5. Subfamily Laphystiinae [Figs. 902-1037]

Key to the genera

1. Dorso-central bristles extending to anterior slope of mesonotum and always visible, even if hair-like (except in *Hexameritia* Speiser, where they cannot be discerned, due to exceptionally dense mesonotal pilosity; *Hexameritia* may be recognized by the exceptionally wide face (Fig. 904)). Scutellar margin with 6 or more (sometimes very numerous) long (twice or more length of scutellum) and slender hairs ........................................... 2

2 (1). Abdomen with numerous lateral bristles on tergites 1 and 2; tergite 3 and sometimes 4-5 with 1 or 2 bristles. Wing with cell r5 closed, usually petiolute. Costa complete, or greatly reduced in width or absent beyond wing apex. Lower 55% to 70% of face gibbous and covered with slender bristles subequal in length to antennae, flat part with short hairs (Figs. 902-903). Ocellar tubercle with 2-4 bristles (Figs. 902-903). Antenna with 3 or 2 flagellomeres; scape subequal to 1.5 times length of pedicel; first flagellomere ¾ as long as scape and pedicel together, slightly to strongly swollen just beyond middle. Scutellum with 10-20 long marginal bristles (Fig. 934). Anatergite with about 20 long, slender bristles. Apical hind tarsomere with a weak spur on ventral surface. Male terminalia (cf. Fisher, 1977: figs. 33, 36, 37): hypandrium present, fused to basistyli, bilobed, the lobes divergent to contiguous; aedeagus with only one tube; epandrium longer than wide. Female spermathecae as in Figs. 952-953. All species sexually dimorphic; females have a wider face, longer wings and wider abdomen; generally more extensively tomentose dorsally; tibiae arcuate in males, straight in females (Nearctic, extending to Baja California and northwesternmost Mexico) .......................................................................................................... *Zabrops* Hull, 1957

At most tergite 1 with lateral bristles. Wing with cell r5 open. Apical hind tarsomere without spur on ventral surface. Other combinations of characters ............................................................................................................................................... 3

3 (2). Head exceptionally wide, 2 times its own height, and face wide (1/3 head width; Fig. 904). Face prominent, longest ventrally, of reduced height, strongly rounded (Fig. 905). Face, front and occiput with dense, fine pile. Abdomen broad, flattened, the margin densely fine pilose. Dense, rather woolly pilose flies (especially head, thorax and lateral margins of abdomen). Male terminalia (Figs. 954-957): hypandrium present, but reduced; epandrium very short basally, with extremely long lateral prolongations; basistyli with stiff, long, apical bristles; aedeagus with a single tube. Spermathecae with a common duct (cf. Artigas, 1971: fig. 26) (Chile) ....... *Hexameritia* Speiser, 1920

Head never as above and face narrow (Figs. 906-907, 7908-909). Rather bare flies. Epandrium never as above. Spermathecae with ducts fused basally, but not forming a single duct (Figs. 964, 971) ........................................................................................................... 4

4 (3). Normally only 6 bristly long hairs on scutellar margin (Fig. 936). Mesonotum and abdomen with short, appressed pile. First two pairs of femora normal, hind pair only slightly thickened; hind tibia moderately thickened; neither posterior femur nor tibia arcuate. Ocellar tubercle with a pair of slender, long, divergent bristles between ocelli (Fig. 907). Male terminalia (Figs. 958-962): hypandrium present, elongate and slender, with two prolongations at apex, these prolongations showing short spines. Spermathecae as in Figs. 963-964 (Brazil: Goiás to Santa Catarina) ............... ......... *Helolaphyctis* Hermann, 1920

Several brisly long hairs on scutellar margin (Fig. 937). Mesonotum with fine, long, bristly, erect pile. Hind femur arched and thickened. Ocellar tubercle without strong bristles. Male terminalia as in Figs. 965-969: hypandrium short, grossly horseshoe-shaped. Spermathecae as in Figs. 970-971 (Brazil: Guaiúba to Santa Catarina) ................................. A *poxyria* Schiner, 1866

5 (1). Antenna with 3 flagellomeres (Fig. 911) ........................................................................................................................................... 6

Antenna with 1 or 2 flagellomeres ........................................................................................................................................... 7

6 (5). Face below antennae ¾ head width and divergent below (Fig. 910); in lateral view nearly plane with eye, except for lower 1/3 which, while relatively short, is gently rounded and gibbose, with a few bristles and hairs (Fig. 911). Scape about four times as long as the short, beadlike pedicel; flagellum slender, longer than combined length of scape and pedicel, second flagellomere quite short, third longer, wider, blunt, cup-shaped, with enclosed spine (Fig. 911). Abdominal tergites 1-6 with lateral bristles. Wing with Costa continuing all around wing and

**Neotropical Diptera** 18
cells r1 and r5 widely open. Male terminalia (Figs. 972-975) with epandrium longer than wide, bearing laterally long, thin, transparent, centrally convex, uneven, posteriorly rounded wing-like processes, leaving a deep recess with a notched; hypandrium present, short, semicircular; aedeagus with only one tube (Brazil: Mato Grosso to Argentina (Salta, Jujuy)) .................................................. Laphygmolesites Hull, 1962

Face wide, at antennae subequal to one and one-fourth times width of an eye, evenly produced from oral margin to antennae, the gibbosity covered with pile, which is longest and densest at oral margin, where there usually are some slender bristles. Scape subequal to 1.5 times length of pedicel; first flagellomere subequal to one and one third times the combined length of scape and pedicel; third flagellomere much longer than the second, with an oblique excavation bearing a small spine. Dorsocentral bristles absent. Scutellum with marginal bristles or hairs, length and number of these variable. Wing with Costa extending only to apex of cell cup, absent beyond, or, rarely, ending at wing apex; cell r1 narrowly closed to narrowly open; cell r5 generally open, but closed and petiolate in several species. Tergites 1-6 with lateral bristles. Male terminalia (cf. Fisher, 1977: figs. 5, 8, 9): hypandrium absent; epandrium wider than long; aedeagus with a single tube (Predominantly Holarctic, a few species in the Oriental and Afrotropical regions) .............................................. Laphystia Loew, 1847

7(6). Face extremely narrow, at level of antennae about 1/5 head width (Figs. 913-914). Antenna with only 1 flagellomere. All wing cells open. Scutellar margin with 2-4 strong bristles (Figs. 939-940). Ventral surface of apical hind tarsomere with a weak spur ........................................... 8

Face wider, ¼ to 1/3 head width (Figs. 916, 918, 920, 922, 924, 927, 928, 930, 932). Antenna with 1 or 2 flagellomeres. Cells r1 and r5 open or closed. Scutellum with marginal bristles, short hairs (which may be very numerous) or bare. Ventral surface of apical hind tarsomere with or without a spur ........................................................................ 9

8(7). Posterior dorsocentral bristles present. Abdomen with tergites 1-3 with lateral bristles. Male terminalia with hypandrium present and aedeagus with a single tube (Figs. 976-979). Spermathecae as in Figs. 980-981 (Chile) .............................................. Cymbipyga Artigas, Papavero & Costa, 1997

Dorsocentral bristles absent. All abdominal tergites with lateral bristles. Hypandrium absent (or fused with bases of gonopods?); aedeagus with three clearly visible apical tubes (Figs. 982-986). Spermathecae as in Figs. 987-988 (Nearctic, Neotropical, but not in Chile) .................................................. Psilocerus Loew, 1874

9(6). Cell r5 open ............................................................................................................................................. 10

Cell r5 closed and petiolate ...................................................................................................................... 13

10(9). Scutellar margin with 2 strong bristles (Figs. 941-942). Antenna with 2 flagellomeres. Cell r1 open or closed. Only one pair (normally weak) of posterior dorsocentrals. Ventral surface of apical hind tarsomere with a strong spur, plus 2 to 20 spines ................................................................. 11

Scutellar margin bare (Figs. 943-944). Antenna with 1 or 2 flagellomeres. Cell r1 closed. Posterior pair of dorsocentrals present or absent. Ventral surface of apical hind tarsomere with or without a spur, with or without spines .... 12

11(10). Pulvilli absent (Fig. 951A). Ventral surface of apical hind tarsomere with a spur and 16-20 spines in two more or less parallel rows of 8-10 (Fig. 951A). Cell r1 open. Male terminalia (Figs. 989-992): hypandrium subtriangular, apex very slender and acuminate; basistyli almost ovoid, relatively short, with typical curved, apically bifid dististyli; aedeagus a single tube; epandrium large, ovoid. Female spermathecae with a common duct (Figs. 993-994) (Peru, Brazil) .................................................................................................................. Macahyba Carrera, 1947

Pulvilli present. Ventral surface of apical hind tarsomere without spur, only 2-4 spines present. Cell r1 closed. Male terminalia (Figs. 995-996): hypandrium triangular, wider than high, the apex not produced; basistyli much longer than in Macahyba, dististyli simple, short, epandrium subtrapezoidal. Female spermathecae with a common duct (Figs. 997-998) (Peru, Bolivia) .............................................................................. Martinomyia Özdikmen, 2007

12(10). Antenna with only 1 flagellomere, apically flattened, spatulate, with a shallow concavity bearing a spine (Fig. 921). Three or more pairs of post-sutural dorsocentral bristles. Ventral surface of apical hind tarsomere with only 2 spines; no spur present. Male terminalia (Figs. 999-1002): hypandrium almost an equilateral triangle; basistyli short, subtriangular, with elongate, simple, curved dististyli; aedeagus a single tube; epandrium almost ovoid, with concave apex. Female spermathecae with a common duct (Figs. 1003-1004) (Brazil: Goiás) .................................................. Cochleauricera Artigas, Papavero & Costa, 1997

Antenna with 2 flagellomeres (Fig. 923). Dorsocentral bristles absent. Ventral surface of apical hind tarsomere with 2-3 spines, plus a definite spur. Male terminalia (Figs. 1005-1008, 1009): hypandrium with wide base and
narrow, tongue-like apex; aedeagus a single tube; epandrium similar to an ant’s head. Female spermathecae with a common duct; spermathecal capsules elongate, curled, thick (Figs. 1010-1011) (Colombia, Brazil: Amazonas, Mato Grosso) .................................................................Protomer Artigas, Papavero & Costa, 1997

13(9). Cell r1 open. Ventral surface of apical hind tarsomere without spur and without small spines. Basistyli without an apical row of stiff bristles or short spines (Fig. 1012) ................................................................................................................................. 14

Cell r1 closed. Ventral surface of apical hind tarsomere with a definite spur, with or without small spines in addition to spur. Basistyli apically with a row of stiff bristles or short spines (Figs. 1020, 1026-1027, 1032-1033) ........ 15

14(13). Hind femur exceptionally stout and enlarged, bearing tuberculate spines ventrally (Fig. 950). Relatively large, robust flies, with dense, flat, appressed, glittering, matted, conspicuous abdominal pile. Abdomen usually robust and short oval, tergites 1-2 only with lateral bristles. Male terminalia (Figs. 1012-1015): hypandrium almost heart-shaped; basistyli with apical prolongation; dististyli elongate; aedeagus a single tube; epandrium with a characteristic ‘U’-shape. Female spermathecae with common duct (Figs. 1016-1017) (Colombia to Argentina, but not in Chile) ................................................................................................................................. Triclioscelis Roeder, 1900

Femur of normal width. Body pile moderately abundant and shorter. Mystax with a row of strong bristles on oral margin and dense, recumbent, squamose hairs above (Figs. 926-927). Only tergite 1 with lateral bristles. Pronotum with strong dorsal and posterolateral bristles. Female spermathecae (Figs. 1018-1018) with a common duct (Holarctic) ................................................................................................................................. Perasis Hermann, 1905

15(13). Scutellar margin with bristles (Fig. 947). Pulvilli absent (Fig. 951B). Ventral surface of apical hind tarsomere with 9 small spines in addition to spur, forming a triangle (Fig. 951B). Male terminalia as in Figs. 1020-1023. Female spermathecae (Figs. 1024-1025) with a common duct (Argentina) .................................. Asicya Lynch Arribálzaga, 1880
Scutellar margin bare, or margin with dense, short, upturned pile (Figs. 948-949). Pulvilli present. Ventral surface of apical hind tarsomere without small spines in addition to spur ................................................................. 16

16(13). Mystax restricted to lower face (Figs. 930-931). Relatively large (13.5 mm), blackish, almost bare flies. Mesonotal and scutellar discs covered with spinules (Fig. 948). Male terminalia very peculiar (Figs. 1026-1029). Female spermathecae (Figs. 1030-1031) with a common duct; capsules forming an extremely coiled spire (Venezuela) ...... ................................................................. Gymnotriclis Artigas, Papavero & Costa, 1997
Mystax dense, occupying entire face (Figs. 932-933). Short, broad, yellowish, densely pilose flies. Scutellum covered with dense, silky, recumbent yellow hairs (Fig. 949). Male terminalia as in Figs. 1032-1035. Female spermathecae (Figs. 1036-1037) with a common duct; capsule with many coils (Argentina) .............. ........................................................................................................ Chrysotriclis Artigas, Papavero & Costa, 1997
Figures 963-964. *Helolaphycis* sp. 963. Abdomen, with the situation of spermathecae. 964. Spermathecae.