nubiloides nigripennis* (Philippi, 1865). Female. A. Frons. B. Antenna. C. Palpus. D. Genital furca and spermathecal ducts. E. Sternite 8 and gonapophyses. F. Tergites 9-10 and cerci. G. Spermatheca. H. Hypoproct.

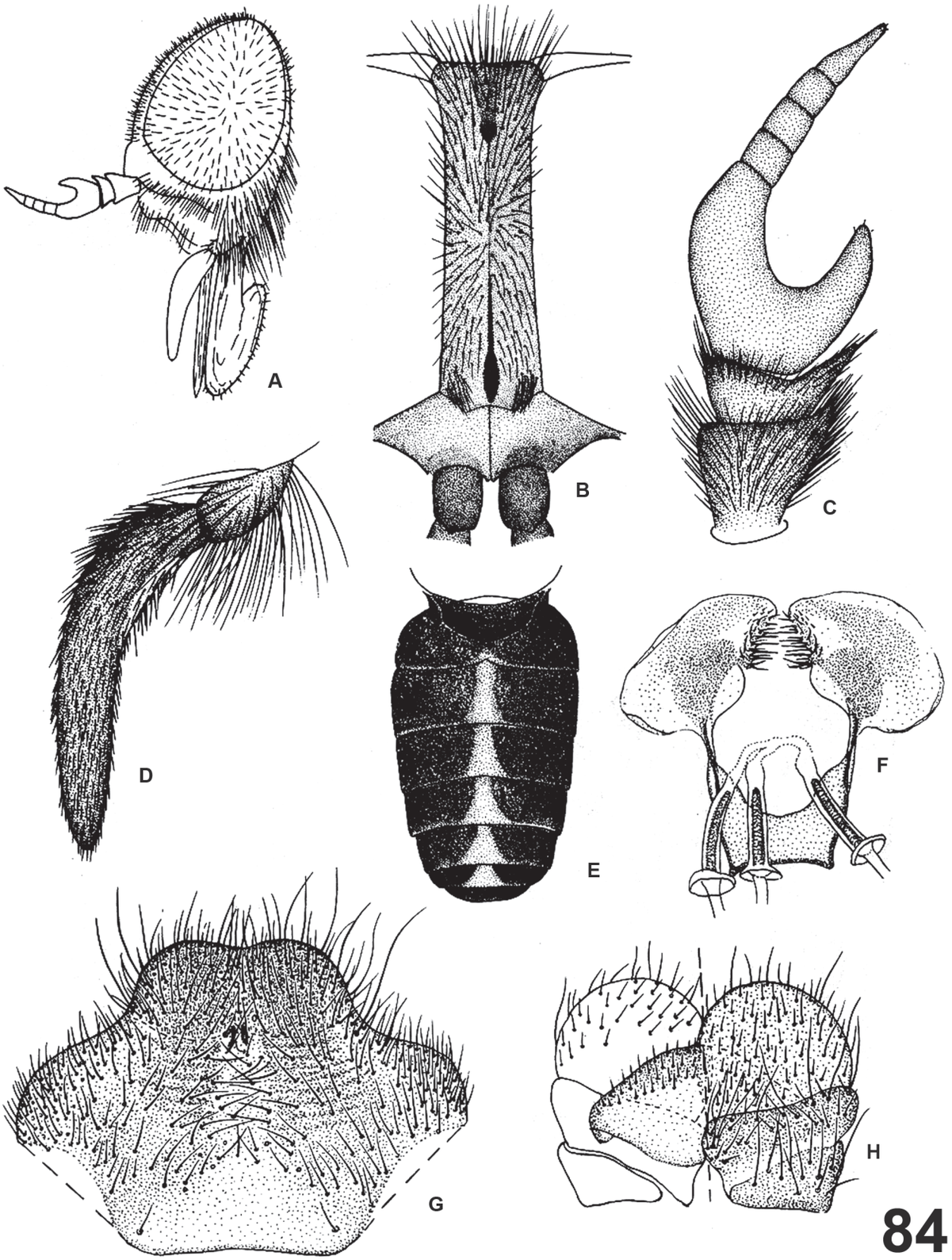

Figure 84. *Nubiloides schajovskoi* (Coscarón, 1974). Female. A. Head, lateral view. B. Frons. C. Antenna. D. Palpus. E. Abdomen, dorsal view. F. Genital furca and spermathecal ducts. G. Sternite 8 and gonapophyses. H. Tergites 9-10 and cerci.

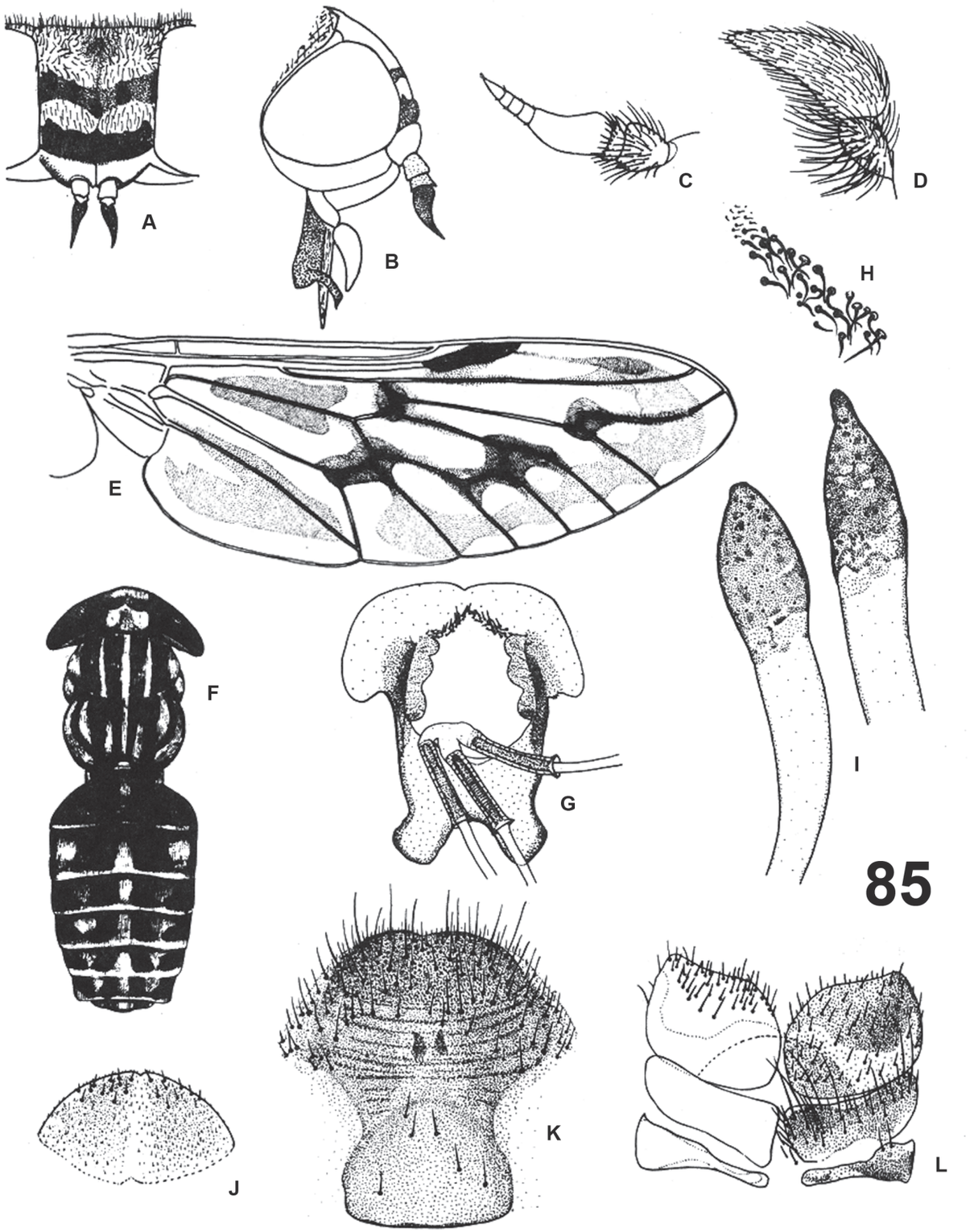

Figure 85. *Haematopotina argentina* (Brèthes, 1910). Female. A. Frons. B. Head, lateral view. C. Antenna. D. Palpus. E. Wing. F. Head, thorax and abdomen, dorsal view. G. Genital furca and spermathecal ducts. H. Spines of upper portion of furca. I. Spermatheca. J. Hypoproct. K. Sternite 8 and gonapophyses. L. Tergites 9-10 and cerci.

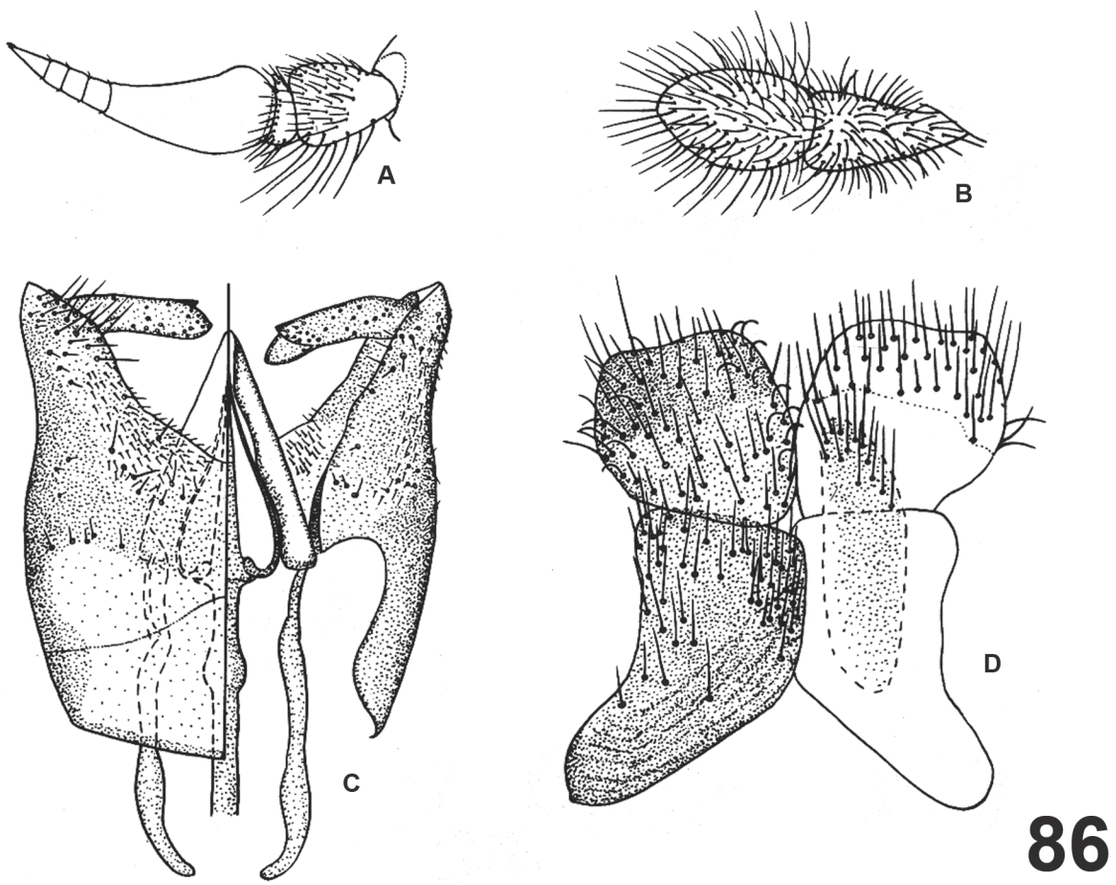

Figure 86. *Haematopotina argentina* (Brèthes, 1910). Male. A. Aedeagus. B. Palpus. C. Aedeagus and gonostyli. D. Epandrium and cerci.

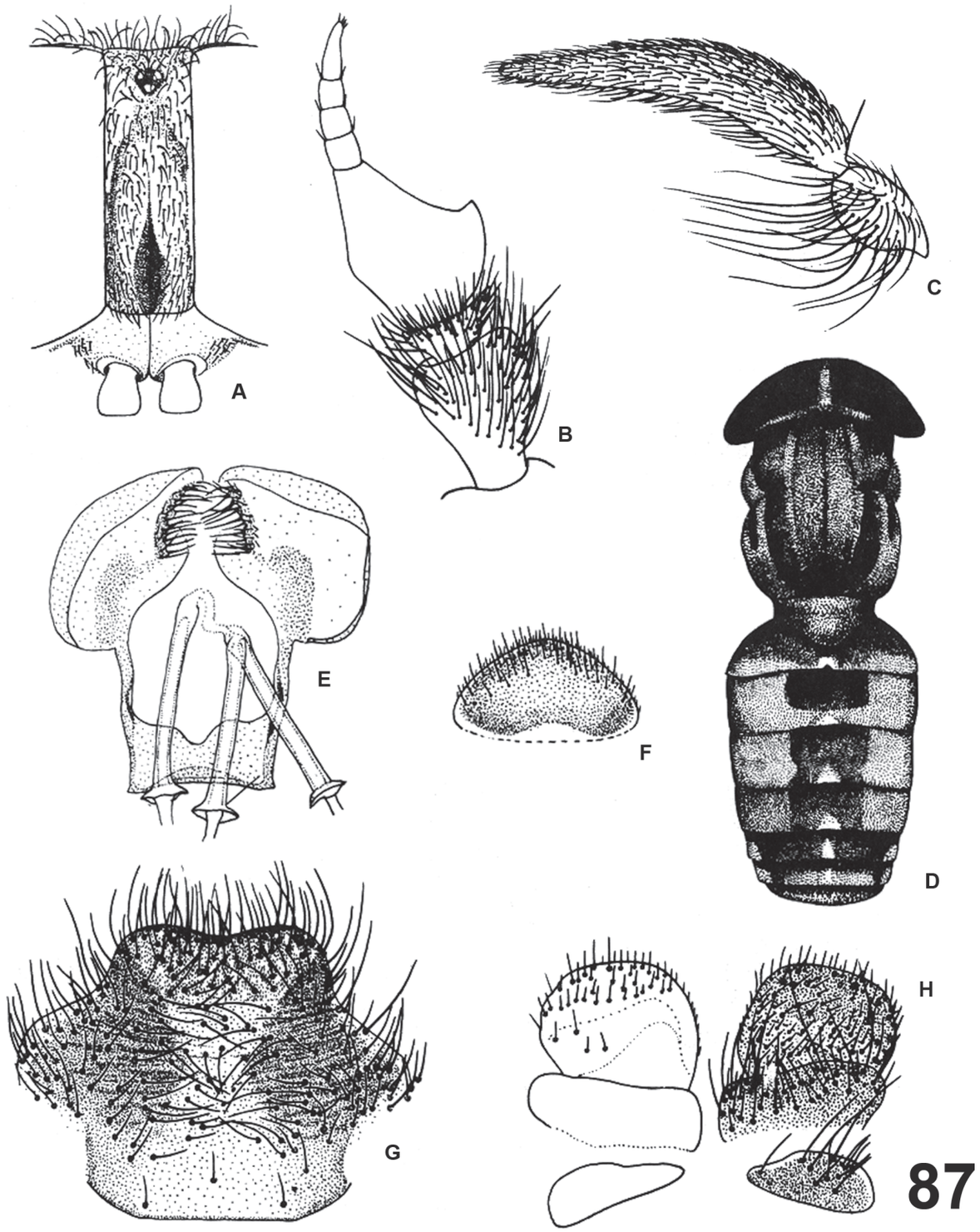

Figure 87. *Agelanius lanei* (Coscarón & Philip, 1967). Female. A. Frons. B. Antenna. C. Palpus. D. Head, thorax and abdomen, dorsal view. E. Genital furca and spermathecal ducts. F. Hypoproct. G. Sternite 8 and gonapophyses. H. Tergites 9-10 and cerci.

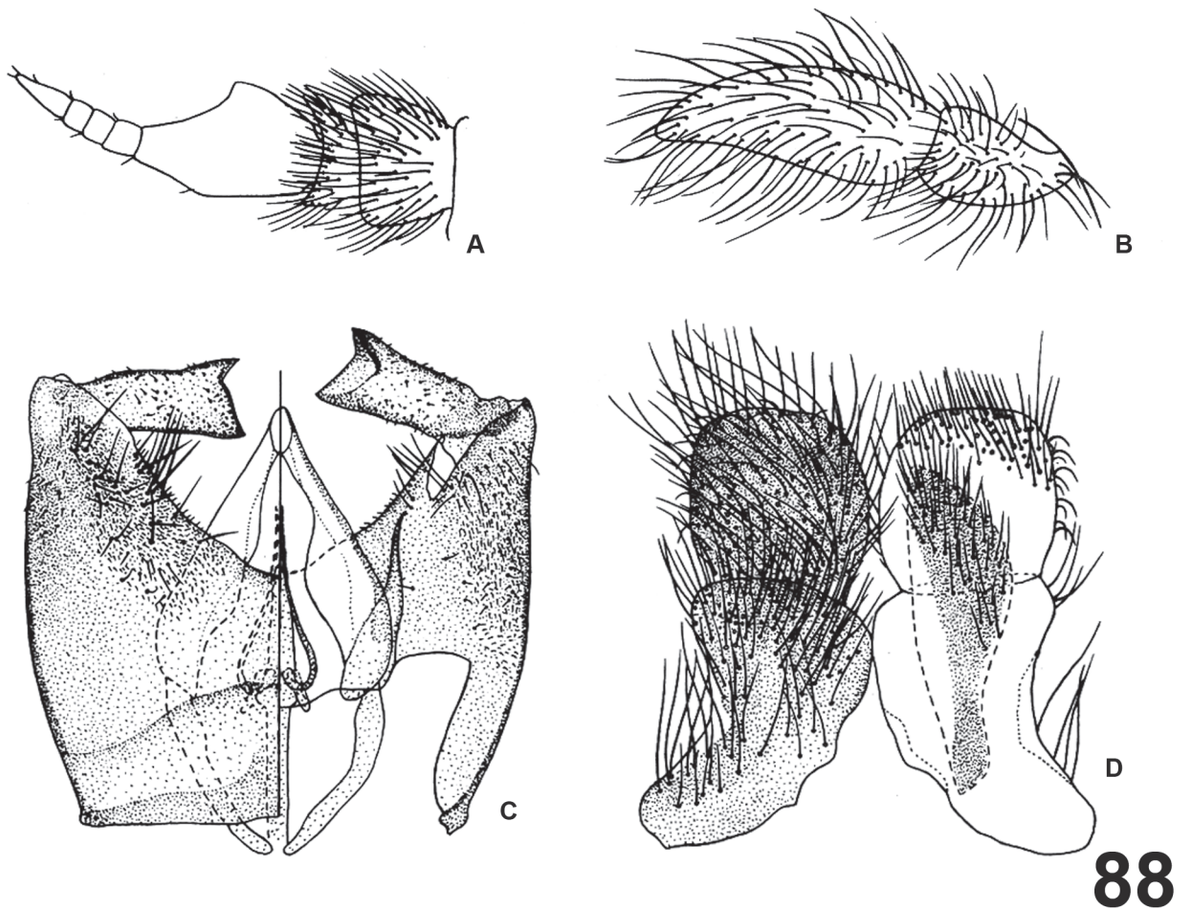

Figure 88 *Agelanius lanei* (Coscarón & Philip, 1967). Male. A. Antenna. B. Palpus. C. Aedeagus and gonostyli. D. Epandrium and cerci.

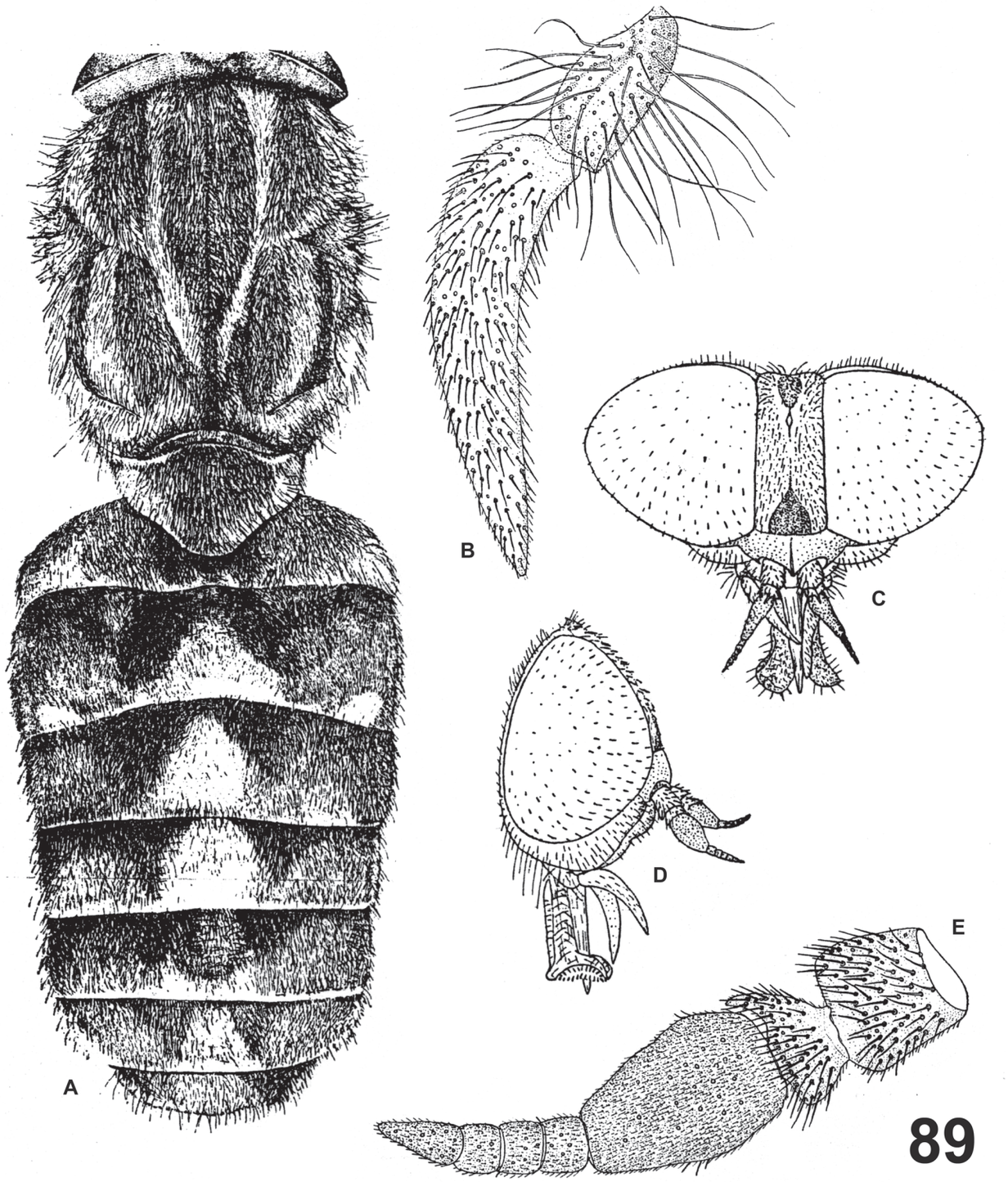

Figure 89. *Acellomyia fontanensis* (Coscarón, 1962). Female. A. Thorax and abdomen, dorsal view. B. Palpus. C. Head, dorsal view. D. Head, lateral view. E. Antenna.

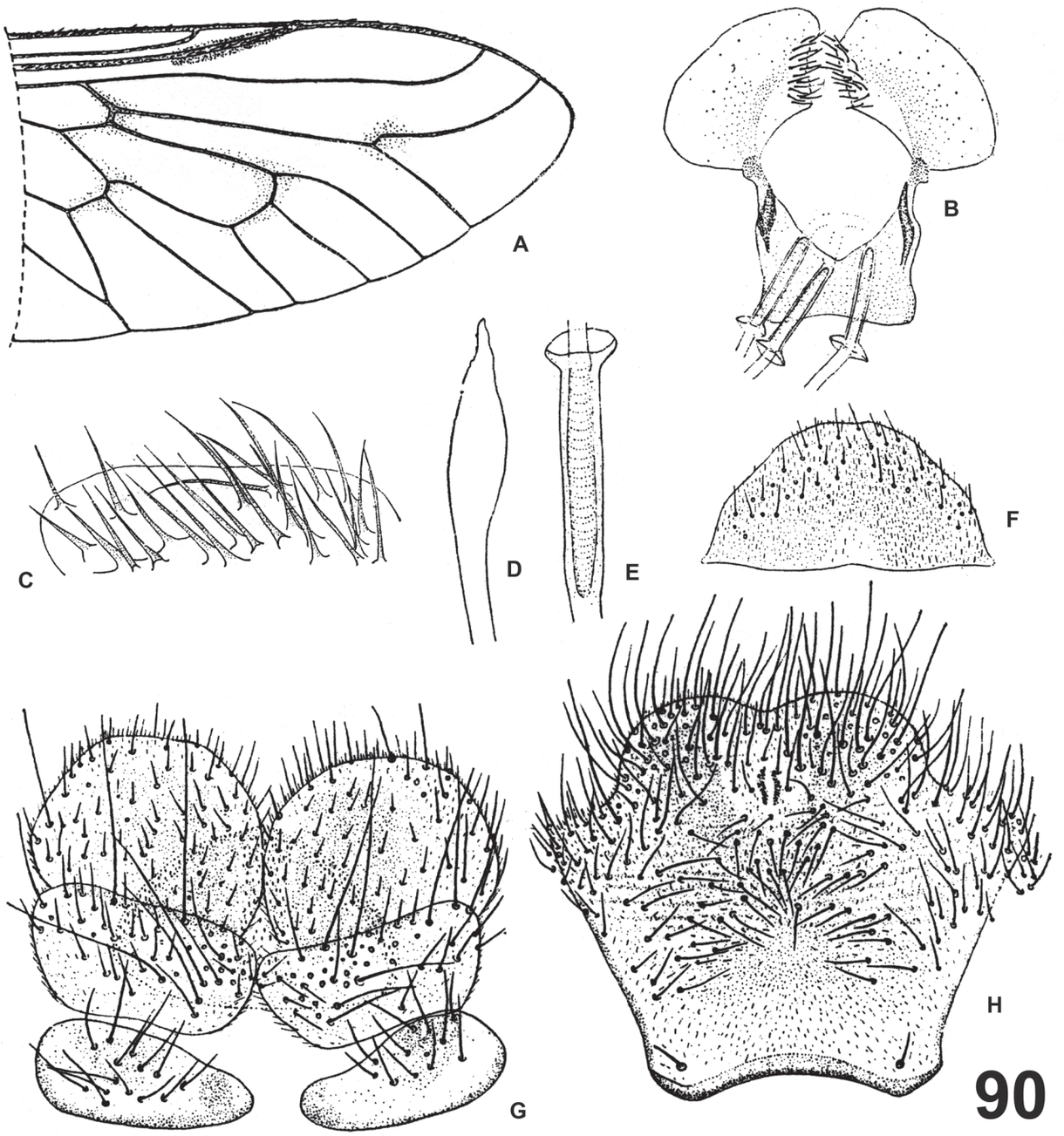

Figure 90. *Acellomyia fontanensis* (Coscarón, 1962). Female. A. Wing. B. Genital furca and spermathecal ducts. C. Comb on distal portion of genital furca. D. Tip of spermatheca. E. Caudal end of spermathecal duct. F. Hypoproct. G. Tergite 9, basal plate of tergite 10 and cerci. H. Sternite 8 and gonapophyses.

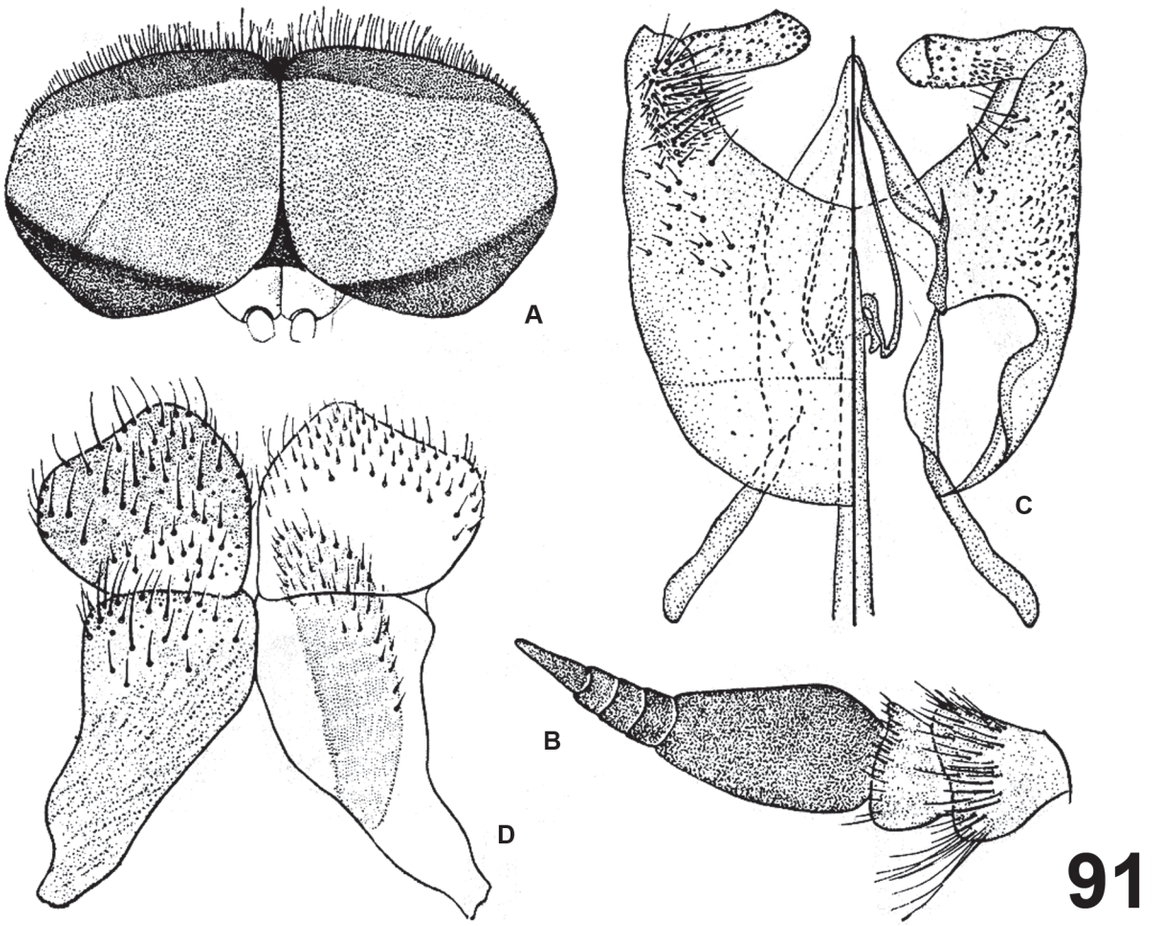

Figure 91 *Acellomyia albohirta* (Walker, 1837). Male. A. Head, frontal view. B. Antenna. C. Aedeagus and gonostyli. D. Epandrium and cerci.

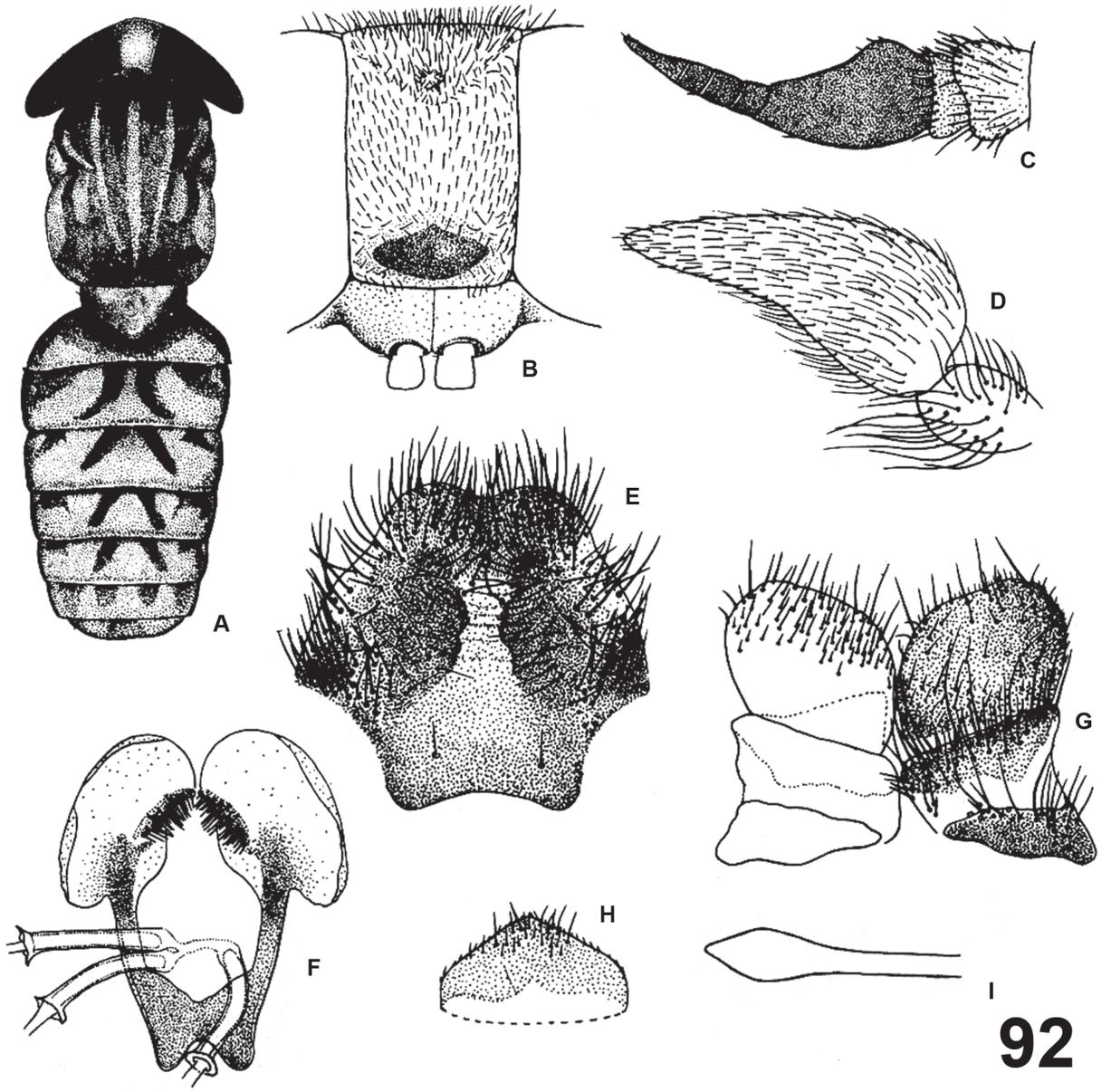

Figure 92. *Acellomyia albohirta* (Walker, 1837). Female. A. Head, thorax and abdomen, dorsal view. B. Frons. C. Antenna. D. Palpus. E. Sternite 8 and gonapophyses. F. Genital furca and spermathecal ducts. G. Tergites 9-10 and cerci. H. Hypoproct. I. Spermatheca.

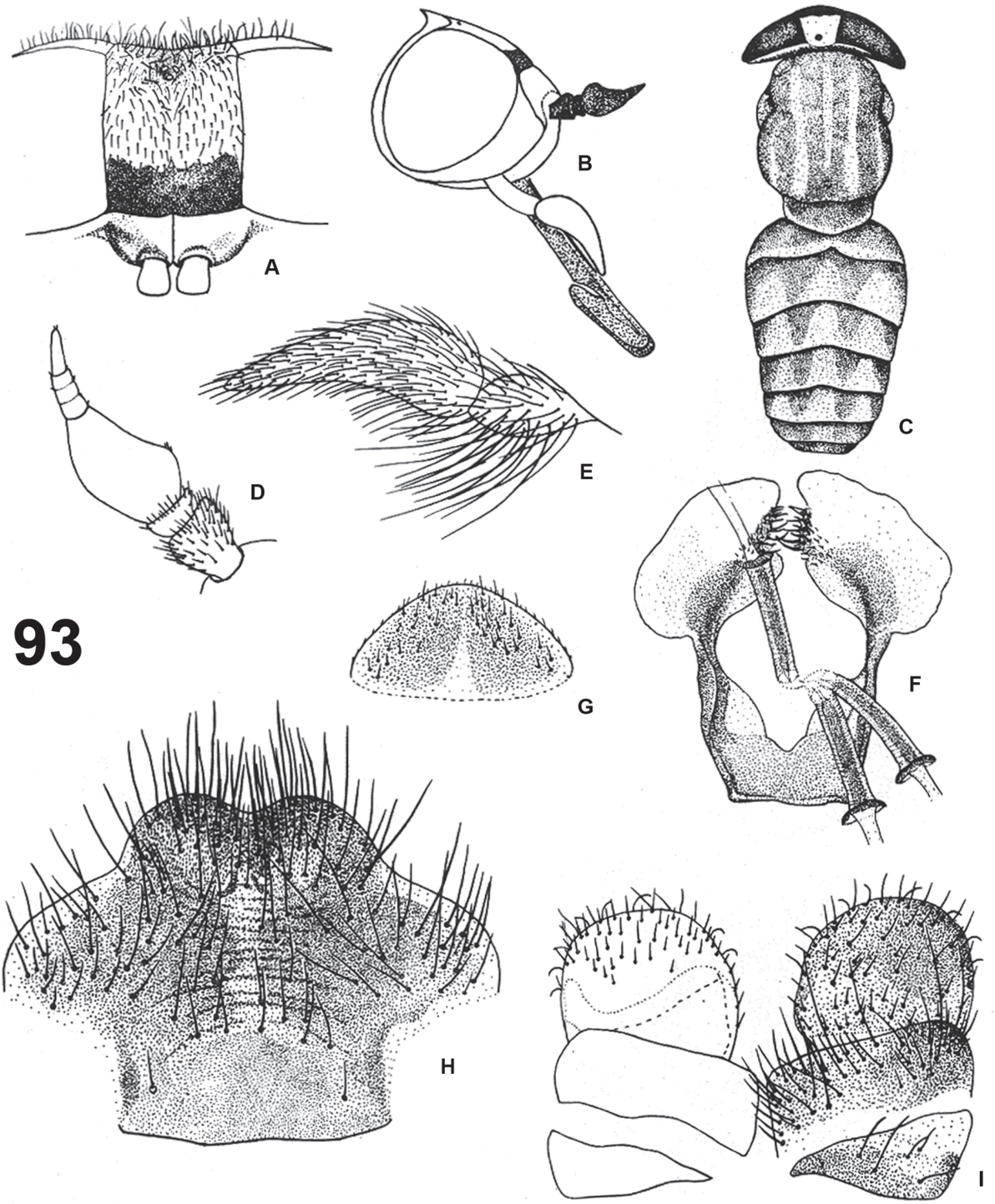

Figure 93. *Dasybasis albosignata* (Kröber, 1930). Female. A. Frons. B. Head, lateral view. C. Head, thorax and abdomen, dorsal view. D. Antenna. E. Palpus. F. Genital furca and spermathecal ducts. G. Hypoproct. H. Sternite 8 and gonapophyses. I. Tergites 9-10 and cerci.

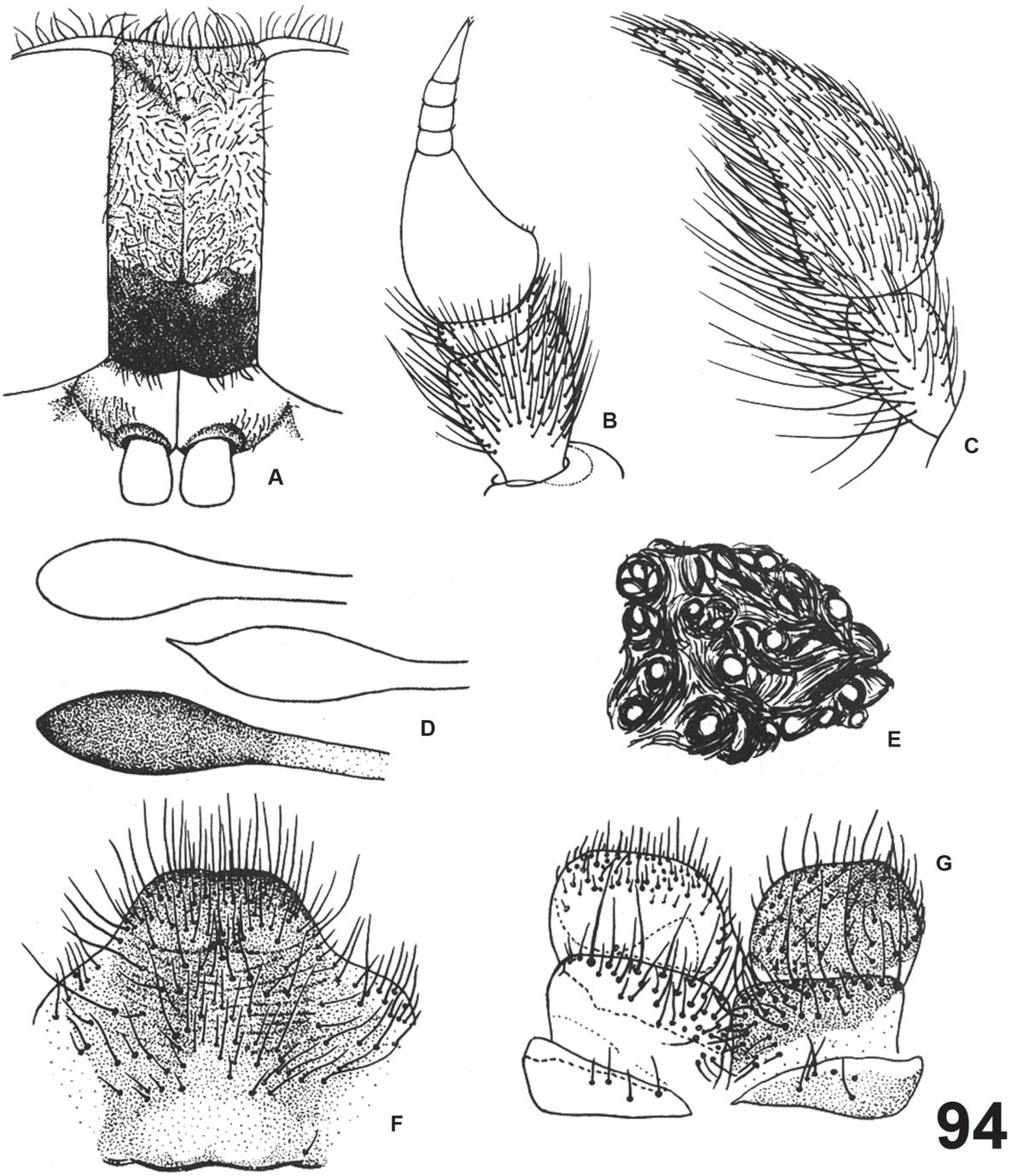

Figure 94. *Dasybasis testaceomaculata* (Macquart, 1838). Female. A. Frons. B. Antenna. C. Palpus. D. Spermatheca. E. Detail of spermathecal wall. F. Sternite 8 and gonapophyses. G. Tergites 9-10 and cerci.

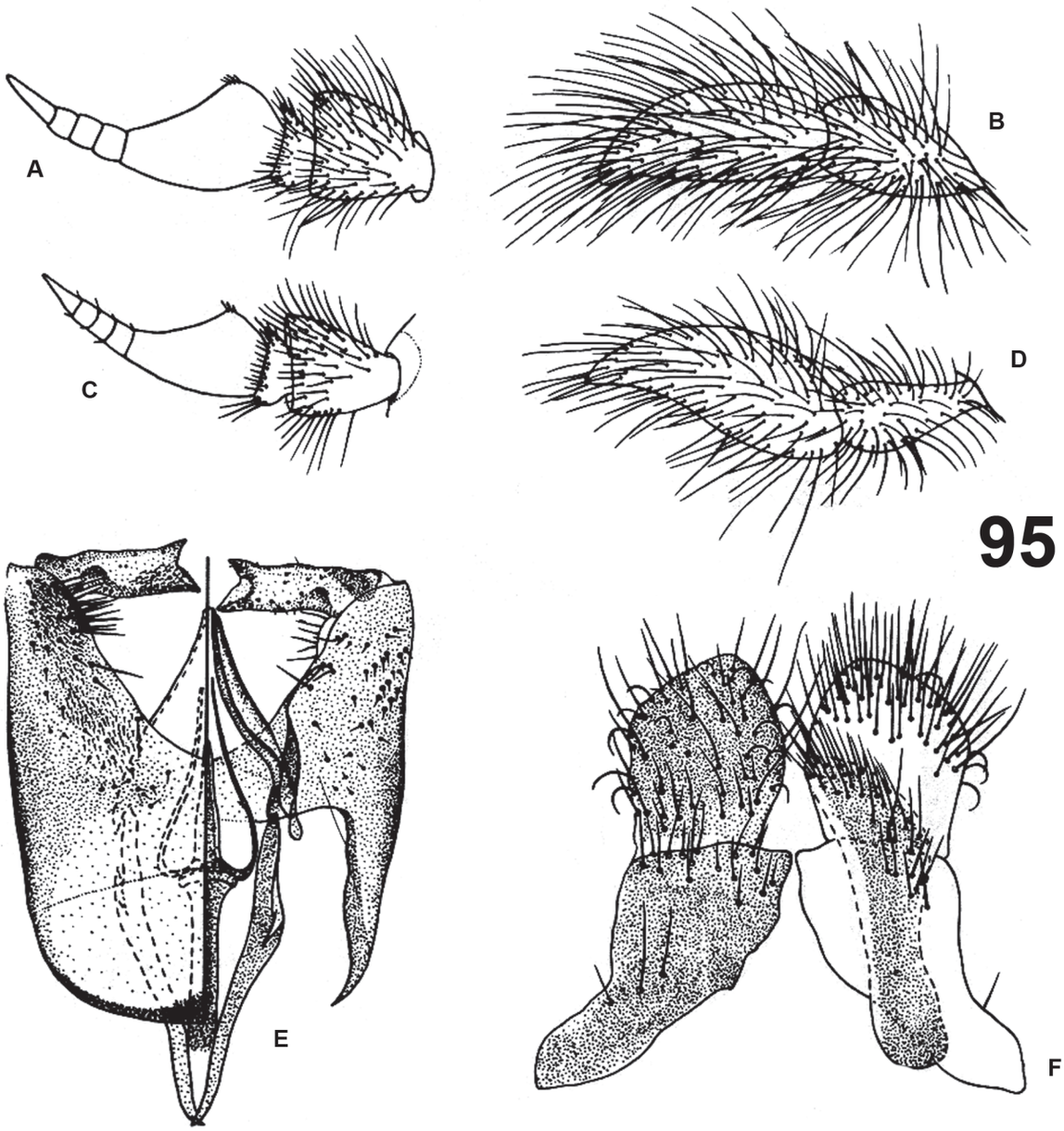

Figure 95. *Dasybasis* (*Dasybasis*) *testaceomaculata* (Macquart, 1838). Male. A, C. Antenna, showing variation. B, D. Palpus, variation. E. Aedeagus and gonostyli. F. Epandrium and cerci.

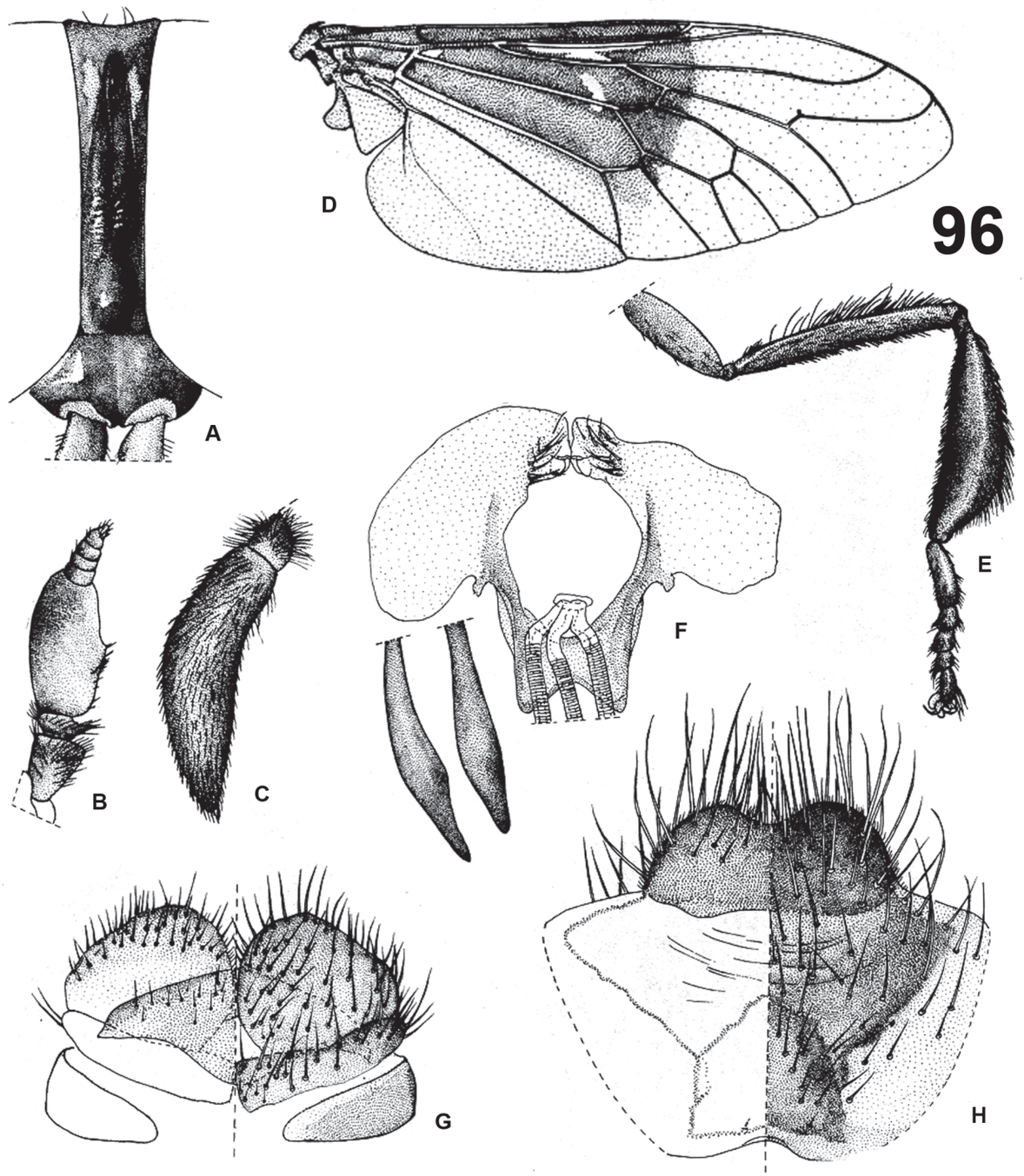

Figure 96. *Selasoma tibiale* (Fabricius, 1805). Female. A. Frons. B. Antenna. C. Palpus. D. Wing. E. Hind leg. F. Genital furca and spermathecal duct. G. Tergites 9-10 and cerci. H. Sternite 8 and gonapophyses.

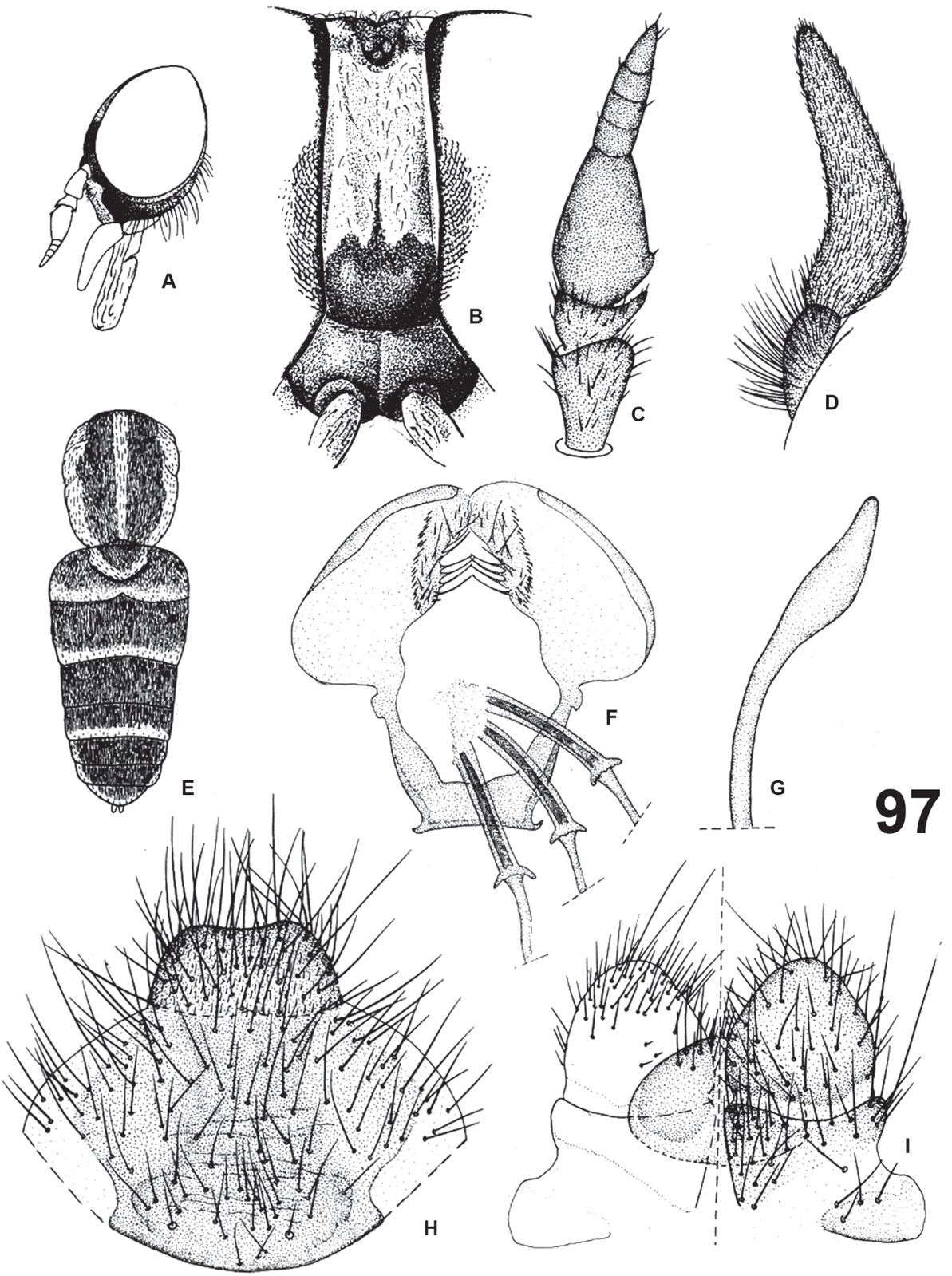

Figure 97. *Pseudacanthocera brevicornis* (Enderlein, 1925). Female. A. Head, lateral view. B. Frons. C. Antenna. D. Palpus. E. Thorax and abdomen, dorsal view. F. Genital furca and spermathecal ducts. G. Spermatheca. H. Sternite 8 and gonapophyses. I. Tergites 9-10 and cerci.

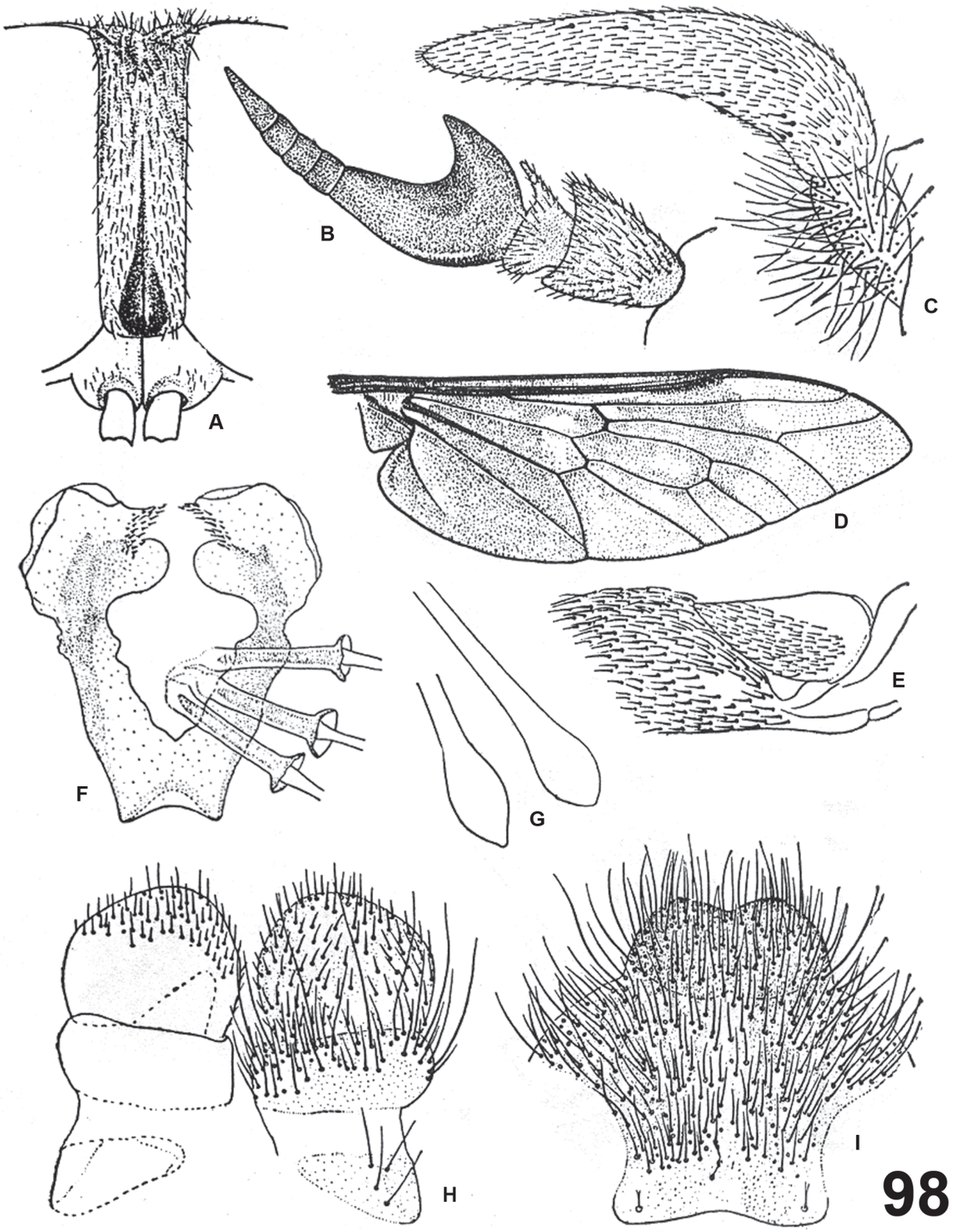

Figure 98. *Dicladocera* (*Dicladocera*) *bellicosa.* (Brèthes, 1910). Female. A. Frons. B. Antenna. C. Palpus. D. Wing. E. Basicosta. F. Genital furca and spermathecal ducts. G. Spermathecae. H. Tergites 9-10 and cerci. I Sternite 8 and gonapophyses.

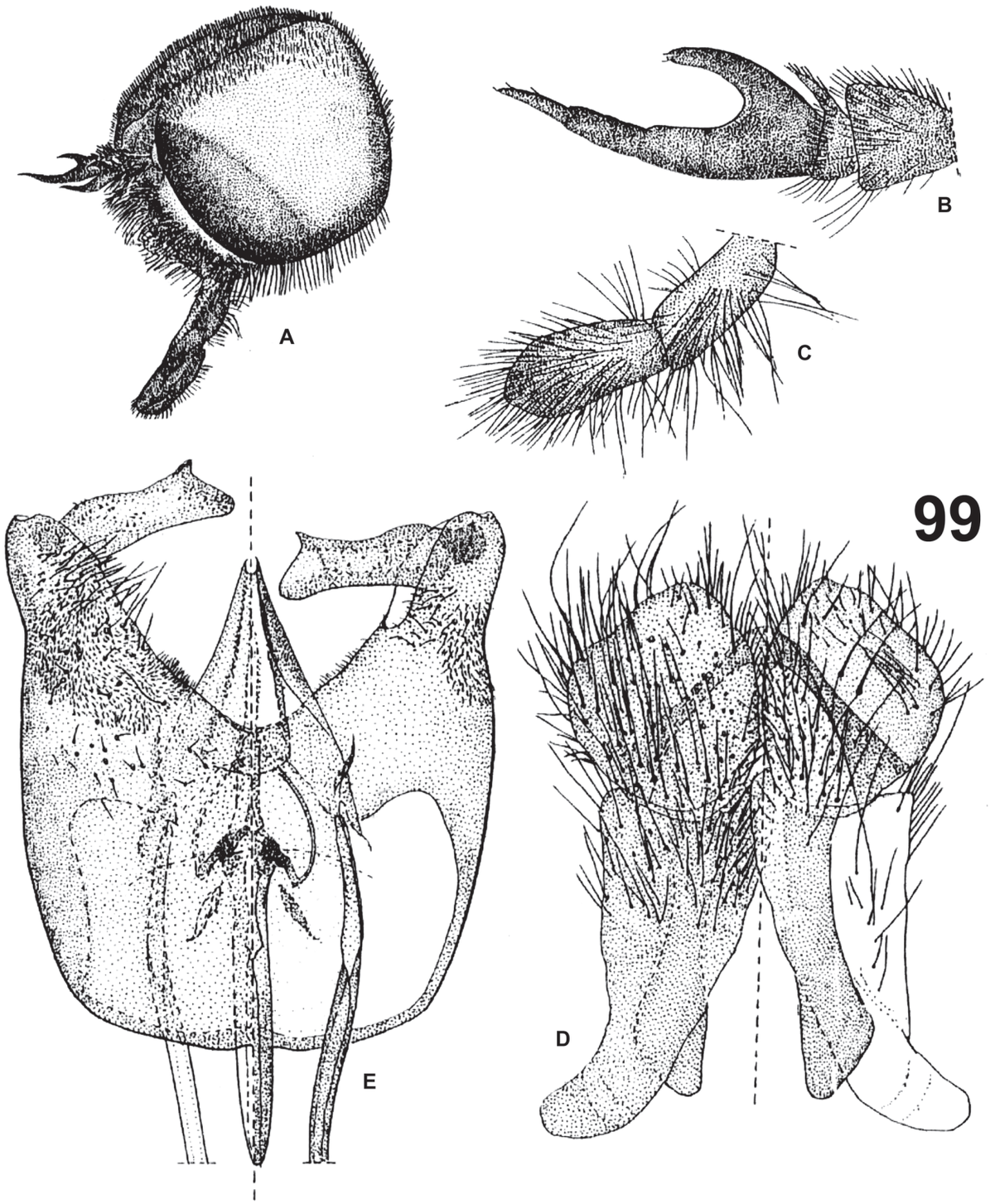

Figure 99. *Dicladocera* (*Dicladocera*) *nubipennis* (Rondani, 1864). Male. A. Frons. B. Antenna. C. Palpus. D. Cerci, paraprocts and hypoproct. E. Basistyli, dististyli and aedeagus.

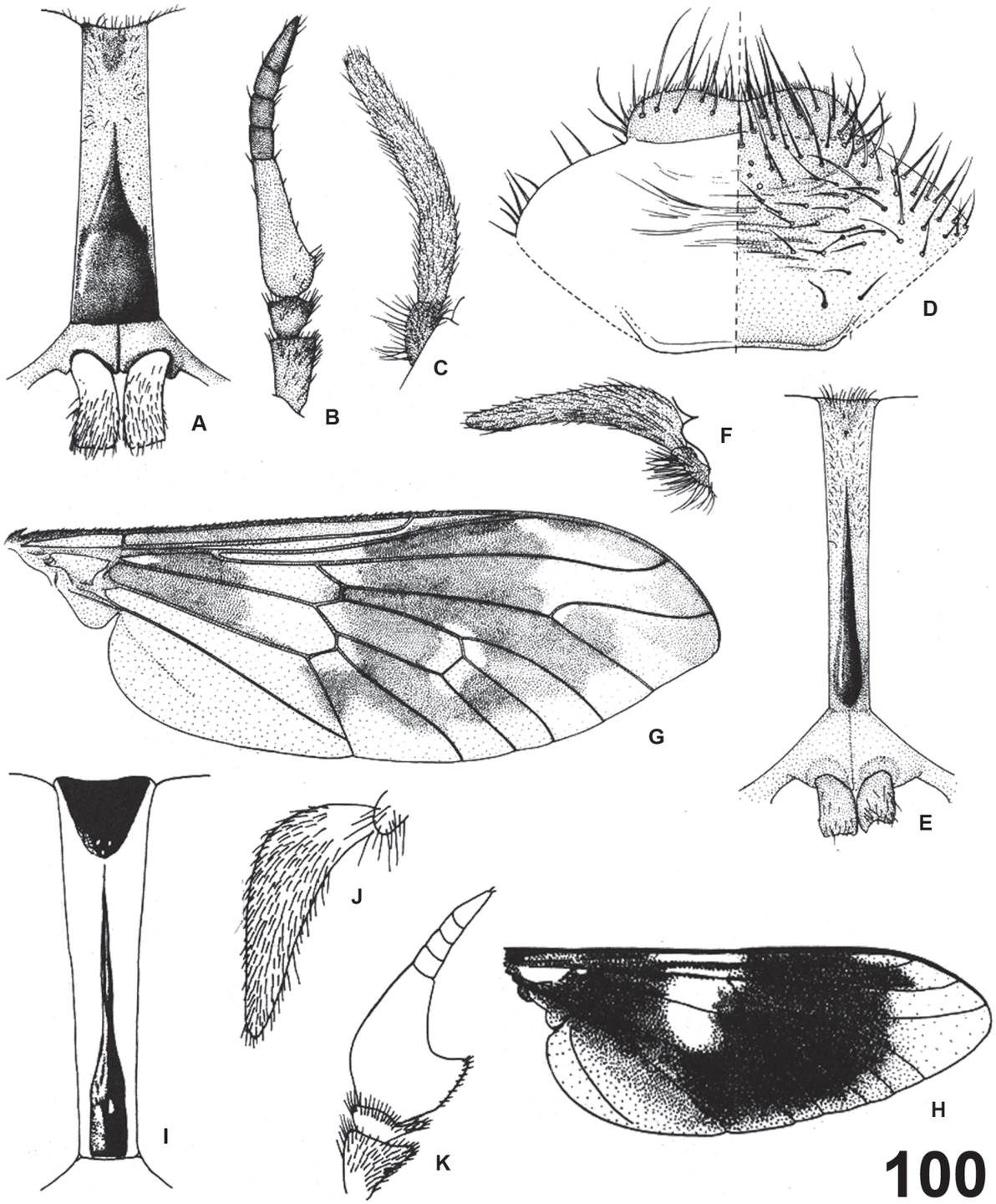

Figure 100. A-D. *Leptapha fumata* (Wiedemann, 1821). Female. A. Frons. B. Antenna. C. Palpus. D. Sternite 8 and gonapophyses. E-G. *Philipotabanus* (*Philipotabanus*) *magnificus* (Kröber, 1934). Female. E. Frons. F. Palpus. G. Wing. H. *Philipotabanus* (*Melasmatabanus*) *fascipennis* (Macquart, 1846). Female. Wing. I-K. *Philipotabanus* (*Mimotabanus*) *fucosus* Fairchild, 1958. Female. I. Frons. J. Palpus. K. Antenna.

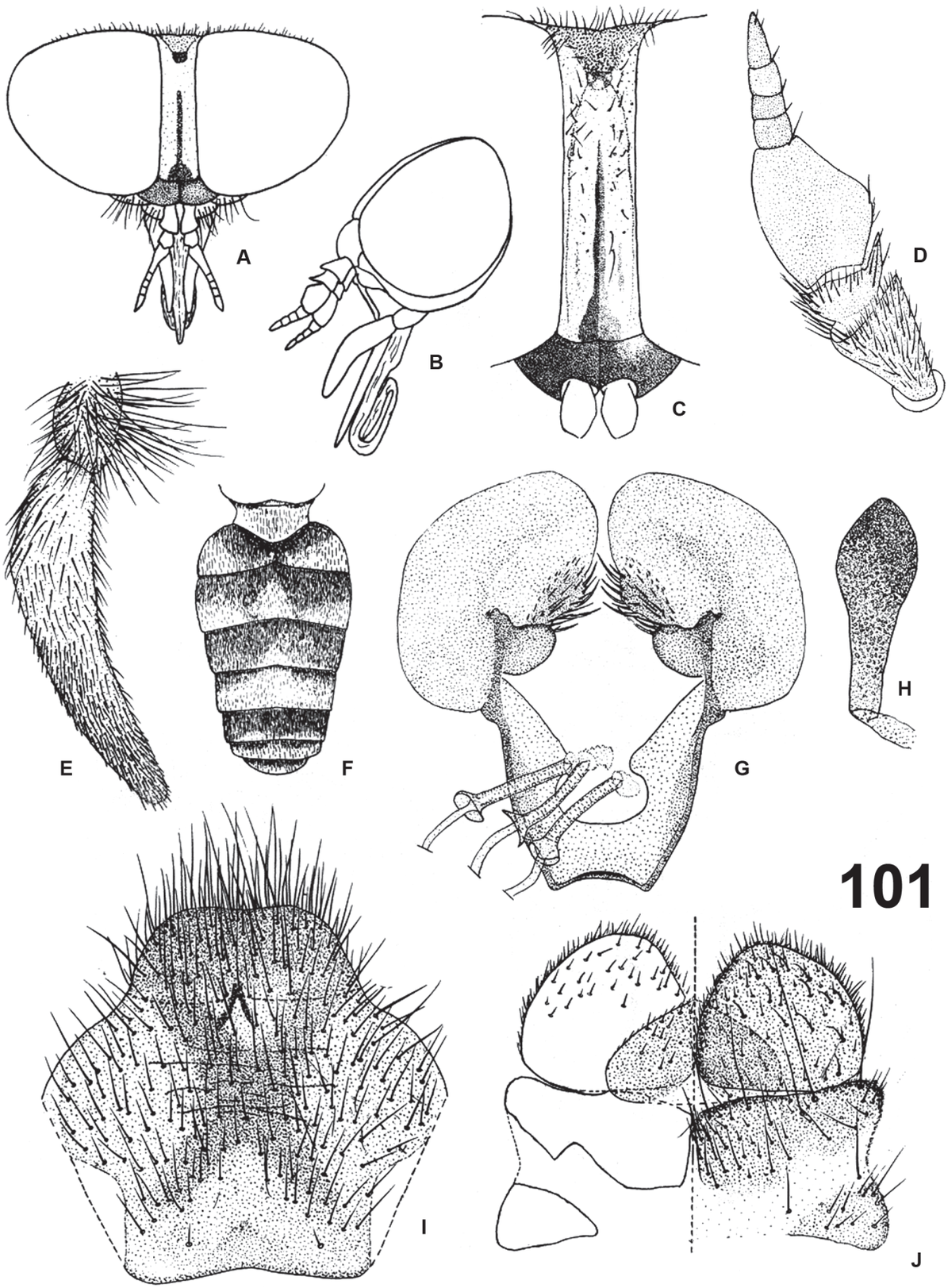

Figure 101. *Leucotabanus procallosus* Lutz, 1912. Female. A. Head, frontal view. B. Same, lateral view. C. Frons. D. Antenna. E. Palpus. F. Abdomen, dorsal view. G. Genital furca and spermathecal ducts. H. Spermatheca. I. Sternite 8 and gonapophyses. J. Tergites 9-10 and cerci.

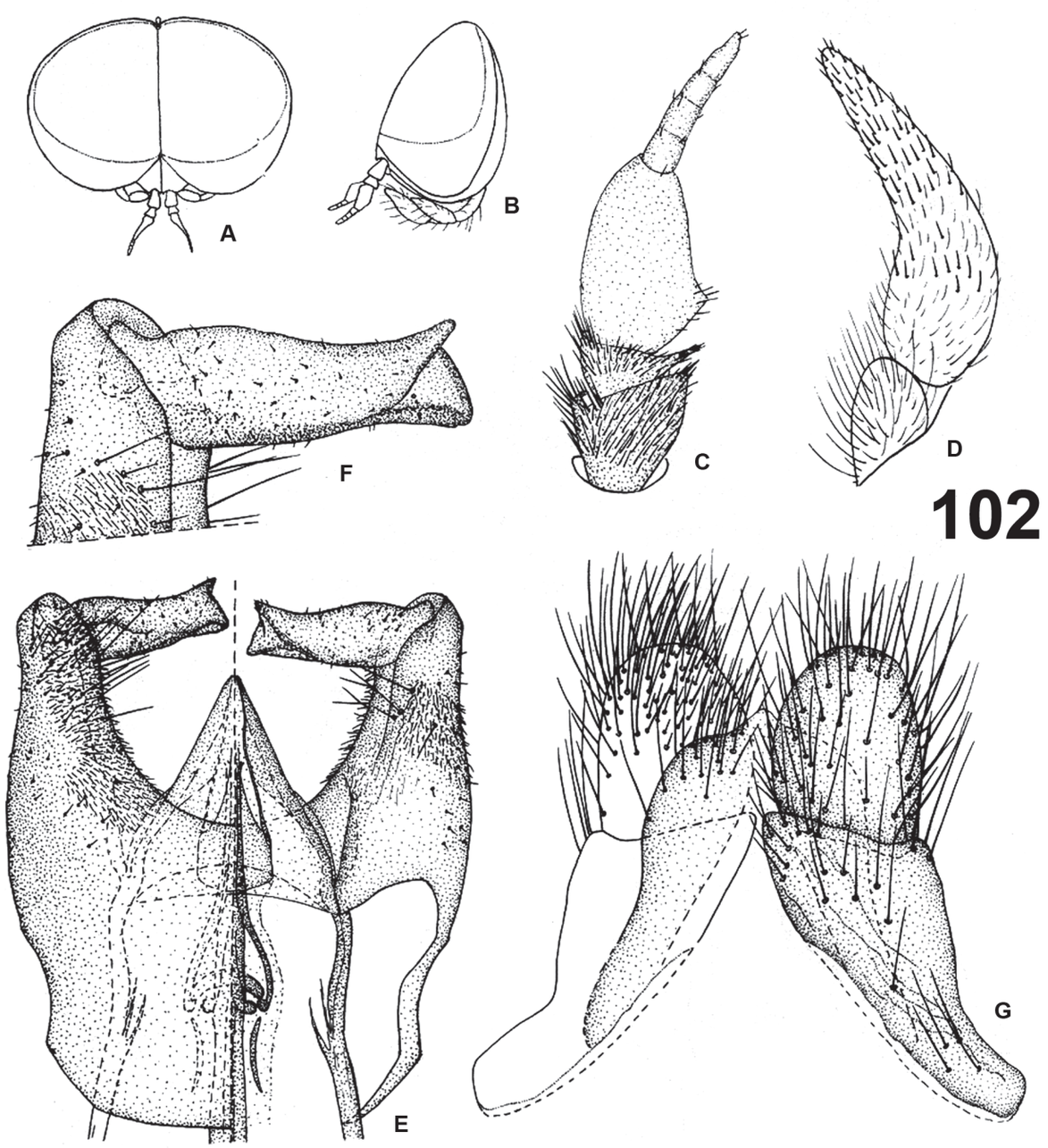

Figure 102. *Leucotabanus procallosus* Lutz, 1912. Male. A. Head, frontal view. B. Same, lateral view. C. Antenna. D. Palpus. E. Aedeagus and gonostyli. F. Dististylus. G. Epandrium and cerci.

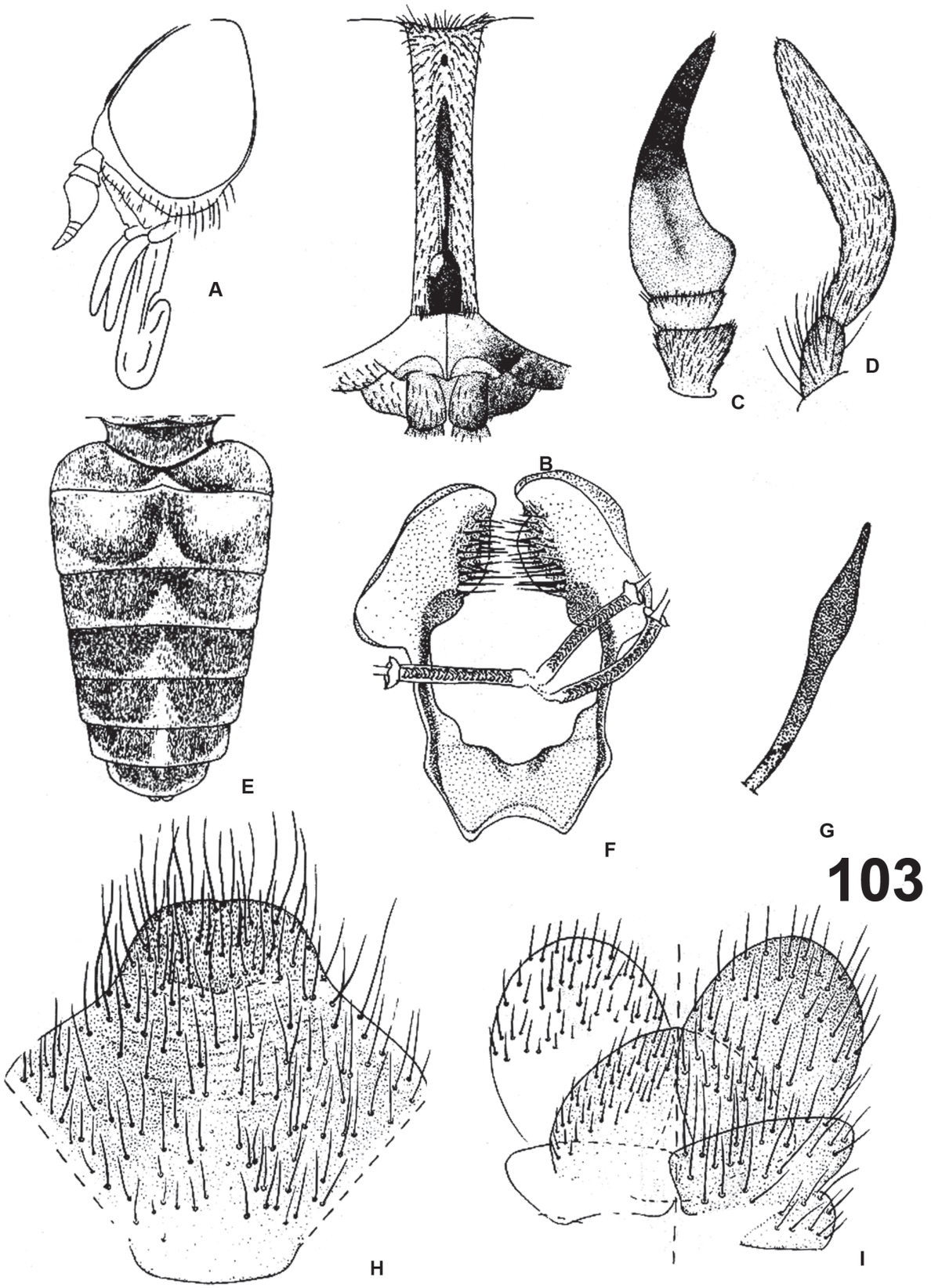

Figure 103. *Stypommisa rubrithorax* (Macquart, 1838). Female. A. Head, lateral view. B. Frons. C. Antenna. D. Palpus. E. Abdomen, dorsal view. F. Genital furca and spermathecal ducts. G. Spermatheca. H. Sternite 8 and gonapophyses. I. Tergites 9-10 and cerci.

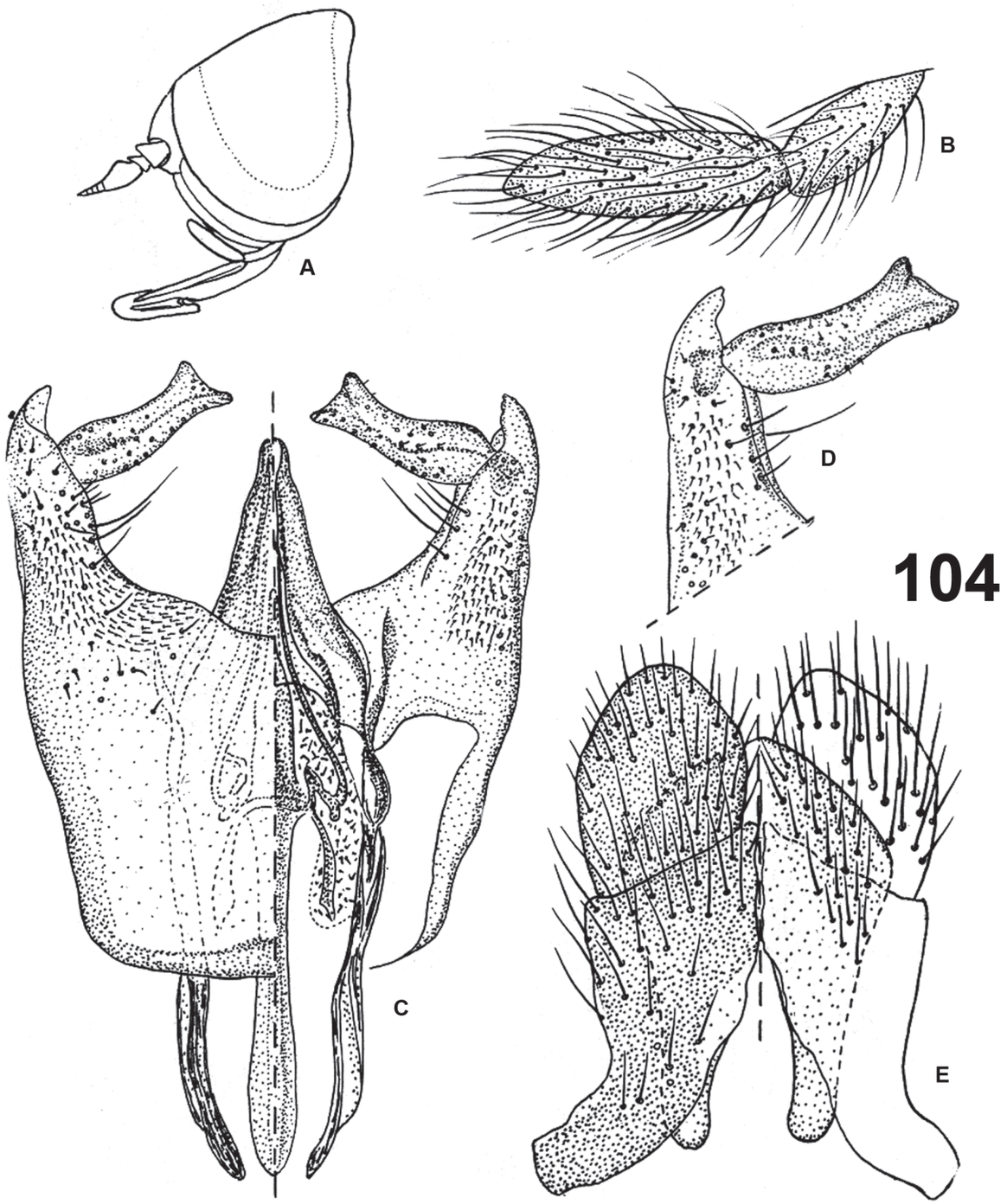

Figure 104. *Stypommisa rubrithorax* (Macquart, 1838). Male. A. Head, lateral view. B. Palpus. C. Aedeagus and gonostyli. D. Dististylus. E. Epandrium and cerci.

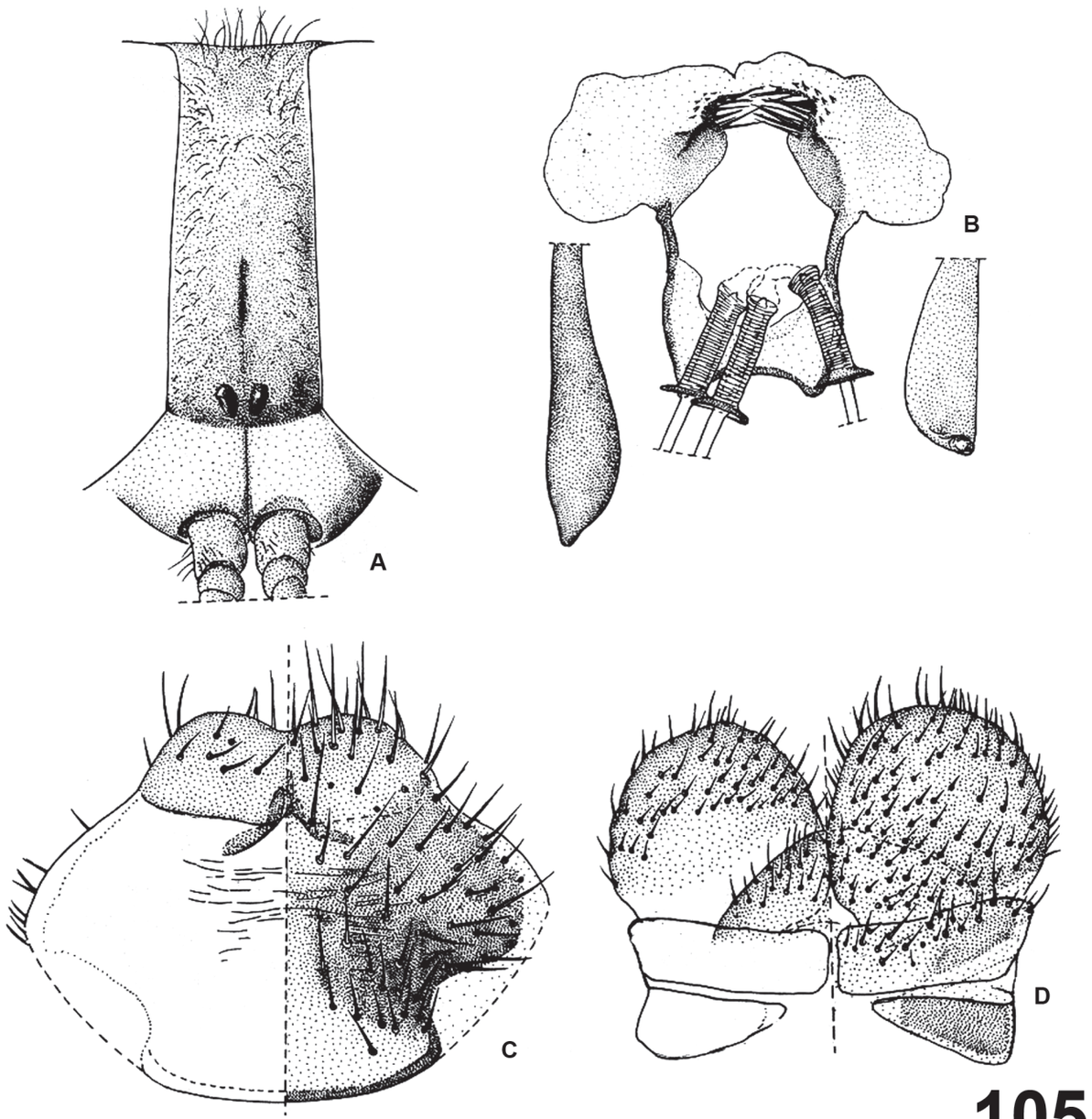

Figure 105. *Atylotus vargasi* Philip, 1954. Female. A. Frons. B. Genital furca and spermathecae. C. Sternite 8 and gonapophyses. D. Tergites 9-10 and cerci.

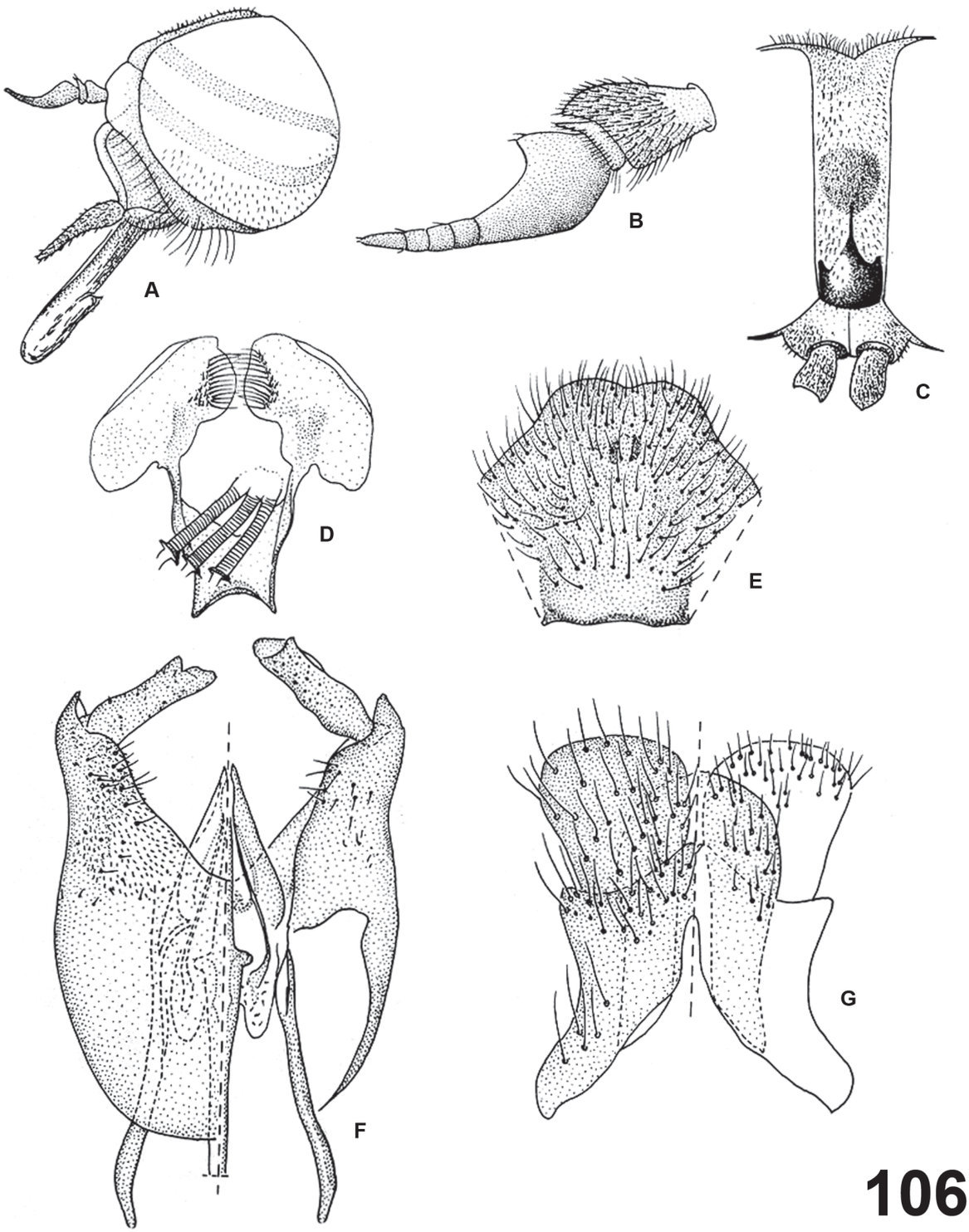

Figure 106. *Poeciloderas lindneri* (Kröber, 1930). Female (A-E), male (F-G). A. Head, lateral view. B. Antenna. C. Frons. D. Genital furca and spermathecal ducts. E. Sternite 8 and gonapophyses. F. Aedeagus and gonostyli. G. Epandrium and cerci.

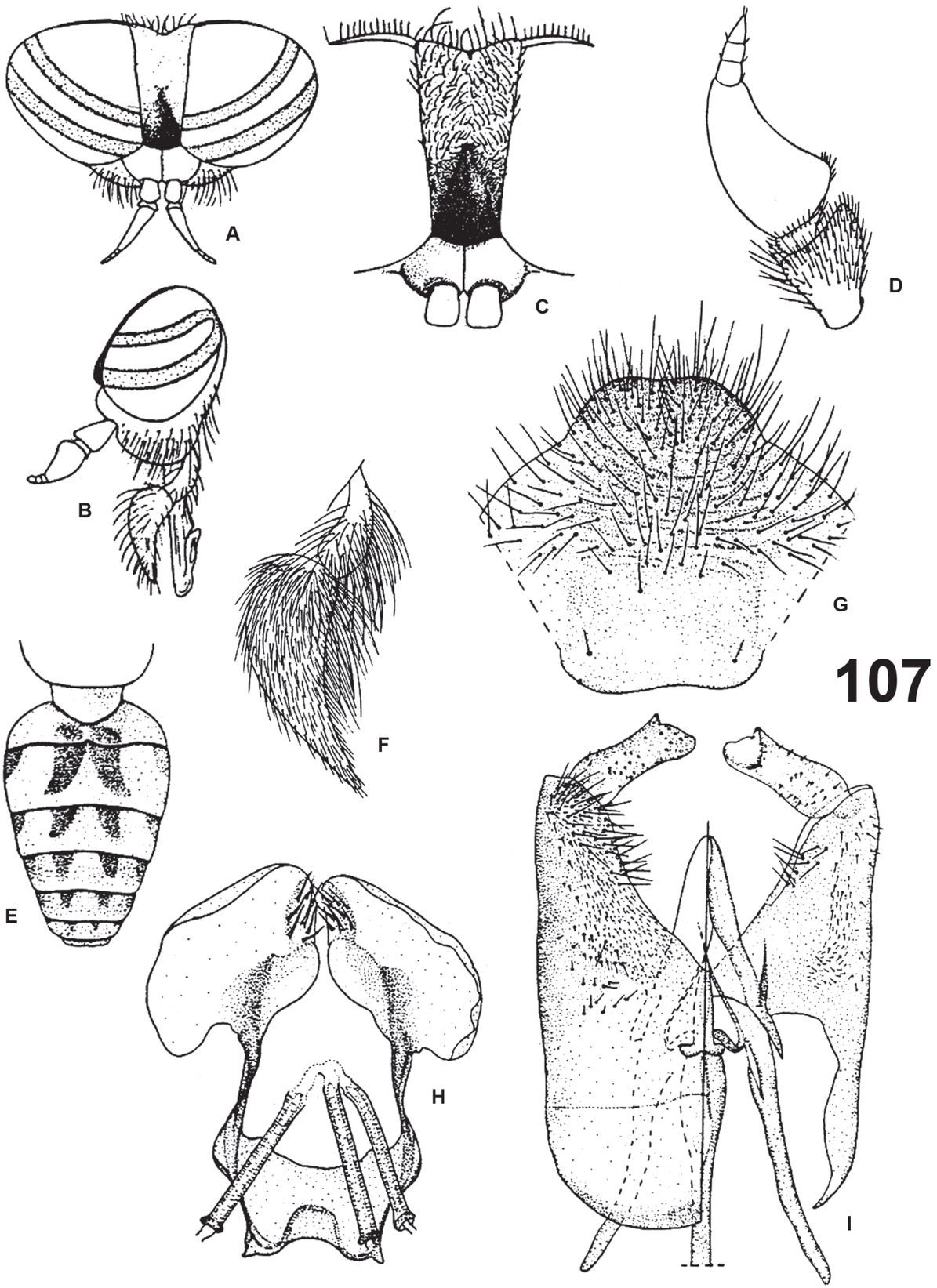

Figure 107. *Phorcotabanus cinereus* (Wiedemann, 1821). Female (A-H), male (I). A. Head, frontal view. B. Same, lateral view. C. Frons. D. Antenna. E. Abdomen, dorsal view. F. Palpus. G. Sternite 8 and gonapophyses. H. Genital furca and spermathecal ducts. I. Aedeagus and gonostyli.

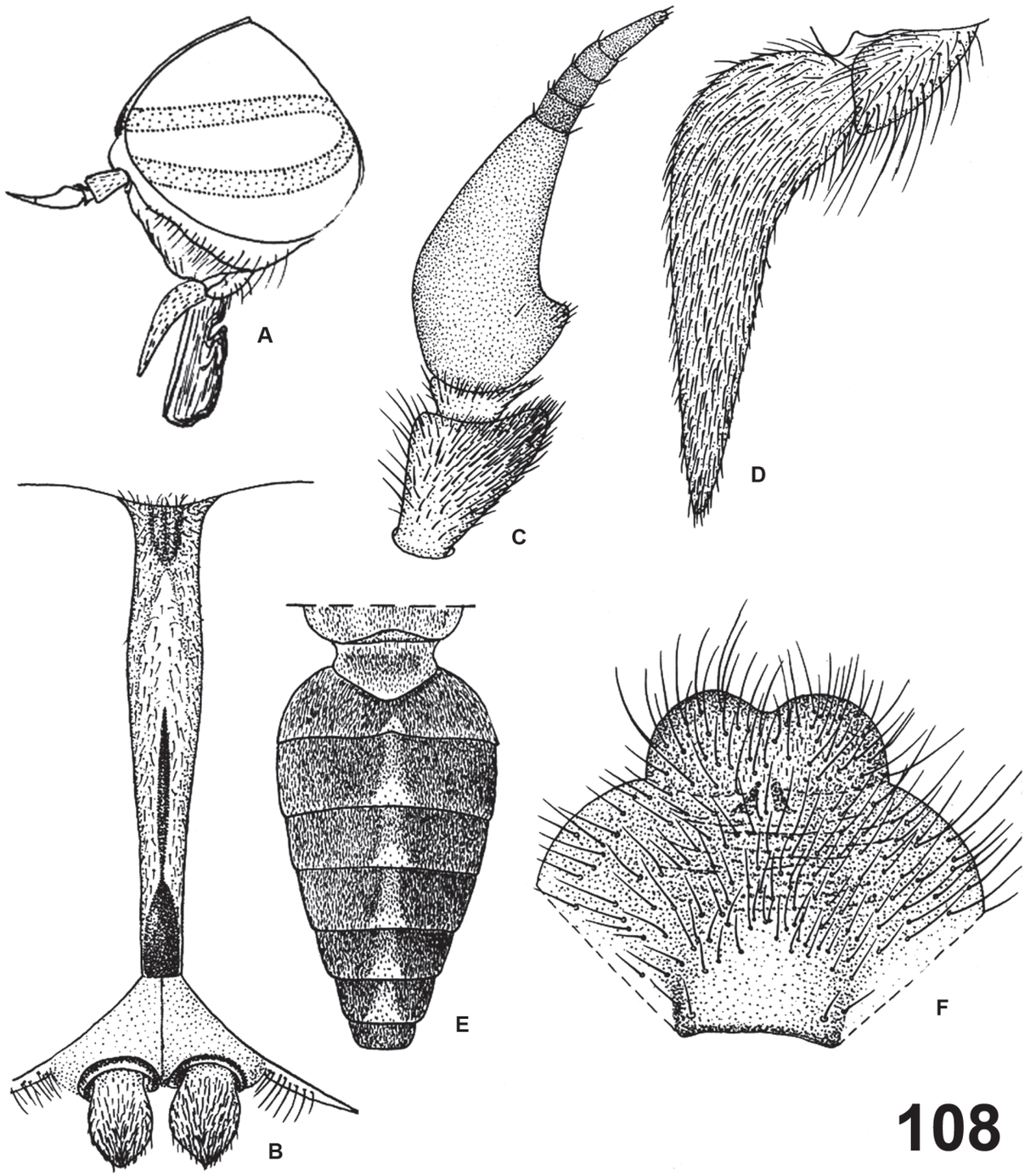

Figure 108. *Tabanus sorbillans* Wiedemann, 1828. Female. A. Head, lateral view. B. Frons. C. Antenna. D. Palpus. E. Abdomen, dorsal view. F. Sternite 8 and gonapophyses.

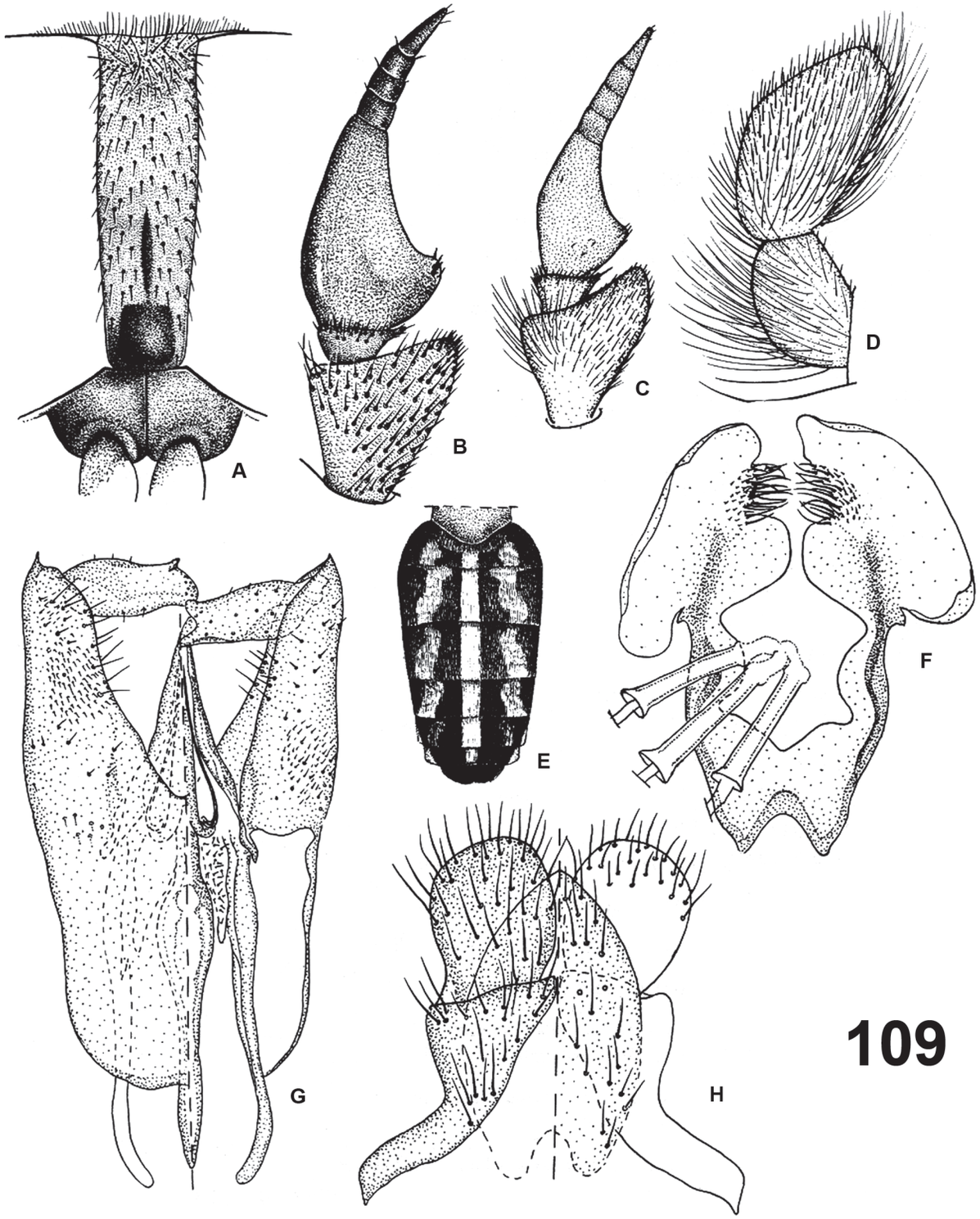

Figure 109. *Tabanus triangulum* Wiedemann, 1828. Female (A-B, D-G), male (C, H). A. Frons. B-C. Antenna. D. Palpus. E. Abdomen, dorsal view. F. Genital furca and spermathecal ducts. G. Tergites 9-10 and cerci. H. Aedeagus and gonostyli.